

ภาคผนวก ค.

ใบรับรองผลการตรวจวิเคราะห์คุณภาพสิ่งแวดล้อม

ผลการทดสอบคุณภาพอากาศในปล่องระบาย

Request No. LA68-0341

Report No. 6803-0330

## TEST REPORT

CUSTOMER : บริษัท อมตะ บี. กริม เพาเวอร์ (ระยอง) 3 จำกัด  
ADDRESS : 7/491 หมู่ 6 ต.มาบยางพร อ.ปลวกแดง จ.ระยอง 21140  
SAMPLE SOURCE : บริษัท อมตะ บี. กริม เพาเวอร์ (ระยอง) 3 จำกัด  
SAMPLE POINT : ปล่องหน่วยผลิตไอน้ำ (HRSG) #31  
SAMPLING DATE : 19/03/2025  
RECEIVED DATE : 25/03/2025  
TESTED DATE : 25-27/03/2025

SAMPLE NO. : 01073  
SAMPLING TIME : 10:20-10:55  
REPORTED DATE : 28/03/2025

## STACK DESCRIPTION @

Height :	45.00	m	Type of Process :	Combustion
Diameter :	2.90	m	Type of Fuel :	Natural Gas
Temperature :	97.00	°C	Operation Capacity :	32.84 MW
Air Velocity :	21.41	m/s	Oxygen Content :	14.30 %
Flow rate <sup>4</sup> :	377,410	Nm <sup>3</sup> /hr	Barometric Pressure :	752.50 mmHg
Moisture Content :	6.99	%	Atmospheric Temperature :	32.00 °C
Shape :	Circle		Carbon Dioxide :	3.81 %

PARAMETER	TEST METHOD	TIME	RESULT <sup>4</sup>		STD	UNIT
			14.30 % O <sub>2</sub>	7 % O <sub>2</sub>		
Total Suspended Particulate (TSP)	Isokinetic, Gravimetric (U.S. EPA Method 5)	10:20-10:55	1.3 0.1363 <sup>@</sup>	2.7 -	60 <sup>1</sup> , 60 <sup>2</sup> , 20 <sup>3</sup> 1.30 <sup>3</sup>	mg/m <sup>3</sup> g/s

## REMARK:

- <sup>1</sup> Notification of The Ministry of Industry B.E. 2567 (2024)
- <sup>2</sup> Notification of the Ministry of Natural Resources and Environmental B.E.2566 (2023)
- <sup>3</sup> ค่ามาตรฐานคุณภาพอากาศจากปล่อง ตามที่กำหนดไว้ในรายงานการวิเคราะห์ผลกระทบสิ่งแวดล้อม (EIA)
- <sup>4</sup> Standard Condition (Temperature 25°C, Pressure 760 mmHg) and Dry Basis
- <sup>@</sup> These Data Outside The Scope of The Registration of The Department of Industrial Works.
- Sampling By Mr. Warakorn Vitayasewee (ว-003-ค-0021)
- GPS 47P 0727599, 1430985

Examined By.....

(Miss Apiradee Chuen-arom)

(ว-003-ค-0007)

28/03/2025



Approved By.....

(Mr. Thongchai Boonsak)

(ว-003-ค-0012)

28/03/2025

REPORTED TEST REFER TO SUBMITTED SAMPLES ONLY  
THIS REPORT SHALL NOT REPRODUCED EXCEPT IN FULL  
WITHOUT THE WRITTEN APPROVAL LABORATORY



Request No. LA68-R0396

Report No. R6803-2284 – R6803-2285

## TEST REPORT

CUSTOMER : บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด  
ADDRESS : 7/491 หมู่ 6 ตำบลมาบยางพร อำเภอปลวกแดง จังหวัดระยอง 21140  
SAMPLE SOURCE : บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด  
SAMPLE POINT : ปล่องระบายมลพิษทางอากาศ HRSG #31 SAMPLE NO. : 04739-04740  
SAMPLING DATE : 19/03/2025 SAMPLING TIME : 10:20-10:50  
RECEIVED DATE : 19/03/2025 REPORTED DATE : 01/04/2025

STACK DESCRIPTION<sup>a</sup>

Height :	45.00	m	Type of Process :	Combustion
Diameter :	2.90	m	Type of Fuel :	Natural Gas
Temperature :	97.00	°C	Operation Capacity :	32.84 MW
Air Velocity :	21.41	m/s	Oxygen Content :	14.30 %
Flow rate <sup>4</sup> :	377,410	Nm <sup>3</sup> /hr	Barometric Pressure :	752.50 mmHg
Moisture Content :	6.99	%	Atmospheric Temperature :	32.00 °C
Shape :	Circle		Carbon Dioxide :	3.81 %

PARAMETER	TEST METHOD	TIME	RESULT <sup>4</sup>		STD	UNIT
			14.30 % O <sub>2</sub>	7 % O <sub>2</sub>		
Sulfur Dioxide (SO <sub>2</sub> )	Instrumental Analyzer Method (U.S. EPA Method 6C)	10:20-10:50	<2.6	<5.5	52 <sup>1</sup> , 52 <sup>2</sup>	mg/m <sup>3</sup>
			<1.0	<2.1	20 <sup>1</sup> , 20 <sup>2</sup> , 10 <sup>3</sup>	ppm
			<0.2726 <sup>6</sup>	-	1.70 <sup>3</sup>	g/s
Oxides of Nitrogen (NO <sub>x</sub> )	Instrumental Analyzer Method (U.S. EPA Method 7E)	10:20-10:50	20.3	42.8	226 <sup>1</sup> , 226 <sup>2</sup>	mg/m <sup>3</sup>
			10.8	22.7	120 <sup>1</sup> , 120 <sup>2</sup> , 60 <sup>3</sup>	ppm
			2.1283 <sup>6</sup>	-	7.33 <sup>3</sup>	g/s

## REMARK:

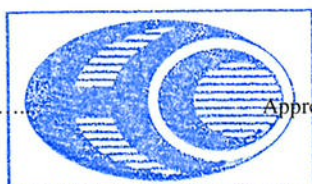
- <sup>1</sup> Notification of The Ministry of Industry B.E. 2547 (2004)
- <sup>2</sup> Notification of The Ministry of Natural Resources and Environment B.E. 2566 (2023)
- <sup>3</sup> ค่ามาตรฐานคุณภาพอากาศจากปล่อง ตามที่กำหนดไว้ในรายงานการวิเคราะห์ผลกระทบสิ่งแวดล้อม (EIA)
- <sup>4</sup> Standard Condition (Temperature 25°C, Pressure 760 mmHg) and Dry Basis
- Sampling By Mr. Warakorn Vitayasewee (ว-003-ก-0021)
- <sup>6</sup> These Data Outside The Scope of The Registration of The Department of Industrial Works.
- GPS 47P 0727599, 1430985

Examined By.....

(Ms. Thanatporn Klinsopon)

(ว-003-ค-0013)

01/04/2025



บริษัท อีสเทิร์นไทยคอนซัลติ้ง 1992 จำกัด

Approved By.....

(Mr. Thongchai Boonsak)

(ว-003-ค-0012)

01/04/2025

REPORTED TEST REFER TO SUBMITTED SAMPLES ONLY  
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WITHOUT THE WRITTEN APPROVAL LABORATORY



Request No. LA68-0332

Report No. 6803-0328

## TEST REPORT

CUSTOMER : บริษัท อมตะ บี. กริม เพาเวอร์ (ระยอง) 3 จำกัด  
ADDRESS : 7/491 หมู่ 6 ต.มาบยางพร อ.ปลวกแดง จ.ระยอง 21140  
SAMPLE SOURCE : บริษัท อมตะ บี. กริม เพาเวอร์ (ระยอง) 3 จำกัด  
SAMPLE POINT : ปล่องหน่วยผลิตไอน้ำ (HRSG) #32  
SAMPLING DATE : 19/03/2025  
RECEIVED DATE : 22/03/2025  
TESTED DATE : 22-27/03/2025

SAMPLE NO. : 01021  
SAMPLING TIME : 10:55-11:30  
REPORTED DATE : 28/03/2025

## STACK DESCRIPTION @

Height :	45.00	m	Type of Process :	Combustion
Diameter :	2.90	m	Type of Fuel :	Natural Gas
Temperature :	96.00	°C	Operation Capacity :	33.01 MW
Air Velocity :	21.56	m/s	Oxygen Content :	14.29 %
Flow rate <sup>4</sup> :	381,237	Nm <sup>3</sup> /hr	Barometric Pressure :	752.50 mmHg
Moisture Content :	6.90	%	Atmospheric Temperature :	33.00 °C
Shape :	Circle		Carbon Dioxide :	3.80 %

PARAMETER	TEST METHOD	TIME	RESULT <sup>4</sup>		STD	UNIT
			14.29 % O <sub>2</sub>	7 % O <sub>2</sub>		
Total Suspended Particulate (TSP)	Isokinetic, Gravimetric (U.S. EPA Method 5)	10:55-11:30	1.2 0.1271 <sup>@</sup>	2.5 -	60 <sup>1</sup> , 60 <sup>2</sup> , 20 <sup>3</sup> 1.30 <sup>3</sup>	mg/m <sup>3</sup> g/s

## REMARK:

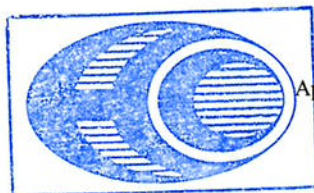
- 1.<sup>1</sup> Notification of The Ministry of Industry B.E. 2567 (2024)
- 2.<sup>2</sup> Notification of the Ministry of Natural Resources and Environmental B.E.2566 (2023)
- 3.<sup>3</sup> คำมาตรฐานคุณภาพอากาศจากปล่อง ตามที่กำหนดไว้ในรายงานการวิเคราะห์ผลกระทบสิ่งแวดล้อม (EIA)
- 4.<sup>4</sup> Standard Condition (Temperature 25°C, Pressure 760 mmHg) and Dry Basis
- 5.<sup>@</sup> These Data Outside The Scope of The Registration of The Department of Industrial Works.
6. Sampling By Mr. Metee Sukprasert (จ-003-ค-0035)
7. GPS 47P 0727622, 1431003

Examined By.....

(Miss Apiradee Chuen-arom)

(จ-003-ค-0007)

28/03/2025



บริษัท อีสเทิร์นไทยคอนซัลติ้ง 1992 จำกัด

Approved By.....

(Mr. Thongchai Boonsak)

(จ-003-ค-0012)

28/03/2025

REPORTED TEST REFER TO SUBMITTED SAMPLES ONLY  
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Request No. LA68-R0374

Report No. R6803-1786 – R6803-1787

## TEST REPORT

CUSTOMER : บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด  
ADDRESS : 7/491 หมู่ 6 ตำบลบางยางพร อำเภอปลวกแดง จังหวัดระยอง 21140  
SAMPLE SOURCE : บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด  
SAMPLE POINT : ปล่องระบายมลพิษทางอากาศ HRSG #32 SAMPLE NO. : 04234-04235  
SAMPLING DATE : 19/03/2025 SAMPLING TIME : 10:45-11:15  
RECEIVED DATE : 19/03/2025 REPORTED DATE : 01/04/2025

STACK DESCRIPTION<sup>(a)</sup>

Height :	45.00	m	Type of Process :	Combustion
Diameter :	2.90	m	Type of Fuel :	Natural Gas
Temperature :	96.00	°C	Operation Capacity :	33.01 MW
Air Velocity :	21.56	m/s	Oxygen Content :	14.29 %
Flow rate <sup>(4)</sup> :	381,237	Nm <sup>3</sup> /hr	Barometric Pressure :	752.50 mmHg
Moisture Content :	6.90	%	Atmospheric Temperature :	33.00 °C
Shape :	Circle		Carbon Dioxide :	3.80 %

PARAMETER	TEST METHOD	TIME	RESULT <sup>(4)</sup>		STD	UNIT
			14.29 % O <sub>2</sub>	7 % O <sub>2</sub>		
Sulfur Dioxide (SO <sub>2</sub> )	Instrumental Analyzer Method (U.S. EPA Method 6C)	10:45-11:15	<2.6	<5.5	52 <sup>(1)</sup> , 52 <sup>(2)</sup>	mg/m <sup>3</sup>
			<1.0	<2.1	20 <sup>(1)</sup> , 20 <sup>(2)</sup> , 10 <sup>(3)</sup>	ppm
			<0.2753 <sup>(a)</sup>	-	1.70 <sup>(3)</sup>	g/s
Oxides of Nitrogen (NO <sub>x</sub> )	Instrumental Analyzer Method (U.S. EPA Method 7E)	10:45-11:15	19.9	41.8	226 <sup>(1)</sup> , 226 <sup>(2)</sup>	mg/m <sup>3</sup>
			10.6	22.3	120 <sup>(1)</sup> , 120 <sup>(2)</sup> , 60 <sup>(3)</sup>	ppm
			2.1074 <sup>(a)</sup>	-	7.33 <sup>(3)</sup>	g/s

## REMARK:

- <sup>(1)</sup> Notification of The Ministry of Industry B.E. 2567 (2024)
- <sup>(2)</sup> Notification of The Ministry of Natural Resources and Environment B.E. 2566 (2023)
- <sup>(3)</sup> ค่ามาตรฐานคุณภาพอากาศจากปล่อง ตามที่กำหนดไว้ในรายงานการวิเคราะห์ผลกระทบสิ่งแวดล้อม (EIA)
- <sup>(4)</sup> Standard Condition (Temperature 25°C, Pressure 760 mmHg) and Dry Basis
- Sampling By Mr. Metee Sukprasert (จ-003-ค-0035)
- <sup>(a)</sup> These Data Outside The Scope of The Registration of The Department of Industrial Works.
- GPS 47P 0727622, 1431003

Examined By.....

(Ms. Thanatporn Klinsopon)

(จ-003-ค-0013)

01/04/2025



บริษัท อีสเทิร์นไทยคอนซัลติ้ง 1992 จำกัด

Approved By.....

(Mr. Thongchai Boonsak)

(จ-003-ค-0012)

01/04/2025

REPORTED TEST REFER TO SUBMITTED SAMPLES ONLY  
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ผลการทดสอบคุณภาพอากาศในบรรยากาศ



Request No. ATR6803058

Report No. 6803-1249 - 6803-1255

## TEST REPORT

CUSTOMER : บริษัท อมตะ บี. กริม เพาเวอร์ (ระยอง) 3 จำกัด  
 ADDRESS : 7/491 หมู่ 6 ตำบลมาบยางพร อำเภอปลวกแดง จังหวัดระยอง 21140  
 SAMPLE SOURCE : บริษัท อมตะ บี. กริม เพาเวอร์ (ระยอง) 3 จำกัด  
 SAMPLE NAME : โรงเรียนบ้านภูไทร  
 RECEIVED DATE : 28/03/2025 SAMPLE NO. : A68031249 - A68031255  
 TESTED DATE : 28/03/2025-01/04/2025 REPORTED DATE : 02/04/2025

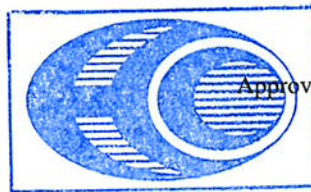
PARAMETER*	TEST METHOD	SAMPLING DATE	RESULT	STD <sup>1/</sup>	UNIT
Total Suspended Particulate (TSP)	Gravimetric Method	15-16/03/2025	0.058	0.33	mg/m <sup>3</sup>
		16-17/03/2025	0.053	0.33	mg/m <sup>3</sup>
		17-18/03/2025	0.051	0.33	mg/m <sup>3</sup>
		18-19/03/2025	0.077	0.33	mg/m <sup>3</sup>
		19-20/03/2025	0.091	0.33	mg/m <sup>3</sup>
		20-21/03/2025	0.105	0.33	mg/m <sup>3</sup>
		21-22/03/2025	0.107	0.33	mg/m <sup>3</sup>

## REMARK:

<sup>1/</sup> Notification of The National Environmental Board Volume 24 B.E.2547 (2004) Standard for 24-hr Average.

\* Parameter Outside The Scope of The Registration of The Department of Industrial Works.

(Sampling By Mr. Apiwat Klangpetch)



บริษัท อีสเทิร์นไทยคอนซัลติ้ง 1992 จำกัด

Approved By

(Miss Thanatporn Klinsopon)

02/04/2025

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Request No. ATR6803058

Report No. 6803-1242 - 6803-1248

## TEST REPORT

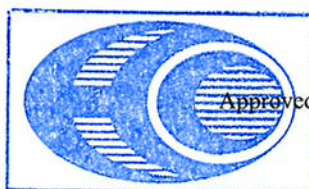
CUSTOMER : บริษัท อมตะ บี. กริม เพาเวอร์ (ระยอง) 3 จำกัด  
ADDRESS : 7/491 หมู่ 6 ตำบลมาบยางพร อำเภอบลวกแดง จังหวัดระยอง 21140  
SAMPLE SOURCE : บริษัท อมตะ บี. กริม เพาเวอร์ (ระยอง) 3 จำกัด  
SAMPLE NAME : โรงเรียนบ้านภูไทร  
RECEIVED DATE : 28/03/2025 SAMPLE NO. : A68031242 - A68031248  
TESTED DATE : 28/03/2025-01/04/2025 REPORTED DATE : 02/04/2025

PARAMETER*	TEST METHOD	SAMPLING DATE	RESULT	STD <sup>1/</sup>	UNIT
Particulate matter less than or Equal					
10 micrometers (PM 10)	Gravimetric Method	15-16/03/2025	0.042	0.12	mg/m <sup>3</sup>
		16-17/03/2025	0.028	0.12	mg/m <sup>3</sup>
		17-18/03/2025	0.046	0.12	mg/m <sup>3</sup>
		18-19/03/2025	0.059	0.12	mg/m <sup>3</sup>
		19-20/03/2025	0.085	0.12	mg/m <sup>3</sup>
		20-21/03/2025	0.072	0.12	mg/m <sup>3</sup>
		21-22/03/2025	0.088	0.12	mg/m <sup>3</sup>

**REMARK:**<sup>1/</sup> Notification of The National Environmental Board Volume 24 B.E.2547 (2004) Standard for 24-hr Average.

\* Parameter Outside The Scope of The Registration of The Department of Industrial Works.

(Sampling By Mr. Apiwat Klangpetch)



บริษัท อีสเทิร์นไทยคอนซัลติ้ง 1992 จำกัด

Approved By .....

(Miss Thanatporn Klinsopon)

02/04/2025

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Request No. ATR6803058

Report No. 6803-1235 - 6803-1241

## TEST REPORT

CUSTOMER : บริษัท อมตะ บี. กริม เพาเวอร์ (ระยอง) 3 จำกัด  
ADDRESS : 7/491 หมู่ 6 ตำบลมาบยางพร อำเภอบลวกแดง จังหวัดระยอง 21140  
SAMPLE SOURCE : บริษัท อมตะ บี. กริม เพาเวอร์ (ระยอง) 3 จำกัด  
SAMPLE NAME : วัดพนานิคม  
RECEIVED DATE : 28/03/2025 SAMPLE NO. : A68031235 - A68031241  
TESTED DATE : 28/03/2025-01/04/2025 REPORTED DATE : 02/04/2025

PARAMETER*	TEST METHOD	SAMPLING DATE	RESULT	STD <sup>1/</sup>	UNIT
Total Suspended Particulate (TSP)	Gravimetric Method	15-16/03/2025	0.034	0.33	mg/m <sup>3</sup>
		16-17/03/2025	0.034	0.33	mg/m <sup>3</sup>
		17-18/03/2025	0.050	0.33	mg/m <sup>3</sup>
		18-19/03/2025	0.070	0.33	mg/m <sup>3</sup>
		19-20/03/2025	0.108	0.33	mg/m <sup>3</sup>
		20-21/03/2025	0.124	0.33	mg/m <sup>3</sup>
		21-22/03/2025	0.106	0.33	mg/m <sup>3</sup>

**REMARK:**<sup>1/</sup> Notification of The National Environmental Board Volume 24 B.E.2547 (2004) Standard for 24-hr Average.

\* Parameter Outside The Scope of The Registration of The Department of Industrial Works.

(Sampling By Mr. Apiwat Klangpetch)



Approved By .....

(Miss Thanatporn Klinsoon)

02/04/2025

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Request No. ATR6803058

Report No. 6803-1228 - 6803-1234

## TEST REPORT

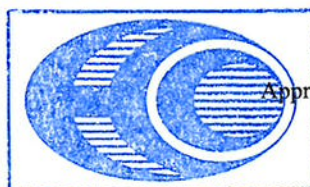
CUSTOMER : บริษัท.อมตะ บี. กริม เพาเวอร์ (ระยอง) 3 จำกัด  
 ADDRESS : 7/491 หมู่ 6 ตำบลมาบยางพร อำเภอบลวกแดง จังหวัดระยอง 21140  
 SAMPLE SOURCE : บริษัท.อมตะ บี. กริม เพาเวอร์ (ระยอง) 3 จำกัด  
 SAMPLE NAME : วัดพนานิคม  
 RECEIVED DATE : 28/03/2025 SAMPLE NO. : A68031228 - A68031234  
 TESTED DATE : 28/03/2025-01/04/2025 REPORTED DATE : 02/04/2025

PARAMETER*	TEST METHOD	SAMPLING DATE	RESULT	STD <sup>/1</sup>	UNIT
Particulate matter less than or Equal					
10 micrometers (PM 10)	Gravimetric Method	15-16/03/2025	0.030	0.12	mg/m <sup>3</sup>
		16-17/03/2025	0.020	0.12	mg/m <sup>3</sup>
		17-18/03/2025	0.046	0.12	mg/m <sup>3</sup>
		18-19/03/2025	0.051	0.12	mg/m <sup>3</sup>
		19-20/03/2025	0.076	0.12	mg/m <sup>3</sup>
		20-21/03/2025	0.068	0.12	mg/m <sup>3</sup>
		21-22/03/2025	0.085	0.12	mg/m <sup>3</sup>

**REMARK:**<sup>/1</sup> Notification of The National Environmental Board Volume 24 B.E.2547 (2004) Standard for 24-hr Average.

\* Parameter Outside The Scope of The Registration of The Department of Industrial Works.

(Sampling By Mr. Apiwat Klangpetch)



บริษัท อีสเทิร์นไทยคอนซัลติ้ง 1992 จำกัด

Approved By .....

(Miss Thanatporn Klinsopon)

02/04/2025

REPORTED TEST REFER TO SUBMITTED SAMPLES ONLY  
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Request No. ATR6803058

Report No. 6803-1207 - 6803-1213

## TEST REPORT

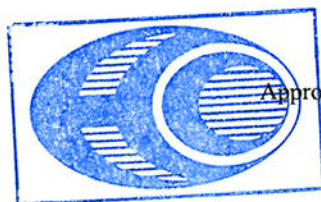
CUSTOMER : บริษัท อมตะ บี. กริม เพาเวอร์ (ระยอง) 3 จำกัด  
 ADDRESS : 7/491 หมู่ 6 ตำบลมาบยางพร อำเภอบลวกแดง จังหวัดระยอง 21140  
 SAMPLE SOURCE : บริษัท อมตะ บี. กริม เพาเวอร์ (ระยอง) 3 จำกัด  
 SAMPLE NAME : โรงพยาบาลส่งเสริมสุขภาพตำบลมาบยางพร  
 RECEIVED DATE : 28/03/2025 SAMPLE NO. : A68031207 - A68031213  
 TESTED DATE : 28/03/2025-01/04/2025 REPORTED DATE : 02/04/2025

PARAMETER*	TEST METHOD	SAMPLING DATE	RESULT	STD <sup>/1</sup>	UNIT
Total Suspended Particulate (TSP)	Gravimetric Method	15-16/03/2025	0.039	0.33	mg/m <sup>3</sup>
		16-17/03/2025	0.041	0.33	mg/m <sup>3</sup>
		17-18/03/2025	0.066	0.33	mg/m <sup>3</sup>
		18-19/03/2025	0.075	0.33	mg/m <sup>3</sup>
		19-20/03/2025	0.153	0.33	mg/m <sup>3</sup>
		20-21/03/2025	0.099	0.33	mg/m <sup>3</sup>
		21-22/03/2025	0.121	0.33	mg/m <sup>3</sup>

**REMARK:**<sup>/1</sup> Notification of The National Environmental Board Volume 24 B.E.2547 (2004) Standard for 24-hr Average.

\* Parameter Outside The Scope of The Registration of The Department of Industrial Works.

(Sampling By Mr. Apiwat Klangpetch)



บริษัท อีสเทิร์นไทยคอนซัลติ้ง 1992 จำกัด

Approved By

(Miss Thanatporn Klinsoon)

02/04/2025

REPORTED TEST REFER TO SUBMITTED SAMPLES ONLY  
 THIS REPORT SHALL NOT REPRODUCED EXCEPT IN FULL  
 WITHOUT THE WRITTEN APPROVAL LABORATORY

Request No. ATR6803058

Report No. 6803-1200 - 6803-1206

## TEST REPORT

CUSTOMER : บริษัท อมตะ บี. กริม เพาเวอร์ (ระยอง) 3 จำกัด  
ADDRESS : 7/491 หมู่ 6 ตำบลมาบยางพร อำเภอบลุกแดง จังหวัดระยอง 21140  
SAMPLE SOURCE : บริษัท อมตะ บี. กริม เพาเวอร์ (ระยอง) 3 จำกัด  
SAMPLE NAME : โรงพยาบาลส่งเสริมสุขภาพตำบลมาบยางพร  
RECEIVED DATE : 28/03/2025 SAMPLE NO. : A68031200 - A68031206  
TESTED DATE : 28/03/2025-01/04/2025 REPORTED DATE : 02/04/2025

PARAMETER*	TEST METHOD	SAMPLING DATE	RESULT	STD <sup>/1</sup>	UNIT
Particulate matter less than or Equal					
10 micrometers (PM 10)	Gravimetric Method	15-16/03/2025	0.032	0.12	mg/m <sup>3</sup>
		16-17/03/2025	0.026	0.12	mg/m <sup>3</sup>
		17-18/03/2025	0.056	0.12	mg/m <sup>3</sup>
		18-19/03/2025	0.069	0.12	mg/m <sup>3</sup>
		19-20/03/2025	0.103	0.12	mg/m <sup>3</sup>
		20-21/03/2025	0.075	0.12	mg/m <sup>3</sup>
		21-22/03/2025	0.083	0.12	mg/m <sup>3</sup>

## REMARK:

<sup>/1</sup> Notification of The National Environmental Board Volume 24 B.E.2547 (2004) Standard for 24-hr Average.

\* Parameter Outside The Scope of The Registration of The Department of Industrial Works.

(Sampling By Mr. Apiwat Klangpetch)



บริษัท อีสเทิร์นไทยคอนซัลติ้ง 1992 จำกัด

Approved By .....

(Miss Thanatporn Klinsopon)

02/04/2025

REPORTED TEST REFER TO SUBMITTED SAMPLES ONLY  
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WITHOUT THE WRITTEN APPROVAL LABORATORY



Request No. ATR6803058

Report No. 6803-1221 - 6803-1227

## TEST REPORT

CUSTOMER : บริษัท อมตะ บี. กริม เพาเวอร์ (ระยอง) 3 จำกัด  
ADDRESS : 7/491 หมู่ 6 ตำบลมาบยางพร อำเภอบลุกแดง จังหวัดระยอง 21140  
SAMPLE SOURCE : บริษัท อมตะ บี. กริม เพาเวอร์ (ระยอง) 3 จำกัด  
SAMPLE NAME : ศูนย์พัฒนาเด็กเล็กองค์การบริหารส่วนตำบลมาบยางพร  
RECEIVED DATE : 28/03/2025 SAMPLE NO. : A68031221 - A68031227  
TESTED DATE : 28/03/2025-01/04/2025 REPORTED DATE : 02/04/2025

PARAMETER*	TEST METHOD	SAMPLING DATE	RESULT	STD <sup>/1</sup>	UNIT
Total Suspended Particulate (TSP)	Gravimetric Method	15-16/03/2025	0.065	0.33	mg/m <sup>3</sup>
		16-17/03/2025	0.052	0.33	mg/m <sup>3</sup>
		17-18/03/2025	0.055	0.33	mg/m <sup>3</sup>
		18-19/03/2025	0.089	0.33	mg/m <sup>3</sup>
		19-20/03/2025	0.103	0.33	mg/m <sup>3</sup>
		20-21/03/2025	0.123	0.33	mg/m <sup>3</sup>
		21-22/03/2025	0.106	0.33	mg/m <sup>3</sup>

## REMARK:

<sup>/1</sup> Notification of The National Environmental Board Volume 24 B.E.2547 (2004) Standard for 24-hr Average.

\* Parameter Outside The Scope of The Registration of The Department of Industrial Works.

(Sampling By Mr. Apiwat Klangpetch)



บริษัท อีสเทิร์นไทยคอนซัลติ้ง 1992 จำกัด

Approved By

(Miss Thanatporn Klinsopon)

02/04/2025

REPORTED TEST REFER TO SUBMITTED SAMPLES ONLY  
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WITHOUT THE WRITTEN APPROVAL LABORATORY

Request No. ATR6803058

Report No. 6803-1214 - 6803-1220

## TEST REPORT

CUSTOMER : บริษัท อมตะ บี. กริม เพาเวอร์ (ระยอง) 3 จำกัด  
 ADDRESS : 7/491 หมู่ 6 ตำบลมาบยางพร อำเภอบลวกแดง จังหวัดระยอง 21140  
 SAMPLE SOURCE : บริษัท อมตะ บี. กริม เพาเวอร์ (ระยอง) 3 จำกัด  
 SAMPLE NAME : ศูนย์พัฒนาเด็กเล็กองค์การบริหารส่วนตำบลมาบยางพร  
 RECEIVED DATE : 28/03/2025 SAMPLE NO. : A68031214 - A68031220  
 TESTED DATE : 28/03/2025-01/04/2025 REPORTED DATE : 02/04/2025

PARAMETER*	TEST METHOD	SAMPLING DATE	RESULT	STD <sup>1/</sup>	UNIT
Particulate matter less than or Equal					
10 micrometers (PM 10)	Gravimetric Method	15-16/03/2025	0.025	0.12	mg/m <sup>3</sup>
		16-17/03/2025	0.019	0.12	mg/m <sup>3</sup>
		17-18/03/2025	0.038	0.12	mg/m <sup>3</sup>
		18-19/03/2025	0.047	0.12	mg/m <sup>3</sup>
		19-20/03/2025	0.055	0.12	mg/m <sup>3</sup>
		20-21/03/2025	0.058	0.12	mg/m <sup>3</sup>
		21-22/03/2025	0.040	0.12	mg/m <sup>3</sup>

**REMARK:**<sup>1/</sup> Notification of The National Environmental Board Volume 24 B.E.2547 (2004) Standard for 24-hr Average.

\* Parameter Outside The Scope of The Registration of The Department of Industrial Works.

(Sampling By Mr. Apiwat Klangpetch)



Approved By .....

(Miss Thanatporn Klinsopon)

02/04/2025

REPORTED TEST REFER TO SUBMITTED SAMPLES ONLY  
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 WITHOUT THE WRITTEN APPROVAL LABORATORY

Request No. LA68-R03102

Report No. R6803-2640 - R6803-2646

## TEST REPORT

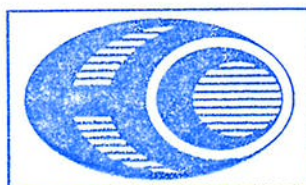
CUSTOMER : บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด  
ADDRESS : 7/491 หมู่ 6 ตำบลมาบตาพุด อำเภอปลวกแดง จังหวัดระยอง 21140  
SAMPLE SOURCE : บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด  
SAMPLE POINT : โรงเรียนบ้านคูไทร  
PARAMETER\* : Nitrogen Dioxide  
DETERMINATION METHOD : Chemiluminescence  
INSTRUMENT : API Model T200 S/N 2005

SAMPLE NO. : 05105-05111  
SAMPLING DATE : 15-22/03/2025  
RECEIVED DATE : 22/03/2025  
REPORTED DATE : 04/04/2025

TIME / DATE	15-16/03/2025	16-17/03/2025	17-18/03/2025	18-19/03/2025	19-20/03/2025	20-21/03/2025	21-22/03/2025	UNIT
13:00 - 14:00 <sup>2</sup>	0.006	0.002	0.002	0.004	0.003	0.003	0.004	ppm
14:00 - 15:00	0.006	0.002	0.001	0.003	0.003	0.003	0.002	ppm
15:00 - 16:00	0.004	0.002	0.002	0.003	0.002	0.001	0.002	ppm
16:00 - 17:00	0.001	0.002	0.004	0.005	0.004	0.001	0.002	ppm
17:00 - 18:00	<0.001	0.002	0.009	0.005	0.011	0.002	0.004	ppm
18:00 - 19:00	<0.001	<0.001	0.008	0.002	0.024	0.002	0.002	ppm
19:00 - 20:00	0.001	0.001	0.011	0.011	0.016	0.004	0.009	ppm
20:00 - 21:00	0.001	<0.001	0.011	0.006	0.010	0.004	0.015	ppm
21:00 - 22:00	0.008	0.002	0.007	0.002	0.011	0.010	0.012	ppm
22:00 - 23:00	0.002	0.002	0.006	0.005	0.016	0.017	0.019	ppm
23:00 - 00:00	0.001	0.002	0.003	0.004	0.025	0.024	0.021	ppm
00:00 - 01:00	0.001	0.002	0.001	0.005	0.026	0.021	0.019	ppm
01:00 - 02:00	<0.001	0.001	<0.001	0.002	0.017	0.019	0.015	ppm
02:00 - 03:00	0.001	<0.001	0.001	0.001	0.012	0.016	0.013	ppm
03:00 - 04:00	0.001	0.001	0.001	0.003	0.009	0.012	0.009	ppm
04:00 - 05:00	0.001	0.001	0.003	0.002	0.006	0.010	0.007	ppm
05:00 - 06:00	0.001	0.001	0.003	0.002	0.010	0.007	0.005	ppm
06:00 - 07:00	0.001	0.001	0.003	0.002	0.008	0.004	0.006	ppm
07:00 - 08:00	0.001	0.001	0.001	0.003	0.005	0.004	0.005	ppm
08:00 - 09:00	<0.001	0.002	0.001	0.004	0.010	0.006	0.009	ppm
09:00 - 10:00	0.002	0.008	<0.001	0.008	0.008	0.010	0.010	ppm
10:00 - 11:00	0.001	0.005	<0.001	0.008	0.008	0.012	0.010	ppm
11:00 - 12:00	0.002	0.005	0.001	0.003	0.003	0.006	0.005	ppm
12:00 - 13:00	<0.001	0.005	0.005	0.002	0.004	0.005	0.004	ppm
Maximum 1 hr.	0.008	0.008	0.011	0.011	0.026	0.024	0.021	ppm
Average 24 hr.	0.002	0.002	0.003	0.004	0.010	0.008	0.009	ppm
Standard (1 hr.) <sup>1</sup>	0.17	0.17	0.17	0.17	0.17	0.17	0.17	ppm

REMARK : <sup>1</sup> Notification of The National Environmental Board Volume 33 B.E. 2552 (2009)<sup>2</sup> Start Time

\* Parameter Outside The Scope of The Registration of The Department of Industrial Works  
(Measurement By Mr. Seksan Pluemwong)



บริษัท อีสเทิร์นไทยคอนซัลติ้ง 1992 จำกัด

Approved By.....

(MS. THANATPORN KLINSOPON)

04/04/2025

REPORTED TEST REFER TO SUBMITTED SAMPLES ONLY  
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Request No. LA68-R03102

Report No. R6803-2654 - R6803-2660

## TEST REPORT

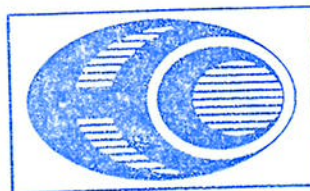
CUSTOMER : บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด  
ADDRESS : 7/491 หมู่ 6 ตำบลบึงข่าง อำเภอบึงกาฬ จังหวัดหนองคาย 21140  
SAMPLE SOURCE : บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด  
SAMPLE POINT : วัดพนานิคม  
PARAMETER\* : Nitrogen Dioxide  
DETERMINATION METHOD : Chemiluminescence  
INSTRUMENT : API Model T200 S/N 7355

SAMPLE NO. : 05119-05125  
SAMPLING DATE : 15-22/03/2025  
RECEIVED DATE : 22/03/2025  
REPORTED DATE : 04/04/2025

TIME / DATE	15-16/03/2025	16-17/03/2025	17-18/03/2025	18-19/03/2025	19-20/03/2025	20-21/03/2025	21-22/03/2025	UNIT
12:00 - 13:00 <sup>2</sup>	0.007	0.003	0.002	0.018	0.008	0.004	0.006	ppm
13:00 - 14:00	0.007	0.002	0.001	0.012	0.006	0.004	0.013	ppm
14:00 - 15:00	0.008	0.003	0.001	0.005	0.005	0.003	0.005	ppm
15:00 - 16:00	0.005	0.003	0.005	0.007	0.003	0.003	0.003	ppm
16:00 - 17:00	0.003	0.002	0.005	0.005	0.002	0.003	0.003	ppm
17:00 - 18:00	0.006	0.002	0.008	0.006	0.002	0.002	0.003	ppm
18:00 - 19:00	0.005	0.002	0.009	0.005	0.002	0.002	0.003	ppm
19:00 - 20:00	0.006	0.002	0.006	0.009	0.004	0.003	0.005	ppm
20:00 - 21:00	0.010	0.005	0.007	0.012	0.007	0.006	0.010	ppm
21:00 - 22:00	0.006	0.006	0.006	0.010	0.007	0.013	0.010	ppm
22:00 - 23:00	0.004	0.006	0.008	0.010	0.006	0.018	0.019	ppm
23:00 - 00:00	0.004	0.005	0.007	0.007	0.006	0.017	0.017	ppm
00:00 - 01:00	0.003	0.004	0.007	0.007	0.008	0.023	0.024	ppm
01:00 - 02:00	0.004	0.002	0.005	0.006	0.006	0.030	0.033	ppm
02:00 - 03:00	0.004	0.003	0.005	0.011	0.003	0.027	0.026	ppm
03:00 - 04:00	0.003	0.005	0.004	0.014	0.016	0.026	0.015	ppm
04:00 - 05:00	0.003	0.005	0.004	0.012	0.007	0.014	0.009	ppm
05:00 - 06:00	0.003	0.003	0.004	0.007	0.007	0.022	0.010	ppm
06:00 - 07:00	0.002	0.003	0.004	0.004	0.007	0.027	0.023	ppm
07:00 - 08:00	0.004	0.004	0.006	0.006	0.022	0.027	0.041	ppm
08:00 - 09:00	0.007	0.005	0.009	0.011	0.010	0.017	0.021	ppm
09:00 - 10:00	0.004	0.006	0.006	0.007	0.007	0.012	0.010	ppm
10:00 - 11:00	0.003	0.005	0.008	0.006	0.006	0.010	0.009	ppm
11:00 - 12:00	0.009	0.005	0.013	0.004	0.004	0.006	0.007	ppm
Maximum 1 hr.	0.010	0.006	0.013	0.018	0.022	0.030	0.041	ppm
Average 24 hr.	0.005	0.004	0.006	0.008	0.007	0.013	0.014	ppm
Standard (1 hr.) <sup>1</sup>	0.17	0.17	0.17	0.17	0.17	0.17	0.17	ppm

REMARK : <sup>1</sup> Notification of The National Environmental Board Volume 33 B.E. 2552 (2009)<sup>2</sup> Start Time

\* Parameter Outside The Scope of The Registration of The Department of Industrial Works  
(Measurement By Mr. Seksan Pluemwong)



บริษัท อีสเทิร์นไทยคอนซัลติ้ง 1992 จำกัด

Approved By.....

(MS. THANATPORN KLINSOPON)

04/04/2025

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Request No. LA68-R03102

Report No. R6803-2626 - R6803-2632

## TEST REPORT

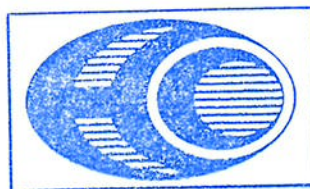
CUSTOMER : บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด  
ADDRESS : 7/491 หมู่ 6 ตำบลมาบยางพร อำเภอลวกแดง จังหวัดระยอง 21140  
SAMPLE SOURCE : บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด  
SAMPLE POINT : โรงพยาบาลส่งเสริมสุขภาพตำบลมาบยางพร  
PARAMETER\* : Nitrogen Dioxide  
DETERMINATION METHOD : Chemiluminescence  
INSTRUMENT : API Model T200 S/N 6758

SAMPLE NO. : 05091-05097  
SAMPLING DATE : 15-22/03/2025  
RECEIVED DATE : 22/03/2025  
REPORTED DATE : 04/04/2025

TIME / DATE	15-16/03/2025	16-17/03/2025	17-18/03/2025	18-19/03/2025	19-20/03/2025	20-21/03/2025	21-22/03/2025	UNIT
11:00 - 12:00 <sup>2</sup>	0.003	0.004	0.008	0.016	0.017	0.017	0.021	ppm
12:00 - 13:00	0.003	0.003	0.007	0.013	0.020	0.021	0.016	ppm
13:00 - 14:00	0.003	0.003	0.006	0.015	0.022	0.016	0.018	ppm
14:00 - 15:00	0.003	0.003	0.005	0.011	0.014	0.013	0.013	ppm
15:00 - 16:00	0.005	0.003	0.006	0.011	0.013	0.015	0.016	ppm
16:00 - 17:00	0.005	0.003	0.007	0.010	0.013	0.014	0.013	ppm
17:00 - 18:00	0.007	0.005	0.009	0.013	0.018	0.015	0.014	ppm
18:00 - 19:00	0.006	0.004	0.016	0.010	0.016	0.017	0.018	ppm
19:00 - 20:00	0.008	0.005	0.013	0.011	0.021	0.022	0.025	ppm
20:00 - 21:00	0.006	0.007	0.013	0.012	0.024	0.030	0.026	ppm
21:00 - 22:00	0.005	0.009	0.012	0.013	0.026	0.037	0.018	ppm
22:00 - 23:00	0.006	0.008	0.013	0.013	0.028	0.044	0.029	ppm
23:00 - 00:00	0.007	0.008	0.011	0.016	0.021	0.037	0.030	ppm
00:00 - 01:00	0.005	0.006	0.010	0.012	0.019	0.036	0.026	ppm
01:00 - 02:00	0.006	0.004	0.008	0.012	0.015	0.025	0.027	ppm
02:00 - 03:00	0.006	0.003	0.008	0.014	0.012	0.017	0.018	ppm
03:00 - 04:00	0.005	0.004	0.010	0.015	0.012	0.015	0.013	ppm
04:00 - 05:00	0.005	0.004	0.007	0.014	0.010	0.014	0.013	ppm
05:00 - 06:00	0.005	0.004	0.007	0.010	0.010	0.016	0.015	ppm
06:00 - 07:00	0.005	0.006	0.012	0.012	0.015	0.020	0.016	ppm
07:00 - 08:00	0.005	0.012	0.014	0.016	0.020	0.017	0.028	ppm
08:00 - 09:00	0.007	0.012	0.016	0.021	0.032	0.027	0.032	ppm
09:00 - 10:00	0.005	0.012	0.014	0.038	0.022	0.027	0.026	ppm
10:00 - 11:00	0.005	0.011	0.013	0.019	0.018	0.025	0.029	ppm
Maximum 1 hr.	0.008	0.012	0.016	0.038	0.032	0.044	0.032	ppm
Average 24 hr.	0.005	0.006	0.010	0.014	0.018	0.022	0.021	ppm
Standard (1 hr.) <sup>1</sup>	0.17	0.17	0.17	0.17	0.17	0.17	0.17	ppm

REMARK : <sup>1</sup> Notification of The National Environmental Board Volume 33 B.E. 2552 (2009)<sup>2</sup> Start Time

\* Parameter Outside The Scope of The Registration of The Department of Industrial Works  
(Measurement By Mr. Seksan Pluemwong)



บริษัท อีสเทิร์นไทยคอนซัลติ้ง 1992 จำกัด

Approved By   
(MS. THANATPORN KLINSOPON)

04/04/2025

REPORTED TEST REFER TO SUBMITTED SAMPLES ONLY  
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WITHOUT THE WRITTEN APPROVAL LABORATORY

Request No. LA68-R03102

Report No. R6803-2668 - R6803-2674

## TEST REPORT

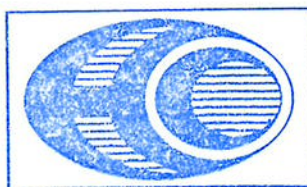
CUSTOMER : บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด  
ADDRESS : 7/491 หมู่ 6 ตำบลบายางพร อำเภอปลวกแดง จังหวัดระยอง 21140  
SAMPLE SOURCE : บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด  
SAMPLE POINT : ศูนย์พัฒนาเด็กเล็กองค์การบริหารส่วนตำบลบายางพร  
PARAMETER\* : Nitrogen Dioxide  
DETERMINATION METHOD : Chemiluminescence  
INSTRUMENT : API Model T200 S/N ENOAIT20002469

SAMPLE NO. : 05133-05139  
SAMPLING DATE : 15-22/03/2025  
RECEIVED DATE : 22/03/2025  
REPORTED DATE : 04/04/2025

TIME / DATE	15-16/03/2025	16-17/03/2025	17-18/03/2025	18-19/03/2025	19-20/03/2025	20-21/03/2025	21-22/03/2025	UNIT
12:00 - 13:00 <sup>2</sup>	0.009	0.005	0.002	0.004	0.005	0.004	0.005	ppm
13:00 - 14:00	0.010	0.005	0.002	0.003	0.004	0.003	0.004	ppm
14:00 - 15:00	0.010	0.006	0.002	0.002	0.006	0.004	0.004	ppm
15:00 - 16:00	0.009	0.005	0.005	0.004	0.007	0.004	0.004	ppm
16:00 - 17:00	0.010	0.006	0.005	0.006	0.004	0.003	0.003	ppm
17:00 - 18:00	0.009	0.004	0.007	0.006	0.004	0.004	0.004	ppm
18:00 - 19:00	0.010	0.004	0.007	0.007	0.005	0.005	0.005	ppm
19:00 - 20:00	0.008	0.005	0.011	0.009	0.009	0.010	0.007	ppm
20:00 - 21:00	0.008	0.007	0.012	0.012	0.010	0.019	0.009	ppm
21:00 - 22:00	0.006	0.006	0.009	0.016	0.020	0.019	0.014	ppm
22:00 - 23:00	0.006	0.007	0.008	0.012	0.018	0.018	0.016	ppm
23:00 - 00:00	0.005	0.006	0.006	0.008	0.013	0.017	0.012	ppm
00:00 - 01:00	0.005	0.005	0.005	0.010	0.007	0.023	0.013	ppm
01:00 - 02:00	0.005	0.004	0.005	0.010	0.005	0.016	0.013	ppm
02:00 - 03:00	0.004	0.003	0.005	0.012	0.004	0.008	0.009	ppm
03:00 - 04:00	0.005	0.003	0.004	0.011	0.007	0.008	0.008	ppm
04:00 - 05:00	0.006	0.003	0.005	0.006	0.006	0.009	0.005	ppm
05:00 - 06:00	0.008	0.004	0.007	0.004	0.004	0.008	0.005	ppm
06:00 - 07:00	0.010	0.005	0.007	0.006	0.004	0.009	0.008	ppm
07:00 - 08:00	0.015	0.008	0.005	0.009	0.004	0.008	0.009	ppm
08:00 - 09:00	0.014	0.008	0.007	0.008	0.006	0.009	0.010	ppm
09:00 - 10:00	0.012	0.006	0.009	0.007	0.006	0.007	0.008	ppm
10:00 - 11:00	0.009	0.004	0.007	0.005	0.006	0.007	0.007	ppm
11:00 - 12:00	0.006	0.003	0.006	0.005	0.005	0.005	0.007	ppm
Maximum 1 hr.	0.015	0.008	0.012	0.016	0.020	0.023	0.016	ppm
Average 24 hr.	0.008	0.005	0.006	0.007	0.007	0.009	0.008	ppm
Standard (1 hr.) <sup>1</sup>	0.17	0.17	0.17	0.17	0.17	0.17	0.17	ppm

REMARK : <sup>1</sup> Notification of The National Environmental Board Volume 33 B.E. 2552 (2009)<sup>2</sup> Start Time

\* Parameter Outside The Scope of The Registration of The Department of Industrial Works  
(Measurement By Mr. Seksan Pluemwong)



บริษัท อีสเทิร์นไทยคอนซัลติ้ง 1992 จำกัด

Approved By: 

(MS. THANATPORN KLINSOPON)

04/04/2025

REPORTED TEST REFER TO SUBMITTED SAMPLES ONLY  
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WITHOUT THE WRITTEN APPROVAL LABORATORY

Request No. LA68-R03102

Report No. R6803-2633 - R6803-2639

## TEST REPORT

CUSTOMER : บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด  
ADDRESS : 7/491 หมู่ 6 ตำบลมาบตาพุด อำเภอปลวกแดง จังหวัดระยอง 21140  
SAMPLE SOURCE : บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด  
SAMPLE POINT : โรงเรียนบ้านกุไทร  
PARAMETER\* : Sulfur Dioxide  
DETERMINATION METHOD : UV-Fluorescence  
INSTRUMENT : API Model MI00E S/N 3139

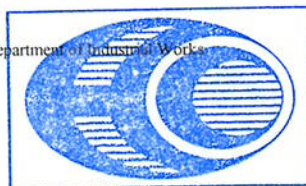
SAMPLE NO. : 05098-05104  
SAMPLING DATE : 15-22/03/2025  
RECEIVED DATE : 22/03/2025  
REPORTED DATE : 04/04/2025

TIME / DATE	15-16/03/2025	16-17/03/2025	17-18/03/2025	18-19/03/2025	19-20/03/2025	20-21/03/2025	21-22/03/2025	UNIT
13:00 - 14:00 <sup>3</sup>	0.004	0.004	0.004	0.004	0.004	0.003	0.003	ppm
14:00 - 15:00	0.004	0.004	0.004	0.004	0.004	0.004	0.003	ppm
15:00 - 16:00	0.005	0.004	0.004	0.004	0.004	0.004	0.003	ppm
16:00 - 17:00	0.004	0.004	0.004	0.004	0.004	0.004	0.004	ppm
17:00 - 18:00	0.004	0.004	0.004	0.004	0.004	0.004	0.003	ppm
18:00 - 19:00	0.004	0.004	0.004	0.004	0.004	0.003	0.004	ppm
19:00 - 20:00	0.004	0.004	0.004	0.004	0.004	0.004	0.004	ppm
20:00 - 21:00	0.004	0.004	0.004	0.004	0.004	0.004	0.003	ppm
21:00 - 22:00	0.004	0.004	0.004	0.004	0.004	0.004	0.003	ppm
22:00 - 23:00	0.004	0.004	0.004	0.004	0.004	0.004	0.004	ppm
23:00 - 00:00	0.004	0.004	0.004	0.004	0.004	0.003	0.004	ppm
00:00 - 01:00	0.004	0.004	0.004	0.004	0.004	0.003	0.004	ppm
01:00 - 02:00	0.004	0.004	0.004	0.003	0.004	0.003	0.003	ppm
02:00 - 03:00	0.004	0.004	0.004	0.004	0.004	0.004	0.003	ppm
03:00 - 04:00	0.004	0.004	0.004	0.004	0.004	0.004	0.004	ppm
04:00 - 05:00	0.004	0.004	0.004	0.004	0.004	0.003	0.003	ppm
05:00 - 06:00	0.004	0.004	0.004	0.004	0.004	0.004	0.003	ppm
06:00 - 07:00	0.004	0.004	0.003	0.004	0.004	0.004	0.003	ppm
07:00 - 08:00	0.004	0.004	0.004	0.004	0.003	0.004	0.003	ppm
08:00 - 09:00	0.004	0.004	0.004	0.004	0.003	0.003	0.004	ppm
09:00 - 10:00	0.004	0.004	0.004	0.004	0.004	0.003	0.003	ppm
10:00 - 11:00	0.004	0.004	0.004	0.004	0.004	0.003	0.003	ppm
11:00 - 12:00	0.004	0.004	0.004	0.004	0.004	0.004	0.003	ppm
12:00 - 13:00	0.004	0.004	0.004	0.004	0.004	0.003	0.003	ppm
Maximum 1 hr.	0.005	0.004	0.004	0.004	0.004	0.004	0.004	ppm
Average 24 hr.	0.004	0.004	0.004	0.004	0.004	0.003	0.003	ppm
Standard (1 hr.) <sup>1</sup>	0.30	0.30	0.30	0.30	0.30	0.30	0.30	ppm
Standard (Average 24 hr.) <sup>2</sup>	0.12	0.12	0.12	0.12	0.12	0.12	0.12	ppm

REMARK : <sup>1</sup> Notification of The National Environmental Board Volume 12 B.E. 2538 (1995) and Volume 21 B.E. 2544 (2001)<sup>2</sup> Notification of The National Environmental Board Volume 24 B.E. 2547 (2004)<sup>3</sup> Start Time

\* Parameter Outside The Scope of The Registration of The Department of Industrial Works

(Measurement By Mr. Seksan Pluemwong)



บริษัท อีสเทิร์นไทยคอนซัลติ้ง 1992 จำกัด

Approved By: 

(MS. THANATPORN KLINSOPON)

04/04/2025

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Request No. LA68-R03102

Report No. R6803-2647 - R6803-2653

## TEST REPORT

CUSTOMER : บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด  
ADDRESS : 7/491 หมู่ 6 ตำบลบางยางพร อำเภอปลวกแดง จังหวัดระยอง 21140  
SAMPLE SOURCE : บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด  
SAMPLE POINT : วัดพนานิคม  
PARAMETER\* : Sulfur Dioxide  
DETERMINATION METHOD : UV-Fluorescence  
INSTRUMENT : API Model T100 S/N 5700

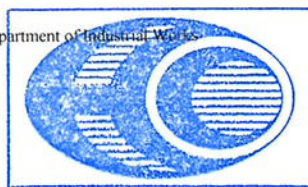
SAMPLE NO. : 05112-05118  
SAMPLING DATE : 15-22/03/2025  
RECEIVED DATE : 22/03/2025  
REPORTED DATE : 04/04/2025

TIME / DATE	15-16/03/2025	16-17/03/2025	17-18/03/2025	18-19/03/2025	19-20/03/2025	20-21/03/2025	21-22/03/2025	UNIT
12:00 - 13:00 <sup>3</sup>	0.002	0.002	0.002	0.002	0.002	0.001	0.001	ppm
13:00 - 14:00	0.001	0.002	0.002	0.002	0.001	0.001	0.001	ppm
14:00 - 15:00	0.002	0.002	0.002	0.002	0.002	0.001	0.001	ppm
15:00 - 16:00	0.001	0.003	0.002	0.002	0.002	0.001	0.001	ppm
16:00 - 17:00	0.001	0.003	0.002	0.002	0.002	0.001	0.001	ppm
17:00 - 18:00	0.001	0.003	0.003	0.002	0.002	0.002	0.001	ppm
18:00 - 19:00	0.001	0.003	0.003	0.002	0.002	0.002	0.001	ppm
19:00 - 20:00	0.001	0.003	0.003	0.002	0.002	0.002	0.002	ppm
20:00 - 21:00	0.001	0.003	0.003	0.002	0.002	0.002	0.002	ppm
21:00 - 22:00	0.002	0.003	0.003	0.002	0.002	0.002	0.002	ppm
22:00 - 23:00	0.002	0.003	0.003	0.002	0.002	0.002	0.002	ppm
23:00 - 00:00	0.002	0.003	0.002	0.002	0.002	0.002	0.002	ppm
00:00 - 01:00	0.002	0.003	0.003	0.002	0.002	0.002	0.002	ppm
01:00 - 02:00	0.002	0.003	0.003	0.002	0.002	0.002	0.002	ppm
02:00 - 03:00	0.002	0.003	0.003	0.002	0.002	0.002	0.002	ppm
03:00 - 04:00	0.002	0.003	0.003	0.002	0.002	0.002	0.002	ppm
04:00 - 05:00	0.002	0.003	0.003	0.002	0.002	0.002	0.002	ppm
05:00 - 06:00	0.002	0.003	0.003	0.002	0.002	0.002	0.002	ppm
06:00 - 07:00	0.002	0.003	0.003	0.002	0.002	0.002	0.002	ppm
07:00 - 08:00	0.003	0.003	0.003	0.002	0.002	0.002	0.002	ppm
08:00 - 09:00	0.003	0.003	0.003	0.002	0.002	0.001	0.002	ppm
09:00 - 10:00	0.002	0.003	0.002	0.002	0.002	0.001	0.002	ppm
10:00 - 11:00	0.002	0.002	0.002	0.002	0.001	0.001	0.001	ppm
11:00 - 12:00	0.002	0.002	0.002	0.002	0.001	0.001	0.001	ppm
Maximum 1 hr.	0.003	0.003	0.003	0.002	0.002	0.002	0.002	ppm
Average 24 hr.	0.002	0.003	0.002	0.002	0.002	0.001	0.001	ppm
Standard (1 hr.) <sup>1</sup>	0.30	0.30	0.30	0.30	0.30	0.30	0.30	ppm
Standard (Average 24 hr.) <sup>2</sup>	0.12	0.12	0.12	0.12	0.12	0.12	0.12	ppm

REMARK : <sup>1</sup> Notification of The National Environmental Board Volume 12 B.E. 2538 (1995) and Volume 21 B.E. 2544 (2001)<sup>2</sup> Notification of The National Environmental Board Volume 24 B.E. 2547 (2004)<sup>3</sup> Start Time

\* Parameter Outside The Scope of The Registration of The Department of Industrial Works

(Measurement By Mr. Seksan Pluemwong)



บริษัท อีสเทิร์นไทยคอนซัลติ้ง 1992 จำกัด

Approved By: 

(MS. THANATPORN KLINSOPON)

04/04/2025

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Request No. LA68-R03102

Report No. R6803-2619 - R6803-2625

## TEST REPORT

CUSTOMER : บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด  
ADDRESS : 7/491 หมู่ 6 ตำบลมาบยางพร อำเภอลวกแดง จังหวัดระยอง 21140  
SAMPLE SOURCE : บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด  
SAMPLE POINT : โรงพยาบาลส่งเสริมสุขภาพตำบลมาบยางพร  
PARAMETER\* : Sulfur Dioxide  
DETERMINATION METHOD : UV-Fluorescence  
INSTRUMENT : API Model MI00E S/N 3220

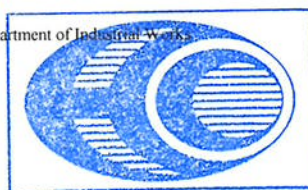
SAMPLE NO. : 05084-05090  
SAMPLING DATE : 15-22/03/2025  
RECEIVED DATE : 22/03/2025  
REPORTED DATE : 04/04/2025

TIME / DATE	15-16/03/2025	16-17/03/2025	17-18/03/2025	18-19/03/2025	19-20/03/2025	20-21/03/2025	21-22/03/2025	UNIT
11:00 - 12:00 <sup>3</sup>	0.008	0.006	0.005	0.005	0.004	0.004	0.004	ppm
12:00 - 13:00	0.008	0.005	0.005	0.005	0.004	0.004	0.004	ppm
13:00 - 14:00	0.008	0.005	0.004	0.005	0.005	0.004	0.004	ppm
14:00 - 15:00	0.008	0.005	0.004	0.004	0.004	0.004	0.004	ppm
15:00 - 16:00	0.008	0.005	0.004	0.004	0.004	0.004	0.004	ppm
16:00 - 17:00	0.009	0.006	0.004	0.004	0.004	0.004	0.004	ppm
17:00 - 18:00	0.009	0.006	0.004	0.004	0.005	0.004	0.004	ppm
18:00 - 19:00	0.009	0.005	0.005	0.004	0.005	0.004	0.004	ppm
19:00 - 20:00	0.008	0.005	0.004	0.004	0.005	0.004	0.004	ppm
20:00 - 21:00	0.008	0.005	0.004	0.004	0.004	0.004	0.004	ppm
21:00 - 22:00	0.008	0.005	0.005	0.004	0.005	0.005	0.004	ppm
22:00 - 23:00	0.007	0.005	0.005	0.004	0.004	0.005	0.004	ppm
23:00 - 00:00	0.007	0.005	0.004	0.004	0.004	0.005	0.004	ppm
00:00 - 01:00	0.007	0.005	0.004	0.004	0.005	0.005	0.004	ppm
01:00 - 02:00	0.007	0.005	0.004	0.004	0.004	0.005	0.004	ppm
02:00 - 03:00	0.007	0.005	0.004	0.004	0.004	0.004	0.004	ppm
03:00 - 04:00	0.006	0.005	0.004	0.005	0.004	0.004	0.004	ppm
04:00 - 05:00	0.006	0.005	0.004	0.005	0.004	0.004	0.004	ppm
05:00 - 06:00	0.006	0.005	0.004	0.005	0.004	0.004	0.004	ppm
06:00 - 07:00	0.006	0.005	0.005	0.005	0.004	0.005	0.004	ppm
07:00 - 08:00	0.006	0.005	0.005	0.004	0.005	0.004	0.004	ppm
08:00 - 09:00	0.007	0.005	0.005	0.005	0.004	0.004	0.004	ppm
09:00 - 10:00	0.006	0.005	0.006	0.005	0.004	0.004	0.004	ppm
10:00 - 11:00	0.006	0.005	0.005	0.004	0.004	0.004	0.004	ppm
Maximum 1 hr.	0.009	0.006	0.006	0.005	0.005	0.005	0.004	ppm
Average 24 hr.	0.007	0.005	0.004	0.004	0.004	0.004	0.004	ppm
Standard (1 hr.) <sup>1</sup>	0.30	0.30	0.30	0.30	0.30	0.30	0.30	ppm
Standard (Average 24 hr.) <sup>2</sup>	0.12	0.12	0.12	0.12	0.12	0.12	0.12	ppm

REMARK : <sup>1</sup> Notification of The National Environmental Board Volume 12 B.E. 2538 (1995) and Volume 21 B.E. 2544 (2001)<sup>2</sup> Notification of The National Environmental Board Volume 24 B.E. 2547 (2004)<sup>3</sup> Start Time

\* Parameter Outside The Scope of The Registration of The Department of Industrial Works

(Measurement By Mr. Seksan Pluemwong)



บริษัท อีสเทิร์นไทยคอนซัลติ้ง 1992 จำกัด

Approved By.....

(MS. THANATPORN KLINSOPON)

04/04/2025

REPORTED TEST REFER TO SUBMITTED SAMPLES ONLY

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WITHOUT THE WRITTEN APPROVAL LABORATORY

Request No. LA68-R03102

Report No. R6803-2661 - R6803-2667

## TEST REPORT

CUSTOMER : บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด  
ADDRESS : 7/491 หมู่ 6 ตำบลบายางพร อำเภอปลวกแดง จังหวัดระยอง 21140  
SAMPLE SOURCE : บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด  
SAMPLE POINT : ศูนย์พัฒนาเด็กเล็กองค์การบริหารส่วนตำบลบายางพร  
PARAMETER\* : Sulfur Dioxide  
DETERMINATION METHOD : UV-Fluorescence  
INSTRUMENT : Horiba Model APSA-370 S/N 3XLWFYVJ

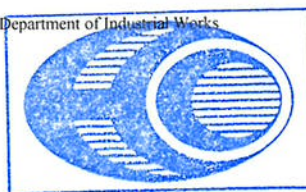
SAMPLE NO. : 05126-05132  
SAMPLING DATE : 15-22/03/2025  
RECEIVED DATE : 22/03/2025  
REPORTED DATE : 04/04/2025

TIME / DATE	15-16/03/2025	16-17/03/2025	17-18/03/2025	18-19/03/2025	19-20/03/2025	20-21/03/2025	21-22/03/2025	UNIT
12:00 - 13:00 <sup>3</sup>	0.003	0.003	0.003	0.003	0.003	0.003	0.003	ppm
13:00 - 14:00	0.003	0.003	0.003	0.003	0.003	0.003	0.003	ppm
14:00 - 15:00	0.003	0.003	0.003	0.003	0.003	0.003	0.003	ppm
15:00 - 16:00	0.003	0.003	0.003	0.003	0.003	0.003	0.003	ppm
16:00 - 17:00	0.003	0.003	0.003	0.003	0.003	0.003	0.003	ppm
17:00 - 18:00	0.003	0.003	0.003	0.003	0.002	0.002	0.003	ppm
18:00 - 19:00	0.003	0.003	0.003	0.003	0.003	0.003	0.003	ppm
19:00 - 20:00	0.002	0.003	0.003	0.003	0.003	0.003	0.003	ppm
20:00 - 21:00	0.003	0.003	0.003	0.003	0.003	0.003	0.003	ppm
21:00 - 22:00	0.003	0.003	0.003	0.003	0.003	0.003	0.003	ppm
22:00 - 23:00	0.003	0.003	0.003	0.003	0.003	0.003	0.003	ppm
23:00 - 00:00	0.003	0.003	0.003	0.003	0.003	0.003	0.003	ppm
00:00 - 01:00	0.003	0.003	0.003	0.003	0.003	0.003	0.003	ppm
01:00 - 02:00	0.003	0.003	0.003	0.003	0.003	0.003	0.003	ppm
02:00 - 03:00	0.003	0.003	0.003	0.003	0.003	0.003	0.003	ppm
03:00 - 04:00	0.003	0.003	0.003	0.003	0.003	0.003	0.003	ppm
04:00 - 05:00	0.003	0.003	0.003	0.003	0.003	0.003	0.003	ppm
05:00 - 06:00	0.003	0.003	0.003	0.003	0.003	0.003	0.003	ppm
06:00 - 07:00	0.003	0.003	0.003	0.003	0.003	0.003	0.003	ppm
07:00 - 08:00	0.003	0.003	0.003	0.003	0.003	0.003	0.003	ppm
08:00 - 09:00	0.003	0.003	0.003	0.003	0.003	0.003	0.003	ppm
09:00 - 10:00	0.003	0.003	0.003	0.003	0.003	0.003	0.003	ppm
10:00 - 11:00	0.003	0.003	0.003	0.003	0.003	0.003	0.003	ppm
11:00 - 12:00	0.003	0.003	0.003	0.002	0.003	0.003	0.003	ppm
Maximum 1 hr.	0.003	0.003	0.003	0.003	0.003	0.003	0.003	ppm
Average 24 hr.	0.003	0.003	0.003	0.003	0.003	0.003	0.003	ppm
Standard (1 hr.) <sup>1</sup>	0.30	0.30	0.30	0.30	0.30	0.30	0.30	ppm
Standard (Average 24 hr.) <sup>2</sup>	0.12	0.12	0.12	0.12	0.12	0.12	0.12	ppm

REMARK : <sup>1</sup> Notification of The National Environmental Board Volume 12 B.E. 2538 (1995) and Volume 21 B.E. 2544 (2001)<sup>2</sup> Notification of The National Environmental Board Volume 24 B.E. 2547 (2004)<sup>3</sup> Start Time

\* Parameter Outside The Scope of The Registration of The Department of Industrial Works

(Measurement By Mr. Seksan Pluemwong)



บริษัท อีสเทิร์นไทยคอนซัลติ้ง 1992 จำกัด

REPORTED TEST REFER TO SUBMITTED SAMPLES ONLY

THIS REPORT SHALL NOT REPRODUCED EXCEPT IN FULL

WITHOUT THE WRITTEN APPROVAL LABORATORY

Approved By.....

(MS. THANATPORN KLINSOPON)

04/04/2025

Request No. LA68-R03102

Report No. R6803-2675 - R6803-2681

## TEST REPORT

CUSTOMER : บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด  
ADDRESS : 7/491 หมู่ 6 ตำบลมาบตาพุด อำเภอปลวกแดง จังหวัดระยอง 21140  
SAMPLE SOURCE : บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด  
SAMPLE POINT : โรงพยาบาลส่งเสริมสุขภาพตำบลมาบตาพุด  
PARAMETER\* : Temperature  
DETERMINATION METHOD : Thermometer Sensor  
INSTRUMENT : Weather Meter. Model Vantage PRO2 Model : 6152C  
S/N BF220706083

SAMPLE NO. : 05140-05146  
SAMPLING DATE : 15-22/03/2025  
RECEIVED DATE : 22/03/2025  
REPORTED DATE : 04/04/2025

TIME / DATE	15-16/03/2025	16-17/03/2025	17-18/03/2025	18-19/03/2025	19-20/03/2025	20-21/03/2025	21-22/03/2025	UNIT
11:00 - 12:00 <sup>1/</sup>	30.6	32.2	32.2	31.5	30.3	28.1	30.3	°C
12:00 - 13:00	32.8	33.3	32.8	32.7	31.3	29.6	31.8	°C
13:00 - 14:00	35.6	34.3	34.0	33.7	32.8	30.8	32.4	°C
14:00 - 15:00	34.9	35.3	33.2	35.1	33.9	31.8	33.9	°C
15:00 - 16:00	32.9	28.7	30.7	34.3	32.9	32.1	34.7	°C
16:00 - 17:00	26.3	28.9	26.0	32.6	32.9	32.4	34.0	°C
17:00 - 18:00	27.2	32.0	26.1	29.2	31.7	31.1	33.1	°C
18:00 - 19:00	27.8	31.0	25.8	29.2	30.6	29.1	29.3	°C
19:00 - 20:00	27.7	29.3	26.3	28.9	29.1	27.9	28.6	°C
20:00 - 21:00	27.1	28.4	26.7	27.8	28.2	26.2	28.1	°C
21:00 - 22:00	27.1	27.7	26.8	27.4	27.3	25.3	27.3	°C
22:00 - 23:00	26.7	27.6	26.7	27.4	26.9	24.7	26.2	°C
23:00 - 00:00	26.4	27.2	26.5	27.2	26.7	25.8	26.3	°C
00:00 - 01:00	26.1	27.2	26.2	26.8	26.2	25.1	26.1	°C
01:00 - 02:00	25.9	27.1	26.1	27.4	26.1	24.8	25.5	°C
02:00 - 03:00	25.8	27.0	25.9	27.1	25.2	24.4	24.9	°C
03:00 - 04:00	26.1	26.8	25.7	26.6	24.6	24.5	24.2	°C
04:00 - 05:00	25.7	26.7	25.6	26.6	24.2	23.9	24.0	°C
05:00 - 06:00	25.7	26.2	25.5	26.2	24.0	23.7	23.8	°C
06:00 - 07:00	25.6	25.6	25.4	25.7	23.4	23.4	23.5	°C
07:00 - 08:00	25.9	25.4	26.1	25.7	23.3	23.6	23.9	°C
08:00 - 09:00	27.3	27.0	27.1	26.7	24.6	24.7	26.1	°C
09:00 - 10:00	29.9	29.0	29.7	28.6	25.3	26.0	30.3	°C
10:00 - 11:00	30.1	31.4	30.0	29.6	26.9	28.6	32.2	°C
Min - Max	25.6 - 35.6	25.4 - 35.3	25.4 - 34.0	25.7 - 35.1	23.3 - 33.9	23.4 - 32.4	23.5 - 34.7	°C
Average 24 hr.	28.2	29.0	27.8	28.9	27.9	27.0	28.4	°C

REMARK : <sup>1/</sup> Start Time

\* Parameter Outside The Scope of The Registration of The Department of Industrial Works  
(Measurement By Mr. Seksan Pluemwong)



บริษัท อีสเทิร์นไทยคอนซัลติ้ง 1992 จำกัด

Approved By.....

(MS. THANATPORN KLINSOPON)

04/04/2025

REPORTED TEST REFER TO SUBMITTED SAMPLES ONLY  
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WITHOUT THE WRITTEN APPROVAL LABORATORY



Request No. LA68-R03102

Report No. R6803-2682 - R6803-2688

## TEST REPORT

CUSTOMER : บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด  
ADDRESS : 7/491 หมู่ 6 ตำบลมาบตาพุด อำเภอปลวกแดง จังหวัดระยอง 21140  
SAMPLE SOURCE : บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด  
SAMPLE POINT : โรงเรียนบ้านภูไทร  
PARAMETER\* : Temperature  
DETERMINATION METHOD : Thermometer Sensor  
INSTRUMENT : Weather Meter, Model Vantage PRO2 Model : 6152CM  
S/N BF201105024

SAMPLE NO. : 05147-05153  
SAMPLING DATE : 15-22/03/2025  
RECEIVED DATE : 22/03/2025  
REPORTED DATE : 04/04/2025

TIME / DATE	15-16/03/2025	16-17/03/2025	17-18/03/2025	18-19/03/2025	19-20/03/2025	20-21/03/2025	21-22/03/2025	UNIT
13:00 - 14:00 <sup>1)</sup>	32.4	34.8	36.6	32.7	30.9	29.9	32.2	°C
14:00 - 15:00	33.8	34.4	35.6	34.9	32.1	30.7	32.0	°C
15:00 - 16:00	34.8	33.4	31.2	34.5	32.8	31.2	33.6	°C
16:00 - 17:00	33.4	35.7	29.4	34.7	33.2	31.7	33.8	°C
17:00 - 18:00	31.3	36.2	27.3	30.1	32.4	31.2	33.4	°C
18:00 - 19:00	31.1	33.5	27.5	27.6	31.1	30.3	32.1	°C
19:00 - 20:00	29.0	30.6	27.3	27.1	29.4	28.3	30.4	°C
20:00 - 21:00	27.8	29.1	27.2	26.5	27.9	26.2	28.5	°C
21:00 - 22:00	27.1	28.1	26.8	26.3	26.9	24.7	26.7	°C
22:00 - 23:00	26.6	27.4	26.7	25.9	25.7	23.9	25.1	°C
23:00 - 00:00	26.1	27.6	26.6	25.7	25.4	23.7	24.1	°C
00:00 - 01:00	25.8	27.5	26.2	25.4	25.1	23.2	23.9	°C
01:00 - 02:00	25.5	27.1	25.7	25.2	25.0	23.0	23.8	°C
02:00 - 03:00	25.3	26.6	25.4	25.3	24.9	23.0	23.6	°C
03:00 - 04:00	25.1	26.3	25.1	25.1	24.1	22.8	23.0	°C
04:00 - 05:00	24.8	26.1	24.9	24.7	24.0	22.4	22.6	°C
05:00 - 06:00	24.7	25.9	24.7	24.3	23.6	22.3	21.8	°C
06:00 - 07:00	24.6	25.5	24.6	24.1	23.1	22.3	21.7	°C
07:00 - 08:00	24.5	25.3	24.4	23.8	22.4	22.7	21.9	°C
08:00 - 09:00	25.4	26.3	25.2	25.2	23.4	23.7	24.1	°C
09:00 - 10:00	27.4	28.8	27.0	26.7	24.6	25.4	26.9	°C
10:00 - 11:00	30.2	30.9	29.2	28.2	25.7	26.7	29.3	°C
11:00 - 12:00	32.6	32.7	30.7	29.1	26.9	29.2	31.2	°C
12:00 - 13:00	35.5	34.8	32.3	30.0	28.6	31.1	32.1	°C
Min - Max	24.5 - 35.5	25.3 - 36.2	24.4 - 36.6	23.8 - 34.9	22.4 - 33.2	22.3 - 31.7	21.7 - 33.8	°C
Average 24 hr.	28.5	29.8	27.8	27.6	27.1	26.2	27.4	°C

REMARK : <sup>1)</sup> Start Time

\* Parameter Outside The Scope of The Registration of The Department of Industrial Works  
(Measurement By Mr. Seksan Pluemwong)



บริษัท อีสเทิร์นไทยคอนซัลติ้ง 1992 จำกัด

Approved By



(MS. THANATPORN KLINSOPON)

04/04/2025

REPORTED TEST REFER TO SUBMITTED SAMPLES ONLY  
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WITHOUT THE WRITTEN APPROVAL LABORATORY

Request No. LA68-R03102

Report No. R6803-2689 - R6803-2695

## TEST REPORT

CUSTOMER : บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด  
ADDRESS : 7/491 หมู่ 6 ตำบลมาบยางพร อำเภอบลุกแดง จังหวัดระยอง 21140  
SAMPLE SOURCE : บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด  
SAMPLE POINT : วัดพนานิคม  
PARAMETER\* : Temperature  
DETERMINATION METHOD : Thermometer Sensor  
INSTRUMENT : Weather Meter, Model Vantage PRO2 Model : 6152C  
S/N BD190507028

SAMPLE NO. : 05154-05160  
SAMPLING DATE : 15-22/03/2025  
RECEIVED DATE : 22/03/2025  
REPORTED DATE : 04/04/2025

TIME / DATE	15-16/03/2025	16-17/03/2025	17-18/03/2025	18-19/03/2025	19-20/03/2025	20-21/03/2025	21-22/03/2025	UNIT
12:00 - 13:00 <sup>1</sup>	34.4	35.4	35.1	34.7	34.6	33.2	35.6	°C
13:00 - 14:00	34.6	36.9	36.9	34.8	35.3	32.9	35.2	°C
14:00 - 15:00	36.1	32.5	35.2	35.4	35.8	34.1	35.4	°C
15:00 - 16:00	33.5	30.4	29.8	34.6	34.4	33.1	35.1	°C
16:00 - 17:00	32.5	33.1	25.7	31.0	33.1	32.2	33.7	°C
17:00 - 18:00	31.7	32.8	26.1	30.6	31.6	30.7	32.7	°C
18:00 - 19:00	30.7	31.1	26.6	29.8	30.6	29.2	30.6	°C
19:00 - 20:00	29.0	29.4	26.6	29.1	28.3	26.9	28.5	°C
20:00 - 21:00	27.9	28.5	26.4	27.8	26.9	25.9	27.4	°C
21:00 - 22:00	27.1	28.0	26.4	27.2	26.1	25.6	26.5	°C
22:00 - 23:00	26.8	27.8	26.3	27.2	25.8	24.7	25.7	°C
23:00 - 00:00	26.6	27.8	26.2	26.9	24.9	24.4	25.2	°C
00:00 - 01:00	26.5	27.4	26.0	26.9	25.2	23.5	24.7	°C
01:00 - 02:00	25.8	27.5	25.9	26.7	25.2	24.0	25.3	°C
02:00 - 03:00	25.7	26.9	25.7	26.7	24.9	24.9	25.1	°C
03:00 - 04:00	25.8	26.9	25.3	25.7	24.3	24.4	24.2	°C
04:00 - 05:00	25.6	26.8	25.4	25.1	23.6	23.7	23.7	°C
05:00 - 06:00	25.6	26.4	25.2	24.6	23.2	23.7	22.6	°C
06:00 - 07:00	25.6	26.1	25.2	23.9	23.2	23.7	23.5	°C
07:00 - 08:00	25.8	26.0	25.5	24.1	23.4	23.9	24.1	°C
08:00 - 09:00	27.0	27.4	26.3	26.1	24.6	25.0	25.6	°C
09:00 - 10:00	29.5	28.9	28.2	28.4	25.7	26.7	29.0	°C
10:00 - 11:00	32.2	31.1	30.4	30.8	28.4	29.8	31.7	°C
11:00 - 12:00	34.1	34.9	32.9	32.4	30.1	33.3	32.9	°C
Min - Max	25.6 - 36.1	26.0 - 36.9	25.2 - 36.9	23.9 - 35.4	23.2 - 35.8	23.5 - 34.1	22.6 - 35.6	°C
Average 24 hr.	29.2	29.6	27.9	28.8	27.9	27.5	28.5	°C

REMARK : <sup>1</sup> Start Time

\* Parameter Outside The Scope of The Registration of The Department of Industrial Works  
(Measurement By Mr. Seksan Pluemwong)



บริษัท อีสเทิร์นไทยคอนซัลติ้ง 1992 จำกัด

Approved By.....

(MS. THANATPORN KLINSOPON)

04/04/2025

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Request No. LA68-R03102

Report No. R6803-2696 - R6803-2702

## TEST REPORT

CUSTOMER : บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด  
ADDRESS : 7/491 หมู่ 6 ตำบลมาบยางพร อำเภอบางพลี จังหวัดระยอง 21140  
SAMPLE SOURCE : บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด  
SAMPLE POINT : ศูนย์พัฒนาเด็กเล็กองค์การบริหารส่วนตำบลมาบยางพร  
PARAMETER\* : Temperature  
DETERMINATION METHOD : Thermometer Sensor  
INSTRUMENT : Weather Meter, Model Vantage PRO2 Model : 6152C  
S/N BF220706084

SAMPLE NO. : 05161-05167  
SAMPLING DATE : 15-22/03/2025  
RECEIVED DATE : 22/03/2025  
REPORTED DATE : 04/04/2025

TIME / DATE	15-16/03/2025	16-17/03/2025	17-18/03/2025	18-19/03/2025	19-20/03/2025	20-21/03/2025	21-22/03/2025	UNIT
12:00 - 13:00 <sup>1)</sup>	35.2	33.6	32.1	32.7	31.4	29.3	31.6	°C
13:00 - 14:00	34.6	34.3	33.4	35.4	31.7	30.3	30.9	°C
14:00 - 15:00	34.0	35.6	33.2	34.4	32.9	30.9	32.4	°C
15:00 - 16:00	33.1	31.2	27.7	34.5	32.4	30.7	32.3	°C
16:00 - 17:00	27.8	30.4	27.3	32.2	31.2	30.6	33.1	°C
17:00 - 18:00	29.4	31.6	27.2	30.8	30.4	29.6	31.1	°C
18:00 - 19:00	28.9	30.6	27.6	30.6	29.8	28.5	29.8	°C
19:00 - 20:00	27.7	29.1	27.1	29.0	28.1	26.6	28.5	°C
20:00 - 21:00	26.9	28.0	26.8	27.6	26.6	25.2	27.3	°C
21:00 - 22:00	26.7	27.5	26.6	27.1	26.1	23.7	25.8	°C
22:00 - 23:00	26.3	27.8	26.4	26.1	25.4	23.2	24.9	°C
23:00 - 00:00	25.8	27.1	26.2	25.7	24.6	22.7	23.3	°C
00:00 - 01:00	25.6	27.3	25.7	25.4	24.9	21.6	22.7	°C
01:00 - 02:00	25.4	26.8	24.9	25.6	24.6	22.6	22.8	°C
02:00 - 03:00	25.2	26.8	25.0	25.3	24.2	22.5	22.8	°C
03:00 - 04:00	24.8	26.7	25.1	25.7	23.2	21.9	22.6	°C
04:00 - 05:00	24.8	26.3	24.5	25.3	22.4	21.8	22.8	°C
05:00 - 06:00	24.7	25.2	24.5	24.8	22.7	21.4	21.3	°C
06:00 - 07:00	24.7	25.3	24.3	24.2	22.5	21.4	20.8	°C
07:00 - 08:00	24.9	25.3	24.6	24.3	22.9	22.6	21.5	°C
08:00 - 09:00	27.1	28.6	27.7	27.4	24.4	25.2	26.3	°C
09:00 - 10:00	28.6	28.9	29.8	29.3	25.6	25.6	29.4	°C
10:00 - 11:00	30.8	30.1	30.4	30.7	26.6	28.8	31.0	°C
11:00 - 12:00	32.3	31.7	32.4	31.3	28.2	30.8	32.4	°C
Min - Max	24.7 - 35.2	25.2 - 35.6	24.3 - 33.4	24.2 - 35.4	22.4 - 32.9	21.4 - 30.9	20.8 - 33.1	°C
Average 24 hr.	28.1	29.0	27.5	28.6	26.8	25.7	27.0	°C

REMARK : <sup>1)</sup> Start Time

\* Parameter Outside The Scope of The Registration of The Department of Industrial Works  
(Measurement By Mr. Seksan Pluemwong)



บริษัท อีสเทิร์นไทยคอนซัลติ้ง 1992 จำกัด

Approved By.....

(MS. THANATPORN KLINSOPON)

04/04/2025

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WITHOUT THE WRITTEN APPROVAL LABORATORY

## แผนผังทิศทางและความเร็วลม

Request No. LA68-R03102

บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด

Sample No. 05190

จุดตรวจวัด : โรงเรียนบ้านภูไทร

วันที่ตรวจวัด : 15-22 มีนาคม 2568

เวลา	15-16 มีนาคม 2568		16-17 มีนาคม 2568		17-18 มีนาคม 2568		18-19 มีนาคม 2568		19-20 มีนาคม 2568		20-21 มีนาคม 2568		21-22 มีนาคม 2568	
	ความเร็วลม (เมตร/วินาที)	ทิศทางลม	ความเร็วลม (เมตร/วินาที)	ทิศทางลม	ความเร็วลม (เมตร/วินาที)	ทิศทางลม	ความเร็วลม (เมตร/วินาที)	ทิศทางลม	ความเร็วลม (เมตร/วินาที)	ทิศทางลม	ความเร็วลม (เมตร/วินาที)	ทิศทางลม	ความเร็วลม (เมตร/วินาที)	ทิศทางลม
13:00-14:00	1.8	NW	1.8	W	1.8	SE	0.9	ENE	2.7	E	4.0	SSW	2.7	E
14:00-15:00	2.2	NW	2.2	W	1.8	SW	0.9	E	2.7	E	3.6	SW	2.2	ESE
15:00-16:00	3.1	W	2.7	SW	2.2	WSW	1.3	W	2.7	E	3.1	SSW	1.8	ESE
16:00-17:00	3.1	W	2.2	SW	1.8	S	2.7	W	2.2	SE	2.7	SW	1.8	E
17:00-18:00	1.8	W	2.2	SW	0.4	WSW	1.8	W	1.8	SE	1.8	SSW	1.3	E
18:00-19:00	1.8	W	2.2	SW	0.4	S	0.9	W	1.3	SE	1.8	SSW	0.9	SE
19:00-20:00	1.3	W	0.9	SW	0.0	-	0.0	-	0.9	SE	0.4	S	1.3	SE
20:00-21:00	0.4	WSW	0.0	-	0.4	S	0.0	-	0.0	-	0.0	-	0.0	-
21:00-22:00	0.0	-	0.0	-	0.0	-	0.0	-	0.0	-	0.0	-	0.0	-
22:00-23:00	0.0	-	0.0	-	0.0	-	0.0	-	0.0	-	0.0	-	0.0	-
23:00-00:00	0.0	-	0.4	E	0.0	-	0.0	-	0.0	-	0.4	SSE	0.0	-
00:00-01:00	0.0	-	1.3	S	0.0	-	0.0	-	0.0	-	0.0	-	0.4	NE
01:00-02:00	0.0	-	0.0	-	0.0	-	0.0	-	0.9	SE	0.0	-	0.0	-
02:00-03:00	0.0	-	0.0	-	0.0	-	0.0	-	0.9	SE	0.0	-	0.9	NE
03:00-04:00	0.0	-	0.0	-	0.0	-	0.0	-	0.9	SE	0.0	-	0.4	NE
04:00-05:00	0.0	-	0.0	-	0.0	-	0.0	-	1.3	ESE	0.4	SE	0.0	-
05:00-06:00	0.0	-	0.0	-	0.0	-	0.0	-	0.9	ESE	0.0	-	0.0	-
06:00-07:00	0.0	-	0.0	-	0.0	-	0.0	-	0.4	ESE	0.4	SSE	0.4	NE
07:00-08:00	0.0	-	0.0	-	0.0	-	0.0	-	0.4	E	0.9	SSE	0.0	-
08:00-09:00	0.0	-	0.4	E	0.0	-	1.8	ENE	1.8	SE	1.3	S	0.4	E
09:00-10:00	1.3	SSW	0.9	ESE	0.0	-	2.7	ENE	3.6	SE	2.2	SSW	1.8	E
10:00-11:00	1.8	S	1.3	ESE	0.0	-	2.7	ENE	3.6	SW	3.1	SSW	2.2	E
11:00-12:00	1.8	SSW	1.8	E	0.4	ENE	3.1	E	3.6	SSW	2.7	SSW	2.7	ESE
12:00-13:00	1.3	S	1.8	SE	1.3	E	2.7	E	4.0	SW	3.1	SW	2.2	ESE



## แผนผังทิศทางและความเร็วลม

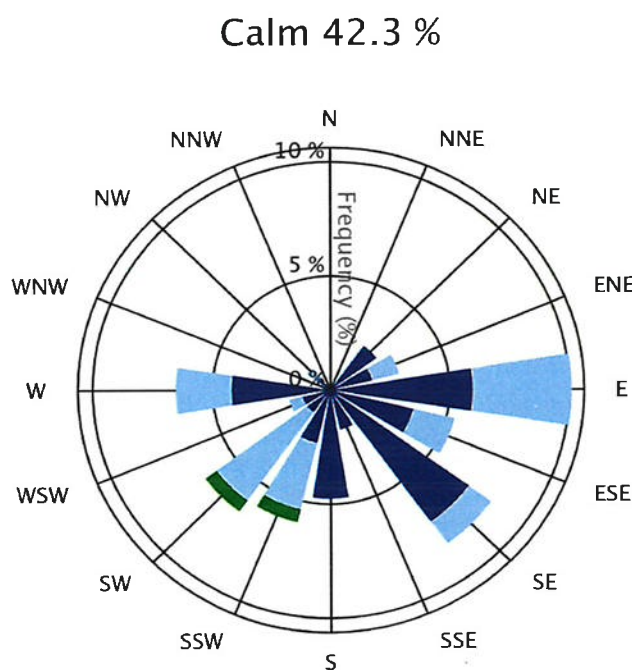
Request No. LA68-R03102

บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด

Sample No. 05190

จุดตรวจวัด : โรงเรียนบ้านภูไทร

วันที่ตรวจวัด : 15-22 มีนาคม 2568



0.4-1.9
  2.0-3.9
  4.0-5.9
  6.0-7.9
  8.0-9.9
  > 9.9 (m/s)

WD/WS	Percentage of Occurrence of Wind Direct Grouped in Various Wind Speed						Total
	0.4-1.9 m/s	2.0-3.9 m/s	4.0-5.9 m/s	6.0-7.9 m/s	8.0-9.9 m/s	> 9.9 m/s	
N	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NNE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NE	2.4	0.0	0.0	0.0	0.0	0.0	2.4
ENE	1.8	1.2	0.0	0.0	0.0	0.0	3.0
E	6.0	4.2	0.0	0.0	0.0	0.0	10.2
ESE	3.6	1.8	0.0	0.0	0.0	0.0	5.4
SE	7.1	1.2	0.0	0.0	0.0	0.0	8.3
SSE	1.8	0.0	0.0	0.0	0.0	0.0	1.8
S	4.8	0.0	0.0	0.0	0.0	0.0	4.8
SSW	2.4	3.0	0.6	0.0	0.0	0.0	6.0
SW	1.2	4.8	0.6	0.0	0.0	0.0	6.6
WSW	1.2	0.6	0.0	0.0	0.0	0.0	1.8
W	4.2	2.4	0.0	0.0	0.0	0.0	6.6
WNW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NW	0.6	0.6	0.0	0.0	0.0	0.0	1.2
NNW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	36.9	19.7	1.2	0.0	0.0	0.0	

## แผนผังทิศทางและความเร็วลม

Request No. LA68-R03102

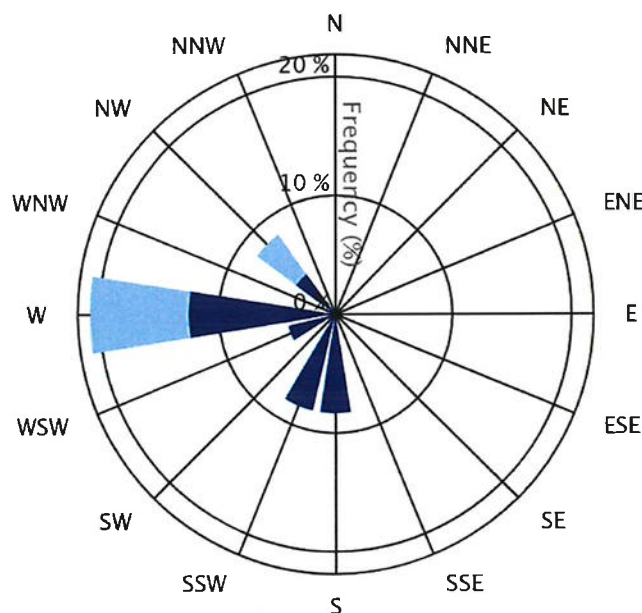
บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด

Sample No. 05190-1

จุดตรวจวัด : โรงเรียนบ้านภูไทร

วันที่ตรวจวัด : 15-16 มีนาคม 2568

Calm 50.0 %


 0.4-1.9
  2.0-3.9
  4.0-5.9
  6.0-7.9
  8.0-9.9
  > 9.9 (m/s)

WD/WS	Percentage of Occurrence of Wind Direct Grouped in Various Wind Speed						Total
	0.4-1.9 m/s	2.0-3.9 m/s	4.0-5.9 m/s	6.0-7.9 m/s	8.0-9.9 m/s	> 9.9 m/s	
N	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NNE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ENE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
E	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ESE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SSE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
S	8.3	0.0	0.0	0.0	0.0	0.0	8.3
SSW	8.3	0.0	0.0	0.0	0.0	0.0	8.3
SW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WSW	4.2	0.0	0.0	0.0	0.0	0.0	4.2
W	12.5	8.3	0.0	0.0	0.0	0.0	20.8
WNW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NW	4.2	4.2	0.0	0.0	0.0	0.0	8.3
NNW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	37.5	12.5	0.0	0.0	0.0	0.0	

## แผนผังทิศทางและความเร็วลม

Request No. LA68-R03102

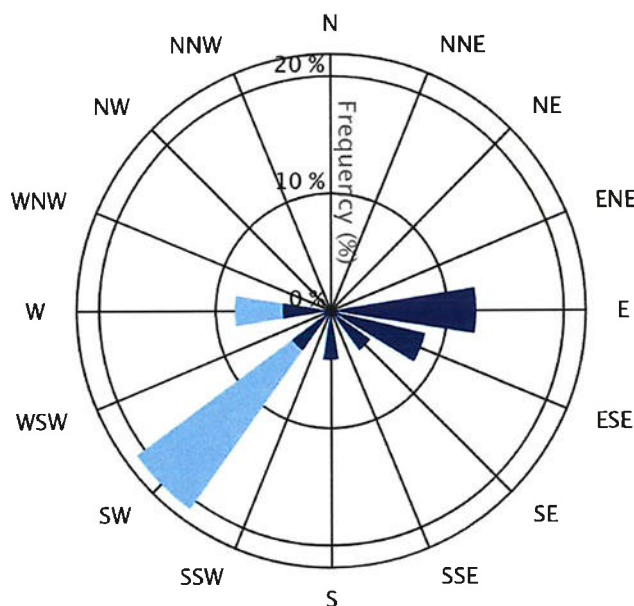
บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด

Sample No. 05190-2

จุดตรวจวัด : โรงเรียนบ้านภูไทร

วันที่ตรวจวัด : 16-17 มีนาคม 2568

Calm 41.7 %


 0.4-1.9
  2.0-3.9
  4.0-5.9
  6.0-7.9
  8.0-9.9
  > 9.9 (m/s)

WD/WS	Percentage of Occurrence of Wind Direct Grouped in Various Wind Speed						Total
	0.4-1.9 m/s	2.0-3.9 m/s	4.0-5.9 m/s	6.0-7.9 m/s	8.0-9.9 m/s	> 9.9 m/s	
N	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NNE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ENE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
E	12.5	0.0	0.0	0.0	0.0	0.0	12.5
ESE	8.3	0.0	0.0	0.0	0.0	0.0	8.3
SE	4.2	0.0	0.0	0.0	0.0	0.0	4.2
SSE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
S	4.2	0.0	0.0	0.0	0.0	0.0	4.2
SSW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SW	4.2	16.7	0.0	0.0	0.0	0.0	20.9
WSW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	4.2	4.2	0.0	0.0	0.0	0.0	8.4
WNW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NNW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	37.5	20.8	0.0	0.0	0.0	0.0	



## แผนผังทิศทางและความเร็วลม

Request No. LA68-R03102

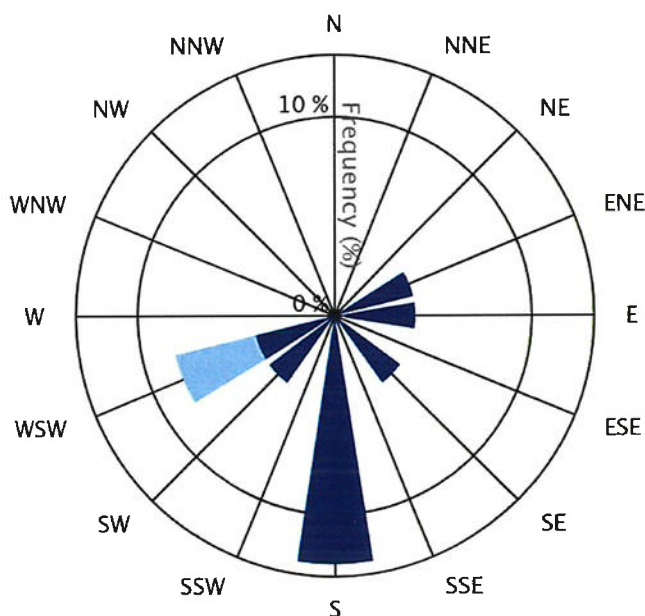
บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด

Sample No. 05190-3

จุดตรวจวัด : โรงเรียนบ้านภูไทร

วันที่ตรวจวัด : 17-18 มีนาคม 2568

Calm 62.5 %



0.4-1.9
  2.0-3.9
  4.0-5.9
  6.0-7.9
  8.0-9.9
  > 9.9 (m/s)

WD/WS	Percentage of Occurrence of Wind Direct Grouped in Various Wind Speed						Total
	0.4-1.9 m/s	2.0-3.9 m/s	4.0-5.9 m/s	6.0-7.9 m/s	8.0-9.9 m/s	> 9.9 m/s	
N	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NNE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ENE	4.2	0.0	0.0	0.0	0.0	0.0	4.2
E	4.2	0.0	0.0	0.0	0.0	0.0	4.2
ESE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SE	4.2	0.0	0.0	0.0	0.0	0.0	4.2
SSE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
S	12.5	0.0	0.0	0.0	0.0	0.0	12.5
SSW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SW	4.2	0.0	0.0	0.0	0.0	0.0	4.2
WSW	4.2	4.2	0.0	0.0	0.0	0.0	8.4
W	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WNW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NNW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	33.4	4.2	0.0	0.0	0.0	0.0	



## แผนผังทิศทางและความเร็วลม

Request No. LA68-R03102

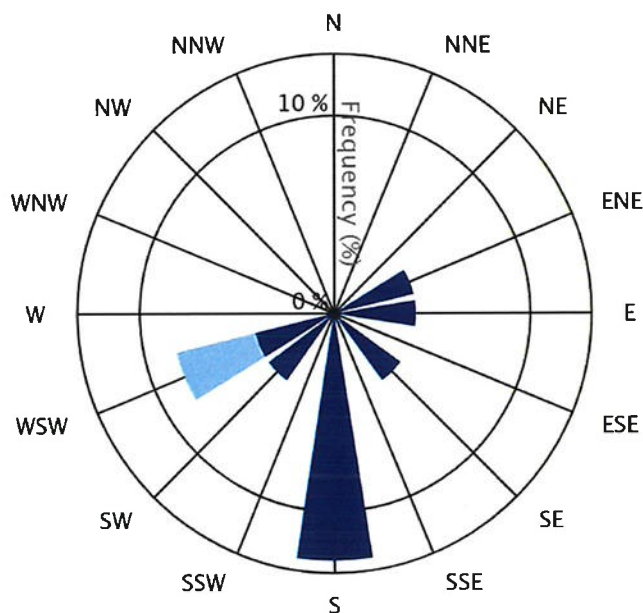
บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด

Sample No. 05190-4

จุดตรวจวัด : โรงเรียนบ้านภูไทร

วันที่ตรวจวัด : 18-19 มีนาคม 2568

Calm 62.5 %


 0.4-1.9
  2.0-3.9
  4.0-5.9
  6.0-7.9
  8.0-9.9
  > 9.9 (m/s)

WD/WS	Percentage of Occurrence of Wind Direct Grouped in Various Wind Speed						Total
	0.4-1.9 m/s	2.0-3.9 m/s	4.0-5.9 m/s	6.0-7.9 m/s	8.0-9.9 m/s	> 9.9 m/s	
N	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NNE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ENE	8.3	8.3	0.0	0.0	0.0	0.0	16.6
E	4.2	8.3	0.0	0.0	0.0	0.0	12.5
ESE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SSE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
S	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SSW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WSW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	12.5	4.2	0.0	0.0	0.0	0.0	16.7
WNW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NNW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	25.0	20.8	0.0	0.0	0.0	0.0	

## แผนผังทิศทางและความเร็วลม

Request No. LA68-R03102

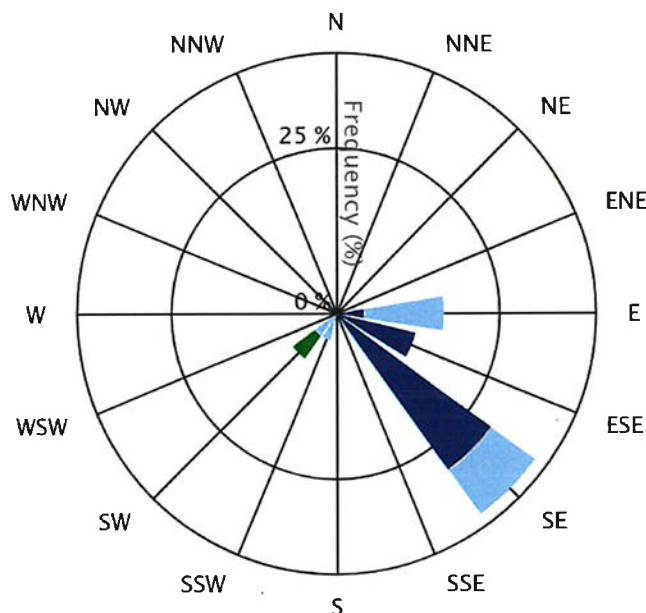
บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด

Sample No. 05190-5

จุดตรวจวัด : โรงเรียนบ้านกุไทร

วันที่ตรวจวัด : 19-20 มีนาคม 2568

Calm 20.8 %


 0.4-1.9
  2.0-3.9
  4.0-5.9
  6.0-7.9
  8.0-9.9
  > 9.9 (m/s)

WD/WS	Percentage of Occurrence of Wind Direct Grouped in Various Wind Speed						Total
	0.4-1.9 m/s	2.0-3.9 m/s	4.0-5.9 m/s	6.0-7.9 m/s	8.0-9.9 m/s	> 9.9 m/s	
N	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NNE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ENE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
E	4.2	12.5	0.0	0.0	0.0	0.0	16.7
ESE	12.5	0.0	0.0	0.0	0.0	0.0	12.5
SE	29.2	8.3	0.0	0.0	0.0	0.0	37.5
SSE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
S	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SSW	0.0	4.2	0.0	0.0	0.0	0.0	4.2
SW	0.0	4.2	4.2	0.0	0.0	0.0	8.3
WSW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WNW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NNW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	45.8	29.2	4.2	0.0	0.0	0.0	

## แผนผังทิศทางและความเร็วลม

Request No. LA68-R03102

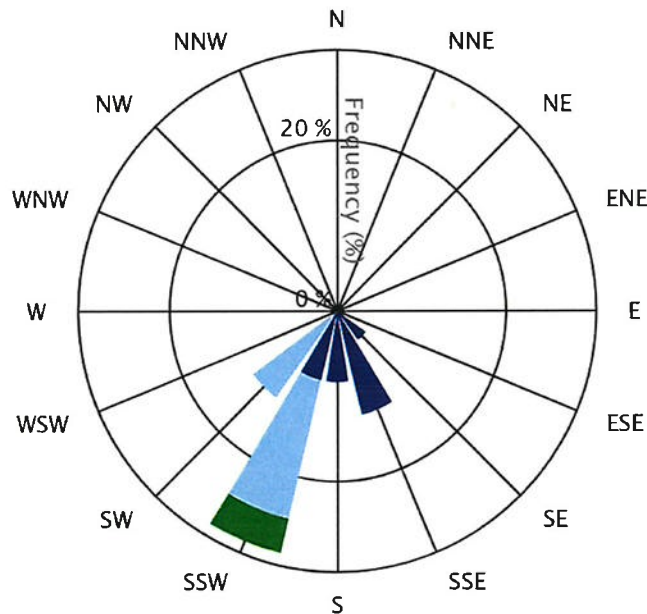
บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด

Sample No. 05190-6

จุดตรวจวัด : โรงเรียนบ้านภูไทร

วันที่ตรวจวัด : 20-21 มีนาคม 2568

Calm 33.3 %



■ 0.4-1.9 ■ 2.0-3.9 ■ 4.0-5.9 ■ 6.0-7.9 ■ 8.0-9.9 ■ &gt; 9.9 (m/s)

WD/WS	Percentage of Occurrence of Wind Direct Grouped in Various Wind Speed						Total
	0.4-1.9 m/s	2.0-3.9 m/s	4.0-5.9 m/s	6.0-7.9 m/s	8.0-9.9 m/s	> 9.9 m/s	
N	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NNE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ENE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
E	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ESE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SE	4.2	0.0	0.0	0.0	0.0	0.0	4.2
SSE	12.5	0.0	0.0	0.0	0.0	0.0	12.5
S	8.3	0.0	0.0	0.0	0.0	0.0	8.3
SSW	8.3	16.7	4.2	0.0	0.0	0.0	29.2
SW	0.0	12.5	0.0	0.0	0.0	0.0	12.5
WSW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WNW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NNW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	33.3	29.2	4.2	0.0	0.0	0.0	



## แผนผังทิศทางและความเร็วลม

Request No. LA68-R03102

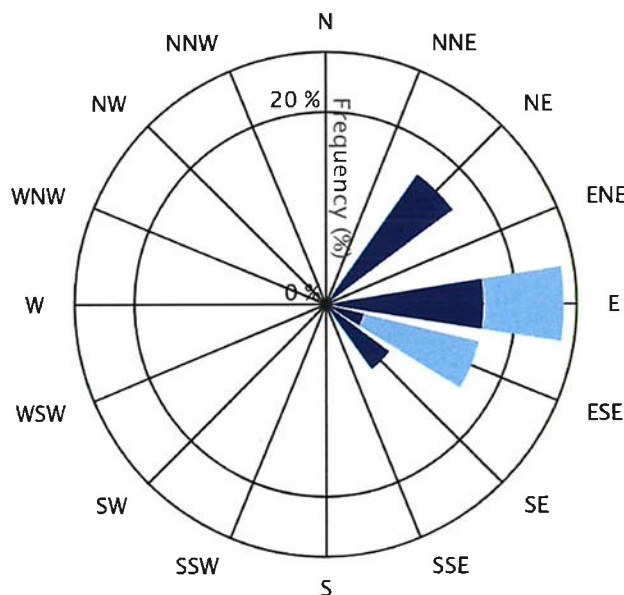
บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด

Sample No. 05190-7

จุดตรวจวัด : โรงเรียนบ้านกุไทร

วันที่ตรวจวัด : 21-22 มีนาคม 2568

Calm 33.3 %



0.4-1.9
  2.0-3.9
  4.0-5.9
  6.0-7.9
  8.0-9.9
  > 9.9 (m/s)

WD/WS	Percentage of Occurrence of Wind Direct Grouped in Various Wind Speed						Total
	0.4-1.9 m/s	2.0-3.9 m/s	4.0-5.9 m/s	6.0-7.9 m/s	8.0-9.9 m/s	> 9.9 m/s	
N	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NNE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NE	16.7	0.0	0.0	0.0	0.0	0.0	16.7
ENE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
E	16.7	8.3	0.0	0.0	0.0	0.0	25.0
ESE	4.2	12.5	0.0	0.0	0.0	0.0	16.7
SE	8.3	0.0	0.0	0.0	0.0	0.0	8.3
SSE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
S	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SSW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WSW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WNW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NNW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	45.8	20.8	0.0	0.0	0.0	0.0	



## แผนผังทิศทางและความเร็วลม

Request No. LA68-R03102

## บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด

Sample No. 05191

## จุดตรวจวัด : วัดพนานิคม

วันที่ตรวจวัด : 15-22 มีนาคม 2568

เวลา	15-16 มีนาคม 2568		16-17 มีนาคม 2568		17-18 มีนาคม 2568		18-19 มีนาคม 2568		19-20 มีนาคม 2568		20-21 มีนาคม 2568		21-22 มีนาคม 2568	
	ความเร็วลม (เมตร/วินาที)	ทิศทางลม	ความเร็วลม (เมตร/วินาที)	ทิศทางลม	ความเร็วลม (เมตร/วินาที)	ทิศทางลม	ความเร็วลม (เมตร/วินาที)	ทิศทางลม	ความเร็วลม (เมตร/วินาที)	ทิศทางลม	ความเร็วลม (เมตร/วินาที)	ทิศทางลม	ความเร็วลม (เมตร/วินาที)	ทิศทางลม
12:00-13:00	0.9	SSW	0.9	S	0.9	ESE	0.4	E	0.4	E	0.9	SW	0.9	NE
13:00-14:00	0.9	SSW	0.9	W	0.9	ESE	0.4	ESE	0.9	E	0.9	SSE	0.9	N
14:00-15:00	0.9	W	0.9	W	0.9	E	0.9	ESE	0.9	E	0.9	ENE	0.9	ESE
15:00-16:00	0.9	W	1.3	SSW	1.3	WSW	0.9	W	0.9	ESE	0.9	ESE	0.9	ESE
16:00-17:00	0.9	SSW	1.3	SSW	0.4	ESE	1.3	SSW	0.4	ESE	0.9	ESE	0.9	ESE
17:00-18:00	0.9	W	1.3	SSW	0.0	-	1.3	SSW	0.9	E	0.4	ESE	0.4	ESE
18:00-19:00	0.9	W	1.3	SSW	0.4	SE	0.9	SSW	0.4	ESE	0.4	ESE	0.4	ESE
19:00-20:00	0.4	WNW	0.4	SSW	0.0	-	0.0	-	0.0	-	0.0	-	0.4	ESE
20:00-21:00	0.0	-	0.0	-	0.0	-	0.0	-	0.0	-	0.0	-	0.0	-
21:00-22:00	0.0	-	0.0	-	0.0	-	0.0	-	0.0	-	0.0	-	0.0	-
22:00-23:00	0.0	-	0.0	-	0.0	-	0.0	-	0.0	-	0.0	-	0.0	-
23:00-00:00	0.0	-	0.0	-	0.0	-	0.0	-	0.0	-	0.0	-	0.0	-
00:00-01:00	0.0	-	0.0	-	0.0	-	0.0	-	0.0	-	0.0	-	0.0	-
01:00-02:00	0.0	-	0.0	-	0.0	-	0.0	-	0.0	-	0.0	-	0.0	-
02:00-03:00	0.0	-	0.0	-	0.0	-	0.0	-	0.4	WSW	0.0	-	0.4	NW
03:00-04:00	0.0	-	0.0	-	0.0	-	0.0	-	0.4	S	0.4	SW	0.0	-
04:00-05:00	0.0	-	0.0	-	0.0	-	0.0	-	0.4	SE	0.4	S	0.0	-
05:00-06:00	0.0	-	0.0	-	0.0	-	0.0	-	0.4	SE	0.0	-	0.0	-
06:00-07:00	0.0	-	0.0	-	0.0	-	0.0	-	0.0	-	0.4	NW	0.0	-
07:00-08:00	0.0	-	0.0	-	0.0	-	0.0	-	0.4	SW	0.4	SW	0.0	-
08:00-09:00	0.0	-	0.0	-	0.0	-	0.4	SW	0.4	SSW	0.4	SW	0.4	SSW
09:00-10:00	0.9	SSW	0.4	ESE	0.0	-	0.4	SSW	0.9	SW	0.9	SSW	0.4	SE
10:00-11:00	0.9	SSW	0.9	ESE	0.4	E	0.4	E	0.9	SSW	0.9	W	0.4	ESE
11:00-12:00	0.9	SE	0.9	E	0.9	E	0.9	NNE	0.9	E	0.9	SW	0.4	ESE

## แผนผังทิศทางและความเร็วลม

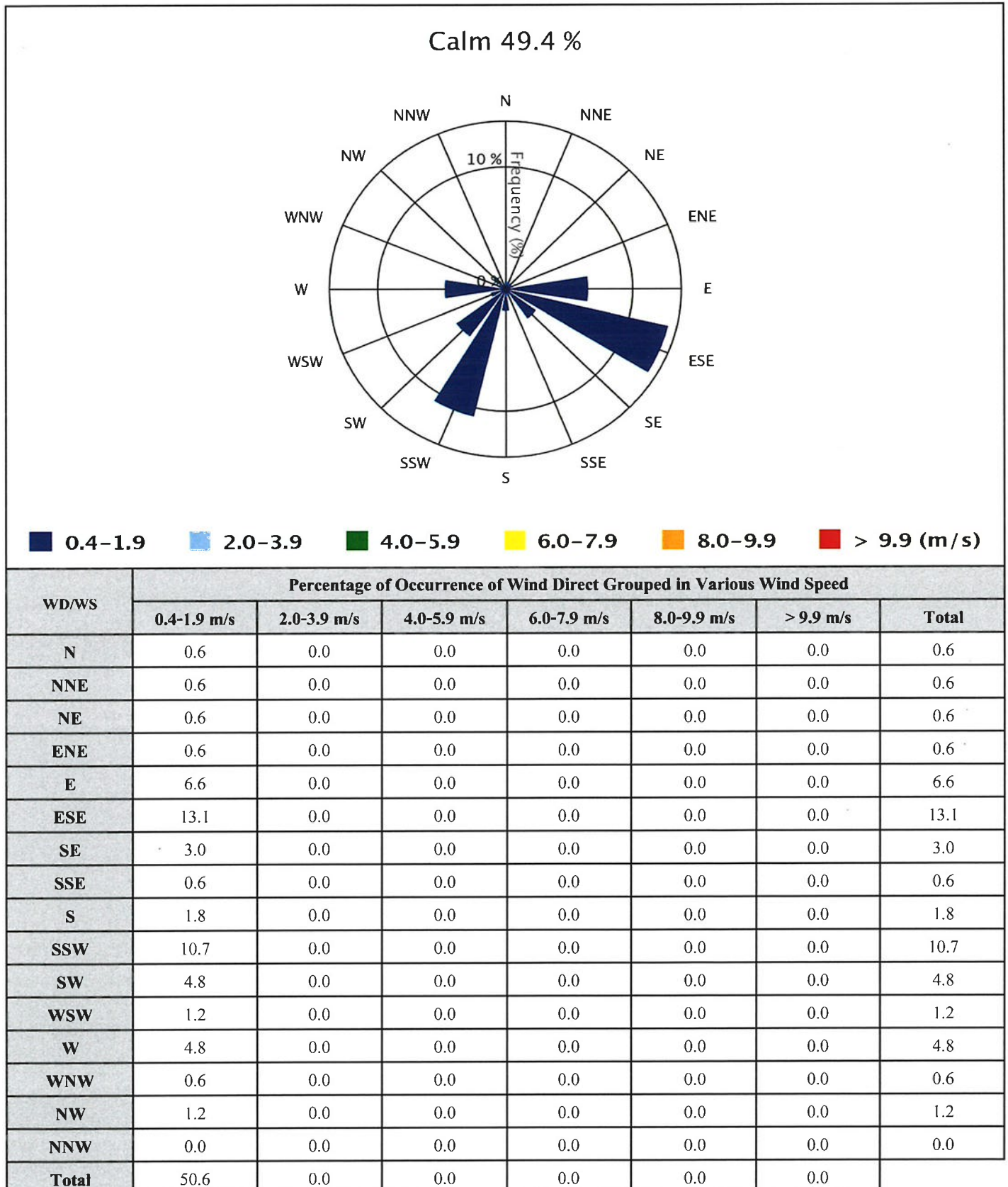
Request No. LA68-R03102

บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด

Sample No. 05191

จุดตรวจวัด : วัดพนานิคม

วันที่ตรวจวัด : 15-22 มีนาคม 2568



## แผนผังทิศทางและความเร็วลม

Request No. LA68-R03102

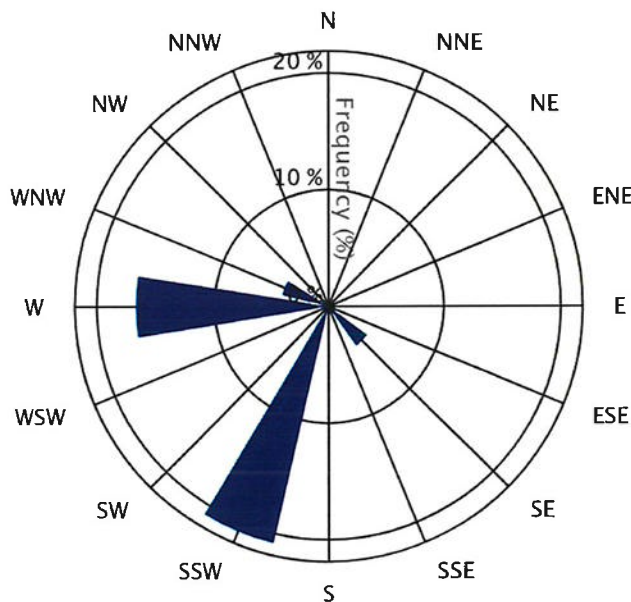
บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด

Sample No. 05191-1

จุดตรวจวัด : วัดพนานิคม

วันที่ตรวจวัด : 15-16 มีนาคม 2568

Calm 54.2 %


 0.4-1.9
  2.0-3.9
  4.0-5.9
  6.0-7.9
  8.0-9.9
  > 9.9 (m/s)

WD/WS	Percentage of Occurrence of Wind Direct Grouped in Various Wind Speed						Total
	0.4-1.9 m/s	2.0-3.9 m/s	4.0-5.9 m/s	6.0-7.9 m/s	8.0-9.9 m/s	> 9.9 m/s	
N	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NNE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ENE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
E	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ESE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SE	4.2	0.0	0.0	0.0	0.0	0.0	4.2
SSE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
S	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SSW	20.8	0.0	0.0	0.0	0.0	0.0	20.8
SW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WSW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	16.7	0.0	0.0	0.0	0.0	0.0	16.7
WNW	4.2	0.0	0.0	0.0	0.0	0.0	4.2
NW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NNW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	45.8	0.0	0.0	0.0	0.0	0.0	



## แผนผังทิศทางและความเร็วลม

Request No. LA68-R03102

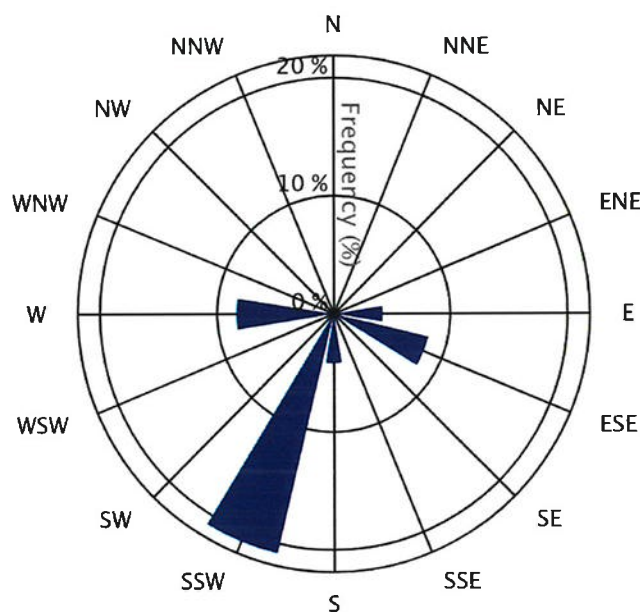
บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด

Sample No. 05191-2

จุดตรวจวัด : วัดพนานิคม

วันที่ตรวจวัด : 16-17 มีนาคม 2568

Calm 54.2 %


 0.4-1.9
  2.0-3.9
  4.0-5.9
  6.0-7.9
  8.0-9.9
  > 9.9 (m/s)

WD/WS	Percentage of Occurrence of Wind Direct Grouped in Various Wind Speed						Total
	0.4-1.9 m/s	2.0-3.9 m/s	4.0-5.9 m/s	6.0-7.9 m/s	8.0-9.9 m/s	> 9.9 m/s	
N	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NNE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ENE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
E	4.2	0.0	0.0	0.0	0.0	0.0	4.2
ESE	8.3	0.0	0.0	0.0	0.0	0.0	8.3
SE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SSE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
S	4.2	0.0	0.0	0.0	0.0	0.0	4.2
SSW	20.8	0.0	0.0	0.0	0.0	0.0	20.8
SW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WSW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	8.3	0.0	0.0	0.0	0.0	0.0	8.3
WNW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NNW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	45.8	0.0	0.0	0.0	0.0	0.0	



## แผนผังทิศทางและความเร็วลม

Request No. LA68-R03102

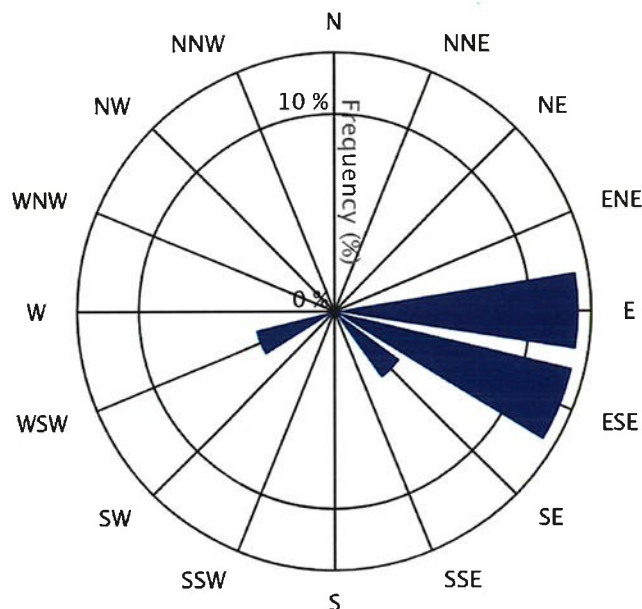
บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด

Sample No. 05191-3

จุดตรวจวัด : วัดพนานิคม

วันที่ตรวจวัด : 17-18 มีนาคม 2568

Calm 66.7 %



0.4-1.9
  2.0-3.9
  4.0-5.9
  6.0-7.9
  8.0-9.9
  > 9.9 (m/s)

WD/WS	Percentage of Occurrence of Wind Direct Grouped in Various Wind Speed						Total
	0.4-1.9 m/s	2.0-3.9 m/s	4.0-5.9 m/s	6.0-7.9 m/s	8.0-9.9 m/s	> 9.9 m/s	
N	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NNE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ENE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
E	12.5	0.0	0.0	0.0	0.0	0.0	12.5
ESE	12.5	0.0	0.0	0.0	0.0	0.0	12.5
SE	4.2	0.0	0.0	0.0	0.0	0.0	4.2
SSE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
S	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SSW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WSW	4.2	0.0	0.0	0.0	0.0	0.0	4.2
W	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WNW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NNW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	33.3	0.0	0.0	0.0	0.0	0.0	

## แผนผังทิศทางและความเร็วลม

Request No. LA68-R03102

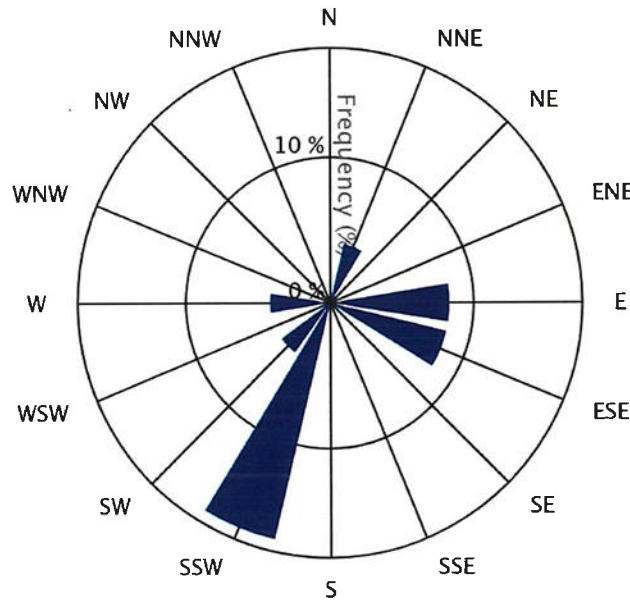
บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด

Sample No. 05191-4

จุดตรวจวัด : วัดพนานิคม

วันที่ตรวจวัด : 18-19 มีนาคม 2568

Calm 54.2 %


 0.4-1.9
  2.0-3.9
  4.0-5.9
  6.0-7.9
  8.0-9.9
  > 9.9 (m/s)

WD/WS	Percentage of Occurrence of Wind Direct Grouped in Various Wind Speed						Total
	0.4-1.9 m/s	2.0-3.9 m/s	4.0-5.9 m/s	6.0-7.9 m/s	8.0-9.9 m/s	> 9.9 m/s	
N	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NNE	4.2	0.0	0.0	0.0	0.0	0.0	4.2
NE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ENE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
E	8.3	0.0	0.0	0.0	0.0	0.0	8.3
ESE	8.3	0.0	0.0	0.0	0.0	0.0	8.3
SE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SSE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
S	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SSW	16.7	0.0	0.0	0.0	0.0	0.0	16.7
SW	4.2	0.0	0.0	0.0	0.0	0.0	4.2
WSW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	4.2	0.0	0.0	0.0	0.0	0.0	4.2
WNW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NNW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	45.8	0.0	0.0	0.0	0.0	0.0	

## แผนผังทิศทางและความเร็วลม

Request No. LA68-R03102

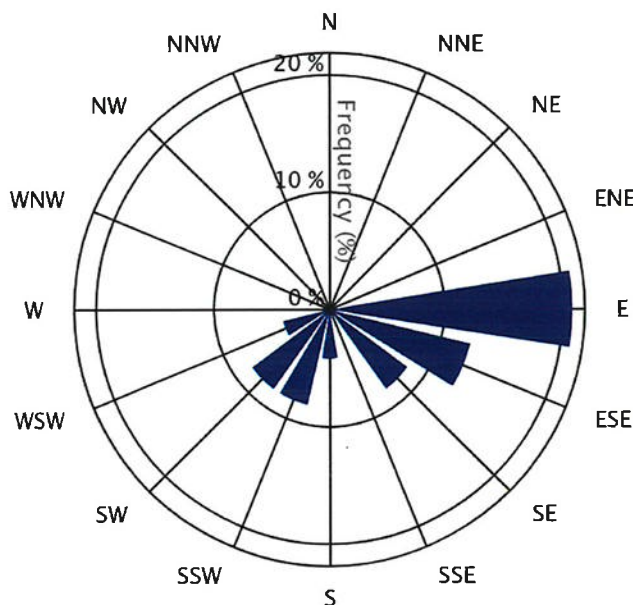
บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด

Sample No. 05191-5

จุดตรวจวัด : วัดพนานิคม

วันที่ตรวจวัด : 19-20 มีนาคม 2568

Calm 33.3 %


 0.4-1.9
  2.0-3.9
  4.0-5.9
  6.0-7.9
  8.0-9.9
  > 9.9 (m/s)

WD/WS	Percentage of Occurrence of Wind Direct Grouped in Various Wind Speed						Total
	0.4-1.9 m/s	2.0-3.9 m/s	4.0-5.9 m/s	6.0-7.9 m/s	8.0-9.9 m/s	> 9.9 m/s	
N	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NNE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ENE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
E	20.8	0.0	0.0	0.0	0.0	0.0	20.8
ESE	12.5	0.0	0.0	0.0	0.0	0.0	12.5
SE	8.3	0.0	0.0	0.0	0.0	0.0	8.3
SSE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
S	4.2	0.0	0.0	0.0	0.0	0.0	4.2
SSW	8.3	0.0	0.0	0.0	0.0	0.0	8.3
SW	8.3	0.0	0.0	0.0	0.0	0.0	8.3
WSW	4.2	0.0	0.0	0.0	0.0	0.0	4.2
W	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WNW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NNW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	66.7	0.0	0.0	0.0	0.0	0.0	



## แผนผังทิศทางและความเร็วลม

Request No. LA68-R03102

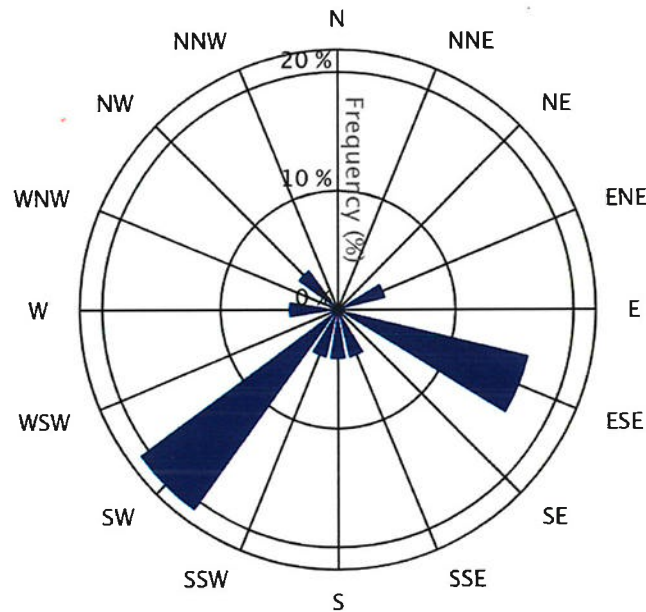
บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด

Sample No. 05191-6

จุดตรวจวัด : วัดพนานิคม

วันที่ตรวจวัด : 20-21 มีนาคม 2568

Calm 37.5 %


 0.4-1.9
  2.0-3.9
  4.0-5.9
  6.0-7.9
  8.0-9.9
  > 9.9 (m/s)

WD/WS	Percentage of Occurrence of Wind Direct Grouped in Various Wind Speed						Total
	0.4-1.9 m/s	2.0-3.9 m/s	4.0-5.9 m/s	6.0-7.9 m/s	8.0-9.9 m/s	> 9.9 m/s	
N	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NNE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ENE	4.2	0.0	0.0	0.0	0.0	0.0	4.2
E	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ESE	16.7	0.0	0.0	0.0	0.0	0.0	16.7
SE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SSE	4.2	0.0	0.0	0.0	0.0	0.0	4.2
S	4.2	0.0	0.0	0.0	0.0	0.0	4.2
SSW	4.2	0.0	0.0	0.0	0.0	0.0	4.2
SW	20.8	0.0	0.0	0.0	0.0	0.0	20.8
WSW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	4.2	0.0	0.0	0.0	0.0	0.0	4.2
WNW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NW	4.2	0.0	0.0	0.0	0.0	0.0	4.2
NNW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	62.5	0.0	0.0	0.0	0.0	0.0	



## แผนผังทิศทางและความเร็วลม

Request No. LA68-R03102

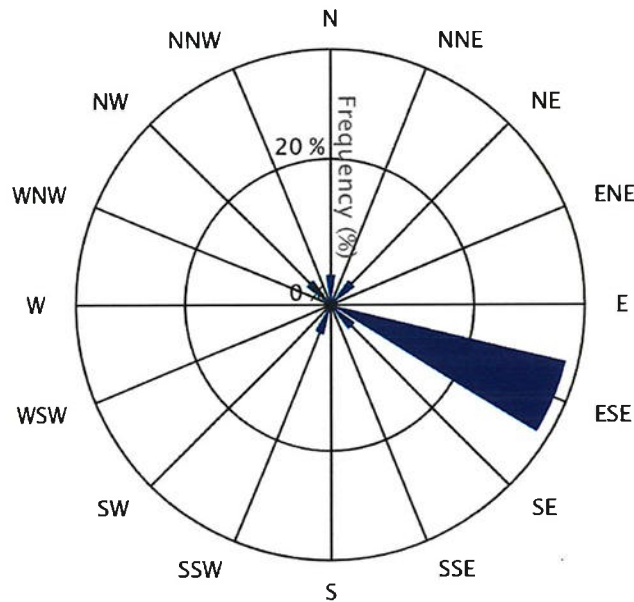
บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด

Sample No. 05191-7

จุดตรวจวัด : วัดพนานิคม

วันที่ตรวจวัด : 21-22 มีนาคม 2568

Calm 45.8 %



■ 0.4-1.9 ■ 2.0-3.9 ■ 4.0-5.9 ■ 6.0-7.9 ■ 8.0-9.9 ■ &gt; 9.9 (m/s)

WD/WS	Percentage of Occurrence of Wind Direct Grouped in Various Wind Speed						Total
	0.4-1.9 m/s	2.0-3.9 m/s	4.0-5.9 m/s	6.0-7.9 m/s	8.0-9.9 m/s	> 9.9 m/s	
N	4.2	0.0	0.0	0.0	0.0	0.0	4.2
NNE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NE	4.2	0.0	0.0	0.0	0.0	0.0	4.2
ENE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
E	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ESE	33.3	0.0	0.0	0.0	0.0	0.0	33.3
SE	4.2	0.0	0.0	0.0	0.0	0.0	4.2
SSE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
S	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SSW	4.2	0.0	0.0	0.0	0.0	0.0	4.2
SW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WSW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WNW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NW	4.2	0.0	0.0	0.0	0.0	0.0	4.2
NNW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	54.2	0.0	0.0	0.0	0.0	0.0	

## แผนผังทิศทางและความเร็วลม

Request No. LA68-R03102

บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด

Sample No. 05189

จุดตรวจวัด : โรงพยาบาลส่งเสริมสุขภาพตำบลมาบยางพร

วันที่ตรวจวัด : 15-22 มีนาคม 2568

เวลา	15-16 มีนาคม 2568		16-17 มีนาคม 2568		17-18 มีนาคม 2568		18-19 มีนาคม 2568		19-20 มีนาคม 2568		20-21 มีนาคม 2568		21-22 มีนาคม 2568	
	ความเร็วลม (เมตร/วินาที)	ทิศทางลม	ความเร็วลม (เมตร/วินาที)	ทิศทางลม	ความเร็วลม (เมตร/วินาที)	ทิศทางลม	ความเร็วลม (เมตร/วินาที)	ทิศทางลม	ความเร็วลม (เมตร/วินาที)	ทิศทางลม	ความเร็วลม (เมตร/วินาที)	ทิศทางลม	ความเร็วลม (เมตร/วินาที)	ทิศทางลม
11:00-12:00	0.4	ESE	0.4	ESE	0.0	-	0.0	-	0.4	WNW	0.4	W	0.4	SW
12:00-13:00	0.4	ESE	0.0	-	0.0	-	0.0	-	0.0	-	0.9	W	0.4	WNW
13:00-14:00	0.4	ESE	0.0	-	0.0	-	0.0	-	0.0	-	0.4	W	0.0	-
14:00-15:00	0.4	WSW	0.0	-	0.0	-	0.0	-	0.0	-	0.0	-	0.0	-
15:00-16:00	1.3	WSW	0.4	SSE	0.0	-	0.0	-	0.0	-	0.0	-	0.0	-
16:00-17:00	1.3	WSW	0.4	ESE	0.4	E	0.0	-	0.0	-	0.0	-	0.0	-
17:00-18:00	0.4	W	0.4	ESE	0.0	-	0.0	-	0.0	-	0.0	-	0.0	-
18:00-19:00	0.4	WSW	0.4	SE	0.0	-	0.9	S	0.0	-	0.0	-	0.0	-
19:00-20:00	0.4	S	0.4	SE	0.0	-	0.4	S	0.0	-	0.0	-	0.0	-
20:00-21:00	0.0	-	0.4	SE	0.0	-	0.0	-	0.0	-	0.0	-	0.0	-
21:00-22:00	0.0	-	0.4	SE	0.4	E	0.0	-	0.0	-	0.0	-	0.0	-
22:00-23:00	0.0	-	0.9	ESE	0.4	E	0.0	-	0.0	-	0.0	-	0.0	-
23:00-00:00	0.0	-	0.0	-	0.0	-	0.0	-	0.0	-	0.0	-	0.0	-
00:00-01:00	0.0	-	1.8	ESE	0.0	-	0.0	-	0.0	-	0.0	-	0.0	-
01:00-02:00	0.0	-	0.0	-	0.0	-	0.0	-	0.0	-	0.0	-	0.0	-
02:00-03:00	0.0	-	0.0	-	0.0	-	0.0	-	0.0	-	0.0	-	0.0	-
03:00-04:00	0.0	-	0.0	-	0.0	-	0.0	-	0.4	NW	0.0	-	0.0	-
04:00-05:00	0.0	-	0.4	SE	0.0	-	0.0	-	0.0	-	0.0	-	0.0	-
05:00-06:00	0.0	-	0.0	-	0.0	-	0.0	-	0.0	-	0.0	-	0.0	-
06:00-07:00	0.0	-	0.0	-	0.0	-	0.0	-	0.0	-	0.0	-	0.0	-
07:00-08:00	0.0	-	0.0	-	0.0	-	0.0	-	0.0	-	0.4	NNW	0.0	-
08:00-09:00	0.0	-	0.0	-	0.0	-	0.4	N	0.4	W	0.4	NNW	0.0	-
09:00-10:00	0.4	ESE	0.0	-	0.0	-	0.4	W	0.4	W	0.4	WNW	0.0	-
10:00-11:00	0.4	ESE	0.0	-	0.0	-	0.0	-	0.4	W	0.4	W	0.0	-

## แผนผังทิศทางและความเร็วลม

Request No. LA68-R03102

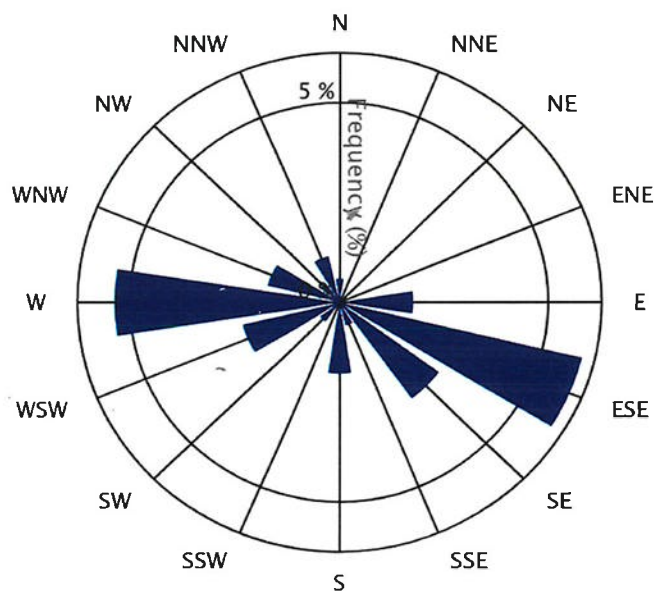
บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด

Sample No. 05189

จุดตรวจวัด : โรงพยาบาลส่งเสริมสุขภาพตำบลมาบยางพร

วันที่ตรวจวัด : 15-22 มีนาคม 2568

Calm 74.4 %



0.4-1.9
  2.0-3.9
  4.0-5.9
  6.0-7.9
  8.0-9.9
  > 9.9 (m/s)

WD/WS	Percentage of Occurrence of Wind Direct Grouped in Various Wind Speed						Total
	0.4-1.9 m/s	2.0-3.9 m/s	4.0-5.9 m/s	6.0-7.9 m/s	8.0-9.9 m/s	> 9.9 m/s	
N	0.6	0.0	0.0	0.0	0.0	0.0	0.6
NNE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ENE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
E	1.8	0.0	0.0	0.0	0.0	0.0	1.8
ESE	6.0	0.0	0.0	0.0	0.0	0.0	6.0
SE	3.0	0.0	0.0	0.0	0.0	0.0	3.0
SSE	0.6	0.0	0.0	0.0	0.0	0.0	0.6
S	1.8	0.0	0.0	0.0	0.0	0.0	1.8
SSW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SW	0.6	0.0	0.0	0.0	0.0	0.0	0.6
WSW	2.4	0.0	0.0	0.0	0.0	0.0	2.4
W	5.4	0.0	0.0	0.0	0.0	0.0	5.4
WNW	1.8	0.0	0.0	0.0	0.0	0.0	1.8
NW	0.6	0.0	0.0	0.0	0.0	0.0	0.6
NNW	1.2	0.0	0.0	0.0	0.0	0.0	1.2
Total	25.6	0.0	0.0	0.0	0.0	0.0	



## แผนผังทิศทางและความเร็วลม

Request No. LA68-R03102

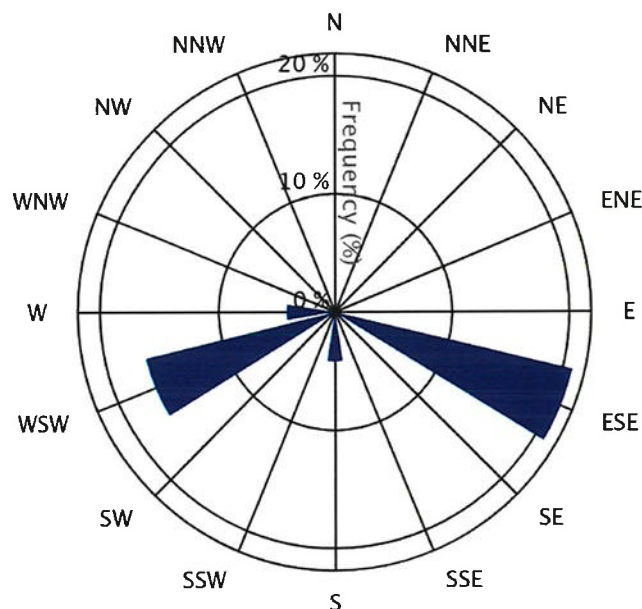
บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด

Sample No. 05189-1

จุดตรวจวัด : โรงพยาบาลส่งเสริมสุขภาพตำบลมาบยางพร

วันที่ตรวจวัด : 15-16 มีนาคม 2568

Calm 54.2 %


 0.4-1.9
  2.0-3.9
  4.0-5.9
  6.0-7.9
  8.0-9.9
  > 9.9 (m/s)

WD/WS	Percentage of Occurrence of Wind Direct Grouped in Various Wind Speed						Total
	0.4-1.9 m/s	2.0-3.9 m/s	4.0-5.9 m/s	6.0-7.9 m/s	8.0-9.9 m/s	> 9.9 m/s	
N	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NNE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ENE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
E	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ESE	20.8	0.0	0.0	0.0	0.0	0.0	20.8
SE	20.8	0.0	0.0	0.0	0.0	0.0	20.8
SSE	4.2	0.0	0.0	0.0	0.0	0.0	4.2
S	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SSW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WSW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WNW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NNW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	45.8	0.0	0.0	0.0	0.0	0.0	



## แผนผังทิศทางและความเร็วลม

Request No. LA68-R03102

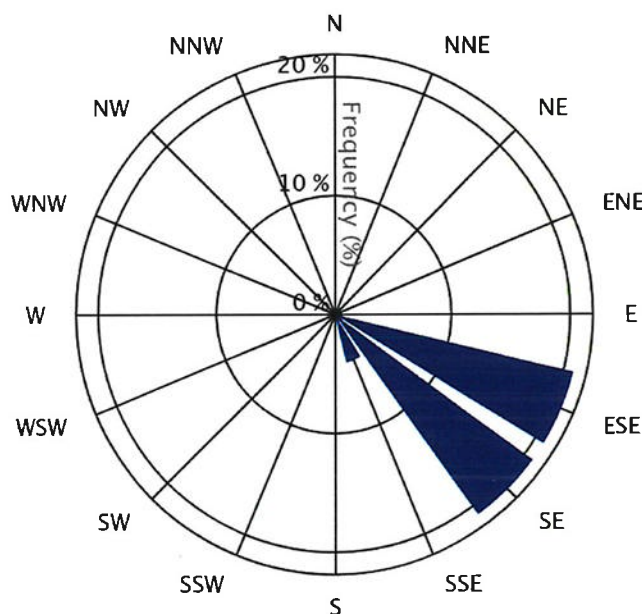
บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด

Sample No. 05189-2

จุดตรวจวัด : โรงพยาบาลส่งเสริมสุขภาพตำบลมาบยางพร

วันที่ตรวจวัด : 16-17 มีนาคม 2568

Calm 54.2 %



0.4-1.9
  2.0-3.9
  4.0-5.9
  6.0-7.9
  8.0-9.9
  > 9.9 (m/s)

WD/WS	Percentage of Occurrence of Wind Direct Grouped in Various Wind Speed						Total
	0.4-1.9 m/s	2.0-3.9 m/s	4.0-5.9 m/s	6.0-7.9 m/s	8.0-9.9 m/s	> 9.9 m/s	
N	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NNE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ENE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
E	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ESE	20.8	0.0	0.0	0.0	0.0	0.0	20.8
SE	20.8	0.0	0.0	0.0	0.0	0.0	20.8
SSE	4.2	0.0	0.0	0.0	0.0	0.0	4.2
S	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SSW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WSW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WNW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NNW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	45.8	0.0	0.0	0.0	0.0	0.0	

## แผนผังทิศทางและความเร็วลม

Request No. LA68-R03102

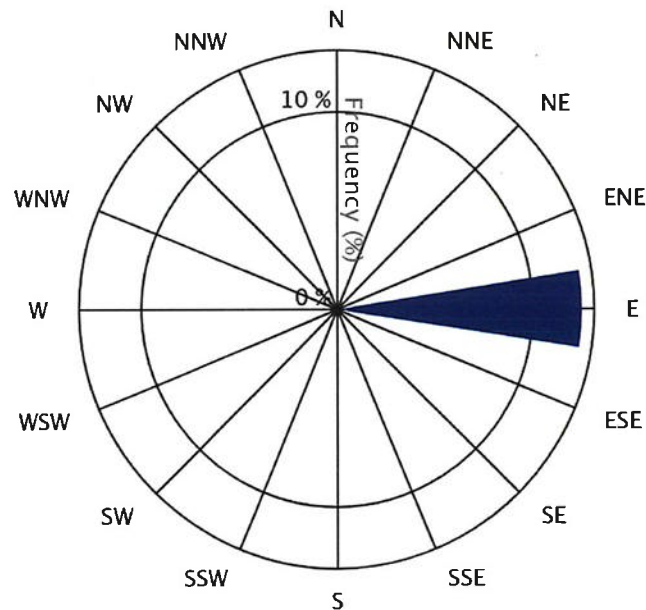
บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด

Sample No. 05189-3

จุดตรวจวัด : โรงพยาบาลส่งเสริมสุขภาพตำบลมาบยางพร

วันที่ตรวจวัด : 17-18 มีนาคม 2568

Calm 87.5 %


 0.4-1.9
  2.0-3.9
  4.0-5.9
  6.0-7.9
  8.0-9.9
  > 9.9 (m/s)

WD/WS	Percentage of Occurrence of Wind Direct Grouped in Various Wind Speed						Total
	0.4-1.9 m/s	2.0-3.9 m/s	4.0-5.9 m/s	6.0-7.9 m/s	8.0-9.9 m/s	> 9.9 m/s	
N	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NNE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ENE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
E	12.5	0.0	0.0	0.0	0.0	0.0	12.5
ESE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SSE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
S	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SSW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WSW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WNW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NNW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	12.5	0.0	0.0	0.0	0.0	0.0	

## แผนผังทิศทางและความเร็วลม

Request No. LA68-R03102

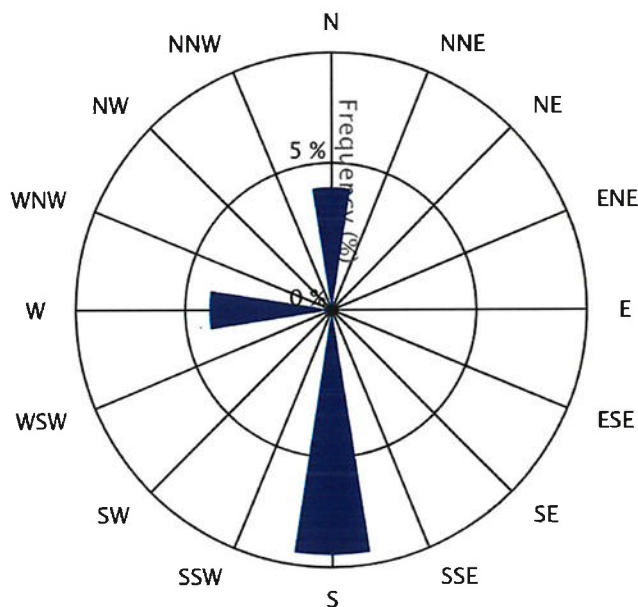
บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด

Sample No. 05189-4

จุดตรวจวัด : โรงพยาบาลส่งเสริมสุขภาพตำบลมายางพร

วันที่ตรวจวัด : 18-19 มีนาคม 2568

Calm 83.3 %


 0.4-1.9
  2.0-3.9
  4.0-5.9
  6.0-7.9
  8.0-9.9
  > 9.9 (m/s)

WD/WS	Percentage of Occurrence of Wind Direct Grouped in Various Wind Speed						Total
	0.4-1.9 m/s	2.0-3.9 m/s	4.0-5.9 m/s	6.0-7.9 m/s	8.0-9.9 m/s	> 9.9 m/s	
N	4.2	0.0	0.0	0.0	0.0	0.0	4.2
NNE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ENE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
E	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ESE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SSE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
S	8.3	0.0	0.0	0.0	0.0	0.0	8.3
SSW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WSW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	4.2	0.0	0.0	0.0	0.0	0.0	4.2
WNW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NNW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	16.7	0.0	0.0	0.0	0.0	0.0	



## แผนผังทิศทางและความเร็วลม

Request No. LA68-R03102

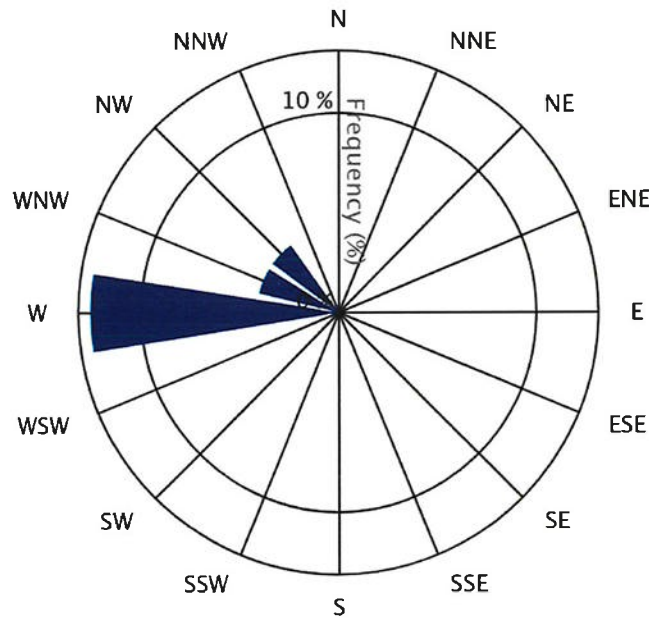
บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด

Sample No. 05189-5

จุดตรวจวัด : โรงพยาบาลส่งเสริมสุขภาพตำบลมาบยางพร

วันที่ตรวจวัด : 19-20 มีนาคม 2568

Calm 79.2 %


 0.4-1.9
  2.0-3.9
  4.0-5.9
  6.0-7.9
  8.0-9.9
  > 9.9 (m/s)

WD/WS	Percentage of Occurrence of Wind Direct Grouped in Various Wind Speed						Total
	0.4-1.9 m/s	2.0-3.9 m/s	4.0-5.9 m/s	6.0-7.9 m/s	8.0-9.9 m/s	> 9.9 m/s	
N	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NNE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ENE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
E	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ESE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SSE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
S	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SSW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WSW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	12.5	0.0	0.0	0.0	0.0	0.0	12.5
WNW	4.2	0.0	0.0	0.0	0.0	0.0	4.2
NW	4.2	0.0	0.0	0.0	0.0	0.0	4.2
NNW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	20.8	0.0	0.0	0.0	0.0	0.0	

## แผนผังทิศทางและความเร็วลม

Request No. LA68-R03102

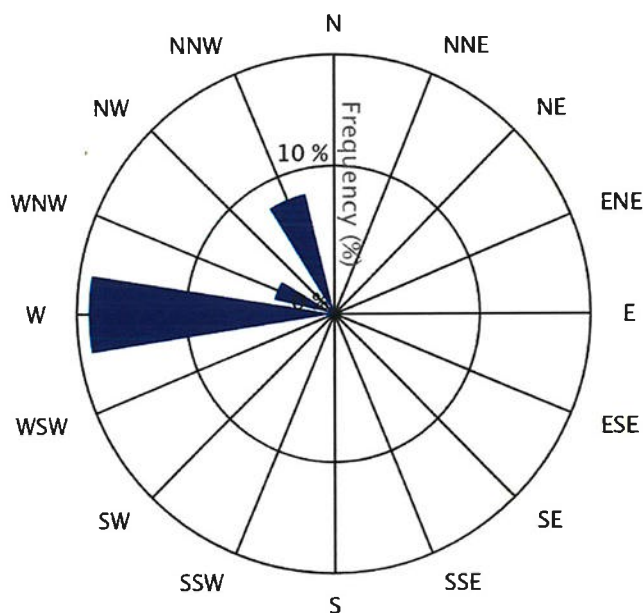
บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด

Sample No. 05189-6

จุดตรวจวัด : โรงพยาบาลส่งเสริมสุขภาพตำบลมาบยางพร

วันที่ตรวจวัด : 20-21 มีนาคม 2568

Calm 70.8 %


 0.4-1.9
  2.0-3.9
  4.0-5.9
  6.0-7.9
  8.0-9.9
  > 9.9 (m/s)

WD/WS	Percentage of Occurrence of Wind Direct Grouped in Various Wind Speed						Total
	0.4-1.9 m/s	2.0-3.9 m/s	4.0-5.9 m/s	6.0-7.9 m/s	8.0-9.9 m/s	> 9.9 m/s	
N	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NNE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ENE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
E	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ESE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SSE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
S	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SSW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WSW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	16.7	0.0	0.0	0.0	0.0	0.0	16.7
WNW	4.2	0.0	0.0	0.0	0.0	0.0	4.2
NW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NNW	8.3	0.0	0.0	0.0	0.0	0.0	8.3
Total	29.2	0.0	0.0	0.0	0.0	0.0	

## แผนผังทิศทางและความเร็วลม

Request No. LA68-R03102

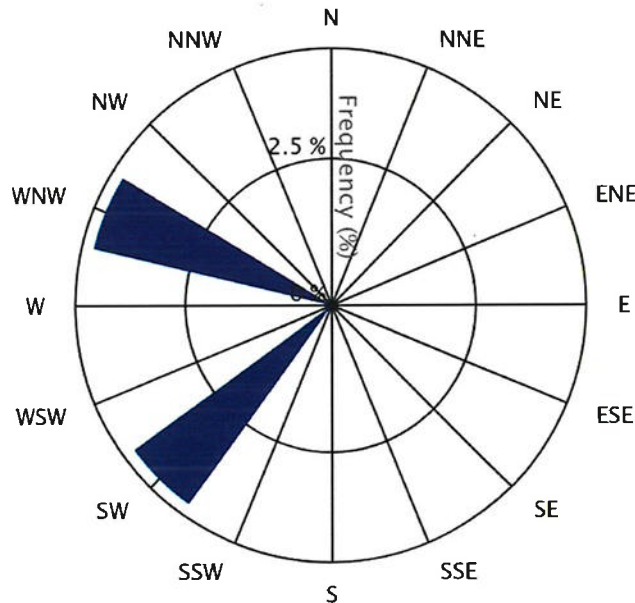
บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด

Sample No. 05189-7

จุดตรวจวัด : โรงพยาบาลส่งเสริมสุขภาพตำบลมาบยางพร

วันที่ตรวจวัด : 21-22 มีนาคม 2568

Calm 91.7 %


 0.4-1.9
  2.0-3.9
  4.0-5.9
  6.0-7.9
  8.0-9.9
  > 9.9 (m/s)

WD/WS	Percentage of Occurrence of Wind Direct Grouped in Various Wind Speed						Total
	0.4-1.9 m/s	2.0-3.9 m/s	4.0-5.9 m/s	6.0-7.9 m/s	8.0-9.9 m/s	> 9.9 m/s	
N	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NNE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ENE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
E	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ESE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SSE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
S	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SSW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SW	4.2	0.0	0.0	0.0	0.0	0.0	4.2
WSW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WNW	4.2	0.0	0.0	0.0	0.0	0.0	4.2
NW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NNW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	8.3	0.0	0.0	0.0	0.0	0.0	



## แผนผังทิศทางและความเร็วลม

Request No. LA68-R03102

บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด

Sample No. 05192

จุดตรวจวัด : ศูนย์พัฒนาเด็กเล็กองค์การบริหารส่วนตำบลมาบยางพร

วันที่ตรวจวัด : 15-22 มีนาคม 2568

เวลา	15-16 มีนาคม 2568		16-17 มีนาคม 2568		17-18 มีนาคม 2568		18-19 มีนาคม 2568		19-20 มีนาคม 2568		20-21 มีนาคม 2568		21-22 มีนาคม 2568	
	ความเร็วลม (เมตร/วินาที)	ทิศทางลม	ความเร็วลม (เมตร/วินาที)	ทิศทางลม	ความเร็วลม (เมตร/วินาที)	ทิศทางลม	ความเร็วลม (เมตร/วินาที)	ทิศทางลม	ความเร็วลม (เมตร/วินาที)	ทิศทางลม	ความเร็วลม (เมตร/วินาที)	ทิศทางลม	ความเร็วลม (เมตร/วินาที)	ทิศทางลม
12:00-13:00	0.4	SE	1.8	SE	1.3	SE	0.9	ENE	1.8	ENE	2.2	ENE	1.3	ENE
13:00-14:00	0.4	SE	1.3	SSE	1.3	E	0.9	ENE	1.8	ENE	2.2	ENE	1.3	ENE
14:00-15:00	1.8	SE	0.9	WNW	1.3	ENE	0.9	SE	1.3	ENE	1.8	ENE	0.9	ENE
15:00-16:00	1.3	SSE	0.9	WSW	1.8	SE	0.9	ENE	1.8	ENE	2.2	ENE	1.8	ENE
16:00-17:00	0.4	NW	0.4	SSE	0.4	S	0.4	S	1.8	E	2.2	ENE	1.3	ENE
17:00-18:00	0.4	WNW	1.8	SSE	0.0	-	0.4	W	1.8	E	1.8	E	1.3	E
18:00-19:00	0.9	WNW	1.3	SSE	0.4	SSE	0.4	W	0.9	E	0.9	E	1.3	E
19:00-20:00	0.0	-	0.0	-	0.0	-	0.0	-	0.0	-	0.0	-	0.9	E
20:00-21:00	0.0	-	0.0	-	0.4	SSE	0.0	-	0.0	-	0.0	-	0.0	-
21:00-22:00	0.0	-	0.4	SSE	0.9	SSE	0.0	-	0.0	-	0.0	-	0.0	-
22:00-23:00	0.0	-	0.9	SE	0.4	SSE	0.0	-	0.0	-	0.0	-	0.0	-
23:00-00:00	0.0	-	0.4	SE	0.0	-	0.0	-	0.0	-	0.0	-	0.0	-
00:00-01:00	0.0	-	2.2	SE	0.0	-	0.0	-	0.0	-	0.0	-	0.0	-
01:00-02:00	0.0	-	0.4	SSE	0.0	-	0.0	-	0.0	-	0.0	-	0.0	-
02:00-03:00	0.0	-	0.4	SE	0.0	-	0.0	-	0.4	ENE	0.0	-	0.0	-
03:00-04:00	0.0	-	0.4	SE	0.0	-	0.4	ENE	0.0	-	0.0	-	0.0	-
04:00-05:00	0.0	-	0.4	SE	0.0	-	0.4	ENE	0.0	-	0.0	-	0.0	-
05:00-06:00	0.0	-	0.0	-	0.0	-	0.0	-	0.4	ENE	0.0	-	0.0	-
06:00-07:00	0.0	-	0.4	E	0.0	-	0.0	-	0.0	-	0.0	-	0.0	-
07:00-08:00	0.0	-	0.0	-	0.0	-	0.0	-	0.4	NE	0.0	-	0.0	-
08:00-09:00	0.0	-	0.0	-	0.0	-	0.4	ENE	1.3	ENE	0.4	ENE	0.0	-
09:00-10:00	0.0	-	0.4	SE	0.0	-	0.4	ENE	2.2	ENE	1.3	NE	0.9	ENE
10:00-11:00	1.3	SE	0.9	SE	0.4	ENE	1.3	ENE	2.2	ENE	1.8	ENE	1.8	ENE
11:00-12:00	2.2	SE	0.9	SE	0.4	ENE	1.3	ENE	2.2	ENE	1.8	ENE	1.3	ENE

## แผนผังทิศทางและความเร็วลม

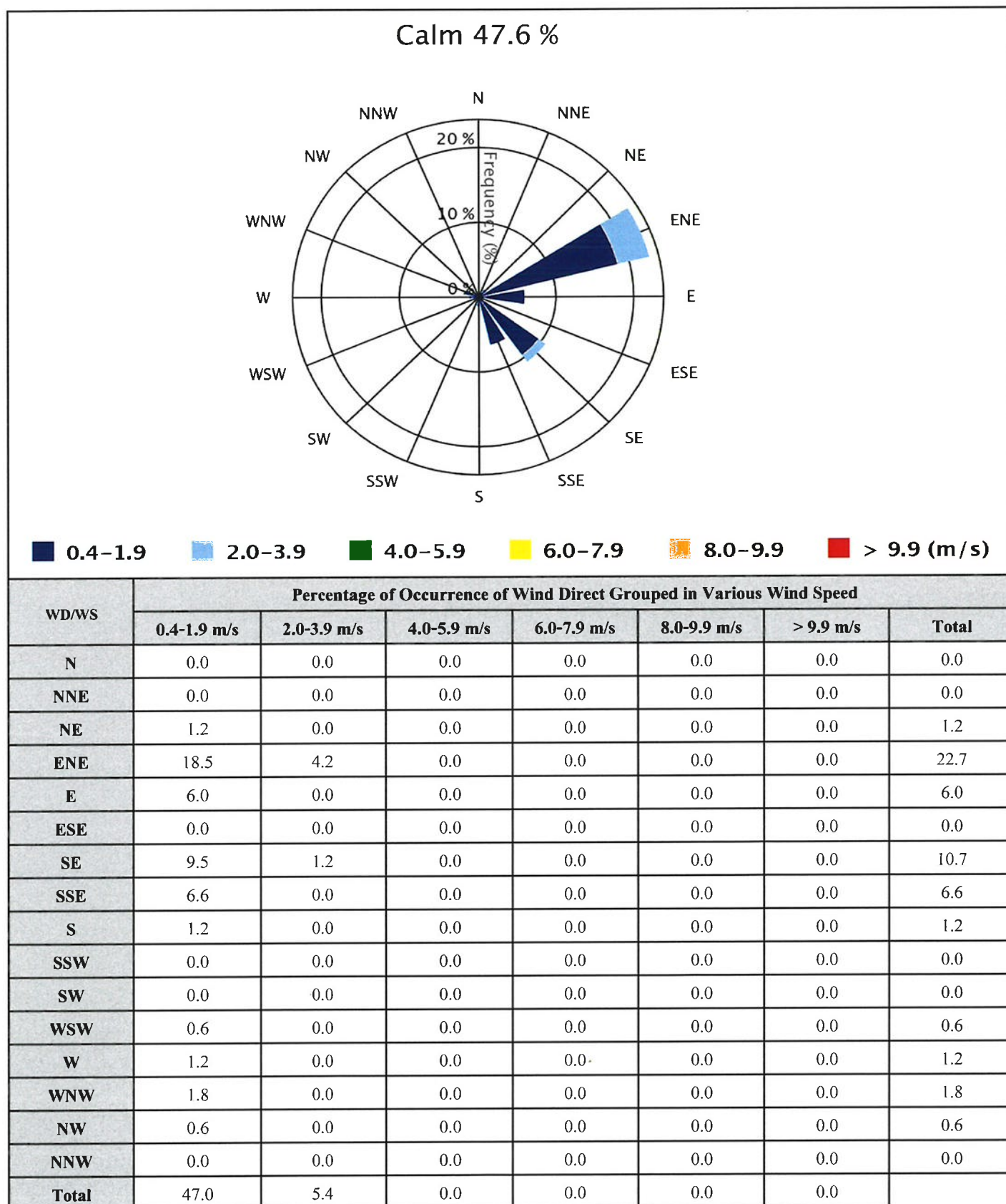
Request No. LA68-R03102

บริษัท อมตะ ปิ.กริม เพาเวอร์ (ระยอง) 3 จำกัด

Sample No. 05192

จุดตรวจวัด : ศูนย์พัฒนาเด็กเล็กองค์การบริหารส่วนตำบลมาบยางพร

วันที่ตรวจวัด : 15-22 มีนาคม 2568



## แผนผังทิศทางและความเร็วลม

Request No. LA68-R03102

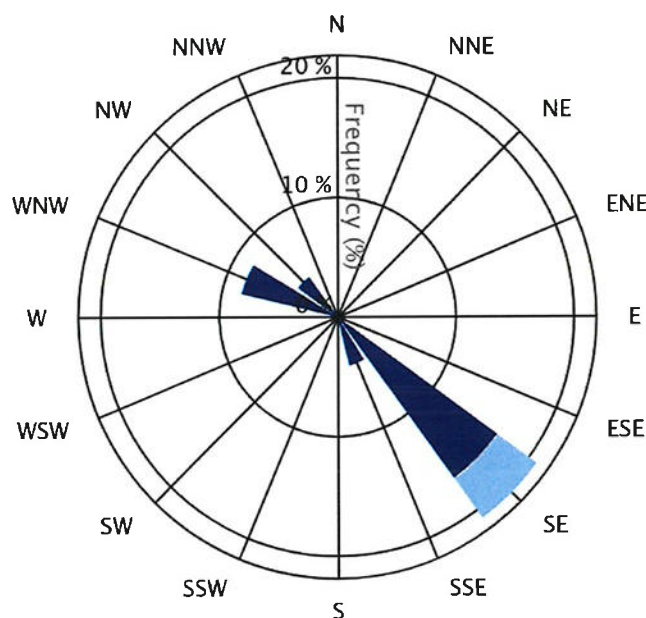
บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด

Sample No. 05192-1

จุดตรวจวัด : ศูนย์พัฒนาเด็กเล็กองค์การบริหารส่วนตำบลมาบยางพร

วันที่ตรวจวัด : 15-16 มีนาคม 2568

Calm 62.5 %



0.4-1.9    2.0-3.9    4.0-5.9    6.0-7.9    8.0-9.9    &gt; 9.9 (m/s)

WD/WS	Percentage of Occurrence of Wind Direct Grouped in Various Wind Speed						Total
	0.4-1.9 m/s	2.0-3.9 m/s	4.0-5.9 m/s	6.0-7.9 m/s	8.0-9.9 m/s	> 9.9 m/s	
N	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NNE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ENE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
E	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ESE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SE	16.7	4.2	0.0	0.0	0.0	0.0	20.9
SSE	4.2	0.0	0.0	0.0	0.0	0.0	4.2
S	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SSW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WSW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WNW	8.3	0.0	0.0	0.0	0.0	0.0	8.3
NW	4.2	0.0	0.0	0.0	0.0	0.0	4.2
NNW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	33.3	4.2	0.0	0.0	0.0	0.0	



## แผนผังทิศทางและความเร็วลม

Request No. LA68-R03102

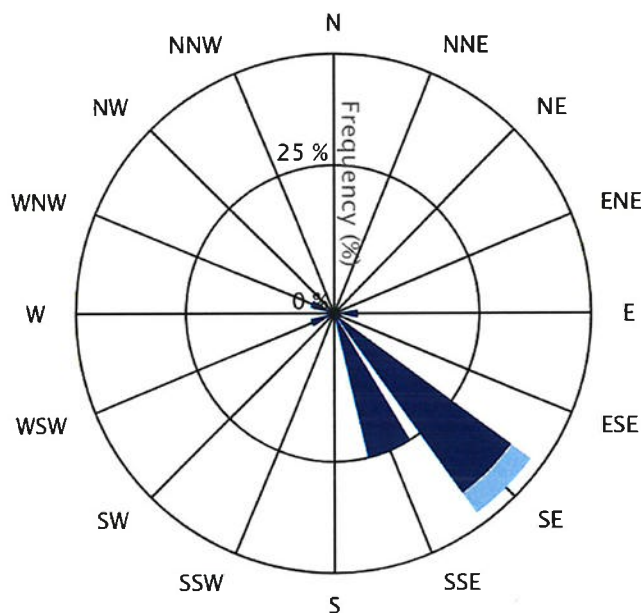
## บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด

Sample No. 05192-2

จุดตรวจวัด : ศูนย์พัฒนาเด็กเล็กองค์การบริหารส่วนตำบลมาบยางพร

วันที่ตรวจวัด : 16-17 มีนาคม 2568

Calm 20.8 %


 0.4-1.9
  2.0-3.9
  4.0-5.9
  6.0-7.9
  8.0-9.9
  > 9.9 (m/s)

WD/WS	Percentage of Occurrence of Wind Direct Grouped in Various Wind Speed						Total
	0.4-1.9 m/s	2.0-3.9 m/s	4.0-5.9 m/s	6.0-7.9 m/s	8.0-9.9 m/s	> 9.9 m/s	
N	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NNE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ENE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
E	4.2	0.0	0.0	0.0	0.0	0.0	4.2
ESE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SE	37.5	4.2	0.0	0.0	0.0	0.0	41.7
SSE	25.0	0.0	0.0	0.0	0.0	0.0	25.0
S	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SSW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WSW	4.2	0.0	0.0	0.0	0.0	0.0	4.2
W	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WNW	4.2	0.0	0.0	0.0	0.0	0.0	4.2
NW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NNW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	75.0	4.2	0.0	0.0	0.0	0.0	

## แผนผังทิศทางและความเร็วลม

Request No. LA68-R03102

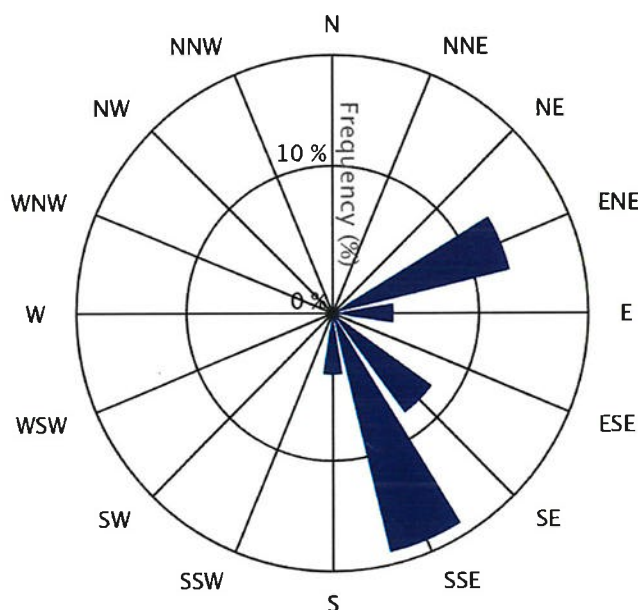
บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด

Sample No. 05192-3

จุดตรวจวัด : ศูนย์พัฒนาเด็กเล็กองค์การบริหารส่วนตำบลมาบยางพร

วันที่ตรวจวัด : 17-18 มีนาคม 2568

Calm 54.2 %


 0.4-1.9
  2.0-3.9
  4.0-5.9
  6.0-7.9
  8.0-9.9
  > 9.9 (m/s)

WD/WS	Percentage of Occurrence of Wind Direct Grouped in Various Wind Speed						Total
	0.4-1.9 m/s	2.0-3.9 m/s	4.0-5.9 m/s	6.0-7.9 m/s	8.0-9.9 m/s	> 9.9 m/s	
N	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NNE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ENE	12.5	0.0	0.0	0.0	0.0	0.0	12.5
E	4.2	0.0	0.0	0.0	0.0	0.0	4.2
ESE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SE	8.3	0.0	0.0	0.0	0.0	0.0	8.3
SSE	16.7	0.0	0.0	0.0	0.0	0.0	16.7
S	4.2	0.0	0.0	0.0	0.0	0.0	4.2
SSW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WSW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WNW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NNW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	45.8	0.0	0.0	0.0	0.0	0.0	

## แผนผังทิศทางและความเร็วลม

Request No. LA68-R03102

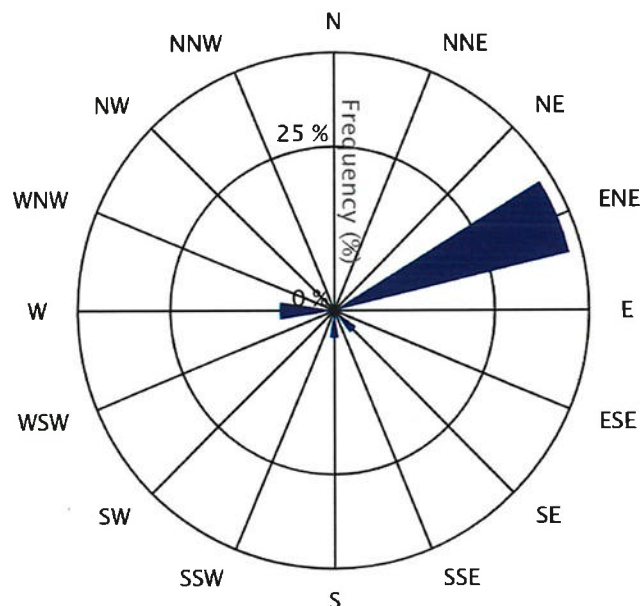
บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด

Sample No. 05192-4

จุดตรวจวัด : ศูนย์พัฒนาเด็กเล็กองค์การบริหารส่วนตำบลมาบยางพร

วันที่ตรวจวัด : 18-19 มีนาคม 2568

Calm 45.8 %


 0.4-1.9
  2.0-3.9
  4.0-5.9
  6.0-7.9
  8.0-9.9
  > 9.9 (m/s)

WD/WS	Percentage of Occurrence of Wind Direct Grouped in Various Wind Speed						Total
	0.4-1.9 m/s	2.0-3.9 m/s	4.0-5.9 m/s	6.0-7.9 m/s	8.0-9.9 m/s	> 9.9 m/s	
N	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NNE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ENE	37.5	0.0	0.0	0.0	0.0	0.0	37.5
E	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ESE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SE	4.2	0.0	0.0	0.0	0.0	0.0	4.2
SSE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
S	4.2	0.0	0.0	0.0	0.0	0.0	4.2
SSW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WSW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	8.3	0.0	0.0	0.0	0.0	0.0	8.3
WNW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NNW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	54.2	0.0	0.0	0.0	0.0	0.0	



## แผนผังทิศทางและความเร็วลม

Request No. LA68-R03102

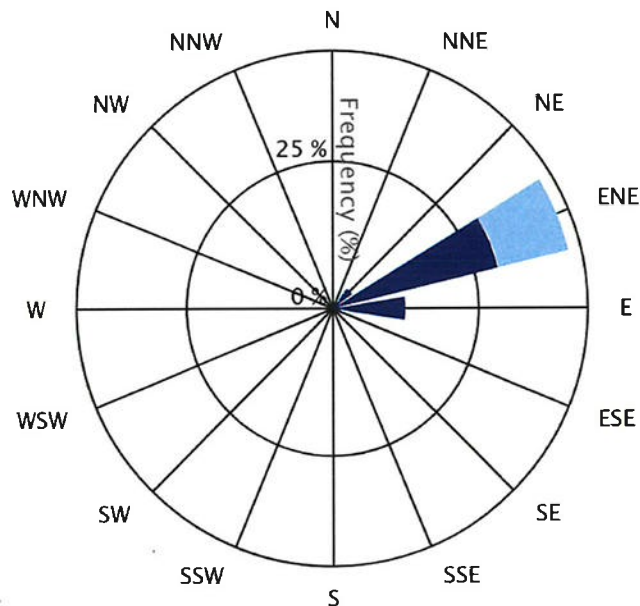
บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด

Sample No. 05192-5

จุดตรวจวัด : ศูนย์พัฒนาเด็กเล็กองค์การบริหารส่วนตำบลมาบยางพร

วันที่ตรวจวัด : 19-20 มีนาคม 2568

Calm 41.7 %



0.4-1.9
  2.0-3.9
  4.0-5.9
  6.0-7.9
  8.0-9.9
  > 9.9 (m/s)

WD/WS	Percentage of Occurrence of Wind Direct Grouped in Various Wind Speed						Total
	0.4-1.9 m/s	2.0-3.9 m/s	4.0-5.9 m/s	6.0-7.9 m/s	8.0-9.9 m/s	> 9.9 m/s	
N	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NNE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NE	4.2	0.0	0.0	0.0	0.0	0.0	4.2
ENE	29.2	12.5	0.0	0.0	0.0	0.0	41.7
E	12.5	0.0	0.0	0.0	0.0	0.0	12.5
ESE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SSE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
S	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SSW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WSW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WNW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NNW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	45.8	12.5	0.0	0.0	0.0	0.0	

## แผนผังทิศทางและความเร็วลม

Request No. LA68-R03102

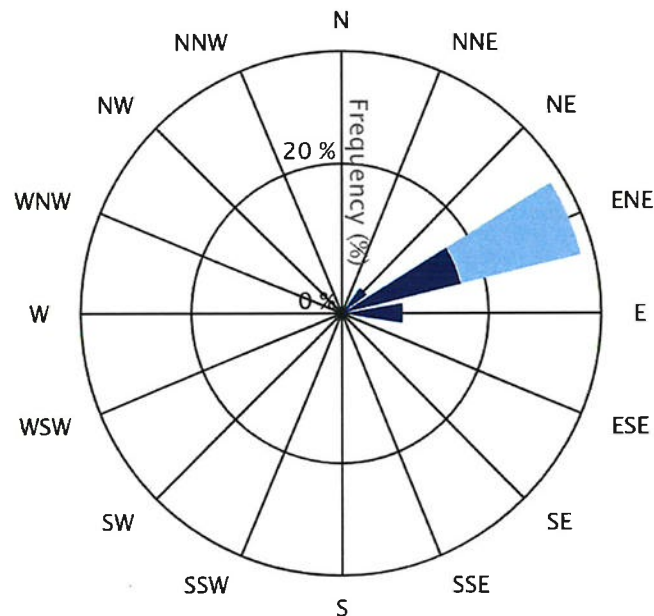
บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด

Sample No. 05192-6

จุดตรวจวัด : ศูนย์พัฒนาเด็กเล็กองค์การบริหารส่วนตำบลมาบยางพร

วันที่ตรวจวัด : 20-21 มีนาคม 2568

Calm 54.2 %


 0.4-1.9
  2.0-3.9
  4.0-5.9
  6.0-7.9
  8.0-9.9
  > 9.9 (m/s)

WD/WS	Percentage of Occurrence of Wind Direct Grouped in Various Wind Speed						Total
	0.4-1.9 m/s	2.0-3.9 m/s	4.0-5.9 m/s	6.0-7.9 m/s	8.0-9.9 m/s	> 9.9 m/s	
N	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NNE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NE	4.2	0.0	0.0	0.0	0.0	0.0	4.2
ENE	16.7	16.7	0.0	0.0	0.0	0.0	33.4
E	8.3	0.0	0.0	0.0	0.0	0.0	8.3
ESE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SSE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
S	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SSW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WSW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WNW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NNW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	29.2	16.7	0.0	0.0	0.0	0.0	

## แผนผังทิศทางและความเร็วลม

Request No. LA68-R03102

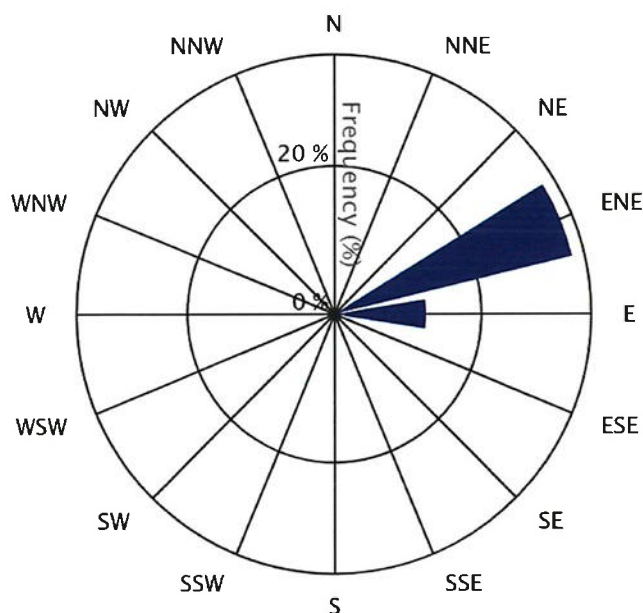
บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด

Sample No. 05192-7

จุดตรวจวัด : ศูนย์พัฒนาเด็กเล็กองค์การบริหารส่วนตำบลมาบยางพร

วันที่ตรวจวัด : 21-22 มีนาคม 2568

Calm 54.2 %



■ 0.4–1.9 ■ 2.0–3.9 ■ 4.0–5.9 ■ 6.0–7.9 ■ 8.0–9.9 ■ &gt; 9.9 (m/s)

WD/WS	Percentage of Occurrence of Wind Direct Grouped in Various Wind Speed						Total
	0.4-1.9 m/s	2.0-3.9 m/s	4.0-5.9 m/s	6.0-7.9 m/s	8.0-9.9 m/s	> 9.9 m/s	
N	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NNE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ENE	33.3	0.0	0.0	0.0	0.0	0.0	33.3
E	12.5	0.0	0.0	0.0	0.0	0.0	12.5
ESE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SSE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
S	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SSW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WSW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WNW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NNW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	45.8	0.0	0.0	0.0	0.0	0.0	



ผลการตรวจวัดระดับเสียงโดยทั่วไป

Request No. LA68-R03102

Report No. R6803-2703

## TEST REPORT

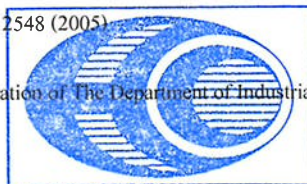
CUSTOMER : บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด  
 ADDRESS : 7/491 หมู่ 6 ตำบลมาบยางพร อำเภอปลวกแดง จังหวัดระยอง 21140  
 SAMPLE SOURCE : บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด  
 SAMPLE POINT : โรงเรียนบ้านภูไทร  
 PARAMETER\* :  $L_{eq}$  1 hr.,  $L_{eq}$  24 hr.,  $L_{max}$ ,  $L_{90}$  &  $L_{dn}$  SAMPLE NO. : 05168  
 DETERMINATION METHOD : ISO 1996-1:2016 MEASURING DATE : 14-15/03/2025  
 INSTRUMENT : Integrated Sound Level Meter RECEIVED DATE : 22/03/2025  
 S/N 00230988 : Class 1 REPORTED DATE : 04/04/2025

TIME \ DATE	14-15/03/2025 ( $L_{eq}$ )	14-15/03/2025 ( $L_{max}$ )	14-15/03/2025 ( $L_{90}$ )	UNIT
11:00 - 12:00 <sup>1/3</sup>	47.0	72.6	41.2	dB(A)
12:00 - 13:00	46.8	73.0	40.0	dB(A)
13:00 - 14:00	61.3	83.6	58.0	dB(A)
14:00 - 15:00	60.8	84.4	53.5	dB(A)
15:00 - 16:00	68.7	92.7	62.8	dB(A)
16:00 - 17:00	54.0	72.2	49.0	dB(A)
17:00 - 18:00	51.0	87.2	43.0	dB(A)
18:00 - 19:00	48.1	70.5	42.8	dB(A)
19:00 - 20:00	44.8	69.6	42.2	dB(A)
20:00 - 21:00	45.3	67.6	42.1	dB(A)
21:00 - 22:00	45.7	76.9	40.9	dB(A)
22:00 - 23:00	45.4	66.3	43.1	dB(A)
23:00 - 00:00	46.8	63.8	44.2	dB(A)
00:00 - 01:00	44.6	58.1	41.2	dB(A)
01:00 - 02:00	42.4	64.9	40.4	dB(A)
02:00 - 03:00	42.9	53.3	40.2	dB(A)
03:00 - 04:00	41.5	65.7	39.7	dB(A)
04:00 - 05:00	42.3	59.1	39.8	dB(A)
05:00 - 06:00	44.0	57.1	41.0	dB(A)
06:00 - 07:00	53.6	70.6	42.8	dB(A)
07:00 - 08:00	50.9	71.8	43.3	dB(A)
08:00 - 09:00	48.3	67.6	41.6	dB(A)
09:00 - 10:00	47.2	70.2	40.4	dB(A)
10:00 - 11:00	48.4	67.1	40.0	dB(A)
$L_{eq}$ 24 hr.	56.7	-	-	dB(A)
$L_{dn}$	58.0	-	-	dB(A)
Maximum	-	92.7	-	dB(A)
$L_{90}$	-	-	41.6	dB(A)
Standard	70 <sup>1/1,2</sup>	115 <sup>1/1,2</sup>	-	dB(A)

REMARK : <sup>1/1</sup> Notification of Office of The National Environmental Board Volume 15 B.E. 2540 (1997)<sup>1/2</sup> Notification of Ministry of the Industry B.E. 2548 (2005)<sup>1/3</sup> Start Time

\* Parameter Outside The Scope of The Registration of The Department of Industrial Works.

(Measurement By Mr. Seksan Pluemwong)



บริษัท อีสเทิร์นไทยคอนซัลติ้ง 1992 จำกัด

Approved By.....

(MS. THANATPORN KLINSOPON)

04/04/2025

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Request No. LA68-R03102

Report No. R6803-2704

## TEST REPORT

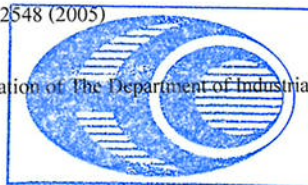
CUSTOMER : บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด  
ADDRESS : 7/491 หมู่ 6 ตำบลมาบตาพุด อำเภอปลวกแดง จังหวัดระยอง 21140  
SAMPLE SOURCE : บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด  
SAMPLE POINT : โรงเรียนบ้านภูไทร  
PARAMETER\* :  $L_{eq}$  1 hr.,  $L_{eq}$  24 hr.,  $L_{max}$ ,  $L_{90}$  &  $L_{dn}$  SAMPLE NO. : 05169  
DETERMINATION METHOD : ISO 1996-1:2016 MEASURING DATE : 15-16/03/2025  
INSTRUMENT : Integrated Sound Level Meter RECEIVED DATE : 22/03/2025  
S/N 00230988 : Class I REPORTED DATE : 04/04/2025

TIME \ DATE	15-16/03/2025 ( $L_{eq}$ )	15-16/03/2025 ( $L_{max}$ )	15-16/03/2025 ( $L_{90}$ )	UNIT
11:00 - 12:00 <sup>3</sup>	48.6	71.4	40.3	dB(A)
12:00 - 13:00	45.8	67.6	40.6	dB(A)
13:00 - 14:00	46.1	64.5	42.6	dB(A)
14:00 - 15:00	49.6	67.4	46.6	dB(A)
15:00 - 16:00	50.7	68.9	47.1	dB(A)
16:00 - 17:00	53.2	69.1	48.0	dB(A)
17:00 - 18:00	50.9	68.5	47.1	dB(A)
18:00 - 19:00	50.9	79.5	47.9	dB(A)
19:00 - 20:00	49.1	60.6	47.5	dB(A)
20:00 - 21:00	49.1	75.3	47.1	dB(A)
21:00 - 22:00	49.1	61.1	47.0	dB(A)
22:00 - 23:00	49.1	64.6	47.4	dB(A)
23:00 - 00:00	49.3	58.0	47.5	dB(A)
00:00 - 01:00	48.6	57.6	46.7	dB(A)
01:00 - 02:00	48.5	56.5	46.2	dB(A)
02:00 - 03:00	48.3	55.6	47.0	dB(A)
03:00 - 04:00	49.3	61.4	48.3	dB(A)
04:00 - 05:00	49.5	69.8	48.4	dB(A)
05:00 - 06:00	50.2	61.3	49.1	dB(A)
06:00 - 07:00	51.2	69.1	49.5	dB(A)
07:00 - 08:00	53.4	70.4	49.3	dB(A)
08:00 - 09:00	53.0	80.3	49.8	dB(A)
09:00 - 10:00	52.5	82.8	49.8	dB(A)
10:00 - 11:00	51.5	73.7	49.1	dB(A)
$L_{eq}$ 24 hr.	50.3	-	-	dB(A)
$L_{dn}$	56.1	-	-	dB(A)
Maximum	-	82.8	-	dB(A)
$L_{90}$	-	-	47.4	dB(A)
Standard	70 <sup>1/1,2</sup>	115 <sup>1/1,2</sup>	-	dB(A)

REMARK : <sup>1/1</sup> Notification of Office of The National Environmental Board Volume 15 B.E. 2540 (1997)<sup>1/2</sup> Notification of Ministry of the Industry B.E. 2548 (2005)<sup>1/3</sup> Start Time

\* Parameter Outside The Scope of The Registration of The Department of Industrial Works.

(Measurement By Mr. Seksan Pluemwong)



บริษัท อีสเทิร์นไทยคอนซัลติ้ง 1992 จำกัด

Approved By.....

(MS. THANATPORN KLINSOPON)

04/04/2025

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Request No. LA68-R03102

Report No. R6803-2705

## TEST REPORT

CUSTOMER : บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด  
ADDRESS : 7/491 หมู่ 6 ตำบลมาบตาพุด อ.เมืองระยอง จ.ระยอง 21140  
SAMPLE SOURCE : บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด  
SAMPLE POINT : โรงเรียนบ้านฉาง  
PARAMETER\* :  $L_{eq}$  1 hr.,  $L_{eq}$  24 hr.,  $L_{max}$ ,  $L_{90}$  &  $L_{dn}$  SAMPLE NO. : 05170  
DETERMINATION METHOD : ISO 1996-1:2016 MEASURING DATE : 16-17/03/2025  
INSTRUMENT : Integrated Sound Level Meter RECEIVED DATE : 22/03/2025  
S/N 00230988 : Class I REPORTED DATE : 04/04/2025

TIME \ DATE	16-17/03/2025 ( $L_{eq}$ )	16-17/03/2025 ( $L_{max}$ )	16-17/03/2025 ( $L_{90}$ )	UNIT
11:00 - 12:00 <sup>3</sup>	53.2	79.9	49.0	dB(A)
12:00 - 13:00	51.2	68.4	49.5	dB(A)
13:00 - 14:00	51.4	67.4	49.6	dB(A)
14:00 - 15:00	51.8	70.3	49.9	dB(A)
15:00 - 16:00	50.1	63.1	48.7	dB(A)
16:00 - 17:00	51.9	69.0	48.3	dB(A)
17:00 - 18:00	51.6	73.2	48.4	dB(A)
18:00 - 19:00	52.1	76.8	49.6	dB(A)
19:00 - 20:00	49.7	65.4	48.6	dB(A)
20:00 - 21:00	49.7	64.8	48.6	dB(A)
21:00 - 22:00	49.7	65.7	48.4	dB(A)
22:00 - 23:00	49.3	65.1	48.3	dB(A)
23:00 - 00:00	49.2	64.1	48.2	dB(A)
00:00 - 01:00	49.0	66.0	47.8	dB(A)
01:00 - 02:00	48.8	65.1	47.6	dB(A)
02:00 - 03:00	48.5	65.6	47.5	dB(A)
03:00 - 04:00	48.3	61.4	47.4	dB(A)
04:00 - 05:00	48.3	67.8	47.3	dB(A)
05:00 - 06:00	50.1	69.5	48.3	dB(A)
06:00 - 07:00	52.0	66.9	49.2	dB(A)
07:00 - 08:00	56.5	78.4	50.7	dB(A)
08:00 - 09:00	57.5	83.8	48.7	dB(A)
09:00 - 10:00	54.9	77.1	51.7	dB(A)
10:00 - 11:00	54.9	75.2	51.2	dB(A)
$L_{eq}$ 24 hr.	52.1	-	-	dB(A)
$L_{dn}$	56.6	-	-	dB(A)
Maximum	-	83.8	-	dB(A)
$L_{90}$	-	-	48.6	dB(A)
Standard	70 <sup>1/,2</sup>	115 <sup>1/,2</sup>	-	dB(A)

REMARK : <sup>1/</sup> Notification of Office of The National Environmental Board Volume 15 B.E. 2540 (1997)<sup>2/</sup> Notification of Ministry of the Industry B.E. 2548 (2005)<sup>3/</sup> Start Time\* Parameter Outside The Scope of The Registration of The Department of Industrial Works.  
(Measurement By Mr. Seksan Pluemwong)

บริษัท อีสเทิร์นไทยคอนซัลติ้ง 1992 จำกัด

Approved By.....

(MS. THANATPORN KLINSOPON)

04/04/2025

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Request No. LA68-R03102

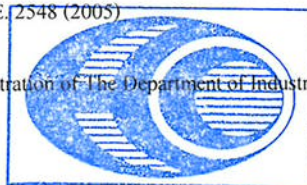
Report No. R6803-2706

## TEST REPORT

CUSTOMER : บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด  
ADDRESS : 7/491 หมู่ 6 ตำบลมาบยางพร อำเภอปลวกแดง จังหวัดระยอง 21140  
SAMPLE SOURCE : บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด  
SAMPLE POINT : โรงเรียนบ้านภูไทร  
PARAMETER\* :  $L_{eq}$  1 hr.,  $L_{eq}$  24 hr.,  $L_{max}$ ,  $L_{90}$  &  $L_{dn}$   
DETERMINATION METHOD : ISO 1996-1:2016  
INSTRUMENT : Integrated Sound Level Meter  
S/N 00230988 : Class 1

SAMPLE NO. : 05171  
MEASURING DATE : 17-18/03/2025  
RECEIVED DATE : 22/03/2025  
REPORTED DATE : 04/04/2025

TIME \ DATE	17-18/03/2025 ( $L_{eq}$ )	17-18/03/2025 ( $L_{max}$ )	17-18/03/2025 ( $L_{90}$ )	UNIT
11:00 - 12:00 <sup>/3</sup>	61.3	82.7	54.6	dB(A)
12:00 - 13:00	61.5	86.8	52.4	dB(A)
13:00 - 14:00	55.2	76.6	42.0	dB(A)
14:00 - 15:00	55.6	84.4	44.5	dB(A)
15:00 - 16:00	57.8	81.6	49.6	dB(A)
16:00 - 17:00	52.3	79.8	45.0	dB(A)
17:00 - 18:00	47.2	67.7	42.5	dB(A)
18:00 - 19:00	49.1	69.5	46.3	dB(A)
19:00 - 20:00	45.7	68.7	42.8	dB(A)
20:00 - 21:00	45.1	68.4	42.6	dB(A)
21:00 - 22:00	45.1	69.0	41.8	dB(A)
22:00 - 23:00	43.7	68.7	41.2	dB(A)
23:00 - 00:00	43.9	64.8	41.2	dB(A)
00:00 - 01:00	42.0	65.3	40.1	dB(A)
01:00 - 02:00	43.6	66.1	40.1	dB(A)
02:00 - 03:00	42.4	53.1	39.3	dB(A)
03:00 - 04:00	41.9	66.7	39.6	dB(A)
04:00 - 05:00	42.9	66.2	39.9	dB(A)
05:00 - 06:00	48.8	71.1	40.9	dB(A)
06:00 - 07:00	55.7	74.8	49.8	dB(A)
07:00 - 08:00	61.0	78.5	53.7	dB(A)
08:00 - 09:00	55.0	83.5	44.7	dB(A)
09:00 - 10:00	55.0	76.8	46.7	dB(A)
10:00 - 11:00	56.7	84.9	48.5	dB(A)
$L_{eq}$ 24 hr.	54.9	-	-	dB(A)
$L_{dn}$	57.2	-	-	dB(A)
Maximum	-	86.8	-	dB(A)
$L_{90}$	-	-	42.6	dB(A)
Standard	70 <sup>/1, /2</sup>	115 <sup>/1, /2</sup>	-	dB(A)

REMARK : <sup>/1</sup> Notification of Office of The National Environmental Board Volume 15 B.E. 2540 (1997)<sup>/2</sup> Notification of Ministry of the Industry B.E. 2548 (2005)<sup>/3</sup> Start Time\* Parameter Outside The Scope of The Registration of The Department of Industrial Works.  
(Measurement By Mr. Seksan Pluemwong)

บริษัท อีสเทิร์นไทยคอนซัลติ้ง 1992 จำกัด

Approved By.....

(MS. THANATPORN KLINSOPON)

04/04/2025

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Request No. LA68-R03102

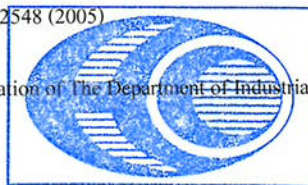
Report No. R6803-2707

## TEST REPORT

CUSTOMER : บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด  
ADDRESS : 7/491 หมู่ 6 ตำบลมาบยางพร อำเภอปลวกแดง จังหวัดระยอง 21140  
SAMPLE SOURCE : บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด  
SAMPLE POINT : โรงเรียนบ้านภูไทร  
PARAMETER\* :  $L_{eq}$  1 hr.,  $L_{eq}$  24 hr.,  $L_{max}$ ,  $L_{90}$  &  $L_{dn}$   
DETERMINATION METHOD : ISO 1996-1:2016  
INSTRUMENT : Integrated Sound Level Meter  
S/N 00230988 : Class 1

SAMPLE NO. : 05172  
MEASURING DATE : 18-19/03/2025  
RECEIVED DATE : 22/03/2025  
REPORTED DATE : 04/04/2025

TIME \ DATE	18-19/03/2025 ( $L_{eq}$ )	18-19/03/2025 ( $L_{max}$ )	18-19/03/2025 ( $L_{90}$ )	UNIT
11:00 - 12:00 <sup>3</sup>	61.4	92.0	53.6	dB(A)
12:00 - 13:00	60.4	89.3	51.7	dB(A)
13:00 - 14:00	50.1	74.2	39.2	dB(A)
14:00 - 15:00	59.8	92.2	45.6	dB(A)
15:00 - 16:00	54.9	75.6	45.6	dB(A)
16:00 - 17:00	66.6	99.8	59.2	dB(A)
17:00 - 18:00	52.4	77.7	46.2	dB(A)
18:00 - 19:00	51.3	66.9	48.0	dB(A)
19:00 - 20:00	47.2	59.1	45.8	dB(A)
20:00 - 21:00	47.4	64.4	45.3	dB(A)
21:00 - 22:00	46.6	55.9	45.2	dB(A)
22:00 - 23:00	46.3	61.5	44.7	dB(A)
23:00 - 00:00	46.0	65.7	44.4	dB(A)
00:00 - 01:00	45.6	63.2	44.0	dB(A)
01:00 - 02:00	46.4	60.7	45.4	dB(A)
02:00 - 03:00	46.8	65.8	45.4	dB(A)
03:00 - 04:00	45.6	65.0	43.8	dB(A)
04:00 - 05:00	44.8	65.6	43.6	dB(A)
05:00 - 06:00	48.9	75.1	44.9	dB(A)
06:00 - 07:00	55.8	74.5	50.8	dB(A)
07:00 - 08:00	60.7	76.4	54.1	dB(A)
08:00 - 09:00	51.9	73.5	47.6	dB(A)
09:00 - 10:00	58.3	77.2	52.4	dB(A)
10:00 - 11:00	53.6	75.2	48.3	dB(A)
$L_{eq}$ 24 hr.	56.9	-	-	dB(A)
$L_{dn}$	58.9	-	-	dB(A)
Maximum	-	99.8	-	dB(A)
$L_{90}$	-	-	45.6	dB(A)
Standard	70 <sup>1/1,2</sup>	115 <sup>1/1,2</sup>	-	dB(A)

REMARK : <sup>1/</sup> Notification of Office of The National Environmental Board Volume 15 B.E. 2540 (1997)<sup>2/</sup> Notification of Ministry of the Industry B.E. 2548 (2005)<sup>3/</sup> Start Time\* Parameter Outside The Scope of The Registration of The Department of Industrial Works.  
(Measurement By Mr. Seksan Pluemwong)

บริษัท อีสเทิร์นไทยคอนซัลติ้ง 1992 จำกัด

Approved By.....

(MS. THANATPORN KLINSOPON)

04/04/2025

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Request No. LA68-R03102

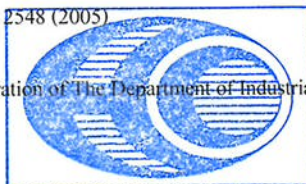
Report No. R6803-2708

## TEST REPORT

CUSTOMER : บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด  
ADDRESS : 7/491 หมู่ 6 ตำบลมาบยางพร อำเภอลวกแดง จังหวัดระยอง 21140  
SAMPLE SOURCE : บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด  
SAMPLE POINT : โรงเรียนบ้านภูไทร  
PARAMETER\* :  $L_{eq}$  1 hr.,  $L_{eq}$  24 hr.,  $L_{max}$ ,  $L_{90}$  &  $L_{dn}$   
DETERMINATION METHOD : ISO 1996-1:2016  
INSTRUMENT : Integrated Sound Level Meter  
S/N 00230988 : Class 1

SAMPLE NO. : 05173  
MEASURING DATE : 19-20/03/2025  
RECEIVED DATE : 22/03/2025  
REPORTED DATE : 04/04/2025

TIME \ DATE	19-20/03/2025 ( $L_{eq}$ )	19-20/03/2025 ( $L_{max}$ )	19-20/03/2025 ( $L_{90}$ )	UNIT
11:00 - 12:00 <sup>3</sup>	62.2	85.1	55.4	dB(A)
12:00 - 13:00	61.3	89.3	53.8	dB(A)
13:00 - 14:00	52.8	79.2	46.1	dB(A)
14:00 - 15:00	55.3	78.7	47.5	dB(A)
15:00 - 16:00	55.5	83.6	46.7	dB(A)
16:00 - 17:00	50.7	78.1	42.2	dB(A)
17:00 - 18:00	47.2	67.8	42.9	dB(A)
18:00 - 19:00	52.5	71.1	49.0	dB(A)
19:00 - 20:00	47.2	69.0	45.1	dB(A)
20:00 - 21:00	46.7	66.1	44.9	dB(A)
21:00 - 22:00	46.2	67.4	44.4	dB(A)
22:00 - 23:00	45.8	65.0	44.1	dB(A)
23:00 - 00:00	45.7	65.9	43.9	dB(A)
00:00 - 01:00	45.1	64.8	43.1	dB(A)
01:00 - 02:00	43.9	65.8	42.6	dB(A)
02:00 - 03:00	44.8	69.1	42.2	dB(A)
03:00 - 04:00	43.9	64.2	41.9	dB(A)
04:00 - 05:00	44.7	53.3	42.2	dB(A)
05:00 - 06:00	46.1	70.9	43.2	dB(A)
06:00 - 07:00	54.7	73.3	50.3	dB(A)
07:00 - 08:00	61.7	80.3	54.5	dB(A)
08:00 - 09:00	58.5	88.0	47.8	dB(A)
09:00 - 10:00	56.7	82.3	51.0	dB(A)
10:00 - 11:00	52.7	74.2	47.9	dB(A)
$L_{eq}$ 24 hr.	55.1	-	-	dB(A)
$L_{dn}$	57.3	-	-	dB(A)
Maximum	-	89.3	-	dB(A)
$L_{90}$	-	-	44.9	dB(A)
Standard	70 <sup>1/2</sup>	115 <sup>1/2</sup>	-	dB(A)

REMARK : <sup>1/</sup> Notification of Office of The National Environmental Board Volume 15 B.E. 2540 (1997)<sup>2/</sup> Notification of Ministry of the Industry B.E. 2548 (2005)<sup>3/</sup> Start Time\* Parameter Outside The Scope of The Registration of The Department of Industrial Works.  
(Measurement By Mr. Seksan Pluemwong)

บริษัท อีสเทิร์นไทยคอนซัลติ้ง 1992 จำกัด

Approved By.....

(MS. THANATPORN KLINSOPON)

04/04/2025

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Request No. LA68-R03102

Report No. R6803-2709

## TEST REPORT

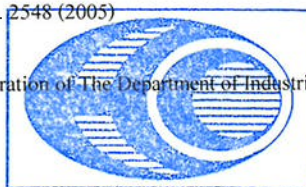
CUSTOMER : บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด  
ADDRESS : 7/491 หมู่ 6 ตำบลมาบตาพุด อำเภอปลวกแดง จังหวัดระยอง 21140  
SAMPLE SOURCE : บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด  
SAMPLE POINT : โรงเรียนบ้านกุโบร์  
PARAMETER\* :  $L_{eq}$  1 hr.,  $L_{eq}$  24 hr.,  $L_{max}$ ,  $L_{90}$  &  $L_{dn}$  SAMPLE NO. : 05174  
DETERMINATION METHOD : ISO 1996-1:2016 MEASURING DATE : 20-21/03/2025  
INSTRUMENT : Integrated Sound Level Meter RECEIVED DATE : 22/03/2025  
S/N 00230988 : Class I REPORTED DATE : 04/04/2025

TIME \ DATE	20-21/03/2025 ( $L_{eq}$ )	20-21/03/2025 ( $L_{max}$ )	20-21/03/2025 ( $L_{90}$ )	UNIT
11:00 - 12:00 <sup>3</sup>	61.7	84.3	55.6	dB(A)
12:00 - 13:00	59.6	85.9	53.1	dB(A)
13:00 - 14:00	53.3	85.5	47.2	dB(A)
14:00 - 15:00	51.4	80.8	45.4	dB(A)
15:00 - 16:00	56.0	75.8	46.2	dB(A)
16:00 - 17:00	51.3	80.1	42.1	dB(A)
17:00 - 18:00	48.6	73.0	42.3	dB(A)
18:00 - 19:00	50.0	74.1	45.8	dB(A)
19:00 - 20:00	44.7	65.6	42.6	dB(A)
20:00 - 21:00	44.8	67.3	42.0	dB(A)
21:00 - 22:00	43.1	65.2	41.4	dB(A)
22:00 - 23:00	43.4	64.4	41.4	dB(A)
23:00 - 00:00	42.2	63.4	40.4	dB(A)
00:00 - 01:00	42.4	65.5	39.6	dB(A)
01:00 - 02:00	40.8	62.3	38.7	dB(A)
02:00 - 03:00	39.0	51.6	38.3	dB(A)
03:00 - 04:00	40.2	60.7	39.0	dB(A)
04:00 - 05:00	41.5	68.9	39.6	dB(A)
05:00 - 06:00	43.9	67.3	40.5	dB(A)
06:00 - 07:00	56.4	70.2	50.5	dB(A)
07:00 - 08:00	61.7	85.1	54.1	dB(A)
08:00 - 09:00	59.8	86.8	47.0	dB(A)
09:00 - 10:00	58.1	90.3	49.7	dB(A)
10:00 - 11:00	52.9	74.7	47.4	dB(A)
$L_{eq}$ 24 hr.	54.9	-	-	dB(A)
$L_{dn}$	57.1	-	-	dB(A)
Maximum	-	90.3	-	dB(A)
$L_{90}$	-	-	42.3	dB(A)
Standard	70 <sup>1/1,2</sup>	115 <sup>1/1,2</sup>	-	dB(A)

REMARK : <sup>1/1</sup> Notification of Office of The National Environmental Board Volume 15 B.E. 2540 (1997)<sup>1/2</sup> Notification of Ministry of the Industry B.E. 2548 (2005)<sup>1/3</sup> Start Time

\* Parameter Outside The Scope of The Registration of The Department of Industrial Works.

(Measurement By Mr. Seksan Pluemwong)



บริษัท อีสเทิร์นไทยคอนซัลติ้ง 1992 จำกัด

Approved By.....

(MS. THANATPORN KLINSOPON)

04/04/2025

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Request No. LA68-R03102

Report No. R6803-2717

## TEST REPORT

CUSTOMER : บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด  
ADDRESS : 7/491 หมู่ 6 ตำบลมาบยางพร อำเภอปลวกแดง จังหวัดระยอง 21140  
SAMPLE SOURCE : บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด  
SAMPLE POINT : วัดพนานิคม  
PARAMETER\* :  $L_{eq}$  1 hr.,  $L_{eq}$  24 hr.,  $L_{max}$ ,  $L_{90}$  &  $L_{dn}$   
DETERMINATION METHOD : ISO 1996-1:2016  
INSTRUMENT : Integrated Sound Level Meter  
S/N 01120943 : Class 1

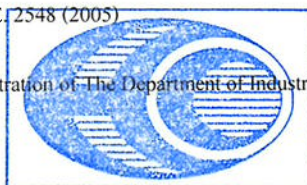
SAMPLE NO. : 05182  
MEASURING DATE : 14-15/03/2025  
RECEIVED DATE : 22/03/2025  
REPORTED DATE : 04/04/2025

TIME \ DATE	14-15/03/2025 ( $L_{eq}$ )	14-15/03/2025 ( $L_{max}$ )	14-15/03/2025 ( $L_{90}$ )	UNIT
11:00 - 12:00 <sup>1/3</sup>	52.9	66.4	51.8	dB(A)
12:00 - 13:00	49.8	67.5	47.1	dB(A)
13:00 - 14:00	50.4	70.1	45.3	dB(A)
14:00 - 15:00	56.9	87.5	45.9	dB(A)
15:00 - 16:00	66.8	102.3	56.3	dB(A)
16:00 - 17:00	54.9	77.6	50.1	dB(A)
17:00 - 18:00	51.7	76.0	46.6	dB(A)
18:00 - 19:00	54.1	76.4	44.9	dB(A)
19:00 - 20:00	51.9	69.7	47.7	dB(A)
20:00 - 21:00	50.6	68.2	46.7	dB(A)
21:00 - 22:00	51.0	79.8	43.6	dB(A)
22:00 - 23:00	46.4	65.2	42.4	dB(A)
23:00 - 00:00	46.6	71.5	41.5	dB(A)
00:00 - 01:00	56.8	83.4	39.9	dB(A)
01:00 - 02:00	41.7	65.9	38.6	dB(A)
02:00 - 03:00	45.4	68.1	38.5	dB(A)
03:00 - 04:00	44.6	69.6	36.8	dB(A)
04:00 - 05:00	46.1	70.9	38.0	dB(A)
05:00 - 06:00	54.5	81.5	42.0	dB(A)
06:00 - 07:00	54.2	78.0	46.6	dB(A)
07:00 - 08:00	54.3	77.7	48.4	dB(A)
08:00 - 09:00	51.9	76.4	44.9	dB(A)
09:00 - 10:00	52.7	80.7	44.1	dB(A)
10:00 - 11:00	51.5	69.6	43.8	dB(A)
$L_{eq}$ 24 hr.	55.6	-	-	dB(A)
$L_{dn}$	59.2	-	-	dB(A)
Maximum	-	102.3	-	dB(A)
$L_{90}$	-	-	44.9	dB(A)
Standard	70 <sup>1/1,2</sup>	115 <sup>1/1,2</sup>	-	dB(A)

REMARK : <sup>1/1</sup> Notification of Office of The National Environmental Board Volume 15 B.E. 2540 (1997)<sup>1/2</sup> Notification of Ministry of the Industry B.E. 2548 (2005)<sup>1/3</sup> Start Time

\* Parameter Outside The Scope of The Registration of The Department of Industrial Works.

(Measurement By Mr. Seksan Pluemwong)



บริษัท อีสเทิร์นไทยคอนซัลติ้ง 1992 จำกัด

Approved By.....

(MS. THANATPORN KLINSOPON)

04/04/2025

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Request No. LA68-R03102

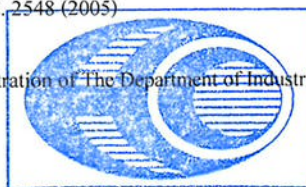
Report No. R6803-2718

## TEST REPORT

CUSTOMER : บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด  
ADDRESS : 7/491 หมู่ 6 ตำบลมาบยางพร อำเภอปลวกแดง จังหวัดระยอง 21140  
SAMPLE SOURCE : บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด  
SAMPLE POINT : วัดพนานิคม  
PARAMETER\* :  $L_{eq}$  1 hr.,  $L_{eq}$  24 hr.,  $L_{max}$ ,  $L_{90}$  &  $L_{dn}$   
DETERMINATION METHOD : ISO 1996-1:2016  
INSTRUMENT : Integrated Sound Level Meter  
S/N 01120943 : Class 1

SAMPLE NO. : 05183  
MEASURING DATE : 15-16/03/2025  
RECEIVED DATE : 22/03/2025  
REPORTED DATE : 04/04/2025

TIME \ DATE	15-16/03/2025 ( $L_{eq}$ )	15-16/03/2025 ( $L_{max}$ )	15-16/03/2025 ( $L_{90}$ )	UNIT
11:00 - 12:00 <sup>3</sup>	51.8	74.2	44.8	dB(A)
12:00 - 13:00	66.4	110.5	48.4	dB(A)
13:00 - 14:00	53.5	70.2	48.6	dB(A)
14:00 - 15:00	55.0	76.2	49.9	dB(A)
15:00 - 16:00	55.8	76.1	49.9	dB(A)
16:00 - 17:00	67.4	98.4	49.0	dB(A)
17:00 - 18:00	55.3	81.8	50.7	dB(A)
18:00 - 19:00	54.3	75.2	50.5	dB(A)
19:00 - 20:00	56.9	84.0	50.9	dB(A)
20:00 - 21:00	53.0	67.7	50.2	dB(A)
21:00 - 22:00	51.2	72.7	49.2	dB(A)
22:00 - 23:00	50.5	68.5	48.7	dB(A)
23:00 - 00:00	49.9	71.6	48.2	dB(A)
00:00 - 01:00	50.5	75.4	48.2	dB(A)
01:00 - 02:00	49.5	70.6	47.8	dB(A)
02:00 - 03:00	49.3	68.6	47.6	dB(A)
03:00 - 04:00	48.5	75.2	47.3	dB(A)
04:00 - 05:00	49.7	69.6	47.2	dB(A)
05:00 - 06:00	51.7	70.7	48.3	dB(A)
06:00 - 07:00	60.4	91.9	52.4	dB(A)
07:00 - 08:00	55.8	72.7	51.8	dB(A)
08:00 - 09:00	59.2	92.1	51.0	dB(A)
09:00 - 10:00	56.5	76.7	50.7	dB(A)
10:00 - 11:00	55.5	77.2	49.4	dB(A)
$L_{eq}$ 24 hr.	58.3	-	-	dB(A)
$L_{dn}$	61.4	-	-	dB(A)
Maximum	-	110.5	-	dB(A)
$L_{90}$	-	-	49.0	dB(A)
Standard	70 <sup>1/,2</sup>	115 <sup>1/,2</sup>	-	dB(A)

REMARK : <sup>1/</sup> Notification of Office of The National Environmental Board Volume 15 B.E. 2540 (1997)<sup>2/</sup> Notification of Ministry of the Industry B.E. 2548 (2005)<sup>3/</sup> Start Time\* Parameter Outside The Scope of The Registration of The Department of Industrial Works.  
(Measurement By Mr. Seksan Pluemwong)

บริษัท อีสเทิร์นไทยคอนซัลติ้ง 1992 จำกัด

Approved By.....  
(MS. THANATPORN KLINSOPON)

04/04/2025

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Request No. LA68-R03102

Report No. R6803-2719

## TEST REPORT

CUSTOMER : บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด  
ADDRESS : 7/491 หมู่ 6 ตำบลมาบยางพร อำเภอปลวกแดง จังหวัดระยอง 21140  
SAMPLE SOURCE : บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด  
SAMPLE POINT : วัดพนานิคม  
PARAMETER\* :  $L_{eq}$  1 hr.,  $L_{eq}$  24 hr.,  $L_{max}$ ,  $L_{90}$  &  $L_{dn}$   
DETERMINATION METHOD : ISO 1996-1:2016  
INSTRUMENT : Integrated Sound Level Meter  
S/N 01120943 : Class 1

SAMPLE NO. : 05184  
MEASURING DATE : 16-17/03/2025  
RECEIVED DATE : 22/03/2025  
REPORTED DATE : 04/04/2025

TIME \ DATE	16-17/03/2025 ( $L_{eq}$ )	16-17/03/2025 ( $L_{max}$ )	16-17/03/2025 ( $L_{90}$ )	UNIT
11:00 - 12:00 <sup>1/3</sup>	50.7	71.0	47.3	dB(A)
12:00 - 13:00	49.9	67.5	47.0	dB(A)
13:00 - 14:00	54.3	75.1	48.7	dB(A)
14:00 - 15:00	52.5	75.7	48.8	dB(A)
15:00 - 16:00	52.8	72.2	48.6	dB(A)
16:00 - 17:00	53.0	74.4	48.6	dB(A)
17:00 - 18:00	52.3	75.3	48.2	dB(A)
18:00 - 19:00	53.6	75.9	48.3	dB(A)
19:00 - 20:00	52.8	75.3	48.1	dB(A)
20:00 - 21:00	49.9	67.9	47.9	dB(A)
21:00 - 22:00	54.1	78.4	47.5	dB(A)
22:00 - 23:00	49.0	64.2	47.4	dB(A)
23:00 - 00:00	49.0	68.9	47.2	dB(A)
00:00 - 01:00	50.7	76.7	46.6	dB(A)
01:00 - 02:00	46.9	57.5	46.3	dB(A)
02:00 - 03:00	48.0	73.7	46.2	dB(A)
03:00 - 04:00	47.2	64.8	46.1	dB(A)
04:00 - 05:00	47.8	71.8	46.1	dB(A)
05:00 - 06:00	53.6	78.8	46.5	dB(A)
06:00 - 07:00	53.5	76.1	49.1	dB(A)
07:00 - 08:00	53.9	71.9	49.4	dB(A)
08:00 - 09:00	54.2	80.4	48.6	dB(A)
09:00 - 10:00	52.5	73.9	48.0	dB(A)
10:00 - 11:00	50.5	72.3	47.5	dB(A)
$L_{eq}$ 24 hr.	51.9	-	-	dB(A)
$L_{dn}$	57.1	-	-	dB(A)
Maximum	-	80.4	-	dB(A)
$L_{90}$	-	-	47.5	dB(A)
Standard	70 <sup>1/1,2</sup>	115 <sup>1/1,2</sup>	-	dB(A)

REMARK : <sup>1/1</sup> Notification of Office of The National Environmental Board Volume 15 B.E. 2540 (1997)<sup>1/2</sup> Notification of Ministry of the Industry B.E. 2548 (2005)<sup>1/3</sup> Start Time

\* Parameter Outside The Scope of The Registration of The Department of Industrial Works.

(Measurement By Mr. Seksan Pluemwong)



บริษัท อีสเทิร์นไทยคอนซัลติ้ง 1992 จำกัด

Approved By.....  
(MS. THANATPORN KLINSOPON)

04/04/2025

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Request No. LA68-R03102

Report No. R6803-2720

## TEST REPORT

CUSTOMER : บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด  
ADDRESS : 7/491 หมู่ 6 ตำบลมาบตาพุด อำเภอปลวกแดง จังหวัดระยอง 21140  
SAMPLE SOURCE : บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด  
SAMPLE POINT : วัดพนานิคม  
PARAMETER\* :  $L_{eq}$  1 hr.,  $L_{eq}$  24 hr.,  $L_{max}$ ,  $L_{90}$  &  $L_{dn}$   
DETERMINATION METHOD : ISO 1996-1:2016  
INSTRUMENT : Integrated Sound Level Meter  
S/N 01120943 : Class 1

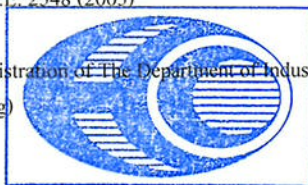
SAMPLE NO. : 05185  
MEASURING DATE : 18-19/03/2025  
RECEIVED DATE : 22/03/2025  
REPORTED DATE : 04/04/2025

TIME \ DATE	18-19/03/2025 ( $L_{eq}$ )	18-19/03/2025 ( $L_{max}$ )	18-19/03/2025 ( $L_{90}$ )	UNIT
12:00 - 13:00 <sup>1/3</sup>	49.7	67.1	46.1	dB(A)
13:00 - 14:00	50.3	67.9	46.5	dB(A)
14:00 - 15:00	49.2	68.5	46.0	dB(A)
15:00 - 16:00	51.5	69.2	47.9	dB(A)
16:00 - 17:00	52.4	75.3	48.1	dB(A)
17:00 - 18:00	54.3	71.2	48.7	dB(A)
18:00 - 19:00	55.2	72.8	51.2	dB(A)
19:00 - 20:00	53.0	79.1	48.1	dB(A)
20:00 - 21:00	50.3	69.6	48.0	dB(A)
21:00 - 22:00	50.0	72.1	46.6	dB(A)
22:00 - 23:00	47.5	65.6	45.3	dB(A)
23:00 - 00:00	48.6	73.4	45.5	dB(A)
00:00 - 01:00	47.3	65.7	45.2	dB(A)
01:00 - 02:00	48.0	71.2	45.0	dB(A)
02:00 - 03:00	46.3	57.2	44.9	dB(A)
03:00 - 04:00	49.0	71.7	45.2	dB(A)
04:00 - 05:00	47.9	70.9	44.8	dB(A)
05:00 - 06:00	54.1	77.5	46.2	dB(A)
06:00 - 07:00	56.8	74.2	53.1	dB(A)
07:00 - 08:00	60.3	98.5	50.8	dB(A)
08:00 - 09:00	58.3	94.4	49.1	dB(A)
09:00 - 10:00	51.1	73.5	47.3	dB(A)
10:00 - 11:00	49.9	66.6	46.8	dB(A)
11:00 - 12:00	49.5	67.2	46.4	dB(A)
$L_{eq}$ 24 hr.	53.0	-	-	dB(A)
$L_{dn}$	58.0	-	-	dB(A)
Maximum	-	98.5	-	dB(A)
$L_{90}$	-	-	46.5	dB(A)
Standard	70 <sup>1/1, 2</sup>	115 <sup>1/1, 2</sup>	-	dB(A)

REMARK : <sup>1/1</sup> Notification of Office of The National Environmental Board Volume 15 B.E. 2540 (1997)<sup>1/2</sup> Notification of Ministry of the Industry B.E. 2548 (2005)<sup>1/3</sup> Start Time

\* Parameter Outside The Scope of The Registration of The Department of Industrial Works.

(Measurement By Mr. Seksan Pluemwong)



Approved By.....

(MS. THANATPORN KLINSOPON)

04/04/2025

บริษัท อีสเทิร์นไทยคอนซัลติ้ง 1992 จำกัด  
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Request No. LA68-R03102

Report No. R6803-2721

## TEST REPORT

CUSTOMER : บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด  
 ADDRESS : 7/491 หมู่ 6 ตำบลมาบตาพุด อำเภอปลวกแดง จังหวัดระยอง 21140  
 SAMPLE SOURCE : บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด  
 SAMPLE POINT : วัดพนานิคม  
 PARAMETER\* :  $L_{eq}$  1 hr.,  $L_{eq}$  24 hr.,  $L_{max}$ ,  $L_{90}$  &  $L_{dn}$   
 DETERMINATION METHOD : ISO 1996-1:2016  
 INSTRUMENT : Integrated Sound Level Meter  
 S/N 01120943 : Class 1

SAMPLE NO. : 05186  
 MEASURING DATE : 19-20/03/2025  
 RECEIVED DATE : 22/03/2025  
 REPORTED DATE : 04/04/2025

TIME \ DATE	19-20/03/2025 ( $L_{eq}$ )	19-20/03/2025 ( $L_{max}$ )	19-20/03/2025 ( $L_{90}$ )	UNIT
12:00 - 13:00 <sup>1/3</sup>	54.1	82.0	49.2	dB(A)
13:00 - 14:00	52.3	70.4	50.0	dB(A)
14:00 - 15:00	54.2	76.9	49.6	dB(A)
15:00 - 16:00	51.6	73.5	49.7	dB(A)
16:00 - 17:00	51.3	68.0	49.5	dB(A)
17:00 - 18:00	51.5	71.8	49.3	dB(A)
18:00 - 19:00	52.7	73.1	50.3	dB(A)
19:00 - 20:00	57.0	79.1	52.8	dB(A)
20:00 - 21:00	54.3	71.3	52.0	dB(A)
21:00 - 22:00	53.2	72.0	50.5	dB(A)
22:00 - 23:00	51.9	66.9	50.1	dB(A)
23:00 - 00:00	51.0	65.4	49.9	dB(A)
00:00 - 01:00	51.1	65.7	50.0	dB(A)
01:00 - 02:00	51.4	73.4	49.7	dB(A)
02:00 - 03:00	50.9	68.7	49.7	dB(A)
03:00 - 04:00	51.8	75.2	49.6	dB(A)
04:00 - 05:00	52.5	73.6	49.5	dB(A)
05:00 - 06:00	52.1	74.3	49.5	dB(A)
06:00 - 07:00	51.5	65.5	49.7	dB(A)
07:00 - 08:00	58.5	80.8	54.3	dB(A)
08:00 - 09:00	54.0	72.9	50.6	dB(A)
09:00 - 10:00	53.4	76.3	50.0	dB(A)
10:00 - 11:00	52.2	69.6	50.0	dB(A)
11:00 - 12:00	53.1	74.2	51.6	dB(A)
$L_{eq}$ 24 hr.	53.3	-	-	dB(A)
$L_{dn}$	58.5	-	-	dB(A)
Maximum	-	82.0	-	dB(A)
$L_{90}$	-	-	49.9	dB(A)
Standard	70 <sup>1/1,2</sup>	115 <sup>1/1,2</sup>	-	dB(A)

REMARK : <sup>1/1</sup> Notification of Office of The National Environmental Board Volume 15 B.E. 2540 (1997)<sup>1/2</sup> Notification of Ministry of the Industry B.E. 2548 (2005)<sup>1/3</sup> Start Time

\* Parameter Outside The Scope of The Registration of The Department of Industrial Works.

(Measurement By Mr. Seksan Pluemwong)



Approved By.....

(MS. THANATPORN KLINSOPON)

04/04/2025

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Request No. LA68-R03102

Report No. R6803-2722

## TEST REPORT

CUSTOMER : บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด  
ADDRESS : 7/491 หมู่ 6 ตำบลมาบตาพุด อำเภอปลวกแดง จังหวัดระยอง 21140  
SAMPLE SOURCE : บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด  
SAMPLE POINT : วัดพนานิคม  
PARAMETER\* :  $L_{eq}$  1 hr.,  $L_{eq}$  24 hr.,  $L_{max}$ ,  $L_{90}$  &  $L_{dn}$   
DETERMINATION METHOD : ISO 1996-1:2016  
INSTRUMENT : Integrated Sound Level Meter  
S/N 01120943 : Class 1

SAMPLE NO. : 05187  
MEASURING DATE : 20-21/03/2025  
RECEIVED DATE : 22/03/2025  
REPORTED DATE : 04/04/2025

TIME \ DATE	20-21/03/2025 ( $L_{eq}$ )	20-21/03/2025 ( $L_{max}$ )	20-21/03/2025 ( $L_{90}$ )	UNIT
12:00 - 13:00 <sup>3</sup>	54.7	76.0	53.2	dB(A)
13:00 - 14:00	54.5	77.4	52.3	dB(A)
14:00 - 15:00	54.2	73.0	52.2	dB(A)
15:00 - 16:00	54.4	76.9	52.2	dB(A)
16:00 - 17:00	53.7	71.5	52.2	dB(A)
17:00 - 18:00	54.6	75.7	52.2	dB(A)
18:00 - 19:00	54.8	81.8	52.3	dB(A)
19:00 - 20:00	53.2	64.1	52.3	dB(A)
20:00 - 21:00	53.1	64.9	52.4	dB(A)
21:00 - 22:00	53.4	68.4	52.7	dB(A)
22:00 - 23:00	53.5	63.9	52.7	dB(A)
23:00 - 00:00	54.1	72.1	52.8	dB(A)
00:00 - 01:00	53.0	69.8	52.4	dB(A)
01:00 - 02:00	53.2	69.7	52.3	dB(A)
02:00 - 03:00	53.0	59.6	52.5	dB(A)
03:00 - 04:00	54.1	74.7	52.5	dB(A)
04:00 - 05:00	53.7	73.8	52.6	dB(A)
05:00 - 06:00	54.7	71.3	52.6	dB(A)
06:00 - 07:00	56.8	77.4	53.8	dB(A)
07:00 - 08:00	55.6	73.4	53.4	dB(A)
08:00 - 09:00	54.6	68.7	53.1	dB(A)
09:00 - 10:00	53.6	71.0	52.4	dB(A)
10:00 - 11:00	53.6	73.1	52.3	dB(A)
11:00 - 12:00	54.1	74.2	52.1	dB(A)
$L_{eq}$ 24 hr.	54.2	-	-	dB(A)
$L_{dn}$	60.6	-	-	dB(A)
Maximum	-	81.8	-	dB(A)
$L_{90}$	-	-	52.4	dB(A)
Standard	70 <sup>1/,2</sup>	115 <sup>1/,2</sup>	-	dB(A)

REMARK : <sup>1/</sup> Notification of Office of The National Environmental Board Volume 15 B.E. 2540 (1997)<sup>2/</sup> Notification of Ministry of the Industry B.E. 2548 (2005)<sup>3/</sup> Start Time

\* Parameter Outside The Scope of The Registration of The Department of Industrial Works.

(Measurement By Mr. Seksan Pluemwong)



Approved By.....

(MS. THANATPORN KLINSOPON)

04/04/2025

บริษัท อีสเทิร์น ไทย คอนซัลติ้ง 1992 จำกัด  
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Request No. LA68-R03102

Report No. R6803-2723

## TEST REPORT

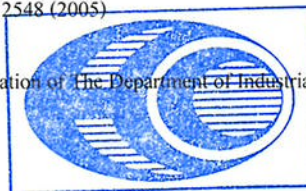
CUSTOMER : บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด  
ADDRESS : 7/491 หมู่ 6 ตำบลมาบตาพุด อำเภอปลวกแดง จังหวัดระยอง 21140  
SAMPLE SOURCE : บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด  
SAMPLE POINT : วัดพนานิคม  
PARAMETER\* :  $L_{eq}$  1 hr.,  $L_{eq}$  24 hr.,  $L_{max}$ ,  $L_{90}$  &  $L_{dn}$  SAMPLE NO. : 05188  
DETERMINATION METHOD : ISO 1996-1:2016 MEASURING DATE : 21-22/03/2025  
INSTRUMENT : Integrated Sound Level Meter RECEIVED DATE : 22/03/2025  
S/N 01120943 : Class I REPORTED DATE : 04/04/2025

TIME \ DATE	21-22/03/2025 ( $L_{eq}$ )	21-22/03/2025 ( $L_{max}$ )	21-22/03/2025 ( $L_{90}$ )	UNIT
12:00 - 13:00 <sup>3</sup>	53.4	71.8	52.2	dB(A)
13:00 - 14:00	53.8	70.7	51.5	dB(A)
14:00 - 15:00	53.8	78.2	51.3	dB(A)
15:00 - 16:00	53.8	76.8	51.8	dB(A)
16:00 - 17:00	54.0	72.1	51.9	dB(A)
17:00 - 18:00	54.1	70.6	52.2	dB(A)
18:00 - 19:00	55.4	72.0	53.1	dB(A)
19:00 - 20:00	53.3	71.0	52.2	dB(A)
20:00 - 21:00	53.6	72.8	52.6	dB(A)
21:00 - 22:00	52.6	67.2	51.8	dB(A)
22:00 - 23:00	52.4	62.4	51.9	dB(A)
23:00 - 00:00	52.5	64.9	52.0	dB(A)
00:00 - 01:00	53.1	71.3	52.1	dB(A)
01:00 - 02:00	54.1	74.6	52.0	dB(A)
02:00 - 03:00	52.3	56.0	51.9	dB(A)
03:00 - 04:00	52.5	55.1	52.1	dB(A)
04:00 - 05:00	53.5	70.8	51.8	dB(A)
05:00 - 06:00	55.2	78.9	52.9	dB(A)
06:00 - 07:00	56.7	76.9	53.8	dB(A)
07:00 - 08:00	54.9	71.2	52.8	dB(A)
08:00 - 09:00	53.9	71.0	52.1	dB(A)
09:00 - 10:00	53.6	79.9	51.7	dB(A)
10:00 - 11:00	54.5	87.8	51.7	dB(A)
11:00 - 12:00	55.3	74.3	50.3	dB(A)
$L_{eq}$ 24 hr.	54.0	-	-	dB(A)
$L_{dn}$	60.3	-	-	dB(A)
Maximum	-	87.8	-	dB(A)
$L_{90}$	-	-	52.0	dB(A)
Standard	70 <sup>1/1, 2</sup>	115 <sup>1/1, 2</sup>	-	dB(A)

REMARK : <sup>1/1</sup> Notification of Office of The National Environmental Board Volume 15 B.E. 2540 (1997)<sup>1/2</sup> Notification of Ministry of the Industry B.E. 2548 (2005)<sup>1/3</sup> Start Time

\* Parameter Outside The Scope of The Registration of The Department of Industrial Works.

(Measurement By Mr. Seksan Pluemwong)



บริษัท อีสเทิร์นไทยคอนซัลติ้ง 1992 จำกัด

Approved By.....

(MS. THANATPON KLINSOPON)

04/04/2025

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Request No. LA68-R03102

Report No. R6803-2710

## TEST REPORT

CUSTOMER : บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด  
ADDRESS : 7/491 หมู่ 6 ตำบลมาบยางพร อำเภอปลวกแดง จังหวัดระยอง 21140  
SAMPLE SOURCE : บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด  
SAMPLE POINT : ริมรั้วโครงการ\_ABPR3  
PARAMETER\* :  $L_{eq}$  1 hr.,  $L_{eq}$  24 hr.,  $L_{max}$ ,  $L_{90}$  &  $L_{dn}$   
DETERMINATION METHOD : ISO 1996-1:2016  
INSTRUMENT : Integrated Sound Level Meter  
S/N 01120950 : Class 1

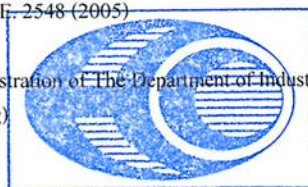
SAMPLE NO. : 05175  
MEASURING DATE : 14-15/03/2025  
RECEIVED DATE : 22/03/2025  
REPORTED DATE : 04/04/2025

TIME \ DATE	14-15/03/2025 ( $L_{eq}$ )	14-15/03/2025 ( $L_{max}$ )	14-15/03/2025 ( $L_{90}$ )	UNIT
11:00 - 12:00 <sup>1/3</sup>	62.7	68.6	62.2	dB(A)
12:00 - 13:00	63.1	75.0	62.8	dB(A)
13:00 - 14:00	67.1	100.3	64.7	dB(A)
14:00 - 15:00	70.9	108.0	65.2	dB(A)
15:00 - 16:00	68.6	100.7	66.0	dB(A)
16:00 - 17:00	65.9	76.4	65.3	dB(A)
17:00 - 18:00	65.7	81.5	65.2	dB(A)
18:00 - 19:00	69.3	81.3	68.6	dB(A)
19:00 - 20:00	66.3	69.5	65.9	dB(A)
20:00 - 21:00	65.6	67.7	65.4	dB(A)
21:00 - 22:00	65.6	82.9	65.3	dB(A)
22:00 - 23:00	65.5	67.4	65.2	dB(A)
23:00 - 00:00	65.3	67.4	65.1	dB(A)
00:00 - 01:00	65.7	81.5	65.2	dB(A)
01:00 - 02:00	66.3	78.7	65.3	dB(A)
02:00 - 03:00	65.7	71.3	65.4	dB(A)
03:00 - 04:00	65.6	80.3	65.4	dB(A)
04:00 - 05:00	64.2	83.2	63.4	dB(A)
05:00 - 06:00	64.8	81.3	64.1	dB(A)
06:00 - 07:00	63.7	80.9	63.2	dB(A)
07:00 - 08:00	67.6	81.2	65.5	dB(A)
08:00 - 09:00	68.7	85.3	64.8	dB(A)
09:00 - 10:00	65.2	82.9	64.8	dB(A)
10:00 - 11:00	64.7	80.6	64.4	dB(A)
$L_{eq}$ 24 hr.	66.4	-	-	dB(A)
$L_{dn}$	72.0	-	-	dB(A)
Maximum	-	108.0	-	dB(A)
$L_{90}$	-	-	65.2	dB(A)
Standard	70 <sup>1/1,2</sup>	115 <sup>1/1,2</sup>	-	dB(A)

REMARK : <sup>1/1</sup> Notification of Office of The National Environmental Board Volume 15 B.E. 2540 (1997)<sup>1/2</sup> Notification of Ministry of the Industry B.E. 2548 (2005)<sup>1/3</sup> Start Time

\* Parameter Outside The Scope of The Registration of The Department of Industrial Works.

(Measurement By Mr. Seksan Pluemwong)



บริษัท อีสเทิร์นไทยคอนซัลติ้ง 1992 จำกัด

Approved By

(MS. THANATPORN KLINSOPON)

04/04/2025

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Request No. LA68-R03102

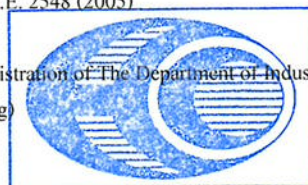
Report No. R6803-2711

## TEST REPORT

CUSTOMER : บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด  
ADDRESS : 7/491 หมู่ 6 ตำบลมาบตาพุด อำเภอปลวกแดง จังหวัดระยอง 21140  
SAMPLE SOURCE : บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด  
SAMPLE POINT : ริมรั้วโครงการ ABPR3  
PARAMETER\* :  $L_{eq}$  1 hr.,  $L_{eq}$  24 hr.,  $L_{max}$ ,  $L_{90}$  &  $L_{dn}$   
DETERMINATION METHOD : ISO 1996-1:2016  
INSTRUMENT : Integrated Sound Level Meter  
S/N 01120950 : Class 1

SAMPLE NO. : 05176  
MEASURING DATE : 15-16/03/2025  
RECEIVED DATE : 22/03/2025  
REPORTED DATE : 04/04/2025

TIME \ DATE	15-16/03/2025 ( $L_{eq}$ )	15-16/03/2025 ( $L_{max}$ )	15-16/03/2025 ( $L_{90}$ )	UNIT
11:00 - 12:00 <sup>1/3</sup>	64.6	70.6	64.3	dB(A)
12:00 - 13:00	64.9	80.4	64.5	dB(A)
13:00 - 14:00	64.6	80.5	64.2	dB(A)
14:00 - 15:00	64.4	69.4	64.0	dB(A)
15:00 - 16:00	64.4	80.1	63.9	dB(A)
16:00 - 17:00	66.3	80.9	64.7	dB(A)
17:00 - 18:00	65.4	70.5	65.0	dB(A)
18:00 - 19:00	69.2	82.2	68.5	dB(A)
19:00 - 20:00	66.1	69.6	65.7	dB(A)
20:00 - 21:00	65.4	67.2	65.2	dB(A)
21:00 - 22:00	65.3	83.6	65.0	dB(A)
22:00 - 23:00	65.3	67.1	65.0	dB(A)
23:00 - 00:00	65.3	81.2	65.0	dB(A)
00:00 - 01:00	64.1	71.0	63.8	dB(A)
01:00 - 02:00	63.6	75.7	63.3	dB(A)
02:00 - 03:00	62.4	68.5	62.1	dB(A)
03:00 - 04:00	60.5	73.2	59.5	dB(A)
04:00 - 05:00	62.3	79.5	61.7	dB(A)
05:00 - 06:00	60.2	65.5	59.6	dB(A)
06:00 - 07:00	61.1	79.3	60.6	dB(A)
07:00 - 08:00	61.6	79.3	61.2	dB(A)
08:00 - 09:00	61.4	79.1	61.1	dB(A)
09:00 - 10:00	62.1	79.2	61.4	dB(A)
10:00 - 11:00	63.0	74.1	62.1	dB(A)
$L_{eq}$ 24 hr.	64.4	-	-	dB(A)
$L_{dn}$	69.9	-	-	dB(A)
Maximum	-	83.6	-	dB(A)
$L_{90}$	-	-	63.9	dB(A)
Standard	70 <sup>1/1,2</sup>	115 <sup>1/1,2</sup>	-	dB(A)

REMARK : <sup>1/1</sup> Notification of Office of The National Environmental Board Volume 15 B.E. 2540 (1997)<sup>1/2</sup> Notification of Ministry of the Industry B.E. 2548 (2005)<sup>1/3</sup> Start Time\* Parameter Outside The Scope of The Registration of The Department of Industrial Works.  
(Measurement By Mr. Seksan Pluemwong)Approved By.....  
(MS. THANATPORN KLINSOPON)

04/04/2025

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Request No. LA68-R03102

Report No. R6803-2712

## TEST REPORT

CUSTOMER : บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด  
ADDRESS : 7/491 หมู่ 6 ตำบลมาบตาพุด อำเภอปลวกแดง จังหวัดระยอง 21140  
SAMPLE SOURCE : บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด  
SAMPLE POINT : ริมรั้วโครงการ\_ABPR3  
PARAMETER\* :  $L_{eq}$  1 hr.,  $L_{eq}$  24 hr.,  $L_{max}$ ,  $L_{90}$  &  $L_{dn}$   
DETERMINATION METHOD : ISO 1996-1:2016  
INSTRUMENT : Integrated Sound Level Meter  
S/N 01120950 : Class 1

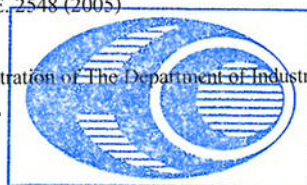
SAMPLE NO. : 05177  
MEASURING DATE : 16-17/03/2025  
RECEIVED DATE : 22/03/2025  
REPORTED DATE : 04/04/2025

TIME \ DATE	16-17/03/2025 ( $L_{eq}$ )	16-17/03/2025 ( $L_{max}$ )	16-17/03/2025 ( $L_{90}$ )	UNIT
11:00 - 12:00 <sup>3</sup>	63.1	77.8	62.2	dB(A)
12:00 - 13:00	69.7	87.0	62.8	dB(A)
13:00 - 14:00	65.2	80.2	62.6	dB(A)
14:00 - 15:00	62.6	80.0	62.1	dB(A)
15:00 - 16:00	62.6	76.8	61.8	dB(A)
16:00 - 17:00	63.2	79.8	62.5	dB(A)
17:00 - 18:00	63.6	80.0	63.0	dB(A)
18:00 - 19:00	63.4	80.0	62.8	dB(A)
19:00 - 20:00	63.5	73.3	63.0	dB(A)
20:00 - 21:00	63.5	79.7	62.9	dB(A)
21:00 - 22:00	63.5	73.5	63.1	dB(A)
22:00 - 23:00	64.6	80.7	63.9	dB(A)
23:00 - 00:00	65.7	75.8	64.9	dB(A)
00:00 - 01:00	64.7	80.9	64.4	dB(A)
01:00 - 02:00	64.7	81.5	64.4	dB(A)
02:00 - 03:00	64.1	81.3	63.7	dB(A)
03:00 - 04:00	62.6	76.1	62.2	dB(A)
04:00 - 05:00	62.6	66.4	61.9	dB(A)
05:00 - 06:00	63.8	82.4	63.3	dB(A)
06:00 - 07:00	61.9	73.6	61.6	dB(A)
07:00 - 08:00	62.2	65.2	61.8	dB(A)
08:00 - 09:00	62.9	85.0	62.1	dB(A)
09:00 - 10:00	63.6	72.6	62.9	dB(A)
10:00 - 11:00	63.6	77.7	62.2	dB(A)
$L_{eq}$ 24 hr.	64.2	-	-	dB(A)
$L_{dn}$	70.5	-	-	dB(A)
Maximum	-	87.0	-	dB(A)
$L_{90}$	-	-	62.8	dB(A)
Standard	70 <sup>1/1,2</sup>	115 <sup>1/1,2</sup>	-	dB(A)

REMARK : <sup>1/1</sup> Notification of Office of The National Environmental Board Volume 15 B.E. 2540 (1997)<sup>1/2</sup> Notification of Ministry of the Industry B.E. 2548 (2005)<sup>1/3</sup> Start Time

\* Parameter Outside The Scope of The Registration of The Department of Industrial Works.

(Measurement By Mr. Seksan Pluemwong)



บริษัท อีสเทิร์นไทยคอนซัลติ้ง 1992 จำกัด

Approved By.....

(MS. THANATPORN KLINSOPON)

04/04/2025

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Request No. LA68-R03102

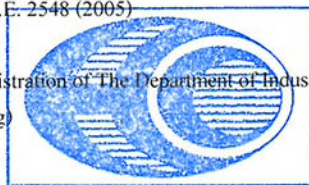
Report No. R6803-2713

## TEST REPORT

CUSTOMER : บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด  
 ADDRESS : 7/491 หมู่ 6 ตำบลมาบยางพร อำเภอปลวกแดง จังหวัดระยอง 21140  
 SAMPLE SOURCE : บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด  
 SAMPLE POINT : ริมรั้วโครงการ\_ABPR3  
 PARAMETER\* :  $L_{eq}$  1 hr.,  $L_{eq}$  24 hr.,  $L_{max}$ ,  $L_{90}$  &  $L_{dn}$   
 DETERMINATION METHOD : ISO 1996-1:2016  
 INSTRUMENT : Integrated Sound Level Meter  
 S/N 01120950 : Class 1

SAMPLE NO. : 05178  
 MEASURING DATE : 17-18/03/2025  
 RECEIVED DATE : 22/03/2025  
 REPORTED DATE : 04/04/2025

TIME \ DATE	17-18/03/2025 ( $L_{eq}$ )	17-18/03/2025 ( $L_{max}$ )	17-18/03/2025 ( $L_{90}$ )	UNIT
11:00 - 12:00 <sup>3</sup>	64.0	80.7	63.4	dB(A)
12:00 - 13:00	64.6	80.1	64.1	dB(A)
13:00 - 14:00	64.5	69.4	64.2	dB(A)
14:00 - 15:00	65.0	81.0	64.7	dB(A)
15:00 - 16:00	65.8	80.4	65.0	dB(A)
16:00 - 17:00	65.3	80.9	65.0	dB(A)
17:00 - 18:00	65.4	80.7	65.1	dB(A)
18:00 - 19:00	69.0	81.2	68.2	dB(A)
19:00 - 20:00	65.8	80.1	65.5	dB(A)
20:00 - 21:00	65.3	66.9	65.1	dB(A)
21:00 - 22:00	65.3	67.4	65.0	dB(A)
22:00 - 23:00	65.3	72.6	65.1	dB(A)
23:00 - 00:00	65.3	67.9	65.0	dB(A)
00:00 - 01:00	65.7	82.7	65.2	dB(A)
01:00 - 02:00	65.7	84.9	65.4	dB(A)
02:00 - 03:00	65.8	81.3	65.6	dB(A)
03:00 - 04:00	65.6	74.8	65.4	dB(A)
04:00 - 05:00	66.0	69.4	65.7	dB(A)
05:00 - 06:00	65.1	72.0	64.4	dB(A)
06:00 - 07:00	63.7	80.8	63.2	dB(A)
07:00 - 08:00	66.9	81.2	64.5	dB(A)
08:00 - 09:00	70.9	87.5	66.1	dB(A)
09:00 - 10:00	65.0	80.5	64.6	dB(A)
10:00 - 11:00	64.5	70.0	64.2	dB(A)
$L_{eq}$ 24 hr.	66.0	-	-	dB(A)
$L_{dn}$	71.9	-	-	dB(A)
Maximum	-	87.5	-	dB(A)
$L_{90}$	-	-	65.0	dB(A)
Standard	70 <sup>1/,2</sup>	115 <sup>1/,2</sup>	-	dB(A)

REMARK : <sup>1/</sup> Notification of Office of The National Environmental Board Volume 15 B.E. 2540 (1997)<sup>2/</sup> Notification of Ministry of the Industry B.E. 2548 (2005)<sup>3/</sup> Start Time\* Parameter Outside The Scope of The Registration of The Department of Industrial Works.  
(Measurement By Mr. Seksan Pluemwong)

บริษัท อีสเทิร์นไทยคอนซัลติ้ง 1992 จำกัด

Approved By.....

(MS. THANATPORN KLINSOPON)

04/04/2025

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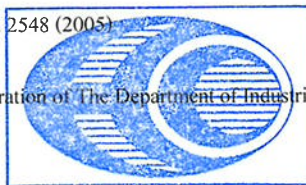
Request No. LA68-R03102

Report No. R6803-2714

## TEST REPORT

CUSTOMER : บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด  
 ADDRESS : 7/491 หมู่ 6 ตำบลมาบยางพร อำเภอปลวกแดง จังหวัดระยอง 21140  
 SAMPLE SOURCE : บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด  
 SAMPLE POINT : ริมรั้วโครงการ\_ABPR3  
 PARAMETER\* :  $L_{eq}$  1 hr.,  $L_{eq}$  24 hr.,  $L_{max}$ ,  $L_{90}$  &  $L_{dn}$  SAMPLE NO. : 05179  
 DETERMINATION METHOD : ISO 1996-1:2016 MEASURING DATE : 18-19/03/2025  
 INSTRUMENT : Integrated Sound Level Meter RECEIVED DATE : 22/03/2025  
 S/N 01120950 : Class I REPORTED DATE : 04/04/2025

TIME \ DATE	18-19/03/2025 ( $L_{eq}$ )	18-19/03/2025 ( $L_{max}$ )	18-19/03/2025 ( $L_{90}$ )	UNIT
11:00 - 12:00 <sup>3</sup>	64.2	79.8	63.9	dB(A)
12:00 - 13:00	63.9	80.1	63.5	dB(A)
13:00 - 14:00	63.9	80.0	63.5	dB(A)
14:00 - 15:00	64.4	68.1	64.0	dB(A)
15:00 - 16:00	64.7	80.5	64.2	dB(A)
16:00 - 17:00	64.9	80.6	64.4	dB(A)
17:00 - 18:00	64.8	80.0	64.4	dB(A)
18:00 - 19:00	68.8	80.8	68.0	dB(A)
19:00 - 20:00	66.0	69.0	65.7	dB(A)
20:00 - 21:00	65.5	68.3	65.2	dB(A)
21:00 - 22:00	65.4	80.9	65.1	dB(A)
22:00 - 23:00	65.3	67.0	65.0	dB(A)
23:00 - 00:00	65.3	83.3	65.1	dB(A)
00:00 - 01:00	65.5	69.1	65.0	dB(A)
01:00 - 02:00	65.7	83.4	65.4	dB(A)
02:00 - 03:00	65.6	67.2	65.4	dB(A)
03:00 - 04:00	65.3	67.3	65.1	dB(A)
04:00 - 05:00	65.9	81.1	65.5	dB(A)
05:00 - 06:00	66.5	76.0	66.0	dB(A)
06:00 - 07:00	65.9	81.0	65.3	dB(A)
07:00 - 08:00	67.1	87.4	64.6	dB(A)
08:00 - 09:00	72.7	91.7	64.2	dB(A)
09:00 - 10:00	62.0	80.2	61.4	dB(A)
10:00 - 11:00	61.7	74.1	61.2	dB(A)
$L_{eq}$ 24 hr.	66.1	-	-	dB(A)
$L_{dn}$	72.2	-	-	dB(A)
Maximum	-	91.7	-	dB(A)
$L_{90}$	-	-	65.0	dB(A)
Standard	70 <sup>1/,2</sup>	115 <sup>1/,2</sup>	-	dB(A)

REMARK : <sup>1/</sup> Notification of Office of The National Environmental Board Volume 15 B.E. 2540 (1997)<sup>2/</sup> Notification of Ministry of the Industry B.E. 2548 (2005)<sup>3/</sup> Start Time\* Parameter Outside The Scope of The Registration of The Department of Industrial Works.  
(Measurement By Mr. Seksan Pluemwong)

บริษัท อีสเทิร์นไทยคอนซัลต์ติ้ง 1992 จำกัด

Approved By.....

(MS. THANATPORN KLINSOPON)

04/04/2025

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Request No. LA68-R03102

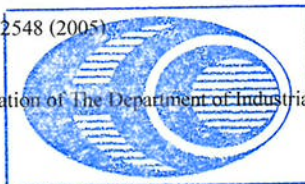
Report No. R6803-2715

## TEST REPORT

CUSTOMER : บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด  
ADDRESS : 7/491 หมู่ 6 ตำบลมาบยางพร อำเภอปลวกแดง จังหวัดระยอง 21140  
SAMPLE SOURCE : บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด  
SAMPLE POINT : ริมรั้วโครงการ\_ABPR3  
PARAMETER\* :  $L_{eq}$  1 hr.,  $L_{eq}$  24 hr.,  $L_{max}$ ,  $L_{90}$  &  $L_{dn}$   
DETERMINATION METHOD : ISO 1996-1:2016  
INSTRUMENT : Integrated Sound Level Meter  
S/N 01120950 : Class 1

SAMPLE NO. : 05180  
MEASURING DATE : 19-20/03/2025  
RECEIVED DATE : 22/03/2025  
REPORTED DATE : 04/04/2025

TIME \ DATE	19-20/03/2025 ( $L_{eq}$ )	19-20/03/2025 ( $L_{max}$ )	19-20/03/2025 ( $L_{90}$ )	UNIT
11:00 - 12:00 <sup>3</sup>	61.6	79.9	60.9	dB(A)
12:00 - 13:00	63.9	80.0	63.3	dB(A)
13:00 - 14:00	64.0	68.4	63.6	dB(A)
14:00 - 15:00	63.2	80.6	62.5	dB(A)
15:00 - 16:00	64.9	81.5	64.0	dB(A)
16:00 - 17:00	64.3	80.6	63.8	dB(A)
17:00 - 18:00	64.7	79.7	63.8	dB(A)
18:00 - 19:00	64.6	72.5	64.3	dB(A)
19:00 - 20:00	64.6	80.2	64.3	dB(A)
20:00 - 21:00	65.1	76.5	64.6	dB(A)
21:00 - 22:00	68.3	80.5	67.6	dB(A)
22:00 - 23:00	64.8	66.5	64.5	dB(A)
23:00 - 00:00	64.6	66.2	64.3	dB(A)
00:00 - 01:00	64.7	71.9	64.4	dB(A)
01:00 - 02:00	64.6	67.2	64.3	dB(A)
02:00 - 03:00	64.8	82.0	64.4	dB(A)
03:00 - 04:00	64.8	68.9	64.4	dB(A)
04:00 - 05:00	65.1	84.2	64.8	dB(A)
05:00 - 06:00	65.1	80.6	64.8	dB(A)
06:00 - 07:00	64.9	66.0	64.7	dB(A)
07:00 - 08:00	65.3	69.5	64.8	dB(A)
08:00 - 09:00	64.1	80.1	63.3	dB(A)
09:00 - 10:00	62.6	75.5	62.2	dB(A)
10:00 - 11:00	64.9	80.5	63.4	dB(A)
$L_{eq}$ 24 hr.	64.7	-	-	dB(A)
$L_{dn}$	71.2	-	-	dB(A)
Maximum	-	84.2	-	dB(A)
$L_{90}$	-	-	64.3	dB(A)
Standard	70 <sup>/1,2</sup>	115 <sup>/1,2</sup>	-	dB(A)

REMARK : <sup>/1</sup> Notification of Office of The National Environmental Board Volume 15 B.E. 2540 (1997)<sup>/2</sup> Notification of Ministry of the Industry B.E. 2548 (2005)<sup>/3</sup> Start Time\* Parameter Outside The Scope of The Registration of The Department of Industrial Works.  
(Measurement By Mr. Seksan Pluemwong)

บริษัท อีสเทิร์นไทยคอนซัลติ้ง 1992 จำกัด

Approved By.....

(MS. THANATPORN KLINSOPON)

04/04/2025

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Request No. LA68-R03102

Report No. R6803-2716

## TEST REPORT

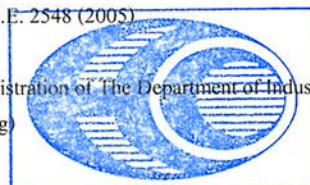
CUSTOMER : บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด  
 ADDRESS : 7/491 หมู่ 6 ตำบลมาบยางพร อำเภอปลวกแดง จังหวัดระยอง 21140  
 SAMPLE SOURCE : บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด  
 SAMPLE POINT : ริมรั้วโครงการ\_ABPR3  
 PARAMETER\* :  $L_{eq}$  1 hr.,  $L_{eq}$  24 hr.,  $L_{max}$ ,  $L_{90}$  &  $L_{dn}$  SAMPLE NO. : 05181  
 DETERMINATION METHOD : ISO 1996-1:2016 MEASURING DATE : 20-21/03/2025  
 INSTRUMENT : Integrated Sound Level Meter RECEIVED DATE : 22/03/2025  
 S/N 01120950 : Class I REPORTED DATE : 04/04/2025

TIME \ DATE	20-21/03/2025 ( $L_{eq}$ )	20-21/03/2025 ( $L_{max}$ )	20-21/03/2025 ( $L_{90}$ )	UNIT
11:00 - 12:00 <sup>3</sup>	64.1	79.8	63.4	dB(A)
12:00 - 13:00	66.0	80.8	64.5	dB(A)
13:00 - 14:00	61.9	79.9	61.2	dB(A)
14:00 - 15:00	65.9	95.7	61.4	dB(A)
15:00 - 16:00	62.6	79.4	61.7	dB(A)
16:00 - 17:00	63.9	79.9	63.3	dB(A)
17:00 - 18:00	63.3	79.0	62.9	dB(A)
18:00 - 19:00	68.0	79.4	67.2	dB(A)
19:00 - 20:00	64.8	79.8	64.4	dB(A)
20:00 - 21:00	64.2	69.9	63.9	dB(A)
21:00 - 22:00	63.5	76.3	63.1	dB(A)
22:00 - 23:00	61.3	74.0	60.3	dB(A)
23:00 - 00:00	62.6	79.9	62.1	dB(A)
00:00 - 01:00	60.8	65.9	60.0	dB(A)
01:00 - 02:00	61.4	79.7	60.9	dB(A)
02:00 - 03:00	62.0	79.7	61.6	dB(A)
03:00 - 04:00	61.9	79.5	61.6	dB(A)
04:00 - 05:00	62.4	79.6	61.7	dB(A)
05:00 - 06:00	63.3	72.9	62.5	dB(A)
06:00 - 07:00	62.8	77.1	61.7	dB(A)
07:00 - 08:00	67.5	86.3	61.8	dB(A)
08:00 - 09:00	67.2	83.6	62.3	dB(A)
09:00 - 10:00	61.8	79.3	61.2	dB(A)
10:00 - 11:00	61.8	76.1	61.0	dB(A)
$L_{eq}$ 24 hr.	64.1	-	-	dB(A)
$L_{dn}$	69.1	-	-	dB(A)
Maximum	-	95.7	-	dB(A)
$L_{90}$	-	-	61.7	dB(A)
Standard	70 <sup>1/,2</sup>	115 <sup>1/,2</sup>	-	dB(A)

REMARK : <sup>1/</sup> Notification of Office of The National Environmental Board Volume 15 B.E. 2540 (1997)<sup>2/</sup> Notification of Ministry of the Industry B.E. 2548 (2005)<sup>3/</sup> Start Time

\* Parameter Outside The Scope of The Registration of The Department of Industrial Works.

(Measurement By Mr. Seksan Pluemwong)



บริษัท อีสเทิร์นไทยคอนซัลติ้ง 1992 จำกัด

Approved By.....

(MS. THANATPORN KLINSOPON)

04/04/2025

REPORTED TEST REFER TO SUBMITTED SAMPLES ONLY  
 THIS REPORT SHALL NOT REPRODUCED EXCEPT IN FULL  
 WITHOUT THE WRITTEN APPROVAL LABORATORY

ผลการตรวจวัดระดับเสียงในบริเวณการทำงาน

**TEST REPORT**

CUSTOMER : บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด\*\*\*  
ADDRESS : 7/491 หมู่ 6 ตำบลมาบยางพร อำเภอลวกแดง จังหวัดระยอง 21140\*\*\*  
SAMPLE SOURCE : บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด\*\*\*  
SAMPLE POINT : เครื่องผลิตไฟฟ้ากังหันก๊าซ\*\*\*  
PARAMETER\*\*\*\* :  $L_{eq}$  1 hr.,  $L_{eq}$  8 hr.,  $L_{max}$  &  $L_{90\#}$  SAMPLE NO. : 04473  
DETERMINATION METHOD : ISO 11202:2010## MEASURING DATE : 20/03/2025  
INSTRUMENT : Integrated Sound Level Meter RECEIVED DATE : 20/03/2025  
S/N 00322748 : Class 2 REPORTED DATE : 31/03/2025

MEASURING TIME	RESULT				UNIT
	$L_{eq}$ 1 hr.	$L_{eq}$ 1 hr.	$L_{max}$	$L_{90\#}$	
08:00 - 09:00	76	76	81	75	dB(A)
09:00 - 10:00	77	77	80	75	dB(A)
10:00 - 11:00	77	77	80	76	dB(A)
11:00 - 12:00	76	76	79	75	dB(A)
12:00 - 13:00	76	76	79	75	dB(A)
13:00 - 14:00	76	76	79	75	dB(A)
14:00 - 15:00	76	76	80	75	dB(A)
15:00 - 16:00	76	76	78	75	dB(A)
$L_{eq}$ 8 hr. (TWA)	76*	76**	—	—	dB(A)
$L_{max}$	—	—	81	—	dB(A)
Standard	85 <sup>/1</sup>	90 <sup>/2</sup>	— <sup>/1</sup> , 140 <sup>/2</sup> , 115 <sup>/3</sup>	—	dB(A)

**REMARK :** # Test Report/Sampling marked 'Not TISI Accredited' in this report are not included in the TISI Accreditation Schedule for our laboratory

## ISO 11202:2010, Notification of The Ministry of Industry B.E. 2546 (2003) on The Safety Protection Measures in Factory Regarding Working Area Environment, Dated November 6, 2003, Notification of The Department of Labour Protection and Welfare on The Standard of Noise Level That Employees are Allowed to Receive in Average Period of Work Each Day, Dated December 13, 2017, Notification of The Department of Labour Protection and Welfare on Criteria, Measurement Methods, and Analysis of Working Conditions Regarding Heat, Light, or Noise Levels, Including Duration and Types of Businesses to Be Performed, Dated February 8, 2018

<sup>/1</sup> Notification of The Department of Labour Protection and Welfare B.E. 2561 (2018)

(Published in the Government Gazette on January 26, 2018)

<sup>/2</sup> Notification of The Ministry of Industry B.E. 2546 (2003)

<sup>/3</sup> Regulation of The Ministry of Labour B.E. 2559 (2016)

\* Based on Criteria 85 dB(A); 3 dB Exchange Rate

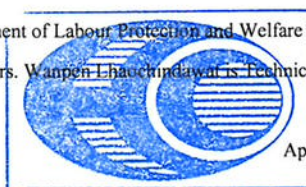
\*\* Based on Criteria 90 dB(A); 5 dB Exchange Rate

\*\*\* These Data are Non Laboratory Data

\*\*\*\* Parameter have License Registration of Department of Labour Protection and Welfare No. 0403-03-2564-0009

(Ms. Thanatporn Klinsopon is Section Head / Mrs. Wanpen Laochindawat is Technical Management)

(Measurement By Mr. Supachai Parakan)



Approved By .....

(MS. THANATPORN KLINSOPON)

31/03/2025

REPORTED TEST REFER TO SUBMITTED SAMPLES ONLY

THIS REPORT SHALL NOT REPRODUCED EXCEPT IN FULL

WITHOUT THE WRITTEN APPROVAL LABORATORY



**TEST REPORT**

CUSTOMER : บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด\*\*\*  
ADDRESS : 7/491 หมู่ 6 ตำบลมาบยางพร อำเภอบลุกแดง จังหวัดระยอง 21140\*\*\*  
SAMPLE SOURCE : บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด\*\*\*  
SAMPLE POINT : เครื่องผลิตไฟฟ้ากังหันไอน้ำ\*\*\*  
PARAMETER\*\*\*\* :  $L_{eq}$  1 hr.,  $L_{eq}$  8 hr.,  $L_{max}$  &  $L_{90\#}$  SAMPLE NO. : 04474  
DETERMINATION METHOD : ISO 11202:2010## MEASURING DATE : 20/03/2025  
INSTRUMENT : Integrated Sound Level Meter RECEIVED DATE : 20/03/2025  
S/N 00222593 : Class 2 REPORTED DATE : 31/03/2025

MEASURING TIME	RESULT				UNIT
	$L_{eq}$ 1 hr.	$L_{eq}$ 1 hr.	$L_{max}$	$L_{90\#}$	
08:00 - 09:00	79	79	103	77	dB(A)
09:00 - 10:00	78	78	89	77	dB(A)
10:00 - 11:00	77	77	103	75	dB(A)
11:00 - 12:00	77	77	97	75	dB(A)
12:00 - 13:00	76	76	86	75	dB(A)
13:00 - 14:00	77	77	87	75	dB(A)
14:00 - 15:00	77	77	88	75	dB(A)
15:00 - 16:00	77	77	88	75	dB(A)
$L_{eq}$ 8 hr. (TWA)	77*	77**	-	-	dB(A)
$L_{max}$	-	-	103	-	dB(A)
Standard	85 <sup>/1</sup>	90 <sup>/2</sup>	- <sup>/1</sup> , 140 <sup>/2</sup> , 115 <sup>/3</sup>	-	dB(A)

**REMARK :** # Test Report/Sampling marked 'Not TISI Accredited' in this report are not included in the TISI Accreditation Schedule for our laboratory  
## ISO 11202:2010, Notification of The Ministry of Industry B.E. 2546 (2003) on The Safety Protection Measures in Factory Regarding Working Area Environment, Dated November 6, 2003, Notification of The Department of Labour Protection and Welfare on The Standard of Noise Level That Employees are Allowed to Receive in Average Period of Work Each Day, Dated December 13, 2017, Notification of The Department of Labour Protection and Welfare on Criteria, Measurement Methods, and Analysis of Working Conditions Regarding Heat, Light, or Noise Levels, Including Duration and Types of Businesses to Be Performed, Dated February 8, 2018  
<sup>/1</sup> Notification of The Department of Labour Protection and Welfare B.E. 2561 (2018)  
(Published in the Government Gazette on January 26, 2018)  
<sup>/2</sup> Notification of The Ministry of Industry B.E. 2546 (2003)  
<sup>/3</sup> Regulation of The Ministry of Labour B.E. 2559 (2016)  
\* Based on Criteria 85 dB(A); 3 dB Exchange Rate  
\*\* Based on Criteria 90 dB(A); 5 dB Exchange Rate  
\*\*\* These Data are Non Laboratory Data  
\*\*\*\* Parameter have License Registration of Department of Labour Protection and Welfare No. 0403-03-2564-0009  
(Ms. Thanatporn Klinsopon is Section Head / Mrs. Wanpen Lhaochindawala is Technical Management)  
(Measurement By Mr. Supachai Parakan)



บริษัท อีสเทิร์นไทยคอนซัลติ้ง 1992 จำกัด

Approved By

(MS. THANATPORN KLINSOPON)

31/03/2025

REPORTED TEST REFER TO SUBMITTED SAMPLES ONLY  
THIS REPORT SHALL NOT REPRODUCED EXCEPT IN FULL  
WITHOUT THE WRITTEN APPROVAL LABORATORY

**TEST REPORT**

CUSTOMER : บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด\*\*\*  
ADDRESS : 7/491 หมู่ 6 ตำบลมาบยางพร อำเภอบลุกแดง จังหวัดระยอง 21140\*\*\*  
SAMPLE SOURCE : บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด\*\*\*  
SAMPLE POINT : เครื่องอัดอากาศ\*\*\*  
PARAMETER\*\*\*\* :  $L_{eq}$  1 hr.,  $L_{eq}$  8 hr.,  $L_{max}$  &  $L_{90\#}$  SAMPLE NO. : 04475  
DETERMINATION METHOD : ISO 11202:2010## MEASURING DATE : 20/03/2025  
INSTRUMENT : Integrated Sound Level Meter RECEIVED DATE : 20/03/2025  
S/N 00322751 : Class 2 REPORTED DATE : 31/03/2025

MEASURING TIME	RESULT				UNIT
	$L_{eq}$ 1 hr.	$L_{eq}$ 1 hr.	$L_{max}$	$L_{90\#}$	
08:00 - 09:00	76	76	79	75	dB(A)
09:00 - 10:00	76	76	82	75	dB(A)
10:00 - 11:00	76	76	91	75	dB(A)
11:00 - 12:00	76	76	90	75	dB(A)
12:00 - 13:00	76	76	88	75	dB(A)
13:00 - 14:00	76	76	89	75	dB(A)
14:00 - 15:00	75	75	88	74	dB(A)
15:00 - 16:00	76	76	88	74	dB(A)
$L_{eq}$ 8 hr. (TWA)	75*	75**	—	—	dB(A)
$L_{max}$	—	—	91	—	dB(A)
Standard	85 <sup>/1</sup>	90 <sup>/2</sup>	— <sup>/1</sup> , 140 <sup>/2</sup> , 115 <sup>/3</sup>	—	dB(A)

**REMARK :** # Test Report/Sampling marked 'Not TISI Accredited' in this report are not included in the TISI Accreditation Schedule for our laboratory

## ISO 11202:2010, Notification of The Ministry of Industry B.E. 2546 (2003) on The Safety Protection Measures in Factory Regarding Working Area Environment, Dated November 6, 2003, Notification of The Department of Labour Protection and Welfare on The Standard of Noise Level That Employees are Allowed to Receive in Average Period of Work Each Day, Dated December 13, 2017, Notification of The Department of Labour Protection and Welfare on Criteria, Measurement Methods, and Analysis of Working Conditions Regarding Heat, Light, or Noise Levels, Including Duration and Types of Businesses to Be Performed, Dated February 8, 2018

<sup>/1</sup> Notification of The Department of Labour Protection and Welfare B.E. 2561 (2018)

(Published in the Government Gazette on January 26, 2018)

<sup>/2</sup> Notification of The Ministry of Industry B.E. 2546 (2003)

<sup>/3</sup> Regulation of The Ministry of Labour B.E. 2559 (2016)

\* Based on Criteria 85 dB(A); 3 dB Exchange Rate

\*\* Based on Criteria 90 dB(A); 5 dB Exchange Rate

\*\*\* These Data are Non Laboratory Data

\*\*\*\* Parameter have License Registration of Department of Labour Protection and Welfare No. 0403-03-2564-0009

(Ms. Thanatporn Klinsopon is Section Head / Mrs. Wanpen Lhaochindawat is Technical Management)

(Measurement By Mr. Supachai Parakan)



Approved By .....

(MS. THANATPORN KLINSOPON)

31/03/2025

บริษัท อีสเทิร์นไทยคอนซัลติ้ง 1992 จำกัด

REPORTED TEST REFER TO SUBMITTED SAMPLES ONLY

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## ผลการทดสอบคุณภาพน้ำทิ้ง



## Test Report

Request No : W6801247

Report No : 6801-0999

Customer : Amata B.Grimm Power (Rayong) 3 Limited.

Address : Amata City Rayong Industrial Estate 7/491 Moo.6 Highway 331,Mabyangporm,Pluak Daeng, Rayong 21140

Sampling Source : Amata B.Grimm Power (Rayong) 3 Limited.

Sample No : W 68010746

Sample Name : บ่อตรวจสอบคุณภาพน้ำทิ้ง

Sampling Date : 13/01/2025

Sampling By : ETC

Sampling Time : 9:50 AM

Sampling Method : Grab

Received Date : 14/01/2025

Tested Date : 14/01/2025 - 20/01/2025

Reported Date : 21/01/2025

Parameter	Unit	Method	Result	Standard <sup>1</sup>
Biochemical Oxygen Demand	mg/L	5-Day BOD Test, Membrane Electrode Method (SM:5210B)	2.3	≤500
Chemical Oxygen Demand	mg/L	Closed Reflux,Titrimetric Method (SM:5220C)	43	≤750
Oil and Grease	mg/L	Liquid-Liquid, Partition-Gravimetric Method (SM:5520B)	< 3.0	≤10
pH (at 25 degree celsius)		Electrometric Method (SM:4500 -H +B)	7.7	5.5-9.0
pH (on site)		Electrometric Method	7.5	5.5-9.0
Temperature	°C	Laboratory and Field Method (SM:2550 B)	21	≤45
Total Dissolved Solids	mg/L	Dried at 180 degree celsius (SM:2540C)	2,756	≤3000

Physical Apperance : 1. Sample : yellow, lightly SS

2. Container : Normal [ PE 0.5 L, PE 1.0 L, PE 1.8 L, G 1.0 L ]

Remark : 1. /1 Notification of Industrial Estate Authority of Thailand 029 / 2567 (2024)

2. SM = Standard Methods for the Examination of Water and Wastewater, APHA, AWWA, WEF, 24th Edition, 2023.

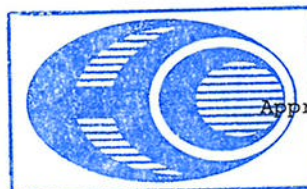
3. Sampling By Miss Pornpinan Viriyakusolkul (จ-003-ก-0036)

Examined By : 

(Miss Apiradee Chuen-arom)

(จ-003-ก-0007)

21/01/2025



บริษัท อีสเทิร์นไทยคอนซัลติ้ง 1992 จำกัด

Approved By : 

(Miss Nunnaphat Bakhuntod)

(จ-003-ก-0005)

21/01/2025

REPORTED TEST REFER TO SUBMITTED SAMPLES ONLY  
THIS REPORT SHALL NOT REPRODUCED EXCEPT IN FULL  
WITHOUT THE WRITTEN APPROVAL LABORATORY

## Test Report

Request No : W6801247

Report No : 6801-0999

Customer : Amata B.Grimm Power (Rayong) 3 Limited.

Address : Amata City Rayong Industrial Estate 7/491 Moo.6 Highway 331,Mabyangporn,Pluak Daeng, Rayong 21140

Sampling Source : Amata B.Grimm Power (Rayong) 3 Limited.

Sample No : W 68010746

Sample Name : บ่อดตรวจสอบคุณภาพน้ำทิ้ง

Sampling Date : 13/01/2025

Sampling By : ETC

Sampling Time : 9:50 AM

Sampling Method : Grab

Received Date : 14/01/2025

Tested Date : 14/01/2025 - 20/01/2025

Reported Date : 21/01/2025

Parameter	Unit	Method	Result	Standard <sup>1</sup>
Total Suspended Solids	mg/L	Dried at 103-105 degree celsius (SM:2540D)	13	≤200

Physical Apperance : 1. Sample : yellow, lightly SS

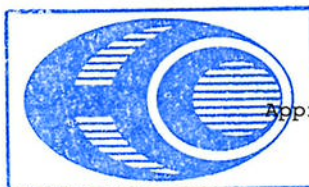
2. Container : Normal [ PE 0.5 L, PE 1.0 L, PE 1.8 L, G 1.0 L ]

Remark : 1. /1 Notification of Industrial Estate Authority of Thailand 029 / 2567 (2024)

2. SM = Standard Methods for the Examination of Water and Wastewater, APHA, AWWA, WEF, 24th Edition, 2023.

3. Sampling By Miss Pompinan Viriyakusolkul (ว-003-ท-0036)

Examined By : .....

(Miss Apiradee Chuen-arom)  
(ว-003-ท-0007)  
21/01/2025

บริษัท อีสเทิร์นไทยคอนซัลติ้ง 1992 จำกัด

Approved By : .....

(Miss Nunnaphat Bakhuntod)  
(ว-003-ท-0005)  
21/01/2025REPORTED TEST REFER TO SUBMITTED SAMPLES ONLY  
THIS REPORT SHALL NOT REPRODUCED EXCEPT IN FULL  
WITHOUT THE WRITTEN APPROVAL LABORATORY

## Test Report

Request No : W6801247

Report No : 6801-0999

Customer : Amata B.Grimm Power (Rayong) 3 Limited.

Address : Amata City Rayong Industrial Estate 7/491 Moo.6 Highway 331, Mabyangporn, Pluak Daeng, Rayong 21140

Sampling Source : Amata B.Grimm Power (Rayong) 3 Limited.

Sample No : W 68010746

Sample Name : บ่อตรวจสอบคุณภาพน้ำทิ้ง

Sampling Date : 13/01/2025

Sampling By : ETC

Sampling Time : 9:50 AM

Sampling Method : Grab

Received Date : 14/01/2025

Tested Date : 14/01/2025 - 22/01/2025

Reported Date : 22/01/2025

Parameter	Unit	Method	Result	Standard/ <sup>1</sup>
Chlorine (Free)	mg/L as Cl <sub>2</sub>	DPD Colorimetric Method (SM:4500 Cl G)	0.5	≤1
Flow Rate (per sec)	m <sup>3</sup> /sec	Calculation	0.022	-

Physical Apperance : 1. Sample : ycllow, lightly SS

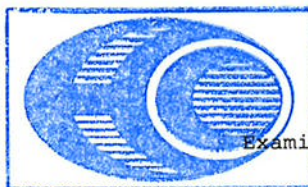
2. Container : Normal [ PE 0.5 L, PE 1.0 L, PE 1.8 L, G 1.0 L ]

Remark : 1. /1 Notification of Industrial Estate Authority of Thailand 029 / 2567 (2024)

2. SM = Standard Methods for the Examination of Water and Wastewater, APHA, AWWA, WEF, 24th Edition, 2023.

3. Parameter Outside The Scope of The Registration of Department of Industrial Works

4. Sampling By Miss Pompinan Viriyakusolkul



บริษัท อีสเทิร์นไทยคอนซัลติ้ง 1992 จำกัด

Examined By : 

(Miss Apiradee Chuen-arom)

22/01/2025

REPORTED TEST REFER TO SUBMITTED SAMPLES ONLY  
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WITHOUT THE WRITTEN APPROVAL LABORATORY



## Test Report

Request No : W6802253

Report No : 6802-0871

Customer : Amata B.Grimm Power (Rayong) 3 Limited.\*\*

Address : Amata City Rayong Industrial Estate 7/491 Moo.6 Highway 331,Mabyangpom,Pluak Daeng, Rayong 21140\*\*

Sampling Source : Amata B.Grimm Power (Rayong) 3 Limited.\*\*

Sample No : W 68020714

Sample Name : บ่อตรวจสอบคุณภาพน้ำทิ้ง \*\*

Sampling Date : 10/02/2025\*\*

Sampling By : ETC\*\*

Sampling Time : 11:10 AM\*\*

Sampling Method : Grab\*\*

Received Date : 11/02/2025

Tested Date : 11/02/2025 - 18/02/2025

Reported Date : 20/02/2025

Parameter	Unit	Method	Result	Standard <sup>1</sup>
Biochemical Oxygen Demand #	mg/L	5-Day BOD Test, Membrane Electrode Method (SM:5210B)	< 2.0	≤500
Chemical Oxygen Demand #	mg/L	Closed Reflux,Titrimetric Method (SM:5220C)	47	≤750
Oil and Grease *	mg/L	Liquid-Liquid, Partition-Gravimetric Method (SM:5520B)	< 3.0	≤10
pH (at 25 degree celsius)*		Electrometric Method (SM:4500 -H +B)	7.8	5.5-9.0
pH (on site) *		Electrometric Method	7.4	5.5-9.0
Temperature *	°C	Laboratory and Field Method (SM:2550 B)	30	≤45
Total Dissolved Solids #	mg/L	Dried at 180 degree celsius (SM:2540C)	2,664	≤3000

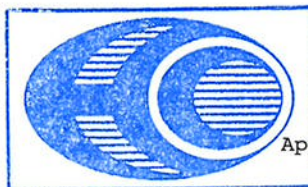
Physical Apperance : 1. Sample : slightly - white, lightly SS  
2. Container : Normal [ PE 0.5 L, PE 1.0 L, PE 1.8 L, G 1.0 L ]

Remark : 1. /1 Notification of Industrial Estate Authority of Thailand 029 / 2567 (2024)

- # = ISO/IEC 17025:2017 Accredited by DSS, SM = Standard Methods for the Examination of Water and Wastewater, APHA, AWWA, WEF, 24th Edition, 2023.
- Miss Apiradee Chuen-arom is Section Head / Miss Nunnaphat Bakhuntod is Technical Management.
- \* = Test Report/Sampling marked Not Accredited, Sampling By Mr. Parkpoom Buasawad (จ-003-ท-0017) \*
- \*\* = These data are non laboratory data.

Examined By : .....

(Miss Apiradee Chuen-arom)  
(จ-003-ท-0007)  
20/02/2025



บริษัท อีสเทิร์นไทยคอนซัลติง 1992 จำกัด

Approved By : .....

(Miss Nunnaphat Bakhuntod)  
(จ-003-ท-0005)  
20/02/2025

REPORTED TEST REFER TO SUBMITTED SAMPLES ONLY  
THIS REPORT SHALL NOT REPRODUCED EXCEPT IN FULL  
WITHOUT THE WRITTEN APPROVAL LABORATORY

## Test Report

Request No : W6802253

Report No : 6802-0871

Customer : Amata B.Grimm Power (Rayong) 3 Limited.\*\*  
Address : Amata City Rayong Industrial Estate 7/491 Moo.6 Highway 331,Mabyangporn,Pluak Daeng, Rayong 21140\*\*  
Sampling Source : Amata B.Grimm Power (Rayong) 3 Limited.\*\* Sample No : W 68020714  
Sample Name : บ่อตรวจสอบคุณภาพน้ำทิ้ง \*\* Sampling Date : 10/02/2025\*\*  
Sampling By : ETC\*\* Sampling Time : 11:10 AM\*\*  
Sampling Method : Grab\*\* Received Date : 11/02/2025  
Tested Date : 11/02/2025 - 18/02/2025 Reported Date : 20/02/2025

Parameter	Unit	Method	Result	Standard <sup>1</sup>
Total Suspended Solids #	mg/L	Dried at 103-105 degree celsius (SM:2540D)	14	≤200

Physical Apperance : 1. Sample : slightly - white, lightly SS

2. Container : Normal [ PE 0.5 L, PE 1.0 L, PE 1.8 L, G 1.0 L ]

Remark : 1. /1 Notification of Industrial Estate Authority of Thailand 029 / 2567 (2024)

2. # = ISO/IEC 17025:2017 Accredited by DSS, SM = Standard Methods for the Examination of Water and Wastewater, APHA, AWWA, WEF, 24th Edition, 2023.

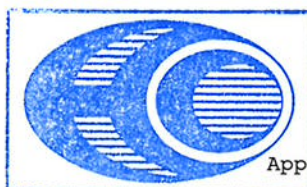
3. Miss Apiradee Chuen-arom is Section Head / Miss Nunnaphat Bakhuntod is Technical Management.

4. \* = Test Report/Sampling marked Not Accredited, Sampling By Mr. Parkpoom Buasawad (จ-003-ท-0017) \*

5. \*\* = These data are non laboratory data.

Examined By : .....

(Miss Apiradee Chuen-arom)  
(จ-003-ท-0007)  
20/02/2025



บริษัท อีสเทิร์นไทยคอนซัลติ้ง 1992 จำกัด

Approved By : .....

(Miss Nunnaphat Bakhuntod)  
(จ-003-ท-0005)  
20/02/2025

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THIS REPORT SHALL NOT REPRODUCED EXCEPT IN FULL  
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## Test Report

Request No : W6802253

Report No : 6802-0871

Customer : Amata B.Grimm Power (Rayong) 3 Limited.

Address : Amata City Rayong Industrial Estate 7/491 Moo.6 Highway 331,Mabyangporn,Pluak Daeng, Rayong 21140

Sampling Source : Amata B.Grimm Power (Rayong) 3 Limited.

Sample No : W 68020714

Sample Name : บ่อตรวจสอบคุณภาพน้ำทิ้ง

Sampling Date : 10/02/2025

Sampling By : ETC

Sampling Time : 11:10 AM

Sampling Method : Grab

Received Date : 11/02/2025

Tested Date : 11/02/2025 - 18/02/2025

Reported Date : 20/02/2025

Parameter	Unit	Method	Result	Standard <sup>1</sup>
Chlorine (Free)	mg/L as Cl <sub>2</sub>	DPD Colorimetric Method (SM:4500 Cl G)	0.1	≤1
Flow Rate (per sec)	m <sup>3</sup> /sec	Calculation	0.022	-

Physical Apperance : 1. Sample : slightly - white, lightly SS

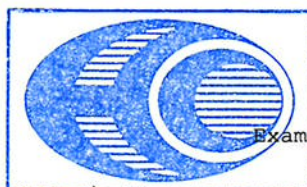
2. Container : Normal [ PE 0.5 L, PE 1.0 L, PE 1.8 L, G 1.0 L ]

Remark : 1. /I Notification of Industrial Estate Authority of Thailand 029 / 2567 (2024)

2. SM = Standard Methods for the Examination of Water and Wastewater, APHA, AWWA, WEF, 24th Edition, 2023.

3. Parameter Outside The Scope of The Registration of Department of Industrial Works

4. Sampling By Mr. Parkpoom Buasawad



บริษัท อีสเทิร์นไทยคอนซัลติ้ง 1992 จำกัด

Examined By : .....

(Miss Apiradee Chuen-arom)

20/02/2025

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## Test Report

Request No : W6803274

Report No : 6803-1161

Customer : Amata B.Grimm Power (Rayong) 3 Limited.\*\*

Address : Amata City Rayong Industrial Estate 7/491 Moo.6 Highway 331,Mabyangporn,Pluak Daeng, Rayong 21140\*\*

Sampling Source : Amata B.Grimm Power (Rayong) 3 Limited.\*\* Sample No : W 68030883

Sample Name : บ่อตรวจสอบคุณภาพน้ำทิ้ง\*\* Sampling Date : 10/03/2025\*\*

Sampling By : ETC\*\* Sampling Time : 10:15 AM\*\*

Sampling Method : Grab\*\* Received Date : 11/03/2025

Tested Date : 11/03/2025 - 19/03/2025 Reported Date : 21/03/2025

Parameter	Unit	Method	Result	Standard <sup>1</sup>
Biochemical Oxygen Demand #	mg/L	5-Day BOD Test, Membrane Electrode Method (SM:5210B)	< 2.0	≤500
Chemical Oxygen Demand #	mg/L	Closed Reflux,Titrimetric Method (SM:5220C)	53	≤750
Oil and Grease *	mg/L	Liquid-Liquid, Partition-Gravimetric Method (SM:5520B)	< 3.0	≤10
pH (at 25 degree celsius)*		Electrometric Method (SM:4500 -H +B)	7.7	5.5-9.0
pH (on site) *		Electrometric Method	7.5	5.5-9.0
Temperature *	°C	Laboratory and Field Method (SM:2550 B)	30	≤45
Total Dissolved Solids #	mg/L	Dried at 180 degree celsius (SM:2540C)	2,828	≤3000

Physical Apperance : 1. Sample : yellowish, lightly SS

2. Container : Normal [ PE 0.5 L, PE 1.0 L, PE 1.8 L, G 1.0 L ]

Remark : 1. /1 Notification of Industrial Estate Authority of Thailand 029 / 2567 (2024)

2. # = ISO/IEC 17025:2017 Accredited by DSS, SM = Standard Methods for the Examination of Water and Wastewater, APHA, AWWA, WEF, 24th Edition, 2023.

3. Miss Apiradee Chuen-arom is Section Head / Miss Nunnaphat Bakhuntod is Technical Management.

4. \* = Test Report/Sampling marked Not Accredited, Sampling By Mr. Supharerk Phatklang (จ-003-ท-0031)\*

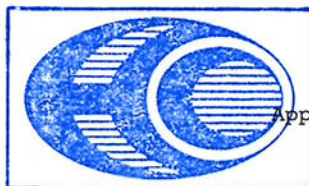
5. \*\* = These data are non laboratory data.

Examined By : .....

(Miss Apiradee Chuen-arom)

(จ-003-ท-0007)

21/03/2025



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Approved By : .....

(Miss Nunnaphat Bakhuntod)

(จ-003-ท-0005)

21/03/2025

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ACCREDITED  
ISO 9001 / ISO 14001

## EASTERN THAI CONSULTING 1992 CO., LTD.

683 Moo 11 Sukhapibarn 8 Rd., Nongkham, Sriracha, Chonburi 20230  
Tel. 0-3848-1197-8, 0-3876-3031-2 Fax : 0-3848-2095 E-mail : marketing@etc1992.com



TESTING  
No.0159

### Test Report

Request No : W6803274

Report No : 6803-1161

Customer : Amata B.Grimm Power (Rayong) 3 Limited.\*\*

Address : Amata City Rayong Industrial Estate 7/491 Moo.6 Highway 331,Mabyangporn,Pluak Daeng, Rayong 21140\*\*

Sampling Source : Amata B.Grimm Power (Rayong) 3 Limited.\*\*

Sample No : W 68030883

Sample Name : บ่อดำรงคุณภาพน้ำทิ้ง\*\*

Sampling Date : 10/03/2025\*\*

Sampling By : ETC\*\*

Sampling Time : 10:15 AM\*\*

Sampling Method : Grab\*\*

Received Date : 11/03/2025

Tested Date : 11/03/2025 - 19/03/2025

Reported Date : 21/03/2025

Parameter	Unit	Method	Result	Standard/ <sup>1</sup>
Total Suspended Solids #	mg/L	Dried at 103-105 degree celsius (SM:2540D)	22	≤200

Physical Apperance : 1. Sample : yellowish, lightly SS

2. Container : Normal [ PE 0.5 L, PE 1.0 L, PE 1.8 L, G 1.0 L ]

Remark : 1. /I Notification of Industrial Estate Authority of Thailand 029 / 2567 (2024)

2. # = ISO/IEC 17025:2017 Accredited by DSS, SM = Standard Methods for the Examination of Water and Wastewater, APHA, AWWA, WEF, 24th Edition, 2023.

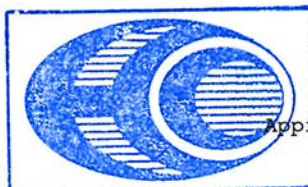
3. Miss Apiradee Chuen-arom is Section Head / Miss Nunnaphat Bakhuntod is Technical Management.

4. \* = Test Report/Sampling marked Not Accredited, Sampling By Mr. Supharerk Phatklang (ว-003-ค-0031)\*

5. \*\* = These data are non laboratory data.

Examined By : .....

(Miss Apiradee Chuen-arom)  
(ว-003-ค-0007)  
21/03/2025



บริษัท อีสเทิร์นไทยคอนซัลติ้ง 1992 จำกัด

Approved By : .....

(Miss Nunnaphat Bakhuntod)  
(ว-003-ค-0005)  
21/03/2025

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## Test Report

Request No : W6803274

Report No : 6803-1161

Customer : Amata B.Grimm Power (Rayong) 3 Limited.

Address : Amata City Rayong Industrial Estate 7/491 Moo.6 Highway 331, Mabyangporm, Pluak Daeng, Rayong 21140

Sampling Source : Amata B.Grimm Power (Rayong) 3 Limited.

Sample No : W 68030883

Sample Name : ป๊อตตรวจสอบคุณภาพน้ำทิ้ง

Sampling Date : 10/03/2025

Sampling By : ETC

Sampling Time : 10:15 AM

Sampling Method : Grab

Received Date : 11/03/2025

Tested Date : 11/03/2025 - 19/03/2025

Reported Date : 21/03/2025

Parameter	Unit	Method	Result	Standard <sup>1</sup>
Chlorine (Free)	mg/L as Cl <sub>2</sub>	DPD Colorimetric Method (SM:4500 Cl G)	0.1	≤1
Flow Rate (per sec)	m <sup>3</sup> /sec	Calculation	0.022	-

Physical Apperance : 1. Sample : yellowish, lightly SS

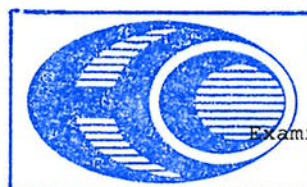
2. Container : Normal [ PE 0.5 L, PE 1.0 L, PE 1.8 L, G 1.0 L ]

Remark : 1. /1 Notification of Industrial Estate Authority of Thailand 029 / 2567 (2024)

2. SM = Standard Methods for the Examination of Water and Wastewater, APHA, AWWA, WEF, 24th Edition, 2023.

3. Parameter Outside The Scope of The Registration of Department of Industrial Works

4. Sampling By Mr. Supharerk Phatklang



บริษัท อีสเทิร์นไทยคอนซัลติ้ง 1992 จำกัด

Examined By : .....

(Miss Apiradee Chuen-arom)

21/03/2025

REPORTED TEST REFER TO SUBMITTED SAMPLES ONLY  
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## Test Report

Request No : W6804268

Report No : 6804-0964

Customer : Amata B.Grimm Power (Rayong) 3 Limited.\*\*

Address : Amata City Rayong Industrial Estate 7/491 Moo.6 Highway 331,Mabyangporm,Pluak Daeng, Rayong 21140\*\*

Sampling Source : Amata B.Grimm Power (Rayong) 3 Limited.\*\* Sample No : W 68040811

Sample Name : บ่อตรวจสอปคุณภาพน้ำทิ้ง\*\* Sampling Date : 09/04/2025\*\*

Sampling By : ETC\*\* Sampling Time : 9:15 AM\*\*

Sampling Method : Grab\*\* Received Date : 10/04/2025

Tested Date : 10/04/2025 - 19/04/2025 Reported Date : 22/04/2025

Parameter	Unit	Method	Result	Standard/ <sup>1</sup>
Biochemical Oxygen Demand #	mg/L	5-Day BOD Test, Membrane Electrode Method (SM:5210B)	< 2.0	≤500
Chemical Oxygen Demand #	mg/L	Closed Reflux,Titrimetric Method (SM:5220C)	54	≤750
Oil and Grease *	mg/L	Liquid-Liquid, Partition-Gravimetric Method (SM:5520B)	< 3.0	≤10
pH (at 25 degree celsius)*		Electrometric Method (SM:4500 -H +B)	7.9	5.5-9.0
pH (on site) *		Electrometric Method	7.6	5.5-9.0
Temperature *	°C	Laboratory and Field Method (SM:2550 B)	31	≤45
Total Dissolved Solids #	mg/L	Dried at 180 degree celsius (SM:2540C)	2,524	≤3000

Physical Apperance : 1. Sample : yellowish, lightly SS

2. Container : Normal [ PE 0.5 L, PE 1.0 L, PE 1.8 L, G 1.0 L ]

Remark : 1. /1 Notification of Industrial Estate Authority of Thailand 029 / 2567 (2024)

2. # = ISO/IEC 17025:2017 Accredited by DSS, SM = Standard Methods for the Examination of Water and Wastewater, APHA, AWWA, WEF, 24th Edition, 2023.

3. Miss Apiradee Chuen-arom is Section Head / Miss Nunnaphat Bakhuntod is Technical Management.

4. \* = Test Report/Sampling marked Not Accredited, Sampling By Mr. Audoumsub Jenjobjing (จ-003-จ-0009)\*

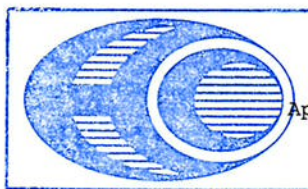
5. \*\* = These data are non laboratory data.

Examined By : .....

(Miss Apiradee Chuen-arom)

(จ-003-ค-0007)

22/04/2025



บริษัท อีสเทิร์นไทยคอนซัลติ้ง 1992 จำกัด

Approved By : .....

(Miss Nunnaphat Bakhuntod)

(จ-003-ค-0005)

22/04/2025

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## Test Report

Request No : W6804268

Report No : 6804-0964

Customer : Amata B.Grimm Power (Rayong) 3 Limited.\*\*

Address : Amata City Rayong Industrial Estate 7/491 Moo.6 Highway 331,Mabyangporm,Pluak Daeng, Rayong 21140\*\*

Sampling Source : Amata B.Grimm Power (Rayong) 3 Limited.\*\*

Sample No : W 68040811

Sample Name : บ่อตรวจสอปคุณภาพน้ำทิ้ง\*\*

Sampling Date : 09/04/2025\*\*

Sampling By : ETC\*\*

Sampling Time : 9:15 AM\*\*

Sampling Method : Grab\*\*

Received Date : 10/04/2025

Tested Date : 10/04/2025 - 19/04/2025

Reported Date : 22/04/2025

Parameter	Unit	Method	Result	Standard <sup>1</sup>
Total Suspended Solids #	mg/L	Dried at 103-105 degree celsius (SM:2540D)	17	≤200

Physical Apperance : 1. Sample : yellowish, lightly SS

2. Container : Normal [ PE 0.5 L, PE 1.0 L, PE 1.8 L, G 1.0 L ]

Remark : 1. /1 Notification of Industrial Estate Authority of Thailand 029 / 2567 (2024)

2. # = ISO/IEC 17025:2017 Accredited by DSS, SM = Standard Methods for the Examination of Water and Wastewater, APHA, AWWA, WEF, 24th Edition, 2023.

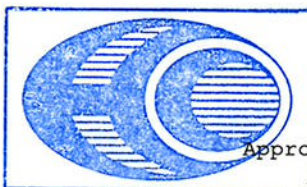
3. Miss Apiradee Chuen-arom is Section Head / Miss Nunnaphat Bakhuntod is Technical Management.

4. \* = Test Report/Sampling marked Not Accredited, Sampling By Mr. Audoumsub Jenjobjing (จ-003-จ-0009)\*

5. \*\* = These data are non laboratory data.

Examined By : .....

(Miss Apiradee Chuen-arom)  
(จ-003-ค-0007)  
22/04/2025



บริษัท อีสเทิร์นไทยคอนซัลต์ 1992 จำกัด

Approved By : .....

(Miss Nunnaphat Bakhuntod)  
(จ-003-ค-0005)  
22/04/2025

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## Test Report

Request No : W6804268

Report No : 6804-0964

Customer : Amata B.Grimm Power (Rayong) 3 Limited.

Address : Amata City Rayong Industrial Estate 7/491 Moo.6 Highway 331,Mabyangporn,Pluak Daeng, Rayong 21140

Sampling Source : Amata B.Grimm Power (Rayong) 3 Limited.

Sample No : W 68040811

Sample Name : บ่อตรวจสอบคุณภาพน้ำทิ้ง

Sampling Date : 09/04/2025

Sampling By : ETC

Sampling Time : 9:15 AM

Sampling Method : Grab

Received Date : 10/04/2025

Tested Date : 10/04/2025 - 19/04/2025

Reported Date : 22/04/2025

Parameter	Unit	Method	Result	Standard/ <sup>1</sup>
Chlorine (Free)	mg/L as Cl <sub>2</sub>	DPD Colorimetric Method (SM:4500 Cl G)	< 0.1	≤1
Flow Rate (per sec)	m <sup>3</sup> /sec	Calculation	0.022	-

Physical Apperance : 1. Sample : yellowish, lightly SS

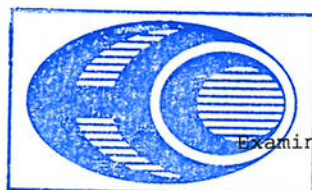
2. Container : Normal [ PE 0.5 L, PE 1.0 L, PE 1.8 L, G 1.0 L ]

Remark : 1. /1 Notification of Industrial Estate Authority of Thailand 029 / 2567 (2024)

2. SM = Standard Methods for the Examination of Water and Wastewater, APHA, AWWA, WEF, 24th Edition, 2023.

3. Parameter Outside The Scope of The Registration of Department of Industrial Works

4. Sampling By Mr. Audoumsub Jenjobjing



บริษัท อีสเทิร์นไทยคอนซัลติ้ง 1992 จำกัด

Examined By : .....

(Miss Apiradee Chuen-arom)

22/04/2025

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## Test Report

Request No : W6805359

Report No : 6805-1381

Customer : Amata B.Grimm Power (Rayong) 3 Limited.\*\*  
Address : Amata City Rayong Industrial Estate 7/491 Moo.6 Highway 331,Mabyangporn,Pluak Daeng, Rayong 21140\*\*  
Sampling Source : Amata B.Grimm Power (Rayong) 3 Limited.\*\* Sample No : W 68051289  
Sample Name : บ่อดำรงสออบคุณภาพน้ำทิ้ง\*\* Sampling Date : 14/05/2025\*\*  
Sampling By : ETC\*\* Sampling Time : 11:00 AM\*\*  
Sampling Method : Grab\*\* Received Date : 15/05/2025  
Tested Date : 15/05/2025 - 21/05/2025 Reported Date : 23/05/2025

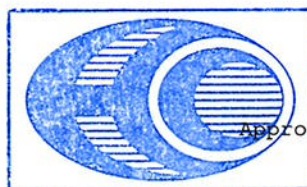
Parameter	Unit	Method	Result	Standard <sup>1</sup>
Biochemical Oxygen Demand #	mg/L	5-Day BOD Test, Membrane Electrode Method (SM:5210B)	< 2.0	≤500
Chemical Oxygen Demand #	mg/L	Closed Reflux,Titrimetric Method (SM:5220C)	< 40	≤750
Oil and Grease *	mg/L	Liquid-Liquid, Partition-Gravimetric Method (SM:5520B)	< 3.0	≤10
pH (at 25 degree celsius)*		Electrometric Method (SM:4500 -H +B)	7.5	5.5-9.0
pH (on site) *		Electrometric Method	7.6	5.5-9.0
Temperature *	°C	Laboratory and Field Method (SM:2550 B)	29	≤45
Total Dissolved Solids #	mg/L	Dried at 180 degree celsius (SM:2540C)	2,704	≤3000

Physical Apperance : 1. Sample : yellowish, lightly SS  
2. Container : Normal [ PE 0.5 L, PE 1.0 L, PE 1.8 L, G 1.0 L ]

Remark : 1. /1 Notification of Industrial Estate Authority of Thailand 029 / 2567 (2024)  
2. # = ISO/IEC 17025:2017 Accredited by DSS, SM = Standard Methods for the Examination of Water and Wastewater, APHA, AWWA, WEF, 24th Edition, 2023.  
3. Miss Apiradee Chuen-arom is Section Head / Miss Nunnaphat Bakhuntod is Technical Management.  
4. \* = Test Report/Sampling marked Not Accredited, Sampling By Mr. Songpon Phiwan (จ-003-ค-0016)\*  
5. \*\* = These data are non laboratory data.

Examined By : .....

(Miss Apiradee Chuen-arom)  
(จ-003-ค-0007)  
23/05/2025



บริษัท อีสเทิร์นไทยคอนซัลติง 1992 จำกัด

Approved By : .....

(Miss Nunnaphat Bakhuntod)  
(จ-003-ค-0005)  
23/05/2025

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## Test Report

Request No : W6805359

Report No : 6805-1381

Customer : Amata B.Grimm Power (Rayong) 3 Limited.\*\*

Address : Amata City Rayong Industrial Estate 7/491 Moo.6 Highway 331,Mabyangporm,Pluak Daeng, Rayong 21140\*\*

Sampling Source : Amata B.Grimm Power (Rayong) 3 Limited.\*\*

Sample No : W 68051289

Sample Name : บ่อดรงสอบคุณภาพน้ำทิ้ง\*\*

Sampling Date : 14/05/2025\*\*

Sampling By : ETC\*\*

Sampling Time : 11:00 AM\*\*

Sampling Method : Grab\*\*

Received Date : 15/05/2025

Tested Date : 15/05/2025 - 21/05/2025

Reported Date : 23/05/2025

Parameter	Unit	Method	Result	Standard <sup>1</sup>
Total Suspended Solids #	mg/L	Dried at 103-105 degree celsius (SM:2540D)	8	≤200

Physical Apperance : 1. Sample : yellowish, lightly SS

2. Container : Normal [ PE 0.5 L, PE 1.0 L, PE 1.8 L, G 1.0 L ]

Remark : 1. /1 Notification of Industrial Estate Authority of Thailand 029 / 2567 (2024)

2. # = ISO/IEC 17025:2017 Accredited by DSS, SM = Standard Methods for the Examination of Water and Wastewater, APHA, AWWA, WEF, 24th Edition, 2023.

3. Miss Apiradee Chuen-arom is Section Head / Miss Nunnaphat Bakhuntod is Technical Management.

4. \* = Test Report/Sampling marked Not Accredited, Sampling By Mr. Songpon Phiwuan (จ-003-ก-0016)\*

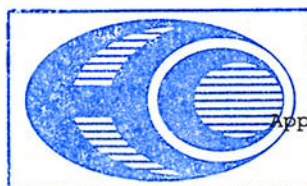
5. \*\* = These data are non laboratory data.

Examined By : .....

(Miss Apiradee Chuen-arom)

(จ-003-ก-0007)

23/05/2025



บริษัท อีสเทิร์นไทยคอนซัลติ้ง 1992 จำกัด

Approved By : .....

(Miss Nunnaphat Bakhuntod)

(จ-003-ก-0005)

23/05/2025

REPORTED TEST REFER TO SUBMITTED SAMPLES ONLY  
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## Test Report

Request No : W6805359

Report No : 6805-1381

Customer : Amata B.Grimm Power (Rayong) 3 Limited.

Address : Amata City Rayong Industrial Estate 7/491 Moo.6 Highway 331,Mabyangporn,Pluak Daeng, Rayong 21140

Sampling Source : Amata B.Grimm Power (Rayong) 3 Limited.

Sample No : W 68051289

Sample Name : ป๊อตรวจสอบคุณภาพน้ำทิ้ง

Sampling Date : 14/05/2025

Sampling By : ETC

Sampling Time : 11:00 AM

Sampling Method : Grab

Received Date : 15/05/2025

Tested Date : 15/05/2025 - 21/05/2025

Reported Date : 23/05/2025

Parameter	Unit	Method	Result	Standard/ <sup>1</sup>
Chlorine (Free)	mg/L as Cl <sub>2</sub>	DPD Colorimetric Method (SM:4500 Cl G)	< 0.1	≤ 1
Flow Rate (per sec)	m <sup>3</sup> /sec	Calculation	0.022	-

Physical Apperance : 1. Sample : yellowish, lightly SS

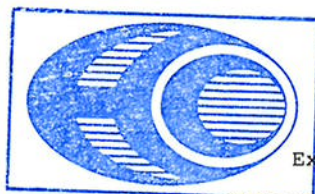
2. Container : Normal [ PE 0.5 L, PE 1.0 L, PE 1.8 L, G 1.0 L ]

Remark : 1. /I Notification of Industrial Estate Authority of Thailand 029 / 2567 (2024)

2. SM = Standard Methods for the Examination of Water and Wastewater, APHA, AWWA, WEF, 24th Edition, 2023.

3. Parameter Outside The Scope of The Registration of Department of Industrial Works

4. Sampling By Mr. Songpon Phiwuan



บริษัท อีสเทิร์นไทยคอนซัลติ้ง 1992 จำกัด

Examined By : .....

(Miss Apiradee Chuen-arom)

23/05/2025

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WITHOUT THE WRITTEN APPROVAL LABORATORY



## Test Report

Request No : W6806217

Report No : 6806-1157

Customer : Amata B.Grimm Power (Rayong) 3 Limited.\*\*

Address : Amata City Rayong Industrial Estate 7/491 Moo.6 Highway 331,Mabyangporm,Pluak Daeng, Rayong 21140\*\*

Sampling Source : Amata B.Grimm Power (Rayong) 3 Limited.\*\*

Sample No : W 68060723

Sample Name : บ่อตรวจสอบคุณภาพน้ำทิ้ง\*\*

Sampling Date : 09/06/2025\*\*

Sampling By : ETC\*\*

Sampling Time : 11:00 AM\*\*

Sampling Method : Grab\*\*

Received Date : 10/06/2025

Tested Date : 10/06/2025 - 20/06/2025

Reported Date : 20/06/2025

Parameter	Unit	Method	Result	Standard <sup>1</sup>
Biochemical Oxygen Demand #	mg/L	5-Day BOD Test, Membrane Electrode Method (SM:5210B)	< 2.0	≤500
Chemical Oxygen Demand #	mg/L	Closed Reflux,Titrimetric Method (SM:5220C)	67	≤750
Oil and Grease *	mg/L	Liquid-Liquid, Partition-Gravimetric Method (SM:5520B)	< 3.0	≤10
pH (at 25 degree celsius) *		Electrometric Method (SM:4500 -H +B)	7.9	5.5-9.0
pH (on site) *		Electrometric Method	7.8	5.5-9.0
Temperature *	°C	Laboratory and Field Method (SM:2550 B)	34	≤45
Total Dissolved Solids #	mg/L	Dried at 180 degree celsius (SM:2540C)	2,384	≤3000

Physical Apperance : 1. Sample : yellowish, lightly SS

2. Container : Normal [ PE 0.5 L, PE 1.0 L, PE 1.8 L, G 1.0 L ]

Remark : 1. /1 Notification of Industrial Estate Authority of Thailand 029 / 2567 (2024)

2. # = ISO/IEC 17025:2017 Accredited by DSS, SM = Standard Methods for the Examination of Water and Wastewater, APHA, AWWA, WEF, 24th Edition, 2023.

3. Miss Apiradee Chuen-arom is Section Head / Miss Nunnaphat Bakhuntod is Technical Management.

4. \* = Test Report/Sampling marked Not Accredited, Sampling By Mr. Parkpoom Buasawad (จ-003-ก-0017)\*

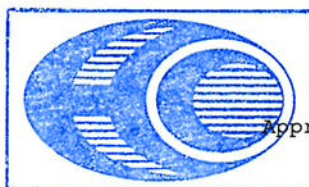
5. \*\* = These data are non laboratory data.

Examined By : .....

(Miss Apiradee Chuen-arom)

(จ-003-ก-0007)

20/06/2025



บริษัท อีสเทิร์นไทยคอนซัลติ้ง 1992 จำกัด

Approved By : .....

(Miss Nunnaphat Bakhuntod)

(จ-003-ก-0005)

20/06/2025

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## Test Report

Request No : W6806217

Report No : 6806-1157

Customer : Amata B.Grimm Power (Rayong) 3 Limited.\*\*

Address : Amata City Rayong Industrial Estate 7/491 Moo.6 Highway 331,Mabyangporn,Pluak Daeng, Rayong 21140\*\*

Sampling Source : Amata B.Grimm Power (Rayong) 3 Limited.\*\*

Sample No : W 68060723

Sample Name : บ่อตรวจสอบคุณภาพน้ำทิ้ง\*\*

Sampling Date : 09/06/2025\*\*

Sampling By : ETC\*\*

Sampling Time : 11:00 AM\*\*

Sampling Method : Grab\*\*

Received Date : 10/06/2025

Tested Date : 10/06/2025 - 20/06/2025

Reported Date : 20/06/2025

Parameter	Unit	Method	Result	Standard <sup>1</sup>
Total Suspended Solids #	mg/L	Dried at 103-105 degree celsius (SM:2540D)	34	≤200

Physical Apperance : 1. Sample : yellowish, lightly SS

2. Container : Normal [ PE 0.5 L, PE 1.0 L, PE 1.8 L, G 1.0 L ]

Remark : 1. /1 Notification of Industrial Estate Authority of Thailand 029 / 2567 (2024)

2. # = ISO/IEC 17025:2017 Accredited by DSS, SM = Standard Methods for the Examination of Water and Wastewater, APHA, AWWA, WEF, 24th Edition, 2023.

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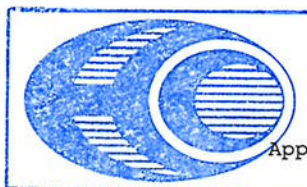
5. \*\* = These data are non laboratory data.

Examined By : .....

(Miss Apiradee Chuen-arom)

(จ-003-ก-0007)

20/06/2025



บริษัท อีสเทิร์นไทยคอนซัลติ้ง 1992 จำกัด

Approved By : .....

(Miss Nunnaphat Bakhuntod)

(จ-003-ก-0005)

20/06/2025

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**Test Report**

Request No : W6806217

Report No : 6806-1157

Customer : Amata B.Grimm Power (Rayong) 3 Limited.

Address : Amata City Rayong Industrial Estate 7/491 Moo.6 Highway 331,Mabyangporn,Pluak Daeng, Rayong 21140

Sampling Source : Amata B.Grimm Power (Rayong) 3 Limited.

Sample No : W 68060723

Sample Name : บ่อตรวจสอบคุณภาพน้ำทิ้ง

Sampling Date : 09/06/2025

Sampling By : ETC

Sampling Time : 11:00 AM

Sampling Method : Grab

Received Date : 10/06/2025

Tested Date : 10/06/2025 - 20/06/2025

Reported Date : 20/06/2025

Parameter	Unit	Method	Result	Standard <sup>1</sup>
Chlorine (Free)	mg/L as Cl <sub>2</sub>	DPD Colorimetric Method (SM:4500 Cl G)	0.1	≤1
Flow Rate (per sec)	m <sup>3</sup> /sec	Calculation	0.022	-

Physical Apperance : 1. Sample : yellowish, lightly SS

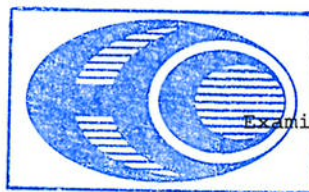
2. Container : Normal [ PE 0.5 L, PE 1.0 L, PE 1.8 L, G 1.0 L ]

Remark : 1. /1 Notification of Industrial Estate Authority of Thailand 029 / 2567 (2024)

2. SM = Standard Methods for the Examination of Water and Wastewater, APHA, AWWA, WEF, 24th Edition, 2023.

3. Parameter Outside The Scope of The Registration of Department of Industrial Works

4. Sampling By Mr. Parkpoom Buasawad



บริษัท อีสเทิร์นไทยคอนซัลติ้ง 1992 จำกัด

Examined By : .....

(Miss Apiradee Chuen-arom)

20/06/2025

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ผลการตรวจวัดระดับความร้อนในบริเวณการทำงาน

Request No. LA68-R0470

Report No. R6804-2443-R6804-2457

## TEST REPORT

CUSTOMER : บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด  
 ADDRESS : 7/491 หมู่ 6 ตำบลมาบยางพร อำเภอบลวกแดง จังหวัดระยอง 21140  
 SAMPLE SOURCE : บริษัท อมตะ บี.กริม เพาเวอร์ (ระยอง) 3 จำกัด  
 SAMPLE POINT : พื้นที่ปฏิบัติงาน (อุณหภูมิจนักรา) SAMPLE NO. : 07907-07921  
 DURATION (MIN) : 120 MEASURING DATE : 21/04/2025  
 PARAMETER\* : Heat Stress RECEIVED DATE : 21/04/2025  
 SAMPLING INSTRUMENT : Wet Bulb Globe Temperature (WBGT) ; REPORTED DATE : 02/05/2025

AREA	WBGT	SAMPLING DURATION		RESULT (°C)			
	S/N No.	TIME	(min)	NWB	GT	DB	WBGT
1. Low Vol	TPL090016	10:45-10:50	5	26.4	34.4	33.0	28.7
2. High Vol	220004319	11:30-11:35	5	27.5	42.7	36.1	31.4
3. GT 31	TPL060039	10:45-10:50	5	26.6	37.0	32.8	29.3
4. GT 32	TPL060040	10:45-10:50	5	27.3	38.0	33.6	30.1
5. Gas Heater	TPL060040	10:00-10:05	5	27.5	36.9	33.2	30.0
6. Sampling Lab HRSG	TEU080014	10:00-10:05	5	27.7	33.3	32.7	29.4
7. Feed Motor HPLP 31, 32	TPL090017	10:00-10:05	5	27.1	34.7	34.1	29.3
8. Super Heat Steam 31, 32	TPL060039	10:00-10:05	5	27.0	34.9	32.6	29.1
9. HP Drum	TPL090016	10:00-10:05	5	26.7	44.1	34.2	30.9
10. Chemical Dosing HRSG	22004316	10:45-10:50	5	26.5	33.7	32.7	28.7
11. LP Drum	TPQ030024	10:00-10:05	5	30.4	47.6	39.8	34.8
12. Deaerator	TPQ030023	10:00-10:05	5	27.9	37.2	33.5	30.3
13. STG 30	22004318	10:00-10:05	5	28.4	36.2	35.9	30.7
14. Cooling Tower	22004319	10:00-10:05	5	27.2	36.0	34.0	29.6
15. WTP Control Room	22004320	10:00-10:50	50	20.2	24.3	24.2	21.4
WBGT AVERAGE		-	-	-	-	-	26.5
STANDARD <sup>/1</sup>		-	-	-	-	-	34.0

## REMARK :

Work Load is Light

Area 1, 2, 3, 4, 5, 7, 8, 9, 11, 12, 14 = Outdoor

Area 6, 10, 13, 15 = Indoor

<sup>/1</sup> Regulation of The Ministry of Labour B.E. 2559 (2016)

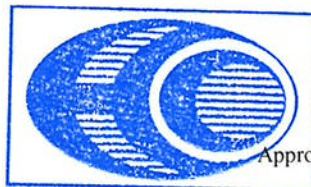
NWB = Natural Wet - Bulb Temperature

GT = Globe Temperature

DB = Dry - Bulb Temperature

WBGT = Wet - Bulb Globe Temperature

\* Parameter have License Registration of Department of Labour Protection and Welfare No. 0401-03-2564-0009  
 (Measurement By Ms. Savita Kittinoavarat)



บริษัท อีสเทิร์นไทยคอนซัลติ้ง 1992 จำกัด

Approved By.....

(MRS. WANPEN LHAOCHINDAWAT)

02/05/2025

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ภาคผนวก ง.

ใบแสดงการตรวจเทียบเครื่องมือ



**ANALYTICAL BALANCE (DU)**

**Model : XS205DU**


**Serial No. : 1126323724**

Mettler-Toledo (Thailand) Ltd.  
846/4 - 846/5846/4 - 846/5 Lasalle Rd., Bangna Tai  
Bangna District, Bangkok 10260  
+66 2723 0382  
MT-TH.ServiceSupport@mt.com



## Accuracy Calibration Certificate

### Customer

Company: EASTERN THAI CONSULTING 1992 CO., LTD.  
Address: 683 Moo 11, Sukhaphiban 8 Rd., Nong Kham  
City: Sriracha Contact: Sasiporn Nakin  
Zip / Postal: 20230  
State / Province: Chonburi  
Order Number:   
0 3 3 3 3 1 9 6 1 9

### Weighing Device

Manufacturer: Mettler Toledo Instrument Type: Weighing Instrument  
Model: XS205DU Asset Number: LABE 05/1  
Serial No.: 1126323724 Terminal Model: SAT  
Building: Laboratory Terminal Serial No.: 1126323724  
Floor: 1 Terminal Asset No.: N/A  
Room: Analytical Balance

Range	Max. Capacity	Readability (d)
1	81 g	0.00001 g
2	220 g	0.0001 g

### Procedure



Calibration Guidelines: EURAMET cg-18 v. 4.0 (11/2015)  
METTLER TOLEDO Work Instruction: CP/W002/20

This calibration certificate contains measurements for As Found calibration. No As Left calibration was performed because the device was not modified after As Found calibration. Therefore, results for As Left correspond to As Found.

The sensitivity/span of the weighing instrument was adjusted before calibration with a built-in weight.

In accordance with EURAMET cg-18 (11/2015), the test loads were selected to reflect the specific use of the weighing device or to accommodate specific calibration conditions.

	Temperature		Humidity	
As Found	Start: 25.7 °C	End: 25.8 °C	Start: 50.9 %	End: 50.6 %

As Found Calibration Date: 09-Dec-2024  
As Left Calibration Date: N/A  
Issue Date: 11-Dec-2024  
Calibrator:   
Somsak Sattanaco  
Approved Signatory:   
Sirachai P.  
Technical Manager / Head of Calibration Center

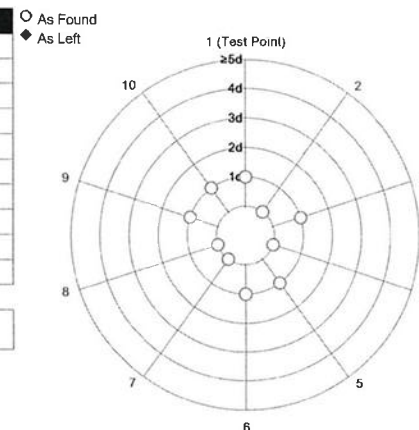
## Measurement Results

### Repeatability

Test Load: 70 g

	As Found	As Left
1	70.00004 g	N/A
2	70.00005 g	N/A
3	70.00004 g	N/A
4	70.00005 g	N/A
5	70.00006 g	N/A
6	70.00004 g	N/A
7	70.00005 g	N/A
8	70.00005 g	N/A
9	70.00006 g	N/A
10	70.00006 g	N/A

Standard Deviation	0.000008 g	N/A
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The "d" in the graph represents the readability of the range/interval in which the test was performed.

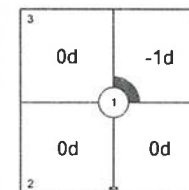
The results of this graph are based upon the absolute values of the differences from the mean value.

### Eccentricity

Test Load: 100 g

Position	As Found	As Left
1	100.0000 g	N/A
2	100.0000 g	N/A
3	100.0000 g	N/A
4	99.9999 g	N/A
5	100.0000 g	N/A

Maximum Deviation	0.0001 g	N/A
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As Found

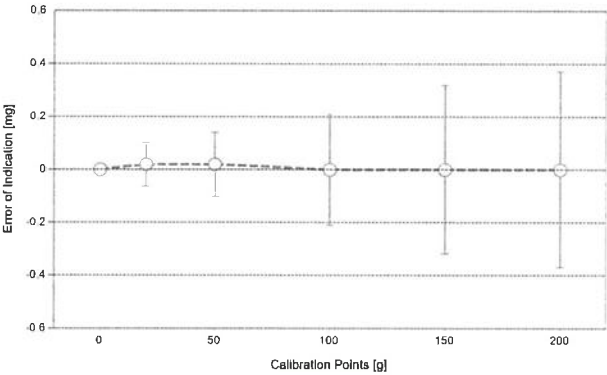
The "d" in the graph represents the readability of the range/interval in which the test was performed.

Error of Indication

As Found

	Reference Value	Indication	Error of Indication	Expanded Uncertainty	k
1	0.00000 g	0.00000 g	0.00000 g	0.017 mg	2
2	0.01000 g	0.01000 g	0.00000 g	0.020 mg	2
3	0.10000 g	0.10000 g	0.00000 g	0.023 mg	2
4	1.00000 g	1.00000 g	0.00000 g	0.032 mg	2
5	4.99998 g	5.00000 g	0.00002 g	0.048 mg	2
6	10.00001 g	10.00001 g	0.00000 g	0.061 mg	2
7	19.99999 g	20.00001 g	0.00002 g	0.082 mg	2
8 *	50.00003 g	50.00005 g	0.00002 g	0.12 mg	2
9	100.00000 g	100.00000 g	0.00000 g	0.21 mg	2
10	150.00000 g	150.00000 g	0.00000 g	0.32 mg	2
11	200.00000 g	200.00000 g	0.00000 g	0.37 mg	2

\*The calculated uncertainty was replaced by the CMC (Calibration and Measurement Capabilities) value because the calculated uncertainty was smaller than the CMC value.



○ As Found

◆ As Left

For improved legibility of the graphics only increasing measurement points are shown and measurement points close to zero are not displayed.

The expanded measurement uncertainty is reported as the standard measurement uncertainty multiplied by the coverage factor k such that the coverage probability corresponds to approximately 95 %.

The user is responsible for maintaining environmental conditions and the settings of the weighing instrument when it was calibrated.  
The results of this calibration certificate relate only to the calibrated item.

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Test Equipment

All weights used for metrological testing are traceable to national or international standards. The weights were calibrated and certified by an accredited calibration laboratory.

Weight Set 1: OIML E2

Weight Set No.: WS37 Date of Issue: 17-Jun-2024  
Certificate Number: 186753-1 Calibration Due Date: 20-Jan-2025

Weight Set 2: OIML E2

Weight Set No.: WS87 Date of Issue: 04-Jul-2023  
Certificate Number: 186520 Calibration Due Date: 02-Jan-2025

Thermo Hygrometer

Equipment No.: IN279 Date of Issue: 19-Jun-2024  
Certificate Number: SG-H-00577/67 Calibration Due Date: 17-Jun-2025

Remarks

FACT adjustment functionality activated  
Equipment condition: Good  
Next calibration according to customer's procedure  
Calibration data not decide by calibration laboratory

End of Accredited Section

The information below and any attachments to this calibration certificate are not part of the accredited calibration.

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Measurement Uncertainty of the Weighing Instrument in Use

Stated is the expanded uncertainty with k=2 in use. The formula shall be used for the estimation of the uncertainty under consideration of the errors of indication. The value R represents the net load indication in the unit of measure of the device.

Temperature coefficient for the evaluation of the measurement uncertainty in use: 1.5 · 10<sup>-8</sup> / K  
Temperature range on site for the evaluation of the measurement uncertainty in use: 3 K

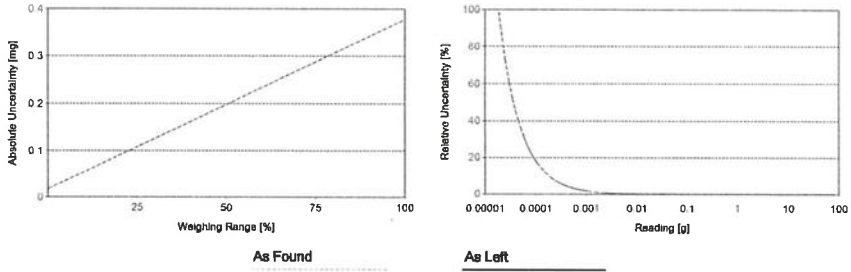
Linearization of Uncertainty Equation

Range		As Found		As Left
d	Max			
1	0.00001 g	81 g	U <sub>1</sub> = 0.018 mg + 0.00444 mg/g · R	N/A
2	0.0001 g	220 g	U <sub>2</sub> = 0.06 mg + 0.00439 mg/g · R	N/A

To optimize the stability of the linearization, besides of the zero load only increasing measurement points with a test load of 5% of the measurement range or larger are taken for the calculation of the linear equation.

Absolute and Relative Measurement Uncertainty in Use for Various Net Indications (Example)

Net Indication	As Found		As Left	
0.00220 g	0.018 mg	0.82%	N/A	N/A
0.02200 g	0.018 mg	0.082%	N/A	N/A
0.22000 g	0.019 mg	0.0086%	N/A	N/A
2.20000 g	0.028 mg	0.0013%	N/A	N/A
220.0000 g	1.0 mg	0.00047%	N/A	N/A



The weighing range shown in the absolute uncertainty graph refers to the first interval/range of the device.

GWP®  
Certificate



As Found



As Left



The weighing device meets the given process requirements.

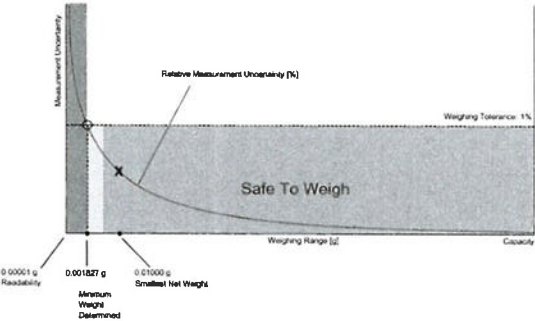
The weighing device meets the given process requirements.

Tests Performed: ☒ As Found ☐ As Left ☒ No adjustments/modifications made. As Left results correspond to As Found.

Process Requirements

Weighing Tolerance: 1% | Smallest Net Weight: 0.01000 g | Safety Factor: 2

Safe Weighing Range



While the values in this graph reflect the actual calibration results, the measurement uncertainty curves are simply a visual representation. This graph reflects As Left testing, unless only As Found was performed.

## Minimum Weight

## As Found Minimum Weight Table

## Range 1

Minimum weights for different weighing tolerances and safety factors					
Tolerance	Safety Factor				
	1	2	3	5	10
0.1%	0.018339 g	0.036842 g	0.055511 g	0.093358 g	0.191052 g
0.2%	0.009149 g	0.018339 g	0.027570 g	0.046156 g	0.093358 g
0.5%	0.003655 g	0.007316 g	0.010984 g	0.018339 g	0.036842 g
1%	0.001827 g	0.003655 g	0.005485 g	0.009149 g	0.018339 g
2%	0.000913 g	0.001827 g	0.002740 g	0.004569 g	0.009149 g
5%	0.000365 g	0.000730 g	0.001096 g	0.001827 g	0.003655 g

The minimum weight table applies to the fine range of the weighing device.



Pass: The determined minimum weight meets the requirement for the smallest net weight.

## As Left Minimum Weight Table

## Range 1

Minimum weights for different weighing tolerances and safety factors					
Tolerance	Safety Factor				
	1	2	3	5	10
0.1%	0.018339 g	0.036842 g	0.055511 g	0.093358 g	0.191052 g
0.2%	0.009149 g	0.018339 g	0.027570 g	0.046156 g	0.093358 g
0.5%	0.003655 g	0.007316 g	0.010984 g	0.018339 g	0.036842 g
1%	0.001827 g	0.003655 g	0.005485 g	0.009149 g	0.018339 g
2%	0.000913 g	0.001827 g	0.002740 g	0.004569 g	0.009149 g
5%	0.000365 g	0.000730 g	0.001096 g	0.001827 g	0.003655 g

The minimum weight table applies to the fine range of the weighing device.



Pass: The determined minimum weight meets the requirement for the smallest net weight.

At these net minimum weight values, the measurement uncertainty of the weighing device is equal to or less than 1/1 (no safety factor), 1/2, 1/3, 1/5, or 1/10 of the required tolerance. The values are calculated with  $k = 2$  and based on the linear formula of the measurement uncertainty of the weighing device in use.

The safety factor for As Found is always 1. This implies no safety factor. As Found testing looks at the behavior of the instrument from the past until test occurred. For the past, it is necessary to know that the tolerance was met, but not the safety factor. The safety factor is a proactive measure to apply for future measurements.

## Notes on minimum weight values in above table:

1. If "N/A" is shown above, no appropriate value could be calculated.
2. METTLER TOLEDO is not responsible for the definition of the process requirements.

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## Measurement Results

## Results Summary

	Repeatability	Eccentricity	Error of Indication
	As Found ✓	✓	✓
As Left	✓	✓	✓

✓ = Passed

✗ = Failed

⚠ = Safety Factor not met

## Repeatability

Test Load: 70 g

Tolerance	Control Limit	As Found		As Left	
		Std. Deviation	Result	Std. Deviation	Result
0.1%	0.000005 g	0.000008 g	✗	0.000008 g	✗
0.2%	0.000010 g		✓		⚠
0.5%	0.000025 g		✓		✓
1%	0.000050 g		✓		✓
2%	0.000100 g		✓		✓
5%	0.000250 g		✓		✓

The weighing tolerance is met if the standard deviation is less than or equal to the corresponding control limit.

## Eccentricity

Test Load: 100 g

Tolerance	Control Limit	As Found		As Left	
		Deviation	Result	Deviation	Result
0.1%	0.0500 g	0.0001 g	✓	0.0001 g	✓
0.2%	0.1000 g		✓		✓
0.5%	0.2500 g		✓		✓
1%	0.5000 g		✓		✓
2%	1.0000 g		✓		✓
5%	2.5000 g		✓		✓

The weighing tolerance is met if the deviation is less than or equal to the corresponding control limit.

COPY

Error of Indication

As Found

		Control limits for various weighing tolerances					
Reference Value	Error	0.1%	0.2%	0.5%	1%	2%	5%
0.00000 g	0.00000 g	N/A	N/A	N/A	N/A	N/A	N/A
19.99999 g	0.00002 g	0.01000 g	0.02000 g	0.05000 g	0.10000 g	0.20000 g	0.50000 g
50.00003 g	0.00002 g	0.02500 g	0.05000 g	0.12500 g	0.25000 g	0.50000 g	1.25000 g
100.0000 g	0.0000 g	0.0500 g	0.1000 g	0.2500 g	0.5000 g	1.0000 g	2.5000 g
150.0000 g	0.0000 g	0.0750 g	0.1500 g	0.3750 g	0.7500 g	1.5000 g	3.7500 g
200.0000 g	0.0000 g	0.1000 g	0.2000 g	0.5000 g	1.0000 g	2.0000 g	5.0000 g
Result		✓	✓	✓	✓	✓	✓

As Left

		Control limits for various weighing tolerances					
Reference Value	Error	0.1%	0.2%	0.5%	1%	2%	5%
0.00000 g	0.00000 g	N/A	N/A	N/A	N/A	N/A	N/A
19.99999 g	0.00002 g	0.01000 g	0.02000 g	0.05000 g	0.10000 g	0.20000 g	0.50000 g
50.00003 g	0.00002 g	0.02500 g	0.05000 g	0.12500 g	0.25000 g	0.50000 g	1.25000 g
100.0000 g	0.0000 g	0.0500 g	0.1000 g	0.2500 g	0.5000 g	1.0000 g	2.5000 g
150.0000 g	0.0000 g	0.0750 g	0.1500 g	0.3750 g	0.7500 g	1.5000 g	3.7500 g
200.0000 g	0.0000 g	0.1000 g	0.2000 g	0.5000 g	1.0000 g	2.0000 g	5.0000 g
Result		✓	✓	✓	✓	✓	✓

The weighing tolerance is met if the error (of indication) for each test point is less than or equal to the corresponding control limit for that particular weighing tolerance. Results at or close to the zero point cannot be assessed.

COPY



**ANALYTICAL BALANCE**

**Model : SECURA224-1S**

**Serial No. : 0036707137**



Certificate No. : 24-164695  
Sample Code : 24-67405-005

## CERTIFICATE OF CALIBRATION

Customer : EASTERN THAI CONSULTING 1992 CO., LTD.  
683 Moo 11, Sukhapibarn 8 Rd, Nongkham,  
Sriracha, Chonburi 20230

Location of Calibration : EASTERN THAI CONSULTING 1992 CO., LTD.  
(Analytical Balance Room)

Equipment : ELECTRONIC BALANCE

Manufacturer : SARTORIUS

Model : SECURA224-1S

Serial No. : 0036707137

ID No. : LABE 05/2

Date of Receipt : 19 December 2024

Date of Calibration : 19 December 2024

Calibrated by Mr. Thanadol Pholthep  
Scientist

Approved by (Mr. Nuttaput Timula)  
Signed for Director

Issue date 20 December 2024

The uncertainties are for a confidence probability of approximately 95%.

The calibration result is applied only to the above calibrated item and was found accurate as shown on date and place of calibration only.

This Certificate is issued in accordance with the conditions of accreditation granted by the Thai Laboratory Accreditation scheme which has assessed the measurement capability of the laboratory and its traceability to recognized national standards and to the unit of measurement realized at the corresponding national standards laboratory. This certificate may not be reproduced other than in full except with the prior written approval of the Asia Medical and Agricultural Laboratory and Research Center Public Company Limited (AMARC).



Certificate No. : 24-164695  
Sample Code : 24-67405-005

## REPORT OF CALIBRATION

Equipment : ELECTRONIC BALANCE  
Manufacturer : SARTORIUS  
Model : SECURA224-1S  
Capacity : Max 220 g  
Resolution : 0.0001 g  
Serial No. : 0036707137  
ID No. : LABE 05/2

## Result of Calibration

## 1. Test weight and repeatability of reading

Repeatability is a measure of the ability of a balance to supply the same result in repetitive weighings with one and the same load under the same measurement condition. The measurement of the repeatability must include both the balance specifications and the ambient (vibration, fluctuating air current/temperature/humidity, etc.) Operator handling of the balance is also included in the standard deviation.

Unit : g	Range : 220	<input type="checkbox"/> Before adjustment	<input type="checkbox"/> After adjustment
<input checked="" type="checkbox"/> No adjustment	Nominal value	100	200
<input type="checkbox"/> Adjustment	Standard weight	100.000016	200.000028
	Average reading of indicator	100.0000	200.0000
	Standard deviation	0.00005	0.00005
Unit : -	Range : -	<input type="checkbox"/> Before adjustment	<input type="checkbox"/> After adjustment
<input type="checkbox"/> No adjustment	Nominal value	-	-
<input type="checkbox"/> Adjustment	Standard weight	-	-
	Average reading of indicator	-	-
	Standard deviation	-	-

Certificate No. : 24-164695  
Sample Code : 24-67405-005

Page 3 of 4

## REPORT OF CALIBRATION

## Result of Calibration

## 2. Sensitivity or value of a scale division

Change in the output variable of a measuring instrument divided by the associated change in the input variable.

Unit : g

Range : 220

Range :

Test Point	Sensitivity, S	Test Point	Sensitivity, S
0	0.9998	-	-
100	0.9998	-	-
200	0.8998	-	-

## 3. Departure of indication from nominal value, Linearity

Unit : g

Nominal Value	Standard Value	Average Reading of Indicator	Correction Value	Expanded Uncertainty	Coverage Factor (k)
Unload	0.0000000	0.0000	0.0000	0.000094	2.01
0.01	0.0100015	0.0100	0.0000	0.000094	2.01
0.1	0.1000064	0.1000	0.0000	0.000094	2.01
1	1.0000017	1.0000	0.0000	0.000095	2.01
2	2.0000049	2.0000	0.0000	0.000095	2.01
5	5.0000012	5.0000	0.0000	0.000096	2.01
10	9.999992	10.0000	0.0000	0.000097	2.01
20	20.000042	20.0000	0.0000	0.00010	2.01
50	50.000046	50.0000	0.0000	0.00012	2.01
100	100.000016	100.0000	0.0000	0.00016	2.00
200	200.000028	200.0000	0.0000	0.00028	2.00

The result expanded uncertainty of measurement  $U$  is stated as the standard uncertainty of measurement multiplied by the coverage factor  $k$ , which for a normal distribution corresponds to a coverage probability of approximately 95%. The standard uncertainty of measurement has been determined in accordance with UKAS M3003.

Certificate No. : 24-164695  
Sample Code : 24-67405-005

Page 4 of 4

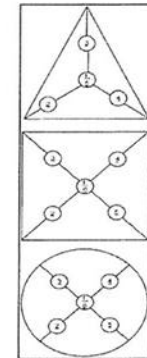
## REPORT OF CALIBRATION

## Result of Calibration :

## 4. Eccentric or off-centre loading

Deviation of the measurement value through off-center (eccentric) loading. The corner load increases with the weight of the load and its removal from the center of the pan support.

<input checked="" type="radio"/> Circle			
Weighing pan	<input type="radio"/> Triangular	Test weight :	100
	<input type="radio"/> Rectangular	Unit :	g
Range	220		
Position	Reading of indicator	Reading of indicator	
1	99.9999	-	
2	100.0001	-	
3	99.9999	-	
4	99.9998	-	
5	99.9999	-	
6	99.9999	-	
Maximum difference	0.0002	-	

☒ Circle☐ Triangular☐ Rectangular

## Condition of Calibration

1. Calibration Method : WI-CL-004 base on UKAS LAB 14: 2019

2. This result of calibration was found accurate as shown on date and place of calibration only.

3. Condition of Calibration item: Normal

4. This certification is traceable to the International System of Unit maintained at : -

- Through the reference standard laboratory of Asia Medical and Agricultural Laboratory and Research Center Public Company Limited (Instrument number 1).

5. Reference standard instrument :

Instrument	Class	ID No.	Certificate No.	Due Date
1) STANDARD WEIGHT 1 mg to 1 kg	E2	LB-WE-78	24-097116	02 August 2025

- End of Report -

6. Ambient conditions	Min	Max
Temperature (°C)	25.0	25.4
Relative Humidity (%Rh)	39.8	41.0
Air pressure (hPa)	1011.0	1012.1

# **BOD INCUBATOR**

**Model : LABE 19/3**





Page 1 of 3

## CERTIFICATE OF CALIBRATION

Certificate No. : 24-089291

Sample Code : 24-35676-001

Customer : EASTERN THAI CONSULTING 1992 CO., LTD.  
683 Moo 11, Sukhapibarn 8 Rd., Nongkham, Sriracha,  
Chonburi 20230

Location of Calibration : EASTERN THAI CONSULTING 1992 CO., LTD.  
(Laboratory)

Equipment : Temperature controlled enclosures (Incubator)

Manufacturer : พัด เครื่องเย็น Model : N/A

Serial No. : S43020027 ID No. : LABE 19/3

Date of Receipt : 16 July 2024 Date of Calibration : 16 July 2024

## Condition of Calibration

1. Environment
- |                           |   |         |           |   |         |           |
|---------------------------|---|---------|-----------|---|---------|-----------|
| 1.1 Ambient temperature   | : | Maximum | 30.6 °C   | : | Minimum | 28.9 °C   |
| 1.2 Relative humidity     | : | Maximum | 76.9 %    | : | Minimum | 69.4 %    |
| 1.3 Line voltage supplied | : | Maximum | 219.8 VAC | : | Minimum | 217.1 VAC |

## 2. Calibration method

TLAS-G-20: Guidelines for calibration and checks of temperature controlled enclosures.

## 3. Reference standard instrument

Instrument	ID No.	Certificate No.	Due Date
Data acquisition with sensor (RTD-P1100)	LB-DA-12 (RTD-168 to RTD-176)	24-045389	28 April 2025

## 4. This certificate is traceable to the international system of unit (SI Unit).

The measurement is traceable to Asia Medical and Agricultural Laboratory and Research Center Public Company Limited.

## 5. This result of calibration was found accurate as shown on date and place of calibration only.

## 6. Condition of calibration item : Normal

Calibrated by Mr. Pattanapong Pulngern

Scientist

Approved by

(Mr. Somchai Neampunt)

Signed for Director

Issue date 17 July 2024

The uncertainties are for a confidence probability of approximately 95%.

The calibration result is applied only to the above calibrated item and was found accurate as shown on date and place of calibration only.

This Certificate is Issued in accordance with the conditions of accreditation granted by the Thai Laboratory Accreditation scheme which has assessed the measurement capability of the laboratory and its traceability to recognized national standards and to the unit of measurement realized at the corresponding national standards laboratory. This certificate may not be reproduced other than in full except with the prior written approval of the Asia Medical and Agricultural Laboratory and Research Center Public Company Limited (AMARC)



Page 2 of 3

## REPORT OF CALIBRATION

Certificate No. : 24-089291

Sample Code : 24-35676-001

## Results of Calibration

Resolution : 0.1 °C

## 1. Reporting of Temperature

Calibration point (°C)	UUC* setting (°C)	UUC* reading (°C)	Measured temperature at each positions (°C)									Uncertainty ± (°C)	Coverage factor <i>k</i>
			# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9 <sup>Rev</sup>		
20	20.0	20.0	20.56	20.45	20.01	19.85	20.21	20.25	20.17	20.05	20.11	0.24	2.00

## 2. Characterization results

Calibration point (°C)	Stability ± (°C)	Uniformity (°C)	Overall variation (°C)
20	0.08	0.50	0.87

## Notes

- UUC\* = Unit Under Calibration

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## REPORT OF CALIBRATION

Certificate No. : 24-089291

Sample Code : 24-35676-001

## Results of Calibration

## Notes

## 1. Sensor installation locations

1.1 All sensors at any corners or walls should be positioned

5 cm (a x b x c) from the wall.

1.2 The reference sensor is preferably located of the geometric center of the chamber.

## 2. Interior dimensions approx of chamber :

W = 70 cm ; D = 55 cm ; H = 140 cm

## 3. Air valve or fresh air level : Off

## 4. Fan level : Open

## 5. The quoted uncertainty includes "Stability of chamber and loading effect in chamber at 20% of uniformity".

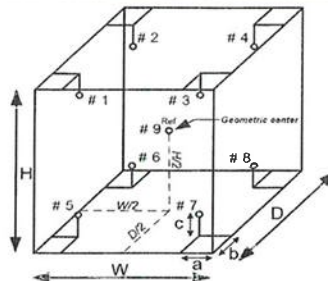
## 6. Uniformity - the maximum difference of measured temperatures at any sensors and the measured temperature at the reference location which are observed at the same time.

## 7. Stability - one-half of the greatest maximum difference of measured temperatures at any one sensor.

## 8. Overall variation - the difference of the maximum and the minimum measured temperatures throughout observation time.

## 9. UUC\* reading - the average reading of indicating device that forms the integral part of the enclosure.

## 10. Calibration results without adjustment.

Figure: Example of sensor  
installation Positions

The result expanded uncertainty of measurement  $U$  is stated as the standard uncertainty of measurement multiplied by the coverage factor  $k$ , which for a normal distribution corresponds to a coverage probability of approximately 95%. The standard uncertainty of measurement has been determined in accordance with UKAS M3003.

- End of Report -



# **BOD INCUBATOR**

**Model : LABE 19/5**



Page 1 of 3

## CERTIFICATE OF CALIBRATION

Certificate No. : 25-042561  
Sample Code : 25-18090-002Customer : EASTERN THAI CONSULTING 1992 CO., LTD.  
683 Moo 11, Sukhapibarn 8 Rd., Nongkham,  
Sriracha, Chonburi 20230Location of Calibration : EASTERN THAI CONSULTING 1992 CO., LTD.  
(Laboratory)

Equipment : Temperature controlled enclosures (Incubator)

Manufacturer : Lovibond Model : TC 445 S

Serial No. : 0520/005227 ID No. : LABE 19/5

Date of Receipt : 20 March 2025 Date of Calibration : 20 March 2025

## Condition of Calibration

1. Environment
- |                           |   |
|---------------------------|---|
| 1.1 Ambient temperature   | : Maximum 29.9 °C ; Minimum 27.5 °C     |
| 1.2 Relative humidity     | : Maximum 51.9 % ; Minimum 43.4 %       |
| 1.3 Line voltage supplied | : Maximum 239.4 VAC ; Minimum 232.8 VAC |

## 2. Calibration method

TLAS-G-20: Guidelines for calibration and checks of temperature controlled enclosures.

## 3. Reference standard instrument

Instrument	ID No.	Certificate No.	Due Date
Data Acquisition With Sensor (RTD-Pt100)	LB-DA-11 (RTD-148 to RTD-155, RTD-227)	24-040190	03 April 2025

## 4. This certificate is traceable to the international system of unit (SI Unit).

The measurement is traceable to Asia Medical and Agricultural Laboratory and Research Center Public Company Limited.

## 5. This result of calibration was found accurate as shown on date and place of calibration only.

## 6. Condition of calibration item : Normal

Calibrated by Mr. Pattanapong Pulngern

Scientist

Approved by

(Mr. Somchai Neampunt)

Signed for Director

Issue date 24 March 2025

The uncertainties are for a confidence probability of approximately 95%.

The calibration result is applied only to the above calibrated item and was found accurate as shown on date and place of calibration.

This Certificate is issued in accordance with the conditions of accreditation granted by the Thai Laboratory Accreditation scheme which has assessed the measurement capability of the laboratory and its traceability to recognized national standards and to the unit of measurement realized at the corresponding national standards laboratory. This certificate may not be reproduced other than in full except with the prior written approval of the Asia Medical and Agricultural Laboratory and Research Center Public Company Limited (AMARC).



Page 2 of 3

## REPORT OF CALIBRATION

Certificate No. : 25-042561

Sample Code : 25-18090-002

## Results of Calibration

Resolution : 0.1 °C

## 1. Reporting of Temperature

Calibration point (°C)	UUC* setting (°C)	UUC* reading (°C)	Measured temperature at each positions (°C)									Uncertainty ± (°C)	Coverage factor k
			# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9 <sup>Ref</sup>		
20	20.5	20.5	19.91	19.78	19.82	19.86	19.78	19.85	19.93	19.63	19.79	0.38	2.00

## 2. Characterization results

Calibration point (°C)	Stability ± (°C)	Uniformity (°C)	Overall variation (°C)
20	0.28	0.25	0.83

## Notes

- UUC\* = Unit Under Calibration



NSC-TISI-TIS17025  
CALIBRATION 0152

Page 3 of 3

## REPORT OF CALIBRATION

Certificate No. : 25-042561

Sample Code : 25-18090-002

## Results of Calibration

## Notes

1. Sensor installation locations
  - 1.1 All sensors at any corners or walls should be positioned 5 cm (a x b x c) from the wall.
  - 1.2 The reference sensor is preferably located of the geometric center of the chamber.
2. Interior dimensions approx of chamber :  
W = 60 cm ; D = 56 cm ; H = 146 cm
3. Air valve or fresh air level : Off
4. Fan level : Open
5. The quoted uncertainty includes" Stability of chamber and loading effect in chamber at 20% of uniformity %.
6. Uniformity - the maximum difference of measured temperatures at any sensors and the measured temperature at the reference location which are observed at the same time.
7. Stability - one-half of the greatest maximum difference of measured temperatures at any one sensor.
8. Overall variation - the difference of the maximum and the minimum measured temperatures throughout observation time.
9. UUC\* reading - the average reading of indicating device that forms the integral part of the enclosure.
10. Calibration results without adjustment.

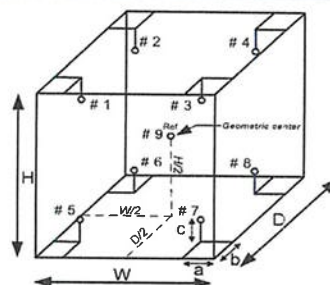


Figure: Example of sensor  
Installation Positions

The result expanded uncertainty of measurement  $U$  is stated as the standard uncertainty of measurement multiplied by the coverage factor  $k$ , which for a normal distribution corresponds to a coverage probability of approximately 95%. The standard uncertainty of measurement has been determined in accordance with UKAS M3003.

- End of Report -

**COPY**

**LIQUID IN GLASS THERMOMETER**

**Model / Type : 0-100 °C**

**Serial No. : 43560**



# CALIBRATION LABORATORY Co., LTD.

2/10-11,14,55 Soi Prasert Manukit 29 Yaek 4, Prasert Manukit Rd., Ladphrao, Bangkok 10230  
Tel. 02-578-0353-4 Fax: 02-578-2672 www.cal-laboratory.com E-mail:sale@cal-laboratory.com



## CERTIFICATE OF CALIBRATION

### FOR

NOMENCLATURE : LIQUID IN GLASS THERMOMETER  
MANUFACTURER : AA PRECISION  
MODEL / TYPE : 0-100 °C  
SERIAL NO. : 43560[LABE 16/1]  
CLID. NO. : 232403905  
JOB CONTROL NO. : 241031116258  
CALIBRATION SERVICE : ☒ IN-LABORATORY ☐ ON-SITE

CUSTOMER : EASTERN THAI CONSULTING 1992 CO., LTD.  
683 MOO 11, SUKHAPIBARN 8 RD,  
NONGKHAM, SRIRACHA, CHONBURI 20230

DATE OF RECEIVED : 31 October 2024

DATE OF ISSUED : 05 November 2024

The report of calibration shall not be reproduced except in full without approval of the Calibration Laboratory Co., Ltd.

Calibrated By : Pimsiri Hemtanon  
Calibration Engineer

Approved By : Mongkol Yotsoontorn  
Authorized Signatory  
05 November 2024



This Calibration Certificate documents the traceability to national standards, which realize the units of measurement according to the International System of Units (SI)

COPY

Certificate No. Q24116258

F3-011-05/12-23

page 1 of 3



@clccalibration



# CALIBRATION LABORATORY Co., LTD.

2/10-11,14,55 Soi Prasert Manukit 29 Yaek 4, Prasert Manukit Rd., Ladphrao, Bangkok 10230  
Tel. 02-578-0353-4 Fax: 02-578-2672 www.cal-laboratory.com E-mail:sale@cal-laboratory.com



## REPORT OF CALIBRATION

### FOR

NOMENCLATURE : LIQUID IN GLASS THERMOMETER  
MANUFACTURER : AA PRECISION  
MODEL / TYPE : 0-100 °C  
SERIAL NO. : 43560[LABE 16/1]  
DATE OF CALIBRATION : 04 November 2024

#### ENVIRONMENT CONDITIONS :

Temperature :  $(23 \pm 2) ^\circ\text{C}$  Relative Humidity :  $(55 \pm 10) \% \text{ RH}$

#### PROCEDURE USED :

This instrument was calibrated under procedure No. CLC-CPH-02 based on ASTM E 77-07 as calibration guidelines.  
The calibration was performed by comparison with Calibration Bath, Precision Thermometer and IPT  
which maintained by the Calibration Laboratory Co., Ltd.

#### REFERENCE STANDARD USED :

1. Calibration Bath, Kambic Model OB-22/2 ULT,OB-22/2 S/N. 17115653,17115654.
2. Precision Thermometer, ASL Model F200-A-8 S/N. 014433/03 with IPT S/N. L0193A-1-1,PO106346-1-18.

#### TRACEABILITY :

1. The measurements are traceable to International System of Units (SI), through Calibration Laboratory Co., Ltd. Certificate No. Q23136342,Q23126517. Due Date 20 December 2024,20 November 2024.
2. The measurements are traceable to International System of Units (SI), through Thailand Institute of Scientific and Technological Research (TISTR) and National Institute of Metrology (Thailand). Certificate No. PSL-T 0203/67,TT-0136-23,TT-0110-24. Due Date 07 December 2024,12 December 2024,06 August 2025.

#### UNCERTAINTY :

The reported expanded uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor  $k = 2,00$  which for a normal distribution corresponds to a coverage probability of approximately 95 %.  
It has been evaluated according to the "Evaluation of the Uncertainty of Measurement in Calibration (EA-4/02 M:2022)"

Certificate No. Q24116258

F3-011-05/12-23

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@clccalibration



# CALIBRATION LABORATORY Co., LTD.

2/10-11,14,55 Soi Prasert Manukil 29 Yaek 4, Prasert Manukil Rd., Ladphrao, Bangkok 10230  
Tel. 02-578-0353-4 Fax: 02-578-2672 www.cal-laboratory.com E-mail sale@cal-laboratory.com



**CONDITION OF CALIBRATION ITEM : RECEIVED IN GOOD OPERATIONAL CONDITION**

**MEASUREMENT RESULTS : ( X ) without adjustment ( ) adjustment**

The DUC Reading were recorded and the means value were reported of four times measurement in the table below.

## CALIBRATION DATA

### **CORRECTION OF TEMPERATURE**

STD Reading ( °C )	DUC Reading ( °C )	Correction ( °C )	Uncertainty $\pm$ ( °C )
0.039	0.00	+0.039	0.065
25.003	25.00	+0.003	
50.008	50.00	+0.008	
100.013	100.00	+0.013	

Range : 0 °C to 100 °C

Graduation : 0.1 °C

Immersion Type : Total Immersion.

Correction of Reference Temperature ( 0 °C ) = 0.039 °C

Note. The Scope of Accredited ANAB Certificate No. ACDM-2814 Version 012 Page 56 of 67

**This report is valid for the above stated instrument/s only.**

### End of Certificate ###

Certificate No. Q24116258

F3-011-05/12-23

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page 3 of 3



@dcalibration



**pH Meter**

**Model : SevenCompact S220**

**Serial No. : B835349235**

Certificate Number CCP-2401-24

## Calibration Certificate SevenCompact™ pH/Ion Meter S220

### Customer

Company EASTERN THAI CONSULTING 1992 CO., LTD.  
Address 683 Moo 11, Sukhaphiban 8 Rd., Nong Kham, Sriracha  
Chonburi 20230  
Customer ID number 301608441  
Customer representative Sasiporn Nakin

### Instrument

Type SevenCompact™ S220 Instrument serial number B835349235  
Internal identification LABE 11/6 Firmware version 2.01.03

### Technical Specifications

Measuring range -2000.0 ... 2000.0 mV -2.000 ... 20.000 pH  
Resolution 0.1 mV 0.001 pH  
Limit of error ± 0.2 mV; ± 0.1 mV in range -1000 ... 1000 mV ± 0.002 pH

Temperature range MTC -30.0 ... 130.0 °C  
Temperature range ATC -5.0 ... 130.0 °C  
Resolution 0.1 °C  
Limit of error ± 0.1 °C

### Procedure Statement

METTLER TOLEDO Certification SOP (Doc. No. 30027577) is used as referring documentation to adjust and certify the instrument indicated in the "Type" and "Serial number" section. The measurement results of this certification were obtained at ambient conditions.

Certificate Number CCP-2401-24

### Certification Tools

Certified digital voltmeter Manufacturer Keysight Technologies Serial number MY60051376  
Type 34401A Certificate number E1U2303781  
Date of certification December 10, 2023

Certified temperature resistors Manufacturer METTLER-TOLEDO Serial number A425  
Type 51302410 Certificate number 71447  
Date of certification September 26, 2023

Designation	Nominal value	Certified value
NTC 30 kΩ, 0 °C	94.980 kΩ	94.941 kΩ
NTC 30 kΩ, 25 °C	30.000 kΩ	29.992 kΩ
NTC 30 kΩ, 50 °C	10.969 kΩ	10.975 kΩ
NTC 30 kΩ, 75 °C	4.528 kΩ	4.528 kΩ
NTC 30 kΩ, 100 °C	2.070 kΩ	2.069 kΩ
PT1000, 0 °C	1.0000 kΩ	1.0001 kΩ
PT1000, 25 °C	1.0974 kΩ	1.0974 kΩ
PT1000, 50 °C	1.1940 kΩ	1.1940 kΩ
PT1000, 75 °C	1.2899 kΩ	1.2900 kΩ
PT1000, 100 °C	1.3851 kΩ	1.3852 kΩ

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Certificate Number CCP-2401-24

## Certification Measurements

## pH/mV sensor input

Designation	Certified value	Measured value	Max. tolerance	Passed / Failed
-1900 mV	-1900.0 mV	-1899.9 mV	0.2 mV	Passed
-1000 mV	-1000.0 mV	-999.9 mV	0.1 mV	Passed
-500 mV	-500.0 mV	-500.0 mV	0.1 mV	Passed
-180 mV	-180.0 mV	-180.0 mV	0.1 mV	Passed
0 mV	0.0 mV	0.0 mV	0.1 mV	Passed
180 mV	180.0 mV	179.9 mV	0.1 mV	Passed
500 mV	500.0 mV	499.9 mV	0.1 mV	Passed
1000 mV	1000.0 mV	999.9 mV	0.1 mV	Passed
1900 mV	1900.0 mV	1899.9 mV	0.2 mV	Passed

pH/mV sensor input  
at high impedance

Designation	Measured low imp.	Measured high imp.	Max. difference	Passed / Failed
1900 mV	1899.9 mV	1899.9 mV	0.6 mV	Passed

## Temperature sensor input

Designation	Nominal value	Measured value	Max. tolerance	Passed / Failed
NTC 30 k $\Omega$ , 0 °C	0.0 °C	0.0 °C	0.1 °C	Passed
NTC 30 k $\Omega$ , 25 °C	25.0 °C	25.0 °C	0.1 °C	Passed
NTC 30 k $\Omega$ , 50 °C	50.0 °C	50.0 °C	0.1 °C	Passed
NTC 30 k $\Omega$ , 75 °C	75.0 °C	75.0 °C	0.1 °C	Passed
NTC 30 k $\Omega$ , 100 °C	100.0 °C	100.0 °C	0.1 °C	Passed
PT1000, 0 °C	0.0 °C	0.0 °C	0.1 °C	Passed
PT1000, 25 °C	25.0 °C	25.0 °C	0.1 °C	Passed
PT1000, 50 °C	50.0 °C	50.0 °C	0.1 °C	Passed
PT1000, 75 °C	75.0 °C	75.0 °C	0.1 °C	Passed
PT1000, 100 °C	100.0 °C	100.0 °C	0.1 °C	Passed

Digital sensor input with  
pH sensor

Sensor recognition	The sensor was recognized correctly by the meter	Passed
--------------------	--	--------

## Summary of Certification

Certification of instrument

Passed

The instrument referred to in this certificate has fulfilled the criteria of the certification. This is indicated by the notation Passed above.

## Remarks

Service Assignment ID : 0332980040-001

Certification of the instrument was performed by

Name Thiraphong Salanoi Function Service Engineer  
Company Mettler-Toledo (Thailand) Ltd.

Date February 5, 2024

Signature

## Performance Test

Attachment to Certificate No. CCP-2401-24

## pH Electrode

Type: InLab® Expert Pro-ISM

S/N: 2463982

## Certified standards used

Standard 1:	Type: pH Buffer	Manufacturer: METTLER TOLEDO	Exp. date: 7/Jul/2025
	Nominal value: pH ( 25.00 °C):	4.01	Lot No.: 1J188G
Standard 2:	Type: pH Buffer	Manufacturer: METTLER TOLEDO	Exp. date: 10/Jul/2025
	Nominal value: pH ( 25.00 °C):	7.00	Lot No.: 1J191H
Standard 3:	Type: pH Buffer	Manufacturer: METTLER TOLEDO	Exp. date: 23/Nov/2024
	Nominal value: pH ( 25.00 °C):	10.01	Lot No.: 1H327A
Standard 4:	Type: Redox Solution	Manufacturer: METTLER TOLEDO	Exp. date: -
	Nominal value: pH ( 25.00 °C):	-	Lot No.: -

## Adjustment

Set Calibration Buffer	B1 (25 °C) 1.68, 4.01, 7.00, 10.01								
Select Calibration Mode Segment	3-Point calibration			2-Point calibration			2-Point calibration		
3-Point Calibration	°C		pH	°C		pH	°C		pH
Cal 1	ATC	27.1	4.01	ATC	-	-	ATC	-	-
Cal 2	ATC	27.0	7.00	ATC	-	-	ATC	-	-
Offset (mV)	6.1			-			-		
Slope % (or mV/pH)	98.5			-			-		
Cal 3	ATC	27.1	10.01						
Offset (mV)	6.1								
Slope % (or mV/pH)	98.1								

## Measurements

Resolution: 2 Decimal places

As Found					As Left				
Buffer Values	Measured		Difference		Buffer Values	Measured		Difference	
pH	°C	pH	pH	pH	pH	°C	pH	pH	pH
4.01	27.0	ATC	4.03	0.02	4.01	27.0	ATC	4.02	0.01
7.00	27.1	ATC	7.04	0.04	7.00	26.8	ATC	7.01	0.01
9.99	27.1	ATC	9.98	-0.01	9.99	27.1	ATC	10.01	0.02

Redox Measurement Result = - mV

Note: The difference result of calibrated electrode should be within +/- 0.05 pH

## Remarks

Place: Laboratory Room

Calibration Date: 5/Feb/2024

Service Specialist: Thiraphong Salanoi

Signature:

**pH Meter**

**Model : SevenCompact S220**

**Serial No. : B835349235**



Certificate Number CCP-0403-25

## Calibration Certificate SevenCompact™ pH/Ion Meter S220

### Customer

Company EASTERN THAI CONSULTING 1992 CO., LTD.

Address 683 Moo 11, Sukhaphiban 8 Rd., Nong Kham

Siracha

CHONBURI 20230

Customer ID number 301608441

Customer representative คุณ ศิริกร นาคฉันท

### Instrument

Type SevenCompact™ S220

Instrument Serial Number B835349235

Internal identification LABE 11/6

Firmware version 1.20.06

### Technical specifications

Measuring Range -1999.9 ... 1999.9 mV -2.000 ... 20.000 pH

Resolution 0.1 mV 0.001 pH

Limit of Error  $\pm 0.2$  mV  $\pm 0.002$  pH

Temperature range MTC -30.0 ... 130.0 °C

Temperature range ATC -5.0 ... 130.0 °C

Resolution 0.1 °C

Limit of Error  $\pm 0.1$  °C

### Procedure Statement

METTLER TOLEDO Certification SOP (Doc. No. ME-30027577B) will be used as referring documentation to adjust and certify the instrument indicated in the "Type" and "Serial number" section. The measurement results of this certification were obtained at ambient conditions.

COPY

Certificate Number CCP-0403-25

### Certification Tools

#### Certified digital voltmeter

Manufacturer KEYSIGHT TECHNOLOGIES

Type 34461A

Control No. ANA143

Serial number MY60036967

Certificate number E1U2401054

Due date March 10, 2025

#### Certified Temperature Resistors

Manufacturer METTLER-TOLEDO

Type 51302410

Control No. ANA114

Serial number A275

Certificate number 73757

Due date February 12, 2026

Designation	Nominal value	Certified value
NTC 30 kΩ, 0 °C	94.980 kΩ	94.9730 kΩ
NTC 30 kΩ, 25 °C	30.000 kΩ	29.9950 kΩ
NTC 30 kΩ, 50 °C	10.969 kΩ	10.9704 kΩ
NTC 30 kΩ, 75 °C	4.528 kΩ	4.5275 kΩ
NTC 30 kΩ, 100 °C	2.070 kΩ	2.0714 kΩ
PT1000, 0 °C	1.000 kΩ	1.0001 kΩ
PT1000, 25 °C	1.0974 kΩ	1.0975 kΩ
PT1000, 50 °C	1.1940 kΩ	1.1942 kΩ
PT1000, 75 °C	1.2899 kΩ	1.2900 kΩ
PT1000, 100 °C	1.3851 kΩ	1.3851 kΩ

COPY

# METTLER TOLEDO

Certificate Number **CCP-0403-25**

## Certification Measurements

Designation	Certified value	Measured value	Max. Tolerance	Passed / Failed
-1900 mV	-1900.0 mV	-1899.98 mV	0.2 mV	Passed
-1000 mV	-1000.0 mV	-1000.00 mV	0.2 mV	Passed
-500 mV	-500.0 mV	-499.98 mV	0.2 mV	Passed
-180 mV	-180.0 mV	-180.00 mV	0.2 mV	Passed
0 mV	0.0 mV	0.01 mV	0.2 mV	Passed
180 mV	180.0 mV	179.98 mV	0.2 mV	Passed
500 mV	500.0 mV	499.90 mV	0.2 mV	Passed
1000 mV	1000.0 mV	1000.00 mV	0.2 mV	Passed
1900 mV	1900.0 mV	1899.99 mV	0.2 mV	Passed

Designation	Measured low imp.	Measured high imp.	Max. Tolerance	Passed / Failed
1900 mV	1900.0 mV	1899.8 mV	0.6 mV	Passed

Designation	Nominal value	Measured value	Max. Tolerance	Passed / Failed
NTC 30 kΩ, 0 °C	0.0 °C	0.0 °C	0.1 °C	Passed
NTC 30 kΩ, 25 °C	25.0 °C	25.0 °C	0.1 °C	Passed
NTC 30 kΩ, 50 °C	50.0 °C	50.0 °C	0.1 °C	Passed
NTC 30 kΩ, 75 °C	75.0 °C	74.9 °C	0.1 °C	Passed
NTC 30 kΩ, 100 °C	100.0 °C	100.0 °C	0.1 °C	Passed
PT1000, 0 °C	0.0 °C	0.1 °C	0.1 °C	Passed
PT1000, 25 °C	25.0 °C	25.0 °C	0.1 °C	Passed
PT1000, 50 °C	50.0 °C	50.0 °C	0.1 °C	Passed
PT1000, 75 °C	75.0 °C	74.9 °C	0.1 °C	Passed
PT1000, 100 °C	100.0 °C	99.9 °C	0.1 °C	Passed

## Summary of Certification

Certification of instrument

**Passed**

The instrument referred to in this certificate has fulfilled the criteria of the certification. This is indicated by the notation Passed in the column above.

Remarks - Test high impedance at 1900.0 mV, Results : 1899.8 mV

Difference = 0.005% Within MPE (0.033%)

Certification of the instrument was performed by

Name Khomsan Pralaung Function Service

Place Mettler-Toledo (Thailand) Ltd.

Calibration Date: 29-Jan-2025

Signature

**COPY**

Mettler-Toledo (Thailand) Limited

# METTLER TOLEDO

## Performance Test

Attachment to Certificate No. CCP-0403-25

## pH Electrode

Type **InLab Expert Pro-ISM** S/N: **2463982**

## Certified standards used

Standard 1:	Type: pH Buffer	Manufacturer: METTLER TOLEDO	Exp. date: 3-Dec-2026
	Nominal value: pH ( 25.00 °C):	4.01	Lot No.: 1J338E
Standard 2:	Type: pH Buffer	Manufacturer: METTLER TOLEDO	Exp. date: 27-Nov-2026
	Nominal value: pH ( 25.00 °C):	7.00	Lot No.: 1J331B
Standard 3:	Type: pH Buffer	Manufacturer: METTLER TOLEDO	Exp. date: 11-Jan-2026
	Nominal value: pH ( 25.00 °C):	10.00	Lot No.: 1K011B
Standard 4:	Type: Redox Solution	Manufacturer: METTLER TOLEDO	Exp. date: -
	Nominal value: pH ( 25.00 °C):	-	Lot No.: -

## Adjustment

Set Calibration Buffer	B1 (25 °C) 1.68, 4.01, 7.00, 10.01					
Select Calibration Mode	3-Point calibration		2-Point calibration		2-Point calibration	
Segment	°C	pH	°C	pH	°C	pH
Cal 1	ATC 25.5	7.00	ATC		ATC	
Cal 2	ATC 25.5	4.00	ATC		ATC	
Offset (mV)	-27.2					
Slope % (or mV/pH)	95.9					
Cal 3	ATC 25.5	10.01				
Offset (mV)	-27.2					
Slope % (or mV/pH)	97.4					

## Measurements

Resolution: 2 Decimal places

As Found					As Left				
Buffer Values	Measured		Difference		Buffer Values	Measured		Difference	
pH	°C	pH	pH		pH	°C	pH	pH	
4.01	25.3	ATC	4.02	0.01	4.01	25.3	ATC	4.01	0.00
7.00	25.2	ATC	6.98	-0.02	7.00	25.2	ATC	7.01	0.01
9.99	25.3	ATC	10.11	0.12	9.99	25.2	ATC	10.00	0.01

Redox Measurement Result = - mV

Note: The difference result of calibrated electrode should be within +/- 0.05 pH

Remarks: N/A

Place: **Laboratory**

Calibration Date: 29-Jan-2025

Service Specialist: **Khomsan Pralaung**

Signature:

**COPY**

**STANDARD WEIGHT 50 g**

Certificate No. : 24-062445  
Sample Code : 24-25551-001

## CERTIFICATE OF CALIBRATION

Customer : EASTERN THAI CONSULTING 1992 CO., LTD.  
683 Moo 11, Sukhapibarn 8 Rd., Nongkham,  
Sriracha, Chonburi 20230

Location of Calibration : Asia Medical and Agricultural Laboratory and Research Center Public Company Limited  
(Calibration Laboratory)

Equipment : Standard Weight 50 g

Manufacturer : METTLER TOLEDO

Class : F1

Serial No. : N/A

ID No. : LABE 10/1

Date of Receipt : 23 May 2024

Date of Calibration : 03 June 2024

Calibrated by Mr. Somwang Sangdee  
Scientist

Approved by ( Mr. Somchai Neampunt )  
Signed for Director

Issue date 04 June 2024

The uncertainties are for a confidence probability of approximately 95%.

The calibration result is applied only to the above calibrated item and was found accurate as shown on date and place of calibration only.

This Certificate is issued in accordance with the conditions of accreditation granted by the Thai Laboratory Accreditation scheme which has assessed the measurement capability of the laboratory and its traceability to recognized national standards and to the unit of measurement realized at the corresponding national standards laboratory. This certificate may not be reproduced other than in full except with the prior written approval of the Asia Medical and Agricultural Laboratory and Research Center Public Company Limited (AMARC).

Certificate No. : 24-062445  
Sample Code : 24-25551-001

## REPORT OF CALIBRATION

Equipment : Standard Weight 50 g  
Manufacturer : METTLER TOLEDO  
Class : F1  
Serial No. : N/A  
ID No. : LABE 10/1

## Result of Calibration :

☒ Without adjustment☐ Adjustment

Conventional value of the result of weighing in air. For a weight taken at a reference temperature ( $t_{ref}$ ) of 20°C, the conventional mass is the mass of a reference weight of a density ( $\rho_{ref}$ ) of 8000 kg.m<sup>-3</sup> which it balances in air of a reference density ( $\rho_a$ ) of 1.2 kg.m<sup>-3</sup>

Description	Deviation	Conventional Mass	Expanded Uncertainty	Maximum Permissible Error	ID No.
	(mg)		(mg)	± (mg)	
50 g	-0.343	49.999657 g	0.10	0.30	LABE 10/1

The result expanded uncertainty of measurement  $U$  is stated as the standard uncertainty of measurement multiplied by the coverage factor  $k = 2.0$ , which for a normal distribution corresponds to a coverage probability of approximately 95%. The standard uncertainty of measurement has been determined in accordance with UKAS M3003

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Certificate No. : 24-062445  
Sample Code : 24-25551-001

## REPORT OF CALIBRATION

### Condition of Calibration

1. Ambient Conditions : Temperature  $20^{\circ}\text{C} \pm 1.5^{\circ}\text{C}$ , Relative humidity  $50\% \pm 10\%$  and air density  $1.19 \text{ kg/m}^3$

2. Calibration Method : Direct comparison weighing according to OIML R111-1 : 2004(E)

3. Reference standard instrument

Instrument	Class	ID No.	Certificate No.	Due Date
1) Standard Weight 1 mg to 1 kg	E2	LB-WE-83	24-001894	11 January 2025

4. This certification is traceable to the International System of Unit maintained at : -

Asia Medical and Agricultural Laboratory and Research Center Public Company Limited

(Instrument number 1).

5. Condition of Calibration item: Normal

### 6. Description of Calibrated Item :

Type and Nominal Value :	Standard Weight 50 g
Shape :	Cylindrical weight with knob
Material :	Stainless steel
Case :	Wooden Box
Comments :	Recalibration

- End of Report -

COPY

**STANDARD WEIGHT 100 g**



Certificate No. : 24-079772  
Sample Code : 24-31841-002

## CERTIFICATE OF CALIBRATION

Customer : EASTERN THAI CONSULTING 1992 CO., LTD.  
683 Moo 11, Sukhapibarn 8 Rd., NongKham,  
Sriracha, Chonburi 20230

Location of Calibration : Asia Medical and Agricultural Laboratory and Research Center Public Company Limited  
(Calibration Laboratory)

Equipment : Standard Weight 100 g

Manufacturer : N/A

Class : N/A

Serial No. : N/A

ID No. : LABE 10/2

Date of Receipt : 25 June 2024

Date of Calibration : 30 June 2024

Calibrated by Mr. Nawa Sisuwan  
Scientist

Approved by ( Mr. Somchai Neampunt )  
Signed for Director

Issue date 03 July 2024

The uncertainties are for a confidence probability of approximately 95%.

The calibration result is applied only to the above calibrated item and was found accurate as shown on date and photo of calibration only.

This Certificate is issued in accordance with the conditions of accreditation granted by the Thai Laboratory Accreditation scheme which has assessed the measurement capability of the laboratory and its traceability to recognized national standards and to the unit of measurement realized at the corresponding national standards laboratory. This certificate may not be reproduced other than in full except with the prior written approval of the Asia Medical and Agricultural Laboratory and Research Center Public Company Limited (AMARC).



Certificate No. : 24-079772  
Sample Code : 24-31841-002

## REPORT OF CALIBRATION

Equipment : Standard Weight 100 g  
Manufacturer : N/A  
Class : N/A  
Serial No. : N/A  
ID No. : LABE 10/2

Result of Calibration : ☒ Without adjustment ☐ Adjustment

Conventional value of the result of weighing in air. For a weight taken at a reference temperature ( $t_{ref}$ ) of 20°C, the conventional mass is the mass of a reference weight of a density ( $\rho_{ref}$ ) of 8000 kg.m<sup>-3</sup> which it balances in air of a reference density ( $\rho_a$ ) of 1.2 kg.m<sup>-3</sup>

Description	Deviation	Conventional Mass	Expanded Uncertainty	Maximum Permissible Error	ID No.
	(mg)		(mg)	± (mg)	
100 g	-0.173	99.999827 g	0.16	0.50	LABE 10/2

The result expanded uncertainty of measurement  $U$  is stated as the standard uncertainty of measurement multiplied by the coverage factor  $k = 2.0$ , which for a normal distribution corresponds to a coverage probability of approximately 95%. The standard uncertainty of measurement has been determined in accordance with UKAS M3003



Certificate No. : 24-079772  
Sample Code : 24-31841-002

## REPORT OF CALIBRATION

### Condition of Calibration

1. Ambient Conditions : Temperature  $20^{\circ}\text{C} \pm 1.5^{\circ}\text{C}$ , Relative humidity  $50\% \pm 10\%$  and air density  $1.19 \text{ kg/m}^3$

2. Calibration Method : WI-CL-007 base on OIML R 111-1 : 2004(E)

3. Reference standard instrument

Instrument	Class	ID No.	Certificate No.	Due Date
1) Standard Weight 1 mg to 1 kg	E2	LB-WE-83	24-001894	11 January 2025

4. This certification is traceable to the International System of Unit maintained at : -

Asia Medical and Agricultural Laboratory and Research Center Public Company Limited

(Instrument number 1).

5. Condition of Calibration item: Normal

### 6. Description of Calibrated Item :

Type and Nominal Value :	Standard Weight 100 g
Shape :	Cylindrical weight with knob
Material :	Stainless steel
Case :	Wooden Box
Comments :	Recalibration

- End of Report -

COPY



**STANDARD WEIGHT 50 g**



Certificate No. : 24-079773  
Sample Code : 24-31841-003

## CERTIFICATE OF CALIBRATION

Customer : EASTERN THAI CONSULTING 1992 CO., LTD.  
683 Moo 11, Sukhapibarn 8 Rd., NongKham,  
Sriracha, Chonburi 20230

Location of Calibration : Asia Medical and Agricultural Laboratory and Research Center Public Company Limited  
(Calibration Laboratory)

Equipment : Standard Weight 50 g

Manufacturer : N/A

Class : N/A

Serial No. : N/A

ID No. : LABE 10/4

Date of Receipt : 25 June 2024

Date of Calibration : 30 June 2024

Calibrated by Mr. Nawa Sisuwan  
Scientist

Approved by ( Mr. Somchai Neampunt )  
Signed for Director

Issue date 03 July 2024

The uncertainties are for a confidence probability of approximately 95%.

The calibration result is applied only to the above calibrated item and was found accurate as shown on date and place of calibration only.

This Certificate is issued in accordance with the conditions of accreditation granted by the Thai Laboratory Accreditation scheme which has assessed the measurement capability of the laboratory and its traceability to recognized national standards and to the unit of measurement realized at the corresponding national standards laboratory. This certificate may not be reproduced other than in full except with the prior written approval of the Asia Medical and Agricultural Laboratory and Research Center Public Company Limited (AMARC).



Certificate No. : 24-079773  
Sample Code : 24-31841-003

## REPORT OF CALIBRATION

Equipment : Standard Weight 50 g

Manufacturer : N/A

Class : N/A

Serial No. : N/A

ID No. : LABE 10/4

Result of Calibration : ☒ Without adjustment ☐ Adjustment

Conventional value of the result of weighing in air. For a weight taken at a reference temperature ( $t_{ref}$ ) of 20°C, the conventional mass is the mass of a reference weight of a density ( $\rho_{ref}$ ) of 8000 kg.m<sup>-3</sup> which it balances in air of a reference density ( $\rho_0$ ) of 1.2 kg.m<sup>-3</sup>

Description	Deviation	Conventional Mass	Expanded Uncertainty	Maximum Permissible Error	ID No.
	(mg)		(mg)	± (mg)	
50 g	-0.176	49.999824 g	0.10	0.30	LABE 10/4

The result expanded uncertainty of measurement  $U$  is stated as the standard uncertainty of measurement multiplied by the coverage factor  $k = 2.0$ , which for a normal distribution corresponds to a coverage probability of approximately 95%. The standard uncertainty of measurement has been determined in accordance with UKAS M3003

Certificate No. : 24-079773

Sample Code : 24-31841-003

## REPORT OF CALIBRATION

## Condition of Calibration

1. Ambient Conditions : Temperature  $20^{\circ}\text{C} \pm 1.5^{\circ}\text{C}$ , Relative humidity  $50\% \pm 10\%$  and air density  $1.19 \text{ kg/m}^3$
2. Calibration Method : WI-CL-007 base on OIML R 111-1 : 2004(E)
3. Reference standard instrument

Instrument	Class	ID No.	Certificate No.	Due Date
1) Standard Weight 1 mg to 1 kg	E2	LB-WE-83	24-001894	11 January 2025

4. This certification is traceable to the International System of Unit maintained at : -

Asia Medical and Agricultural Laboratory and Research Center Public Company Limited

( Instrument number 1).

5. Condition of Calibration item: Normal

## 6. Description of Calibrated Item :

Type and Nominal Value :	Standard Weight 50 g
Shape :	Cylindrical weight with knob
Material :	Stainless steel
Case :	Wooden Box
Comments :	Recalibration

- End of Report -

COPY

**ANALYTICAL BALANCE (DU)**

**Model : XS205DU**

**Serial No. : 1126323724**




Mettler-Toledo (Thailand) Ltd.  
846/4 - 846/5/846/4 - 846/5 Lasalle Rd., Bangna Tai  
Bangna District, Bangkok 10260  
+66 2723 0382  
MT-TH.ServiceSupport@mt.com



## Accuracy Calibration Certificate

### Customer

Company: EASTERN THAI CONSULTING 1992 CO., LTD.  
Address: 683 Moo 11, Sukhaphiban 8 Rd., Nong Kham  
City: Sriracha Contact: Sasiporn Nakin  
Zip / Postal: 20230  
State / Province: Chonburi  
Order Number: 

### Weighing Device

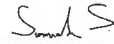
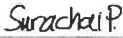
Manufacturer: Mettler Toledo Instrument Type: Weighing Instrument  
Model: XS205DU Asset Number: LABE 05/1  
Serial No.: 1126323724 Terminal Model: SAT  
Building: Laboratory Terminal Serial No.: 1126323724  
Floor: 1 Terminal Asset No.: N/A  
Room: Analytical Balance

Range	Max. Capacity	Readability (d)
1	81 g	0.00001 g
2	220 g	0.0001 g

### Procedure

Calibration Guideline: EURAMET cg-18 v. 4.0 (11/2015)  
METTLER TOLEDO Work Instruction: CP/W002/20  
This calibration certificate contains measurements for As Found calibration. No As Left calibration was performed because the device was not modified after As Found calibration. Therefore, results for As Left correspond to As Found.  
The sensitivity/span of the weighing instrument was adjusted before calibration with a built-in weight.  
In accordance with EURAMET cg-18 (11/2015), the test loads were selected to reflect the specific use of the weighing device or to accommodate specific calibration conditions.

	Temperature		Humidity	
As Found	Start: 25.7 °C	End: 25.8 °C	Start: 50.9 %	End: 50.6 %

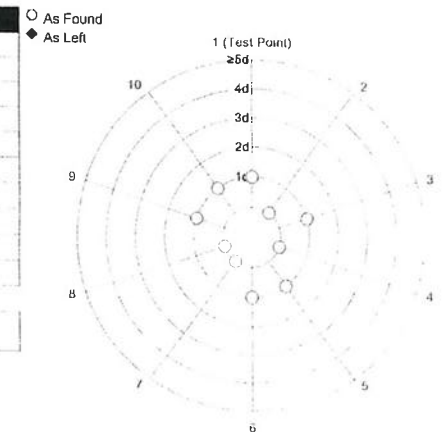
As Found Calibration Date: 09-Dec-2024  
As Left Calibration Date: N/A  
Issue Date: 11-Dec-2024  
Calibrator:   
Somsak Sattanaco  
Approved Signatory:   
Technical Manager / Head of Calibration Center

## Measurement Results

### Repeatability

Test Load: 70 g

	As Found	As Left
1	70.00004 g	N/A
2	70.00005 g	N/A
3	70.00004 g	N/A
4	70.00005 g	N/A
5	70.00006 g	N/A
6	70.00004 g	N/A
7	70.00005 g	N/A
8	70.00005 g	N/A
9	70.00006 g	N/A
10	70.00006 g	N/A
Standard Deviation	0.000008 g	N/A



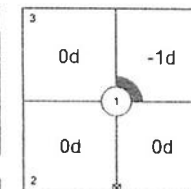
The "d" in the graph represents the readability of the range/interval in which the test was performed.

The results of this graph are based upon the absolute values of the differences from the mean value.

### Eccentricity

Test Load: 100 g

Position	As Found	As Left
1	100.0000 g	N/A
2	100.0000 g	N/A
3	100.0000 g	N/A
4	99.9999 g	N/A
5	100.0000 g	N/A
Maximum Deviation	0.0001 g	N/A



As Found

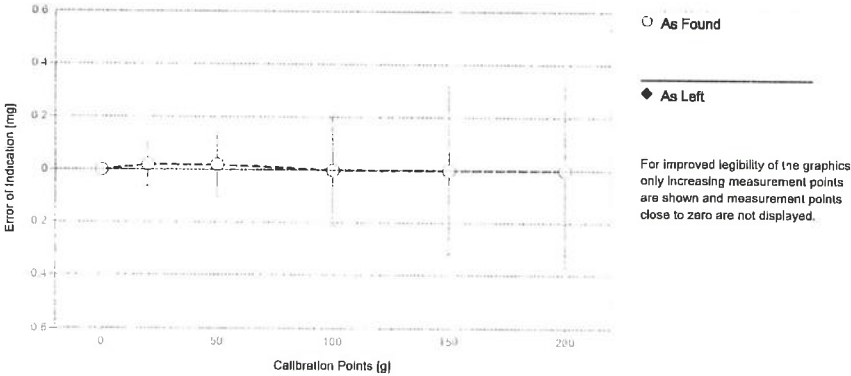
The "d" in the graph represents the readability of the range/interval in which the test was performed.

Error of Indication

As Found

	Reference Value	Indication	Error of Indication	Expanded Uncertainty	k
1	0.00000 g	0.00000 g	0.00000 g	0.017 mg	2
2	0.01000 g	0.01000 g	0.00000 g	0.020 mg	2
3	0.10000 g	0.10000 g	0.00000 g	0.023 mg	2
4	1.00000 g	1.00000 g	0.00000 g	0.032 mg	2
5	4.99998 g	5.00000 g	0.00002 g	0.048 mg	2
6	10.00001 g	10.00001 g	0.00000 g	0.061 mg	2
7	19.99999 g	20.00001 g	0.00002 g	0.082 mg	2
8*	50.00003 g	50.00005 g	0.00002 g	0.12 mg	2
9	100.0000 g	100.0000 g	0.0000 g	0.21 mg	2
10	150.0000 g	150.0000 g	0.0000 g	0.32 mg	2
11	200.0000 g	200.0000 g	0.0000 g	0.37 mg	2

\*The calculated uncertainty was replaced by the CMC (Calibration and Measurement Capabilities) value because the calculated uncertainty was smaller than the CMC value.



The expanded measurement uncertainty is reported as the standard measurement uncertainty multiplied by the coverage factor k such that the coverage probability corresponds to approximately 95 %.

The user is responsible for maintaining environmental conditions and the settings of the weighing instrument when it was calibrated.  
The results of this calibration certificate relate only to the calibrated item.

COPY

Test Equipment

All weights used for metrological testing are traceable to national or international standards. The weights were calibrated and certified by an accredited calibration laboratory.

Weight Set 1: OIML E2

Weight Set No.: WS37 Date of Issue: 17-Jun-2024  
Certificate Number: 186753-1 Calibration Due Date: 20-Jan-2025

Weight Set 2: OIML E2

Weight Set No.: WS87 Date of Issue: 04-Jul-2023  
Certificate Number: 186520 Calibration Due Date: 02-Jan-2025

Thermo Hygrometer

Equipment No.: IN279 Date of Issue: 19-Jun-2024  
Certificate Number: SG-H-00577/67 Calibration Due Date: 17-Jun-2025

Remarks

FACT adjustment functionality activated  
Equipment condition: Good  
Next calibration according to customer's procedure  
Calibration data not decide by calibration laboratory

End of Accredited Section

The information below and any attachments to this calibration certificate are not part of the accredited calibration.

COPY

## Measurement Uncertainty of the Weighing Instrument in Use

Stated is the expanded uncertainty with  $k=2$  in use. The formula shall be used for the estimation of the uncertainty under consideration of the errors of indication. The value R represents the net load indication in the unit of measure of the device.

Temperature coefficient for the evaluation of the measurement uncertainty in use:  $1.5 \cdot 10^{-6} / K$

Temperature range on site for the evaluation of the measurement uncertainty in use: 3 K

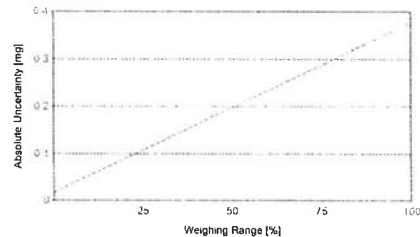
### Linearization of Uncertainty Equation

Range		As Found	As Left
d	Max		
1 0.00001 g	81 g	$U_1 = 0.018 \text{ mg} + 0.00444 \text{ mg/g} \cdot R$	N/A
2 0.0001 g	220 g	$U_2 = 0.06 \text{ mg} + 0.00439 \text{ mg/g} \cdot R$	N/A

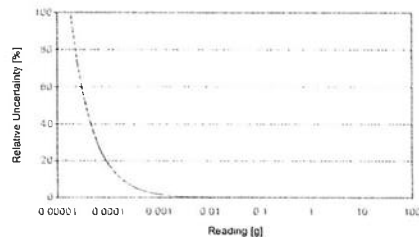
To optimize the stability of the linearization, besides of the zero load only increasing measurement points with a test load of 5% of the measurement range or larger are taken for the calculation of the linear equation.

### Absolute and Relative Measurement Uncertainty in Use for Various Net Indications (Examples)

Net Indication	As Found		As Left	
0.00220 g	0.018 mg	0.82%	N/A	N/A
0.02200 g	0.018 mg	0.082%	N/A	N/A
0.22000 g	0.019 mg	0.0086%	N/A	N/A
2.20000 g	0.028 mg	0.0013%	N/A	N/A
220.0000 g	1.0 mg	0.00047%	N/A	N/A



As Found



As Left

The weighing range shown in the absolute uncertainty graph refers to the first interval/range of the device.

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# GWP® Certificate



As  
Found



As  
Left



The weighing device meets the given process requirements.

The weighing device meets the given process requirements.

Tests Performed: ☒ As Found ☐ As Left ☒ No adjustments/modifications made. As Left results correspond to As Found.

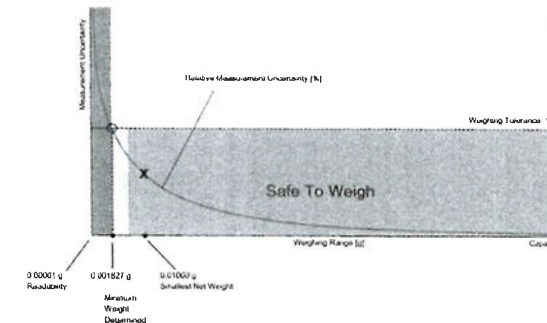
## Process Requirements

Weighing Tolerance: 1%

Smallest Net Weight: 0.01000 g

Safety Factor: 2

### Safe Weighing Range



While the values in this graph reflect the actual calibration results, the measurement uncertainty curves are simply a visual representation. This graph reflects As Left testing, unless only As Found was performed.

COPY

## Minimum Weight

### As Found Minimum Weight Table

Range 1

Minimum weights for different weighing tolerances and safety factors					
Tolerance	Safety Factor				
	1	2	3	5	10
0.1%	0.018339 g	0.036842 g	0.055511 g	0.093358 g	0.191052 g
0.2%	0.009149 g	0.018339 g	0.027570 g	0.046156 g	0.093358 g
0.5%	0.003655 g	0.007316 g	0.010984 g	0.018339 g	0.036842 g
1%	0.001827 g	0.003655 g	0.005485 g	0.009149 g	0.018339 g
2%	0.000913 g	0.001827 g	0.002740 g	0.004569 g	0.009149 g
5%	0.000365 g	0.000730 g	0.001096 g	0.001827 g	0.003655 g

The minimum weight table applies to the fine range of the weighing device.

✓ Pass: The determined minimum weight meets the requirement for the smallest net weight.

### As Left Minimum Weight Table

Range 1

Minimum weights for different weighing tolerances and safety factors					
Tolerance	Safety Factor				
	1	2	3	5	10
0.1%	0.018339 g	0.036842 g	0.055511 g	0.093358 g	0.191052 g
0.2%	0.009149 g	0.018339 g	0.027570 g	0.046156 g	0.093358 g
0.5%	0.003655 g	0.007316 g	0.010984 g	0.018339 g	0.036842 g
1%	0.001827 g	0.003655 g	0.005485 g	0.009149 g	0.018339 g
2%	0.000913 g	0.001827 g	0.002740 g	0.004569 g	0.009149 g
5%	0.000365 g	0.000730 g	0.001096 g	0.001827 g	0.003655 g

The minimum weight table applies to the fine range of the weighing device.

✓ Pass: The determined minimum weight meets the requirement for the smallest net weight.

At these net minimum weight values, the measurement uncertainty of the weighing device is equal to or less than 1/1 (no safety factor), 1/2, 1/3, 1/5, or 1/10 of the required tolerance. The values are calculated with  $k = 2$  and based on the linear formula of the measurement uncertainty of the weighing device in use.

The safety factor for As Found is always 1. This implies no safety factor. As Found testing looks at the behavior of the instrument from the past until test occurred. For the past, it is necessary to know that the tolerance was met, but not the safety factor. The safety factor is a proactive measure to apply for future measurements.

#### Notes on minimum weight values in above table:

1. If "N/A" is shown above, no appropriate value could be calculated.
2. METTLER TOLEDO is not responsible for the definition of the process requirements.

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## Measurement Results

### Results Summary

	Repeatability	Eccentricity	Error of Indication
	As Found As Left	✓ ✓	✓ ✓

✓ = Passed

✗ = Failed

⚠ = Safety Factor not met

### Repeatability

Test Load: 70 g

Tolerance	Control Limit	As Found		As Left	
		Std. Deviation	Result	Std. Deviation	Result
0.1%	0.000005 g	0.000008 g	✗	0.000008 g	✗
0.2%	0.000010 g		✓		⚠
0.5%	0.000025 g		✓		✓
1%	0.000050 g		✓		✓
2%	0.000100 g		✓		✓
5%	0.000250 g		✓		✓

The weighing tolerance is met if the standard deviation is less than or equal to the corresponding control limit.

### Eccentricity

Test Load: 100 g

Tolerance	Control Limit	As Found		As Left	
		Deviation	Result	Deviation	Result
0.1%	0.0500 g	0.0001 g	✓	0.0001 g	✓
0.2%	0.1000 g		✓		✓
0.5%	0.2500 g		✓		✓
1%	0.5000 g		✓		✓
2%	1.0000 g		✓		✓
5%	2.5000 g		✓		✓

The weighing tolerance is met if the deviation is less than or equal to the corresponding control limit.

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## Error of Indication

## As Found

		Control limits for various weighing tolerances					
Reference Value	Error	0.1%	0.2%	0.5%	1%	2%	5%
0.00000 g	0.00000 g	N/A	N/A	N/A	N/A	N/A	N/A
19.99999 g	0.00002 g	0.01000 g	0.02000 g	0.05000 g	0.10000 g	0.20000 g	0.50000 g
50.00003 g	0.00002 g	0.02500 g	0.05000 g	0.12500 g	0.25000 g	0.50000 g	1.25000 g
100.0000 g	0.0000 g	0.0500 g	0.1000 g	0.2500 g	0.5000 g	1.0000 g	2.5000 g
150.0000 g	0.0000 g	0.0750 g	0.1500 g	0.3750 g	0.7500 g	1.5000 g	3.7500 g
200.0000 g	0.0000 g	0.1000 g	0.2000 g	0.5000 g	1.0000 g	2.0000 g	5.0000 g
Result		✓	✓	✓	✓	✓	✓

## As Left

		Control limits for various weighing tolerances					
Reference Value	Error	0.1%	0.2%	0.5%	1%	2%	5%
0.00000 g	0.00000 g	N/A	N/A	N/A	N/A	N/A	N/A
19.99999 g	0.00002 g	0.01000 g	0.02000 g	0.05000 g	0.10000 g	0.20000 g	0.50000 g
50.00003 g	0.00002 g	0.02500 g	0.05000 g	0.12500 g	0.25000 g	0.50000 g	1.25000 g
100.0000 g	0.0000 g	0.0500 g	0.1000 g	0.2500 g	0.5000 g	1.0000 g	2.5000 g
150.0000 g	0.0000 g	0.0750 g	0.1500 g	0.3750 g	0.7500 g	1.5000 g	3.7500 g
200.0000 g	0.0000 g	0.1000 g	0.2000 g	0.5000 g	1.0000 g	2.0000 g	5.0000 g
Result		✓	✓	✓	✓	✓	✓

The weighing tolerance is met if the error (of indication) for each test point is less than or equal to the corresponding control limit for that particular weighing tolerance. Results at or close to the zero point cannot be assessed.

COPY

**ANALYTICAL BALANCE**

**Model : MS204TS/00**


**Serial No. : B904136539**

Mettler-Toledo (Thailand) Ltd.  
846/4 - 846/5 Lasalle Rd., Bangna Tai Sub-District  
Bangna District, Bangkok 10260  
+66 2723 0382  
MT-TH.ServiceSupport@mt.com



## Accuracy Calibration Certificate

### Customer

Company: EASTERN THAI CONSULTING 1992 CO., LTD.  
Address: 683 Moo 11, Sukhaphiban 8 Rd., Nong Kham  
City: Sriracha Contact: Sasiporn Nakin  
Zip / Postal: 20230  
State / Province: Chonburi  
Order Number: 

### Weighing Device

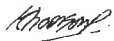
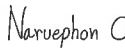
Manufacturer: Mettler Toledo Instrument Type: Weighing Instrument  
Model: MS204TS/00 Asset Number: LABE 05/4  
Serial No.: B904136539 Terminal Model: N/A  
Building: Laboratory Terminal Serial No.: N/A  
Floor: 1 Terminal Asset No.: N/A  
Room: Balance

Range	Max. Capacity	Readability (d)
1	220 g	0.0001 g

### Procedure

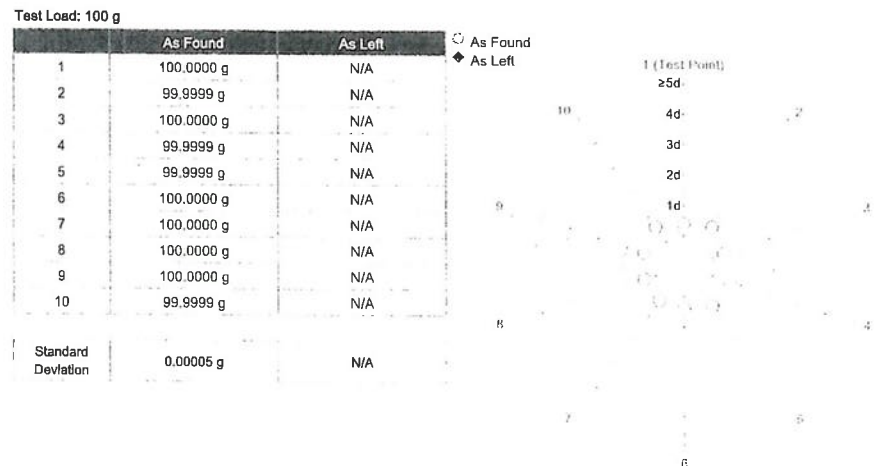
Calibration Guideline: EURAMET cg-18 v. 4.0 (11/2015)  
METTLER TOLEDO Work Instruction: CPW002/20  
This calibration certificate contains measurements for As Found calibration. No As Left calibration was performed because the device was not modified after As Found calibration. Therefore, results for As Left correspond to As Found.  
The sensitivity/span of the weighing instrument was adjusted before calibration with a built-in weight.  
In accordance with EURAMET cg-18 (11/2015), the test loads were selected to reflect the specific use of the weighing device or to accommodate specific calibration conditions.

	Temperature	Humidity
As Found	Start: 24.2 °C End: 24.3 °C	Start: 37.9 % End: 37.9 %

As Found Calibration Date: 29-Jan-2025 Calibrator:   
As Left Calibration Date: N/A  
Issue Date: 01-Feb-2025 Khomsan Prataung  
Approved Signatory:   
Technical Manager / Head of Calibration Center

## Measurement Results

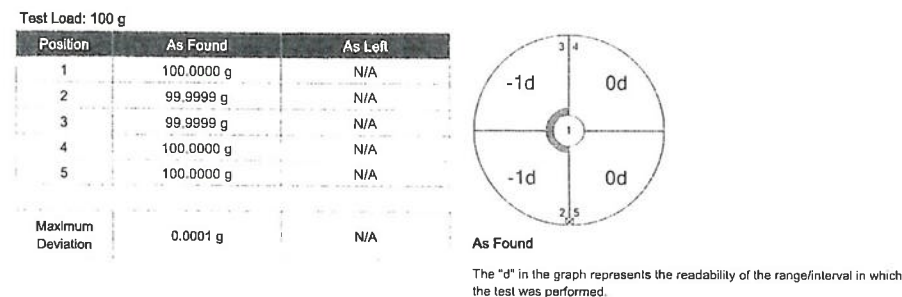
### Repeatability



The "d" in the graph represents the readability of the range/interval in which the test was performed.

The results of this graph are based upon the absolute values of the differences from the mean value.

### Eccentricity

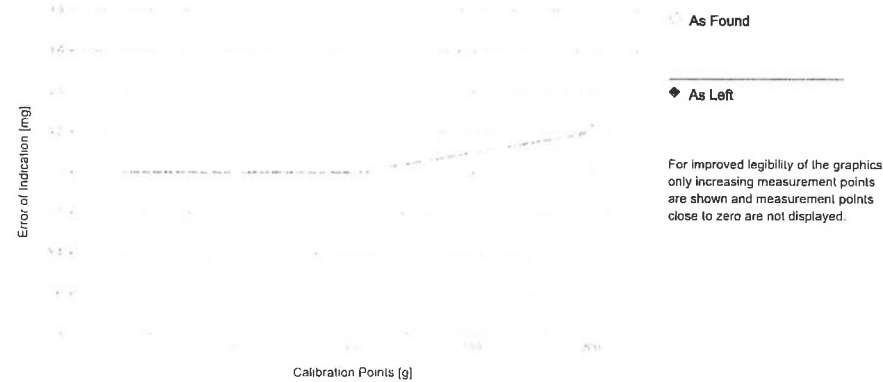


Error of Indication

As Found

	Reference Value	Indication	Error of Indication	Expanded Uncertainty	k
1	0.0000 g	0.0000 g	0.0000 g	0.12 mg	2
2	0.0100 g	0.0100 g	0.0000 g	0.13 mg	2
3	0.0500 g	0.0500 g	0.0000 g	0.13 mg	2
4	0.1000 g	0.1000 g	0.0000 g	0.13 mg	2
5	1.0000 g	1.0000 g	0.0000 g	0.13 mg	2
6	5.0000 g	5.0000 g	0.0000 g	0.14 mg	2
7	10.0000 g	10.0000 g	0.0000 g	0.14 mg	2
8	50.0000 g	50.0000 g	0.0000 g	0.16 mg	2
9	100.0000 g	100.0000 g	0.0000 g	0.24 mg	2
10	150.0000 g	150.0001 g	0.0001 g	0.31 mg	2
11	200.0000 g	200.0002 g	0.0002 g	0.35 mg	2

The calculated uncertainty was replaced by the CMC (Calibration and Measurement Capabilities) value because the calculated uncertainty was smaller than the CMC value.



The expanded measurement uncertainty is reported as the standard measurement uncertainty multiplied by the coverage factor k such that the coverage probability corresponds to approximately 95 %.

The user is responsible for maintaining environmental conditions and the settings of the weighing instrument when it was calibrated.  
The results of this calibration certificate relate only to the calibrated item.

Test Equipment

All weights used for metrological testing are traceable to national or international standards. The weights were calibrated and certified by an accredited calibration laboratory.

Weight Set 1: OIML E2

Weight Set No.:	WS32	Date of Issue:	07-Aug-2024
Certificate Number:	193673	Calibration Due Date:	30-Jan-2026

Weight Set 2: OIML E2

Weight Set No.:	WS32-1	Date of Issue:	06-Sep-2024
Certificate Number:	C436717337	Calibration Due Date:	26-Jan-2026

Thermo Hygrometer

Equipment No.:	IN277	Date of Issue:	19-Jun-2024
Certificate Number:	SG-H-00575/67	Calibration Due Date:	18-Jun-2025

Remarks

FACT adjustment functionality activated

Equipment condition: Good

Next calibration according to customer's procedure

Calibration data not decide by calibration laboratory

End of Accredited Section

The information below and any attachments to this calibration certificate are not part of the accredited calibration.



Measurement Uncertainty of the Weighing Instrument in Use

Stated is the expanded uncertainty with  $k=2$  in use. The formula shall be used for the estimation of the uncertainty under consideration of the errors of indication. The value  $R$  represents the net load indication in the unit of measure of the device.

Temperature coefficient for the evaluation of the measurement uncertainty in use:  $1.5 \cdot 10^{-6} / K$

Temperature range on site for the evaluation of the measurement uncertainty in use: 5 K

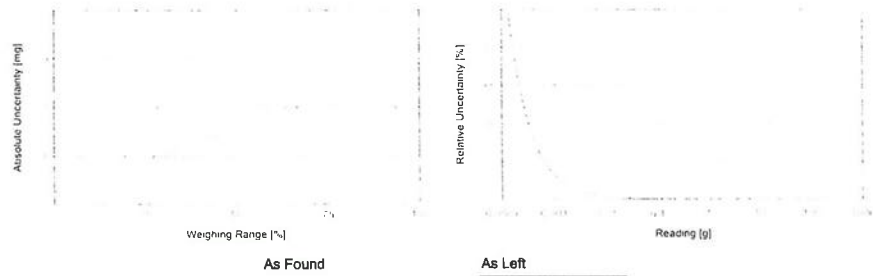
Linearization of Uncertainty Equation

	Range		As Found	As Left
	d	Max		
1	0.0001 g	220 g	$U_1 = 0.13 \text{ mg} + 0.00598 \text{ mg/g} \cdot R$	N/A

To optimize the stability of the linearization, besides of the zero load only increasing measurement points with a test load of 5% of the measurement range or larger are taken for the calculation of the linear equation.

Absolute and Relative Measurement Uncertainty in Use for Various Net Indications (Examples)

Net Indication	As Found		As Left	
0.0220 g	0.13 mg	0.59%	N/A	N/A
0.2200 g	0.13 mg	0.060%	N/A	N/A
2.2000 g	0.14 mg	0.0065%	N/A	N/A
22.0000 g	0.26 mg	0.0012%	N/A	N/A
220.0000 g	1.4 mg	0.00066%	N/A	N/A



GWP®  
Certificate



As Found



As Left



The weighing device meets the given process requirements.

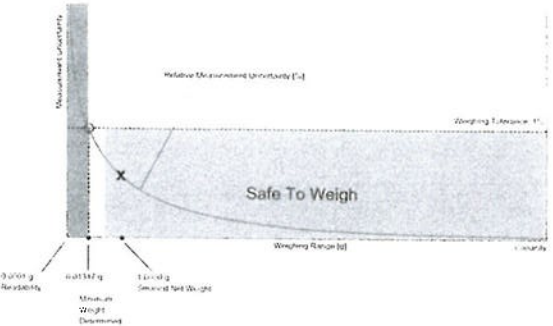
The weighing device meets the given process requirements.

Tests Performed: ☒ As Found ☒ As Left ☒ No adjustments/modifications made. As Left results correspond to As Found.

Process Requirements

Weighing Tolerance: 1% | Smallest Net Weight: 1.0000 g | Safety Factor: 2

Safe Weighing Range



While the values in this graph reflect the actual calibration results, the measurement uncertainty curves are simply a visual representation. This graph reflects As Left testing, unless only As Found was performed.

## Minimum Weight

### As Found Minimum Weight Table

Minimum weights for different weighing tolerances and safety factors					
Tolerance	Safety Factor				
	1	2	3	5	10
0.1%	0.13245 g	0.26650 g	0.40219 g	0.67859 g	1.40037 g
0.2%	0.06603 g	0.13245 g	0.19927 g	0.33414 g	0.67859 g
0.5%	0.02636 g	0.05279 g	0.07928 g	0.13245 g	0.26650 g
1%	0.01317 g	0.02636 g	0.03957 g	0.06603 g	0.13245 g
2%	0.00658 g	0.01317 g	0.01977 g	0.03296 g	0.06603 g
5%	0.00263 g	0.00527 g	0.00790 g	0.01317 g	0.02636 g



Pass: The determined minimum weight meets the requirement for the smallest net weight.

### As Left Minimum Weight Table

Minimum weights for different weighing tolerances and safety factors					
Tolerance	Safety Factor				
	1	2	3	5	10
0.1%	0.13245 g	0.26650 g	0.40219 g	0.67859 g	1.40037 g
0.2%	0.06603 g	0.13245 g	0.19927 g	0.33414 g	0.67859 g
0.5%	0.02636 g	0.05279 g	0.07928 g	0.13245 g	0.26650 g
1%	0.01317 g	0.02636 g	0.03957 g	0.06603 g	0.13245 g
2%	0.00658 g	0.01317 g	0.01977 g	0.03296 g	0.06603 g
5%	0.00263 g	0.00527 g	0.00790 g	0.01317 g	0.02636 g



Pass: The determined minimum weight meets the requirement for the smallest net weight.

At these net minimum weight values, the measurement uncertainty of the weighing device is equal to or less than 1/1 (no safety factor), 1/2, 1/3, 1/5, or 1/10 of the required tolerance. The values are calculated with  $k = 2$  and based on the linear formula of the measurement uncertainty of the weighing device in use.

The safety factor for As Found is always 1. This implies no safety factor. As Found testing looks at the behavior of the instrument from the past until test occurred. For the past, it is necessary to know that the tolerance was met, but not the safety factor. The safety factor is a proactive measure to apply for future measurements.

#### Notes on minimum weight values in above table:

- If "N/A" is shown above, no appropriate value could be calculated.
- METTLER TOLEDO is not responsible for the definition of the process requirements.

## Measurement Results

### Results Summary

	Repeatability	Eccentricity	Error of Indication
As Found	✓	✓	✓
As Left	✓	✓	✓

✓ = Passed

✗ = Failed

N = Safety Factor not met

### Repeatability

Test Load: 100 g

Tolerance	Control Limit	As Found		As Left	
		Std. Deviation	Result	Std. Deviation	Result
0.1%	0.00050 g		✓		✓
0.2%	0.00100 g		✓		✓
0.5%	0.00250 g	0.00005 g	✓	0.00005 g	✓
1%	0.00500 g		✓		✓
2%	0.01000 g		✓		✓
5%	0.02500 g		✓		✓

The weighing tolerance is met if the standard deviation is less than or equal to the corresponding control limit.

### Eccentricity

Test Load: 100 g

Tolerance	Control Limit	As Found		As Left	
		Deviation	Result	Deviation	Result
0.1%	0.0500 g		✓		✓
0.2%	0.1000 g		✓		✓
0.5%	0.2500 g	0.0001 g	✓	0.0001 g	✓
1%	0.5000 g		✓		✓
2%	1.0000 g		✓		✓
5%	2.5000 g		✓		✓

The weighing tolerance is met if the deviation is less than or equal to the corresponding control limit.

Error of Indication

As Found

		Control limits for various weighing tolerances					
Reference Value	Error	0.1%	0.2%	0.5%	1%	2%	5%
0.0000 g	0.0000 g	N/A	N/A	N/A	N/A	N/A	N/A
50.0000 g	0.0000 g	0.0250 g	0.0500 g	0.1250 g	0.2500 g	0.5000 g	1.2500 g
100.0000 g	0.0000 g	0.0500 g	0.1000 g	0.2500 g	0.5000 g	1.0000 g	2.5000 g
150.0000 g	0.0001 g	0.0750 g	0.1500 g	0.3750 g	0.7500 g	1.5000 g	3.7500 g
200.0000 g	0.0002 g	0.1000 g	0.2000 g	0.5000 g	1.0000 g	2.0000 g	5.0000 g
Result		✓	✓	✓	✓	✓	✓

As Left

		Control limits for various weighing tolerances					
Reference Value	Error	0.1%	0.2%	0.5%	1%	2%	5%
0.0000 g	0.0000 g	N/A	N/A	N/A	N/A	N/A	N/A
50.0000 g	0.0000 g	0.0250 g	0.0500 g	0.1250 g	0.2500 g	0.5000 g	1.2500 g
100.0000 g	0.0000 g	0.0500 g	0.1000 g	0.2500 g	0.5000 g	1.0000 g	2.5000 g
150.0000 g	0.0001 g	0.0750 g	0.1500 g	0.3750 g	0.7500 g	1.5000 g	3.7500 g
200.0000 g	0.0002 g	0.1000 g	0.2000 g	0.5000 g	1.0000 g	2.0000 g	5.0000 g
Result		✓	✓	✓	✓	✓	✓

The weighing tolerance is met if the error (of indication) for each test point is less than or equal to the corresponding control limit for that particular weighing tolerance. Results at or close to the zero point cannot be assessed.

**Area Heat Stress Monitor**

**Model : QUESTEMP 32**

**Serial No. : TPL090016**



## CERTIFICATE OF CALIBRATION

Certificate No. : CDT-017-68

Page 1 of 2 Pages

**MEASUREMENT ITEM** : Heat Stress Monitor  
**MANUFACTURER** : 3M  
**MODEL/TYPE** : Ques Temp 32  
**SERIAL NUMBER** : TPL090016  
**ID NUMBER** : NO. 6  
**CONDITION AS-RECEIVED** : Used item  
**CUSTOMER** : Eastern thai consulting 1992 Co.,Ltd.  
683 Moo 11, Sukhapibarn 8 Rd,  
Nongkham, Sriracha, Chonburi 20230

**RECEIVED DATE** : 27 Dec 2024  
**MEASUREMENT DATE** : 08 Jan 2025  
**ISSUE DATE** : 14 Jan 2025

### ENVIRONMENTAL CONDITIONS:

Ambient condition in the laboratory are as follow:  
Temperature : 23.0 ± 3.0 °C  
Relative Humidity : 55.0 ± 15.0 %RH

**NOTED:** The certificate is valid only to the item calibrated on date and place of calibration.

### TABULATION OF RESULTS:

The table on next page give the measured values.

### Calibration procedure:

The temperature calibration was done by  
In-House calibration method as WI-CL-001  
according to comparison method with standard  
digital temperature indicator and standard  
temperature probe. The temperature scale use  
was based on ITS-90.

### Traceability:

The measurement results are traceable to the  
international system of units (SI) through  
National Institute of Metrology Thailand (NIMT)  
Certificate number: TT-0047-24, Certificate  
number: ER-0113-24

### Reference Used During Calibration:

1. Standard Temperature Probe  
Model: STS-100 A500, Serial No.: 667682-09,  
Due date: 26 Mar 2025  
2. Digital Temperature Indicator  
Model: DTI-1000-A MK II, Serial No.: 671407-  
00591 Due date: 21 Oct 2025

### Uncertainty of Measurement:

The reported uncertainty of measurement is  
based on the standard uncertainty multiplied by  
a coverage factor k=2, Which for a normal  
distribution corresponds to a coverage  
probability of approximately 95%. The standard  
uncertainty has been determined in accordance  
with the GUM 'Evaluation of measurement data  
' - Guide to the expression of uncertainty in  
measurement'

**Result of Calibration:** ☒ Without Adjustment ☐ With Adjustment

**Calibration Range:** 20 °C to 40 °C

### Function:

Table 1: This equipment was connected with wet bulb Temperature probe Model: -, S/N: -.  
Dimension: Diameter 4.77 mm. Length 70 mm.

Immersion Depth (mm)	Standard Reading (°C)	UUC Reading (°C)	Error (°C)	Uncertainty (°C)
65	20.071	20.3	0.2	0.099
65	25.058	25.3	0.2	0.099
65	30.050	30.3	0.3	0.099
65	35.036	35.3	0.3	0.099
65	40.020	40.2	0.2	0.099

Table 2: This equipment was connected with Globe Temperature probe Model: -, S/N: -.  
Dimension: Diameter 4.77 mm. Length 70 mm.

Immersion Depth (mm)	Standard Reading (°C)	UUC Reading (°C)	Error (°C)	Uncertainty (°C)
65	20.071	20.3	0.2	0.099
65	25.059	25.3	0.2	0.099
65	30.049	30.3	0.3	0.099
65	35.036	35.3	0.3	0.099
65	40.020	40.2	0.2	0.099

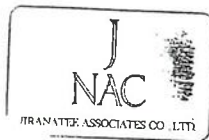
Table 3: This equipment was connected with Dry Bulb Temperature probe Model: -, S/N: -.  
Dimension: Diameter 4.77 mm. Length 70 mm.

Immersion Depth (mm)	Standard Reading (°C)	UUC Reading (°C)	Error (°C)	Uncertainty (°C)
65	20.071	20.1	0.0	0.099
65	25.059	25.0	-0.1	0.099
65	30.049	30.0	0.0	0.099
65	35.037	35.1	0.1	0.099
65	40.020	40.0	0.0	0.099


UUC\*: Unit Under Calibration

\*\*\*End of Certificate of Calibration\*\*\*

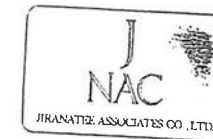
Calibrated by:  
☐ Mr. Sorawit Thachalad  
☒ Miss Jitraporn Lertsomphol  
☐ Miss Ruangrumpai Phoommit



Approved signatory:

  
Mr. Parinya Booncharoen  
Calibration Department Manager

**COPY**



**COPY**

**Area Heat Stress Monitor**

**Model : HD32.2**

**Serial No. : 22004319**

## CERTIFICATE OF CALIBRATION

Certificate No. : CDT-043-68

Page 1 of 2 Pages

**MEASUREMENT ITEM** : Heat Stress Monitor  
**MANUFACTURER** : Delta OHM  
**MODEL/TYPE** : HD32.2  
**SERIAL NUMBER** : 22004319  
**ID NUMBER** : NO. 17  
**CONDITION AS-RECEIVED** : Used item  
**CUSTOMER** : Eastern thai consulting 1992 Co.,Ltd.  
683 Moo 11, Sukhapiarn 8 Rd,  
Nongkham, Sriracha, Chonburi 20230

**RECEIVED DATE** : 23 Jan 2025  
**MEASUREMENT DATE** : 30 Jan 2025  
**ISSUE DATE** : 30 Jan 2025

### ENVIRONMENTAL CONDITIONS:

Ambient condition in the laboratory are as follow:  
Temperature :  $23.0 \pm 3.0$  °C  
Relative Humidity :  $55.0 \pm 15.0$  %RH

**NOTED:** The certificate is valid only to the item calibrated on date and place of calibration.

### TABULATION OF RESULTS:

The table on next page give the measured values.

### Calibration procedure:

The temperature calibration was done by In-House calibration method as WI-CL-001 according to comparison method with standard digital temperature indicator and standard temperature probe. The temperature scale use was based on ITS-90.

### Traceability:

The measurement results are traceable to the international system of units (SI) through National Institute of Metrology Thailand (NIMT) Certificate number: TT-0047-24, Certificate number: ER-0113-24

### Reference Used During Calibration:

1. Standard Temperature Probe  
Model: STS-100 A500, Serial No.: 667682-09,  
Due date: 26 Mar 2025  
2. Digital Temperature Indicator  
Model: DTI-1000-A MK II, Serial No.: 671407-00591 Due date: 21 Oct 2025

### Uncertainty of Measurement:

The reported uncertainty of measurement is based on the standard uncertainty multiplied by a coverage factor  $k=2$ , Which for a normal distribution corresponds to a coverage probability of approximately 95%. The standard uncertainty has been determined in accordance with the GUM "Evaluation of measurement data - Guide to the expression of uncertainty in measurement"

**Result of Calibration:** ☒ Without Adjustment ☐ With Adjustment

**Calibration Range:** 20 °C to 40 °C

### Function:

Table 1: This equipment was connected with wet bulb probe Model: HP3201.2, S/N: 22010215.  
Dimension: Diameter 3.3 mm. Length 170 mm.

Immersion Depth (mm)	Standard Reading (°C)	UUC Reading (°C)	Error (°C)	Uncertainty (°C)
80	20.063	20.0	-0.1	0.099
80	25.062	25.0	-0.1	0.099
80	30.052	30.0	-0.1	0.099
80	35.042	35.0	0.0	0.099
80	40.024	40.0	0.0	0.099

Table 2: This equipment was connected with Globe thermometer probe Model: TP3276.2, S/N: 22014940.  
Dimension: Diameter 3.3 mm. Length 205 mm.

Immersion Depth (mm)	Standard Reading (°C)	UUC Reading (°C)	Error (°C)	Uncertainty (°C)
110	20.063	20.1	0.0	0.099
110	25.062	25.1	0.0	0.099
110	30.052	30.1	0.0	0.099
110	35.042	35.1	0.1	0.099
110	40.024	40.1	0.1	0.099

Table 3: This equipment was connected with temperature probe Model: TP3207.2, S/N: 22003554.  
Dimension: Diameter 14 mm. Length 150 mm.

Immersion Depth (mm)	Standard Reading (°C)	UUC Reading (°C)	Error (°C)	Uncertainty (°C)
75	20.063	20.3	0.2	0.099
75	25.062	25.0	-0.1	0.099
75	30.052	29.9	-0.2	0.099
75	35.042	34.8	-0.2	0.099
75	40.024	39.7	-0.3	0.099

UUC\*: Unit Under Calibration

Calibrated by:  
☐ Mr. Sorawit Thachalad  
☒ Miss Jitraporn Lertsomphol  
☐ Miss Ruangrumpai Phoommit



Approved signatory:

*[Signature]*  
Mr. Parinya Booncharoen  
Calibration Department Manager

**COPY**

\*\*\*End of Certificate of Calibration\*\*\*



**COPY**

**Area Heat Stress Monitor**

**Model : QUESTEMP 32**

**Serial No. : TPL060039**



## CERTIFICATE OF CALIBRATION

Certificate No. : CDT-015-68

Page 1 of 2 Pages

**MEASUREMENT ITEM** : Heat Stress Monitor  
**MANUFACTURER** : 3M  
**MODEL/TYPE** : Ques Temp 32  
**SERIAL NUMBER** : TPLD60039  
**ID NUMBER** : NO. 4  
**CONDITION AS-RECEIVED** : Used item  
**CUSTOMER** : Eastern thai consulting 1992 Co.,Ltd.  
683 Moo 11, Sukhapibarn 8 Rd,  
Nongkham, Sriracha, Chonburi 20230

**RECEIVED DATE** : 27 Dec 2024  
**MEASUREMENT DATE** : 07 Jan 2025  
**ISSUE DATE** : 14 Jan 2025

### ENVIRONMENTAL CONDITIONS:

Ambient condition in the laboratory are as follow:

Temperature : 23.0 ± 3.0 °C  
Relative Humidity : 55.0 ± 15.0 %RH

**NOTED:** The certificate is valid only to the item calibrated on date and place of calibration.

### TABULATION OF RESULTS:

The table on next page give the measured values.

### Calibration procedure:

The temperature calibration was done by In-House calibration method as WI-CL-001 according to comparison method with standard digital temperature indicator and standard temperature probe. The temperature scale use was based on ITS-90.

### Traceability:

The measurement results are traceable to the international system of units (SI) through National Institute of Metrology Thailand (NIMT) Certificate number: TT-0047-24, Certificate number: ER-0113-24

### Reference Used During Calibration:

1. Standard Temperature Probe  
Model: STS-100 A500, Serial No.: 667682-09,  
Due date: 26 Mar 2025  
2. Digital Temperature Indicator  
Model: DTI-1000-A MK II, Serial No.: 671407-  
00591 Due date: 21 Oct 2025

### Uncertainty of Measurement:

The reported uncertainty of measurement is based on the standard uncertainty multiplied by a coverage factor k=2, Which for a normal distribution corresponds to a coverage probability of approximately 95%. The standard uncertainty has been determined in accordance with the GUM 'Evaluation of measurement data - Guide to the expression of uncertainty in measurement'

Calibrated by:  
☐ Mr. Sorawit Thachalad  
☒ Miss Jitraporn Lertsomphol  
☐ Miss Ruangrumpai Phoommit



Approved signatory:

Mr. Parinya Booncharoen  
Calibration Department Manager

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**Result of Calibration:** ☒ Without Adjustment ☐ With Adjustment

**Calibration Range:** 20 °C to 40 °C

### Function:

Table 1: This equipment was connected with wet bulb Temperature probe Model: -, S/N: -.  
Dimension: Diameter 4.77 mm. Length 70 mm.

Immersion Depth (mm)	Standard Reading (°C)	UUC Reading (°C)	Error (°C)	Uncertainty (°C)
65	20.061	20.2	0.1	0.14
65	25.063	24.9	-0.2	0.14
65	30.044	29.8	-0.3	0.14
65	35.028	34.8	-0.2	0.14
65	40.006	39.8	-0.2	0.14

Table 2: This equipment was connected with Globe Temperature probe Model: -, S/N: -.  
Dimension: Diameter 4.77 mm. Length 70 mm.

Immersion Depth (mm)	Standard Reading (°C)	UUC Reading (°C)	Error (°C)	Uncertainty (°C)
65	20.061	20.0	-0.1	0.099
65	25.063	24.9	-0.2	0.099
65	30.044	29.8	-0.2	0.099
65	35.028	34.7	-0.3	0.099
65	40.006	39.6	-0.4	0.099

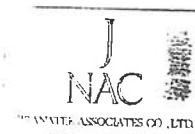
Table 3: This equipment was connected with Dry Bulb Temperature probe Model: -, S/N: -.  
Dimension: Diameter 4.77 mm. Length 70 mm.

Immersion Depth (mm)	Standard Reading (°C)	UUC Reading (°C)	Error (°C)	Uncertainty (°C)
65	20.061	20.0	-0.1	0.099
65	25.063	25.0	-0.1	0.099
65	30.044	30.0	0.0	0.099
65	35.028	35.0	0.0	0.099
65	40.006	40.0	0.0	0.099

UUC\*: Unit Under Calibration

Remark: The reported uncertainty of measurement is 0.14, based on standard uncertainty multiplied by a coverage factor k=2.14 providing a level of confidence of approximately 95%.

\*\*\*End of Certificate of Calibration\*\*\*



**COPY**

**Area Heat Stress Monitor**

**Model : QUESTEMP 32**

**Serial No. : TPL060040**

## CERTIFICATE OF CALIBRATION

Certificate No. : CDT-016-68

Page 1 of 2 Pages

MEASUREMENT ITEM : Heat Stress Monitor  
MANUFACTURER : 3M  
MODEL/TYPE : Ques Temp 32  
SERIAL NUMBER : TPL060040  
ID NUMBER : NO. 5  
CONDITION AS-RECEIVED : Used item  
CUSTOMER : Eastern thai consulting 1992 Co.,Ltd.  
683 Moo 11, Sukhapibarn 8 Rd,  
Nongkham, Sriracha, Chonburi 20230

RECEIVED DATE : 27 Dec 2024  
MEASUREMENT DATE : 08 Jan 2025  
ISSUE DATE : 14 Jan 2025

### ENVIRONMENTAL CONDITIONS:

Ambient condition in the laboratory are as follow:  
Temperature : 23.0 ± 3.0 °C  
Relative Humidity : 55.0 ± 15.0 %RH

NOTED: The certificate is valid only to the item calibrated on date and place of calibration.

### TABULATION OF RESULTS:

The table on next page give the measured values.

### Calibration procedure:

The temperature calibration was done by  
In-House calibration method as WI-CL-001  
according to comparison method with standard  
digital temperature indicator and standard  
temperature probe. The temperature scale use  
was based on ITS-90.

### Traceability:

The measurement results are traceable to the  
international system of units (SI) through  
National Institute of Metrology Thailand (NIMT)  
Certificate number: IT-0047-24, Certificate  
number: ER-0113-24

### Reference Used During Calibration:

1. Standard Temperature Probe  
Model: STS-100 A500, Serial No.: 667682-09,  
Due date: 26 Mar 2025  
2. Digital Temperature Indicator  
Model: DTI-1000-A MK II, Serial No.: 671407-  
00591 Due date: 21 Oct 2025

### Uncertainty of Measurement:

The reported uncertainty of measurement is  
based on the standard uncertainty multiplied by  
a coverage factor  $k=2$ , Which for a normal  
distribution corresponds to a coverage  
probability of approximately 95%. The standard  
uncertainty has been determined in accordance  
with the GUM 'Evaluation of measurement data  
- Guide to the expression of uncertainty in  
measurement'

Result of Calibration: ☒ Without Adjustment ☐ With Adjustment

Calibration Range: 20 °C to 40 °C

### Function:

Table 1: This equipment was connected with wet bulb Temperature probe Model: -, S/N: -.  
Dimension: Diameter 4.77 mm, Length 70 mm.

Immersion Depth (mm)	Standard Reading (°C)	UUC Reading (°C)	Error (°C)	Uncertainty (°C)
65	20.064	20.0	-0.1	0.099
65	25.054	25.0	-0.1	0.099
65	30.045	30.0	0.0	0.099
65	35.034	34.9	-0.1	0.099
65	40.023	39.9	-0.1	0.099

Table 2: This equipment was connected with Globe Temperature probe Model: -, S/N: -.  
Dimension: Diameter 4.77 mm, Length 70 mm.

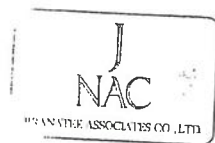
Immersion Depth (mm)	Standard Reading (°C)	UUC Reading (°C)	Error (°C)	Uncertainty (°C)
65	20.065	20.0	-0.1	0.099
65	25.053	24.9	-0.2	0.099
65	30.045	29.9	-0.1	0.099
65	35.034	34.8	-0.2	0.099
65	40.022	39.8	-0.2	0.099

Table 3: This equipment was connected with Dry Bulb Temperature probe Model: -, S/N: -.  
Dimension: Diameter 4.77 mm, Length 70 mm.

Immersion Depth (mm)	Standard Reading (°C)	UUC Reading (°C)	Error (°C)	Uncertainty (°C)
65	20.064	20.0	-0.1	0.099
65	25.053	25.0	-0.1	0.099
65	30.045	30.0	0.0	0.099
65	35.034	34.9	-0.1	0.099
65	40.022	39.9	-0.1	0.099

UUC\*: Unit Under Calibration

Calibrated by:  
☒ Mr. Sorawit Thachalad  
☒ Miss Jitraporn Lertsomphol  
☐ Miss Ruangrumpai Phoommit

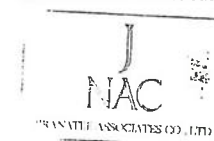


Approved signatory

Mr. Parinya Booncharoen  
Calibration Department Manager

**COPY**

\*\*\*End of Certificate of Calibration\*\*\*



**COPY**

**Area Heat Stress Monitor**

**Model : QUESTEMP 34**

**Serial No. : TEU080014**



## CERTIFICATE OF CALIBRATION

Certificate No. : CDT-024-68

Page 1 of 2 Pages

**MEASUREMENT ITEM** : Heat Stress Monitor  
**MANUFACTURER** : TSI QUEST  
**MODEL/TYPE** : Ques Temp 34  
**SERIAL NUMBER** : TEU080014  
**ID NUMBER** : NO. 13  
**CONDITION AS-RECEIVED** : Used item  
**CUSTOMER** : Eastern thai consulting 1992 Co.,Ltd.  
683 Moo 11, Sukhapibarn 8 Rd,  
Nongkham, Sriracha, Chonburi 20230

**RECEIVED DATE** : 27 Dec 2024  
**MEASUREMENT DATE** : 10 Jan 2025  
**ISSUE DATE** : 14 Jan 2025

### ENVIRONMENTAL CONDITIONS:

Ambient condition in the laboratory are as follow:  
Temperature : 23.0 ± 3.0 °C  
Relative Humidity : 55.0 ± 15.0 %RH

**NOTED:** The certificate is valid only to the item calibrated on date and place of calibration.

### TABULATION OF RESULTS:

The table on next page give the measured values.

### Calibration procedure:

The temperature calibration was done by In-House calibration method as WI-CL-001 according to comparison method with standard digital temperature indicator and standard temperature probe. The temperature scale use was based on ITS-90.

### Traceability:

The measurement results are traceable to the international system of units (SI) through National Institute of Metrology Thailand (NIMT) Certificate number: TT-0047-24, Certificate number: ER-0113-24

### Reference Used During Calibration:

1. Standard Temperature Probe  
Model: STS-100 ASD0, Serial No.: 667682-09,  
Due date: 26 Mar 2025  
2. Digital Temperature Indicator  
Model: DTI-1000-A MK II, Serial No.: 671407-  
00591 Due date: 21 Oct 2025

### Uncertainty of Measurement:

The reported uncertainty of measurement is based on the standard uncertainty multiplied by a coverage factor  $k=2$ , Which for a normal distribution corresponds to a coverage probability of approximately 95%. The standard uncertainty has been determined in accordance with the GUM 'Evaluation of measurement data - Guide to the expression of uncertainty in measurement'

**Result of Calibration:** [X] Without Adjustment [ ] With Adjustment

**Calibration Range:** 20 °C to 40 °C

### Function:

Table 1: This equipment was connected with wet bulb Temperature probe Model: -, S/N: -.  
Dimension: Diameter 4.77 mm. Length 70 mm.

Immersion Depth (mm)	Standard Reading (°C)	UUC Reading (°C)	Error (°C)	Uncertainty (°C)
65	20.069	20.4	0.3	0.099
65	25.061	25.3	0.2	0.099
65	30.047	30.3	0.3	0.099
65	35.036	35.2	0.2	0.11
65	40.018	40.3	0.3	0.099

Table 2: This equipment was connected with Globe Temperature probe Model: -, S/N: -.  
Dimension: Diameter 4.77 mm. Length 70 mm.

Immersion Depth (mm)	Standard Reading (°C)	UUC Reading (°C)	Error (°C)	Uncertainty (°C)
65	20.069	20.3	0.2	0.099
65	25.061	25.3	0.2	0.099
65	30.047	30.3	0.3	0.099
65	35.036	35.3	0.3	0.099
65	40.019	40.3	0.3	0.099

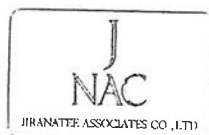
Table 3: This equipment was connected with Dry Bulb Temperature probe Model: -, S/N: -.  
Dimension: Diameter 4.77 mm. Length 70 mm.

Immersion Depth (mm)	Standard Reading (°C)	UUC Reading (°C)	Error (°C)	Uncertainty (°C)
65	20.070	20.3	0.3	0.14
65	25.061	25.3	0.2	0.099
65	30.047	30.3	0.3	0.099
65	35.036	35.3	0.3	0.099
65	40.019	40.3	0.3	0.099

UUC\*: Unit Under Calibration

Remark: The reported uncertainty of measurement is 0.14, based on standard uncertainty multiplied by a coverage factor  $k=2$  14 providing a level of confidence of approximately 95%.

Calibrated by:  
☐ Mr. Sorawit Thachalad  
☒ Miss Jitraporn Lertsomphol  
☐ Miss Ruangrumpai Phoommit

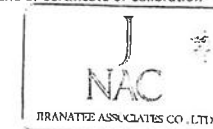


Approved signatory

Mr. Parinya Booncharoen  
Calibration Department Manager

**COPY**

\*\*\*End of Certificate of Calibration\*\*\*



**COPY**

**Area Heat Stress Monitor**

**Model : QUESTEMP 32**

**Serial No. : TPL090017**

## CERTIFICATE OF CALIBRATION

Certificate No. : CDT-018-68

Page 1 of 2 Pages

**MEASUREMENT ITEM** : Heat Stress Monitor  
**MANUFACTURER** : 3M  
**MODEL/TYPE** : Ques Temp 32  
**SERIAL NUMBER** : TPL090017  
**ID NUMBER** : NO. 7  
**CONDITION AS-RECEIVED** : Used item  
**CUSTOMER** : Eastern thai consulting 1992 Co.,Ltd.  
683 Moo 11, Sukhapibarn 8 Rd,  
Nongkham, Sriracha, Chonburi 20230

**RECEIVED DATE** : 27 Dec 2024  
**MEASUREMENT DATE** : 08 Jan 2025  
**ISSUE DATE** : 14 Jan 2025

### ENVIRONMENTAL CONDITIONS:

Ambient condition in the laboratory are as follow:

Temperature :  $23.0 \pm 3.0$  °C  
Relative Humidity :  $55.0 \pm 15.0$  %RH

**NOTED:** The certificate is valid only to the item calibrated on date and place of calibration.

### TABULATION OF RESULTS:

The table on next page give the measured values.

### Calibration procedure:

The temperature calibration was done by In-House calibration method as WI-CL-001 according to comparison method with standard digital temperature indicator and standard temperature probe. The temperature scale use was based on ITS-90.

### Traceability:

The measurement results are traceable to the international system of units (SI) through National Institute of Metrology Thailand (NIMT) Certificate number: TT-0047-24, Certificate number: ER-0113-24

### Reference Used During Calibration:

1. Standard Temperature Probe  
Model: STS-100 ASD0, Serial No.: 667682-09,  
Due date: 26 Mar 2025  
2. Digital Temperature Indicator  
Model: DTI-1000-A MK II, Serial No.: 671407-  
00591 Due date: 21 Oct 2025

### Uncertainty of Measurement:

The reported uncertainty of measurement is based on the standard uncertainty multiplied by a coverage factor  $k=2$ . Which for a normal distribution corresponds to a coverage probability of approximately 95%. The standard uncertainty has been determined in accordance with the GUM 'Evaluation of measurement data - Guide to the expression of uncertainty in measurement'

**Result of Calibration:** ☒ Without Adjustment ☐ With Adjustment

**Calibration Range:** 20 °C to 40 °C

### Function:

Table 1: This equipment was connected with wet bulb Temperature probe Model: -, S/N: -.  
Dimension: Diameter 4.77 mm. Length 70 mm.

Immersion Depth (mm)	Standard Reading (°C)	UUC Reading (°C)	Error (°C)	Uncertainty (°C)
65	20.070	19.8	-0.3	0.099
65	25.060	24.8	0.3	0.099
65	30.048	29.8	-0.2	0.099
65	35.036	34.8	-0.2	0.099
65	40.022	39.8	-0.2	0.099

Table 2: This equipment was connected with Globe Temperature probe Model: -, S/N: -.  
Dimension: Diameter 4.77 mm. Length 70 mm.

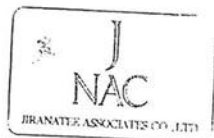
Immersion Depth (mm)	Standard Reading (°C)	UUC Reading (°C)	Error (°C)	Uncertainty (°C)
65	20.070	19.9	-0.2	0.099
65	25.060	24.9	-0.2	0.099
65	30.048	30.0	0.0	0.099
65	35.036	35.0	0.0	0.099
65	40.022	40.0	0.0	0.099

Table 3: This equipment was connected with Dry Bulb Temperature probe Model: -, S/N: -.  
Dimension: Diameter 4.77 mm. Length 70 mm.

Immersion Depth (mm)	Standard Reading (°C)	UUC Reading (°C)	Error (°C)	Uncertainty (°C)
65	20.070	19.7	-0.4	0.099
65	25.060	24.7	-0.4	0.099
65	30.048	29.6	-0.4	0.099
65	35.036	34.6	-0.4	0.099
65	40.022	39.6	-0.4	0.099

UUC\*: Unit Under Calibration

Calibrated by:  
☐ Mr. Sorawit Thachalad  
☒ Miss Jitraporn Lertsomphol  
☐ Miss Ruangrumpai Phoommit

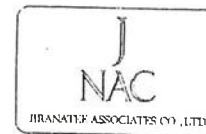


Approved signatory

*[Signature]*  
Mr. Parinya Booncharoen  
Calibration Department Manager

**COPY**

\*\*\*End of Certificate of Calibration\*\*\*



**COPY**

**Area Heat Stress Monitor**

**Model : HD32.2**

**Serial No. : 22004316**



## CERTIFICATE OF CALIBRATION

Certificate No. : CDT-041-68

Page 1 of 2 Pages

**MEASUREMENT ITEM** : Heat Stress Monitor  
**MANUFACTURER** : Delta OHM  
**MODEL/TYPE** : HD32.2  
**SERIAL NUMBER** : 22004316  
**ID NUMBER** : NO. 15  
**CONDITION AS-RECEIVED** : Used Item  
**CUSTOMER** : Eastern thai consulting 1992 Co.,Ltd.  
683 Moo 11, Sukhapibarn 8 Rd,  
Nongkham, Sriracha, Chonburi 20230

**RECEIVED DATE** : 23 Jan 2025  
**MEASUREMENT DATE** : 29 Jan 2025  
**ISSUE DATE** : 30 Jan 2025

### ENVIRONMENTAL CONDITIONS:

Ambient condition in the laboratory are as follow:

Temperature :  $23.0 \pm 3.0$  °C  
Relative Humidity :  $55.0 \pm 15.0$  %RH

**NOTED:** The certificate is valid only to the item calibrated on date and place of calibration.

### TABULATION OF RESULTS:

The table on next page give the measured values.

### Calibration procedure:

The temperature calibration was done by In-House calibration method as WI-CL-001 according to comparison method with standard digital temperature indicator and standard temperature probe. The temperature scale use was based on ITS-90.

### Traceability:

The measurement results are traceable to the international system of units (SI) through National Institute of Metrology Thailand (NIMT) Certificate number: TT-0047-24, Certificate number: ER-0113-24

### Reference Used During Calibration:

1. Standard Temperature Probe  
Model: STS-100 A500, Serial No.: 667682-09,  
Due date: 26 Mar 2025  
2. Digital Temperature Indicator  
Model: DTI-1000-A MK II, Serial No.: 671407-  
00591 Due date: 21 Oct 2025

### Uncertainty of Measurement:

The reported uncertainty of measurement is based on the standard uncertainty multiplied by a coverage factor  $k=2$ , Which for a normal distribution corresponds to a coverage probability of approximately 95%. The standard uncertainty has been determined in accordance with the GUM 'Evaluation of measurement data - Guide to the expression of uncertainty in measurement'

**Result of Calibration:** ☒ Without Adjustment ☐ With Adjustment

**Calibration Range:** 20 °C to 40 °C

### Function:

Table 1: This equipment was connected with wet bulb probe Model: HP3201.2, S/N: 22010213.  
Dimension: Diameter 3.3 mm. Length 170 mm.

Immersion Depth (mm)	Standard Reading (°C)	UUC Reading (°C)	Error (°C)	Uncertainty (°C)
80	20.073	20.1	0.0	0.099
80	25.064	25.1	0.0	0.099
80	30.055	30.1	0.0	0.099
80	35.046	35.1	0.1	0.099
80	40.035	40.1	0.1	0.099

Table 2: This equipment was connected with Globe thermometer probe Model: TP3276.2, S/N: 22014923.  
Dimension: Diameter 3.3 mm. Length 205 mm.

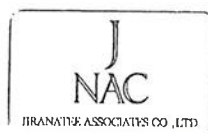
Immersion Depth (mm)	Standard Reading (°C)	UUC Reading (°C)	Error (°C)	Uncertainty (°C)
110	20.073	20.1	0.0	0.099
110	25.064	25.1	0.0	0.099
110	30.055	30.1	0.0	0.099
110	35.047	35.1	0.1	0.099
110	40.035	40.1	0.1	0.099

Table 3: This equipment was connected with temperature probe Model: TP3207.2, S/N: 22015193.  
Dimension: Diameter 14 mm. Length 150 mm.

Immersion Depth (mm)	Standard Reading (°C)	UUC Reading (°C)	Error (°C)	Uncertainty (°C)
75	20.073	20.1	0.0	0.099
75	25.064	25.0	-0.1	0.099
75	30.055	30.0	-0.1	0.099
75	35.047	35.0	0.0	0.099
75	40.036	40.0	0.0	0.099

UUC\*: Unit Under Calibration

Calibrated by:  
☐ Mr. Sorawit Thachalad  
☒ Miss Jitraporn Lertsomphol  
☐ Miss Ruangrumpai Phoommit



Approved signatory:

*Mr. Parinya Booncharoen*  
Mr. Parinya Booncharoen  
Calibration Department Manager

**COPY**

\*\*\*End of Certificate of Calibration\*\*\*



**COPY**

**Area Heat Stress Monitor**

**Model : QUESTEMP 32**

**Serial No. : TPQ030024**

## CERTIFICATE OF CALIBRATION

Certificate No. : CDT-020-68

Page 1 of 2 Pages

**MEASUREMENT ITEM** : Heat Stress Monitor  
**MANUFACTURER** : 3M  
**MODEL/TYPE** : Ques Temp 32  
**SERIAL NUMBER** : TPQ030024  
**ID NUMBER** : NO. 9  
**CONDITION AS-RECEIVED** : Used Item  
**CUSTOMER** : Eastern thai consulting 1992 Co., Ltd.  
683 Moo 11, Sukhaphibarn 8 Rd,  
Nongkham, Sriracha, Chonburi 20230

**RECEIVED DATE** : 27 Dec 2024  
**MEASUREMENT DATE** : 09 Jan 2025  
**ISSUE DATE** : 14 Jan 2025

### ENVIRONMENTAL CONDITIONS:

Ambient condition in the laboratory are as follow:  
**Temperature** :  $23.0 \pm 3.0$  °C  
**Relative Humidity** :  $55.0 \pm 15.0$  %RH

**NOTED:** The certificate is valid only to the item calibrated on date and place of calibration.

### TABULATION OF RESULTS:

The table on next page give the measured values.

### Calibration procedure:

The temperature calibration was done by In-House calibration method as WI-CL-001 according to comparison method with standard digital temperature indicator and standard temperature probe. The temperature scale use was based on ITS-90.

### Traceability:

The measurement results are traceable to the international system of units (SI) through National Institute of Metrology Thailand (NIMT) Certificate number: IT-0047-24, Certificate number: ER-0113-24

### Reference Used During Calibration:

- Standard Temperature Probe  
Model: STS-100 A500, Serial No.: 667682 09,  
Due date: 26 Mar 2025
- Digital Temperature Indicator  
Model: DTI-1000-A MK II, Serial No.: 671407-  
00591 Due date: 21 Oct 2025

### Uncertainty of Measurement:

The reported uncertainty of measurement is based on the standard uncertainty multiplied by a coverage factor  $k=2$ , Which for a normal distribution corresponds to a coverage probability of approximately 95%. The standard uncertainty has been determined in accordance with the GUM 'Evaluation of measurement data - Guide to the expression of uncertainty in measurement'

**Result of Calibration:** ☒ Without Adjustment ☐ With Adjustment

**Calibration Range:** 20 °C to 40 °C

### Function:

Table 1: This equipment was connected with wet bulb Temperature probe Model: -, S/N: -,  
Dimension: Diameter 4.77 mm. Length 70 mm.

Immersion Depth (mm)	Standard Reading (°C)	UUC Reading (°C)	Error (°C)	Uncertainty (°C)
65	20.074	20.2	0.1	0.14
65	25.064	25.2	0.1	0.14
65	30.051	30.2	0.2	0.14
65	35.037	35.2	0.2	0.14
65	40.020	40.1	0.1	0.14

Table 2: This equipment was connected with Globe Temperature probe Model: -, S/N: -,  
Dimension: Diameter 4.77 mm. Length 70 mm.

Immersion Depth (mm)	Standard Reading (°C)	UUC Reading (°C)	Error (°C)	Uncertainty (°C)
65	20.074	20.4	0.3	0.14
65	25.064	25.2	0.1	0.14
65	30.051	29.8	-0.2	0.14
65	35.037	34.8	-0.3	0.14
65	40.021	39.7	-0.3	0.14

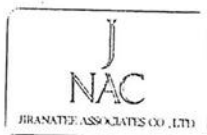
Table 3: This equipment was connected with Dry Bulb Temperature probe Model: -, S/N: -,  
Dimension: Diameter 4.77 mm. Length 70 mm.

Immersion Depth (mm)	Standard Reading (°C)	UUC Reading (°C)	Error (°C)	Uncertainty (°C)
65	20.074	20.3	0.2	0.099
65	25.063	25.2	0.1	0.14
65	30.051	30.2	0.1	0.099
65	35.038	35.2	0.2	0.099
65	40.020	40.2	0.2	0.099

**UUC:** Unit Under Calibration

Remark: The reported uncertainty of measurement is 0.14, based on standard uncertainty multiplied by a coverage factor  $k=2.14$  providing a level of confidence of approximately 95%.

Calibrated by:  
☐ Mr. Sorawit Thachalad  
☒ Miss Jitraporn Lertsomphol  
☐ Miss Ruangrumpai Phoommit



Approved signatory:

Mr. Parinya Booncharoen  
Calibration Department Manager

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\*\*\*End of Certificate of Calibration\*\*\*



**COPY**

**Area Heat Stress Monitor**

**Model : QUESTEMP 32**

**Serial No. : TPQ030023**



## CERTIFICATE OF CALIBRATION

Certificate No. : CDT-019-68

Page 1 of 2 Pages

**MEASUREMENT ITEM** : Heat Stress Monitor  
**MANUFACTURER** : 3M  
**MODEL/TYPE** : Ques Temp 32  
**SERIAL NUMBER** : TPQ030023  
**ID NUMBER** : NO. 8  
**CONDITION AS-RECEIVED** : Used item  
**CUSTOMER** : Eastern thai consulting 1992 Co., Ltd.  
683 Moo 11, Sukhapibarn 8 Rd,  
Nongkham, Sriracha, Chonburi 20230

**RECEIVED DATE** : 27 Dec 2024  
**MEASUREMENT DATE** : 08 Jan 2025  
**ISSUE DATE** : 14 Jan 2025

**ENVIRONMENTAL CONDITIONS:**  
Ambient condition in the laboratory are as follow:  
Temperature : 23.0 ± 3.0 °C  
Relative Humidity : 55.0 ± 15.0 %RH

**NOTED:** The certificate is valid only to the item calibrated on date and place of calibration.

**TABULATION OF RESULTS:**  
The table on next page give the measured values.

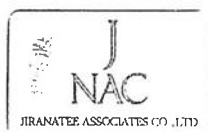
**Calibration procedure:**  
The temperature calibration was done by  
In-House calibration method as WI-CL-001  
according to comparison method with standard  
digital temperature indicator and standard  
temperature probe. The temperature scale use  
was based on ITS-90.

**Traceability:**  
The measurement results are traceable to the  
international system of units (SI) through  
National Institute of Metrology Thailand (NIMT)  
Certificate number: TT-0047-24, Certificate  
number: ER-0113-24

**Reference Used During Calibration:**  
1. Standard Temperature Probe  
Model: STS-100 A500, Serial No : 657682-09.  
Due date: 26 Mar 2025  
2. Digital Temperature Indicator  
Model: DTI-1000 A MK II, Serial No., G71407-  
00591 Due date: 21 Oct 2025

**Uncertainty of Measurement:**  
The reported uncertainty of measurement is  
based on the standard uncertainty multiplied by  
a coverage factor k=2, Which for a normal  
distribution corresponds to a coverage  
probability of approximately 95%. The standard  
uncertainty has been determined in accordance  
with the GUM "Evaluation of measurement data  
- Guide to the expression of uncertainty in  
measurement"

Calibrated by:  
☐ Mr. Sorawit Thachalad  
☒ Miss Jitraporn Lertsomphol  
☐ Miss Ruangrumpai Phoommit



Approved signatory

Mr. Parinya Booncharoen  
Calibration Department Manager

**COPY**

**Result of Calibration:** ☒ Without Adjustment ☐ With Adjustment

**Calibration Range:** 20 °C to 40 °C

**Function:**

Table 1: This equipment was connected with wet bulb Temperature probe Model: -, S/N: -.  
Dimension: Diameter 4.77 mm, Length 70 mm.

Immersion Depth (mm)	Standard Reading (°C)	UUC Reading (°C)	Error (°C)	Uncertainty (°C)
65	20.061	20.2	0.1	0.099
65	25.063	25.2	0.1	0.099
65	30.044	30.2	0.2	0.099
65	35.028	35.2	0.2	0.099
65	40.006	40.2	0.2	0.099

Table 2: This equipment was connected with Globe Temperature probe Model: -, S/N: -.  
Dimension: Diameter 4.77 mm, Length 70 mm.

Immersion Depth (mm)	Standard Reading (°C)	UUC Reading (°C)	Error (°C)	Uncertainty (°C)
65	20.061	20.2	0.2	0.14
65	25.063	25.1	0.1	0.14
65	30.044	30.1	0.1	0.14
65	35.028	35.1	0.1	0.14
65	40.006	40.0	0.0	0.14

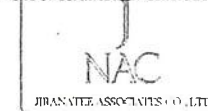
Table 3: This equipment was connected with Dry Bulb Temperature probe Model: -, S/N: -.  
Dimension: Diameter 4.77 mm, Length 70 mm.

Immersion Depth (mm)	Standard Reading (°C)	UUC Reading (°C)	Error (°C)	Uncertainty (°C)
65	20.061	20.2	0.1	0.099
65	25.063	25.2	0.1	0.099
65	30.044	30.2	0.2	0.099
65	35.028	35.2	0.2	0.099
65	40.006	40.2	0.2	0.099

**UUC\*:** Unit Under Calibration

**Remark:** The reported uncertainty of measurement is 0.14, based on standard uncertainty multiplied by a coverage factor k=2,14 providing a level of confidence of approximately 95%.

\*\*\*End of Certificate of Calibration\*\*\*



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**Area Heat Stress Monitor**

**Model : HD32.2**

**Serial No. : 22004318**

## CERTIFICATE OF CALIBRATION

Certificate No. : CDT-042-68

Page 1 of 2 Pages

**MEASUREMENT ITEM** : Heat Stress Monitor  
**MANUFACTURER** : Delta OHM  
**MODEL/TYPE** : HD32.2  
**SERIAL NUMBER** : 22004318  
**ID NUMBER** : NO. 16  
**CONDITION AS-RECEIVED** : Used item  
**CUSTOMER** : Eastern thai consulting 1992 Co.,Ltd.  
683 Moo 11, Sukhapibarn 8 Rd,  
Nongkham, Sriracha, Chonburi 20230

**RECEIVED DATE** : 23 Jan 2025  
**MEASUREMENT DATE** : 29 Jan 2025  
**ISSUE DATE** : 30 Jan 2025

### ENVIRONMENTAL CONDITIONS:

Ambient condition in the laboratory are as follow:  
Temperature : 23.0 ± 3.0 °C  
Relative Humidity : 55.0 ± 15.0 %RH

**NOTED:** The certificate is valid only to the item calibrated on date and place of calibration.

### TABULATION OF RESULTS:

The table on next page give the measured values.

### Calibration procedure:

The temperature calibration was done by In-House calibration method as WI-CL-001 according to comparison method with standard digital temperature Indicator and standard temperature probe. The temperature scale use was based on ITS-90.

### Traceability:

The measurement results are traceable to the international system of units (SI) through National Institute of Metrology Thailand (NIMT) Certificate number: TT-0047-24, Certificate number: ER-0113-24

### Reference Used During Calibration:

1. Standard Temperature Probe  
Model: STS-100 A500, Serial No.: 667682-09,  
Due date: 26 Mar 2025  
2. Digital Temperature Indicator  
Model: DTI-1000-A MK II, Serial No.: 671407-00591 Due date: 21 Oct 2025

### Uncertainty of Measurement:

The reported uncertainty of measurement is based on the standard uncertainty multiplied by a coverage factor k=2, Which for a normal distribution corresponds to a coverage probability of approximately 95%. The standard uncertainty has been determined in accordance with the GUM 'Evaluation of measurement data - Guide to the expression of uncertainty in measurement'

**Result of Calibration:** ☒ Without Adjustment ☐ With Adjustment

**Calibration Range:** 20 °C to 40 °C

### Function:

Table 1: This equipment was connected with wet bulb probe Model: HP3201.2, S/N: 22010218.  
Dimension: Diameter 3.3 mm. Length 170 mm.

Immersion Depth (mm)	Standard Reading (°C)	UUC Reading (°C)	Error (°C)	Uncertainty (°C)
80	20.073	20.1	0.0	0.099
80	25.064	25.1	0.0	0.099
80	30.055	30.1	0.0	0.099
80	35.046	35.1	0.1	0.099
80	40.036	40.1	0.1	0.099

Table 2: This equipment was connected with Globe thermometer probe Model: TP3276.2, S/N: 22014929.  
Dimension: Diameter 3.3 mm. Length 205 mm.

Immersion Depth (mm)	Standard Reading (°C)	UUC Reading (°C)	Error (°C)	Uncertainty (°C)
110	20.074	20.1	0.0	0.099
110	25.064	25.1	0.0	0.099
110	30.055	30.1	0.0	0.099
110	35.046	35.1	0.1	0.099
110	40.036	40.1	0.1	0.099

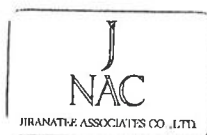
Table 3: This equipment was connected with temperature probe Model: TP3207.2, S/N: 22015205.  
Dimension: Diameter 14 mm. Length 150 mm.

Immersion Depth (mm)	Standard Reading (°C)	UUC Reading (°C)	Error (°C)	Uncertainty (°C)
75	20.073	20.2	0.1	0.099
75	25.064	25.1	0.0	0.099
75	30.054	30.1	0.0	0.099
75	35.046	35.0	0.0	0.099
75	40.036	39.9	-0.1	0.099

UUC\*: Unit Under Calibration

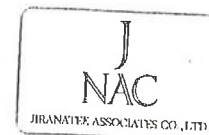
\*\*\*End of Certificate of Calibration\*\*\*

Calibrated by:  
☐ Mr. Sorawit Thachalad  
☒ Miss Jitraporn Lertsomphol  
☐ Miss Ruangrumpai Phoommit



Approved signatory:   
Mr. Parinya Booncharoen  
Calibration Department Manager

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**Area Heat Stress Monitor**

**Model : HD32.2**

**Serial No. : 22004320**



## CERTIFICATE OF CALIBRATION

Certificate No. : CDT-044-68

Page 1 of 2 Pages

MEASUREMENT ITEM : Heat Stress Monitor  
MANUFACTURER : Delta OHM  
MODEL/TYPE : HD32.2  
SERIAL NUMBER : 22004320  
ID NUMBER : NO. 18  
CONDITION AS-RECEIVED : Used item  
CUSTOMER : Eastern thai consulting 1992 Co.,Ltd.  
683 Moo 11, Sukhapibarn 8 Rd,  
Nongkham, Sriracha, Chonburi 20230

RECEIVED DATE : 23 Jan 2025  
MEASUREMENT DATE : 30 Jan 2025  
ISSUE DATE : 30 Jan 2025

### ENVIRONMENTAL CONDITIONS:

Ambient condition in the laboratory are as follow:  
Temperature :  $23.0 \pm 3.0$  °C  
Relative Humidity :  $55.0 \pm 15.0$  %RH

NOTED: The certificate is valid only to the item calibrated on date and place of calibration.

### TABULATION OF RESULTS:

The table on next page give the measured values.

### Calibration procedure:

The temperature calibration was done by  
In-House calibration method as WI-CL-001  
according to comparison method with standard  
digital temperature indicator and standard  
temperature probe. The temperature scale use  
was based on ITS-90.

### Traceability:

The measurement results are traceable to the  
international system of units (SI) through  
National Institute of Metrology Thailand (NIMT)  
Certificate number: TT-0047-24, Certificate  
number: ER-0113-24

### Reference Used During Calibration:

1. Standard Temperature Probe  
Model: STS-100 AS00, Serial No.: 667682-09,  
Due date: 26 Mar 2025  
2. Digital Temperature Indicator  
Model: DTI-1000-A MK II, Serial No.: 671407-  
00591 Due date: 21 Oct 2025

### Uncertainty of Measurement:

The reported uncertainty of measurement is  
based on the standard uncertainty multiplied by  
a coverage factor  $k=2$ , Which for a normal  
distribution corresponds to a coverage  
probability of approximately 95%. The standard  
uncertainty has been determined in accordance  
with the GUM 'Evaluation of measurement data  
- Guide to the expression of uncertainty in  
measurement'

Result of Calibration: ☒ Without Adjustment ☐ With Adjustment

Calibration Range: 20 °C to 40 °C

### Function:

Table 1: This equipment was connected with wet bulb probe Model: HP3201.2, S/N: 22010220.  
Dimension: Diameter 3.3 mm. Length 170 mm.

Immersion Depth (mm)	Standard Reading (°C)	UUC Reading (°C)	Error (°C)	Uncertainty (°C)
80	20.063	20.1	0.0	0.099
80	25.062	25.1	0.0	0.099
80	30.052	30.1	0.0	0.099
80	35.043	35.1	0.1	0.099
80	40.025	40.1	0.1	0.099

Table 2: This equipment was connected with Globe thermometer probe Model: TP3276.2, S/N: 22014931.  
Dimension: Diameter 3.3 mm. Length 205 mm.

Immersion Depth (mm)	Standard Reading (°C)	UUC Reading (°C)	Error (°C)	Uncertainty (°C)
110	20.063	20.1	0.0	0.099
110	25.062	25.1	0.0	0.099
110	30.052	30.1	0.0	0.099
110	35.043	35.1	0.1	0.099
110	40.025	40.1	0.1	0.099

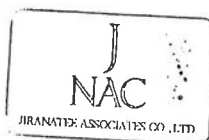
Table 3: This equipment was connected with temperature probe Model: TP3207.2, S/N: 22015196.  
Dimension: Diameter 14 mm. Length 150 mm.

Immersion Depth (mm)	Standard Reading (°C)	UUC Reading (°C)	Error (°C)	Uncertainty (°C)
75	20.063	20.2	0.1	0.099
75	25.062	25.2	0.1	0.099
75	30.052	30.1	0.0	0.099
75	35.043	35.1	0.1	0.099
75	40.025	40.1	0.1	0.099

UUC\*: Unit Under Calibration

\*\*\*End of Certificate of Calibration\*\*\*

Calibrated by:  
☐ Mr. Sorawit Thachalad  
☒ Miss Jitraporn Lertsomphol  
☐ Miss Ruangrumpal Phoommit



Approved signatory:

Mr. Parinya Booncharoen  
Calibration Department Manager

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## **BAROMETER**

**Equipment : Analog Barometer**

**ID No. / Tag No. : BM001/41**



MIRACLE INTERNATIONAL TECHNOLOGY CO.,LTD

214 Bangwaek Rd. Bangpai Bangkac Bangkok 10160  
Tel.: 0-2865-4647-8 Fax: 0-2865-4649 http://www.mit.in.th



## CALIBRATION CERTIFICATE

Certificate No. : L202405022-0013

Date Issued : 08-May-24

**Customer** : Eastern Thai Consulting 1992 Co., Ltd.  
683 Moo 11, Sukhapibarn 8 Rd., Nongkham, Sriracha, Chonburi 20230

**Equipment** : Analog Barometer

**Manufacturer** : Barigo

**Model** : -

**Serial No.** : -

**ID No./Tag No.** : BM001/41

**Date Received** : 03-May-24

**Date Calibrated** : 06-May-24

**Calibrated by** : Mr. Saruth Srichulikul

### Calibration Method or Calibration Procedure Used

In-house method : CP-21 base on DKD-R 6-1: Edition 3 2014.

This certificate is traceable to national standards, which realize the units of measurement according to the International System of Units (SI).

### Result of Calibration

The reported uncertainty of measurement was based on standard uncertainty multiplied by a coverage factor  $k = 2$ , providing a level confidence approximately 95 percent.

This certificate may not be reproduced other than in full except with the prior written approval of the Miracle International Technology Company Limited.

Approved by:

*Sarayuth T.*  
(Mr. Sarayuth Tochua)



Page 1 of 2

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Certificate No : L202405022-0013

Environment Ambient Temperature :  $(25 \pm 2)^{\circ}\text{C}$

Relative Humidity :  $(50 \pm 15)\%\text{RH}$

STD Reading	UUC Reading (mbar)	UUC Reading (mbar)	UUC Error	Uncertainty	MPE	Pass / Fail
mbar	Before Adjusted	After Adjusted	mbar	$\pm$ mbar	$\pm$ mbar	with Guard Band
990.00	990	-	0.00	0.59	10.3	Pass
1000.00	1000	-	0.00	0.59	10.3	Pass
1010.00	1010	-	0.00	0.59	10.3	Pass
1020.00	1020	-	0.00	0.59	10.3	Pass
1030.00	1030	-	0.00	0.59	10.3	Pass

STD = Standard Pass =  $|\text{error}| + |\text{uncertainty}| \leq |\text{MPE}|$

UUC = Unit Under Calibration Fail =  $|\text{error}| + |\text{uncertainty}| > |\text{MPE}|$

MPE = Maximum Permissible Error

Calibrated condition : Pressure Medium Air : Density =  $1.19 \text{ kg/m}^3$  @  $20^{\circ}\text{C}$ , 1 bar  
Mounting Position Vertical  
Reference Level at center of its dial  
Conversion Factor Multiply by  $1.0 \text{ E}+02$  - Pa unit

Description of UUC : Range 950 - 1080 mbar Absolute  
Calibration Range 990 - 1030 mbar Absolute  
Scale Interval 1 mbar

Condition As-Received : Used Item

The measurement results and statements of conformity with specification only relate to the item calibrated.

Measurement Standards Used & Traceability :

The International System of Units (SI) through

iRPC Certificate No. CLI-P230097 for Reference Pressure Monitor Serial No. 1598. Due 09-Nov-24

End of Certificate

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Page 2 of 2

**CERTIFICATE OF ANALYSIS**

**EPA PROTOCOL GAS**

**Cylinder No. : EB0145030**



# **CERTIFICATE OF ANALYSIS**

## **Grade of Product: EPA Protocol**

Part Number: E03NI99E15AC0U4      Reference Number: 160-402242242-1  
Cylinder Number: EB0145030      Cylinder Volume: 144.4 CF  
Laboratory: 124 - Plumsteadville - PA      Cylinder Pressure: 2015 PSIG  
PGVP Number: A12021      Valve Outlet: 350  
Gas Code: CH4,PPN,BALN      Certification Date: Oct 15, 2021

**Expiration Date: Oct 15, 2029**

Certification performed in accordance with "EPA Traceability Protocol for Assay and Certification of Gaseous Calibration Standards (May 2012)" document EPA 600/R-12/531, using the assay procedures listed. Analytical Methodology does not require correction for analytical interference. This cylinder has a total analytical uncertainty as stated below with a confidence level of 95%. There are no significant impurities which affect the use of this calibration mixture. All concentrations are on a mole/mole basis unless otherwise noted.

Do Not Use This Cylinder below 100 psig, i.e. 0.7 megapascals.

### **ANALYTICAL RESULTS**

Component	Requested Concentration	Actual Concentration	Protocol Method	Total Relative Uncertainty	Assay Dates
METHANE	180.0 PPM	177.0 PPM	G1	+/- 1.0% NIST Traceable	10/15/2021
PROPANE	185.0 PPM	187.0 PPM	G1	+/- 1.0% NIST Traceable	10/15/2021
NITROGEN	Balance				

### **CALIBRATION STANDARDS**

Type	Lot ID	Cylinder No	Concentration	Uncertainty	Expiration Date
NTRM	08011503	K002564	246.7 PPM METHANE/AIR	+/- 0.6%	May 15, 2025
NTRM	200602-06	6162660Y	243.3 PPM PROPANE/AIR	+/- 0.5%	Mar 17, 2027

### **ANALYTICAL EQUIPMENT**

Instrument/Make/Model	Analytical Principle	Last Multipoint Calibration
Nicolet iS50 FTIR AUP2110295 CH4	FTIR	Oct 13, 2021
Nicolet iS50 FTIR AUP2110295 C3H8	FTIR	Oct 14, 2021

Triad Data Available Upon Request

#### **NOTES:**

Gross Weight: 28.0 Kg  
Net Weight: 4.9 Kg  
PO# 5221004861



*Michael A. Miller*  
Approved for Release



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**CERTIFICATE OF ANALYSIS**

**EPA PROTOCOL GAS**

**Cylinder No. : EB0062815**

# CERTIFICATE OF ANALYSIS

## Grade of Product: EPA Protocol

Part Number: E04NI99E15ACX9C Reference Number: 82-401135335-1  
Cylinder Number: EB0062815 Cylinder Volume: 144.4 CF  
Laboratory: 124 - Riverton (SAP) - NJ Cylinder Pressure: 2015 PSIG  
PGVP Number: B52018 Valve Outlet: 660  
Gas Code: CO,NO,NOX,SO2,BALN Certification Date: Mar 13, 2018

Expiration Date: Mar 13, 2026

Certification performed in accordance with "EPA Traceability Protocol for Assay and Certification of Gaseous Calibration Standards (May 2012)" document EPA 600/R-12/531, using the assay procedures listed. Analytical Methodology does not require correction for analytical interference. This cylinder has a total analytical uncertainty as stated below with a confidence level of 95%. There are no significant impurities which affect the use of this calibration mixture. All concentrations are on a volume/volume basis unless otherwise noted.

Do Not Use This Cylinder below 100 psig, i.e. 0.7 megapascals.

### ANALYTICAL RESULTS

Component	Requested Concentration	Actual Concentration	Protocol Method	Total Relative Uncertainty	Assay Dates
NOX	50.00 PPM	50.55 PPM	G1	+/- 1.4% NIST Traceable	03/06/2018, 03/13/2018
NITRIC OXIDE	50.00 PPM	50.50 PPM	G1	+/- 1.4% NIST Traceable	03/06/2018, 03/13/2018
SULFUR DIOXIDE	50.00 PPM	51.01 PPM	G1	+/- 1.0% NIST Traceable	03/06/2018, 03/13/2018
CARBON MONOXIDE	2000 PPM	1977 PPM	G1	+/- 1.0% NIST Traceable	03/06/2018
NITROGEN	Balance				

### CALIBRATION STANDARDS

Type	Lot ID	Cylinder No	Concentration	Uncertainty	Expiration Date
NTRM	16060607	CC442564	50.42 PPM NITRIC OXIDE/NITROGEN	+/- 0.8%	Jun 27, 2020
PRM	12367	APEX1099237	9.82 PPM NITROGEN DIOXIDE/AIR	+/- 2.0%	Jun 02, 2017
GMIS	0315201604	CC503358	4.975 PPM NITROGEN DIOXIDE/NITROGEN	+/- 1.6%	Mar 15, 2019
NTRM	16011025	CC473218	49.02 PPM SULFUR DIOXIDE/NITROGEN	+/- 0.8%	Jun 07, 2022
NTRM	12060735	CC356192	2498 PPM CARBON MONOXIDE/NITROGEN	+/- 0.6%	Dec 14, 2026

The SRM, PRM or RGM noted above is only in reference to the GMIS used in the assay and not part of the analysis.

### ANALYTICAL EQUIPMENT

Instrument/Make/Model	Analytical Principle	Last Multipoint Calibration
Nicolet 6700 APW1100391 CO	FTIR	Feb 08, 2018
Nicolet 6700 APW1100391 NO	FTIR	Feb 15, 2018
Nicolet 6700 APW1100391 NO2	FTIR	Feb 16, 2018
Nicolet 6700 APW1100391 SO2	FTIR	Mar 01, 2018

Triad Data Available Upon Request

NOTES: NET WEIGHT: 10.43lbs

GROSS WEIGHT: 60.93lbs

PO# 5218000763

This calibration std. has been certified in accordance with the May 2012 EPA Traceability Protocol, Document EPA-600/R-12/531. All testing processes and measurements conform to the requirements of ISO/IEC 17025 and to Airgas ISO 9001:2000 and relate only to items identified on this certificate. All values are certified to be NIST Traceable with total uncertainty as detailed under Analytical Uncertainty. This document shall not be reproduced in full without written approval of the issuer.



TESTING CERT No. 3082.05

*Don Merri*  
Approved for Release

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**DRY GAS METER XC-572-V**

**Serial No. : 1110070**





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## Certificate Of Calibration

Method 5 Pre-Test Console Calibration - Cubic meter (m3)

### Meter Console Information

Console Model : XC-572-V  
Console serial : 1110070  
DGM Model #: SK25EX  
DGM Serial #: 00006432

### Calibration Condition

Cal. Date: 28-Jun-24  
Due Date: 28-Jun-25  
Cal. Report No.: WDS-SV6706007  
Ambient Temp (°C): 25  
Pressure (mm Hg): 758  
Relative Humidity (%): 60

### Factors/Conversion

Std. Temp. (°K): 298  
Std. Pressure (mm Hg): 760  
K<sub>1</sub> (K/mm Hg): 0.3857

### Reference Equipment

WTM Model: W-NKoDa-5B WTM Cal. Due Date: Dec. 2024  
WTM Serial: 600245 Gamma: 1.0000

### UUT Meter (DGM)

Run Time (minutes)	DGM Orifice (mm H <sub>2</sub> O)	Volume		Outlet Temp		Volume		Outlet Temp	
		Initial	Final	Initial	Final	Initial	Final	Initial	Final
15.00	13.0	239.7603	239.9212	27	27	63.63889	63.79843	27	27
10.00	25.0	239.9406	240.0979	27	27	63.81777	63.97353	27	27
8.00	50.0	240.1147	240.2952	27	28	63.99028	64.16968	26	26
7.00	80.0	240.3308	240.5352	28	28	64.20536	64.40956	26	26
5.00	120.0	240.5641	240.7422	29	29	64.43852	64.61730	26	26

### Reference Meter (WTM)

### Standardized Data

Test Meter		Reference Meter		Correction Factor		Flow Rate		ΔH@ (mm H <sub>2</sub> O)	
Std. Volume	Std. Flow Rate	Std. Volume	Std. Flow Rate	"Gamma"	Variation	Std & Corr	0.0212 SCMM	Variation	
V <sub>m(std)</sub> (m <sup>3</sup> )	Q <sub>m(std)</sub> m <sup>3</sup> /min	V <sub>w(std)</sub> (m <sup>3</sup> )	Q <sub>w(std)</sub> m <sup>3</sup> /min	(Y)	(ΔY)	Q <sub>m(std)corr</sub>	ΔH <sub>g</sub>	ΔΔH <sub>g</sub>	
0.157	0.010	0.155	0.010	0.991	-0.003	0.010	53.303	6.250	
0.154	0.015	0.152	0.015	0.989	-0.005	0.015	47.860	0.807	
0.176	0.022	0.175	0.022	0.993	-0.001	0.022	46.233	-0.820	
0.200	0.029	0.199	0.028	0.997	0.003	0.028	43.895	-3.158	
0.174	0.035	0.175	0.035	1.001	0.007	0.035	43.973	-3.080	

### Calibration Results

Pass/Fail Result: Pass

Note: For Calibration Factor Y, the ratio of the reading of the calibration meter to the dry gas meter, acceptable tolerance of individual values from the average is ±0.02

Note: For ΔH<sub>g</sub>, orifice pressure differential that equates to 0.75cfm (0.0212m<sup>3</sup>/min) at standard temperature and pressure, acceptable tolerance of individual values from the average is ±0.2inches (5.1mm) H<sub>2</sub>O

Approved By:

(Patpasu Chaisana)  
Service Manager

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Date: 28-Jun-24

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## Certificate of Calibration - Supplemental

METHOD 5 PRE-TEST CONSOLE CALIBRATION

### Nomenclature

P<sub>b</sub> - Barometric Pressure  
DGM - Dry Gas Meter  
K<sub>1</sub> - Constant based on standard temp and press  
Θ - Run time, in minutes  
P<sub>m</sub> - ΔH (Meter Pressure, gauge)  
V<sub>m</sub> - Volume collected by test meter, corrected for STP  
Q<sub>m(std)</sub> - Calculated flow rate of test meter  
K' - Critical orifice coefficient  
P<sub>w</sub> - Measured pressure of reference meter  
t<sub>w</sub> - Temperature measured in reference meter  
t<sub>m</sub> - Temperature measured in test meter  
Y - Ratio of volume collected from test meter and orifice  
sc - Scaling Factor  
Counts<sub>std</sub> - Number of pulse counts, standardized  
C<sub>total</sub> - Number of raw pulse counts of a calibration run

### Equations

$$V_{w(std)} = Y * K_1 \frac{V_w * (P_{bar} + \frac{P_{m(std)}}{13.6})}{T_{sc}}$$

$$V_{m(std)} = Counts_{std} * Y_{sc(avg)}$$

$$Counts_{std} = K_1 \frac{Counts_{total} * (P_{bar} + \frac{P_{m(std)}}{13.6})}{T_{sc}}$$

$$Q_{w(std)} = \frac{V_{w(std)}}{t}$$

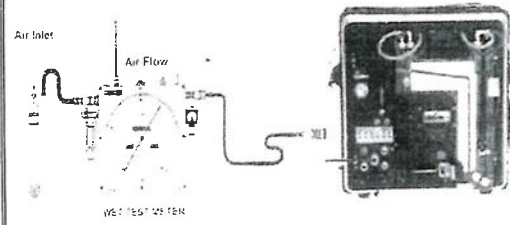
$$Y_{sc} = \frac{V_{w(std)}}{Counts_{std}}$$

$$K_1 = \frac{T_{std}}{P_{std}}$$

$$Y = \frac{V_{w(std)}}{V_{m(std)}}$$

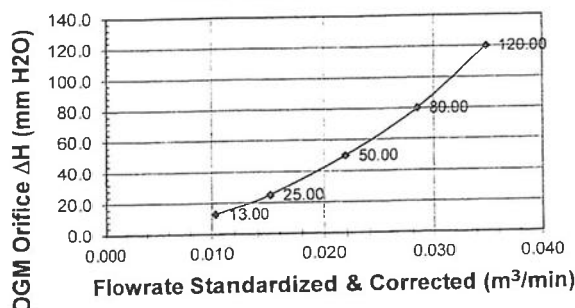
$$Metric \Delta H_g = \frac{P_w - (1.001136 * P_m + \frac{P_w}{11.36})}{(1 - \frac{T}{T_{sc}})}$$

### Calibration Train



### Calibration Graphs

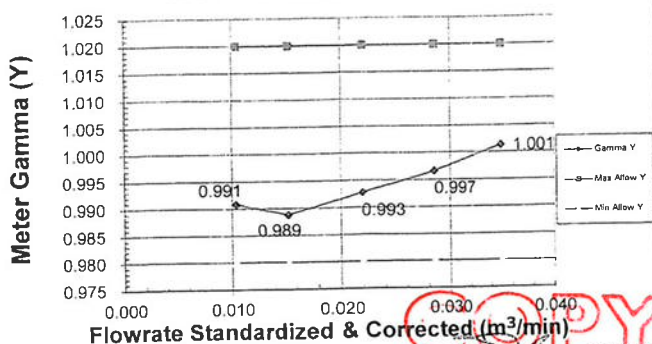
#### Meter Pressure vs Flowrate



Console Serial: 1110070

Console Model: XC-572-V

#### Meter Gamma vs Flowrate



Console Serial: 1110070

Console Model: XC-572-V

# TEMPERATURE DISPLAY CALIBRATION

## Meter Console Information

Console Model	XC-572-V
Console serial	1110070
Temp Indicator Model	ID-85
Temp Indicator Serial	-

## Calibration Conditions

Cal Date	28-Jun-24
Due Date	28-Jun-25
Cal Report No	WDS-SV6706007
Ambient Temp (°C)	25
Pressure (mm Hg)	758
Humidity (%)	60

## Reference Equipment

Temp Meter Model	Fluke 714B
Serial No	60590035
Cal Date	07-Apr-24
Temp Meter Model	Fluke 179
Serial No	58620112
Cal Date	06-Feb-24

## Temperature Sensor Calibration

Reference Point	Ref Thermometer Temperature	Thermocouple Display Temperature	Temperature Difference
#	°C	°C	°C
1	-18.0	-17.0	1.0
2	38.0	39.0	-1.0
3	93.0	94.0	-1.0
4	149.0	150.0	-1.0
5	260.0	261.0	-1.0
6	371.0	372.0	-1.0
7	482.0	483.0	-1.0
8	593.0	593.0	0.0
9	816.0	815.0	1.0
10	1038.0	1038.0	0.0
Maximum <sup>1</sup>			1.0

PASS

## Note

<sup>1</sup> For valid test results, the maximum difference between temperature readings should  $\leq 1.0^{\circ}\text{C}$  ( EPA Method 5, Section 6.1.1.8 )  
Perform all TC Channel calibrations. Except meter (DGM) channel

## DGM Out Temperature Sensor Calibration

Temperature point	Ref Thermometer Temperature	Thermocouple Display Temperature	Temperature Difference
#	°C	°C	°C
Ice	1.0	2.0	-1.0
Ambient	24.2	25.0	-0.8
Heat	110.5	111.0	-0.5

## Difference Range

Temp. Difference  $\pm 2^{\circ}\text{F}$  or  $\pm 1.1^{\circ}\text{C}$

PASS

## Note

The temperatures of the thermocouple and reference thermometers shall agree to within  $\pm 2^{\circ}\text{F}$ . ( EPA Method 5, section 10.5 )

Approved By :

*Patpasu Chaisana*

( Patpasu Chaisana )

Service Manager

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**DRY GAS METER MC-572-V**

**Serial No. : 1007055**

## Certificate Of Calibration

Method 5 Pre-Test Console Calibration - Cubic meter (m3)

## Meter Console Information

Console Model : MC-572-V  
 Console serial : 1007055  
 DGM Model #: SK25EX  
 DGM Serial #: 0009799

## Calibration Condition

Cal. Date: 04-Aug-24  
 Due Date: 04-Aug-25  
 Cal. Report No: WDS-SV6707001  
 Ambient Temp (°C): 25  
 Pressure (mm Hg): 758  
 Relative Humidity (%): 60

## Factors/Conversion

Std. Temp. (°K): 298  
 Std. Pressure (mm Hg): 760  
 K<sub>1</sub> (K/mm Hg): 0.3857

## Reference Equipment

WTM Model: W-NKoDa-5B WTM Cal. Due Date: Dec. 2024  
 WTM Serial: 600245 Gamma: 1.0000

## UUT Meter (DGM)

Run Time (minutes)	DGM Orifice (mm H <sub>2</sub> O)	Volume		Outlet Temp		Volume		Outlet Temp	
		Initial	Final	Initial	Final	Initial	Final	Initial	Final
15.00	13.0	107.7550	107.9221	29	30	68.41024	68.57350	28	27
10.00	25.0	107.9308	108.0876	30	30	68.58202	68.73488	27	27
8.00	50.0	108.1027	108.2822	30	30	68.74958	68.92516	27	27
7.00	80.0	108.3029	108.5061	30	30	68.94550	69.14488	27	27
5.00	120.0	108.5139	108.6908	30	30	69.15251	69.32550	27	27

## Standardized Data

Test Meter		Reference Meter		Correction Factor		Flow Rate		ΔH@ (mm H <sub>2</sub> O)	
Std. Volume	Std. Flow Rate	Std. Volume	Std. Flow Rate	"Gamma"	Variation	Std & Corr	0.0212 SCMM	Variation	
V <sub>std</sub> (m <sup>3</sup> )	Q <sub>std</sub> (m <sup>3</sup> /min)	V <sub>ref</sub> (m <sup>3</sup> )	Q <sub>ref</sub> (m <sup>3</sup> /min)	(Y)	(ΔY)	Q <sub>std</sub> (m <sup>3</sup> /min)	ΔH <sub>std</sub>	ΔΔH <sub>std</sub>	
0.162	0.011	0.159	0.011	0.982	0.000	0.011	50.751	2.535	
0.152	0.015	0.149	0.015	0.982	0.001	0.015	49.300	1.084	
0.174	0.022	0.171	0.021	0.983	0.002	0.021	48.061	-0.155	
0.197	0.028	0.194	0.028	0.983	0.002	0.028	45.922	-2.293	
0.173	0.035	0.169	0.034	0.976	-0.005	0.034	47.046	-1.170	
				0.981	= Y Avg			48.216	= ΔH@ Avg

Pass/Fail Result: **Pass**

Note: For Calibration Factor Y, the ratio of the reading of the calibration meter to the dry gas meter, acceptable tolerance of individual values from the average is ±0.02

Note: For ΔH<sub>std</sub>, orifice pressure differential that equates to 0.75cfm (0.0212m<sup>3</sup>/min) at standard temperature and pressure, acceptable tolerance of individual values from the average is ±0.2 inches (5.1mm) H<sub>2</sub>O

Approved By: \_\_\_\_\_

(Patpasu Chaisana)  
 Service Manager

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Date: 04-Aug-24

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## Certificate of Calibration - Supplemental

METHOD 5 PRE-TEST CONSOLE CALIBRATION

## Nomenclature

P<sub>a</sub> - Barometric Pressure  
 DGM - Dry Gas Meter  
 K<sub>1</sub> - Constant based on standard temp and press  
 Q - Run time, in minutes  
 P<sub>m</sub> - ΔH (Meter Pressure, gauge)  
 V<sub>m</sub> - Volume collected by test meter, corrected for STP  
 Q<sub>m(Std)</sub> - Calculated flow rate of test meter  
 K' - Critical orifice coefficient  
 P<sub>w</sub> - Measured pressure of reference meter  
 T<sub>w</sub> - Temperature measured in reference meter  
 T<sub>m</sub> - Temperature measured in test meter  
 Y - Ratio of volume collected from test meter and orifice  
 sc - Scaling Factor  
 Counts<sub>std</sub> - Number of pulse counts, standardized  
 Counts<sub>total</sub> - Number of raw pulse counts of a calibration run

## Equations

$$V_{m(Std)} = Y * K_1 \frac{V_w * (P_{bar} + \frac{P_w}{1.315})}{T_w}$$

$$V_{m(Std)} = Counts_{std} * Y_{scaling}$$

$$Counts_{std} = K_1 \frac{Counts_{total} * (P_{bar} - \frac{P_w}{1.315})}{T_m}$$

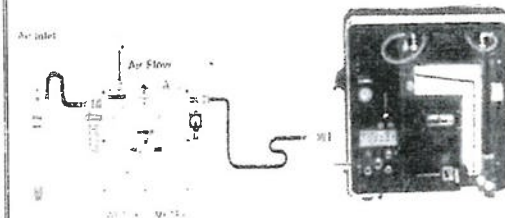
$$Q_{m(Std)} = \frac{V_{m(Std)}}{Q}$$

$$Y_w = \frac{V_{m(Std)}}{Counts_{std}}$$

$$K_1 = \frac{T_{std}}{P_{std}}$$

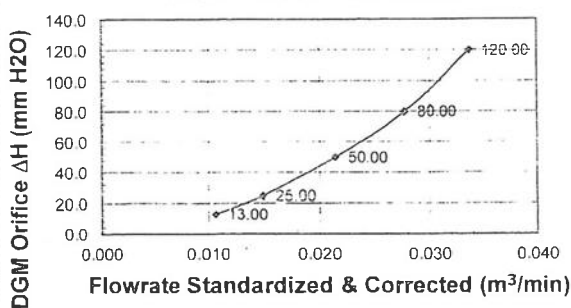
$$Metric \Delta H = \frac{P_w * 101.325}{P_{std} - P_w} * \left( \frac{T_w - T_{std}}{T_w} \right)$$

## Calibration Train



## Calibration Graphs

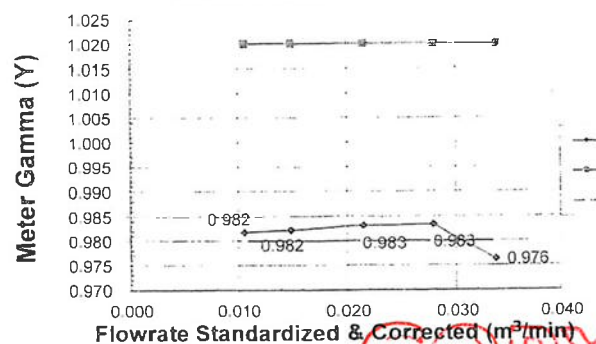
## Meter Pressure vs Flowrate



Console Serial: 1007055

Console Model: MC-

## Meter Gamma vs Flowrate



Console Serial: 1007055

Console Model: MC-572-V



TEMPERATURE DISPLAY CALIBRATION

**Meter Console Information**

Console Model	MC-S72-V
Console Serial	1007055
Temp Indicator Model	765-KF
Temp Indicator Serial	JC17852

**Calibration Conditions**

Cal Date	04-Aug-24
Due Date	04-Aug-25
Cal Report No	WDS-SV6707001
Ambient Temp (°C)	25
Pressure (mm Hg)	750
Humidity (%)	60

**Reference Equipment**

Temp Meter Model	Fluke 714B
Serial No	60590035
Cal Date	07-Apr-24
Temp Meter Model	Fluke 179
Serial No	59620112
Cal Date	06-Feb-24

**Temperature Sensor Calibration**

Reference Point	Ref Thermometer Temperature	Thermocouple Display Temperature	Temperature Difference
#	°C	°C	°C
1	-18.0	-18.0	0.0
2	38.0	38.0	0.0
3	93.0	94.0	-1.0
4	149.0	149.0	0.0
5	260.0	261.0	-1.0
6	371.0	372.0	-1.0
7	482.0	482.0	0.0
8	593.0	593.0	0.0
9	816.0	816.0	0.0
10	1038.0	1038.0	0.0
Maximum <sup>1</sup>			1.0

PASS

**Note**

<sup>1</sup> For valid test results, the maximum difference between temperature readings should  $\leq 1.0^{\circ}\text{C}$  (EPA Method 5, Section 6.1.1.8). Perform all TC Channel calibrations. Except meter (DGM) channel.

**DGM Out Temperature Sensor Calibration**

Temperature point	Ref Thermometer Temperature	Thermocouple Display Temperature	Temperature Difference
#	°C	°C	°C
Ice	0.0	0.0	0.0
Ambient	26.9	27.0	-0.1
Heat	114.5	115.0	-0.5

**Difference Rang**

Temp Difference  $\pm 2^{\circ}\text{F}$  or  $\pm 1.1^{\circ}\text{C}$

PASS

**Note**

The temperatures of the thermocouple and reference thermometers shall agree to within  $\pm 2^{\circ}\text{F}$  (EPA Method 5, section 10.5).

Approved By :

*Patpasu Chaisana*  
( Patpasu Chaisana )  
Service Manager

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**DRY GAS METER XC-572-V**

**Serial No. : A2007510**

## Certificate Of Calibration

Method 5 Pre-Test Console Calibration - Cubic meter (m3)

## Meter Console Information

Console Model : XC-S72-V  
 Console serial : A2007510  
 DGM Model #: SK25EX  
 DGM Serial #: 00005115

## Calibration Condition

Cal. Date: 30-Aug-24  
 Due Date: 30-Aug-25  
 Cal. Report No.: WDS-SV6708010  
 Ambient Temp (°C): 25  
 Pressure (mm Hg): 758  
 Relative Humidity (%): 60

## Factors/Conversion

Std. Temp. (°K): 298  
 Std. Pressure (mm Hg): 760  
 K<sub>1</sub> (K/mm Hg): 0.3857

## Reference Equipment

WTM Model: W-NKoDa-5B WTM Cal. Due Date: Dec 2024  
 WTM Serial: 600245 Gamma: 1.0000

Run Time (minutes)	DGM Orifice (mm H <sub>2</sub> O)	Volume		Outlet Temp		Volume		Outlet Temp	
		Initial	Final	Initial	Final	Initial	Final	Initial	Final
15.00	13.0	814.2810	814.4438	26	26	77.39845	77.56182	28	27
10.00	25.0	814.4657	814.6233	26	27	77.58371	77.74136	27	27
8.00	50.0	814.6427	814.8218	27	27	77.76069	77.93943	27	27
7.00	80.0	815.2310	815.4323	28	28	78.34575	78.54534	29	28
5.00	120.0	815.4512	815.6222	28	28	78.58461	78.73859	28	28

Standardized Data				Calibration Results				
Test Meter		Reference Meter		Correction Factor		Flow Rate	ΔH@ (mm H <sub>2</sub> O)	
Std. Volume	Std. Flow Rate	Std. Volume	Std. Flow Rate	"Gamma"	Variation	Std & Corr	0.0212 SCMM	Variation
V <sub>m(std)</sub> (m <sup>3</sup> )	Q <sub>m(std)</sub> m <sup>3</sup> /min	V <sub>w(std)</sub> (m <sup>3</sup> )	Q <sub>w(std)</sub> m <sup>3</sup> /min	(Y)	(ΔY)	Q <sub>m(refer)</sub>	ΔH <sub>g</sub>	ΔΔH <sub>g</sub>
0.159	0.011	0.159	0.011	0.997	0.002	0.011	51.276	3.517
0.154	0.015	0.154	0.015	0.996	0.002	0.015	46.891	-0.868
0.175	0.022	0.174	0.022	0.994	-0.001	0.022	46.793	-0.966
0.197	0.028	0.193	0.028	0.982	-0.013	0.028	46.623	-1.136
0.168	0.034	0.169	0.034	1.005	0.010	0.034	47.211	-0.547
				0.995	= Y Avg.		47.759	= ΔH@ Avg

Pass/Fail Result: **Pass**

Note: For Calibration Factor Y, the ratio of the reading of the calibration meter to the dry gas meter, acceptable tolerance of individual values from the average is ±0.02

Note: For ΔH<sub>g</sub>, orifice pressure differential that equates to 0.75cfm (0.0212m<sup>3</sup>/min) at standard temperature and pressure, acceptable tolerance of individual values from the average is ±0.2inches (5.1mm) H<sub>2</sub>O

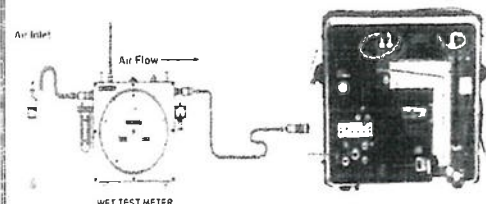
Approved By:   
 (Palpasu Chaisana)  
 Service Manager

Date: 30-Aug-24

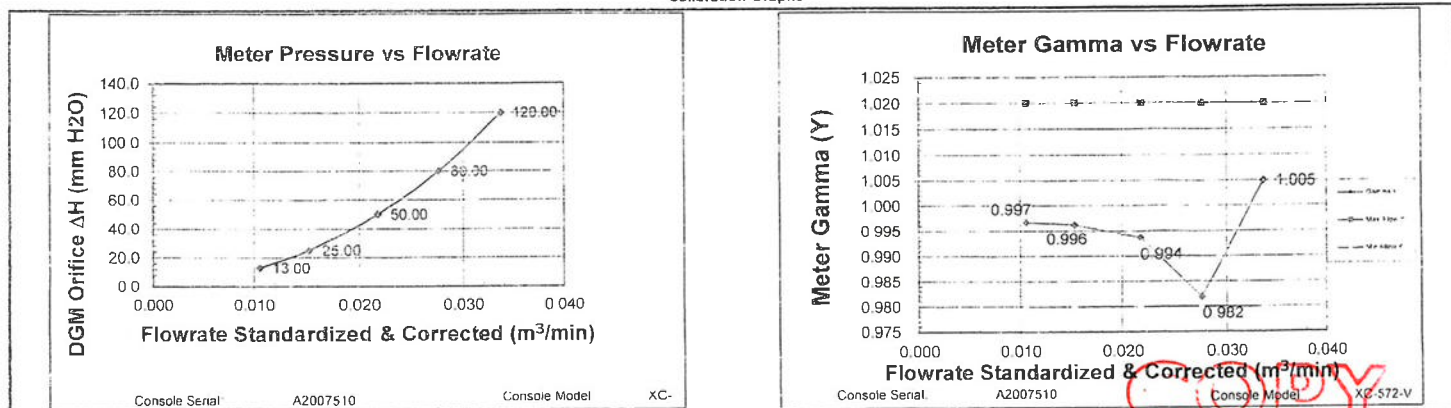
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## Certificate of Calibration - Supplemental

METHOD 5 PRE-TEST CONSOLE CALIBRATION

Nomenclature	Equations	Calibration Train
<p>P<sub>b</sub> - Barometric Pressure</p> <p>DGM - Dry Gas Meter</p> <p>K<sub>1</sub> - Constant based on standard temp and press</p> <p>Θ - Run time, in minutes</p> <p>P<sub>m</sub> - ΔH (Meter Pressure, gauge)</p> <p>V<sub>m</sub> - Volume collected by test meter, corrected for STP</p> <p>Q<sub>m(std)</sub> - Calculated flow rate of test meter</p> <p>K' - Critical orifice coefficient</p> <p>P<sub>w</sub> - Measured pressure of reference meter</p> <p>T<sub>w</sub> - Temperature measured in reference meter</p> <p>T<sub>m</sub> - Temperature measured in test meter</p> <p>Y - Ratio of volume collected from test meter and orifice</p> <p>sc - Scaling Factor</p> <p>Counts<sub>std</sub> - Number of pulse counts, standardized</p> <p>Counts<sub>total</sub> - Number of raw pulse counts of a calibration run</p>	$V_{w(std)} = Y * K_1 \frac{V_w * (P_{bar} + \frac{P_{m(g)}}{13.6})}{T_w}$ $V_{m(std)} = Counts_{std} * Y_{sc(avg)}$ $Counts_{std} = K_1 \frac{Counts_{total} * (P_{bar} + \frac{P_{m(g)}}{13.6})}{T_m}$ $Q_{w(std)} = \frac{V_{w(std)}}{\Theta} \quad Y_{sc} = \frac{V_{m(std)}}{Counts_{std}}$ $K_1 = \frac{T_{std}}{P_{std}} \quad Y = \frac{V_{m(std)}}{V_{w(std)}}$ $Metric \Delta H_{sc} = \frac{P_{bar} - 0.3911658 * (P_{bar} + \frac{P_{m(g)}}{13.6})}{T_m} * \left( \frac{T_w * \Theta}{V_w * P_{bar}} \right)^2$	

## Calibration Graphs



TEMPERATURE DISPLAY CALIBRATION

**Meter Console Information**

Console Model	XC-572-V
Console serial	A2007510
Temp Indicator Model	765-KF
Temp Indicator Serial	JC17819

**Calibration Conditions**

Cal Date	30-Aug-24
Due Date	30-Aug-25
Cal Report No	WDS-SV6708010
Ambient Temp (°C)	25
Pressure (mm Hg)	759
Humidity (%)	60

**Reference Equipment**

Temp Meter Model	Fluke 714B
Serial No	60590035
Cal Date	07-Apr-24
Temp Meter Model	Fluke 179
Serial No	58620112
Cal Date	06-Feb-24

**Temperature Sensor Calibration**

Reference Point	Ref Thermometer Temperature	Thermocouple Display Temperature	Temperature Difference
#	°C	°C	°C
1	-18.0	-18.0	0.0
2	38.0	38.0	0.0
3	93.0	93.0	0.0
4	149.0	149.0	0.0
5	260.0	260.0	0.0
6	371.0	372.0	-1.0
7	482.0	482.0	0.0
8	593.0	593.0	0.0
9	816.0	817.0	-1.0
10	1038.0	1039.0	-1.0
Maximum <sup>1</sup>			1.0

PASS

**Note**

<sup>1</sup> For valid test results, the maximum difference between temperature readings should  $\leq 1.0^{\circ}\text{C}$  (EPA Method 5, Section 6.1.1.8). Perform all TC Channel calibrations. Except meter (DGM) channel

**DGM Out Temperature Sensor Calibration**

Temperature point	Ref Thermometer Temperature	Thermocouple Display Temperature	Temperature Difference
#	°C	°C	°C
Ice	0.0	0.0	0.0
Ambient	27.6	28.0	-0.4
Heat	116.3	116.0	0.3

**Difference Range**

Temp. Difference  $\pm 2^{\circ}\text{F}$  or  $\pm 1.1^{\circ}\text{C}$

PASS

**Note**

The temperatures of the thermocouple and reference thermometers shall agree to within  $\pm 2^{\circ}\text{F}$ . (EPA Method 5, section 10.5)

Approved By :

*Patpasu Chaisana*

( Patpasu Chaisana )

Service Manager

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**Flue gas Analyzer**

**Testo 350 New**

**Serial No. 63455616/0722**



**Certificate No.:** G 670713  
**Date of issue :** 09-Oct-24

**Instrument description :** Flue Gas Analyzer  
**Instrument model :** Testo 350 New  
**Instrument serial no. :** 63455616/0722  
**Control unit serial no. :** 03600177/0722  
**ID no. or control no. :** -  
**Manufacturer :** Testo SE & Co. KGaA  
**Probe description :** -  
**Probe model :** -  
**Probe serial no. :** -  
**Customer name :** Eastern Thai Consulting 1992 Company Limited  
**Customer address :** 683 Moo 11, Sukhapibarn 8 Road, Nongkham, Si Racha, Chon Buri 20280

**Total pages of certificate :** 3 Pages  
**Receiving no. :** L-243862  
**Receiving date. :** 03-Oct-24  
**Parameter of calibration :** Gas Calibration(Oxygen 2.50,10.04,21.02 %vol, Carbon Monoxide 80.18,302,1007 ppm, Nitrogen Dioxide 30.68, 81.8, 201.9 ppm, Nitric Oxide 30.0, 151.5, 322.5 ppm, Sulphur Dioxide 50.36, 100.8, 600.8 ppm)

**Condition of UUC. :** Used

**Ambient condition :** All of the Measurment were caried out the stabilized labotary

Temperature : 23 ± 5 °C

Humidity : 55 ± 15 %RH

**Calibration place :** 17/121 Soi Ngamwongwan 47 Yaek 48, Toongsonghong, Laksi, Bangkok 10210 THAILAND

**Calibration procedure no. :** This instrument was calibrated by comparison with Standard gas mixture according to calibration Work Instruction no. WI-CL-28-C

*The calibration certificate expanded uncertainty of measurement is stated as the standard uncertainty of measurent Multiplied by coverage factor k=2, which for a normal distribution corresponds to a coverage probability of approximately 95%.*

*This certificate is applied only to item under test Environmental condition.*

*This Calibration Certificate may not be repoduced other than in full except with the permission of the issuing laboratory. Calibration certificates without signature and seal not valid and The results relate only to the items tested/calibrated.*

*This calibration certificate documents are tracebility to national standards, which realize measurement according to the International System of Units (SI).*

**Date of calibration :** 09-Oct-24

*Kwanchai Khamdoung*

Mr. Kwanchai Khamdoung  
Calibration Technician

*D. Nongluck Wongsettee*

Mrs. Nongluck Wongsettee  
Technical Manager

**COPY**



**Certificate No.:** G 670713

**Standard References (Table 1)**

Standard	Certificate No.	Vendor	Due date
Oxygen ( O2 ) 2.50 % Vol	2412/23	Linde	27-Aug-27
Oxygen ( O2 ) 10.04 % Vol	CG-0153-21	Nimt	18-Nov-26
Oxygen ( O2 ) 21.02 % Vol	CG-0041-22	Nimt	10-Feb-27
Carbon monoxide ( CO ) 80.18 ppm	CG-0002-24	Nimt	11-Jan-29
Carbon monoxide ( CO ) 302 ppm	1915/23	Linde	16-Jun-25
Carbon monoxide ( CO ) 1007 ppm	1870/24	Linde	17-Jun-26
Nitrogen Dioxide ( NO2 ) 30.68 ppm	2832/24	Linde	08-Sep-24
Nitrogen Dioxide ( NO2 ) 81.8 ppm	2330/24	Linde	01-Aug-26
Nitrogen Dioxide ( NO2 ) 201.9 ppm	1975/23	Linde	17-Jul-25
Nitric Oxide ( NO ) 30.0 ppm	CG-0065-24	Nimt	06-May-26
Nitric Oxide ( NO ) 151.5 ppm	0161/23	Linde	22-Jan-25
Nitric Oxide ( NO ) 322.5 ppm	1974/23	Linde	17-Jul-25
Sulphur Dioxide ( SO2 ) 50.36 ppm	2004/23	Linde	17-Jul-25
Sulphur Dioxide ( SO2 ) 100.8 ppm	3507/22	Linde	09-Nov-24
Sulphur Dioxide ( SO2 ) 600.8 ppm	2003/23	Linde	17-Jul-25

**Measured room conditions**

Temperature : 22.9 °C Humidity : 66.4 %RH Pressure : 1011.5 mbar

**Calibration conditions**

Gas Temperature : 23 °C Flow rate : 1,300 ml/min Gas pressure : 1014.8 mbar

**Calibration Results (Befor adjustment) (Table 2)**

Parameter of Standard	Standard Values	Mean of UUC	Error	Uncertainty (±)
O2 (%Vol)	2.50	2.43	-0.07	0.15
O2 (%Vol)	10.04	9.92	-0.12	0.20
O2 (%Vol)	21.02	21.11	0.09	0.30
CO (ppm)	80.18	74	-6.18	3.0
CO (ppm)	302	295	-7	6.0
CO (ppm)	1007	996	-11	12
NO2 (ppm)	30.68	32.2	1.52	8.0
NO2 (ppm)	81.8	81.5	-0.3	8.0
NO2 (ppm)	201.9	204.3	2.4	12
NO (ppm)	30.0	27	-3.0	8.0
NO (ppm)	151.5	146	-5.5	8.0
NO (ppm)	322.5	305	-17.5	12
SO2 (ppm)	50.36	48	-2.36	6.0
SO2 (ppm)	100.8	97	-3.8	6.0
SO2 (ppm)	600.8	591	-9.8	13

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**Calibration Results (After adjustment) (Table 3)**

Parameter of Standard	Standard Values	Mean of UUC	Error	Uncertainty ( $\pm$ )
O2 (%Vol)	2.50	2.43	-0.70	0.15
O2 (%Vol)	10.04	9.92	-0.12	0.20
O2 (%Vol)	21.02	21.11	0.09	0.30
CO (ppm)	80.18	80	-0.18	3.0
CO (ppm)	302	303	1	6.0
CO (ppm)	1007	1008	1	12
NO2 (ppm)	30.68	32.2	1.52	8.0
NO2 (ppm)	81.8	81.5	-0.3	8.0
NO2 (ppm)	201.9	204.3	2.4	12
NO (ppm)	30.0	31	1.0	8.0
NO (ppm)	151.5	153	1.5	8.0
NO (ppm)	322.5	321	-1.5	12
SO2 (ppm)	50.36	51	0.64	6.0
SO2 (ppm)	100.8	102	1.2	6.0
SO2 (ppm)	600.8	604	3.2	13

**Remark :**  $1 \text{ cmol/mol} = 1 \text{ \%vol.}$   $1 \text{ }\mu\text{mol/mol} = 1 \text{ ppm.}$

## End of Report

### เรื่อง อายุการใช้งานโดยประมาณของ Gas Sensor

เรียน ท่านผู้ใช้งาน/ฝ่ายจัดซื้อทราบ

เนื่องจากเครื่องมือวัดวิเคราะห์แก๊สที่ทางบริษัท เซ็นเทค อินดัสเทรียล โซลูชั่น จำกัด ได้จำหน่ายให้แก่ท่านประกอบไปด้วย Sensor ที่มีโครงสร้างจาก Electrochemical หรือ วัสดุที่มีการเสื่อมอายุได้ ดังนั้น Sensor ที่ติดตั้งในเครื่อง จึงสามารถเสื่อมสภาพ ตามอายุการใช้งานได้

บริษัทฯ ได้ตระหนักถึงความสำคัญ ในการใช้งานเครื่องมือของท่าน ซึ่งจำเป็นต้องใช้อย่างต่อเนื่องและต้องการความถูกต้องแม่นยำตลอดเวลา บริษัทฯ จึงได้จัดทำตารางสำหรับตรวจสอบอายุการใช้งานและระยะเวลา ที่จะเปลี่ยน Sensor ครั้งต่อไปให้กับท่าน เพื่อความสะดวกในการดูแลรักษาและสั่งซื้อ Spare Sensor ก่อนที่ Sensor จะหมดอายุการใช้งาน ดังนี้

## ใบรายงานอายุการใช้งานของ Gas Sensor

อ้างอิงเอกสารเลขที่ AI-SV-RP-2407044

ชื่อลูกค้า บริษัท อีสเทิร์น ไทยคอนซัลติ้ง 1992 จำกัด

ข้อเครื่องมือ

Testo 350NEW

S/N 63455616/0722

[illegible]

**Hot Air Oven**

**Model : UFE 500**

**Serial No. : G511.0182**



## CERTIFICATE OF CALIBRATION

Certificate No. : 24-164691  
Sample Code : 24-67405-001Customer : EASTERN THAI CONSULTING 1992 CO., LTD.  
683 Moo 11, Sukhapibarn 8 Rd, Nongkham,  
Sriracha, Chonburi 20230Location of Calibration : EASTERN THAI CONSULTING 1992 CO., LTD.  
(Hot Lab)

Equipment : Temperature controlled enclosures (Hot air oven)

Manufacturer : Memmert Model : UFE 500

Serial No. : G511.0182 ID No. : LABE 17/4

Date of Receipt : 19 December 2024 Date of Calibration : 19 December 2024

## Condition of Calibration

1. Environment
- |                           |           |           |           |           |
|---------------------------|-----------|-----------|-----------|-----------|
| 1.1 Ambient temperature   | : Maximum | 32.0 °C   | : Minimum | 31.0 °C   |
| 1.2 Relative humidity     | : Maximum | 48.5 %    | : Minimum | 43.5 %    |
| 1.3 Line voltage supplied | : Maximum | 226.3 VAC | : Minimum | 222.0 VAC |

## 2. Calibration method

TLAS-G-20: Guidelines for calibration and checks of temperature controlled enclosures.

## 3. Reference standard instrument

Instrument	ID No.	Certificate No.	Due Date
Data Acquisition With Sensor (RTD-Pt100)	LB-DA-11 (RTD-138 to RTD-146)	24-040191	07 April 2025

## 4. This certificate is traceable to the international system of unit (SI Unit).

The measurement is traceable to Asia Medical and Agricultural Laboratory and Research Center Public Company Limited.

## 5. This result of calibration was found accurate as shown on date and place of calibration only.

## 6. Condition of calibration item : Normal

Calibrated by Mr. Nophanon Anusak  
Scientist

Issue date 20 December 2024

The uncertainties are for a confidence probability of approximately 95%

The calibration result is applied only to the above calibrated item and was found accurate as shown on date and place of calibration only

This Certificate is issued in accordance with the conditions of accreditation granted by the Thai Laboratory Accreditation scheme which has assessed the measurement capability of the laboratory and its traceability to recognized national standards and to the unit of measurement realized at the corresponding national standards laboratory. This certificate may not be reproduced other than in full except with the prior written approval of the Asia Medical and Agricultural Laboratory and Research Center Public Company Limited (AMARC)

## REPORT OF CALIBRATION

Certificate No. : 24-164691  
Sample Code : 24-67405-001

## Results of Calibration

Resolution : 0.5 °C

## 1. Reporting of Temperature

Calibration point (°C)	UUC* setting (°C)	UUC* reading (°C)	Measured temperature at each positions (°C)									Uncertainty ± (°C)	Coverage factor <i>k</i>
			# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9 <sup>fixed</sup>		
104	103.5	103.5	104.14	104.15	103.80	104.15	104.09	104.19	103.85	103.65	104.22	0.47	2.00

## 2. Characterization results

Calibration point (°C)	Stability ± (°C)	Uniformity (°C)	Overall variation (°C)
104	0.07	0.63	0.69

## Notes

- UUC\* = Unit Under Calibration

Approved by  
Signed for Director

(Mr. Somchai Neampunt)

Signed for Director

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NSC-TISI-TIS17025  
CALIBRATION 0152

Page 3 of 3

## REPORT OF CALIBRATION

Certificate No. : 24-164691

Sample Code : 24-67405-001

## Results of Calibration

## Notes

## 1. Sensor installation locations

- 1.1 All sensors at any corners or walls should be positioned  
5 cm (a x b x c) from the wall.
- 1.2 The reference sensor is preferably located of the geometric center  
of the chamber.

## 2. Interior dimensions approx of chamber :

W = 56 cm ; D = 40 cm ; H = 48 cm

## 3. Air valve or fresh air level : Off

## 4. Fan level : Open

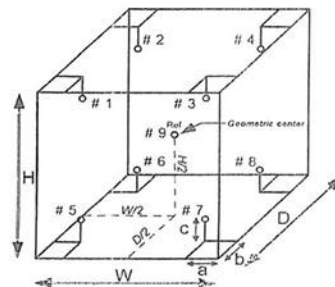
5. The quoted uncertainty includes "Stability of chamber and loading effect  
in chamber at 20% of uniformity".6. Uniformity - the maximum difference of measured temperatures at any sensors and the measured temperature at the reference  
location which are observed at the same time.

## 7. Stability - one-half of the greatest maximum difference of measured temperatures at any one sensor.

## 8. Overall variation - the difference of the maximum and the minimum measured temperatures throughout observation time.

## 9. UUC\* reading - the average reading of indicating device that forms the integral part of the enclosure.

## 10. Calibration results without adjustment.

Figure: Example of sensor  
installation Positions

The result expanded uncertainty of measurement  $U$  is stated as the standard uncertainty of measurement multiplied by the coverage factor  $k$ , which for a normal distribution corresponds to a coverage probability of approximately 95%. The standard uncertainty of measurement has been determined in accordance with UKAS M3003

- End of Report -

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**ORIFICE TRANSFER STANDARD CERTIFICATION**

**WORKSHEET TE-5025A**

**ROOTSMETER S/N 0438320**



TISCH ENVIRONMENTAL, INC.  
145 SOUTH MIAMI AVE  
VILLAGE OF CLEVELAND, OH  
44130  
613.467.9000  
877.283.7810 TOLL FREE  
613.467.9009 FAX

# ORIFICE TRANSFER STANDARD CERTIFICATION WORKSHEET TE-5025A

Date - Mar 24, 2016 Rootmeter S/N 0438320 Ta (K) - 295  
Operator Tisch Orifice I.D. - 0136 Pa (mm) - 742.95

PLATE OR Run #	VOLUME START (m3)	VOLUME STOP (m3)	DIFF VOLUME (m3)	DIFF TIME (min)	METER DIFF Hg (mm)	ORFICE DIFF H2O (in.)
1	NA	NA	1.00	1.3400	3.2	2.00
2	NA	NA	1.00	0.9510	6.3	4.00
3	NA	NA	1.00	0.8510	7.8	5.00
4	NA	NA	1.00	0.8130	8.6	5.50
5	NA	NA	1.00	0.6690	12.6	8.00

## DATA TABULATION

Vstd	(x axis) Qstd	(y axis)	Va	(x axis) Qa	(y axis)
0.9832	0.7337	1.4054	0.9957	0.7430	0.8911
0.9791	1.0296	1.9875	0.9915	1.0426	1.2603
0.9770	1.1481	2.2221	0.9894	1.1626	1.4090
0.9760	1.2006	2.3305	0.9884	1.2157	1.4778
0.9707	1.4510	2.8107	0.9830	1.4694	1.7823
Qstd slope (m) = 1.96262			Qa slope (m) = 1.22896		
intercept (b) = -0.03249			intercept (b) = -0.02060		
coefficient (r) = 0.99993			coefficient (r) = 0.99993		

y axis = SQRT[H2O(Pa/760) (298/Ta)]

y axis = SQRT[H2O(Ta/Pa)]

## CALCULATIONS

Vstd = Diff. Vol [(Pa-Diff. Hg)/760] (298/Ta)  
Qstd = Vstd/Time

Va = Diff Vol [(Pa-Diff Hg)/Pa]  
Qa = Va/Time

For subsequent flow rate calculations:

Qstd = 1/m{ [SQRT(H2O(Pa/760) (298/Ta))] - b}  
Qa = 1/m{ [SQRT H2O(Ta/Pa)] - b}

**COPY**  
*J. K. [signature]*



**THERMO-HYGROMETER**

**Model : 608-H1**

**Serial No. : 45106737**

## CERTIFICATE OF CALIBRATION

Certificate No. : 24-062442

Sample Code : 24-25546-002

Customer : EASTERN THAI CONSULTING 1992 CO., LTD.

683 Moo 11, Sukhapibarn 8 Rd., Nongkham,  
Sriracha, Chonburi 20230Location of Calibration : Asia Medical and Agricultural Laboratory and Research Center Public Company Limited  
(Calibration laboratory)

Equipment : Digital thermo-hygrometer

Manufacturer : testo

Model : 608-H1

Serial No. : 45106737

ID No. : LABE 09/7

Date of Receipt : 23 May 2024

Date of Calibration : 27-28 May 2024

## Condition of Calibration

1. Environment
- 1.1 Ambient temperature : 23.0 °C ± 3.0 °C
- 1.2 Relative humidity : 55.0 % ± 15.0 %

## 2. Calibration method

- 2.1 In-house method: WI-CL-045 By comparison with thermometer standard / chilled mirror hygrometer in controlled chamber.
- 2.2 The calibration by comparison unit under calibration (UUC) to the thermometer standard / chilled mirror hygrometer in a chamber at the controlled temperature / relative humidity.

## 3. Reference standard instrument

Instrument	Model	ID No.	Certificate No.	Due Date
3.1 Chilled Mirror	Optidew 401	LB-DP-03 & LB-DP-03 (DP)	TH-0064-23	07 August 2024
3.2 Digital Thermometer	Optidew 401	LB-DP-03 & LB-DP-03 (Temp.)	23-103423	03 September 2024
3.3 Digital Thermometer	34972A	LB-DA-07 with RTD-89	23-101374	05 September 2024

## 4. This certificate is traceable to the international system of unit (SI Unit).

- 4.1 Instrument No. 3.1 through National Institute of Metrology (Thailand).
- 4.2 Instrument No. 3.2 and 3.3 through Asia Medical and Agricultural Laboratory and Research Center Public Company Limited.

## 5. This result of calibration was found accurate as shown on date and place of calibration only.

## 6. Condition of calibration item : Normal

Calibrated by Miss Pornsuda Lohabal  
Scientist

Approved by

(Mr. Somchai Neampunt)  
Signed for Director

Issue date 30 May 2024

The uncertainties are for a confidence probability of approximately 95%.

The calibration result is applied only to the above calibrated item and was found accurate as shown on date and place of calibration only

This Certificate is issued in accordance with the conditions of accreditation granted by the Thai Laboratory Accreditation scheme which has assessed the measurement capability of the laboratory and its traceability to recognized national standards and to the unit of measurement realized at the corresponding national standards laboratory. This certificate may not be reproduced other than in full except with the prior written approval of the Asia Medical and Agricultural Laboratory and Research Center Public Company Limited (AMARC).

## REPORT OF CALIBRATION

Certificate No. : 24-062442

Sample Code : 24-25546-002

## Results of Calibration

## Temperature measurement

Resolution : 0.1 °C

Range : 0 °C to 50 °C

Calibration point °C	Average of standard reading		Unit under calibration		Expanded uncertainty °C
	Controlled humidity %RH	Temperature °C	Average reading °C	Correction value °C	
20	50	20.00	20.1	- 0.10	± 0.39
25	50	25.00	25.0	0.00	± 0.39
30	50	30.00	29.9	+ 0.10	± 0.39

## Humidity measurement

Resolution : 0.1 %RH

Range : 10 %RH to 95 %RH

Calibration point %RH	Average of standard reading		Unit under calibration		Expanded uncertainty %RH
	Air temperature °C	Calculated humidity %RH	Average reading %RH	Correction value %RH	
45	25.02	45.10	48.4	- 3.30	± 1.3
60	25.01	60.07	63.4	3.33	± 1.5
75	25.01	75.15	78.5	- 3.35	± 1.7

## Notes

- Calibration results without adjustment.

The result expanded uncertainty of measurement  $U$  is stated as the standard uncertainty of measurement multiplied by the coverage factor  $k$ , which for a normal distribution corresponds to a coverage probability of approximately 95%. The standard uncertainty of measurement has been determined in accordance with UKAS M3003.

- End of Report -

Calibrated by Miss Pornsuda Lohabal  
Scientist

Approved by

(Mr. Somchai Neampunt)  
Signed for Director

Issue date 30 May 2024

The uncertainties are for a confidence probability of approximately 95%.

The calibration result is applied only to the above calibrated item and was found accurate as shown on date and place of calibration only

This Certificate is issued in accordance with the conditions of accreditation granted by the Thai Laboratory Accreditation scheme which has assessed the measurement capability of the laboratory and its traceability to recognized national standards and to the unit of measurement realized at the corresponding national standards laboratory. This certificate may not be reproduced other than in full except with the prior written approval of the Asia Medical and Agricultural Laboratory and Research Center Public Company Limited (AMARC).

**UV/VIS SPECTROPHOTOMETER**

**Model : UV-1800**

**Serial No. : A11635101643 CD**



**Bara Scientific Co., Ltd.**  
968 U Chu Liang Building Floor7 Rama4 Road  
Silom Bangrak Bangkok Thailand 10500  
Tel : 02-6324300 Fax : 02-6375496-7  
www.barascientific.com



## Certificate of Calibration

Number of Page(s) 1 of 3

Certificate No. BSCC-UV-146/24  
Equipment UV/Vis Spectrophotometer  
Model UV-1800  
Manufacturer Shimadzu  
Serial No. A11635101643 CD  
ID No. LABE 03/2  
Date of receipt 22 April 2024  
Date of calibration 22 April 2024  
Date of issue 29 April 2024

Customer name Eastern Thai Consulting 1992 Co., Ltd.

Address 683 Moo 11, Sukkaphibarn 8 Rd., Nongkham, Sriracha, Chonburi 20230

Temperature (22.9-24.1) °C (On site)  
Humidity (41.7-46.9) %RH (On site)

Equipment condition Good Operation

Calibration Location Analysis Department

Calibration Procedure In-house method WI-UV-702-01 based on ASTM E275-01

Traceability Wavelength Accuracy is traceable to certificate No. 116614 and 116613  
Photometric Accuracy is traceable to certificate No. 116210 and 116224  
Sray Light is traceable to certificate No. 116616  
The above certificate are traceable to SI unit through Sarna Scientific Ltd.  
(UKAS accredited calibration laboratory NO. 0659)

Calibrated by Mr.Poomjai Korsawatvorakul

Approved by

**Mr.Sonthi Temboonsakdi**  
Service Manager

The above results are valid exclusively for the calibrated item(s) as mention in this report / certificate  
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## Certificate of Calibration

Certificate No. BSCC-UV-146/24

Number of Page(s) 2 of 3

### Calibration Results:

#### 1.Wavelength Accuracy

Certified Wavelength (nm)	UUC (nm)	Error (nm)	Uncertainty (±nm)
287.71	287.75	0.04	0.18
445.82	445.89	0.07	0.18
536.52	536.50	-0.02	0.18
741.02	741.01	-0.01	0.18
879.41	879.33	-0.08	0.18

#### 2.Photometric Accuracy (UV)

Wavelength (nm)	Certified Absorbance (A)	UUC (A)	Error (A)	Uncertainty (±A)
235	0.0000 0.7415	0.0000 0.7387	0.0000 -0.0028	0.0075 0.0075
257	CNR CNR	CNR CNR	CNR CNR	CNR CNR
313	CNR CNR	CNR CNR	CNR CNR	CNR CNR
350	0.0000 0.6406	0.0000 0.6395	0.0000 -0.0011	0.0075 0.0075

\*CNR = Customer not request

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# Certificate of Calibration

Certificate No. **BSCC-UV-146/24** Number of Page(s) 3 of 3

## Calibration Results:

### 3. Photometric Accuracy (Visible)

Wavelength (nm)	Certified Absorbance (A)	UUC (A)	Error (A)	Uncertainty ( $\pm A$ )
420.0	0.0000	0.0000	0.0000	0.0042
	0.5715	0.5729	0.0014	0.0042
	0.7087	0.7087	0.0000	0.0042
	1.0987	1.1005	0.0018	0.0042
440.0	0.0000	0.0000	0.0000	0.0042
	0.5561	0.5578	0.0017	0.0042
	0.6968	0.6969	0.0001	0.0042
	1.0757	1.0774	0.0017	0.0042
465.0	CNR	CNR	CNR	CNR
	CNR	CNR	CNR	CNR
	CNR	CNR	CNR	CNR
	CNR	CNR	CNR	CNR
546.1	0.0000	0.0000	0.0000	0.0042
	0.5193	0.5213	0.0020	0.0042
	0.6937	0.6940	0.0003	0.0042
	1.0411	1.0428	0.0017	0.0042
590.0	CNR	CNR	CNR	CNR
	CNR	CNR	CNR	CNR
	CNR	CNR	CNR	CNR
	CNR	CNR	CNR	CNR
635.0	0.0000	0.0000	0.0000	0.0042
	0.5605	0.5624	0.0019	0.0042
	0.7579	0.7583	0.0004	0.0042
	1.1131	1.1138	0.0007	0.0042

\*CNR = Customer not request

### 4. Stray Light\*

Standard cut-off wavelength (nm)	Unit Under Calibration(UUC)		
	Wavelength (nm)	Transmission (%T)	Absorbance (A)
201.33 $\pm$ 0.11nm	200.80	0.9750	2.0111

The Stray light transmission reference is less than 1.0%T and Stray light absorbance reference is greater than 2.0A

\*Stray Light not NSC-ONSC Accredited.

The measurement uncertainty is base on a standard uncertainty multiplied by a coverage factor k=2 providing a level of confidence of approximately 95%.

\*\*\*End of Certificate\*\*\*

The above results are valid exclusively for the calibrated item(s) as mention in this report / certificate. Advertising the report / Certificate and publicity of the results are prohibited and also shall not be reproduced except in full, without written approval of the Bara Scientific Co., Ltd.

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**SOUND LEVEL CALIBRATOR**

**MODEL : NC-75**

**SERIAL No. : 34802645**

SITHIPORN ASSOCIATES CO., LTD.  
CALIBRATION LABORATORY

451-451/1 Sirinthorn Road, Bangbumru, Bangplud, Bangkok, 10700 Thailand  
Tel. +66 2433 8331 Email : calibration@sithiporn.com



Cert. No. : ACC24043  
Pages : 1 of 3

Calibration Certificate

Equipment : SOUND CALIBRATOR  
Manufacturer : RION  
Model : NC-75  
Serial No.: 34802645  
ID No.:

Condition As Found : GOOD

Customer : EASTERN THAI CONSULTING 1992 CO., LTD.  
SAHA GROUP INDUSTRIAL PARK, 683 MOO 11,  
NONGKHAM, SIRACHA, CHONBURI 20230 THAILAND.

Location :  
Ambient Temperature : ( 23.0 ± 3 ) °C  
Pressure : ( 101.3 ± 3 ) kPa  
Relative Humidity : ( 50.0 ± 20 ) %

Received Date : 09 SEPTEMBER 2024  
Calibration Date : 26 SEPTEMBER 2024  
Date of Issue : 26 SEPTEMBER 2024

Calibrated by : Nathakorn Pisutpaisan

Approved by :  
( Thanakul Petchurai )

This certificate is issued in accordance with the requirements of ISO/IEC 17025 standard, may not be reproduced other than in full, except with the prior written approval of the head of Calibration Laboratory.

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SITHIPORN ASSOCIATES CO., LTD.  
CALIBRATION LABORATORY

451-451/1 Sirinthorn Road, Bangbumru, Bangplud, Bangkok, 10700 Thailand  
Tel. +66 2433 8331 Email : calibration@sithiporn.com



Cert. No. : ACC24043  
Job No. : VC67AC0150  
Pages : 2 of 3

Calibration Procedure : CP-AC-03

Calibration Method :

This equipment was calibrated by follow on IEC-60942-2003 Standard.  
The sound pressure level, frequency and total distortion of the sound calibrator was measured using the reference microphone.

Condition of this result of calibration :

1. Reference Standard Instruments :

Instrument	Model	Serial No.	Cert. No.	Due Date
Waveform Generator	33511B	MY52302742	EF-0007-24	05-FEB-25
Digital Multimeter	33461A	MY53220104	EEL.BP 21/0267	13-FEB-25
Digital Multimeter	33461A	MY53220076	EEL.BP 20/0267	15-FEB-25
Digital Multimeter	33461A	MY60024273	EEL.BP 22/0267	15-FEB-25
Programmable Attenuator	MAT-1070	62100114	EF-0008-24	05-FEB-25
Condenser Microphone	4180	2977900	AA-1001-24	12-FEB-25
Measuring Amplifier	NA-42KAI	34560495	AA-3001-24	05-FEB-25
Audio Analyzer	AVR-3360A	V744B6069	EF-0009-24	09-FEB-25

2. This result of calibration was found accurate as shown on date and place of calibration for this calibrated item only.  
3. This certificate is traceable to the international system of unit maintained at :  
3.1 National Institute of Metrology (Thailand).  
3.2 Thailand Institute of Scientific and Technological Research (TISTR).

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Thanakul Petchurai

**SITHIPORN ASSOCIATES CO., LTD.**  
**CALIBRATION LABORATORY**

451-451/1 Sirinthorn Road, Bangbumru, Bangplud, Bangkok, 10700 Thailand  
Tel. +66 2433 8331 Email : calibration@sithiporn.com

SITHIPORN  
associates



Cert. No. : ACC24043  
Job No. : VC67AC0150  
Pages : 3 of 3

**Result of calibration :**

**1. Sound pressure level**

Specified sound pressure level (dB)	Measured value (dB)	Deviated value (dB)	Uncertainty (dB)	Acceptance limit (dB)
94	93.97	-0.03	0.14	0.40

**2. Frequency**

Specified Frequency (Hz)	Measured value (Hz)	Deviated value ( % )	Uncertainty ( % )	Acceptance limit ( % )
1000	1000.0	0.0	0.1	1.0

**3. Total distortion**

Measured value ( % )	Uncertainty ( % )	Acceptance limit ( % )
0.15	0.10	3.0

The reported uncertainty is based on a standard uncertainty multiplied by coverage factor  $k = 2$   
or any value following calculation, providing a level of confidence of approximately 95 %

----- End of Calibration Certificate -----

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*Shawee T. Petch*

**SOUND LEVEL METER**

**MODEL : NL-52A**

**SERIAL No. : 00230988**

Cert. No. : ACL25049  
Pages : 1 of 8

## Calibration Certificate

**Equipment :** SOUND LEVEL METER  
**Manufacturer :** RION  
**Model :** NL-52A / Microphone UC-59 / Preamplifier NH-25  
**Serial No.:** 00230988 / 22332 / 22424  
**ID No.:** -

**Condition As Found :** GOOD

**Customer :** EASTERN THAI CONSULTING 1992 CO., LTD.  
SAHA GROUP INDUSTRIAL PARK, 683 MOO 11,  
NONGKHAM, SIRACHA, CHONBURI 20230 THAILAND.

**Location :** -  
**Ambient Temperature :** ( 23.0  $\pm$  3 ) °C  
**Pressure :** ( 101.3  $\pm$  3 ) kPa  
**Relative Humidity :** ( 50.0  $\pm$  20 ) %

**Received Date :** 06 JANUARY 2025  
**Calibration Date :** 15 - 16 JANUARY 2025  
**Date of Issue :** 17 JANUARY 2025

**Calibrated by :** Nathakorn Pisutpaisan

**Approved by :**

*T. Petchurai*  
( Thanakul Petchurai )

This certificate is issued in accordance with the requirements of ISO/IEC 17025 standard, may not be reproduced  
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**Calibration Procedure :** CP-AC-01

Cert. No. : ACL25049  
Job No. : VC68AC0048  
Pages : 2 of 8

### Calibration Method :

This equipment was calibrated by follow on IEC-61672-3 (2013) Standard for sound level meter (SLM).  
The SLM had tests to Acoustical and Electrical signal tests of frequency weighting with Anechoic chamber and Reference  
Standard Instruments.  
For tests results of each items were made by observation of each Instruments display and also with SLM's display.

### Condition of this result of calibration :

#### 1. Reference Standard Instruments :

<u>Instrument</u>	<u>Model</u>	<u>Serial No.</u>	<u>Cert. No.</u>	<u>Due Date</u>
Waveform Generator	33210A	MY48017076	EF-0009-24	05-FEB-25
Waveform Generator	33511B	MY52302742	EF-0007-24	05-FEB-25
Digital Multimeter	33461A	MY53220104	EEL.BP 21/0267	13-FEB-25
Digital Multimeter	33461A	MY53220076	EEL.BP 20/0267	15-FEB-25
Digital Multimeter	34461A	MY60024273	EEL.BP 22/0267	15-FEB-25
Programmable Attenuator	MAT-1070	62100114	EF-0008-24	05-FEB-25
Condenser Microphone	4180	2977900	AA-1001-24	12-FEB-25
Measuring Amplifier	NA-42KAI	34560495	AA-3001-24	05-FEB-25

2. This result of calibration was found accurate as shown on date and place of calibration for this calibrated item only.

3. This certificate is traceable to the international system of unit maintained at :

3.1 National Institute of Metrology (Thailand).

3.2 Thailand Institute of Scientific and Technological Research (TISTR).

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*T. Petchurai*



Cert. No. : ACL25049  
Job No. : VC68AC0048  
Pages : 3 of 8

Summary of Measurement Result :

Parameter	Uncertainty (dB)	Maximum-permitted uncertainty of measurement (dB)
1. Absolute sensitivity	0.2	N/A
2. Self-generated noise	0.2	N/A
3. Acoustical signal tests of frequency weightings		
125 Hz	0.3	0.6
1000 Hz	0.3	0.6
8000 Hz	0.3	0.7
4. Electrical signal tests of frequency weightings		
For 10 Hz to 4 kHz	0.3	0.6
For > 4 kHz to 10 kHz	0.3	0.7
For > 10 kHz to 20 kHz	0.3	1.0
5. Frequency and time weightings at 1 kHz	0.2	0.2
6. Long - term stability	0.1	0.1
7. Level linearity on the reference level range	0.2	0.3
8. Level linearity including the level range control	0.2	0.3
9. Tone burst response	0.2	0.3
10. Peak C sound level	0.2	0.35
11. Overload indication	0.2	0.25
12. High level stability	0.1	0.1

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Cert. No. : ACL25049  
Job No. : VC68AC0048  
Page : 4 of 8

Result of calibration :

## 1. Absolute sensitivity

Reference Acoustic Signal ( dB )	Measured Value ( dB )	Deviation ( dB )	Acceptance Limit ( dB )
93.9 (93.94)	94.0	0.0	±0.3

## 2. Self-generated noise

## 2.1 Normal test

Measured Value ( dB )
13.8

2.2 The microphone of the sound level meter was replaced by electrical signal input device.

Frequency Weighting	Weighting ( dB )
A - weight	9.9
C - weight	14.8
Flat	20.4

## 3. Acoustical signal tests of frequency weightings

Meter free-field acoustic response at a level of 84 dB

Frequency ( Hz )	Deviation from various frequency weighting response curve (dB)			
	Flat	C-weight	A-weight	Acceptance Limits
125	0.4	0.4	0.4	± 1.0
1000	0.2	0.2	0.2	± 0.7
8000	0.3	0.3	0.3	+ 1.5, - 2.5

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Job No. : VC68AC0048  
Pages : 5 of 8

**4. Electrical signal tests of frequency weightings**

Weighting network response with relative to 1 kHz.

Frequency ( Hz )	Deviation from various frequency weighting response curve (dB)			
	Flat	C-weight	A-weight	Acceptance Limits
63	-0.1	-0.1	-0.1	±1.0
125	-0.1	0.0	0.0	±1.0
250	0.0	0.0	-0.1	±1.0
500	0.0	0.0	-0.1	±1.0
1000	0.0	0.0	0.0	±1.0
2000	0.0	0.0	0.0	±1.0
4000	0.0	0.0	0.0	±1.0
8000	0.0	0.1	0.1	+ 1.5, - 2.5
16000	0.0	-1.2	-1.2	+ 2.5, -16.0

**5. Frequency and time weightings at 1 kHz**

5.1 Frequency weightings at 1 kHz

Frequency Weighting	Anticipated Value ( dB )	Measured Value ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
A - weight	94.0	94.0	0.0	± 0.2
C - weight	94.0	94.0	0.0	± 0.2
Flat	94.0	94.0	0.0	± 0.2

5.2 Time weighting at 1 kHz

Frequency Weighting	Anticipated Value ( dB )	Measured Value ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
Fast	94.0	94.0	0.0	± 0.1
Slow	94.0	94.0	0.0	± 0.1
Leq	94.0	94.0	0.0	± 0.1

**6. Long - term stability**

Frequency Weighting	SLM Display at initial ( dB )	SLM Display at final ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
A - weight	94.0	94.0	0.0	± 0.1

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Cert. No. : ACL25049  
Job No. : VC68AC0048  
Pages : 6 of 8

**7. Level linearity on the reference level range**

Anticipated Value ( dB )	Measured Value ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
137.0	137.0	0.0	±0.8
136.0	136.0	0.0	±0.8
135.0	135.0	0.0	±0.8
134.0	134.0	0.0	±0.8
133.0	133.0	0.0	±0.8
132.0	131.9	-0.1	±0.8
131.0	130.9	-0.1	±0.8
129.0	129.0	0.0	±0.8
124.0	124.0	0.0	±0.8
119.0	119.0	0.0	±0.8
114.0	114.0	0.0	±0.8
109.0	109.0	0.0	±0.8
104.0	104.0	0.0	±0.8
99.0	99.0	0.0	±0.8
94.0	94.0	0.0	±0.8
89.0	89.0	0.0	±0.8
84.0	84.0	0.0	±0.8
79.0	79.0	0.0	±0.8
74.0	74.0	0.0	±0.8
69.0	69.0	0.0	±0.8
64.0	64.0	0.0	±0.8
59.0	59.0	0.0	±0.8
54.0	54.0	0.0	±0.8
49.0	49.0	0.0	±0.8
44.0	44.0	0.0	±0.8
39.0	39.0	0.0	±0.8
34.0	34.0	0.0	±0.8
30.0	30.0	0.0	±0.8
29.0	29.0	0.0	±0.8
28.0	28.0	0.0	±0.8
27.0	27.0	0.0	±0.8
26.0	26.0	0.0	±0.8
25.0	25.0	0.0	±0.8

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Cert. No. : ACL25049  
Job No. : VC68AC0048  
Pages : 7 of 8

## 8. Level linearity including the level range control

Range	Anticipated Value ( dB )	Measured Value ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
130	94.0	94.0	0.0	±0.8

Range	Anticipated Value ( dB )	Measured Value ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
130	29.0	29.0	0.0	±0.8

## 9. Tone burst response

Time Weighting	Tone burst duration, Tb ( ms )	Cycle	Anticipated Value ( dB )	Measured Value ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
Fast	0.25	1	108.0	107.9	-0.1	1.0 ; -3.0
	2	8	117.0	117.0	0.0	1.0 ; -1.5
	200	800	134.0	134.0	0.0	±0.5
Slow	2	8	108.0	108.0	0.0	1.0 ; -3.0
	200	800	127.6	127.6	0.0	±0.5
SEL	0.25	1	99.0	98.9	-0.1	1.0 ; -3.0
	2	8	108.0	108.0	0.0	1.0 ; -1.5
	200	800	128.0	128.0	0.0	±0.5

Cert. No. : ACL25049  
Job No. : VC68AC0048  
Pages : 8 of 8

## 10. Peak C sound level

Number of cycle in test signal	Anticipated Value ( dB )	Measured Value, L <sub>peak</sub> ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
Continuous	130.0	130.0	0.0	±2.0
One	133.4	133.4	0.0	±2.0

Number of cycle in test signal	Anticipated Value ( dB )	Measured Value ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
Continuous	133.0	133.0	0.0	±1.0
Positive half cycle	135.4	135.2	-0.2	±1.0
Negative half cycle	135.4	135.2	-0.2	±1.0

## 11. Overload indication

Measured value ( dB )		Deviated Value ( dB )	Acceptance Limits ( dB )
Positive one-half cycle	Negative one-half cycle		
89.5	89.5	0.0	±1.5

## 12. High level stability

Frequency Weighting	SLM Display at initial ( dB )	SLM Display at final ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
A - weight	137.0	137.0	0.0	±0.1

The reported uncertainty is based on a standard uncertainty multiplied by coverage factor  $k = 2$   
or any value following calculation, providing a level of confidence of approximately 95 %

End of Calibration Certificate

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**SOUND LEVEL METER**

**MODEL : NL-52A**

**SERIAL No. : 01120943**

Cert. No. : ACL25051  
Pages : 1 of 8

## Calibration Certificate

**Equipment :** SOUND LEVEL METER  
**Manufacturer :** RION  
**Model :** NL-52A / Microphone UC-59 / Preamplifier NH-25  
**Serial No.:** 01120943 / 22778 / 22431  
**ID No.:** -


**Condition As Found :** GOOD

**Customer :** EASTERN THAI CONSULTING 1992 CO., LTD.  
SAHA GROUP INDUSTRIAL PARK, 683 MOO 11,  
NONGKHAM, SIRACHA, CHONBURI 20230 THAILAND.

**Location :** -  
**Ambient Temperature :** ( 23.0  $\pm$  3 ) °C  
**Pressure :** ( 101.3  $\pm$  3 ) kPa  
**Relative Humidity :** ( 50.0  $\pm$  20 ) %

**Received Date :** 06 JANUARY 2025  
**Calibration Date :** 15 - 16 JANUARY 2025  
**Date of Issue :** 17 JANUARY 2025

**Calibrated by :** Nathakorn Pisutpaisan

**Approved by :**   
( Thanakul Petchurai )

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**Calibration Procedure :** CP-AC-01

### Calibration Method :

This equipment was calibrated by follow on IEC-61672-3 (2013) Standard for sound level meter (SLM).  
The SLM had tests to Acoustical and Electrical signal tests of frequency weighting with Anechoic chamber and Reference Standard Instruments.  
For tests results of each items were made by observation of each Instruments display and also with SLM's display.

### Condition of this result of calibration :

#### 1. Reference Standard Instruments :

Instrument	Model	Serial No.	Cert. No.	Due Date
Waveform Generator	33210A	MY48017076	EF-0009-24	05-FEB-25
Waveform Generator	33511B	MY52302742	EF-0007-24	05-FEB-25
Digital Multimeter	33461A	MY53220104	EEL.BP 21/0267	13-FEB-25
Digital Multimeter	33461A	MY53220076	EEL.BP 20/0267	15-FEB-25
Digital Multimeter	34461A	MY60024273	EEL.BP 22/0267	15-FEB-25
Programmable Attenuator	MAT-1070	62100114	EF-0008-24	05-FEB-25
Condenser Microphone	4180	2977900	AA-1001-24	12-FEB-25
Measuring Amplifier	NA-42KAI	34560495	AA-3001-24	05-FEB-25

2. This result of calibration was found accurate as shown on date and place of calibration for this calibrated item only.

3. This certificate is traceable to the international system of unit maintained at :

3.1 National Institute of Metrology (Thailand).

3.2 Thailand Institute of Scientific and Technological Research (TISTR).

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Cert. No. : ACL25051  
Job No. : VC68AC0048  
Pages : 3 of 8

**Summary of Measurement Result :**

Parameter	Uncertainty (dB)	Maximum-permitted uncertainty of measurement (dB)
1. Absolute sensitivity	0.2	N/A
2. Self-generated noise	0.2	N/A
3. Acoustical signal tests of frequency weightings		
125 Hz	0.3	0.6
1000 Hz	0.3	0.6
8000 Hz	0.3	0.7
4. Electrical signal tests of frequency weightings		
For 10 Hz to 4 kHz	0.3	0.6
For > 4 kHz to 10 kHz	0.3	0.7
For > 10 kHz to 20 kHz	0.3	1.0
5. Frequency and time weightings at 1 kHz	0.2	0.2
6. Long - term stability	0.1	0.1
7. Level linearity on the reference level range	0.2	0.3
8. Level linearity including the level range control	0.2	0.3
9. Tone burst response	0.2	0.3
10. Peak C sound level	0.2	0.35
11. Overload indication	0.2	0.25
12. High level stability	0.1	0.1

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T. Petch.

Cert. No. : ACL25051  
Job No. : VC68AC0048  
Page : 4 of 8

**Result of calibration :****1. Absolute sensitivity**

Reference Acoustic Signal ( dB )	Measured Value ( dB )	Deviation ( dB )	Acceptance Limit ( dB )
93.9 (93.94)	94.0	0.0	±0.3

**2. Self-generated noise****2.1 Normal test**

Measured Value ( dB )
13.8

**2.2 The microphone of the sound level meter was replaced by electrical signal input device.**

Frequency Weighting	Weighting ( dB )
A - weight	9.9
C - weight	15.2
Flat	20.8

**3. Acoustical signal tests of frequency weightings**

Meter free-field acoustic response at a level of 84 dB

Frequency ( Hz )	Deviation from various frequency weighting response curve (dB)			
	Flat	C-weight	A-weight	Acceptance Limits
125	0.3	0.3	0.3	± 1.0
1000	0.2	0.2	0.2	± 0.7
8000	0.2	0.2	0.2	+ 1.5, - 2.5

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Job No. : VC68AC0048  
Pages : 5 of 8

#### 4. Electrical signal tests of frequency weightings

Weighting network response with relative to 1 kHz.

Frequency ( Hz )	Deviation from various frequency weighting response curve (dB)			
	Flat	C-weight	A-weight	Acceptance Limits
63	-0.1	-0.1	-0.1	±1.0
125	0.0	0.0	0.0	±1.0
250	0.0	0.0	0.0	±1.0
500	0.0	0.0	-0.1	±1.0
1000	0.0	0.0	0.0	±1.0
2000	0.0	0.0	0.0	±1.0
4000	0.0	0.0	0.0	±1.0
8000	0.0	0.0	0.0	+ 1.5, - 2.5
16000	0.0	-1.3	-1.2	+ 2.5, -16.0

#### 5. Frequency and time weightings at 1 kHz

##### 5.1 Frequency weightings at 1 kHz

Frequency Weighting	Anticipated Value ( dB )	Measured Value ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
A - weight	94.0	94.0	0.0	± 0.2
C - weight	94.0	94.0	0.0	± 0.2
Flat	94.0	94.0	0.0	± 0.2

##### 5.2 Time weighting at 1 kHz

Frequency Weighting	Anticipated Value ( dB )	Measured Value ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
Fast	94.0	94.0	0.0	± 0.1
Slow	94.0	94.0	0.0	± 0.1
Leq	94.0	94.0	0.0	± 0.1

#### 6. Long - term stability

Frequency Weighting	SLM Display at initial ( dB )	SLM Display at final ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
A - weight	94.0	94.0	0.0	± 0.1

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Job No. : VC68AC0048  
Pages : 6 of 8

#### 7. Level linearity on the reference level range

Anticipated Value ( dB )	Measured Value ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
137.0	137.0	0.0	±0.8
136.0	136.0	0.0	±0.8
135.0	135.0	0.0	±0.8
134.0	134.1	0.1	±0.8
133.0	133.0	0.0	±0.8
132.0	132.0	0.0	±0.8
131.0	131.0	0.0	±0.8
129.0	129.0	0.0	±0.8
124.0	124.0	0.0	±0.8
119.0	119.1	0.1	±0.8
114.0	114.1	0.1	±0.8
109.0	109.0	0.0	±0.8
104.0	104.1	0.1	±0.8
99.0	99.0	0.0	±0.8
94.0	94.0	0.0	±0.8
89.0	89.0	0.0	±0.8
84.0	84.0	0.0	±0.8
79.0	79.0	0.0	±0.8
74.0	74.0	0.0	±0.8
69.0	69.0	0.0	±0.8
64.0	64.0	0.0	±0.8
59.0	59.0	0.0	±0.8
54.0	54.0	0.0	±0.8
49.0	49.0	0.0	±0.8
44.0	44.0	0.0	±0.8
39.0	39.0	0.0	±0.8
34.0	34.0	0.0	±0.8
30.0	30.0	0.0	±0.8
29.0	29.0	0.0	±0.8
28.0	28.0	0.0	±0.8
27.0	27.0	0.0	±0.8
26.0	26.0	0.0	±0.8
25.0	25.0	0.0	±0.8

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Cert. No. : ACL25051  
Job No. : VC68AC0048  
Pages : 7 of 8

## 8. Level linearity including the level range control

Range	Anticipated Value ( dB )	Measured Value ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
130	94.0	94.0	0.0	±0.8

Range	Anticipated Value ( dB )	Measured Value ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
130	29.0	29.0	0.0	±0.8

## 9. Tone burst response

Time Weighting	Tone burst duration, Tb ( ms )	Cycle	Anticipated Value ( dB )	Measured Value ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
Fast	0.25	1	108.0	107.9	-0.1	1.0 ; -3.0
	2	8	117.0	116.9	-0.1	1.0 ; -1.5
	200	800	134.0	134.0	0.0	±0.5
Slow	2	8	108.0	107.9	-0.1	1.0 ; -3.0
	200	800	127.6	127.6	0.0	±0.5
SEL	0.25	1	99.0	98.8	-0.2	1.0 ; -3.0
	2	8	108.0	108.0	0.0	1.0 ; -1.5
	200	800	128.0	128.0	0.0	±0.5

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## 10. Peak C sound level

Number of cycle in test signal	Anticipated Value ( dB )	Measured Value, L <sub>peak</sub> ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
Continuous	130.0	130.0	0.0	±2.0
One	133.4	133.4	0.0	±2.0

Number of cycle in test signal	Anticipated Value ( dB )	Measured Value ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
Continuous	133.0	133.0	0.0	±1.0
Positive half cycle	135.4	135.2	-0.2	±1.0
Negative half cycle	135.4	135.2	-0.2	±1.0

## 11. Overload indication

Measured value ( dB )		Deviated Value ( dB )	Acceptance Limits ( dB )
Positive one-half cycle	Negative one-half cycle		
89.5	89.5	0.0	±1.5

## 12. High level stability

Frequency Weighting	SLM Display at initial ( dB )	SLM Display at final ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
A - weight	137.0	137.0	0.0	±0.1

The reported uncertainty is based on a standard uncertainty multiplied by coverage factor  $k = 2$   
or any value following calculation, providing a level of confidence of approximately 95 %

End of Calibration Certificate

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**SOUND LEVEL METER**

**MODEL : NL-52A**

**SERIAL No. : 01120950**

Cert. No. : ACL25057

Pages : 1 of 8

## Calibration Certificate

**Equipment :** SOUND LEVEL METER  
**Manufacturer :** RION  
**Model :** NL-52A / Microphone UC-59 / Preamplifier NH-25  
**Serial No.:** 01120950 / 22043 / 22339  
**ID No.:** -

**Condition As Found :** GOOD

**Customer :** EASTERN THAI CONSULTING 1992 CO., LTD.  
SAHA GROUP INDUSTRIAL PARK, 683 MOO 11,  
NONGKHAM, SIRACHA, CHONBURI 20230 THAILAND.

**Location :** -  
**Ambient Temperature :** ( 23.0  $\pm$  3 ) °C  
**Pressure :** ( 101.3  $\pm$  3 ) kPa  
**Relative Humidity :** ( 50.0  $\pm$  20 ) %

**Received Date :** 06 JANUARY 2025  
**Calibration Date :** 15 - 16 JANUARY 2025  
**Date of Issue :** 17 JANUARY 2025

**Calibrated by :** Nathakorn Pisutpaisan

**Approved by :**

*T. Petchurai*  
( Thanakul Petchurai )

This certificate is issued in accordance with the requirements of ISO/IEC 17025 standard, may not be reproduced  
other than in full, except with the prior written approval of the head of Calibration Laboratory.

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Cert. No. : ACL25057

Job No. : VC68AC0048

Pages : 2 of 8

**Calibration Procedure :** CP-AC-01

### Calibration Method :

This equipment was calibrated by follow on IEC-61672-3 (2013) Standard for sound level meter (SLM).  
The SLM had tests to Acoustical and Electrical signal tests of frequency weighting with Anechoic chamber and Reference  
Standard Instruments.  
For tests results of each items were made by observation of each Instruments display and also with SLM's display.

### Condition of this result of calibration :

#### 1. Reference Standard Instruments :

<u>Instrument</u>	<u>Model</u>	<u>Serial No.</u>	<u>Cert. No.</u>	<u>Due Date</u>
Waveform Generator	33210A	MY48017076	EF-0009-24	05-FEB-25
Waveform Generator	33511B	MY52302742	EF-0007-24	05-FEB-25
Digital Multimeter	33461A	MY53220104	EEL.BP 21/0267	13-FEB-25
Digital Multimeter	33461A	MY53220076	EEL.BP 20/0267	15-FEB-25
Digital Multimeter	34461A	MY60024273	EEL.BP 22/0267	15-FEB-25
Programmable Attenuator	MAT-1070	62100114	EF-0008-24	05-FEB-25
Condenser Microphone	4180	2977900	AA-1001-24	12-FEB-25
Measuring Amplifier	NA-42KAI	34560495	AA-3001-24	05-FEB-25

2. This result of calibration was found accurate as shown on date and place of calibration for this calibrated item only.

3. This certificate is traceable to the international system of unit maintained at :

3.1 National Institute of Metrology (Thailand).

3.2 Thailand Institute of Scientific and Technological Research (TISTR).

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Cert. No. : ACL25057  
Job No. : VC68AC0048  
Pages : 3 of 8

**Summary of Measurement Result :**

Parameter	Uncertainty (dB)	Maximum-permitted uncertainty of measurement (dB)
1. Absolute sensitivity	0.2	N/A
2. Self-generated noise	0.2	N/A
3. Acoustical signal tests of frequency weightings		
125 Hz	0.3	0.6
1000 Hz	0.3	0.6
8000 Hz	0.3	0.7
4. Electrical signal tests of frequency weightings		
For 10 Hz to 4 kHz	0.3	0.6
For > 4 kHz to 10 kHz	0.3	0.7
For > 10 kHz to 20 kHz	0.3	1.0
5. Frequency and time weightings at 1 kHz	0.2	0.2
6. Long - term stability	0.1	0.1
7. Level linearity on the reference level range	0.2	0.3
8. Level linearity including the level range control	0.2	0.3
9. Tone burst response	0.2	0.3
10. Peak C sound level	0.2	0.35
11. Overload indication	0.2	0.25
12. High level stability	0.1	0.1

Cert. No. : ACL25057  
Job No. : VC68AC0048  
Page : 4 of 8

**Result of calibration :****1. Absolute sensitivity**

Reference Acoustic Signal ( dB )	Measured Value ( dB )	Deviation ( dB )	Acceptance Limit ( dB )
93.9 (93.94)	94.0	0.0	±0.3

**2. Self-generated noise****2.1 Normal test**

Measured Value ( dB )
13.4

2.2 The microphone of the sound level meter was replaced by electrical signal input device.

Frequency Weighting	Weighting ( dB )
A - weight	9.9
C - weight	16.4
Flat	21.9

**3. Acoustical signal tests of frequency weightings**

Meter free-field acoustic response at a level of 84 dB

Frequency ( Hz )	Deviation from various frequency weighting response curve (dB)			
	Flat	C-weight	A-weight	Acceptance Limits
125	0.4	0.4	0.4	± 1.0
1000	0.2	0.2	0.2	± 0.7
8000	0.5	0.5	0.5	+ 1.5, - 2.5

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Job No. : VC68AC0048  
Pages : 5 of 8

#### 4. Electrical signal tests of frequency weightings

Weighting network response with relative to 1 kHz.

Frequency ( Hz )	Deviation from various frequency weighting response curve (dB)			
	Flat	C-weight	A-weight	Acceptance Limits
63	0.0	-0.1	0.0	±1.0
125	0.0	0.1	0.0	±1.0
250	0.0	0.0	0.0	±1.0
500	0.0	0.1	0.0	±1.0
1000	0.0	0.0	0.0	±1.0
2000	0.0	0.1	0.0	±1.0
4000	0.0	0.0	0.0	±1.0
8000	0.0	0.1	0.1	+ 1.5, - 2.5
16000	0.0	-1.2	-1.2	+ 2.5, -16.0

#### 5. Frequency and time weightings at 1 kHz

##### 5.1 Frequency weightings at 1 kHz

Frequency Weighting	Anticipated Value ( dB )	Measured Value ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
A - weight	94.0	94.0	0.0	± 0.2
C - weight	94.0	94.0	0.0	± 0.2
Flat	94.0	94.0	0.0	± 0.2

##### 5.2 Time weighting at 1 kHz

Frequency Weighting	Anticipated Value ( dB )	Measured Value ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
Fast	94.0	94.0	0.0	± 0.1
Slow	94.0	94.0	0.0	± 0.1
Leq	94.0	94.0	0.0	± 0.1

#### 6. Long - term stability

Frequency Weighting	SLM Display at initial ( dB )	SLM Display at final ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
A - weight	94.0	94.0	0.0	± 0.1

Cert. No. : ACL25057  
Job No. : VC68AC0048  
Pages : 6 of 8

#### 7. Level linearity on the reference level range

Anticipated Value ( dB )	Measured Value ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
137.0	137.0	0.0	±0.8
136.0	136.0	0.0	±0.8
135.0	135.0	0.0	±0.8
134.0	134.0	0.0	±0.8
133.0	133.0	0.0	±0.8
132.0	132.0	0.0	±0.8
131.0	131.0	0.0	±0.8
129.0	129.0	0.0	±0.8
124.0	124.0	0.0	±0.8
119.0	119.0	0.0	±0.8
114.0	114.0	0.0	±0.8
109.0	109.0	0.0	±0.8
104.0	104.0	0.0	±0.8
99.0	99.0	0.0	±0.8
94.0	94.0	0.0	±0.8
89.0	89.0	0.0	±0.8
84.0	84.0	0.0	±0.8
79.0	79.0	0.0	±0.8
74.0	74.0	0.0	±0.8
69.0	69.0	0.0	±0.8
64.0	64.0	0.0	±0.8
59.0	59.0	0.0	±0.8
54.0	53.9	-0.1	±0.8
49.0	49.0	0.0	±0.8
44.0	44.0	0.0	±0.8
39.0	38.9	-0.1	±0.8
34.0	33.9	-0.1	±0.8
30.0	30.0	0.0	±0.8
29.0	28.9	-0.1	±0.8
28.0	28.0	0.0	±0.8
27.0	26.9	-0.1	±0.8
26.0	26.0	0.0	±0.8
25.0	25.0	0.0	±0.8

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Cert. No. : ACL25057

Job No. : VC68AC0048

Pages : 7 of 8

## 8. Level linearity including the level range control

Range	Anticipated Value ( dB )	Measured Value ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
130	94.0	94.0	0.0	±0.8

Range	Anticipated Value ( dB )	Measured Value ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
130	29.0	28.9	-0.1	±0.8

## 9. Tone burst response

Time Weighting	Tone burst duration, Tb ( ms )	Cycle	Anticipated Value ( dB )	Measured Value ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
Fast	0.25	1	108.0	107.9	-0.1	1.0 ; -3.0
	2	8	117.0	117.0	0.0	1.0 ; -1.5
	200	800	134.0	134.1	0.1	±0.5
Slow	2	8	108.0	108.0	0.0	1.0 ; -3.0
	200	800	127.6	127.6	0.0	±0.5
SEL	0.25	1	99.0	98.9	-0.1	1.0 ; -3.0
	2	8	108.0	108.0	0.0	1.0 ; -1.5
	200	800	128.0	128.0	0.0	±0.5

Cert. No. : ACL25057

Job No. : VC68AC0048

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## 10. Peak C sound level

Number of cycle in test signal	Anticipated Value ( dB )	Measured Value, L <sub>peak</sub> ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
Continuous	130.0	130.0	0.0	±2.0
One	133.4	133.3	-0.1	±2.0

Number of cycle in test signal	Anticipated Value ( dB )	Measured Value ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
Continuous	133.0	133.0	0.0	±1.0
Positive half cycle	135.4	135.2	-0.2	±1.0
Negative half cycle	135.4	135.2	-0.2	±1.0

## 11. Overload indication

Measured value ( dB )		Deviated Value ( dB )	Acceptance Limits ( dB )
Positive one-half cycle	Negative one-half cycle		
89.6	89.6	0.0	±1.5

## 12. High level stability

Frequency Weighting	SLM Display at initial ( dB )	SLM Display at final ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
A - weight	137.0	137.0	0.0	±0.1

The reported uncertainty is based on a standard uncertainty multiplied by coverage factor  $k = 2$ 

or any value following calculation, providing a level of confidence of approximately 95%

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**SOUND LEVEL METER**

**MODEL : NL-42A**

**SERIAL No. : 00322748**

**SITHIPORN ASSOCIATES CO., LTD.**  
**CALIBRATION LABORATORY**

451-451/1 Sirinthorn Road, Bangbumru, Bangplud, Bangkok, 10700 Thailand  
Tel. +66 2433 8331 Email : calibration@sithiporn.com

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Cert. No. : ACL25045  
Pages : 1 of 8

## Calibration Certificate

**Equipment :** SOUND LEVEL METER  
**Manufacturer :** RION  
**Model :** NL-42A / Microphone UC-52 / Preamplifier NH-24  
**Serial No.:** 00322748 / 196471 / 15480  
**ID No.:** -

**Condition As Found :** GOOD

**Customer :** EASTERN THAI CONSULTING 1992 CO., LTD.  
SAHA GROUP INDUSTRIAL PARK, 683 MOO 11,  
NONGKHAM, SIRACHA, CHONBURI 20230 THAILAND.

**Location :** -  
**Ambient Temperature :** ( 23.0  $\pm$  3 ) °C  
**Pressure :** ( 101.3  $\pm$  3 ) kPa  
**Relative Humidity :** ( 50.0  $\pm$  20 ) %

**Received Date :** 06 JANUARY 2025  
**Calibration Date :** 15 - 16 JANUARY 2025  
**Date of Issue :** 17 JANUARY 2025

**Calibrated by :** Nathakorn Pisutpaisan

**Approved by :**

*T. Petchur*  
( Thanakul Petchurai )

This certificate is issued in accordance with the requirements of ISO/IEC 17025 standard, may not be reproduced  
other than in full, except with the prior written approval of the head of Calibration Laboratory.

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Cert. No. : ACL25045  
Job No. : VC68AC0048  
Pages : 2 of 8

**Calibration Procedure :** CP-AC-01

### Calibration Method :

This equipment was calibrated by follow on IEC-61672-3 (2013) Standard for sound level meter (SLM).  
The SLM had tests to Acoustical and Electrical signal tests of frequency weighting with Anechoic chamber and Reference  
Standard Instruments.  
For tests results of each items were made by observation of each Instruments display and also with SLM's display.

### Condition of this result of calibration :

1. Reference Standard Instruments :

<u>Instrument</u>	<u>Model</u>	<u>Serial No.</u>	<u>Cert. No.</u>	<u>Due Date</u>
Waveform Generator	33210A	MY48017076	EF-0009-24	05-FEB-25
Waveform Generator	33511B	MY52302742	EF-0007-24	05-FEB-25
Digital Multimeter	33461A	MY53220104	EEL.BP 21/0267	13-FEB-25
Digital Multimeter	33461A	MY53220076	EEL.BP 20/0267	15-FEB-25
Digital Multimeter	34461A	MY60024273	EEL.BP 22/0267	15-FEB-25
Programable Attenuator	MAT-1070	62100114	EF-0008-24	05-FEB-25
Condenser Microphone	4180	2977900	AA-1001-24	12-FEB-25
Measuring Amplifier	NA-42KA1	34560495	AA-3001-24	05-FEB-25

2. This result of calibration was found accurate as shown on date and place of calibration for this calibrated item only.

3. This certificate is traceable to the international system of unit maintained at :

3.1 National Institute of Metrology (Thailand).

3.2 Thailand Institute of Scientific and Technological Research (TISTR).

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Cert. No. : ACL25045  
Job No. : VC68AC0048  
Pages : 3 of 8

Summary of Measurement Result :

Parameter	Uncertainty (dB)	Maximum-permitted uncertainty of measurement (dB)
1. Absolute sensitivity	0.2	N/A
2. Self-generated noise	0.2	N/A
3. Acoustical signal tests of frequency weightings		
125 Hz	0.3	0.6
1000 Hz	0.3	0.6
8000 Hz	0.3	0.7
4. Electrical signal tests of frequency weightings		
For 10 Hz to 4 kHz	0.3	0.6
For > 4 kHz to 10 kHz	0.3	0.7
For > 10 kHz to 20 kHz	0.3	1.0
5. Frequency and time weightings at 1 kHz	0.2	0.2
6. Long - term stability	0.1	0.1
7. Level linearity on the reference level range	0.2	0.3
8. Level linearity including the level range control	0.2	0.3
9. Tone burst response	0.2	0.3
10. Peak C sound level	0.2	0.35
11. Overload indication	0.2	0.25
12. High level stability	0.1	0.1

Cert. No. : ACL25045  
Job No. : VC68AC0048  
Page : 4 of 8

Result of calibration :

## 1. Absolute sensitivity

Reference Acoustic Signal ( dB )	Measured Value ( dB )	Deviation ( dB )	Acceptance Limit ( dB )
93.9 (93.94)	93.9	0.0	±0.3

## 2. Self-generated noise

## 2.1 Normal test

Measured Value ( dB )
14.2

2.2 The microphone of the sound level meter was replaced by electrical signal input device.

Frequency Weighting	Weighting ( dB )
A - weight	10.8
C - weight	17.1
Flat	22.9

## 3. Acoustical signal tests of frequency weightings

Meter free-field acoustic response at a level of 84 dB

Frequency ( Hz )	Deviation from various frequency weighting response curve (dB)			Acceptance Limits
	Flat	C-weight	A-weight	
125	0.1	0.1	0.1	± 1.5
1000	0.0	0.0	0.0	± 1.0
8000	0.5	0.5	0.5	± 5.0

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Job No. : VC68AC0048  
Pages : 5 of 8

#### 4. Electrical signal tests of frequency weightings

Weighting network response with relative to 1 kHz.

Frequency ( Hz )	Deviation from various frequency weighting response curve (dB)			
	Flat	C-weight	A-weight	Acceptance Limits
63	0.0	0.0	0.0	±2.0
125	0.0	0.0	0.0	±1.5
250	0.0	0.0	0.0	±1.5
500	0.0	0.1	0.0	±1.5
1000	0.0	0.0	0.0	±1.0
2000	0.0	0.1	0.0	±2.0
4000	0.0	0.0	0.0	±3.0
8000	0.0	0.1	0.1	±5.0

#### 5. Frequency and time weightings at 1 kHz

##### 5.1 Frequency weightings at 1 kHz

Frequency Weighting	Anticipated Value ( dB )	Measured Value ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
A - weight	94.0	94.0	0.0	± 0.2
C - weight	94.0	94.0	0.0	± 0.2
Flat	94.0	94.0	0.0	± 0.2

##### 5.2 Time weighting at 1 kHz

Frequency Weighting	Anticipated Value ( dB )	Measured Value ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
Fast	94.0	94.0	0.0	± 0.1
Slow	94.0	94.0	0.0	± 0.1
Leq	94.0	94.0	0.0	± 0.1

#### 6. Long - term stability

Frequency Weighting	SLM Display at initial ( dB )	SLM Display at final ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
A - weight	94.0	94.0	0.0	± 0.3

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Job No. : VC68AC0048  
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#### 7. Level linearity on the reference level range

Anticipated Value ( dB )	Measured Value ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
137.0	137.0	0.0	± 1.1
136.0	136.0	0.0	± 1.1
135.0	135.0	0.0	± 1.1
134.0	134.0	0.0	± 1.1
133.0	133.0	0.0	± 1.1
132.0	132.0	0.0	± 1.1
131.0	131.0	0.0	± 1.1
129.0	129.0	0.0	± 1.1
124.0	124.0	0.0	± 1.1
119.0	119.0	0.0	± 1.1
114.0	114.0	0.0	± 1.1
109.0	109.0	0.0	± 1.1
104.0	104.0	0.0	± 1.1
99.0	99.0	0.0	± 1.1
94.0	94.0	0.0	± 1.1
89.0	89.0	0.0	± 1.1
84.0	84.0	0.0	± 1.1
79.0	79.0	0.0	± 1.1
74.0	74.0	0.0	± 1.1
69.0	69.0	0.0	± 1.1
64.0	64.0	0.0	± 1.1
59.0	59.0	0.0	± 1.1
54.0	54.0	0.0	± 1.1
49.0	49.0	0.0	± 1.1
44.0	44.0	0.0	± 1.1
39.0	39.0	0.0	± 1.1
34.0	33.9	-0.1	± 1.1
30.0	29.9	-0.1	± 1.1
29.0	28.9	-0.1	± 1.1
28.0	27.9	-0.1	± 1.1
27.0	26.9	-0.1	± 1.1
26.0	25.9	-0.1	± 1.1
25.0	24.9	-0.1	± 1.1

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Job No. : VC68AC0048  
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## 8. Level linearity including the level range control

Range	Anticipated Value ( dB )	Measured Value ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
130	94.0	94.0	0.0	±1.1

Range	Anticipated Value ( dB )	Measured Value ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
130	29.0	28.9	-0.1	±1.1

## 9. Tone burst response

Time Weighting	Tone burst duration, Tb ( ms )	Cycle	Anticipated Value ( dB )	Measured Value ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
Fast	0.25	1	108.0	107.9	-0.1	1.5 ; -5.0
	2	8	117.0	117.0	0.0	1.0 ; -2.5
	200	800	134.0	134.1	0.1	±1.0
Slow	2	8	108.0	108.0	0.0	1.5 ; -5.0
	200	800	127.6	127.6	0.0	±1.0
SEL	0.25	1	99.0	98.9	-0.1	1.5 ; -5.0
	2	8	108.0	108.0	0.0	1.0 ; -2.5
	200	800	128.0	128.0	0.0	±1.0

Cert. No. : ACL25045  
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## 10. Peak C sound level

Number of cycle in test signal	Anticipated Value ( dB )	Measured Value, L <sub>peak</sub> ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
Continuous	130.0	130.0	0.0	±3.0
One	133.4	133.4	0.0	±3.0

Number of cycle in test signal	Anticipated Value ( dB )	Measured Value ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
Continuous	133.0	133.0	0.0	±2.0
Positive half cycle	135.4	135.2	-0.2	±2.0
Negative half cycle	135.4	135.2	-0.2	±2.0

## 11. Overload indication

Measured value ( dB )		Deviated Value ( dB )	Acceptance Limits ( dB )
Positive one-half cycle	Negative one-half cycle	0.1	+1.5
89.5	89.6		

## 12. High level stability

Frequency Weighting	SLM Display at initial ( dB )	SLM Display at final ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
A - weight	137.0	137.0	0.0	±0.3

The reported uncertainty is based on a standard uncertainty multiplied by coverage factor  $k = 2$   
or any value following calculation, providing a level of confidence of approximately 95%

End of Calibration Certificate

**SOUND LEVEL METER**

**MODEL : NL-42A**

**SERIAL No. : 00222593**

Cert. No. : ACL25042

Pages : 1 of 8

## Calibration Certificate

**Equipment :** SOUND LEVEL METER  
**Manufacturer :** RION  
**Model :** NL-42A / Microphone UC-52 / Preamplifier NH-24  
**Serial No.:** 00222593 / 195906 / 15426  
**ID No.:** -

**Condition As Found :** GOOD

**Customer :** EASTERN THAI CONSULTING 1992 CO., LTD.  
SAHA GROUP INDUSTRIAL PARK, 683 MOO 11,  
NONGKHAM, SIRACHA, CHONBURI 20230 THAILAND.

**Location :** -  
**Ambient Temperature :** ( 23.0  $\pm$  3 ) °C  
**Pressure :** ( 101.3  $\pm$  3 ) kPa  
**Relative Humidity :** ( 50.0  $\pm$  20 ) %

**Received Date :** 06 JANUARY 2025  
**Calibration Date :** 15 - 16 JANUARY 2025  
**Date of Issue :** 17 JANUARY 2025

**Calibrated by :** Nathakorn Pisutpaisan

**Approved by :**

*T. Petchur*  
( Thanakul Petchur )

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Cert. No. : ACL25042

Job No. : VC68AC0048

Pages : 2 of 8

**Calibration Procedure :** CP-AC-01

### Calibration Method :

This equipment was calibrated by follow on IEC-61672-3 (2013) Standard for sound level meter (SLM).  
The SLM had tests to Acoustical and Electrical signal tests of frequency weighting with Anechoic chamber and Reference  
Standard Instruments.  
For tests results of each items were made by observation of each Instruments display and also with SLM's display.

### Condition of this result of calibration :

#### 1. Reference Standard Instruments :

<u>Instrument</u>	<u>Model</u>	<u>Serial No.</u>	<u>Cert. No.</u>	<u>Due Date</u>
Waveform Generator	33210A	MY48017076	EF-0009-24	05-FEB-25
Waveform Generator	33511B	MY52302742	EF-0007-24	05-FEB-25
Digital Multimeter	33461A	MY53220104	EEL.BP 21/0267	13-FEB-25
Digital Multimeter	33461A	MY53220076	EEL.BP 20/0267	15-FEB-25
Digital Multimeter	34461A	MY60024273	EEL.BP 22/0267	15-FEB-25
Programmable Attenuator	MAT-1070	62100114	EF-0008-24	05-FEB-25
Condenser Microphone	4180	2977900	AA-1001-24	12-FEB-25
Measuring Amplifier	NA-42KAI	34560495	AA-3001-24	05-FEB-25

2. This result of calibration was found accurate as shown on date and place of calibration for this calibrated item only.

3. This certificate is traceable to the international system of unit maintained at :

3.1 National Institute of Metrology (Thailand).

3.2 Thailand Institute of Scientific and Technological Research (TISTR).

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Cert. No. : ACL25042  
Job No. : VC68AC0048  
Pages : 3 of 8

Summary of Measurement Result :

Parameter	Uncertainty (dB)	Maximum-permitted uncertainty of measurement (dB)
1. Absolute sensitivity	0.2	N/A
2. Self-generated noise	0.2	N/A
3. Acoustical signal tests of frequency weightings		
125 Hz	0.3	0.6
1000 Hz	0.3	0.6
8000 Hz	0.3	0.7
4. Electrical signal tests of frequency weightings		
For 10 Hz to 4 kHz	0.3	0.6
For > 4 kHz to 10 kHz	0.3	0.7
For > 10 kHz to 20 kHz	0.3	1.0
5. Frequency and time weightings at 1 kHz	0.2	0.2
6. Long - term stability	0.1	0.1
7. Level linearity on the reference level range	0.2	0.3
8. Level linearity including the level range control	0.2	0.3
9. Tone burst response	0.2	0.3
10. Peak C sound level	0.2	0.35
11. Overload indication	0.2	0.25
12. High level stability	0.1	0.1

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Cert. No. : ACL25042  
Job No. : VC68AC0048  
Page : 4 of 8

Result of calibration :

## 1. Absolute sensitivity

Reference Acoustic Signal ( dB )	Measured Value ( dB )	Deviation ( dB )	Acceptance Limit ( dB )
93.9 (93.94)	93.9	0.0	±0.3

## 2. Self-generated noise

## 2.1 Normal test

Measured Value ( dB )
13.8

2.2 The microphone of the sound level meter was replaced by electrical signal input device.

Frequency Weighting	Weighting ( dB )
A - weight	9.9
C - weight	16.8
Flat	22.5

## 3. Acoustical signal tests of frequency weightings

Meter free-field acoustic response at a level of 84 dB

Frequency ( Hz )	Deviation from various frequency weighting response curve (dB)			Acceptance Limits
	Flat	C-weight	A-weight	
125	0.6	0.6	0.6	± 1.5
1000	0.1	0.1	0.1	± 1.0
8000	0.8	0.8	0.8	±5.0

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Cert. No. : ACL25042  
Job No. : VC68AC0048  
Pages : 5 of 8

**4. Electrical signal tests of frequency weightings**

Weighting network response with relative to 1 kHz.

Frequency ( Hz )	Deviation from various frequency weighting response curve (dB)			
	Flat	C-weight	A-weight	Acceptance Limits
63	0.1	0.0	0.0	±2.0
125	0.1	0.1	0.0	±1.5
250	0.1	0.0	0.0	±1.5
500	0.1	0.1	0.0	±1.5
1000	0.0	0.0	0.0	±1.0
2000	0.0	0.1	0.0	±2.0
4000	0.0	0.1	0.0	±3.0
8000	0.0	0.1	0.1	±5.0

**5. Frequency and time weightings at 1 kHz****5.1 Frequency weightings at 1 kHz**

Frequency Weighting	Anticipated Value ( dB )	Measured Value ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
A - weight	94.0	94.0	0.0	± 0.2
C - weight	94.0	94.0	0.0	± 0.2
Flat	94.0	94.0	0.0	± 0.2

**5.2 Time weighting at 1 kHz**

Frequency Weighting	Anticipated Value ( dB )	Measured Value ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
Fast	94.0	94.0	0.0	± 0.1
Slow	94.0	94.0	0.0	± 0.1
Leq	94.0	94.0	0.0	± 0.1

**6. Long - term stability**

Frequency Weighting	SLM Display at initial ( dB )	SLM Display at final ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
A - weight	94.0	94.1	0.1	± 0.3

Cert. No. : ACL25042  
Job No. : VC68AC0048  
Pages : 6 of 8

**7. Level linearity on the reference level range**

Anticipated Value ( dB )	Measured Value ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
137.0	137.0	0.0	± 1.1
136.0	136.0	0.0	± 1.1
135.0	135.0	0.0	± 1.1
134.0	134.0	0.0	± 1.1
133.0	133.0	0.0	± 1.1
132.0	132.0	0.0	± 1.1
131.0	131.0	0.0	± 1.1
129.0	129.0	0.0	± 1.1
124.0	124.0	0.0	± 1.1
119.0	119.0	0.0	± 1.1
114.0	114.0	0.0	± 1.1
109.0	109.0	0.0	± 1.1
104.0	104.0	0.0	± 1.1
99.0	99.0	0.0	± 1.1
94.0	94.0	0.0	± 1.1
89.0	89.0	0.0	± 1.1
84.0	84.0	0.0	± 1.1
79.0	79.0	0.0	± 1.1
74.0	74.0	0.0	± 1.1
69.0	69.0	0.0	± 1.1
64.0	64.0	0.0	± 1.1
59.0	59.0	0.0	± 1.1
54.0	54.0	0.0	± 1.1
49.0	49.0	0.0	± 1.1
44.0	44.0	0.0	± 1.1
39.0	39.0	0.0	± 1.1
34.0	34.0	0.0	± 1.1
30.0	30.0	0.0	± 1.1
29.0	29.0	0.0	± 1.1
28.0	28.0	0.0	± 1.1
27.0	27.1	0.1	± 1.1
26.0	26.0	0.0	± 1.1
25.0	25.0	0.0	± 1.1

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Cert. No. : ACL25042  
Job No. : VC68AC0048  
Pages : 7 of 8

## 8. Level linearity including the level range control

Range	Anticipated Value ( dB )	Measured Value ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
130	94.0	94.0	0.0	±1.1

Range	Anticipated Value ( dB )	Measured Value ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
130	29.0	29.0	0.0	±1.1

## 9. Tone burst response

Time Weighting	Tone burst duration, Tb ( ms )	Cycle	Anticipated Value ( dB )	Measured Value ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
Fast	0.25	1	108.0	107.9	-0.1	1.5 ; -5.0
	2	8	117.0	117.0	0.0	1.0 ; -2.5
	200	800	134.0	134.1	0.1	±1.0
Slow	2	8	108.0	108.0	0.0	1.5 ; -5.0
	200	800	127.6	127.6	0.0	±1.0
SEL	0.25	1	99.0	98.9	-0.1	1.5 ; -5.0
	2	8	108.0	108.0	0.0	1.0 ; -2.5
	200	800	128.0	128.1	0.1	±1.0

Cert. No. : ACL25042  
Job No. : VC68AC0048  
Pages : 8 of 8

## 10. Peak C sound level

Number of cycle in test signal	Anticipated Value ( dB )	Measured Value, L <sub>peak</sub> ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
Continuous	130.0	130.0	0.0	±3.0
One	133.4	133.4	0.0	±3.0

Number of cycle in test signal	Anticipated Value ( dB )	Measured Value ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
Continuous	133.0	133.0	0.0	±2.0
Positive half cycle	135.4	135.1	-0.3	±2.0
Negative half cycle	135.4	135.1	-0.3	±2.0

## 11. Overload indication

Measured value ( dB )		Deviated Value ( dB )	Acceptance Limits ( dB )
Positive one-half cycle	Negative one-half cycle		
89.5	89.6	0.1	±1.5

## 12. High level stability

Frequency Weighting	SLM Display at initial ( dB )	SLM Display at final ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
A - weight	137.0	137.0	0.0	±0.3

The reported uncertainty is based on a standard uncertainty multiplied by coverage factor  $k = 2$   
or any value following calculation, providing a level of confidence of approximately 95 %

End of Calibration Certificate

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**SOUND LEVEL METER**

**MODEL : NL-42A**

**SERIAL No. : 00322751**



Cert. No. : ACL25047  
Pages : 1 of 8

## Calibration Certificate

**Equipment :** SOUND LEVEL METER  
**Manufacturer :** RION  
**Model :** NL-42A / Microphone UC-52 / Preamplifier NH-24  
**Serial No.:** 00322751 / 196474 / 15483  
**ID No.:** -

**Condition As Found :** GOOD

**Customer :** EASTERN THAI CONSULTING 1992 CO., LTD.  
SAHA GROUP INDUSTRIAL PARK, 683 MOO 11,  
NONGKHAM, SIRACHA, CHONBURI 20230 THAILAND.

**Location :** -  
**Ambient Temperature :** ( 23.0  $\pm$  3 ) °C  
**Pressure :** ( 101.3  $\pm$  3 ) kPa  
**Relative Humidity :** ( 50.0  $\pm$  20 ) %

**Received Date :** 06 JANUARY 2025  
**Calibration Date :** 15 - 16 JANUARY 2025  
**Date of Issue :** 17 JANUARY 2025

**Calibrated by :** Nathakorn Pisutpaisan

**Approved by :**

  
( Thanakul Petchurai )

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Cert. No. : ACL25047  
Job No. : VC68AC0048  
Pages : 2 of 8

**Calibration Procedure :** CP-AC-01

### Calibration Method :

This equipment was calibrated by follow on IEC-61672-3 (2013) Standard for sound level meter (SLM).  
The SLM had tests to Acoustical and Electrical signal tests of frequency weighting with Anechoic chamber and Reference Standard Instruments.  
For tests results of each items were made by observation of each Instruments display and also with SLM's display.

### Condition of this result of calibration :

#### 1. Reference Standard Instruments :

<u>Instrument</u>	<u>Model</u>	<u>Serial No.</u>	<u>Cert. No.</u>	<u>Due Date</u>
Waveform Generator	33210A	MY48017076	EF-0009-24	05-FEB-25
Waveform Generator	33511B	MY52302742	EF-0007-24	05-FEB-25
Digital Multimeter	33461A	MY53220104	EEL.BP 21/0267	13-FEB-25
Digital Multimeter	33461A	MY53220076	EEL.BP 20/0267	15-FEB-25
Digital Multimeter	34461A	MY60024273	EEL.BP 22/0267	15-FEB-25
Programmable Attenuator	MAT-1070	62100114	EF-0008-24	05-FEB-25
Condenser Microphone	4180	2977900	AA-1001-24	12-FEB-25
Measuring Amplifier	NA-42KAI	34560495	AA-3001-24	05-FEB-25

2. This result of calibration was found accurate as shown on date and place of calibration for this calibrated item only.

3. This certificate is traceable to the international system of unit maintained at :

3.1 National Institute of Metrology (Thailand).

3.2 Thailand Institute of Scientific and Technological Research (TISTR).





Cert. No. : ACL25047  
Job No. : VC68AC0048  
Pages : 3 of 8

**Summary of Measurement Result :**

Parameter	Uncertainty (dB)	Maximum-permitted uncertainty of measurement (dB)
1. Absolute sensitivity	0.2	N/A
2. Self-generated noise	0.2	N/A
3. Acoustical signal tests of frequency weightings		
125 Hz	0.3	0.6
1000 Hz	0.3	0.6
8000 Hz	0.3	0.7
4. Electrical signal tests of frequency weightings		
For 10 Hz to 4 kHz	0.3	0.6
For > 4 kHz to 10 kHz	0.3	0.7
For > 10 kHz to 20 kHz	0.3	1.0
5. Frequency and time weightings at 1 kHz	0.2	0.2
6. Long - term stability	0.1	0.1
7. Level linearity on the reference level range	0.2	0.3
8. Level linearity including the level range control	0.2	0.3
9. Tone burst response	0.2	0.3
10. Peak C sound level	0.2	0.35
11. Overload indication	0.2	0.25
12. High level stability	0.1	0.1

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Cert. No. : ACL25047  
Job No. : VC68AC0048  
Page : 4 of 8

**Result of calibration :**

**1. Absolute sensitivity**

Reference Acoustic Signal ( dB )	Measured Value ( dB )	Deviation ( dB )	Acceptance Limit ( dB )
93.9 (93.94)	93.9	0.0	±0.3

**2. Self-generated noise**

**2.1 Normal test**

Measured Value ( dB )
14.2

**2.2 The microphone of the sound level meter was replaced by electrical signal input device.**

Frequency Weighting	Weighting ( dB )
A - weight	10.8
C - weight	16.7
Flat	22.5

**3. Acoustical signal tests of frequency weightings**

Meter free-field acoustic response at a level of 84 dB

Frequency ( Hz )	Deviation from various frequency weighting response curve (dB)			
	Flat	C-weight	A-weight	Acceptance Limits
125	0.3	0.3	0.3	± 1.5
1000	0.1	0.1	0.1	± 1.0
3000	0.5	0.5	0.5	±5.0

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Job No. : VC68AC0048  
Pages : 5 of 8

**4. Electrical signal tests of frequency weightings**

Weighting network response with relative to 1 kHz.

Frequency ( Hz )	Deviation from various frequency weighting response curve (dB)			
	Flat	C-weight	A-weight	Acceptance Limits
63	0.0	0.0	0.0	±2.0
125	0.0	0.0	0.0	±1.5
250	0.0	0.0	0.0	±1.5
500	0.0	0.0	0.0	±1.5
1000	0.0	0.0	0.0	±1.0
2000	0.0	0.0	0.0	±2.0
4000	0.0	0.0	0.0	±3.0
8000	0.0	0.1	0.1	±5.0

**5. Frequency and time weightings at 1 kHz****5.1 Frequency weightings at 1 kHz**

Frequency Weighting	Anticipated Value ( dB )	Measured Value ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
A - weight	94.0	94.0	0.0	± 0.2
C - weight	94.0	94.0	0.0	± 0.2
Flat	94.0	94.0	0.0	± 0.2

**5.2 Time weighting at 1 kHz**

Frequency Weighting	Anticipated Value ( dB )	Measured Value ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
Fast	94.0	94.0	0.0	± 0.1
Slow	94.0	94.0	0.0	± 0.1
Leq	94.0	94.0	0.0	± 0.1

**6. Long - term stability**

Frequency Weighting	SLM Display at initial ( dB )	SLM Display at final ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
A - weight	94.0	94.0	0.0	± 0.3

Cert. No. : ACL25047  
Job No. : VC68AC0048  
Pages : 6 of 8

**7. Level linearity on the reference level range**

Anticipated Value ( dB )	Measured Value ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
137.0	137.0	0.0	± 1.1
136.0	136.0	0.0	± 1.1
135.0	135.0	0.0	± 1.1
134.0	134.0	0.0	± 1.1
133.0	133.0	0.0	± 1.1
132.0	132.0	0.0	± 1.1
131.0	131.0	0.0	± 1.1
129.0	129.0	0.0	± 1.1
124.0	124.0	0.0	± 1.1
119.0	119.0	0.0	± 1.1
114.0	114.0	0.0	± 1.1
109.0	109.0	0.0	± 1.1
104.0	104.0	0.0	± 1.1
99.0	99.0	0.0	± 1.1
94.0	94.0	0.0	± 1.1
89.0	89.1	0.1	± 1.1
84.0	84.1	0.1	± 1.1
79.0	79.0	0.0	± 1.1
74.0	74.1	0.1	± 1.1
69.0	69.1	0.1	± 1.1
64.0	64.0	0.0	± 1.1
59.0	59.1	0.1	± 1.1
54.0	54.0	0.0	± 1.1
49.0	49.0	0.0	± 1.1
44.0	44.0	0.0	± 1.1
39.0	39.0	0.0	± 1.1
34.0	34.1	0.1	± 1.1
30.0	30.1	0.1	± 1.1
29.0	29.1	0.1	± 1.1
28.0	28.1	0.1	± 1.1
27.0	27.1	0.1	± 1.1
26.0	26.1	0.1	± 1.1
25.0	25.2	0.2	± 1.1

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**8. Level linearity including the level range control**

Range	Anticipated Value ( dB )	Measured Value ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
130	94.0	94.0	0.0	±1.1

Range	Anticipated Value ( dB )	Measured Value ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
130	29.0	29.0	0.0	±1.1

**9. Tone burst response**

Time Weighting	Tone burst duration, Tb ( ms )	Cycle	Anticipated Value ( dB )	Measured Value ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
Fast	0.25	1	108.0	107.9	-0.1	1.5 ; -5.0
	2	8	117.0	117.0	0.0	1.0 ; -2.5
	200	800	134.0	134.0	0.0	±1.0
Slow	2	8	108.0	108.0	0.0	1.5 ; -5.0
	200	800	127.6	127.6	0.0	±1.0
SEL	0.25	1	99.0	98.9	-0.1	1.5 ; -5.0
	2	8	108.0	108.0	0.0	1.0 ; -2.5
	200	800	128.0	128.0	0.0	±1.0

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**10. Peak C sound level**

Number of cycle in test signal	Anticipated Value ( dB )	Measured Value, L <sub>peak</sub> ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
Continuous	130.0	130.0	0.0	±3.0
One	133.4	133.3	-0.1	±3.0

Number of cycle in test signal	Anticipated Value ( dB )	Measured Value ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
Continuous	133.0	133.0	0.0	±2.0
Positive half cycle	135.4	135.2	-0.2	±2.0
Negative half cycle	135.4	135.2	-0.2	±2.0

**11. Overload indication**

Measured value ( dB )		Deviated Value ( dB )	Acceptance Limits ( dB )
Positive one-half cycle	Negative one-half cycle		
89.5	89.6	0.1	±1.5

**12. High level stability**

Frequency Weighting	SLM Display at initial ( dB )	SLM Display at final ( dB )	Deviated Value ( dB )	Acceptance Limits ( dB )
A - weight	137.0	137.0	0.0	±0.3

The reported uncertainty is based on a standard uncertainty multiplied by coverage factor  $k = 2$

or any value following calculation, providing a level of confidence of approximately 95 %

End of Calibration Certificate

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ภาคผนวก จ.

เอกสารชี้แจงเงื่อนไขของปฏิบัติการวิเคราะห์เอกสาร

ที่ อก ๐๓๒๐/๑๑๓๔๒



กรมโรงงานอุตสาหกรรม  
ถนนพระรามที่ ๖ แขวงทุ่งพญาไท  
เขตราชเทวี กรุงเทพฯ ๑๐๔๐๐

๒๗ กรกฎาคม ๒๕๖๖

เรื่อง ต่ออายุหนังสือรับขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน

เรียน กรรมการผู้จัดการ บริษัท อีสเทิร์น ไทย คอนซัลติ้ง ๑๙๙๒ จำกัด

อ้างถึง คำขอต่ออายุของห้องปฏิบัติการวิเคราะห์เอกชน ลงวันที่ ๗ มิถุนายน ๒๕๖๖

สิ่งที่ส่งมาด้วย เอกสารแนบท้ายหนังสือรับต่ออายุขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน

๑. รายชื่อผู้ควบคุมดูแลห้องปฏิบัติการวิเคราะห์ จำนวน ๔๐ ราย
๒. รายชื่อเจ้าหน้าที่ประจำห้องปฏิบัติการวิเคราะห์ จำนวน ๒๕ ราย
๓. ขอบข่ายสารมลพิษที่ได้รับขึ้นทะเบียนจากกรมโรงงานอุตสาหกรรม จำนวน ๒๙๒ รายการ  
จำนวน ๑๙ แผ่น

ตามหนังสือที่อ้างถึง บริษัท อีสเทิร์น ไทย คอนซัลติ้ง ๑๙๙๒ จำกัด ขอต่ออายุหนังสือรับขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน เลขทะเบียน ว-๐๐๓ สถานที่ตั้งเลขที่ ๖๘๓ หมู่ที่ ๑๑ ถนนสุขุมวิท ๘ ตำบลหนองขาม อำเภอสรีราชา จังหวัดชลบุรี ต่อกรมโรงงานอุตสาหกรรม นั้น

กรมโรงงานอุตสาหกรรมพิจารณาแล้ว ให้บริษัท อีสเทิร์น ไทย คอนซัลติ้ง ๑๙๙๒ จำกัด ต่ออายุหนังสือรับขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน โดยมีองค์ประกอบดังนี้

- ก. ผู้ควบคุมดูแลห้องปฏิบัติการวิเคราะห์ จำนวน ๔๐ ราย ตามสิ่งที่ส่งมาด้วย ๑
- ข. เจ้าหน้าที่ประจำห้องปฏิบัติการวิเคราะห์ จำนวน ๒๕ ราย ตามสิ่งที่ส่งมาด้วย ๒
- ค. ขอบข่ายสารมลพิษที่ได้รับขึ้นทะเบียนให้วิเคราะห์ในน้ำเสีย จำนวน ๔๗ รายการ  
อากาศเสีย (ปล่องระบาย) จำนวน ๒๑ รายการ น้ำใต้ดิน จำนวน ๑๑๑ รายการ สิ่งปฏิกูลหรือวัสดุที่ไม่ใช้แล้ว  
จำนวน ๑๘ รายการ และดิน จำนวน ๙๕ รายการ รวมทั้งสิ้นจำนวน ๒๙๒ รายการ ตามสิ่งที่ส่งมาด้วย ๓

หนังสือฉบับนี้จะหมดอายุในวันที่ ๕ กรกฎาคม ๒๕๖๙ หากประสงค์จะต่ออายุหนังสือรับขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน ให้ยื่นคำขอต่ออายุพร้อมเอกสารประกอบคำขอต่อกรมโรงงานอุตสาหกรรม ภายใน ๓๐ วัน ก่อนวันสิ้นอายุของหนังสือรับขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน ทั้งนี้ สามารถยื่นคำขอผ่านระบบอิเล็กทรอนิกส์ได้ที่หน้าเว็บไซต์กรมโรงงานอุตสาหกรรม

จึงเรียนมาเพื่อทราบ

ขอแสดงความนับถือ

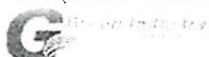
(นายทวี อำพาพันธ์)

ผู้อำนวยการศูนย์วิจัยและเตือนภัยมลพิษโรงงานภาคตะวันออก  
ปฏิบัติราชการแทนอธิบดีกรมโรงงานอุตสาหกรรม

ศูนย์วิจัยและเตือนภัยมลพิษโรงงานภาคตะวันออก

โทร. ๐ ๓๓๑๓ ๖๐๕๕ ต่อ ๕๐๐๑-๒

ไปรษณีย์อิเล็กทรอนิกส์ [eirw@diw.mail.go.th](mailto:eirw@diw.mail.go.th)



“อุตสาหกรรมก้าวไกล ประเทศไทยก้าวหน้า ร่วมกันพัฒนา อุตสาหกรรมสีเขียว”

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เอกสารแนบท้ายหนังสือรับต่ออายุขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน

บริษัท อีสเทิร์น ไทย คอนซัลตติ้ง ๑๙๙๒ จำกัด เลขทะเบียน ว-๐๐๓

ที่ อก ๐๓๒๐/๑๑๓๔๒

ลงวันที่ ๒๗ กรกฎาคม ๒๕๖๖

ก. ผู้ควบคุมดูแลห้องปฏิบัติการวิเคราะห์ จำนวน ๔๐ ราย

๑) นางสาวมาลีเกษ เลขะวัจกุล	ทะเบียนเลขที่	ว-๐๐๓-ค-๐๐๐๑
๒) นายวัฒนา โคตรหล้า	ทะเบียนเลขที่	ว-๐๐๓-ค-๐๐๐๒
๓) นางวรรณเพ็ญ เหลาจินดาวัฒน์	ทะเบียนเลขที่	ว-๐๐๓-ค-๐๐๐๓
๔) นายกะวีร์ สุธาทรัพย์	ทะเบียนเลขที่	ว-๐๐๓-ค-๐๐๐๔
๕) นางสาวนันท์ณภัส แปะขุนทด	ทะเบียนเลขที่	ว-๐๐๓-ค-๐๐๐๕
๖) นางสาวพรนภา หลงคำหงษ์	ทะเบียนเลขที่	ว-๐๐๓-ค-๐๐๐๖
๗) นางสาวอภิตี ขึ้นอารมย์	ทะเบียนเลขที่	ว-๐๐๓-ค-๐๐๐๗
๘) นางสาวอัจฉรี จิตตะยโสธร	ทะเบียนเลขที่	ว-๐๐๓-ค-๐๐๐๘
๙) นางสาวจิรพร ปานคง	ทะเบียนเลขที่	ว-๐๐๓-ค-๐๐๐๙
๑๐) นายสุทธา สองธนี	ทะเบียนเลขที่	ว-๐๐๓-ค-๐๐๑๐
๑๑) นางสาวนันประภา อูยสูงเนิน	ทะเบียนเลขที่	ว-๐๐๓-ค-๐๐๑๑
๑๒) นายธงไชย บุญศักดิ์	ทะเบียนเลขที่	ว-๐๐๓-ค-๐๐๑๒
๑๓) นางสาวธนาพร กลิ่นโสภณ	ทะเบียนเลขที่	ว-๐๐๓-ค-๐๐๑๓
๑๔) นายธีระพงษ์ นวลอินทร์	ทะเบียนเลขที่	ว-๐๐๓-ค-๐๐๑๔
๑๕) นางสาวแพรว พลแสน	ทะเบียนเลขที่	ว-๐๐๓-ค-๐๐๑๕
๑๖) นายทรงพล ผิวอ้วน	ทะเบียนเลขที่	ว-๐๐๓-ค-๐๐๑๖
๑๗) นายภาคภูมิ บัวสวัสดิ์	ทะเบียนเลขที่	ว-๐๐๓-ค-๐๐๑๗
๑๘) นางสาวจันทน์ สายพันธ์	ทะเบียนเลขที่	ว-๐๐๓-ค-๐๐๑๘
๑๙) นายภาณุพงศ์ บำรุงรส	ทะเบียนเลขที่	ว-๐๐๓-ค-๐๐๑๙
๒๐) นางสาวปภาณิน จันตะสอน	ทะเบียนเลขที่	ว-๐๐๓-ค-๐๐๒๐
๒๑) นายวรกร ไวทยะเสวี	ทะเบียนเลขที่	ว-๐๐๓-ค-๐๐๒๑
๒๒) นางสาววรรณภา ไชยศิริ	ทะเบียนเลขที่	ว-๐๐๓-ค-๐๐๒๒
๒๓) นางสาวพรพิมล ภูมิคอนสาร	ทะเบียนเลขที่	ว-๐๐๓-ค-๐๐๒๓
๒๔) นางสาวธมลวรรณ ผลอ้อ	ทะเบียนเลขที่	ว-๐๐๓-ค-๐๐๒๔
๒๕) นางสาวบุญเรือง บุญถม	ทะเบียนเลขที่	ว-๐๐๓-ค-๐๐๒๕
๒๖) นางสาวกสณันท์ ป้อมน้อย	ทะเบียนเลขที่	ว-๐๐๓-ค-๐๐๒๖
๒๗) นายชานูวัฒน์ โชติวงค์	ทะเบียนเลขที่	ว-๐๐๓-ค-๐๐๒๗
๒๘) นางสาวพจนีย์ งามวิสัย	ทะเบียนเลขที่	ว-๐๐๓-ค-๐๐๒๘
๒๙) นายวิญญ์วัล สิงห์โต	ทะเบียนเลขที่	ว-๐๐๓-ค-๐๐๒๙
๓๐) นางสาวนุกูล อารศรี	ทะเบียนเลขที่	ว-๐๐๓-ค-๐๐๓๐
๓๑) นายศุภฤกษ์ พาดกลาง	ทะเบียนเลขที่	ว-๐๐๓-ค-๐๐๓๑
๓๒) นายณิชาพล ทองหล่อ	ทะเบียนเลขที่	ว-๐๐๓-ค-๐๐๓๒
๓๓) นายธรรมรัตน์ โพธิ์ตันคำ	ทะเบียนเลขที่	ว-๐๐๓-ค-๐๐๓๓
๓๔) นายโอชา ขวัญศิริมงคล	ทะเบียนเลขที่	ว-๐๐๓-ค-๐๐๓๔
๓๕) นายเมธี สุขประเสริฐ	ทะเบียนเลขที่	ว-๐๐๓-ค-๐๐๓๕

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๓๖) นางสาวพรพินันท์...

๓๖) นางสาวพรพินันท์ วิริยกุลกุล	ทะเบียนเลขที่	ว-๐๐๓-ค-๐๐๓๖
๓๗) นางสาวอาภาภรณ์ เสริมสนธิ	ทะเบียนเลขที่	ว-๐๐๓-ค-๐๐๓๗
๓๘) นางสาวนภัทร์ธมณต์ ประดิษฐ์นุช	ทะเบียนเลขที่	ว-๐๐๓-ค-๐๐๓๘
๓๙) นางสาวสุนิษา เอ็งเส้ง	ทะเบียนเลขที่	ว-๐๐๓-ค-๐๐๓๙
๔๐) นางสาวระพิน อ้นชั้น	ทะเบียนเลขที่	ว-๐๐๓-ค-๐๐๔๐

ข. เจ้าหน้าที่ประจำห้องปฏิบัติการวิเคราะห์ จำนวน ๒๕ ราย

๑) นางสาวดวงกมล เนื้อทอง	ทะเบียนเลขที่	ว-๐๐๓-จ-๐๐๐๑
๒) นางสาววัชรภรณ์ อินทสุข	ทะเบียนเลขที่	ว-๐๐๓-จ-๐๐๐๒
๓) นางสาวกัญจน์ถวิกา จันทร์ชอดแก้ว	ทะเบียนเลขที่	ว-๐๐๓-จ-๐๐๐๓
๔) นางสาวฉัตรสุดา มงคลโกชนัน	ทะเบียนเลขที่	ว-๐๐๓-จ-๐๐๐๔
๕) นางสาวณัฐวดี อำมาตย์ทัศน์	ทะเบียนเลขที่	ว-๐๐๓-จ-๐๐๐๕
๖) นางสาวนิอรอุมา ปาระ	ทะเบียนเลขที่	ว-๐๐๓-จ-๐๐๐๖
๗) นางสาวธัญลักษณ์ ชันโต	ทะเบียนเลขที่	ว-๐๐๓-จ-๐๐๐๗
๘) นางสาวสุทธิดา สร้างแก้ว	ทะเบียนเลขที่	ว-๐๐๓-จ-๐๐๐๘
๙) นายอุดมทรัพย์ เจนจบจริง	ทะเบียนเลขที่	ว-๐๐๓-จ-๐๐๐๙
๑๐) นายณราธิป สงวนศิลป์	ทะเบียนเลขที่	ว-๐๐๓-จ-๐๐๑๐
๑๑) นายวีระชัย พอใจ	ทะเบียนเลขที่	ว-๐๐๓-จ-๐๐๑๑
๑๒) นายอัญชลี ทะพงษ์	ทะเบียนเลขที่	ว-๐๐๓-จ-๐๐๑๒
๑๓) นางสาวสุมลิตรา มีแก่น	ทะเบียนเลขที่	ว-๐๐๓-จ-๐๐๑๓
๑๔) นางสาวสวรรณยา เพชรประไพ	ทะเบียนเลขที่	ว-๐๐๓-จ-๐๐๑๔
๑๕) นางสาวจุฑามาศ เจริญพรหม	ทะเบียนเลขที่	ว-๐๐๓-จ-๐๐๑๕
๑๖) นางสาวนิภาพร คำขมภู	ทะเบียนเลขที่	ว-๐๐๓-จ-๐๐๑๖
๑๗) นางสาวอรชา พันธุ์เมือง	ทะเบียนเลขที่	ว-๐๐๓-จ-๐๐๑๗
๑๘) นายกิตติ ไพโรจน์	ทะเบียนเลขที่	ว-๐๐๓-จ-๐๐๑๘
๑๙) นายชาญณรงค์ ตั้งธรรมรักษ์	ทะเบียนเลขที่	ว-๐๐๓-จ-๐๐๑๙
๒๐) นางสาวปวีรศา เอสันเทียะ	ทะเบียนเลขที่	ว-๐๐๓-จ-๐๐๒๐
๒๑) นางสาวจุฑาทิพย์ กิจดี	ทะเบียนเลขที่	ว-๐๐๓-จ-๐๐๒๑
๒๒) นางสาวสุภาวดี ศรีละออง	ทะเบียนเลขที่	ว-๐๐๓-จ-๐๐๒๒
๒๓) นางสาวณัฐชยา บรรพบุตร	ทะเบียนเลขที่	ว-๐๐๓-จ-๐๐๒๓
๒๔) นางสาวณัฐนิช นนตานอก	ทะเบียนเลขที่	ว-๐๐๓-จ-๐๐๒๔
๒๕) นางสาวดวงสุดา แสนวันดี	ทะเบียนเลขที่	ว-๐๐๓-จ-๐๐๒๕

COPY

เอกสารแนบท้ายหนังสือรับต่ออายุขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน

บริษัท อีสเทิร์น ไทย คอนซัลติ้ง ๑๙๙๒ จำกัด เลขทะเบียน ว-๐๐๓

ที่ อก ๐๓๒๐/๑๑๓๔๒

ลงวันที่ ๒๗ กรกฎาคม ๒๕๖๖

ขอขยายสารมลพิษที่ได้รับขึ้นทะเบียนจากกรมโรงงานอุตสาหกรรม จำนวน ๒๙๒ รายการ

น้ำเสีย จำนวน 47 รายการ

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
1	Aldrin	1) Liquid-Liquid Extraction, Gas Chromatographic Method <sup>[4]</sup> 2) Liquid-Liquid Extraction, Gas Chromatographic / Mass Spectrometric Method <sup>[4]</sup>
2	Arsenic	1) Continuous Hydride Generation/Atomic Absorption Spectrometric Method <sup>[4]</sup> 2) Digestion, Inductively Coupled Plasma Method <sup>[4]</sup>
3	Barium	Digestion, Inductively Coupled Plasma Method <sup>[4]</sup>
4	$\alpha$ -BHC	1) Liquid-Liquid Extraction, Gas Chromatographic Method <sup>[4]</sup> 2) Liquid-Liquid Extraction, Gas Chromatographic / Mass Spectrometric Method <sup>[4]</sup>
5	$\beta$ -BHC	1) Liquid-Liquid Extraction, Gas Chromatographic Method <sup>[4]</sup> 2) Liquid-Liquid Extraction, Gas Chromatographic / Mass Spectrometric Method <sup>[4]</sup>
6	$\delta$ -BHC	1) Liquid-Liquid Extraction, Gas Chromatographic Method <sup>[4]</sup> 2) Liquid-Liquid Extraction, Gas Chromatographic / Mass Spectrometric Method <sup>[4]</sup>
7	$\gamma$ -BHC	1) Liquid-Liquid Extraction, Gas Chromatographic Method <sup>[4]</sup> 2) Liquid-Liquid Extraction, Gas Chromatographic / Mass Spectrometric Method <sup>[4]</sup>
8	Biochemical Oxygen Demand	1) 5-Day BOD Test, Membrane Electrode Method <sup>[4]</sup> 2) 5-Day BOD Test, Azide Modification Method <sup>[4]</sup>
9	Cadmium	Digestion, Inductively Coupled Plasma Method <sup>[4]</sup>
10	Chemical Oxygen Demand	Closed Reflux, Titrimetric Method <sup>[4]</sup>
11	cis-Chlordane	1) Liquid-Liquid Extraction, Gas Chromatographic Method <sup>[4]</sup> 2) Liquid-Liquid Extraction, Gas Chromatographic / Mass Spectrometric Method <sup>[4]</sup>
12	trans-Chlordane	1) Liquid-Liquid Extraction, Gas Chromatographic Method <sup>[4]</sup> 2) Liquid-Liquid Extraction, Gas Chromatographic / Mass Spectrometric Method <sup>[4]</sup>
13	Chromium	1) Digestion, Direct Air-Acetylene Flame Method <sup>[4]</sup> 2) Digestion, Inductively Coupled Plasma Method <sup>[4]</sup>

COPY

14 Color...

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
14	Color	ADMI Weighted-Ordinate Spectrophotometric Method <sup>[4]</sup>
15	Copper	1) Digestion, Direct Air-Acetylene Flame Method <sup>[4]</sup> 2) Digestion, Inductively Coupled Plasma Method <sup>[4]</sup>
16	Cyanide	Distillation, Colorimetric Method <sup>[4]</sup>
17	4,4'-DDD	1) Liquid-Liquid Extraction, Gas Chromatographic Method <sup>[4]</sup> 2) Liquid-Liquid Extraction, Gas Chromatographic / Mass Spectrometric Method <sup>[4]</sup>
18	4,4'-DDE	1) Liquid-Liquid Extraction, Gas Chromatographic Method <sup>[4]</sup> 2) Liquid-Liquid Extraction, Gas Chromatographic / Mass Spectrometric Method <sup>[4]</sup>
19	DDT	Liquid-Liquid Extraction, Gas Chromatographic / Mass Spectrometric Method <sup>[4]</sup>
20	Dieldrin	1) Liquid-Liquid Extraction, Gas Chromatographic Method <sup>[4]</sup> 2) Liquid-Liquid Extraction, Gas Chromatographic / Mass Spectrometric Method <sup>[4]</sup>
21	Endosulfan I	1) Liquid-Liquid Extraction, Gas Chromatographic Method <sup>[4]</sup> 2) Liquid-Liquid Extraction, Gas Chromatographic / Mass Spectrometric Method <sup>[4]</sup>
22	Endosulfan II	1) Liquid-Liquid Extraction, Gas Chromatographic Method <sup>[4]</sup> 2) Liquid-Liquid Extraction, Gas Chromatographic / Mass Spectrometric Method <sup>[4]</sup>
23	Endosulfan sulfate	1) Liquid-Liquid Extraction, Gas Chromatographic Method <sup>[4]</sup> 2) Liquid-Liquid Extraction, Gas Chromatographic / Mass Spectrometric Method <sup>[4]</sup>
24	Endrin	Liquid-Liquid Extraction, Gas Chromatographic / Mass Spectrometric Method <sup>[4]</sup>
25	Endrin aldehyde	1) Liquid-Liquid Extraction, Gas Chromatographic Method <sup>[4]</sup> 2) Liquid-Liquid Extraction, Gas Chromatographic / Mass Spectrometric Method <sup>[4]</sup>
26	Endrin ketone	1) Liquid-Liquid Extraction, Gas Chromatographic Method <sup>[4]</sup> 2) Liquid-Liquid Extraction, Gas Chromatographic / Mass Spectrometric Method <sup>[4]</sup>
27	Formaldehyde	Distillation, Colorimetric Method <sup>[3]</sup>
28	Free Chlorine	1) Iodometric Method <sup>[4]</sup> 2) Colorimetric Method <sup>[4]</sup>

**COPY**

29 Heptachlor...

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
29	Heptachlor	1) Liquid-Liquid Extraction, Gas Chromatographic Method <sup>[4]</sup> 2) Liquid-Liquid Extraction, Gas Chromatographic / Mass Spectrometric Method <sup>[4]</sup>
30	Heptachlor Epoxide	1) Liquid-Liquid Extraction, Gas Chromatographic Method <sup>[4]</sup> 2) Liquid-Liquid Extraction, Gas Chromatographic / Mass Spectrometric Method <sup>[4]</sup>
31	Hexavalent Chromium	Filtration, Colorimetric Method <sup>[4]</sup>
32	Lead	1) Digestion, Direct Air-Acetylene Flame Method <sup>[4]</sup> 2) Digestion, Inductively Coupled Plasma Method <sup>[4]</sup>
33	Manganese	Digestion, Inductively Coupled Plasma Method <sup>[4]</sup>
34	Mercury	Digestion, Cold-Vapor Atomic Absorption Spectrometric Method <sup>[4]</sup>
35	Methoxychlor	Liquid-Liquid Extraction, Gas Chromatographic / Mass Spectrometric Method <sup>[4]</sup>
36	Nickel	1) Digestion, Direct Air-Acetylene Flame Method <sup>[4]</sup> 2) Digestion, Inductively Coupled Plasma Method <sup>[4]</sup>
37	Oil and Grease	Liquid-Liquid, Partition-Gravimetric Method <sup>[4]</sup>
38	pH	Electrometric Method <sup>[4]</sup>
39	Phenols	Distillation, Direct Photometric Method <sup>[4]</sup>
40	Selenium	Digestion, Hydride Generation/Atomic Absorption Spectrometric Method <sup>[4]</sup>
41	Sulfide	ZnS Precipitation, Iodometric Method <sup>[4]</sup>
42	Temperature	Field Method <sup>[4]</sup>
43	Trivalent Chromium	1) Digestion, Direct Air-Acetylene Flame Method; Filtration, Colorimetric Method; Calculation <sup>[4]</sup> 2) Digestion, Inductively Coupled Plasma Method; Colorimetric Method; Calculation <sup>[4]</sup>
44	Total Dissolved Solids	Dried at 180 °C <sup>[4]</sup>
45	Total Kjeldahl Nitrogen	Macro Kjeldahl Method <sup>[4]</sup>
46	Total Suspended Solids	Dried at 103-105 °C <sup>[4]</sup>
47	Zinc	Digestion, Inductively Coupled Plasma Method <sup>[4]</sup>

COPY

อากาศเสีย...



อากาศเสีย (ปล่องระบาย) จำนวน 21 รายการ

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
1	Antimony	Isokinetic Sampling, Digestion, Inductively Coupled Plasma Method <sup>[5]</sup>
2	Arsenic	Isokinetic Sampling, Digestion, Inductively Coupled Plasma Method <sup>[5]</sup>
3	Cadmium	Isokinetic Sampling, Digestion, Inductively Coupled Plasma Method <sup>[5]</sup>
4	Carbon Monoxide	1) Bag, Non-Dispersive Infrared Method <sup>[5]</sup> 2) Instrumental Analyzer Method <sup>[5]</sup>
5	Chromium	Isokinetic Sampling, Digestion, Inductively Coupled Plasma Method <sup>[5]</sup>
6	Cobalt	Isokinetic Sampling, Digestion, Inductively Coupled Plasma Method <sup>[5]</sup>
7	Copper	Isokinetic Sampling, Digestion, Inductively Coupled Plasma Method <sup>[5]</sup>
8	Hydrogen Sulfide	Absorption Sampling, Iodometric Method <sup>[5]</sup>
9	Lead	Isokinetic Sampling, Digestion, Inductively Coupled Plasma Method <sup>[5]</sup>
10	Manganese	Isokinetic Sampling, Digestion, Inductively Coupled Plasma Method <sup>[5]</sup>
11	Mercury	Isokinetic Sampling, Digestion, Cold-Vapor Atomic Absorption Spectrometric Method <sup>[5]</sup>
12	Nickel	Isokinetic Sampling, Digestion, Inductively Coupled Plasma Method <sup>[5]</sup>
13	Opacity	Ringelmann's Method <sup>[1,5]</sup>
14	Oxides of Nitrogen	1) Absorption Sampling, Phenoldisulfonic Acid Method <sup>[8]</sup> 2) Instrumental Analyzer Method <sup>[7]</sup>
15	Selenium	Isokinetic Sampling, Digestion, Inductively Coupled Plasma Method <sup>[5]</sup>
16	Sulfur Dioxide	1) Absorption Sampling, Barium-Thorin Titrimetric Method <sup>[5]</sup> 2) Instrumental Analyzer Method <sup>[5]</sup>
17	Sulfuric Acid	Isokinetic Sampling, Barium-Thorin Titrimetric Method <sup>[6]</sup>
18	Tin	Isokinetic Sampling, Digestion, Inductively Coupled Plasma Method <sup>[5]</sup>

COPY

19 Total Suspended Particulate...

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
19	Total Suspended Particulate	Isokinetic Sampling, Gravimetric Method <sup>[6]</sup>
20	Vanadium	Isokinetic Sampling, Digestion, Inductively Coupled Plasma Method <sup>[5]</sup>
21	Xylene	Adsorption Sampling, Gas Chromatographic Method <sup>[6]</sup>

น้ำใต้ดิน จำนวน 111 รายการ

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
1	Acenaphthene	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
2	Acetone	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
3	Aldrin	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
4	Anthracene	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
5	Antimony	Digestion, Inductively Coupled Plasma Method <sup>[4]</sup>
6	Arsenic	1) Continuous Hydride Generation/Atomic Absorption Spectrometric Method <sup>[4]</sup> 2) Digestion, Inductively Coupled Plasma Method <sup>[4]</sup>
7	Barium	Digestion, Inductively Coupled Plasma Method <sup>[4]</sup>
8	Benz(a)anthracene	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
9	Benzene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
10	Benzo(b)fluoranthene	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
11	Benzo(k)fluoranthene	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
12	Benzo(a)pyrene	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
13	Benzo[g,h,i]perylene	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
14	Beryllium	Digestion, Inductively Coupled Plasma Method <sup>[4]</sup>

**COPY**

15 Bis(2-chloroethyl)ether...

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
15	Bis(2-chloroethyl)ether	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
16	Bis(2-ethylhexyl)phthalate	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
17	Bromodichloromethane	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
18	Bromoform	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
19	Butanol	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
20	Butyl benzyl phthalate	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
21	Cadmium	Digestion, Inductively Coupled Plasma Method <sup>[4]</sup>
22	Carbazole	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
23	Carbon disulfide	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
24	Carbon tetrachloride	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
25	Chlordane	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
26	p-Chloroaniline	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
27	Chlorobenzene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
28	Chlorodibromomethane	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
29	Chloroform	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
30	2-Chlorophenol	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
31	Chromium	1) Digestion, Direct Air-Acetylene Flame Method <sup>[4]</sup> 2) Digestion, Inductively Coupled Plasma Method <sup>[4]</sup>
32	Chromium (III)	1) Digestion, Direct Air-Acetylene Flame Method; Filtration, Colorimetric Method; Calculation <sup>[4]</sup> 2) Digestion, Inductively Coupled Plasma Method; Filtration, Colorimetric Method; Calculation <sup>[4]</sup>

**COPY**

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
33	Chromium (VI)	Filtration, Colorimetric Method <sup>[4]</sup>
34	Chrysene	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
35	Cyanide	Distillation, Colorimetric Method <sup>[4]</sup>
36	DDD	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
37	DDE	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
38	DDT	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
39	Dibenz(a,h)anthracene	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
40	Di-n-butyl phthalate	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
41	1,2-Dichlorobenzene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
42	1,3-Dichlorobenzene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
43	1,4-Dichlorobenzene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
44	1,1-Dichloroethane	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
45	1,2-Dichloroethane	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
46	1,1-Dichloroethylene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
47	cis-1,2-Dichloroethylene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
48	trans-1,2-Dichloroethylene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
49	2,4-Dichlorophenol	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
50	1,2-Dichloropropane	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
51	1,3-Dichloropropane	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>



**COPY**

52 Dieldrin...

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
52	Dieldrin	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
53	Diethyl phthalate	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
54	2,4-Dimethylphenol	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
55	2,4-Dinitrotoluene	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
56	2,6-Dinitrotoluene	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
57	Di-n-octyl phthalate	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
58	Endosulfan	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
59	Endrin	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
60	Ethylbenzene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
61	Fluoranthene	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
62	Fluorene	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
63	Heptachlor	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
64	Heptachlor epoxide	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
65	Hexachlorobenzene	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
66	Hexachloro-1,3-butadiene	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
67	n-Hexane	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
68	$\alpha$ -HCH	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
69	$\beta$ -HCH	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>

COPY

70  $\gamma$ -HCH...



ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
70	$\gamma$ -HCH	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
71	Hexachlorocyclopentadiene	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
72	Hexachloroethane	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
73	Indeno(1,2,3-cd)pyrene	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
74	Isophorone	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
75	Lead	1) Digestion, Direct Air-Acetylene Flame Method <sup>[4]</sup> 2) Digestion, Inductively Coupled Plasma Method <sup>[4]</sup>
76	Manganese	Digestion, Inductively Coupled Plasma Method <sup>[4]</sup>
77	Mercury	Digestion, Cold-Vapor Atomic Absorption Spectrometric Method <sup>[4]</sup>
78	Methoxychlor	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
79	Methylene chloride	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
80	2-Methylphenol	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
81	2-Methylnaphthalene	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
82	Methyl tert-butyl ether	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
83	Naphthalene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
84	Nickel	Digestion, Inductively Coupled Plasma Method <sup>[4]</sup>
85	Nitrobenzene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
86	N-Nitrosodi-n-propylamine	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
87	pH	Electrometric Method <sup>[4]</sup>
88	Phenanthrene	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>

COPY

89 Phenol...

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
89	Phenol	1) Distillation, Direct Photometric Method <sup>[4]</sup> 2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
90	Pyrene	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
91	Selenium	Digestion, Hydride Generation/Atomic Absorption Spectrometric Method <sup>[4]</sup>
92	Silver	Digestion, Inductively Coupled Plasma Method <sup>[4]</sup>
93	Styrene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
94	1,1,2,2-Tetrachloroethane	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
95	Trichloroethylene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
96	1,2,4-Trichlorobenzene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
97	1,1,1-Trichloroethane	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
98	1,1,2-Trichloroethane	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
99	Tetrachloroethylene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
100	Toluene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
101	2,4,5-Trichlorophenol	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
102	2,4,6-Trichlorophenol	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
103	1,3,5-Trimethylbenzene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
104	Vanadium	Digestion, Inductively Coupled Plasma Method <sup>[4]</sup>
105	Vinyl acetate	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
106	Vinyl chloride	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>

**COPY**

107 m-Xylene...

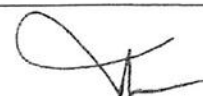
ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
107	m-Xylene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
108	o-Xylene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
109	p-Xylene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
110	Xylene (Total)	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
111	Zinc	Digestion, Inductively Coupled Plasma Method <sup>[4]</sup>

**สิ่งปฏิกูลหรือวัสดุที่ไม่ใช้แล้ว จำนวน 18 รายการ**

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
1	Antimony	Digestion, Inductively Coupled Plasma Method <sup>[9,10]</sup>
2	Arsenic	1) Waste Extraction, Digestion, Inductively Coupled Plasma Method <sup>[2,9,10]</sup>
3	Barium	2) Digestion, Inductively Coupled Plasma Method <sup>[9,10]</sup>
4	Beryllium	1) Waste Extraction, Digestion, Inductively Coupled Plasma Method <sup>[2,9,10]</sup>
5	Cadmium	2) Digestion, Inductively Coupled Plasma Method <sup>[9,10]</sup>
6	Chromium	1) Waste Extraction, Digestion, Inductively Coupled Plasma Method <sup>[2,9,10]</sup>
7	Chromium (VI)	2) Digestion, Inductively Coupled Plasma Method <sup>[9,10]</sup>
8	Cobalt	1) Waste Extraction, Digestion, Colorimetric Method <sup>[2,13]</sup>
9	Copper	2) Alkaline Digestion, Colorimetric Method <sup>[9,13]</sup>
		1) Waste Extraction, Digestion, Inductively Coupled Plasma Method <sup>[2,9,10]</sup>
		2) Digestion, Inductively Coupled Plasma Method <sup>[9,10]</sup>

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ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
10	Lead	1) Waste Extraction, Digestion, Inductively Coupled Plasma Method <sup>[2,9,10]</sup> 2) Digestion, Inductively Coupled Plasma Method <sup>[9,10]</sup>
11	Mercury	1) Waste Extraction, Digestion, Cold Vapor Atomic Absorption Spectrometric Method <sup>[2,11]</sup> 2) Digestion, Cold vapor Atomic Absorption Spectrometric Method <sup>[9,11]</sup>
12	Nickel	1) Waste Extraction, Digestion, Inductively Coupled Plasma Method <sup>[2,9,10]</sup> 2) Digestion, Inductively Coupled Plasma Method <sup>[9,10]</sup>
13	Molybdenum	1) Waste Extraction, Digestion, Inductively Coupled Plasma Method <sup>[2,9,10]</sup> 2) Digestion, Inductively Coupled Plasma Method <sup>[9,10]</sup>
14	Selenium	1) Waste Extraction, Digestion, Inductively Coupled Plasma Method <sup>[2,9,10]</sup> 2) Digestion, Inductively Coupled Plasma Method <sup>[9,10]</sup>
15	Silver	1) Waste Extraction, Digestion, Inductively Coupled Plasma Method <sup>[2,9,10]</sup> 2) Digestion, Inductively Coupled Plasma Method <sup>[9,10]</sup>
16	Thallium	1) Waste Extraction, Digestion, Inductively Coupled Plasma Method <sup>[2,9,10]</sup> 2) Digestion, Inductively Coupled Plasma Method <sup>[9,10]</sup>
17	Vanadium	1) Waste Extraction, Digestion, Inductively Coupled Plasma Method <sup>[2,9,10]</sup> 2) Digestion, Inductively Coupled Plasma Method <sup>[9,10]</sup>
18	Zinc	1) Waste Extraction, Digestion, Inductively Coupled Plasma Method <sup>[2,9,10]</sup> 2) Digestion, Inductively Coupled Plasma Method <sup>[9,10]</sup>



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ดิน...

ดิน จำนวน 95 รายการ

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
1	Acenaphthene	Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[15,17]</sup>
2	Acetone	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[14,16]</sup>
3	Anthracene	Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[15,17]</sup>
4	Antimony	Digestion, Inductively Coupled Plasma Method <sup>[9,10]</sup>
5	Arsenic	Digestion, Inductively Coupled Plasma Method <sup>[9,10]</sup>
6	Barium	Digestion, Inductively Coupled Plasma Method <sup>[9,10]</sup>
7	Benz(a)anthracene	Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[15,17]</sup>
8	Benzene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[14,16]</sup>
9	Benzo(b)fluoranthene	Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[15,17]</sup>
10	Benzo(k)fluoranthene	Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[15,17]</sup>
11	Benzo(a)pyrene	Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[15,17]</sup>
12	Benzo[g,h,i]perylene	Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[15,17]</sup>
13	Beryllium	Digestion, Inductively Coupled Plasma Method <sup>[9,10]</sup>
14	Bis(2-chloroethyl)ether	Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[15,17]</sup>
15	Bis(2-ethylhexyl)phthalate	Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[15,17]</sup>
16	Bromodichloromethane	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[14,16]</sup>
17	Bromoform	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[14,16]</sup>
18	Butanol	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[14,16]</sup>

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19 Butyl benzyl phthalate...



ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
19	Butyl benzyl phthalate	Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[15,17]</sup>
20	Cadmium	Digestion, Inductively Coupled Plasma Method <sup>[9,10]</sup>
21	Carbazole	Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[15,17]</sup>
22	Carbon disulfide	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[14,16]</sup>
23	Carbon tetrachloride	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[14,16]</sup>
24	p-Chloroaniline	Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[15,17]</sup>
25	Chlorobenzene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[14,16]</sup>
26	Chlorodibromomethane	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[14,16]</sup>
27	Chloroform	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[14,16]</sup>
28	2-Chlorophenol	Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[15,17]</sup>
29	Chromium	Digestion, Inductively Coupled Plasma Method <sup>[9,10]</sup>
30	Chromium (III)	Digestion, Inductively Coupled Plasma Method; Filtration, Colorimetric Method; Calculation <sup>[9,10]</sup>
31	Chromium (VI)	Alkaline Digestion, Colorimetric Method <sup>[12,13]</sup>
32	Chrysene	Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[15,17]</sup>
33	Dibenz(a,h)anthracene	Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[15,17]</sup>
34	Di-n-butyl phthalate	Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[15,17]</sup>
35	1,2-Dichlorobenzene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[14,16]</sup>
36	1,3-Dichlorobenzene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[14,16]</sup>
37	1,4-Dichlorobenzene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[14,16]</sup>

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38 1,1-Dichloroethane...

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
38	1,1-Dichloroethane	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[14,16]</sup>
39	1,2-Dichloroethane	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[14,16]</sup>
40	1,1-Dichloroethylene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[14,16]</sup>
41	cis-1,2-Dichloroethylene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[14,16]</sup>
42	trans-1,2-Dichloroethylene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[14,16]</sup>
43	2,4-Dichlorophenol	Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[15,17]</sup>
44	1,2-Dichloropropane	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[14,16]</sup>
45	1,3-Dichloropropane	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[14,16]</sup>
46	Diethyl phthalate	Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[15,17]</sup>
47	2,4-Dimethylphenol	Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[15,17]</sup>
48	2,4-Dinitrotoluene	Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[15,17]</sup>
49	2,6-Dinitrotoluene	Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[15,17]</sup>
50	Di-n-octyl phthalate	Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[15,17]</sup>
51	Ethylbenzene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[14,16]</sup>
52	Fluoranthene	Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[15,17]</sup>
53	Fluorene	Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[15,17]</sup>
54	Hexachlorobenzene	Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[15,17]</sup>
55	Hexachloro-1,3-butadiene	Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[15,17]</sup>

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ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
56	n-Hexane	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[14,16]</sup>
57	Hexachlorocyclopentadiene	Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[15,17]</sup>
58	Hexachloroethane	Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[15,17]</sup>
59	Indeno(1,2,3-cd)pyrene	Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[15,17]</sup>
60	Isophorone	Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[15,17]</sup>
61	Lead	Digestion, Inductively Coupled Plasma Method <sup>[9,10]</sup>
62	Manganese	Digestion, Inductively Coupled Plasma Method <sup>[9,10]</sup>
63	Mercury	Digestion, Cold-Vapor Atomic Absorption Spectrometric Method <sup>[9,11]</sup>
64	Methylene chloride	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[14,16]</sup>
65	2-Methylphenol	Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[15,17]</sup>
66	2-Methylnaphthalene	Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[15,17]</sup>
67	Methyl tert-butyl ether	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[14,16]</sup>
68	Naphthalene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[14,16]</sup>
69	Nickel	Digestion, Inductively Coupled Plasma Method <sup>[9,10]</sup>
70	Nitrobenzene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[14,16]</sup>
71	N-Nitrosodi-n-propylamine	Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[15,17]</sup>
72	Phenanthrene	Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[15,17]</sup>
73	Phenol	Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[15,17]</sup>
74	Pyrene	Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[15,17]</sup>

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ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
75	Selenium	Digestion, Inductively Coupled Plasma Method <sup>[9,10]</sup>
76	Silver	Digestion, Inductively Coupled Plasma Method <sup>[9,10]</sup>
77	Styrene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[14,16]</sup>
78	1,1,2,2-Tetrachloroethane	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[14,16]</sup>
79	Tetrachloroethylene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[14,16]</sup>
80	Toluene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[14,16]</sup>
81	1,2,4-Trichlorobenzene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[14,16]</sup>
82	1,1,1-Trichloroethane	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[14,16]</sup>
83	1,1,2-Trichloroethane	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[14,16]</sup>
84	Trichloroethylene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[14,16]</sup>
85	2,4,5-Trichlorophenol	Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[15,17]</sup>
86	2,4,6-Trichlorophenol	Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[15,17]</sup>
87	1,3,5-Trimethylbenzene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[14,16]</sup>
88	Vanadium	Digestion, Inductively Coupled Plasma Method <sup>[9,10]</sup>
89	Vinyl acetate	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[14,16]</sup>
90	Vinyl chloride	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[14,16]</sup>
91	m-Xylene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[14,16]</sup>
92	o-Xylene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[14,16]</sup>
93	p-Xylene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[14,16]</sup>

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ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
94	Xylene (Total)	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[14,16]</sup>
95	Zinc	Digestion, Inductively Coupled Plasma Method <sup>[9,10]</sup>

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ที่ อก ๐๓๒๐/ ๕๖๐๕ 1



กรมโรงงานอุตสาหกรรม  
ถนนพระรามที่ ๖ แขวงทุ่งพญาไท  
เขตราชเทวี กรุงเทพฯ ๑๐๕๐๐

๑๕ พฤษภาคม ๒๕๖๗

เรื่อง เปลี่ยนแปลงเอกสารอ้างอิงวิธีวิเคราะห์สารมลพิษ เปลี่ยนแปลงสารมลพิษในดิน และเปลี่ยนแปลงบุคลากร  
ของห้องปฏิบัติการวิเคราะห์

เรียน กรรมการผู้จัดการ บริษัท อีสเทิร์น ไทย คอนซัลติ้ง ๑๙๙๒ จำกัด

อ้างถึง คำขอขึ้นทะเบียน/ต่ออายุ/เปลี่ยนแปลงบุคลากร และชนิดสารมลพิษของห้องปฏิบัติการวิเคราะห์เอกชน  
ลงวันที่ ๕ มีนาคม ๒๕๖๗

สิ่งที่ส่งมาด้วย เอกสารแนบท้ายหนังสือเปลี่ยนแปลงเอกสารอ้างอิงวิธีวิเคราะห์สารมลพิษ และเปลี่ยนแปลง  
สารมลพิษบริษัท อีสเทิร์น ไทย คอนซัลติ้ง ๑๙๙๒ จำกัด จำนวน ๑๒ แผ่น

ตามคำขอฯ ที่อ้างถึง บริษัท อีสเทิร์น ไทย คอนซัลติ้ง ๑๙๙๒ จำกัด ห้องปฏิบัติการวิเคราะห์  
เอกชน เลขทะเบียน ว-๐๐๓ สถานที่ตั้งเลขที่ ๖๘๓ หมู่ที่ ๑๑ ถนนสุขาภิบาล ๘ ตำบลหนองขาม  
อำเภอศรีราชา จังหวัดชลบุรี แจ้งขอเปลี่ยนแปลงเอกสารอ้างอิงวิธีวิเคราะห์สารมลพิษในน้ำเสีย น้ำใต้ดิน  
เปลี่ยนแปลงสารมลพิษในดิน และเปลี่ยนแปลงบุคลากร นั้น

กรมโรงงานอุตสาหกรรมพิจารณาแล้ว มีความเห็นดังนี้

๑. ให้ยกเลิกผู้ควบคุมดูแลห้องปฏิบัติการวิเคราะห์ จำนวน ๑ ราย

นายวัฒนา โคตรหล้า ทะเบียนเลขที่ ว-๐๐๓-ค-๐๐๐๒

๒. ให้ยกเลิกเจ้าหน้าที่ประจำห้องปฏิบัติการวิเคราะห์ จำนวน ๓ ราย

๑) นางสาวอัญชลี ทะพงษ์ ทะเบียนเลขที่ ว-๐๐๓-จ-๐๐๑๒

๒) นางสาวจุฑามาศ เจริญพรหม ทะเบียนเลขที่ ว-๐๐๓-จ-๐๐๑๕

๓) นางสาวณัฐนิช นนตานอก ทะเบียนเลขที่ ว-๐๐๓-จ-๐๐๒๔

๓. ให้ยกเลิกขอบข่ายรายการสารมลพิษในน้ำเสีย และน้ำใต้ดินตามรายการเอกสารแนบท้าย  
หนังสือต่ออายุรับขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์เอกชนที่ อก ๐๓๒๐/๑๑๓๔๒ ลงวันที่ ๒๗ กรกฎาคม ๒๕๖๖

๔. ให้วิเคราะห์สารมลพิษตามขอบข่ายที่ได้รับขึ้นทะเบียนให้วิเคราะห์ในน้ำเสีย จำนวน ๔๗ รายการ  
และน้ำใต้ดิน จำนวน ๑๑๑ รายการ รวมทั้งสิ้นจำนวน ๑๕๘ รายการ ตามเอกสารแนบท้ายหนังสือเปลี่ยนแปลง  
เอกสารอ้างอิงวิธีวิเคราะห์สารมลพิษ เปลี่ยนแปลงสารมลพิษในดิน และเปลี่ยนแปลงบุคลากร ดังสิ่งที่ส่งมาด้วย

๕. ให้วิเคราะห์สารมลพิษตามขอบข่ายที่ได้รับขึ้นทะเบียนให้วิเคราะห์เพิ่มเติมในดิน จำนวน  
๑๒ รายการ ตามเอกสารแนบท้ายหนังสือเปลี่ยนแปลงเอกสารอ้างอิงวิธีวิเคราะห์สารมลพิษเปลี่ยนแปลงสารมลพิษ  
ในดิน และเปลี่ยนแปลงบุคลากร ดังสิ่งที่ส่งมาด้วย

อนึ่ง หนังสือ ....

COPY



อนึ่ง หนังสือฉบับนี้จะหมดอายุพร้อมหนังสือต่ออายุรับขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์  
เอกชนในวันที่ ๕ กรกฎาคม ๒๕๖๙

จึงเรียนมาเพื่อทราบ

ขอแสดงความนับถือ



(นายพรศ กลั่นกรอง)

รองอธิบดี ปฏิบัติราชการแทน

อธิบดีกรมโรงงานอุตสาหกรรม

ศูนย์วิจัยและเตือนภัยมลพิษโรงงานภาคตะวันออก

โทร. ๐ ๓๓๑๓ ๖๐๕๙ ต่อ ๕๐๐๑-๒

ไปรษณีย์อิเล็กทรอนิกส์ [eirw@diw.mail.go.th](mailto:eirw@diw.mail.go.th)

COPY



“อุตสาหกรรมก้าวไกล ประเทศไทยก้าวหน้า ร่วมกันพัฒนา อุตสาหกรรมสีเขียว”



เอกสารแนบท้ายหนังสือเปลี่ยนแปลงเอกสารอ้างอิงวิธีวิเคราะห์สารมลพิษ

บริษัท อีสเทิร์น ไทย คอนซัลติ้ง ๑๙๙๒ จำกัด

เลขทะเบียน ว-๐๐๓

ที่ ออก ๐๓๒๐/

ลงวันที่

ขอขยายสารมลพิษที่ได้รับขึ้นทะเบียนจากกรมโรงงานอุตสาหกรรม จำนวน ๑๗๐ รายการ

น้ำเสีย จำนวน 47 รายการ

ลำดับ ที่	สารมลพิษ	วิธีวิเคราะห์
1	Aldrin	1) Liquid-Liquid Extraction, Gas Chromatographic Method <sup>[1]</sup> 2) Liquid-Liquid Extraction, Gas Chromatographic / Mass Spectrometric Method <sup>[1]</sup>
2	Arsenic	1) Continuous Hydride Generation/Atomic Absorption Spectrometric Method <sup>[1]</sup> 2) Digestion, Inductively Coupled Plasma Method <sup>[1]</sup>
3	Barium	Digestion, Inductively Coupled Plasma Method <sup>[1]</sup>
4	$\alpha$ -BHC	1) Liquid-Liquid Extraction, Gas Chromatographic Method <sup>[1]</sup> 2) Liquid-Liquid Extraction, Gas Chromatographic / Mass Spectrometric Method <sup>[1]</sup>
5	$\beta$ -BHC	1) Liquid-Liquid Extraction, Gas Chromatographic Method <sup>[1]</sup> 2) Liquid-Liquid Extraction, Gas Chromatographic / Mass Spectrometric Method <sup>[1]</sup>
6	$\delta$ -BHC	1) Liquid-Liquid Extraction, Gas Chromatographic Method <sup>[1]</sup> 2) Liquid-Liquid Extraction, Gas Chromatographic / Mass Spectrometric Method <sup>[1]</sup>
7	$\gamma$ -BHC	1) Liquid-Liquid Extraction, Gas Chromatographic Method <sup>[1]</sup> 2) Liquid-Liquid Extraction, Gas Chromatographic / Mass Spectrometric Method <sup>[1]</sup>
8	Biochemical Oxygen Demand	1) 5-Day BOD Test, Membrane Electrode Method <sup>[1]</sup> 2) 5-Day BOD Test, Azide Modification Method <sup>[1]</sup>
9	Cadmium	Digestion, Inductively Coupled Plasma Method <sup>[1]</sup>
10	Chemical Oxygen Demand	Closed Reflux, Titrimetric Method <sup>[1]</sup>
11	cis-Chlordane	1) Liquid-Liquid Extraction, Gas Chromatographic Method <sup>[1]</sup> 2) Liquid-Liquid Extraction, Gas Chromatographic / Mass Spectrometric Method <sup>[1]</sup>

COPY

12 trans-Chlordane ...

ลำดับ ที่	สารมลพิษ	วิธีวิเคราะห์
12	trans-Chlordane	1) Liquid-Liquid Extraction, Gas Chromatographic Method <sup>[1]</sup> 2) Liquid-Liquid Extraction, Gas Chromatographic / Mass Spectrometric Method <sup>[1]</sup>
13	Chromium	1) Digestion, Direct Air-Acetylene Flame Method <sup>[1]</sup> 2) Digestion, Inductively Coupled Plasma Method <sup>[1]</sup>
14	Color	ADMI Weighted-Ordinate Spectrophotometric Method <sup>[1]</sup>
15	Copper	1) Digestion, Direct Air-Acetylene Flame Method <sup>[1]</sup> 2) Digestion, Inductively Coupled Plasma Method <sup>[1]</sup>
16	Cyanide	Distillation, Colorimetric Method <sup>[1]</sup>
17	4,4'-DDD	1) Liquid-Liquid Extraction, Gas Chromatographic Method <sup>[1]</sup> 2) Liquid-Liquid Extraction, Gas Chromatographic / Mass Spectrometric Method <sup>[1]</sup>
18	4,4'-DDE	1) Liquid-Liquid Extraction, Gas Chromatographic Method <sup>[1]</sup> 2) Liquid-Liquid Extraction, Gas Chromatographic / Mass Spectrometric Method <sup>[1]</sup>
19	DDT	Liquid-Liquid Extraction, Gas Chromatographic / Mass Spectrometric Method <sup>[1]</sup>
20	Dieldrin	1) Liquid-Liquid Extraction, Gas Chromatographic Method <sup>[1]</sup> 2) Liquid-Liquid Extraction, Gas Chromatographic / Mass Spectrometric Method <sup>[1]</sup>
21	Endosulfan I	1) Liquid-Liquid Extraction, Gas Chromatographic Method <sup>[1]</sup> 2) Liquid-Liquid Extraction, Gas Chromatographic / Mass Spectrometric Method <sup>[1]</sup>
22	Endosulfan II	1) Liquid-Liquid Extraction, Gas Chromatographic Method <sup>[1]</sup> 2) Liquid-Liquid Extraction, Gas Chromatographic / Mass Spectrometric Method <sup>[1]</sup>
23	Endosulfan sulfate	1) Liquid-Liquid Extraction, Gas Chromatographic Method <sup>[1]</sup> 2) Liquid-Liquid Extraction, Gas Chromatographic / Mass Spectrometric Method <sup>[1]</sup>
24	Endrin	Liquid-Liquid Extraction, Gas Chromatographic / Mass Spectrometric Method <sup>[1]</sup>

**COPY**

25 Endrin aldehyde ...



ลำดับ ที่	สารมลพิษ	วิธีวิเคราะห์
25	Endrin aldehyde	1) Liquid-Liquid Extraction, Gas Chromatographic Method <sup>[1]</sup> 2) Liquid-Liquid Extraction, Gas Chromatographic / Mass Spectrometric Method <sup>[1]</sup>
26	Endrin ketone	1) Liquid-Liquid Extraction, Gas Chromatographic Method <sup>[1]</sup> 2) Liquid-Liquid Extraction, Gas Chromatographic / Mass Spectrometric Method <sup>[1]</sup>
27	Formaldehyde	Distillation, Colorimetric Method <sup>[4]</sup>
28	Free Chlorine	1) Iodometric Method <sup>[1]</sup> 2) Colorimetric Method <sup>[1]</sup>
29	Heptachlor	1) Liquid-Liquid Extraction, Gas Chromatographic Method <sup>[1]</sup> 2) Liquid-Liquid Extraction, Gas Chromatographic / Mass Spectrometric Method <sup>[1]</sup>
30	Heptachlor Epoxide	1) Liquid-Liquid Extraction, Gas Chromatographic Method <sup>[1]</sup> 2) Liquid-Liquid Extraction, Gas Chromatographic / Mass Spectrometric Method <sup>[1]</sup>
31	Hexavalent Chromium	Filtration, Colorimetric Method <sup>[1]</sup>
32	Lead	1) Digestion, Direct Air-Acetylene Flame Method <sup>[1]</sup> 2) Digestion, Inductively Coupled Plasma Method <sup>[1]</sup>
33	Manganese	Digestion, Inductively Coupled Plasma Method <sup>[1]</sup>
34	Mercury	Digestion, Cold-Vapor Atomic Absorption Spectrometric Method <sup>[1]</sup>
35	Methoxychlor	Liquid-Liquid Extraction, Gas Chromatographic / Mass Spectrometric Method <sup>[1]</sup>
36	Nickel	1) Digestion, Direct Air-Acetylene Flame Method <sup>[1]</sup> 2) Digestion, Inductively Coupled Plasma Method <sup>[1]</sup>
37	Oil and Grease	Liquid-Liquid, Partition-Gravimetric Method <sup>[1]</sup>
38	pH	Electrometric Method <sup>[1]</sup>
39	Phenols	Distillation, Direct Photometric Method <sup>[1]</sup>
40	Selenium	Digestion, Hydride Generation/Atomic Absorption Spectrometric Method <sup>[1]</sup>

**COPY**

ลำดับ ที่	สารมลพิษ	วิธีวิเคราะห์
41	Sulfide	ZnS Precipitation, Iodometric Method <sup>[1]</sup>
42	Temperature	Field Method <sup>[1]</sup>
43	Trivalent Chromium	1) Digestion, Direct Air-Acetylene Flame Method; Filtration, Colorimetric Method; Calculation <sup>[1]</sup> 2) Digestion, Inductively Coupled Plasma Method; Colorimetric Method; Calculation <sup>[1]</sup>
44	Total Dissolved Solids	Dried at 180 °C <sup>[1]</sup>
45	Total Kjeldahl Nitrogen	Macro Kjeldahl Method <sup>[1]</sup>
46	Total Suspended Solids	Dried at 103-105 °C <sup>[1]</sup>
47	Zinc	Digestion, Inductively Coupled Plasma Method <sup>[1]</sup>

น้ำใต้ดิน จำนวน 111 รายการ

ลำดับ ที่	สารมลพิษ	วิธีวิเคราะห์
1	Acenaphthene	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[1]</sup>
2	Acetone	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[1]</sup>
3	Aldrin	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[1]</sup>
4	Anthracene	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[1]</sup>
5	Antimony	Digestion, Inductively Coupled Plasma Method <sup>[1]</sup>
6	Arsenic	1) Continuous Hydride Generation/Atomic Absorption Spectrometric Method <sup>[1]</sup> 2) Digestion, Inductively Coupled Plasma Method <sup>[1]</sup>
7	Barium	Digestion, Inductively Coupled Plasma Method <sup>[1]</sup>
8	Benz(a)anthracene	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[1]</sup>

**COPY**

ลำดับ ที่	สารมลพิษ	วิธีวิเคราะห์
9	Benzene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[1]</sup>
10	Benzo(b)fluoranthene	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[1]</sup>
11	Benzo(k)fluoranthene	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[1]</sup>
12	Benzo(a)pyrene	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[1]</sup>
13	Benzo[g,h,i]perylene	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[1]</sup>
14	Beryllium	Digestion, Inductively Coupled Plasma Method <sup>[1]</sup>
15	Bis(2-chloroethyl)ether	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[1]</sup>
16	Bis(2-ethylhexyl)phthalate	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[1]</sup>
17	Bromodichloromethane	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[1]</sup>
18	Bromoform	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[1]</sup>
19	Butanol	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[1]</sup>
20	Butyl benzyl phthalate	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[1]</sup>
21	Cadmium	Digestion, Inductively Coupled Plasma Method <sup>[1]</sup>
22	Carbazole	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[1]</sup>
23	Carbon disulfide	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[1]</sup>
24	Carbon tetrachloride	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[1]</sup>

**COPY**

25 Chlordane ...

ลำดับ ที่	สารมลพิษ	วิธีวิเคราะห์
25	Chlordane	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[1]</sup>
26	p-Chloroaniline	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[1]</sup>
27	Chlorobenzene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[1]</sup>
28	Chlorodibromomethane	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[1]</sup>
29	Chloroform	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[1]</sup>
30	2-Chlorophenol	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[1]</sup>
31	Chromium	1) Digestion, Direct Air-Acetylene Flame Method <sup>[1]</sup> 2) Digestion, Inductively Coupled Plasma Method <sup>[1]</sup>
32	Chromium (III)	1) Digestion, Direct Air-Acetylene Flame Method; Filtration, Colorimetric Method; Calculation <sup>[1]</sup> 2) Digestion, Inductively Coupled Plasma Method; Filtration, Colorimetric Method; Calculation <sup>[1]</sup>
33	Chromium (VI)	Filtration, Colorimetric Method <sup>[1]</sup>
34	Chrysene	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[1]</sup>
35	Cyanide	Distillation, Colorimetric Method <sup>[1]</sup>
36	DDD	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[1]</sup>
37	DDE	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[1]</sup>
38	DDT	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[1]</sup>
39	Dibenz(a,h)anthracene	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[1]</sup>

COPY

40 Di-n-butyl phthalate ...

ลำดับ ที่	สารมลพิษ	วิธีวิเคราะห์
40	Di-n-butyl phthalate	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[1]</sup>
41	1,2-Dichlorobenzene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[1]</sup>
42	1,3-Dichlorobenzene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[1]</sup>
43	1,4-Dichlorobenzene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[1]</sup>
44	1,1-Dichloroethane	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[1]</sup>
45	1,2-Dichloroethane	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[1]</sup>
46	1,1-Dichloroethylene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[1]</sup>
47	cis-1,2-Dichloroethylene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[1]</sup>
48	trans-1,2-Dichloroethylene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[1]</sup>
49	2,4-Dichlorophenol	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[1]</sup>
50	1,2-Dichloropropane	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[1]</sup>
51	1,3-Dichloropropane	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[1]</sup>
52	Dieldrin	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[1]</sup>
53	Diethyl phthalate	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[1]</sup>
54	2,4-Dimethylphenol	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[1]</sup>

**COPY**

55 2,4-Dinitrotoluene ...



ลำดับ ที่	สารมลพิษ	วิธีวิเคราะห์
55	2,4-Dinitrotoluene	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[1]</sup>
56	2,6-Dinitrotoluene	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[1]</sup>
57	Di-n-octyl phthalate	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[1]</sup>
58	Endosulfan	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[1]</sup>
59	Endrin	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[1]</sup>
60	Ethylbenzene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[1]</sup>
61	Fluoranthene	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[1]</sup>
62	Fluorene	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[1]</sup>
63	Heptachlor	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[1]</sup>
64	Heptachlor epoxide	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[1]</sup>
65	Hexachlorobenzene	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[1]</sup>
66	Hexachloro-1,3-butadiene	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[1]</sup>
67	n-Hexane	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[1]</sup>
68	$\alpha$ -HCH	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[1]</sup>
69	$\beta$ -HCH	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[1]</sup>

ลำดับ ที่	สารมลพิษ	วิธีวิเคราะห์
70	$\gamma$ -HCH	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[1]</sup>
71	Hexachlorocyclopentadiene	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[1]</sup>
72	Hexachloroethane	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[1]</sup>
73	Indeno(1,2,3-cd)pyrene	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[1]</sup>
74	Isophorone	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[1]</sup>
75	Lead	1) Digestion, Direct Air-Acetylene Flame Method <sup>[1]</sup> 2) Digestion, Inductively Coupled Plasma Method <sup>[1]</sup>
76	Manganese	Digestion, Inductively Coupled Plasma Method <sup>[1]</sup>
77	Mercury	Digestion, Cold-Vapor Atomic Absorption Spectrometric Method <sup>[1]</sup>
78	Methoxychlor	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[1]</sup>
79	Methylene chloride	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[1]</sup>
80	2-Methylphenol	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[1]</sup>
81	2-Methylnaphthalene	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[1]</sup>
82	Methyl tert-butyl ether	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[1]</sup>
83	Naphthalene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[1]</sup>
84	Nickel	Digestion, Inductively Coupled Plasma Method <sup>[1]</sup>
85	Nitrobenzene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[1]</sup>

ลำดับ ที่	สารมลพิษ	วิธีวิเคราะห์
86	N-Nitrosodi-n-propylamine	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[1]</sup>
87	pH	Electrometric Method <sup>[4]</sup>
88	Phenanthrene	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
89	Phenol	1) Distillation, Direct Photometric Method <sup>[4]</sup> 2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
90	Pyrene	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
91	Selenium	Digestion, Hydride Generation/Atomic Absorption Spectrometric Method <sup>[4]</sup>
92	Silver	Digestion, Inductively Coupled Plasma Method <sup>[4]</sup>
93	Styrene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
94	1,1,2,2-Tetrachloroethane	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
95	Trichloroethylene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
96	1,2,4-Trichlorobenzene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
97	1,1,1-Trichloroethane	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
98	1,1,2-Trichloroethane	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
99	Tetrachloroethylene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
100	Toluene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
101	2,4,5-Trichlorophenol	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>

ลำดับ ที่	สารมลพิษ	วิธีวิเคราะห์
102	2,4,6-Trichlorophenol	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
103	1,3,5-Trimethylbenzene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
104	Vanadium	Digestion, Inductively Coupled Plasma Method <sup>[4]</sup>
105	Vinyl acetate	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
106	Vinyl chloride	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
107	m-Xylene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
108	o-Xylene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
109	p-Xylene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
110	Xylene (Total)	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method <sup>[4]</sup>
111	Zinc	Digestion, Inductively Coupled Plasma Method <sup>[4]</sup>

**ดิน จำนวน 12 รายการ**

ลำดับ ที่	สารมลพิษ	วิธีวิเคราะห์
1	$\alpha$ -HCH	Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[2,3]</sup>
2	$\beta$ -HCH	Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[2,3]</sup>
3	$\gamma$ -HCH	Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[2,3]</sup>
4	Heptachlor	Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[2,3]</sup>

**COPY**

5 Aldrin ...

ลำดับ ที่	สารมลพิษ	วิธีวิเคราะห์
5	Aldrin	Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[2,3]</sup>
6	Heptachlor epoxide	Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[2,3]</sup>
7	Chlordane	Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[2,3]</sup>
8	Dieldrin	Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[2,3]</sup>
9	Endrin	Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[2,3]</sup>
10	DDD	Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[2,3]</sup>
11	DDT	Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[2,3]</sup>
12	Methoxychlor	Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method <sup>[2,3]</sup>

#### เอกสารอ้างอิง

1. APHA, AWWA, WEF. **Standard Methods for the Examination of Water and Wastewater**. 24<sup>th</sup> ed. Washington, DC: APHA, 2023.
2. United States Environment Protection Agency. Test Methods for Evaluation Solid Waste Physical/Chemical Methods. **Ultrasonic Extraction. SW-846 Method 3550C**, 2007
3. United States Environment Protection Agency. Test Methods for Evaluation Solid Waste Physical/Chemical Methods. **Semivolatile Organic Compounds by Gas Chromatography/Mass Spectrometry. SW-846 Method 8270E**, 2018
4. สมาคมวิศวกรรมสิ่งแวดล้อมแห่งประเทศไทย. คู่มือวิเคราะห์น้ำเสีย. พิมพ์ครั้งที่ 4. กรุงเทพฯ: เรือนแก้วการพิมพ์, 2547.

**COPY**



ภาคผนวก จ.

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ใบรับรองความสามารถห้องปฏิบัติการวิเคราะห์



ที่ อว 0303/169

## ใบรับรองความสามารถห้องปฏิบัติการทดสอบ

ใบรับรองฉบับนี้ให้ไว้เพื่อแสดงว่า

**ห้องปฏิบัติการ บริษัท อีสเทิร์น ไทย คอนซัลติ้ง 1992 จำกัด**  
**เลขที่ 683 หมู่ที่ 11 ถนนสุขาภิบาล 8 ตำบลหนองขาม**  
**อำเภอศรีราชา จังหวัดชลบุรี 20230**

ได้ผ่านการประเมินความสามารถห้องปฏิบัติการทดสอบตามมาตรฐาน ISO/IEC 17025 : 2017  
และข้อกำหนด กฎระเบียบ และเงื่อนไขการรับรองความสามารถห้องปฏิบัติการทดสอบ  
ของสำนักบริหารและรับรองห้องปฏิบัติการ กรมวิทยาศาสตร์บริการ

**หมายเลขการรับรองระบบงานที่ ทดสอบ - 0159**

รายละเอียดการรับรองดังขอบข่ายการรับรองแนบท้าย

ออกให้ ณ วันที่ : 10 มกราคม 2568

หมดอายุ วันที่ : 6 พฤศจิกายน 2570

ลงชื่อ :



(นางจันทน์ วรสรรพวิทย)

ผู้อำนวยการสำนักบริหารและรับรองห้องปฏิบัติการ

สำนักบริหารและรับรองห้องปฏิบัติการ กรมวิทยาศาสตร์บริการ  
กระทรวงการอุดมศึกษา วิทยาศาสตร์ วิจัยและนวัตกรรม

## ขอข่ายการรับรองความสามารถห้องปฏิบัติการทดสอบ

ชื่อห้องปฏิบัติการ : ห้องปฏิบัติการ บริษัท อีสเทิร์น ไทย คอนซัลตัง 1992 จำกัด

สถานที่ตั้ง : เลขที่ 683 หมู่ที่ 11 ถนนสุขาภิบาล 8 ตำบลหนองขาม  
อำเภอศรีราชา จังหวัดชลบุรี 20230

หมายเลขการรับรองระบบงานที่ : ทดสอบ - 0159

สถานะของห้องปฏิบัติการ : ☒ ถาวร ☐ นอกสถานที่ ☐ชั่วคราว ☐ เคลื่อนที่

ลำดับ ที่	วัสดุ / ผลิตภัณฑ์ที่ทดสอบ	รายการที่ทดสอบ / ช่วงของการทดสอบ	วิธีทดสอบ / เทคนิคที่ใช้
1	น้ำ	- ซีโอดี 40 mg/L ถึง 5 000 mg/L  - โปรท 0.001 mg/L ถึง 0.02 mg/L  - บีโอดี 2 mg/L ถึง 5 000 mg/L	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24 <sup>th</sup> ed., 2023, part 5220 C  Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24 <sup>th</sup> ed., 2023, part 3112 B  Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24 <sup>th</sup> ed., 2023, part 5210 B

ออกครั้งแรก ณ วันที่ 21 พฤศจิกายน 2560

ฉบับที่ 5

สำนักบริหารและรับรองห้องปฏิบัติการ กรมวิทยาศาสตร์บริการ กระทรวงการอุดมศึกษา วิทยาศาสตร์ วิจัย และนวัตกรรม

## ขอข่ายการรับรองความสามารถห้องปฏิบัติการทดสอบ

ชื่อห้องปฏิบัติการ : ห้องปฏิบัติการ บริษัท อีสเทิร์น ไทย คอนซัลติง 1992 จำกัด

สถานที่ตั้ง : เลขที่ 683 หมู่ที่ 11 ถนนสุขาภิบาล 8 ตำบลหนองขาม  
อำเภอศรีราชา จังหวัดชลบุรี 20230

หมายเลขการรับรองระบบงานที่ : ทดสอบ - 0159

สถานะของห้องปฏิบัติการ : ☒ ถาวร ☐ นอกสถานที่ ☐ชั่วคราว ☐เคลื่อนที่

ลำดับ ที่	วัสดุ / ผลิตภัณฑ์ที่ทดสอบ	รายการที่ทดสอบ / ช่วงของการทดสอบ	วิธีทดสอบ / เทคนิคที่ใช้
1 (ต่อ)	น้ำ	- สารที่ละลายได้ทั้งหมด ที่อุณหภูมิ 180 °C 25 mg/L ถึง 10 000 mg/L  - สารแขวนลอยทั้งหมด ที่อุณหภูมิ 103 °C ถึง 105 °C 5 mg/L ถึง 2 000 mg/L  - ฟลูออไรด์ 0.5 mg/L ถึง 10 mg/L	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24 <sup>th</sup> ed., 2023, part 2540 C  Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24 <sup>th</sup> ed., 2023, part 2540 D  Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24 <sup>th</sup> ed., 2023, part 4500-F <sup>-</sup> C

ออกครั้งแรก ณ วันที่ 21 พฤศจิกายน 2560

ฉบับที่ 5

สำนักบริหารและรับรองห้องปฏิบัติการ กรมวิทยาศาสตร์บริการ กระทรวงการอุดมศึกษา วิทยาศาสตร์ วิจัย และนวัตกรรม

## ขอข่ายการรับรองความสามารถห้องปฏิบัติการทดสอบ

ชื่อห้องปฏิบัติการ : ห้องปฏิบัติการ บริษัท อีสเทิร์น ไทย คอนซัลตติ้ง 1992 จำกัด

สถานที่ตั้ง : เลขที่ 683 หมู่ที่ 11 ถนนสุขาภิบาล 8 ตำบลหนองขาม  
อำเภอศรีราชา จังหวัดชลบุรี 20230

หมายเลขการรับรองระบบงานที่ : ทดสอบ - 0159

สถานะของห้องปฏิบัติการ : ☒ ถาวร ☐ นอกสถานที่ ☐ชั่วคราว ☐เคลื่อนที่

ลำดับ ที่	วัสดุ / ผลิตภัณฑ์ที่ทดสอบ	รายการที่ทดสอบ / ช่วงของการทดสอบ	วิธีทดสอบ / เทคนิคที่ใช้
1 (ต่อ)	น้ำ	- คลอไรด์ 50 mg/L ถึง 2 000 mg/L  - ความกระด้างทั้งหมด (คำนวณเป็นแคลเซียมคาร์บอเนต) 50 mg/L ถึง 500 mg/L	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24 <sup>th</sup> ed., 2023, part 4500-Cl <sup>-</sup> B  Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24 <sup>th</sup> ed., 2023, part 2340 C

ออกครั้งแรก ณ วันที่ 21 พฤศจิกายน 2560

ฉบับที่ 5

สำนักบริหารและรับรองห้องปฏิบัติการ กรมวิทยาศาสตร์บริการ กระทรวงการอุดมศึกษา วิทยาศาสตร์ วิจัย และนวัตกรรม



### ขอข่ายการรับรองความสามารถห้องปฏิบัติการทดสอบ

ชื่อห้องปฏิบัติการ : ห้องปฏิบัติการ บริษัท อีสเทิร์น ไทย คอนซัลติง 1992 จำกัด

สถานที่ตั้ง : เลขที่ 683 หมู่ที่ 11 ถนนสุขาภิบาล 8 ตำบลหนองขาม  
อำเภอศรีราชา จังหวัดชลบุรี 20230

หมายเลขการรับรองระบบงานที่ : ทดสอบ - 0159

สถานะของห้องปฏิบัติการ : ☒ ถาวร ☐ นอกสถานที่ ☐ชั่วคราว ☐เคลื่อนที่

ลำดับ ที่	วัสดุ / ผลิตภัณฑ์ที่ทดสอบ	รายการที่ทดสอบ / ช่วงของการทดสอบ	วิธีทดสอบ / เทคนิคที่ใช้
2	น้ำเสีย	- ซีโอดี 40 mg/L ถึง 5 000 mg/L  - โปรท 0.001 mg/L ถึง 0.02 mg/L  - บีโอดี 2 mg/L ถึง 5 000 mg/L	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24 <sup>th</sup> ed., 2023, part 5220 C  Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24 <sup>th</sup> ed., 2023, part 3112 B  Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24 <sup>th</sup> ed., 2023, part 5210 B

ออกครั้งแรก ณ วันที่ 21 พฤศจิกายน 2560

ฉบับที่ 5

สำนักบริหารและรับรองห้องปฏิบัติการ กรมวิทยาศาสตร์บริการ กระทรวงการอุดมศึกษา วิทยาศาสตร์ วิจัย และนวัตกรรม

## ขอข่ายการรับรองความสามารถห้องปฏิบัติการทดสอบ

ชื่อห้องปฏิบัติการ : ห้องปฏิบัติการ บริษัท อีสเทิร์น ไทย คอนซัลติง 1992 จำกัด

สถานที่ตั้ง : เลขที่ 683 หมู่ที่ 11 ถนนสุขาภิบาล 8 ตำบลหนองขาม  
อำเภอศรีราชา จังหวัดชลบุรี 20230

หมายเลขการรับรองระบบงานที่ : ทดสอบ - 0159

สถานะของห้องปฏิบัติการ : ☒ ถาวร ☐ นอกสถานที่ ☐ชั่วคราว ☐เคลื่อนที่

ลำดับ ที่	วัสดุ / ผลิตภัณฑ์ที่ทดสอบ	รายการที่ทดสอบ / ช่วงของการทดสอบ	วิธีทดสอบ / เทคนิคที่ใช้
2 (ต่อ)	น้ำเสีย	<p>- สารที่ละลายได้ทั้งหมด ที่อุณหภูมิ 180 °C 25 mg/L ถึง 10 000 mg/L</p> <p>- สารแขวนลอยทั้งหมด ที่อุณหภูมิ 103 °C ถึง 105 °C 5 mg/L ถึง 2 000 mg/L</p> <p>- ฟลูออไรด์ 0.5 mg/L ถึง 10 mg/L</p>	<p>Standard Methods for the Examination of Water and Wastewater, APHA, AWWA &amp; WEF, 24<sup>th</sup> ed., 2023, part 2540 C</p> <p>Standard Methods for the Examination of Water and Wastewater, APHA, AWWA &amp; WEF, 24<sup>th</sup> ed., 2023, part 2540 D</p> <p>Standard Methods for the Examination of Water and Wastewater, APHA, AWWA &amp; WEF, 24<sup>th</sup> ed., 2023, part 4500-F<sup>-</sup> C</p>

ออกครั้งแรก ณ วันที่ 21 พฤศจิกายน 2560

ฉบับที่ 5

สำนักบริหารและรับรองห้องปฏิบัติการ กรมวิทยาศาสตร์บริการ กระทรวงการอุดมศึกษา วิทยาศาสตร์ วิจัย และนวัตกรรม

## ขอข่ายการรับรองความสามารถห้องปฏิบัติการทดสอบ

ชื่อห้องปฏิบัติการ : ห้องปฏิบัติการ บริษัท อีสเทิร์น ไทย คอนซัลตติ้ง 1992 จำกัด

สถานที่ตั้ง : เลขที่ 683 หมู่ที่ 11 ถนนสุขาภิบาล 8 ตำบลหนองขาม  
อำเภอศรีราชา จังหวัดชลบุรี 20230

หมายเลขการรับรองระบบงานที่ : ทดสอบ - 0159

สถานะของห้องปฏิบัติการ : ☒ ถาวร ☐ นอกสถานที่ ☐ชั่วคราว ☐เคลื่อนที่

ลำดับ ที่	วัสดุ / ผลิตภัณฑ์ที่ทดสอบ	รายการที่ทดสอบ / ช่วงของการทดสอบ	วิธีทดสอบ / เทคนิคที่ใช้
2 (ต่อ)	น้ำเสีย	- คลอไรต์ 50 mg/L ถึง 2 000 mg/L  - ความกระด้างทั้งหมด (คำนวณเป็นแคลเซียมคาร์บอเนต) 50 mg/L ถึง 500 mg/L	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24 <sup>th</sup> ed., 2023, part 4500-Cl <sup>-</sup> B  Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24 <sup>th</sup> ed., 2023, part 2340 C
3	น้ำทะเล	- สารแขวนลอยทั้งหมด ที่อุณหภูมิ 103 °C ถึง 105 °C 5 mg/L ถึง 100 mg/L	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24 <sup>th</sup> ed., 2023, part 2540 D

ออกให้ ณ วันที่ : 10 มกราคม 2568

ลงชื่อ :



(นางจันทร์รัตน์ วรสรรพวิทย)

ผู้อำนวยการสำนักบริหารและรับรองห้องปฏิบัติการ

ออกครั้งแรก ณ วันที่ 21 พฤศจิกายน 2560

ฉบับที่ 5



ใบรับรองเลขที่ 23-LB0251  
(Certificate No.)

## ใบรับรองระบบงาน (Certificate of Accreditation)

อาศัยอำนาจตามความในพระราชบัญญัติการมาตรฐานแห่งชาติ พ.ศ. ๒๕๕๑  
(By Virtue of National Standardization Act B.E. 2551 (2008))

เลขาธิการสำนักงานมาตรฐานผลิตภัณฑ์อุตสาหกรรม  
(Secretary-General, Thai Industrial Standards Institute)

ออกใบรับรองฉบับนี้ให้  
(Issues this certificate to)

บริษัท อีสเทิร์น ไทย คอนซัลติง 1992 จำกัด  
(Eastern Thai Consulting 1992 Co., Ltd.)

ตั้งอยู่เลขที่  
(Address)

๖๘๓ หมู่ที่ ๑๑ ถนนสุขาภิบาล ๘ ตำบลหนองขาม อำเภอสรีราชา จังหวัดชลบุรี  
(683 Moo 11, Sukhapibarn 8 Road, Nongkham, Sriracha, Chonburi)

ได้รับการรับรองความสามารถ  
(Certificate of competence)

ตามมาตรฐานเลขที่ มอก. ๑๗๐๒๕ - ๒๕๖๑  
(Standard No. TIS 17025-2561 (2018) (ISO/IEC 17025: 2017))

ข้อกำหนดทั่วไปว่าด้วยความสามารถของ ห้องปฏิบัติการทดสอบและห้องปฏิบัติการสอบเทียบ  
(General requirements for the competence of testing and calibration laboratories)

หมายเลขการรับรองที่ ทดสอบ ๑๗๑๒  
(Accreditation No. Testing 1712)

โดยมีรายละเอียดสาขาและขอบข่ายที่ได้ใบรับรอง แสดงไว้ใน QR CODE และ [www.tisi.go.th](http://www.tisi.go.th)  
(Details of the scheme and scope of the certificate are shown in QR CODE and [www.tisi.go.th](http://www.tisi.go.th))

ออกให้ ณ วันที่ ๒๓ สิงหาคม พ.ศ. ๒๕๖๖  
(Issue date : 23 August B.E. 2566 (2023))

(นายเอกนิติ รมยานนท์)

รองเลขาธิการสำนักงานมาตรฐานผลิตภัณฑ์อุตสาหกรรม

ปฏิบัติราชการแทน

เลขาธิการสำนักงานมาตรฐานผลิตภัณฑ์อุตสาหกรรม



c88f6993



รายละเอียดสาขาและขอบข่ายใบรับรองห้องปฏิบัติการ

(Scope of Accreditation for Testing)

ใบรับรองเลขที่ 23-LB0251

(Certification No. 23-LB0251)



ชื่อห้องปฏิบัติการ

(Laboratory Name)

บริษัท อีสเทิร์น ไทย คอนซัลติ้ง 1992 จำกัด

(Eastern Thai Consulting 1992 Co.,Ltd.)

หมายเลขการรับรองที่

(Accreditation No.)

ทดสอบ 1712

(Testing 1712)

ฉบับที่ 01

(Issue No.01)

ออกให้ตั้งแต่วันที่ 17 กรกฎาคม พ.ศ. 2566

(Valid from) (17 July B.E.2566 (2023))

ถึงวันที่ 16 กรกฎาคม พ.ศ. 2571

(Until) (16 July B.E.2571 (2028))

สถานภาพห้องปฏิบัติการ

(Laboratory status)

☒ ถาวร

(Permanent)

☐ นอกสถานที่

(Site)

☐ชั่วคราว

(Temporary)

☐เคลื่อนที่

(Mobile)

☐หลายสถานที่

(Multisite)

สาขาการทดสอบ (Field of Testing)	รายการทดสอบ (Parameter)	วิธีทดสอบ (Test Method)
<p>สาขาสิ่งแวดล้อม (Environmental field)</p> <p>1. น้ำ ( Water )</p>	<p>- โลหะหนัก (Heavy metal)</p> <ul style="list-style-type: none"> <li>โครเมียม (Cr) 0.03 mg/L to 2.00 mg/L</li> <li>ทองแดง (Cu) 0.03 mg/L to 2.00 mg/L</li> <li>เหล็ก (Fe) 0.03 mg/L to 2.00 mg/L</li> <li>ตะกั่ว (Pb) 0.01 mg/L to 1.00 mg/L</li> <li>นิกเกิล (Ni) 0.03 mg/L to 2.00 mg/L</li> <li>อลูมิเนียม (Al) 0.10 mg/L to 2.00 mg/L</li> <li>แบเรียม (Ba) 0.03 mg/L to 2.00 mg/L</li> <li>แคดเมียม (Cd) 0.003 mg/L to 1.00 mg/L</li> <li>แมงกานีส (Mn) 0.03 mg/L to 2.00 mg/L</li> <li>เงิน (Ag) 0.05 mg/L to 2.00 mg/L</li> <li>สังกะสี (Zn) 0.03 mg/L to 2.00 mg/L</li> </ul>	<p>- Standard Method for the Examination of Water and Wastewater, APHA, AWWA, WEF 23<sup>rd</sup> edition 2017. Part 3030 F and 3120 B</p>

กระทรวงอุตสาหกรรมสำนักงานมาตรฐานผลิตภัณฑ์อุตสาหกรรม

(Ministry of Industry, Thai Industrial Standards Institute)



รายละเอียดสาขาและขอบข่ายใบรับรองห้องปฏิบัติการ

(Scope of Accreditation for Testing)

ใบรับรองเลขที่ 23-LB0251

(Certification No. 23-LB0251)



ฉบับที่ 01

(Issue No.)

ออกให้ตั้งแต่วันที่ 17 กรกฎาคม พ.ศ. 2566

(Valid from)

(17 July B.E.2566 (2023))

ถึงวันที่ 16 กรกฎาคม พ.ศ. 2571

(Until) (16 July B.E.2571 (2028))

สถานภาพห้องปฏิบัติการ

(Laboratory status)

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(Site)

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(Multisite)

สาขาการทดสอบ (Field of Testing)	รายการทดสอบ (Parameter)	วิธีทดสอบ (Test Method)
<p>สาขาสิ่งแวดล้อม (Environmental field)</p> <p>1. น้ำ (ต่อ) (Water ) (cont.)</p> <p>2. น้ำเสีย (Wastewater )</p>	<p>- ไขมันและน้ำมัน (Oil &amp; Grease) 3.0 mg/L - 20.0 mg/L</p> <p>- โลหะหนัก (Heavy metal)</p> <ul style="list-style-type: none"> <li>โครเมียม (Cr) 0.03 mg/L to 2.00 mg/L</li> <li>ทองแดง (Cu) 0.03 mg/L to 2.00 mg/L</li> <li>เหล็ก (Fe) 0.03 mg/L to 2.00 mg/L</li> <li>ตะกั่ว (Pb) 0.03 mg/L to 2.00 mg/L</li> <li>นิกเกิล (Ni) 0.03 mg/L to 2.00 mg/L</li> <li>อลูมิเนียม (Al) 0.10 mg/L to 2.00 mg/L</li> <li>แบเรียม (Ba) 0.03 mg/L to 2.00 mg/L</li> <li>แคดเมียม (Cd) 0.03 mg/L to 2.00 mg/L</li> </ul>	<p>- Standard Method for the Examination of Water and Wastewater, APHA, AWWA, WEF 23<sup>rd</sup> edition 2017. Part 5520 B</p> <p>- Standard Method for the Examination of Water and Wastewater, APHA, AWWA, WEF 23<sup>rd</sup> edition 2017. Part 3030 F and 3120 B</p>

รายละเอียดสาขาและขอบข่ายใบรับรองห้องปฏิบัติการ

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ฉบับที่ 01

(Issue No.01)

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(Temporary)

☐เคลื่อนที่

(Mobile)

☐หลายสถานที่

(Multisite)

สาขาการทดสอบ (Field of Testing)	รายการทดสอบ (Parameter)	วิธีทดสอบ (Test Method)
<p>สาขาสังแวดล้อม (Environmental field)</p> <p>2. น้ำเสีย (ต่อ) (Wastewater ) (cont.)</p>	<p>- โลหะหนัก (ต่อ) (Heavy metal) (cont.)</p> <ul style="list-style-type: none"> <li>• แมงกานีส (Mn) 0.03 mg/L to 2.00 mg/L</li> <li>• เงิน (Ag) 0.05 mg/L to 2.00 mg/L</li> <li>• สังกะสี (Zn) 0.03 mg/L to 2.00 mg/L</li> </ul> <p>- ไขมันและน้ำมัน (Oil &amp; Grease) 3.0 mg/L - 20.0 mg/L</p>	<p>- Standard Method for the Examination of Water and Wastewater, APHA, AWWA, WEF 23<sup>rd</sup> edition 2017. Part 3030 F and 3120 B</p> <p>- Standard Method for the Examination of Water and Wastewater, APHA, AWWA, WEF 23<sup>rd</sup> edition 2017. Part 5520 B</p>

รายละเอียดสาขาและขอบข่ายใบรับรองห้องปฏิบัติการ

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ใบรับรองเลขที่ 23-LB0251

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สาขาการทดสอบ (Field of Testing)	รายการทดสอบ (Parameter)	วิธีทดสอบ (Test Method)
<p>สาขาสีสิ่งแวดล้อม (Environmental field)</p> <p>3.พื้นที่การทำงาน (Workplace)</p>	<p>- ระดับเสียง (Sound Level)</p> <ul style="list-style-type: none"> <li>ระดับเสียงเฉลี่ย <math>L_{eqT}</math> ช่วง 30 - 130 dB(A)</li> <li>ระดับเสียงสูงสุด <math>L_{max}</math> ช่วง 30 - 130 dB(A)</li> </ul>	<p>- ISO 11202:2010</p> <p>- ประกาศกระทรวงอุตสาหกรรม เรื่องมาตรการคุ้มครองความปลอดภัยในการประกอบกิจการโรงงานเกี่ยวกับสภาวะแวดล้อมในการทำงาน พ.ศ.2546 ลงวันที่ 6 พ.ย. 2546 (Notification of The Ministry of Industry B.E. 2546 (2003) on the Safety Protection Measures in Factory Regarding Working Area Environment, dated November 6, 2003)</p> <p>- ประกาศกรมสวัสดิการและคุ้มครองแรงงาน เรื่องมาตรฐานระดับเสียงที่ยอมให้ลูกจ้างได้รับเฉลี่ยตลอดระยะเวลาการทำงานในแต่ละวัน ลงวันที่ 13 ธ.ค. 2560 (Notification of the Department of Labor Protection and Welfare on the standard of noise level that employees are allowed to receive in average period of work each day, dated December 13, 2017.)</p> <p>- ประกาศกรมสวัสดิการและคุ้มครองแรงงาน เรื่องหลักเกณฑ์ วิธีการตรวจวัดและการวิเคราะห์สภาวะการทำงานเกี่ยวกับระดับความร้อน แสงสว่าง หรือเสียง รวมทั้งระยะเวลาและประเภทกิจการที่ต้องดำเนินการ ลงวันที่ 8 ก.พ. 2561 (Notification of the Department of Labor Protection and Welfare on Criteria, Measurement Methods, and Analysis of Working Conditions Regarding Heat, Light, or Noise Levels, Including Duration and Types of Businesses to Be Performed, dated February 8, 2018.)</p>

รายละเอียดสาขาและขอบข่ายใบรับรองห้องปฏิบัติการ

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สาขาการทดสอบ (Field of Testing)	รายการทดสอบ (Parameter)	วิธีทดสอบ (Test Method)
<p>สาขาสิ่งแวดล้อม (Environmental field)</p> <p>4. บรรยากาศ (Ambient)</p>	<p>- ระดับเสียง (Sound Level)</p> <ul style="list-style-type: none"> <li>• ระดับเสียงเฉลี่ย LeqT ช่วง 30.0 - 130.0 dB(A)</li> <li>• ระดับเสียงสูงสุด Lmax ช่วง 30.0 - 130.0 dB(A)</li> </ul>	<p>- ISO 1996 - 1 : 2016</p> <p>- ประกาศคณะกรรมการสิ่งแวดล้อมแห่งชาติ ฉบับที่ 15 (2540) เรื่องกำหนด มาตรฐาน ระดับเสียงโดยทั่วไป ลงวันที่ 12 มี.ค. 2540 (Notification of The National Environmental Board Volume 15 B.E. 2540 (1997) on the general noise level standards, dated March 12, 1997)</p> <p>- ประกาศกรมควบคุมมลพิษ เรื่อง การ คำนวณค่าระดับเสียง ลงวันที่ 11 ส.ค. 2540 (Notification of the Pollution Control Department on the calculation of the noise level, dated August 11, 1997.)</p> <p>- ประกาศกรมโรงงานอุตสาหกรรม เรื่อง วิธีการตรวจวัดระดับเสียงการรบกวน ระดับ เสียงเฉลี่ย 24 ชั่วโมง และระดับเสียงสูงสุดที่ เกิดจากการประกอบกิจการโรงงาน พ.ศ. 2553 ลงวันที่ 20 ธ.ค. 2553 (Notification of the Department of Industrial Works on Methods for Measuring Noise Annoyance, Noise Levels 24-Hour Average and Maximum Noise Level from Factory B.E. 2553, dated December 20, 2010.)</p>



บริษัท อีสเทิร์น ไทย คอนซัลต์ติ้ง 1992 จำกัด

สวนอุตสาหกรรมศรีนครินทร์ (ศรีราชา) 683 หมู่ที่ 11 ถนน สุขุมวิท 8

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