

**DXG**

**ENGINEERED  
BY LIGHT**

**Flue Gas Analyzer &  
Continuous Emission  
Monitoring Systems (CEMS)**

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# DXG

ENGINEERED  
BY LIGHT

Established in 1989, DXG made a significant stride in 1998 by achieving the localization of high-precision spectroscopic equipment. Leveraging years of experience in optical instrument development and manufacturing, DXG successfully introduced South Korea's inaugural domestic flue gas analyzer.

As a reputable enterprise, DXG specializes in designing and producing gas analyzers and monitoring systems for diverse applications, including power plants, incinerators, petrochemical complexes, and maritime vessels. This distinction has firmly positioned DXG as a premier manufacturer of flue gas analyzers, proudly representing South Korea on the international stage.

Our paramount goal is elevating customer satisfaction through tailored product optimization and a comprehensive suite of services, from precise on-site installation to meticulous maintenance. This unwavering commitment defines DXG as a provider of exceptional solutions.



# HISTORY

- 1989** Foundation of DONGWOO OPTRON
- 1998** Establishment of Manufacturing Facilities & R&D center
- 1999** Development of Spectrometer
- 2001** Headquarter Relocation to Gyeonggi Gwangju
- 2006** 1st Presidential Commendation for Excellence in Precision Technology
- 2007** Development of Flue Gas Analyzer
- 2009** 2nd Presidential Commendation for Excellence in Precision Technology  
First Sales of Flue Gas Analyzers to 5 Major State-owned Power Plants in Korea
- 2012** Prime Minister Commendation for Contributing to National Industrial Development
- 2015** CPA Certification [China]
- 2018** TUV Certification [Germany]  
CCEP Certification [China]
- 2019** Established South West Branch [Korea]
- 2020** Established 2nd Factory  
Established South East Branch [Korea]  
EAC Certification [Russia]
- 2021** Supply Flue Gas Analyzer more than 2,000 sets  
Established West Branch [Korea]
- 2022** Headquarter Relocation to Seoul, Gangnam
- 2023** Change of Company Name to DXG Ltd.  
US EPA Approval  
PAC Certification [Russia]

# GLOBAL EXPANSION



In light of the worldwide surge in stringent environmental regulations, the environmental industry is undergoing substantial growth. DXG is strategically committed to global market expansion, evidenced by our proactive approach in obtaining major environmental certifications, including the US EPA, German TUV, Russian PAC and Chinese CCEP.



# ANALYZER BY COMPONENTS

NO	Type	Model	SO <sub>2</sub>	NO <sub>x</sub>	HCl	NH <sub>3</sub>	CO	CO <sub>2</sub>	O <sub>2</sub>	Dust	Flow
1	In-Situ Type	DGA-X*	○	○		○					
2		DGA-XP	○	○					○		
3		TGA Series			○	○	○		○		
4		GGA-70-1*							○		
5		LCD-80*								○	
6		LCD-80S								○	
7		LCD-82								○	
8		LGS-80								○	
9		PGA Series									○
10		SCD-90									
11	Extractive Type	DSM-X	○	○			○	○	○		
12		DSM-XG	○	○					○		
13		DSM-XK	○	○					○		
14		RSM-61					○	○			
15		LSM-30			○						
16		LSM-50				○					
17		LGH-80								○	
18		CSM-20		○							

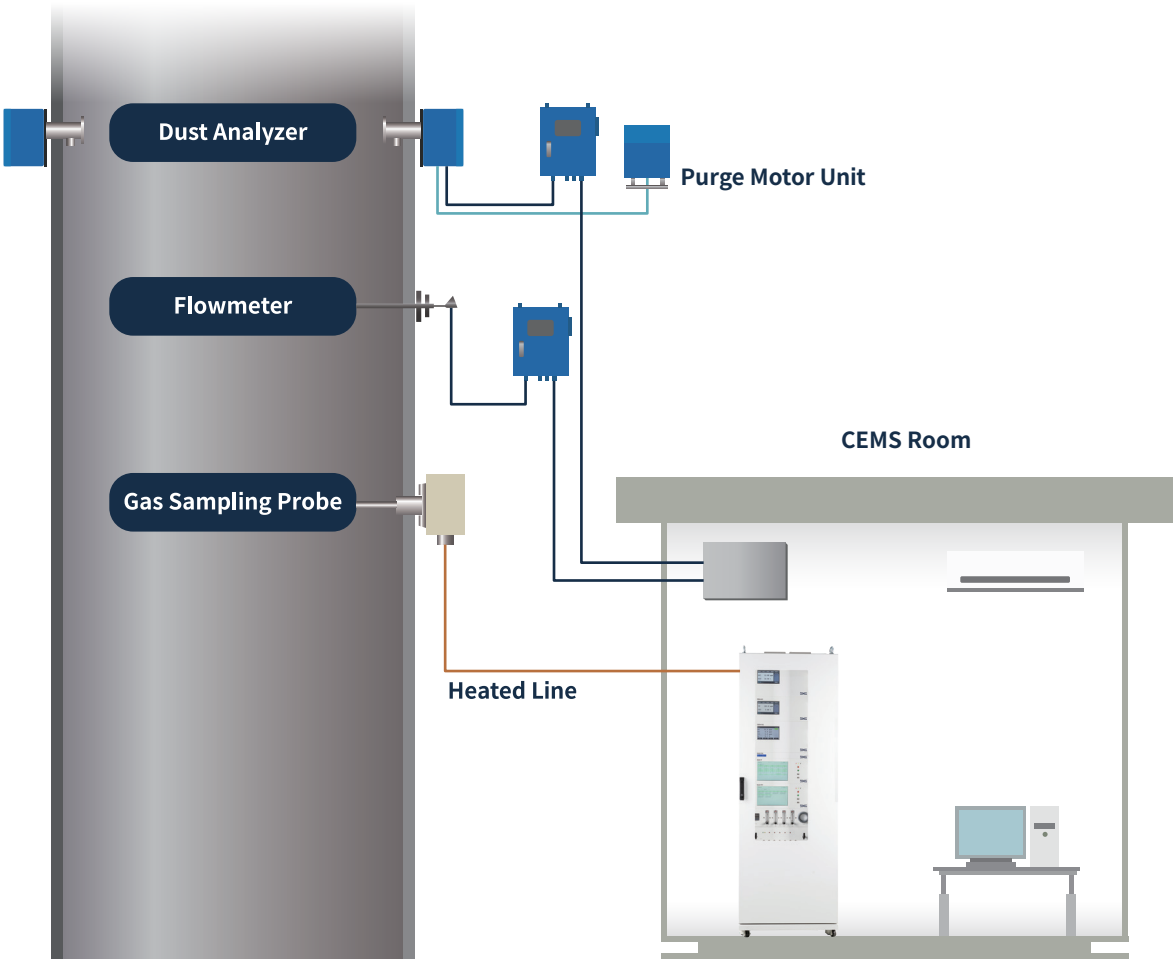
\* Explosion Proof Type Available

# EXTRACTIVE MONITORING TYPE

Gas is extracted from the designated sample point and subsequently directed through a heated sample line to the pre-conditioning facility. This preparatory stage involves the removal of moisture and particulate matter, ensuring that the gas is finely tuned to meet the precise measurement criteria of the analyzer.

This approach allows for easy accessibility of the analyzer in challenging installation locations.

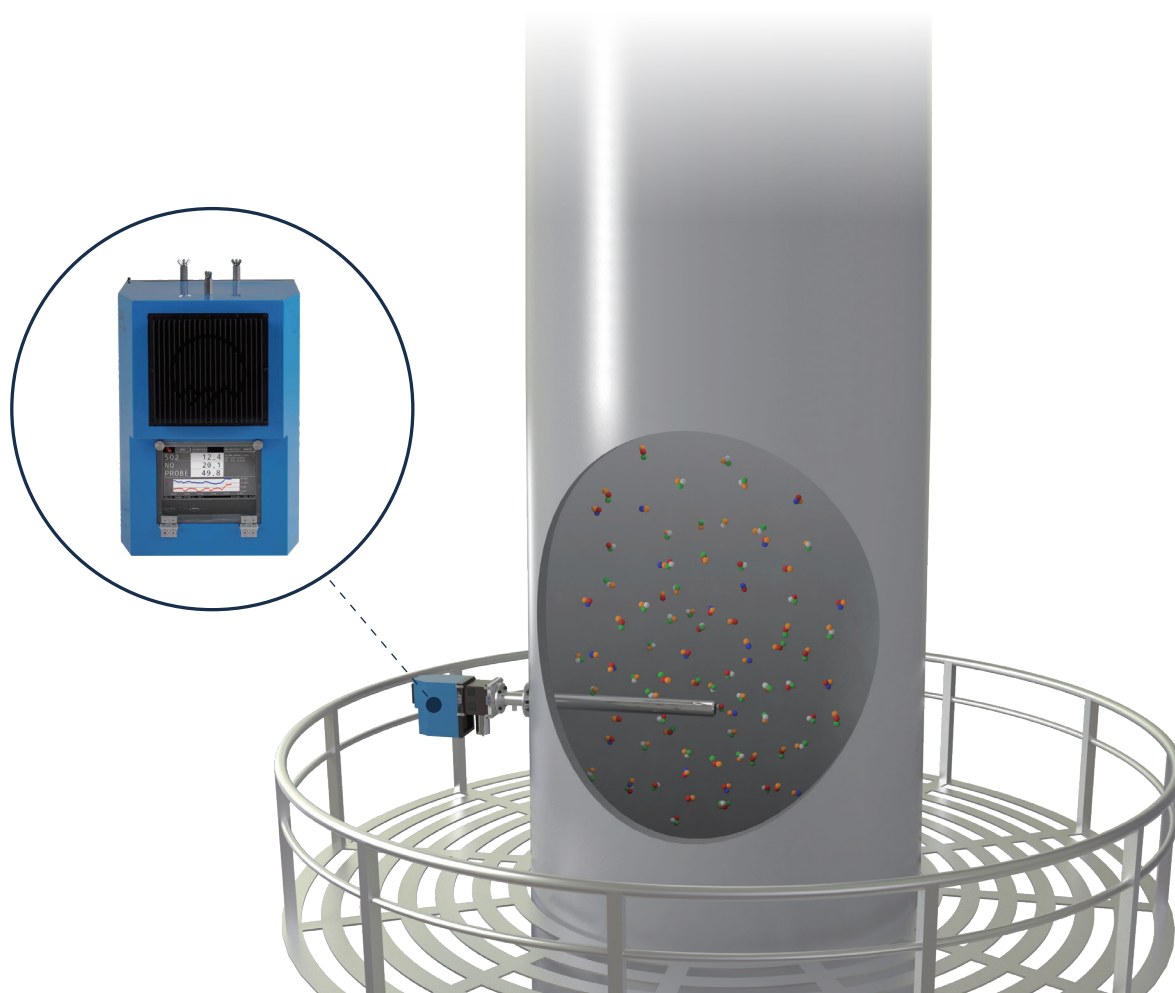
By installing the equipment in a convenient location, optical gas measurement is achieved through pre-conditioning. Extractive method can vary in configuration based on the required sample handling approach.



# IN-SITU MONITORING TYPE

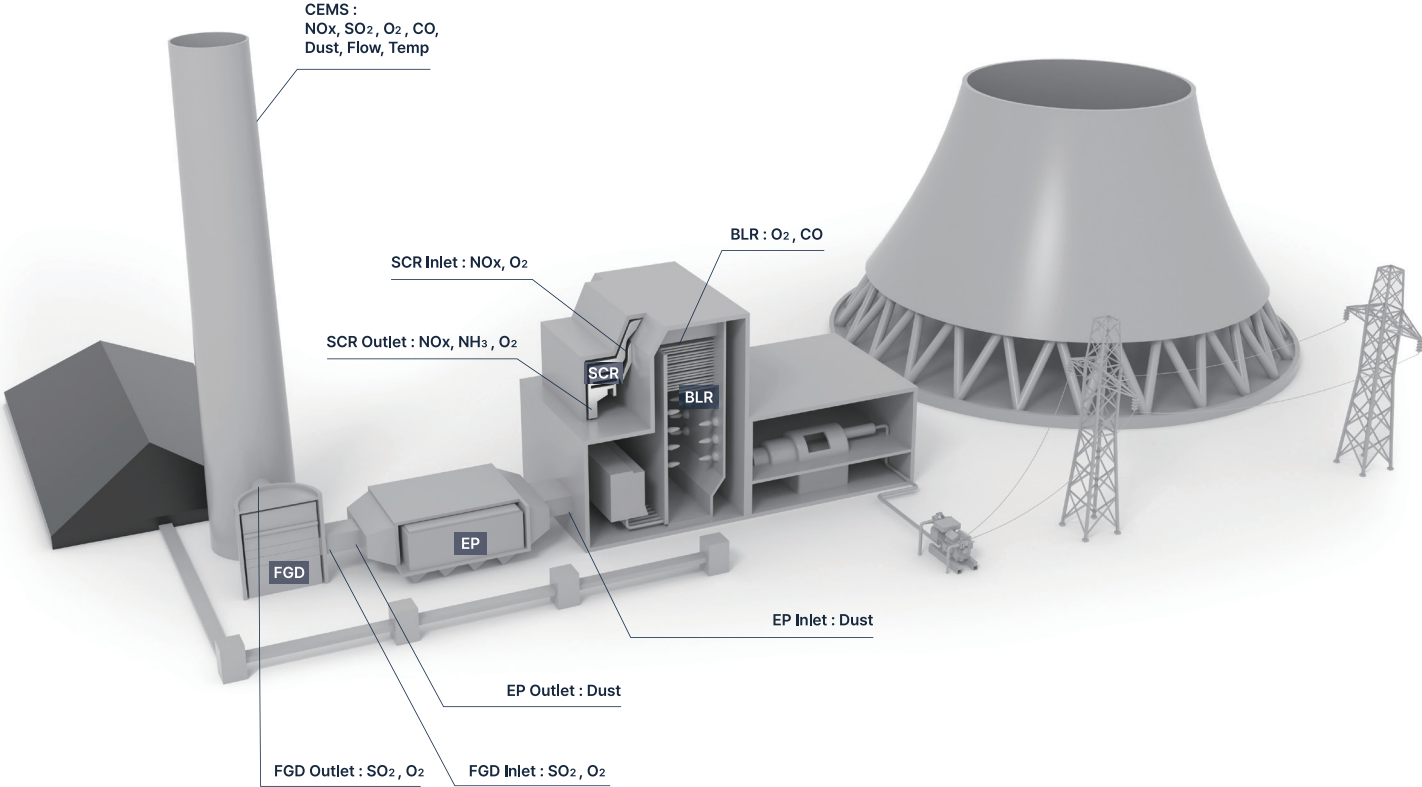
The In-situ method entails inserting a specialized probe into a chimney or duct through which gas is flowing. This probe enables the instantaneous measurement of gas concentrations within the internal space of the chimney or duct.

One significant advantage of this approach is its rapid response time, enabling quick and precise measurements. Moreover, its streamlined installation and operational ease further enhance its practicality, as it negates the requirement for additional pre-conditioning process.



# COAL POWER PLANT

Measured Components NOx, SO<sub>2</sub>, NH<sub>3</sub>, CO, O<sub>2</sub>, Dust, Flow, Temp



Maritime



Glass, Ceramics



Cement



Paper, Pulp



Petrochemical, Oil and Gas

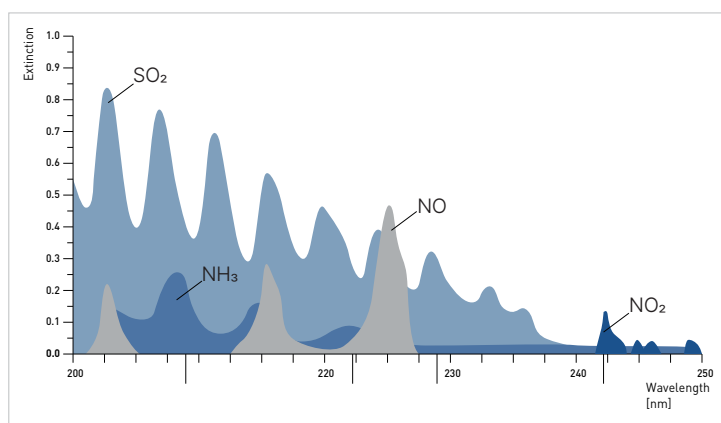
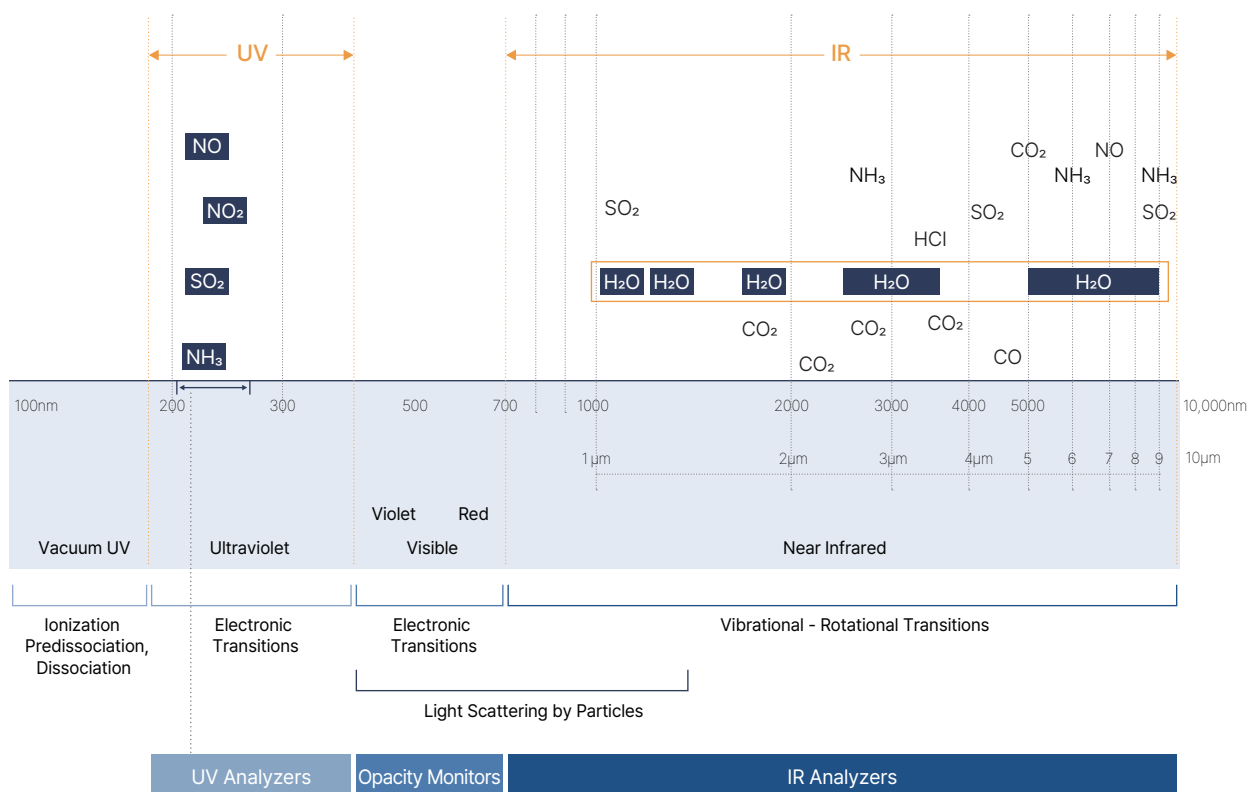


Metal, Steel



# UV & IR SPECTRUM

## PROS. & CONS. (UV vs. IR)



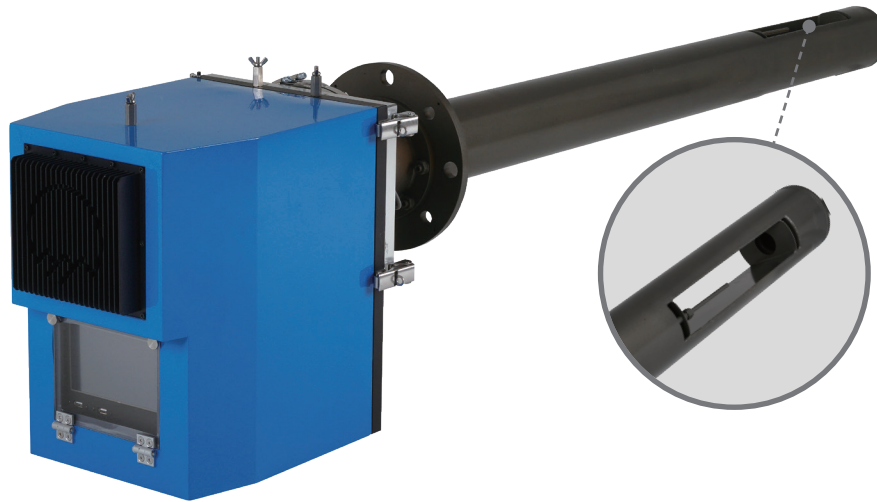
### Ultraviolet, UV

- Due to its short wavelength (200 – 400 nm), it has low noise, resulting in high measurement precision
- With no water vapor absorption bands, it excludes moisture interference and ensures high precision
- Only absorption bands for NO<sub>x</sub>, SO<sub>2</sub>, and NH<sub>3</sub> are present, making it unable to analyze gas components like CO and HCl

### Infrared, IR

- It has the advantage of analyzing a wide variety of gas components
- Due to its longer wavelength (1 – 20 um), there is a higher occurrence of noise, resulting in reduced measurement precision
- The wavelength range uniformly encompasses water vapor absorption bands, making complete exclusion of moisture interference challenging

## In-Situ



## Technical Specifications

Measured Components	SO <sub>2</sub> , NO, NO <sub>2</sub> , NH <sub>3</sub>
Measurement Principles	Differential Optical Absorption Spectroscopy (DOAS)
Measuring Ranges	SO <sub>2</sub> : Min 0 ~ 50 / Max 0 ~ 2000 ppm NO <sub>x</sub> : Min 0 ~ 40 / Max 0 ~ 2000 ppm NH <sub>3</sub> : Min 0 ~ 10 / Max 0 ~ 50 ppm
Min. Measuring Unit	0.1 ppm
Zero Drift (2 hours)	< ±1 % FS
Span Drift (2 hours)	< ±1 % FS
Repeatability	< ±1 % FS
Linearity	< ±1 % FS
Response Time	< 5 seconds

### System Components

Main Unit / Probe / Power Distribution Panel /  
Purge Motor Unit / Master Flange / Cables

### Options

Probe Protector / Teflon Coated Probe  
ACU (Auto-calibration Unit)  
IP66 or NEMA 4X  
Regulator & Valve / Calibration Gas

### Certificates Approvals

Type Approval (Korea)  
US EPA (USA)  
TUV (Germany)  
CPA, CCEP (China)  
EAC, PAC (Russia)

### Features

- 01 Measures in the low wavelength UV range (200 ~ 400 nm) for high precision and minimal moisture interference
- 02 Utilizes the differential optical absorption spectroscopy (DOAS) method, eliminating the need for calibration
- 03 Selectively measures two gases out of NO<sub>x</sub>, SO<sub>2</sub>, and NH<sub>3</sub> simultaneously
- 04 Enables individual NO and NO<sub>2</sub> measurements without the need for a NO<sub>x</sub> converter
- 05 Optional addition of a standard gas calibration device

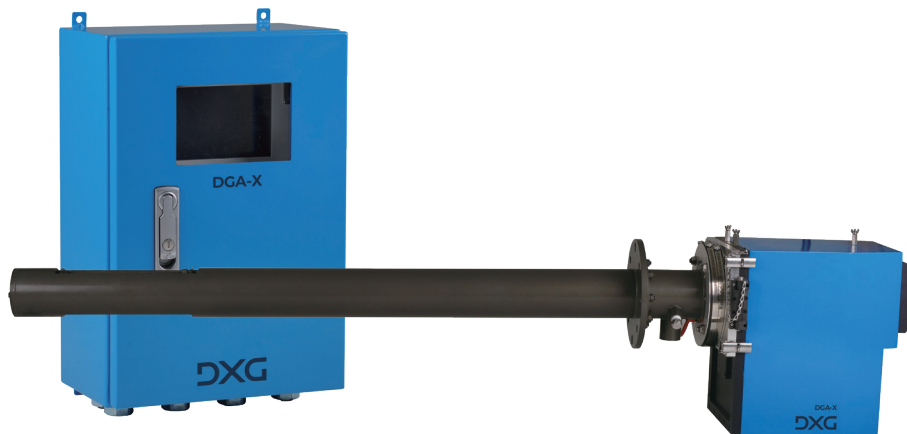
## Options

DGA-X with ACU  
Real Gas Calibration



## Options

DGA-X  
Separated Control Unit



## Other Specifications

<b>Measurement Conditions</b>	Operating Temperature	-20 ~ +55 °C	<b>Probe</b>	Materials	SUS 316 L or SUS 316 Ti
	Gas Temperature	< +900 °C		Length	0.5 ~ 2.5 m
<b>Communication</b>	Analog Outputs	2 Channel, 4 ~ 20 mA	<b>Purge Motor Unit</b>	Measurement Section Length	300 mm, 500 mm
	Digital Outputs	4 Channel		Gas Flow Rate	> 1 m/s
	Digital Inputs	2 Channel		Weight	1.5 m : 20 kg / 2.0 m : 25 kg
	Display & Input Device	7 inch LCD Monitor (Touch Screen)		Purge Motor	Necessary
<b>Dimension &amp; Power Supply</b>	Interface	RS232, 422, 485 / LAN (Ethernet) / Hart	Temperature Sensor	PT 1000	
	Dimensions	W 300 x D 380 x H420 mm	Dimensions	W550 x D350 x H850 mm	
	Weight	22 kg	Weight	15 kg	
	Enclosure Rating	IP 65 (IP 66)	Voltage	3P 480 VAC or 1P 220 VAC	
	Voltage	110 / 220 VAC, 50 / 60 Hz	Power Consumption	1.0 kW ~ 1.5 kW	
	Power Consumption	500 W			

# DGA-X Ex.

UV Absorption  
NO<sub>x</sub>, SO<sub>2</sub>, NH<sub>3</sub>

In-Situ

## Technical Specifications

Measured Components	SO <sub>2</sub> , NO, NO <sub>2</sub> , NH <sub>3</sub>
Measurement Principles	Differential Optical Absorption Spectroscopy (DOAS)
Measuring Ranges	SO <sub>2</sub> : Min 0 ~ 50 / Max 0 ~ 2000 ppm NO <sub>x</sub> : Min 0 ~ 40 / Max 0 ~ 2000 ppm NH <sub>3</sub> : Min 0 ~ 10 / Max 0 ~ 50 ppm
Min. Measuring Unit	0.1 ppm
Zero Drift (2 hours)	< ±1 % FS
Span Drift (2 hours)	< ±1 % FS
Repeatability	< ±1 % FS
Linearity	< ±1 % FS
Response Time	< 5 seconds



### System Components

Main Unit / Probe / Junction Box /  
Purge System / Master Flange / Cables

### Options

Purge Motor Unit (Air Pump, Air Filter, Air Hose)

### Features

- 01 Explosion-proof model of the DGA-X
- 02 In-situ explosion-proof design reduces the need for an explosion-proof shelter, saving costs and minimizing space constraints
- 03 Measures in the low wavelength UV range (200 ~ 400 nm) for high precision and minimal moisture interference
- 04 Utilizes the differential optical absorption spectroscopy (DOAS) method, eliminating the need for calibration
- 05 Selectively measures two gases out of NO<sub>x</sub>, SO<sub>2</sub>, and NH<sub>3</sub> simultaneously
- 06 Enables individual NO and NO<sub>2</sub> measurements without the need for a NO<sub>x</sub> converter

## Other Specifications

Measurement Conditions	Operating Temperature	-20 ~ +55 °C
	Gas Temperature	< +900 °C
Communication	Analog Outputs	2 Channel, 4 ~ 20 mA
	Digital Outputs	4 Channel
	Digital Inputs	2 Channel
	Display & Input Device	7 inch LCD Monitor (Touch Screen)
Dimension & Power Supply	Interface	RS232, 422, 485 / LAN (Ethernet) / Hart
	Dimensions	W 300 x D 380 x H420 mm
	Weight	38 kg
	Enclosure Rating	IP 65
	Voltage	110 / 220 VAC, 50 / 60 Hz
	Power Consumption	500 W

Probe	Materials	SUS 316 L or SUS 316 Ti
	Length	0.5 ~ 2.5 m
	Measurement Section Length	300 mm, 500 mm
	Gas Flow Rate	> 1 m/s
	Weight	1.5 m : 20 kg / 2.0 m : 25 kg
	Purge Motor	Necessary
Purge Motor Unit	Temperature Sensor	PT 1000
	Dimensions	W185 x D367.5 x L153 mm (Integrated with M / U)
	Weight	13 kg
	Voltage	110 / 220 VAC, 50 / 60 Hz
IA (Instrument Air) Consumption	Power Consumption	100 W
	Analyzer	8.4 m <sup>3</sup> /h
	Probe	60 m <sup>3</sup> /h



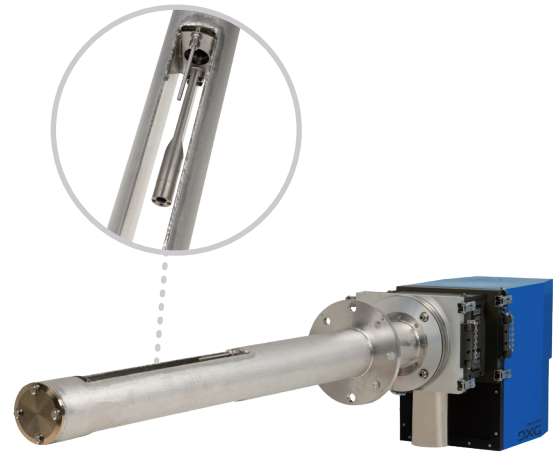
# DGA-XP

UV Absorption / Zirconia  
NO<sub>x</sub>, SO<sub>2</sub>, O<sub>2</sub>

In-Situ

## Technical Specifications

Measured Components	NO <sub>x</sub> , SO <sub>2</sub> , O <sub>2</sub>
Measurement Principles	UV (NO <sub>x</sub> , SO <sub>2</sub> ) / Zirconia (O <sub>2</sub> )
Measuring Ranges	NO <sub>x</sub> : Min 0 ~ 50 / Max 0 ~ 200 ppm SO <sub>2</sub> : Min 0 ~ 50 / Max 0 ~ 200 ppm O <sub>2</sub> : 0 ~ 25 %
Min. Measuring Unit	0.1 ppm (NO <sub>x</sub> , SO <sub>2</sub> ), 0.01 vol% (O <sub>2</sub> )
Zero Drift (2 hours)	< ±1 % FS
Span Drift (2 hours)	< ±2 % FS
Repeatability	< ±2 % FS
Linearity	< ±2 % FS
Response Time	< 5 seconds



**System Components** Main Unit / Probe / Power Distribution Panel / Purge Motor Unit / Master Flange / Cables

**Options** Probe Protector / Teflon Coated Probe  
IP66 or NEMA 4X (Panel)  
Regulator & Valve / Calibration Gas  
Gas Panel / ACU (Auto-calibration Unit)

**Certificates / Approvals** Type Approval (Korea)

## Features

- 01 Integrates DGA-X and GGA-70-1 to simultaneously measure NO<sub>x</sub>, SO<sub>2</sub>, and O<sub>2</sub>
- 02 NO<sub>x</sub> and SO<sub>2</sub> measurements employ ultraviolet differential optical absorption spectroscopy (UV DOAS), while O<sub>2</sub> uses zirconia sensing method
- 03 Optional addition of a standard gas calibration device

## Other Specifications

<b>Measurement Conditions</b>	Operating Temperature	-20 ~ +55 °C
	Gas Temperature	< +200 °C
<b>Communication</b>	Analog Outputs	3 Channel, 4 ~ 20 mA
	Digital Outputs	6 Channel
	Digital Inputs	3 Channel
	Display & Input Device	7 inch LCD Monitor (Touch Screen)
<b>Dimension &amp; Power Supply</b>	Interface	RS232, 422, 485 / LAN (Ethernet) / Hart
	Dimensions	W300 x D420 x H413 mm
	Weight	22 kg
	Enclosure Rating	IP66
	Voltage	110 / 220 VAC, 50 / 60 Hz
	Power Consumption	500 W

<b>Probe</b>	Materials	SUS 316 L or SUS 316 Ti
	Length	0.5 ~ 2.5 m
	Measurement Section Length	500 mm
	Gas Flow Rate	> 1 m/s
	Weight	1.5 m : 25 kg / 2.0 m : 30 kg
<b>Purge Motor Unit</b>	Purge Motor	Necessary
	Temperature Sensor	PT 1000
<b>IA (Instrument Air) Consumption</b>	Dimensions	W550 x D350 x H850 mm
	Weight	15 kg
	Voltage	3 P 480 VAC or 1 P 220 VAC
	Power Consumption	1.0 kW ~ 1.5 kW
	Analyzer	0.2 m <sup>3</sup> /h

# RGA-60 | TDLS CO

## In-Situ

### Technical Specifications

Measured Components	CO
Measurement Principles	TDLS (Tunable Diode Laser Spectroscopy)
Measuring Ranges	0 – 1000 ppm
Min. Measuring	0.1 ppm
Zero Drift (2 hours)	< ±2 % FS
Span Drift (2 hours)	< ±2 % FS
Repeatability	< ±2 % FS
Linearity	< ±1 % FS
Response Time	< 5 seconds



**System Components** Main Unit / Probe / Power Distribution Panel / Purge Motor Unit / Master Flange / Cables

**Options** Probe Protector / Teflon Coated Probe  
IP66 or NEMA 4X  
Regulator & Valve / Calibration Gas

- Features**
- 01 Utilizes tunable diode laser (TDL) technology to scan a narrow wavelength range, unaffected by gases other than CO
  - 02 Semi-permanent use without light source replacement using a laser light source
  - 03 Enables standard gas calibration with calibration filters
  - 04 Incorporates SUS material in calibration filters to prevent damage from duct-related particles like dust and sand

### Other Specifications

<b>Measurement Conditions</b>	Operating Temperature	-20 ~ +55 °C
	Gas Temperature	< +450 °C
<b>Communication</b>	Analog Outputs	2 Channel, 4 ~ 20 mA
	Digital Outputs	4 Channel
	Digital Inputs	2 Channel
	Display & Input Device	7 inch LCD Monitor (Touch Screen)
<b>Dimension &amp; Power Supply</b>	Interface	RS232, 422, 485 / LAN (Ethernet) / Hart
	Dimensions	W300 x D420 x H413 mm
	Weight	20 kg
	Enclosure Rating	IP65 (IP66)
	Voltage	110 / 220 VAC, 50 / 60 Hz
	Power Consumption	500 W

<b>Probe</b>	Materials	SUS 316 L or SUS 316 Ti
	Length	0.5 ~ 2.5 m
	Measurement Section Length	500 mm
	Gas Flow Rate	> 1 m/s
	Weight	1.5 m : 20 kg / 2.0 m : 25 kg
	Purge Motor	Necessary
	Temperature Sensor	PT 1000
<b>IA (Instrument Air) Consumption</b>	Analyzer	0.5 m³/h

# TGA-50 | TDLS

NH<sub>3</sub>

## In-Situ

### Technical Specifications

Measured Components	NH <sub>3</sub>
Measurement Principles	TDLS (Tunable Diode Laser Spectroscopy)
Measuring Ranges	Min 0 ~ 10 / Max 0 ~ 500 ppm
Min. Measuring Unit	0.1 ppm
Zero Drift (2 hours)	< ±1 % FS
Span Drift (2 hours)	< ±1 % FS
Repeatability	< ±2 % FS
Linearity	< ±1 % FS
Response Time	< 5 seconds



#### System Components

Main Unit / Probe / Power Distribution Panel / Purge Motor Unit / Master Flange / Cables

#### Options

Probe Protector / Teflon Coated Probe  
IP66 or NEMA 4X  
Regulator & Valve / Calibration Gas

#### Certificates / Approvals

Type Approval (Korea)

#### Features

- 01 Utilizes tunable diode laser (TDL) technology to scan a narrow wavelength range, unaffected by gases other than NH<sub>3</sub>
- 02 Semi-permanent use without light source replacement using a laser light source
- 03 Enables standard gas calibration with calibration filter
- 04 Incorporates SUS material in calibration filters to prevent damage from duct-related particles like dust and sand

### Other Specifications

Measurement Conditions	Operating Temperature	-20 ~ +55 °C
	Gas Temperature	< +450 °C
Communication	Analog Outputs	2 Channel, 4 ~ 20 mA
	Digital Outputs	4 Channel
	Digital Inputs	2 Channel
	Display & Input Device	7 inch LCD Monitor (Touch Screen)
Dimension & Power Supply	Interface	RS232, 422, 485 / LAN (Ethernet) / Hart
	Dimensions	W300 x D420 x H413 mm
	Weight	20 kg
	Enclosure Rating	IP65 (IP66)
	Voltage	110 / 220 VAC, 50 / 60 Hz
	Power Consumption	500 W

#### Probe

Materials	SUS 316 L or SUS 316 Ti
Length	0.5 ~ 2.5 m
Measurement Section Length	500 mm
Gas Flow Rate	> 1 m/s
Weight	1.5 m : 20 kg / 2.0 m : 25 kg
Purge Motor	Necessary
Temperature Sensor	PT 1000
Analyzer	0.5 m <sup>3</sup> /h

#### IA (Instrument Air) Consumption

# GGA-70-1 | Zirconia

O<sub>2</sub>

In-Situ

## Technical Specifications

Measured Components	O <sub>2</sub>
Measurement Principles	Zirconia (ZrO <sub>2</sub> )
Measuring Ranges	Min 0 ~ 25 / Max 0 ~ 100 %
Min. Measuring Unit	0.01 %
Zero Drift (2 hours)	< ±1 % FS
Span Drift (2 hours)	< ±1 % FS
Repeatability	< ±0.2 %
Linearity	< ±1 % FS
Response Time	< 5 seconds



### System Components

Detector / Analyzer Main Unit / Analyzer Panel / Calibration Gas Unit / Master Flange / Cables

### Options

Detector Protector / Teflon Coated Detector  
IP66 or NEMA 4X  
Calibration Gas (Zero Gas, Span Gas, 2 Stage Regulator)

### Certificates / Approvals

Type Approval (Korea)  
US EPA (USA)  
CPA, CCEP (China)  
EAC, PAC (Russia)

### Features

- 01 Measures ionization reactions based on EMF changes between platinum (Pt) electrodes using zirconia (ZrO<sub>2</sub>) principle, converted into oxygen concentrations
- 02 Employs a K-type thermocouple for excellent linearity between temperature and EMF
- 03 Maintains measurement accuracy through periodic automatic self-check cycles
- 04 Utilizes an IC with built-in cold junction compensation (CJC) functionality
- 05 Minimizes noise and protects heater lifespan with zero-crossing functionality
- 06 Explosion-proof model available (GGA-70-1 Ex.)

## Other Specifications

Measurement Conditions	Operating Temperature	-20 ~ +55 °C
	Operating Humidity	0 ~ 95 % RH
	Gas Temperature	0 ~ +800 °C
	Gas Pressure	-5 ~ 250 kPa
Communication	Analog Outputs	2 Channel, 4 ~ 20 mADC 2 Channel, 1 ~ 5 VDC
	Digital Outputs	4 Channel
	Digital Inputs	2 Channel
	Display & Input Device	4.3 inch LCD Monitor (Touch Screen)
	Interface	RS232, 422, 485 / LAN (Ethernet) / Hart
	Storage Device	Flash Memory
Dimension & Power Supply	Dimensions	W370 x D200 x H480 mm
	Weight	14 kg
	Enclosure Rating	IP65
	Voltage	110 / 220 VAC, 50 / 60 Hz
	Power Consumption	500 W

Detector	Materials	SUS 316 L or SUS 316 Ti
	Length	1.0 m, 1.5 m
	Heating Temperature	+750 °C
	Weight	1.0 m : 10 kg / 1.5 m : 15 kg
	Temperature Sensor	PT 1000 (Optional)
Calibration Gas Unit (Frame Type)	Materials	SUS 304
	Dimensions	W1650 x D340 x H340 mm
	Operating Temperature	0 ~ +40 °C
	Weight	14 kg
Calibration Gas Unit (Panel Type)	Materials	SUS 304
	Dimensions	W500 x D300 x H1200 mm
	Operating Temperature	-20 ~ +60 °C
	Weight	35 kg (46 kg including base)
IA (Instrument Air) Consumption	Analyzer	0.2 m <sup>3</sup> /h

# LCD-80

Light Transmission  
Dust (Dry Type)

In-Situ

## Technical Specifications

Measured Components	Dust, Opacity
Measurement Principles	Laser (Light Transmission Method)
Measuring Ranges	Dust : Min 0 ~ 15 / Max 0 ~ 20000 mg/m <sup>3</sup> Opacity : 0 ~ 100 %
Min. Measuring Unit	0.1 mg/m <sup>3</sup>
Measurement Distances	1 ~ 10 m
Zero Drift (2 hours)	< ±1 % FS
Span Drift (2 hours)	< ±2 % FS
Repeatability	< ±1 % FS
Linearity	< ±2 % FS
Response Time	< 5 seconds



### System Components

Analyzer Unit / Cables /  
Transceiver & Reflector Unit /  
Master Flange / Purge Motor Unit

### Options

Calibration Jig  
Main Unit Cabinet  
IP66 or NEMA 4X

### Certificates / Approvals

Type Approval (Korea)  
US EPA (USA)  
CPA (China)  
EAC, PAC (Russia)

### Features

- 01 Uses a high-efficiency laser diode with a red visible light wavelength range of 645 - 660nm as the light source
- 02 Features a convenient structure and a window viewer for easy alignment confirmation
- 03 Applicable as a single path system for high-concentration and double path for low-concentration environments
- 04 Allows representative measurements of large diameter stacks using the cross-duct method

## Other Specifications

Measurement Conditions	Operating Temperature	-20 ~ +55 °C
	Operating Pressure	3 bar (≒ 300 kPa)
	Operating Humidity	0 ~ 95 % RH
	Gas Temperature	-30 ~ +600 °C
	Gas Pressure	-50 ~ 30 hPa
Communication	Analog Outputs	1 Channel, 4 ~ 20 mA
	Digital Outputs	3 Channel
	Digital Inputs	1 Channel / DI Voltage 12 VDC ~ 24 VDC
	Display & Input Device	7 inch LCD Monitor (Touch Screen / USB)
Purge Motor Unit	Interface	RS232, 422, 485 / LAN (Ethernet) / Hart
	Dimensions	W550 x D350 x H850 mm
	Weight	15 kg
	Voltage	1P 220 VAC
	Power Consumption	500 W

### Analyzer Unit

Materials	SUS 304
Dimensions	W330 x D206 x H480 mm
Weight	18.5 kg
Voltage	110 / 220 VAC, 50 / 60 Hz
Power Consumption	200 W

### Transceiver Unit

Materials	SUS 304, AL 6061
Dimensions	W210 x D200 x H270 mm
Weight	4.8 kg
Voltage	12 V / 24 V

### Reflector Unit

Materials	SUS 304, AL 6061
Dimensions	W200 x D140 x H200 mm
Weight	4.6 kg
Voltage	N / A (24 V with heater option)

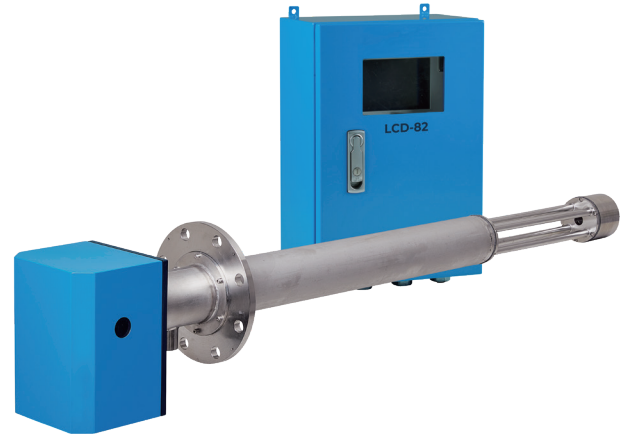
# LCD-82

Light Transmission  
Dust (Dry type)

## In-Situ

### Technical Specifications

Measured Components	Dust, Opacity
Measurement Principles	Laser (Light Transmission Method)
Measuring Ranges	Dust : Min 0 ~ 1000 / Max 0 ~ 20000 mg/m <sup>3</sup> Opacity : 0 ~ 100 %
Min. Measuring Unit	0.1 mg/m <sup>3</sup>
Zero Drift (24 hours)	< ±1 % FS
Span Drift (24 hours)	< ±2 % FS
Repeatability	< ±1 % FS
Linearity	< ±2 % FS
Response Time	< 5 seconds



### System Components

Main Unit / Transceiver Probe Unit /  
Purge Motor Unit (Air Pump, Air Filter, Air Hose) /  
Cables / Master Flange

### Options

Calibration Jig  
Main Unit Cabinet  
IP66 or NEMA 4X

### Features

- 01 A model transformed from the LCD-80 cross-duct type to a probe type analyzer
- 02 Suitable for ultra-high-concentration environments where light cannot pass through in cross-duct applications
- 03 Ideal for sites with stack vibrations or distortion causing misalignment in cross-duct applications
- 04 Prevents optical contamination using the purge motor unit
- 05 Protects the probe from ash-cutting with the probe protector

### Other Specifications

Measurement Conditions	Operating Temperature	-20 ~ +55 °C
	Operating Pressure	3 bar (≒ 300 kPa)
	Operating Humidity	0 ~ 95 % RH
	Gas Temperature	-30 ~ +600 °C
	Gas Pressure	-50 ~ 30 hPa
Communication	Analog Outputs	1 Channel, 4 ~ 20 mA
	Digital Outputs	3 Channel
	Digital Inputs	1 Channel / DI Voltage 12 VDC ~ 24 VDC
	Display & Input Device	7 inch LCD Monitor (Touch Screen / USB)
	Interface	RS232, 422, 485 / LAN (Ethernet) / Hart

### Analyzer Unit

Materials	SUS 304
Dimensions	W400 x D201 x H500 mm
Weight	18.5 kg
Voltage	110 / 220 VAC, 50 / 60 Hz
Power Consumption	200 W

### Probe

Materials	SUS 316, SUS 316Ti
Length	0.5 ~ 2.5 m
Weight	10 ~ 20 kg

### Purge Motor Unit

Dimensions	W550 x D350 x H850 mm
Weight	15 kg
Voltage	1P 220 VAC
Power Consumption	500 W

# LGS-80

Forward Light Scattering  
Dust (Dry type)

In-Situ

## Technical Specifications

Measured Components	Dust
Measurement Principles	Forward Light Scattering
Measuring Ranges	Min 0 ~ 15 / Max 0 ~ 200 mg/m <sup>3</sup>
Measurable Minimum Thickness	0.05 mg/m <sup>3</sup>
Min. Measuring Unit	0.1 mg/m <sup>3</sup>
Zero Drift (24 hours)	< ±1 % FS
Span Drift (24 hours)	< ±2 % FS
Repeatability	< ±1 % FS
Linearity	< ±2 % FS
Response Time	< 5 seconds , 1 ~ 600 seconds (Selectable)



### System Components

Main Unit / Probe /  
Purge Motor Unit (Air Pump, Air Filter, Air Hose) /  
Master Flange / Cables

### Certificates / Approvals

Type Approval (Korea)  
US EPA (USA)

### Features

- 01 Capable of measuring concentrations as low as 0.05 mg/m<sup>3</sup> using forward scatter with forward light scattering principle
- 02 Prevents internal component contamination with purge air supply
- 03 Compensates for optical contamination effects on measurements through periodic span check cycle

## Other Specifications

Measurement Conditions	Operating Temperature	-20 ~ +60 °C
	Gas Temperature	< +150 °C
	Gas Flow Rate	4 ~ 20 m/s
	Gas Pressure	-50 ~ 10 mbar
	Gas Humidity	< 99 % RH
Communication	Analog Outputs	1 Channel, 4 ~ 20 mA
	Digital Outputs	4 Channel
	Digital Inputs	1 Channel
	Display & Input Device	7 inch LCD Monitor (Touch Screen)
	Interface	RS232, 422, 485

Analyzer Unit	Materials	SUS 304
	Dimensions	W440 x D266 x H500 mm
	Weight	20 kg
	Voltage	110 / 220 VAC, 50 / 60 Hz
	IP Grade	IP54 (Electrical Device IP65)
	Power Consumption	200 W
Probe	Materials	SUS 316, SUS 316Ti
	Length	0.5 ~ 2.5 m
	Weight	4.8 kg
Purge Motor Unit	Dimensions	W550 x D350 x H850 mm
	Weight	15 kg
	Voltage	1P 220 VAC
	Power Consumption	500 W

# LGH-80

Forward Light Scattering  
Dust (Wet type)

## Extractive

### Technical Specifications

Measured Components	Dust
Measurement Principles	Forward Light Scattering
Measuring Ranges	Min 0 ~ 15 / Max 0 ~ 200 mg/m <sup>3</sup>
Measurable Minimum Thickness	0.05 mg/m <sup>3</sup>
Min. Measuring Unit	0.1 mg/m <sup>3</sup>
Zero Drift (24 hours)	< ±1 % FS
Span Drift (24 hours)	< ±2 % FS
Repeatability	< ±1 % FS
Linearity	< ±2 % FS
Response Time	< 5 seconds , 1 ~ 600 seconds (Selectable)



<b>System Components</b>	LGH-80 Main Unit / Sample Probe / Purge Motor Unit (Air Pump, Air Filter, Air Hose) Cables / Maser Flange
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<b>Options</b>	PGA-91 Pitot Tube Flowmeter
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<b>Certificates / Approvals</b>	Type Approval (Korea)
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<b>Features</b>	<ol style="list-style-type: none"> <li>01 Optimized for high humidity environments using a wet measurement method</li> <li>02 Capable of measuring concentrations as low as 0.05mg/m<sup>3</sup> using forward scatter with forward light scattering principle</li> <li>03 Ensures extended component lifespan by sampling gas within the duct using the ejector principle</li> <li>04 Prevents sampling errors through isokinetic sampling</li> <li>05 Evaporates moisture in collected gas for accurate measurements and prevents concentration errors due to moisture condensate</li> <li>06 Prevents dust deposition in the sample line through periodic blowback cycle</li> <li>07 Compensates for optical contamination effects on measurements through periodic span check cycle</li> </ol>
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### Other Specifications

<b>Measurement Conditions</b>	Operating Temperature	-20 ~ +60 °C
	Gas Temperature	< +150 °C
	Gas Flow Rate	4 ~ 20 m/s
	Gas Pressure	-50 ~ 20 mbar
	Gas Humidity	<1 weight%

<b>Communication</b>	Analog Outputs	1 Channel, 4 ~ 20 mA
	Digital Outputs	4 Channel
	Digital Inputs	1 Channel
	Display & Input Device	7 inch LCD Monitor (Touch Screen)
	Interface	RS232, 422, 485

<b>Analyzer Unit</b>	Materials	SUS 304
	Dimensions	W800 x D600 x H1806 mm
	Weight	45 kg
	Voltage	110 / 220 VAC, 50 / 60 Hz
	Power Consumption	2 kW

<b>Probe</b>	Materials	PVDF
	Length	0.5 ~ 2.5 m
	Weight	0.5 kg

<b>Purge Motor Unit</b>	Dimensions	W550 x D350 x H850 mm
	Weight	15 kg
	Voltage	3 P 480 VAC
	Power Consumption	1.5 kW



# PGA Series | Pitot-tube Flowmeter

In-Situ

## Technical Specifications

Measured Components	Flow Rate (Vs), Pressure Dynamic (Pd), Pressure Static (Ps), Pressure Ambient (Pa), Temperature (Ts)
Measurement Principles	Pitot-tube
Measuring Ranges	Vs : Min 0 ~ 5 m/s, Max 0 ~ 50 m/s Pd : 2.5 ~ 254 mmH <sub>2</sub> O Pa : 500 ~ 1100 hPa
Repeatability	< ±0.5 % FS
Linearity	< ±1 % FS
Response Time	< 5 seconds



System Components	Analyzer Main Unit / S-type Pitot Tube / Master Flange / Cables
Options	Main Unit Cabinet Teflon Coated Probe
Certificates / Approvals	Type Approval (Korea) US EPA (USA) CCEP (China) EAC (Russia)

Features	<ol style="list-style-type: none"> <li>01 Measures flow velocity through the vertical surface of the pitot tube using S-Type pitot tubes (dynamic pressure)</li> <li>02 Installs on one side of the stack for easy installation and maintenance</li> </ol>
Product Variation	PGA-91 : 10 m/s, 20 m/s, 25 m/s, 30 m/s, 50 m/s PGA-92 : 15 m/s PGA-93 : 8 m/s PGA-94 : 5 m/s

## Other Specifications

Measurement Conditions	Operating Temperature -18 ~ +55 °C Gas Temperature < 500 °C
Communication	Analog Outputs 2 Channel, 4 ~ 20 mA Analog Inputs 1 Channel (Internal), 4 ~ 20 mA Digital Outputs 4 Channel Digital Inputs 1 Channel Display & Input Device 7 inch LCD Monitor (Touch Screen) Interface RS232, 422, 485 / LAN (Ethernet) / Hart
Dimension & Power Supply	Dimensions W350 x D243 x H480 mm Weight 25 kg Voltage 110 / 220 VAC, 50 / 60 Hz Power Consumption 200 W

Pitot Tube	Materials SUS 316 L or SUS 316 Ti Length 500 mm ~ 2500 mm Max. Gas Temperature < 500°C Gas Flow Rate > 0.01 m/s Weight 1.0 m : 10 kg / 2.0 m : 15 kg Purge Motor Necessary (Instrument Air) Temperature Sensor K-type Thermocouple
IA (Instrument Air) Consumption	Analyzer 0.2 m <sup>3</sup> /h

# SCD-90 | Ultrasonic Flowmeter

In-Situ

## Technical Specifications

Measured Components	Velocity, Flow Rate
Measurement Principles	Ultrasonic
Measuring Ranges	0 ~ 50 m/sec
Min. Measuring Unit	0.1 m/sec
Repeatability	< ±2 % FS
Linearity	< ±5 % FS
Response Time	< 5 seconds



**System Components**  
Main Unit / Ultrasonic Transducers /  
Purge Motor Unit (Air Pump, Air Filter, Air Hose)  
Cables / Master Flange

- Features**
- 01 Measures gas flow and velocity using ultrasonic signals
  - 02 Allows representative measurements of large diameter stacks using the cross-duct method

**Certificates / Approvals**  
Type Approval (Korea)

## Other Specifications

<b>Measurement Conditions</b>	Operating Temperature	-20 ~ +60 °C
	Gas Temperature	0 ~ 150 °C
	Measurement Distances	1 ~ 50 m
	<b>Communication</b>	
	Analog Outputs	1 Channel, 4 ~ 20 mA
	Digital Outputs	3 Channel
	Display & Input Device	7 inch LCD Monitor (Touch Screen)
	Interface	RS232, 485

<b>Dimension &amp; Power Supply</b>	Dimensions	W350 X D243 X H480
	Weight	25 kg
	Voltage	110 / 220 VAC, 50 / 60 Hz
	Power Consumption	200 W
<b>Purge Motor Unit</b>	Dimensions	W550 x D350 x H850 mm
	Weight	15 kg
	Voltage	1 P 220 VAC
	Power Consumption	500 W

# EXTRACTIVE TYPE SYSTEM

19 inch Rack Configuration  
for CEMS



## Technical index

### Measurement Components and Principles

SO <sub>2</sub> , NO, NO <sub>2</sub>	UV DOAS
CO, CO <sub>2</sub>	NDIR
O <sub>2</sub>	Paramagnetic or Zirconia
HCl	TDLS

### Data Logger

AD Converter	<ul style="list-style-type: none"> <li>Available in 19 inch rack mount or panel installation types</li> <li>Stores measurement data and status information (5-second data) for over 10 days</li> <li>Equipped with error display functionality for rapid response</li> </ul>
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Data Logger	<ul style="list-style-type: none"> <li>Utilizes a high performance quad-core CPU</li> <li>Runs stably with linux as the primary OS</li> <li>Features a user friendly 10.1-inch touch screen</li> </ul>
FEP	<ul style="list-style-type: none"> <li>Offers a ample storage capacity for extended data retention, storing over a year of 5 minute data</li> </ul>

### Gas Sampling & Conditioning System

Components	Sampler, Cooler, Needle Valve, MD Dryer, Drain Pump, Moisture Detector, Solenoid Valve, Membrane Filter
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# DSM-X

UV Absorption / NDIR / Zirconia  
NO<sub>x</sub>, SO<sub>2</sub>, CO, CO<sub>2</sub>, O<sub>2</sub>

## Extractive

### Technical Specifications

Measured Components	NO <sub>x</sub> , SO <sub>2</sub> , CO, CO <sub>2</sub> , O <sub>2</sub>
Measurement Principles	UV (NO, NO <sub>2</sub> , SO <sub>2</sub> ) / NDIR (CO, CO <sub>2</sub> ) / Zirconia (O <sub>2</sub> )
Measuring Ranges	NO : Min 0 ~ 40 / Max 0 ~ 2000 ppm NO <sub>2</sub> : 0 ~ 100 ppm SO <sub>2</sub> : Min 0 ~ 50 / Max 0 ~ 2000 ppm CO : Min 0 ~ 100 / Max 0 ~ 600 ppm CO <sub>2</sub> : Min 0~25 / Max 0~50 % O <sub>2</sub> : Min 0 ~ 25 / Max 0 ~ 100 %
Min. Measuring Unit	0.1 ppm
Zero Drift (24 hours)	< ±1 % FS
Span Drift (24 hours)	< ±1 % FS
Repeatability	< ±1 % FS
Linearity	< ±2 % FS
Response Time	< 5 seconds

#### System Components

Main Unit / Cables

#### Options

Sample Probe / Sample Line / Conditioning Systems (Cooler, Filter, Valve, Pumps etc.) / Distribution Panel / Rack Panel / Regulator / Calibration Gas

#### Certificates / Approvals

Type Approval (Korea)  
CPA (China)



#### Features

- 01 Multi-analyzer integrating UV, NDIR, and Zirconia measurement methods into a single product, allowing simultaneous measurement of NO, NO<sub>2</sub>, SO<sub>2</sub>, CO, CO<sub>2</sub>, and O<sub>2</sub> in a single unit
- 02 Enables individual NO and NO<sub>2</sub> measurements without the need for a NO<sub>x</sub> converter
- 03 Utilizes cost-effective zirconia principle for O<sub>2</sub> measurements

### Other Specifications

#### Measurement Conditions

Operating Temperature	+10 ~ +50 °C
Operating Humidity	0 ~ 99 % RH
Gas Temperature	< +900 °C
Gas Flow Rate	0.5 L/min ~ 1.5 L/min
Sampling Method	Gas Cooler
Sampling Pump	Diaphragm Pump
Sampling Tube	PTFE
Ambient Pressure	800 ~ 1100 mbar

#### Communication

Analog Outputs	2 Channel, 4 ~ 20 mA
Digital Outputs	2 Channel, 12 VDC
Digital Inputs	1 Channel
Display & Input Device	7 inch LCD Monitor (Touch Screen)
Interface	RS232, 422, 485 / LAN (Ethernet) / Hart

#### Dimension & Power Supply

Materials	SUS 304, Al 6061
Dimensions	W440 x D550 x H240 mm
Weight	30 kg
Voltage	110 / 220 VAC, 50 / 60 Hz
Power Consumption	300 W

# DSM-XG

UV Absorption / Paramagnetic  
NO<sub>x</sub>, SO<sub>2</sub>, O<sub>2</sub>

## Extractive

### Technical Specifications

Measured Components	NO <sub>x</sub> , SO <sub>2</sub> , O <sub>2</sub>
Measurement Principles	UV (NO, NO <sub>2</sub> , SO <sub>2</sub> ) / Paramagnetic (O <sub>2</sub> )
Measuring Ranges	NO : Min 0 ~ 40 / Max 0 ~ 2000 ppm NO <sub>2</sub> : 0 ~ 100 ppm SO <sub>2</sub> : Min 0 ~ 50 / Max 0 ~ 2000 ppm O <sub>2</sub> : Min 0 ~ 25 / Max 0 ~ 100 %
Min. Measuring Unit	0.1 ppm
Zero Drift (24 hours)	< ±1 % FS
Span Drift (24 hours)	< ±1 % FS
Repeatability	< ±1 % FS
Linearity	< ±2 % FS
Response Time	< 5 seconds



#### System Components

Main Unit / Cables

#### Options

Sample Probe / Sample Line / Conditioning Systems (Cooler, Filter, Valve, Pumps etc.) / Distribution Panel / Rack Panel / Regulator / Calibration Gas

#### Certificates / Approvals

Type Approval (Korea)  
US EPA (USA)  
TUV (Germany)  
CPA (China)  
EAC, PAC (Russia)

#### Features

- 01 Ensures high precision and minimal moisture interference in NO<sub>x</sub> and SO<sub>2</sub> measurements using UV differential optical absorption spectroscopy (UV DOAS)
- 02 Enables individual NO and NO<sub>2</sub> measurements without the need for a NO<sub>x</sub> converter
- 03 Uses a paramagnetic O<sub>2</sub> sensor for semi-permanent sensor use

### Other Specifications

Measurement Conditions	Operating Temperature	+10 ~ +50 °C
	Operating Humidity	0 ~ 99 % RH
	Gas Temperature	< +900 °C
	Gas Flow Rate	0.5 L/min ~ 1.5 L/min
	Sampling Method	Gas Cooler
	Sampling Pump	Diaphragm Pump
	Sampling Tube	PTFE
	Ambient Pressure	800 ~ 1100 mbar

#### Communication

Analog Outputs	2 Channel, 4 ~ 20 mA
Digital Outputs	2 Channel, 12 VDC
Digital Inputs	1 Channel
Display & Input Device	7 inch LCD Monitor (Touch Screen)
Interface	RS232, 422, 485 / LAN (Ethernet) / Hart

#### Dimension & Power Supply

Materials	SUS 304, Al 6061
Dimensions	W440 x D550 x H240 mm
Weight	30 kg
Voltage	110 / 220 VAC, 50 / 60 Hz
Power Consumption	300 W

# DSM-XK

UV Absorption / Zirconia  
NO<sub>x</sub>, SO<sub>2</sub>, O<sub>2</sub>

## Extractive

### Technical Specifications

Measured Components	NO <sub>x</sub> , SO <sub>2</sub> , O <sub>2</sub>
Measurement Principles	UV (NO, NO <sub>2</sub> , SO <sub>2</sub> ) / Zirconia (O <sub>2</sub> )
Measuring Ranges	NO : Min 0 ~ 40 / Max 0 ~ 2000 ppm NO <sub>2</sub> : 0 ~ 100 ppm SO <sub>2</sub> : Min 0 ~ 50 / Max 0 ~ 2000 ppm O <sub>2</sub> : Min 0 ~ 25 / Max 0 ~ 100 %
Min. Measuring Unit	0.1 ppm
Zero Drift (24 hours)	< ±1 % FS
Span Drift (24 hours)	< ±1 % FS
Repeatability	< ±1 % FS
Linearity	< ±2 % FS
Response Time	< 5 seconds



#### System Components

Main Unit / Cables

#### Options

Sample Probe / Sample Line / Conditioning Systems (Cooler, Filter, Valve, Pumps etc.) / Distribution Panel / Rack Panel / Regulator / Calibration Gas

#### Certificates / Approvals

Type Approval (Korea)  
US EPA (USA)  
CPA (China)  
EAC, PAC (Russia)

#### Features

- 01 Ensures high precision and minimal moisture interference in NO<sub>x</sub> and SO<sub>2</sub> measurements using UV differential optical absorption spectroscopy (UV DOAS)
- 02 Enables individual NO and NO<sub>2</sub> measurements without the need for a NO<sub>x</sub> converter
- 03 Utilizes cost-effective zirconia principle for O<sub>2</sub> measurements

### Other Specifications

Measurement Conditions	Operating Temperature	+10 ~ +50 °C
	Operating Humidity	0 ~ 99 % RH
	Gas Temperature	< +900 °C
	Gas Flow Rate	0.5 L/min ~ 1.5 L/min
	Sampling Method	Gas Cooler
	Sampling Pump	Diaphragm Pump
	Sampling Tube	PTFE
	Ambient Pressure	800 ~ 1100 mbar

#### Communication

Analog Outputs	2 Channel, 4 ~ 20 mA
Digital Outputs	2 Channel, 12 VDC
Digital Inputs	1 Channel
Display & Input Device	7 inch LCD Monitor (Touch Screen)
Interface	RS232, 422, 485 / LAN (Ethernet) / Hart

#### Dimension & Power Supply

Materials	SUS 304, Al 6061
Dimensions	W440 x D550 x H240 mm
Weight	30 kg
Voltage	110 / 220 VAC, 50 / 60 Hz
Power Consumption	300 W

# RSM-61 | NDIR

CO, CO<sub>2</sub>

## Extractive

### Technical Specifications

Measured Components	CO, CO <sub>2</sub>
Measurement Principles	NDIR (Non-dispersive Infrared Absorption)
Measuring Ranges	CO : Min 0 ~ 100 / Max 0 ~ 600 ppm CO <sub>2</sub> : Min 0~25 / Max 0~50 %
Zero Drift (24 hours)	< ±1 % FS
Span Drift (24 hours)	< ±1 % FS
Repeatability	< ±1 % FS
Linearity	< ±2 % FS
Response Time	< 5 seconds



#### System Components

Main Unit / Cables

#### Options

Sample Probe / Sample Line / Conditioning Systems (Cooler, Filter, Valve, Pumps etc.)  
Distribution Panel / Rack Panel / Regulator / Calibration Gas

#### Certificates / Approvals

Type Approval (Korea)  
US EPA (USA)  
CPA (China)  
EAC, PAC (Russia)

#### Features

- 01 Integration with other extractive method analyzers like DSM-XG and LSM-30 is possible to configure a comprehensive system
- 02 Cost-effective alternative compared to multianalyzer systems when single measurement of CO or CO<sub>2</sub> is required

### Other Specifications

Measurement Conditions	Operating Temperature	+5 ~ +45 °C
	Operating Humidity	0 ~ 99 % RH
	Gas Temperature	< +900 °C
	Gas Flow Rate	0.2 L/min ~ 1.5 L/min
	Sampling Method	Gas Cooler
	Sampling Pump	Diaphragm Pump
	Sampling Tube	PTFE
	Ambient Pressure	800 ~ 1100 mbar

#### Communication

Analog Outputs	2 Channel, 4 ~ 20 mA
Digital Outputs	2 Channel, 12 VDC
Digital Inputs	1 Channel
Display & Input Device	7 inch LCD Monitor (Touch Screen / USB)
Interface	RS232, 422, 485 / LAN (Ethernet) / Hart

#### Dimension & Power Supply

Materials	SUS 304, Al 6061
Dimensions	W485 x D322 x H177 mm
Weight	10 kg
Voltage	110 / 220 VAC, 50 / 60 Hz
Power Consumption	100 W

# LSM-30 | TDLS HCl

Extractive

## Technical Specifications

Measured Components	HCl
Measurement Principles	TDLS (Tunable Diode Laser Spectroscopy)
Measuring Ranges	Min 0 ~ 20 / Max 0 ~ 100 ppm
Zero Drift (24 hours)	< ±1 % FS
Span Drift (24 hours)	< ±1 % FS
Repeatability	< ±2 % FS
Linearity	< ±2 % FS



<b>System Components</b>	Main Unit / Cables
<b>Options</b>	Sample Probe / Sample Line / Heating Block / Distribution Panel / Rack Panel / Regulator / Calibration Gas
<b>Certificates / Approvals</b>	Type Approval (Korea) US EPA (USA)

<b>Features</b>	<ol style="list-style-type: none"> <li>01 Integration with other extractive method analyzers like DSM-XG and RSM-61 is possible to configure a comprehensive system</li> <li>02 Cost-effective alternative compared to multianalyzer systems when single measurement of HCl is required</li> <li>03 Utilizes tunable diode laser diode (TDL) technology to scan a narrow wavelength range, unaffected by gases other than HCl</li> <li>04 Semi-permanent use without light source replacement using a laser light source</li> <li>05 Only very little flow is required for measurement by minimizing the gas cell size</li> </ol>
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## Other Specifications

<b>Measurement Conditions</b>	Operating Temperature	-20 ~ +50 °C
	Operating Humidity	0 ~ 99 % RH
	Gas Temperature	< +190 °C
	Cell Temperature	+190 °C
	Cell Heating time	45 min (When heating from +25°C)
	Gas Humidity	Max 20 % abs. H2O
	Gas Flow Rate	1.0 L/min ~ 5.0 L/min
	Sampling Pump	Heated Diaphragm Pump
	Sampling Tube	PTFE
	Ambient Pressure	800 ~ 1100 mbar

<b>Communication</b>	Analog Outputs	2 Channel, 4 ~ 20 mA
	Digital Outputs	2 Channel, 12 VDC
	Digital Inputs	1 Channel
<b>Display &amp; Input Device</b>	Display & Input Device	7 inch LCD Monitor (Touch Screen)
	Interface	RS232, 422, 485
<b>Dimension &amp; Power Supply</b>	Materials	SUS 304, Al 6061
	Dimensions	W440 x D550 x H222 mm
	Weight	20 kg
	Voltage	110 / 220 VAC, 50 / 60 Hz
	Power Consumption	200 W





# TRACK RECORD

## SCR

Company	Project	Gas Analyzer	Q'ty	Date	
Korea South-east Power (KEPCO)	YoungHeung #3,4	NOx	4	2012-Oct.	
	YoungHeung #3	NOx	4	2015-May	
	YoungHeung #2	NOx	2	2015-Oct.	
	YoungHeung #4	NOx	2	2016-Feb.	
	YoungHeung #1	NOx	2	2016-Mar.	
	YoungHeung #4	NOx	1	2017-Sep.	
	YoungHeung #4	NOx	1	2018-Aug.	
	YoungHeung #2	NOx	4	2019-Mar.	
	YoungHeung #1	NOx	4	2019-Oct.	
	YoungHeung #4	NOx	2	2019-Nov.	
	YoungHeung #1,2	NOx / SO2	4	2020-Mar.	
	YoungHeung #3,4	NOx	2	2021-Oct.	
	YoungHeung #3,4	NOx	4	2023-Nov.	
	SamChunPo #3,4	NOx	4	2012-Nov.	
	SamChunPo #3,4	NOx / NH3	4	2013-Mar.	
	SamChunPo #1,2	NOx / O2	4	2016-Mar.	
	SamChunPo #3	NOx / O2	2	2017-Nov.	
	SamChunPo #3,4	NOx / NH3	4	2018-May	
	SamChunPo #4	NOx / O2	2	2018-Jul.	
	SamChunPo #3,4	NH3	4	2022-Apr.	
	YoungDong #1,2	NOx	4	2019-Apr.	
	YeoSu #1,2	NH3	3	2022-Sep.	
Korea Southern Power (KEPCO)	HaDong #8	NOx	4	2013-May	
	HaDong #5	NOx	4	2013-Aug.	
	HaDong #1,4	NOx	4	2014-Mar.	
	HaDong #6	NOx	4	2014-Jul.	
	HaDong #1	NOx / NH3	2	2014-Nov.	
	HaDong #7	NOx	4	2014-Nov.	
	HaDong #2-4	NOx / NH3	6	2015-Apr.	
	HaDong #5-8	NH3	8	2015-Apr.	
	HaDong # 8	NOx / SO2	4	2017-Jun.	
	HaDong #3	NOx	2	2019-Nov.	
	HaDong #5,6	NOx / SO2	6	2019-Nov.	
	HaDong #7	NOx / SO2	6	2019-Nov.	
	HaDong #4	NOx	2	2019-Dec.	
	HaDong #8	NOx	1	2022-Aug.	
	HaDong #1-8	NH3	14	2023-May	
	HaDong #5,6,8	NOx	7	2023-Dec.	
	HaDong #1,2	NOx	4	2023-Dec.	
	South JeJu #1,2	NOx / SO2	4	2017-Apr.	
	South JeJu #1,2	NOx / NH3	2	2018-Apr.	
	South JeJu #1,2	NOx / NH3, SO2	2	2019-Dec.	
	AnDong Combined #1	NOx	2	2018-Dec.	
	AnDong Combined #1	NOx / NH3	1	2018-Dec.	
	AnDong Combined #1	NOx / NH3	1	2021-Oct.	
	SamCheok #1	NOx / NH3	2	2020-Dec.	
	SamCheok #1,2	NOx / NH3	6	2021-Jun.	
	SamCheok #1,2	NOx / SO2	4	2022-Mar.	
	SamCheok #2	NOx / SO2	4	2023-Apr.	
	Hanlim #2	NOx	1	2023-Oct.	
CO		1	2023-Oct.		
Korea East-west Power (KEPCO)	DangJin #5	NOx	2	2012-May	
	DangJin #2	NOx	2	2013-Sep.	
	DangJin #3,4	NOx	4	2014-Sep.	
	DangJin #3,4	O2	4	2014-Sep.	
	DangJin #7	NOx / NH3	1	2014-Oct.	
	DangJin #7,8	NOx / NH3	3	2015-Jun.	
	DangJin #5,6	NOx / NH3	4	2015-Sep.	
	DangJin #1,3	NOx	10	2018-Jul.	
	DangJin #1,3	O2	4	2018-Jul.	
	DangJin #7,8	NOx / NH3	8	2019-Jan.	
	DangJin #2,4	NOx	6	2019-Mar.	
	DangJin #2,4	O2	4	2019-Mar.	
	DangJin #2,4	NOx / NH3	4	2019-Nov.	
	DangJin #5,6	NOx	8	2020-May	
	UISan #4,5	NOx / NH3	8	2016-Sep.	
	UISan #6	NH3	2	2017-Jul.	
	HoNam #1,2	NH3	4	2020-Nov.	
	Korea Western Power (KEPCO)	TaeAhn #1,3,5,6	NOx	16	2012-Jan.
		TaeAhn #2,4	NOx	8	2013-Mar.
		TaeAhn #8	NOx	4	2013-May
		TaeAhn #6	NOx	2	2015-Mar.
		TaeAhn #7	NOx	4	2015-Nov.
TaeAhn #3,4		NOx	2	2016-Mar.	
TaeAhn #5		NOx	2	2016-May	
TaeAhn #7,8		NH3	4	2016-Oct.	
TaeAhn #5,6		NOx	4	2019-Dec.	
TaeAhn #1~4		NOx / NH3	6	2020-Mar.	
PyeongTaek #2		NOx	4	2014-May	
PyeongTaek #1		NOx	4	2015-Mar.	
Korea Midland Power (KEPCO)	JeJu #1,2	NOx / NH3	2	2022-Oct.	
	JeJu Combined #2	O2	1	2022-Oct.	
		O2	1	2023-Nov.	
	BoRyeong #7	NOx	4	2017-Apr.	
	BoRyeong #8	NOx	2	2017-Aug.	
	BoRyeong #7,8	NOx	2	2017-Nov.	
	BoRyeong #8	NOx	4	2018-Apr.	
	BoRyeong #8	NOx	1	2018-Sep.	
	BoRyeong #7,8	NOx	3	2019-Apr.	
	DongTan #1,2	NOx	2	2023-Jul.	
Korea District Heating Corp.	SamChuck Green #1,2	NOx	16	2013-Dec.	
		NOx / NH3	8	2013-Dec.	
Korea Southern Power (STX Heavy Industry)	SamChuck Green #1,2	O2	16	2013-Dec.	
		O2	16	2013-Dec.	

Company	Project	Gas Analyzer	Q'ty	Date
Hanhwa Total [Hanmo]	Hanhwa Total	NOx	2	2014-Jul.
		NH3	1	2014-Jul.
		O2	1	2014-Jul.
GS Donghae Elec. [STX Heavy Industry]	Bukpyeong #1,2	NOx	10	2015-Feb.
		NH3	4	2015-Feb.
Dongsuh Foods Corp. [ECOPRO]	ChangWon BuPyeong	NOx / NH3	1	2015-Dec.
		NOx / NH3	1	2016-Jan.
GS E&R [Keumkang CNT]	PoChun Heat & Power	NOx / NH3	2	2015-Dec.
		NOx	1	2017-Mar.
S-Oil [Welcron KangWon]	S-oil OnSan Plant	NOx / NH3	1	2017-Mar.
		NOx / O2	4	2017-Oct.
Korea Western Power [GE PSK]	ShinPyeongTaek #1,2	NH3	2	2017-Oct.
		NOx	2	2017-Dec.
Korea Western Power [Halla]	TaeAhn IGCC	NH3	1	2017-Dec.
		O2	2	2017-Dec.
		NOx	3	2018-Jun.
GoSung Green Power [Hanshin B-tec]	GoSung Hai Power Aux Boiler	NH3	3	2018-Jun.
		O2	2	2018-Jun.
		CO	1	2018-Jun.
		NOx / NH3	1	2018-Oct.
SeJong City [FK Engineering]	SeJong City Crematory Facility #1	O2	1	2018-Oct.
		NOx / NH3	1	2019-Oct.
		O2	1	2019-Oct.
SeJong City [FK Engineering]	SeJong City Crematory Facility #2	NOx / NH3	1	2021-Sep.
		O2	1	2021-Sep.
		NOx / NH3	1	2021-Sep.
Huvis [Seoul Sharp Heavy Industry]	Huvis	NOx	1	2018-Dec.
		NOx / NH3	1	2018-Dec.
		O2	1	2018-Dec.
Korea Southern Power [EMKO]	South JeJu Combined #1,2	NOx	4	2019-Jan.
		NH3	2	2019-Jan.
LG Chemical [KENTEK]	LG Chemical DaeSan Plant	O2	4	2019-Jan.
		NOx / NH3	1	2019-Apr.
LG Chemical [Green Works]	LG Chemical NaJu Plant	NOx / NH3	3	2019-Jun.
		NOx	24	2019-Jul.
Korea East-west [Halla]	UISan Combined #1~6	NH3	12	2019-Jul.
		O2	24	2019-Jul.
		NOx	9	2019-Aug.
Korea Southern Power [Haelim Engineering]	YoungWol LNG Power #1~3	NOx / NH3	6	2019-Aug.
		NOx	6	2019-Aug.
Orion Engineered Carbons [SC Engineering]	YeoSu	SO2	4	2019-Aug.
		O2	1	2019-Aug.
		Flow	2	2019-Aug.
Hyundai Steel	DangJin, SoonChun	NOx / NH3	2	2019-Aug.
		O2	2	2019-Aug.
Hyundai Steel	DangJin Plant #1	NOx / NH3	1	2020-Sep.
		O2	1	2020-Sep.
KG ETS [Daon Technology]	KG ETS Incineration #3	SO2	1	2019-Sep.
GS Caltex [GFutec]	GS Caltex YeoSu Plant MFC	NOx / NH3	5	2019-Sep.
		NOx	5	2020-Jan.
KOEN [Keumhwa C&E]	BunDang Combined #1~5, #7	NOx	6	2020-Jan.
		O2	12	2020-Jan.
Gunjang Energy [Blue Bird]	SMGE S1 SCR	NOx / NH3	6	2020-Jan.
		NOx / NH3	3	2020-Feb.
GangNeung Eco Power (GEP) [Hanshin B-tec]	GangNeung Ahnin Aux Boiler	O2	2	2020-Feb.
		NOx	3	2020-Apr.
Seetec [ECOPRO]	Seetec SCR	NH3	3	2020-Apr.
		NOx / NH3	2	2020-May
SMGE S1 [Sumitomo SHI FW]	SMGE S1	SO2	1	2020-Jun.
		CO	1	2020-Jun.
Korea Midland Power [Daon Tech]	ShinBoRyong Aux Boiler	NOx	2	2020-Oct.
		NH3	2	2020-Oct.
Kumho P&B Chemicals [Shinhan Engineering]	YeoSu	O2	2	2020-Oct.
		NOx / NH3	1	2020-Dec.
Dongsuh Pertochemical Corp. [ECOPRO]	UISan	NOx / NH3	1	2021-Mar.
NaePo Green Energy [GE GAS POWER]	NaePo Combined	NOx	2	2021-Jun.
		NH3	1	2021-Jun.
Korea East-west Power [Doosan Heavy Industry]	DangJin Power #1~4	O2	2	2021-Jun.
		NH3	8	2021-Aug.
Odfjell Terminals Korea [Ecopro HN]	UISan	NOx / SO2	24	2021-Sep.
		NOx / NH3	1	2021-Aug.
TongYeong Eco Power [GE GAS POWER]	TongYeong Natural Gas #1,2	NOx	4	2021-Sep.
		NH3	2	2021-Sep.
Korea Southern Power [GE GAS POWER]	ShinSeJong Combined #1	O2	4	2021-Sep.
		NOx	4	2021-Sep.
Korea Southern Power [SNT Energy]	TaeAhn #7,8	NH3	2	2021-Sep.
		O2	2	2021-Sep.
Korea Southern Power [Daon Technology]	SamCheck Aux Boiler	NOx	24	2021-Nov.
		NH3	12	2021-Nov.
Korea Southern Power [Daon Technology]	SamCheck Aux Boiler	NOx	1	2021-Nov.
		NH3	2	2021-Nov.
Korea South-East Power [Sae-A STX Entech]	YeongHeung #1,2	O2	1	2021-Nov.
		NOx	12	2021-Dec.
Korea South-East Power [Sae-A STX Entech]	YeongHeung #1,2	NH3	4	2021-Dec.
		O2	4	2021-Dec.
Korea South-East Power [Sae-A STX Entech]	YeongHeung #1,2	SO3	8	2021-Dec.
		SO3	8	2021-Dec.

Company	Project	Gas Analyzer	Q'ty	Date
Korea Western Power [Haelim engineering]	GimPo Cogeneration #1	NOx	1	2021-Dec.
		O2	1	2021-Dec.
		NH3	1	2021-Dec.
		NOx	1	2022-Apr.
Korea Southern Power [EMKO]	Shin InCheon #3~8	NOx / O2	12	2021-Dec.
		NH3	6	2021-Dec.
POSCO	PoHang 1	NOx	1	2021-Dec.
		NOx / NH3	1	2021-Dec.
		O2	1	2021-Dec.
Korea District Heating Corp. [SNT Energy]	Daegu, CheongJu Combined	NOx	4	2022-Jan.
		NH3	2	2022-Jan.
		O2	4	2022-Jan.
		CO	2	2022-Jul.
		THC	2	2022-Jul.
Korea Southern Power [Gangwon Energy]	ShinSeJong Combined Aux Boiler	NOx	1	2022-Feb.
		NH3	1	2022-Feb.
		O2	2	2022-Feb.
Korea District Heating Corp. [Daeyoung C&E]	YangSan Combined	NOx	2	2022-Feb.
		NH3	1	2022-Feb.
		O2	1	2022-Feb.
HuChems [Jel Tech Industry]	HuChems NakPo Wharf	NOx / NH3	1	2022-Apr.
Forone system	BuSan Fashion Center	NOx	1	2022-Apr.
		O2	1	2022-Apr.
Korea District Heating Corp. [Hanshin B-tec]	CheongJu Branch Peak Boiler #1,2	NOx	4	2022-Sep.
		NH3	2	2022-Sep.
HuChems [Kiryoon E&C]	HuChems #6NA	NOx	1	2022-Oct.
		NH3	1	2022-Oct.
P&O chemical [Seoul Sharp Heavy Industry]	GongJu	NOx	1	2022-Nov.
		NH3	1	2022-Nov.
Sungshin Cement [Keumkang CNT]	Sungshin Cement DanYang #1,2	NH3	2	2023-Feb.
		NH3	3	2023-Nov.
GS EPS [Blue Bird Environment]	GS EPS #3 SCR	NOx	1	2023-May
		NOx / NH3	1	2023-May
		O2	1	2023-May
TAIHAN Cable [Ecopro HN]	TAIHAN SCR	NH3	1	2023-Jun.
SGC Energy [Kiryoon E&C]	SGC Energy (Iksan) QT PJT	NOx / NH3	1	2023-Jul.
		O2	1	2023-Jul.
SK Eco Engineering [Hanshin B-tec]	SK-ON SeoSan #1~3	NOx / O2	3	2023-Nov.
		NOx / NH3	3	2023-Nov.
LG Chemical	NaJu	NOx / NH3	1	2016-May
DaeGu Dyeing Industrial Complex	DaeGu Dyeing Industrial Complex	NOx/SO2	3	2016-Sep.
		NOx / NH3	3	2016-Sep.
		NOx	1	2023-Apr.
Seoul Energy	Mapo Recovery Facility	O2	2	2016-Oct.
Huchems	Yeosu	NOx / NH3	1	2016-Dec.
		NOx / NH3	1	2020-Jan.
		NOx	1	2020-May
		NOx / NH3	1	2022-Feb.
		NOx / NH3	1	2022-May
Hanhwa	Yeosu #1~3	NOx	3	2019-May
		NOx / NH3	3	2019-May
YeoSu Urban Management Corp.	Waste Incineration Facility	NOx	1	2021-Jun.
LH	DaeJeon Energy Business Team	NOx	1	2021-July.
		CO / CO2	1	2021-July.
		NH3	1	2021-July.
Sithe Korea	Sithe YeoSu #1,2	NOx	1	2021-Aug.
		NOx / NH3	1	2021-Aug.
GS Donghae Elec. Power	BukPyeong #1	CO	1	2021-Oct.
		CO	1	2022-Feb.
		NOx	1	2022-Apr.
GRM	DanYang	NOx	1	2022-Apr.
AnSan Urban Development	ASUDI #2	NH3	1	2023-Jun.
Hyundai Steel	DangJin	NOx / NH3	1	2023-Jun.
		O2	1	2023-Jun.
PoSeung Green Power	PoSeung Green Power #1	NOx / NH3	1	2023-Jan.
Huaneng BEIJING Thermal Power (华能北京热电厂)	Huaneng Thermal #1~4 (China)	NOx	4	2018-Nov.
		NOx	1	2022-Oct.
APOC [Gangwon Energy]	APOC PDH/UTOS (Saudi Arabia)	NOx	1	2022-Jun.
		O2	1	2022-Jun.

## ESP

Company	Project	Gas Analyzer	Q'ty	Date
Korea Southern Power	HaDong #2	Dust	2	2019-Aug.
OCI [Seoul Sharp Heavy Industry]	OCI GwangYang Plant	Dust	1	2019-Jul.
GangNeung Eco Power (GEP) [KC Cottrell]	GangNeung AhnIn Aux Boiler #1,2	Dust	16	2020-Sep.
		Dust	12	2020-Sep.
LS-Nikko Copper	OnSan #1,2	SO2	1	2020-Oct.
		SO2	1	2021-Mar.
		Flow	2	2020-Oct.
PT Cirebon Power Service (PLN)	PT Cirebon Power Service (Indonesia)	SO2	3	2021-Mar.
		Dust	2	2016-Feb.

Company	Project	Gas Analyzer	Q'ty	Date
Ryuju Thermal Power (柳州国华电厂)	Ryuju Thermal #2 (China)	Dust	2	2019-Oct.
	Ryuju Thermal #1 (China)	Dust	2	2020-May.
Jawa [KC Cottrell]	JAWA #9,10 (Indonesia)	Dust	4	2021-Sep.

## FGD

Company	Project	Gas Analyzer	Q'ty	Date
Korea South-east Power (KEPCO)	YoungHeung #4	SO2	2	2016-Jan.
	YoungHeung #2	SO2	2	2016-Nov.
	YoungHeung #3	SO2	2	2017-Feb.
	YoungHeung #1	SO2	2	2017-Mar.
	YoungHeung #3	SO2	1	2017-Sep.
	YoungHeung #4	SO2	1	2018-Apr.
	YoungHeung #6	SO2	2	2019-Feb.
	YoungHeung #3,4	SO2	2	2019-Nov.
	YoungHeung #5	SO2	3	2020-Jan.
	SamChunPo #3,4	SO2	4	2012-Nov.
Korea Southern Power (KEPCO)	SamChunPo #1,2	SO2	2	2014-Sep.
	SamChunPo #2	SO2	2	2016-Apr.
	SamChunPo #3,4	SO2	4	2018-May
	YeoSu #1	SO2	2	2023-May
	HaDong #1,3	SO2	2	2011-Nov.
	HaDong #2,4,5,6	SO2	4	2012-Jun.
	HaDong #1~6	SO2	6	2014-Dec.
	HaDong #1~4	NOx / SO2	8	2018-May
	HaDong #5~8	NOx / SO2	8	2018-May
	HaDong #8	SO2	2	2019-Mar.
Korea East-west Power (KEPCO)	HaDong #1~4	SO2	4	2020-Mar.
	HaDong #5,6,8	SO2	2	2023-Nov.
	DangJin #1	SO2	1	2011-Mar.
	DangJin #1~4	NOx / SO2	4	2019-Aug.
	DangJin #1~4	Dust	4	2019-Aug.
	DangJin #8	SO2	2	2019-Dec.
	DangJin #5,8	SO2	6	2023-May
	UISan #6	SO2	1	2011-Oct.
	TaeAhn #6	SO2	2	2015-Mar.
	TaeAhn #7	SO2	2	2015-Sep.
Korea Western Power (KEPCO)	TaeAhn #5	SO2	1	2016-Apr.
	TaeAhn #5,8	SO2	3	2016-Oct.
	TaeAhn #1~4	SOx	2	2020-Mar.
	DangJin #9,10	SO2	12	2014-Mar.
Korea East-west Power [STX Heavy Industry]	O2	4	2014-Mar.	
	SO2	12	2014-Nov.	
Korea Midland Lower [Doosan Heavy Industry]	ShinBoRyeong #1,2	O2	4	2014-Nov.
Korea Western Power [STX Heavy Industry]	TaeAhn #9,10	SO2	12	2014-Nov.
GS Donghae Elec. Power [STX Heavy Industry]	BukPyeong #1,2	SO2	10	2015-Feb.
GoSeong Green Power [KC Cottrell]	GoSeong Hai Power #1,2	SO2	12	2019-Jul.
		O2	4	2019-Jul.
SMGES1 [KC Cottrell]	SMGE S1	SO2	1	2020-Aug.
GangNeung Eco Power (GEP) [KC Cottrell]	GangNeung AhnIn Power	Dust	1	2020-Aug.
		O2	12	2020-Oct.
Korea East-west Power [Nexgen Technology]	DangJin #1~4	O2	4	2020-Oct.
		O2	8	2021-Sep.
Korea South-east Power [Sae-A STX Entech]	YeongHeung #1,2	NOx / SO2	6	2021-Dec.
		SO2	6	2021-Dec.
		O2	4	2021-Dec.
Korea East-west Power [Daekyeong Engineering]	DangJin #4	Dust	1	2021-Dec.
Korea East-west Power [Haelim Engineering]	Donghae Coal Fired Power Plant #1,2	NOx / SO2	4	2022-Sep.
		HCl	2	2022-Sep.
Korea Western Power [DYPNF]	TaeAhn #5,6	HF	2	2022-Sep.
		SO2	8	2023-Nov.

# TRACK RECORD

## CEMS

Company	Project	Gas Analyzer	Q'ty	Date
Korea South-east Power	SamChunPo #5	NOx / SO2	1	2012-Nov.
	HaDong #1~8	NOx / SO2	8	2012-Jun.
Korea Southern Power (KEPCO)	HaDong #1~8	NOx / SO2	8	2017-Mar.
	SamCheok #1	NOx / SO2	1	2020-Sep.
	YeongWol #1~3	NOx / O2	3	2020-Nov.
Korea East-west Power (KEPCO)	DangJin #1~8	NOx / SO2	8	2011-Oct.
	DangJin #9,10	O2	2	2021-Apr.
Korea Midland Power (KEPCO)	JeJu #2	NOx / SO2	1	2012-Apr.
		NOx / SO2	2	2019-Jan.
	JeJu #3 GT	O2	2	2019-Jan.
		Flow	2	2019-Jan.
		D/L, FEP, Temp.	2	2019-Jan.
	JeJu Combined #1,2	NOx / SO2 / O2	2	2017-Mar.
		Dust	2	2017-Mar.
		Flow	2	2017-Mar.
		D/L, FEP, Temp.	2	2017-Mar.
		NOx / SO2	2	2012-Apr.
BoRyeong #1,2	NOx / SO2	2	2016-Jun.	
O2	2	2016-Jun.		
Korea District Heating Corp. (KDHC)	PaJu Branch #1,2	NOx	2	2017-Mar.
		O2	2	2017-Mar.
		Flow	2	2017-Mar.
		D/L, FEP, Temp.	2	2017-Mar.
	GwangGyo Branch #1	NOx	1	2017-Mar.
		O2	1	2017-Mar.
		Flow	1	2017-Mar.
	PanGyo Branch #1	D/L, Temp.	1	2017-Mar.
		NOx	1	2017-Mar.
		O2	1	2017-Mar.
	HwaSung Branch #1,2	Flow	1	2017-Mar.
		D/L, FEP, Temp.	2	2017-Mar.
		NOx / SO2	2	2017-Mar.
	YongIn Branch #1	D/L, Temp.	1	2017-Apr.
		O2	1	2017-Apr.
		Dust	1	2017-Apr.
		Flow	1	2017-Apr.
	SamSong Branch #1,2	D/L, Temp.	1	2017-Apr.
		NOx	2	2017-Apr.
		O2	2	2017-Apr.
	SuWon Branch #1,2	Flow	2	2017-Apr.
		Dust	2	2017-Apr.
		Flow	2	2017-Apr.
	DaeGu Branch #1,2	D/L, FEP, Temp.	2	2017-Apr.
		NOx / SO2	2	2017-Apr.
		O2	2	2017-Apr.
		Dust	2	2017-Apr.
	DaeGu Branch #3,4	Flow	2	2017-Apr.
		D/L, FEP, Temp.	2	2017-Apr.
		NOx / SO2	1	2020-Oct.
		O2	1	2020-Oct.
	JungAng Branch #3	Flow	1	2020-Oct.
		D/L, Temp.	1	2020-Oct.
	YangSan Branch #1,2	NOx	2	2021-Jan.
		O2	2	2021-Jan.
		Flow	2	2021-Jan.
	GuangJu/JeonNam Branch #1,2	D/L, FEP, Temp.	2	2021-Jan.
		NOx	2	2021-Jan.
		O2	2	2021-Jan.
	Seoul Energy	MokDong Cogeneration #1	O2	1
D/L			2	2019-Aug.
MokDong Cogeneration #2,3		NOx	2	2019-Apr.
		O2	2	2019-Apr.
		Flow	2	2019-Apr.
MaGok Group Energy #1		D/L, FEP, Temp.	2	2019-Apr.
		NOx	1	2017-Apr.
		O2	1	2017-Apr.
		Flow	1	2017-Apr.
NoWon Cogeneration #3,4		D/L, Temp.	1	2017-Apr.
	NOx	2	2019-Apr.	
GS Donghae Elec. [BHI]	O2	2	2019-Apr.	
	D/L, FEP, Temp.	2	2019-Apr.	
Korea Southern Power [Daewoo E&C]	BukPyeong #1,2	NOx / SO2	4	2013-May
		NOx / SO2	2	2019-Feb.
		O2	2	2019-Feb.
		Dust	2	2019-Feb.
POSCO	GwangYang Plant	Flow	2	2019-Feb.
		D/L, FEP, Temp.	2	2019-Feb.
		NOx / SO2 / O2	5	2019-Sep.

Company	Project	Gas Analyzer	Q'ty	Date
Shinyoung Porte [Seoul Sharp Heavy Industry]	GoSeong Wood Pellet Wet ESP	NOx / SO2 / O2	1	2020-Jan.
		Dust	1	2020-Jan.
		Flow	1	2020-Jan.
GangNeung Eco Power (GEP) [Hanshin B-tec]	GangNeung Ahnin Aux Boiler	D/L, Temp.	1	2020-Jan.
		NOx / O2	1	2020-Apr.
		Dust	1	2020-Apr.
Korea District Heating Corp. [Hanjin Heavy Industry]	YangSan Cogeneration	Flow	1	2020-Apr.
		D/L, Temp.	1	2020-Apr.
		NOx	1	2020-Nov.
Samyang Food [Sookook]	MiRyang	O2	1	2020-Nov.
		Flow	1	2020-Nov.
		D/L, Temp.	1	2020-Nov.
HangangCM [Enprotech]	HwaSung	NOx / O2	1	2021-Feb.
		Flow	1	2021-Feb.
		D/L, Temp.	1	2021-Feb.
Korea Southern Power [Daewoo E&C]	ShinSeJong Combined #1	NOx	1	2021-Feb.
		O2	1	2021-Feb.
		Flow	1	2021-Feb.
POSCO Chemical [POSCO E&C]	PoHang Anode Materials	D/L, Temp.	1	2021-Feb.
		NOx	1	2021-Mar.
		O2	1	2021-Mar.
Korea Gas Corp. [Biofriends]	GwangJu #1 ChangWon #1	Dust	1	2021-Mar.
		CO, CO2	1	2021-Mar.
		Flow	1	2021-Mar.
UGPS [SK ECO Plant]	UiSan GPS Combined #1,2	THC	1	2021-Mar.
		D/L, FEP, Temp.	1	2021-Mar.
		NOx / SO2	1	2021-Mar.
Hyundai Oilbank [Hyundai Cosmo]	DaeSan #1,2	Dust	1	2021-Mar.
		Flow	1	2021-Mar.
		D/L, Temp.	1	2021-Mar.
Korea Southern Power [GangWon Energy]	SinSeJong Combined Aux Boiler	NOx	2	2021-Mar.
		O2	2	2021-Mar.
		Flow	2	2021-Mar.
SK Chemical [SK ECO Engineering]	SK Chemical MU #1~3	D/L, FEP, Temp.	1	2021-May
		NOx	1	2021-May
		Flow	1	2021-May
ByuckSan [KORECO]	HongSung #1~2	D/L, Temp.	1	2021-May
		NOx	2	2021-Oct.
		O2	2	2021-Oct.
HwaCheon Incineration Plant [Myungjin Electric]	HwaCheon Incineration Plant #1	NOx	2	2021-Oct.
		Flow	2	2021-Oct.
		D/L, FEP, Temp.	2	2021-Oct.
Korea East-west Power [POSCO E&C]	EumSung Combined #1, Aux	NOx	2	2021-Oct.
		O2	2	2021-Oct.
		Dust	2	2021-Oct.
Hyundai Oil Bank [Nexgen Technology]	Hyundai Oil Bank TMS	Flow	2	2021-Oct.
		D/L, FEP, Temp.	2	2021-Oct.
		NOx/SO2	2	2021-Oct.
GwangYang Biomass [Lotte E&C]	GwangYang Biomass #1,2	O2	2	2021-Oct.
		Dust	2	2021-Oct.
		Flow	2	2021-Oct.
ASan	ASan Incineration Plant	D/L, Temp.	2	2021-Oct.
		NOx	2	2021-Oct.
		O2	2	2021-Oct.
Samyang	InCheon 1 Plant	NOx/SO2	2	2021-Oct.
		Dust	2	2021-Oct.
		Flow	2	2021-Oct.
Mona Lisa	JeonJu Incineration Plant	NOx / SO2 / O2	1	2022-Feb.
		CO	1	2022-Feb.
		HCl	1	2022-Feb.
Dongyang Environment	Muan Incineration	Dust	1	2022-Feb.
		Flow	1	2022-Feb.
		D/L, Temp.	1	2022-Feb.
Korea East-west Power [POSCO E&C]	EumSung Combined #1, Aux	NOx / O2	2	2022-Jun.
		Dust	2	2022-Jun.
		Flow	2	2022-Jun.
SK Chemical [SK ECO Engineering]	SK Chemical MU #1~3	D/L, FEP, Temp.	2	2022-Jun.
		NOx	3	2022-Jun.
		O2	3	2022-Jun.
ByuckSan [KORECO]	HongSung #1~2	NOx	3	2022-Jun.
		O2	3	2022-Jun.
		Flow	3	2022-Jun.
HwaCheon Incineration Plant [Myungjin Electric]	HwaCheon Incineration Plant #1	D/L, FEP, Temp.	3	2022-Jun.
		NOx	3	2022-Jun.
		O2	3	2022-Jun.
Korea East-west Power [POSCO E&C]	EumSung Combined #1, Aux	NOx	3	2022-Jun.
		O2	3	2022-Jun.
		Flow	3	2022-Jun.
Hyundai Oil Bank [Nexgen Technology]	Hyundai Oil Bank TMS	D/L, FEP, Temp.	3	2022-Jun.
		NOx	3	2022-Jun.
		O2	3	2022-Jun.
GwangYang Biomass [Lotte E&C]	GwangYang Biomass #1,2	NOx / SO2	1	2022-Nov.
		CO, CO2	1	2022-Nov.
		HCl	1	2022-Nov.
ASan	ASan Incineration Plant	Dust	1	2022-Nov.
		Flow	1	2022-Nov.
		D/L, FEP, Temp.	1	2022-Nov.
Samyang	InCheon 1 Plant	D/L, FEP, Temp.	1	2022-Nov.
		NOx / SO2 / O2	1	2022-Nov.
		CO	1	2022-Nov.
Mona Lisa	JeonJu Incineration Plant	HCl	1	2022-Nov.
		Dust	1	2022-Nov.
		Flow	1	2022-Nov.
Dongyang Environment	Muan Incineration	D/L, Temp.	1	2022-Nov.
		NOx / SO2 / O2	1	2022-Nov.
		CO	1	2022-Nov.
Korea East-west Power [POSCO E&C]	EumSung Combined #1, Aux	Dust	1	2023-Jun.
		Flow	1	2023-Jun.
		Temp.	1	2023-Jun.
Hyundai Oil Bank [Nexgen Technology]	Hyundai Oil Bank TMS	NOx / SO2	2	2023-Jun.
		O2	2	2023-Jun.
		Flow	2	2023-Jun.
GwangYang Biomass [Lotte E&C]	GwangYang Biomass #1,2	D/L, FEP, Temp.	2	2023-Jun.
		NOx / SO2	2	2023-Jun.
		O2	2	2023-Jun.
ASan	ASan Incineration Plant	NOx / SO2	1	2023-Sep.
		Dust	1	2023-Sep.
		Flow	1	2023-Sep.
Samyang	InCheon 1 Plant	Temp.	1	2023-Sep.
		NOx / SO2	1	2023-Sep.
		O2	1	2023-Sep.
Mona Lisa	JeonJu Incineration Plant	D/L, Temp.	1	2023-Sep.
		NOx / SO2 / O2	1	2023-Sep.
		CO	1	2023-Sep.
Dongyang Environment	Muan Incineration	HCl	1	2023-Sep.
		Dust	1	2023-Sep.
		Flow	1	2023-Sep.
Korea East-west Power [POSCO E&C]	EumSung Combined #1, Aux	D/L, Temp.	1	2023-Sep.
		NOx / SO2 / O2	1	2023-Sep.
		CO	1	2023-Sep.
Hyundai Oil Bank [Nexgen Technology]	Hyundai Oil Bank TMS	Dust	1	2023-Sep.
		Flow	1	2023-Sep.
		HCl	1	2023-Sep.
GwangYang Biomass [Lotte E&C]	GwangYang Biomass #1,2	D/L, Temp.	1	2023-Sep.
		NOx / SO2 / O2	1	2023-Sep.
		CO	1	2023-Sep.
ASan	ASan Incineration Plant	Dust	1	2023-Sep.
		Flow	1	2023-Sep.
		HCl	1	2023-Sep.
Samyang	InCheon 1 Plant	D/L, Temp.	1	2023-Sep.
		NOx / SO2 / O2	1	2023-Sep.
		CO	1	2023-Sep.
Mona Lisa	JeonJu Incineration Plant	Dust	1	2023-Sep.
		Flow	1	2023-Sep.
		HCl	1	2023-Sep.
Dongyang Environment	Muan Incineration	D/L, Temp.	1	2023-Sep.
		NOx / SO2 / O2	1	2023-Sep.
		CO	1	2023-Sep.



Company	Project	Gas Analyzer	Q'ty	Date
YangJu City	YangJu Incineration #1,2	NOx / SO2 / O2	2	2016-Jun.
		CO	2	2016-Jun.
		HCl	2	2016-Jun.
		Dust	2	2016-Jun.
		Flow	2	2016-Jun.
Hyundai Steel	DangJin Plant	D/L, FEP, Temp.	2	2016-Jun.
		O2	3	2016-Aug.
Seoul City	Seoul Metropolitan Govt. JungRang Recovery	NOx / SO2 / O2	2	2016-Oct.
		CO	2	2016-Oct.
		Flow	2	2016-Oct.
Dongwoo FineChem	Dongwoo FineChem #1	D/L, FEP, Temp.	2	2016-Oct.
		NOx	1	2017-May
		O2	1	2017-May
KyeRyong	KyeRyong Incineration Plant	Flow	1	2017-May
		D/L, Temp.	1	2017-May
		NOx / SO2 / O2	1	2017-Jun.
		CO	1	2017-Jun.
		HCl	1	2017-Jun.
Sein ENT	Green Environment	Dust	1	2017-Jun.
		Flow	1	2017-Jun.
		D/L, Temp.	1	2017-Jun.
		NOx / SO2 / O2	1	2016-Nov.
		CO	1	2016-Nov.
SsangYong C&B	Jochiwon Incineration #1,2	HCl	1	2016-Nov.
		Dust	1	2016-Nov.
		Flow	1	2016-Nov.
		Temp.	1	2016-Nov.
		NOx / SO2 / O2	2	2017-Jan.
Miraepaper	JeonJu #1,2	CO	2	2017-Jan.
		HCl	2	2017-Jan.
		Dust	2	2017-Jan.
		Flow	2	2017-Jan.
		D/L, FEP, Temp.	2	2017-Jan.
PyeongTaek Energy	OSeong Combined #1-3	SO2	2	2021-May.
		NOx / SO2 / O2	2	2017-Feb.
		CO	2	2017-Feb.
		HCl	2	2017-Feb.
		Dust	2	2017-Feb.
Huchems	Huchems #5	D/L, FEP, Temp.	2	2017-Feb.
		NOx / O2	3	2017-Mar.
WTC	WTC #1~3	Flow	3	2017-Mar.
		D/L, FEP, Temp.	3	2017-Mar.
		NOx	3	2017-Apr.
		O2	3	2017-Apr.
		Flow	3	2017-Apr.
Huvis	Huvis	D/L, Temp.	3	2017-Apr.
		NOx / SO2 / O2	1	2017-May
		Flow	1	2017-May
		Dust	1	2017-May
		D/L, Temp.	1	2017-May
Korea Cast Iron Pipe Ind.	#34, 35	NOx / SO2 / O2	2	2017-May
		Dust	3	2017-May
		Temp.	3	2017-May
		Flow	1	2023-Mar.
		Temp.	1	2023-Mar.
Kyung Hee Medical Center	Boiler	Temp.	1	2023-Mar.
		NOx	1	2017-May
		O2	1	2017-May
		Flow	1	2017-May
		D/L, Temp.	1	2017-May
Avanstrate Korea	PyeongTaek #1~3	NOx / SO2 / O2	3	2017-Aug.
		Dust	3	2017-Aug.
		Flow	3	2017-Aug.
		D/L, FEP, Temp.	3	2017-Aug.
		NOx / SO2 / O2	1	2017-Nov.
POSCO	JungEup R&D Center	CO	1	2017-Nov.
		HCl	1	2017-Nov.
		Dust	1	2017-Nov.
		Flow	1	2017-Nov.
		D/L, Temp.	1	2017-Nov.
GeumSan City [Korea Environment Corp. (KECO)]	GeumSan Incineration	NOx / SO2 / O2	4	2023-Nov.
		NOx / SO2 / O2	1	2018-Jul.
		CO	1	2018-Jul.
		HCl	1	2018-Jul.
		Dust	1	2018-Jul.
Byeollae Energy	Byeollae Energy #1,2	Flow	1	2018-Jul.
		D/L, Temp.	1	2018-Jul.
		NOx	2	2019-Jun.
		O2	2	2019-Jun.
		Flow	2	2019-Jun.
Miwon Chemical	GongJu Plant	SO2	1	2019-Sep.
		NOx / SO2 / O2	1	2019-Nov.
Samdoo Dye Works	DaeJeon Plant #1	CO	1	2019-Nov.
		HCl	1	2019-Nov.
		Dust	1	2019-Nov.
		Flow	1	2019-Nov.
		D/L, Temp.	1	2019-Nov.
Bookook Industries	#842 DC, #721 DC	NOx / SO2 / O2	2	2019-Dec.
		Flow	2	2019-Dec.
		D/L, FEP, Temp.	2	2019-Dec.
Dream Ascon	BuCheon #1,2	NOx	2	2019-Dec.
		O2	2	2019-Dec.
		Flow	2	2019-Dec.
		D/L, FEP, Temp.	2	2019-Dec.

Company	Project	Gas Analyzer	Q'ty	Date
Sunghoon Eng.	SiHeung #1~5	NOx / SO2	5	2020-Mar.
		Flow	5	2020-Mar.
		D/L, FEP, Temp.	5	2020-Mar.
Sithe Korea	Sithe YeoSu #1,2	NOx / O2	2	2020-Mar.
		Flow	2	2020-Mar.
		D/L, FEP, Temp.	2	2020-Mar.
Kukil Paper	YongIn #1	NOx	1	2020-Apr.
		O2	1	2020-Apr.
		Flow	1	2020-Apr.
		D/L, Temp.	1	2020-Apr.
		NOx	2	2020-May
SuWan Energy	SuWan Cogeneration #1,2	O2	2	2020-May
		Flow	2	2020-May
		D/L, FEP, Temp.	2	2020-May
Deogyang Chemical	UISan #1	NOx	1	2020-May
		O2	1	2020-May
		Flow	1	2020-May
		D/L, Temp.	1	2020-May
AnSan Urban Development	ASUDI #2	NOx	1	2020-May
		NOx	6	2020-Jun.
CNCITY Energy	HAKHA CES Gas Engine #1-6	O2	6	2020-Jun.
		Flow	6	2020-Jun.
		D/L, FEP, Temp.	6	2020-Jun.
		NOx	1	2020-Sep.
Lotte Aluminium	PyeongTaek #1	O2	1	2020-Sep.
		Flow	1	2020-Sep.
		D/L, Temp.	1	2020-Sep.
		NOx	1	2022-Jan.
		Flow	1	2022-Jan.
ASA	WanJu #1	D/L, Temp.	1	2022-Jan.
		NOx / SO2	1	2020-Sep.
		Dust	1	2020-Sep.
Daehan Feed	InCheon #1	Flow	1	2020-Sep.
		D/L, Temp.	1	2020-Sep.
		NOx	1	2020-Sep.
		O2	1	2020-Sep.
		Flow	1	2020-Sep.
Samhyun	EumSung #1~3	D/L, FEP, Temp.	3	2020-Oct.
		Flow	3	2020-Oct.
		D/L, FEP, Temp.	3	2020-Oct.
		Flow	1	2023-Aug.
		Temp.	1	2023-Aug.
Yujin Metal	ChungJu #1	NOx / SO2	1	2020-Oct.
		Dust	1	2020-Oct.
		Flow	1	2020-Oct.
		D/L, Temp.	1	2020-Oct.
		NOx / SO2	5	2020-Nov.
Dongil Steel	AnSung #1-5	Flow	5	2020-Nov.
		O2	1	2020-Nov.
		D/L, FEP, Temp.	5	2020-Nov.
		NOx / SO2	2	2020-Nov.
		Flow	2	2020-Nov.
SEGI Retech	YeongCheon #1~2	D/L, FEP, Temp.	2	2020-Nov.
		NOx / SO2	1	2021-Sep.
		Flow	1	2021-Sep.
		D/L, Temp.	1	2021-Sep.
		NOx/SO2	2	2020-Nov.
AMT	IkSan #1~2	Dust	2	2020-Nov.
		Flow	2	2020-Nov.
		D/L, FEP, Temp.	2	2020-Nov.
		NOx	1	2020-Nov.
		O2	1	2020-Nov.
Hankuk SLGA	InCheon #1	Flow	1	2020-Nov.
		D/L, Temp.	1	2020-Nov.
		NOx / SO2	1	2020-Dec.
		Flow	1	2020-Dec.
		D/L, Temp.	1	2020-Dec.
Daesung	InCheon #1	NOx / SO2	1	2020-Dec.
		Flow	1	2020-Dec.
		D/L, Temp.	1	2020-Dec.
		NOx / SO2	8	2020-Dec.
		Flow	8	2020-Dec.
Hyundai Motors	UISan #1~13	D/L, FEP, Temp.	13	2020-Dec.
		NOx	1	2021-Jan.
		Flow	1	2021-Jan.
SuWon City Sewerage	Sludge facility	D/L, Temp.	1	2021-Feb.
		NOx	1	2021-Jan.
		O2	1	2021-Jan.
		Flow	1	2021-Jan.
		D/L, Temp.	1	2021-Jan.
Dukyung	UISan Plant 2 #1	NOx/O2	2	2021-Jan.
		CO	2	2021-Jan.
		Flow	2	2021-Jan.
		D/L, FEP, Temp.	2	2021-Jan.
		NOx/O2	2	2022-Jul.
Hansol Paper	DaeJeon #2,3	CO	2	2022-Jul.
		Flow	2	2022-Jul.
		D/L, FEP, Temp.	2	2022-Jul.
		NOx/O2	1	2021-Apr.
		Flow	1	2021-Apr.
LS Cable & System	GuMi #1	D/L, Temp.	1	2021-Apr.
		NOx/SO2	1	2021-Mar.
		Flow	1	2021-Mar.
		D/L, Temp.	1	2021-Mar.
		D/L, Temp.	1	2021-Mar.

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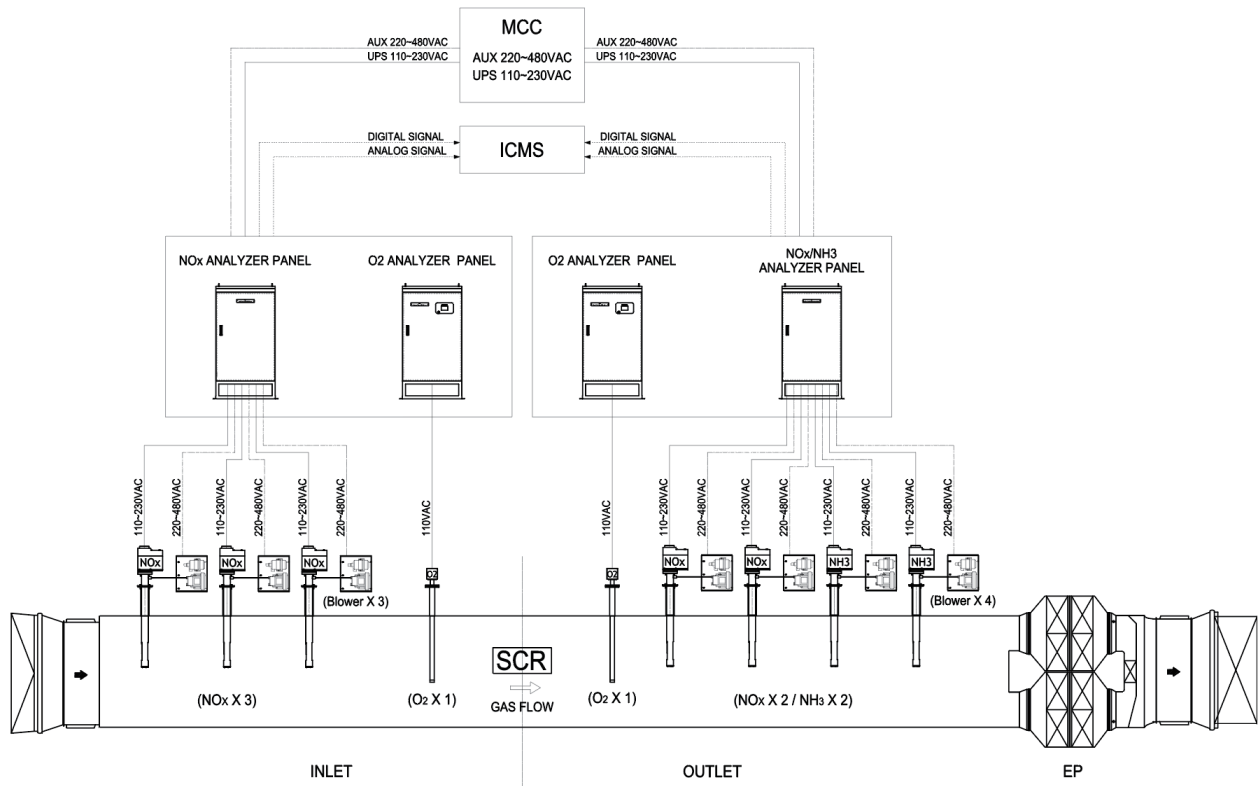
Company	Project	Gas Analyzer	Q'ty	Date
YNCC	Plant 1 #1~7 Plant 2 #1~10 Plant 3 #1~9 Plant 4 #1~5	NOx / O2	30	2021-Feb.
		Dust	1	2021-Feb.
		Flow	30	2021-Feb.
		D/L, FEP, Temp.	30	2021-Feb.
Hyundai Steel	PoHang Plant #1~6 SunCheon Steelworks #1~4, Oxidation Furnace, #2 Annealing	NOx	6	2021-Feb.
		FEP	1	2021-Feb.
		NOx / O2	5	2021-Mar.
		Flow	4	2021-Mar.
		D/L, FEP	5	2021-Mar.
Sambo	ChangWon #1 SeoSan #1~4	Temp.	4	2021-Mar.
		NOx / O2	1	2021-Feb.
		Flow	1	2021-Feb.
		D/L, Temp.	1	2021-Feb.
Geumgang	EumSung #1,2 UnYang #1	NOx / O2	4	2021-Feb.
		Flow	4	2021-Feb.
		D/L, FEP, Temp.	4	2021-Feb.
		NOx / SO2	2	2021-Mar.
		Flow	2	2021-Mar.
Ottogi	Dapung #5	D/L, FEP, Temp.	2	2021-Mar.
		NOx	1	2021-Dec.
		Flow	1	2021-Dec.
Husteel	DangJin #1,2	D/L, Temp.	1	2021-Dec.
		NOx	1	2021-Mar.
		O2	1	2021-Mar.
Dongil Industries	PoHang #1~5	Flow	1	2021-Mar.
		D/L, Temp.	1	2021-Mar.
Hyundai Sungwoo Casting	ChungJu #1,2	NOx	2	2021-Mar.
		Flow	2	2021-Mar.
		D/L, FEP, Temp.	2	2021-Mar.
SeAH CSS	SoGyeong #2	D/L, FEP, Temp.	2	2021-Mar.
		NOx / SO2	5	2021-Apr.
KEP	UISan #1~6	NOx	2	2021-Apr.
		Flow	2	2021-Apr.
		D/L, FEP, Temp.	2	2021-Apr.
Dongsuh Foods	JinCheon #1	NOx / O2	6	2021-Apr.
		Dust	6	2021-Apr.
		Flow	6	2021-Apr.
MoorimSP	DaeGu Boiler #1,2	D/L, FEP, Temp.	6	2021-Apr.
		NOx	1	2021-Apr.
		O2	1	2021-Apr.
ILJIN Electric	AnSan #1, 2	Flow	1	2021-Apr.
		D/L, Temp.	1	2021-Apr.
		D/L, FEP, Temp.	2	2021-Apr.
Prince Paper	YeSan #1	NOx/SO2	1	2021-Apr.
		Dust	1	2021-Apr.
		O2	1	2021-Apr.
OCI	PoHang #1~3	Flow	1	2021-Apr.
		D/L, Temp.	1	2021-Apr.
		D/L, FEP, Temp.	2	2021-Apr.
Corning	ASan #1,2	NOx / SO2 / O2	3	2021-May
		Dust	1	2021-May
		Flow	3	2021-May
Donghee Auto	SeoSan #1	D/L, FEP, Temp.	3	2021-May
		NOx / O2	2	2021-Jun.
		Flow	2	2021-Jun.
KOLON Industry	GuMi #1 GuMi #34, 35 GyungSan #1, 2	D/L, FEP, Temp.	2	2021-Jun.
		NOx / O2	1	2021-Jul.
		O2	1	2021-Jul.
Hyunsung Ceramic	HongSung #1	Dust	1	2021-Jul.
		Flow	1	2021-Jul.
		D/L, Temp.	1	2021-Jul.
JeonBuk National University Hospital	Boiler	O2	1	2021-Jul.
		Dust	1	2021-Jul.
		Flow	1	2021-Jul.
SIMPAC	DangJin #1~3 DangJin #3	D/L, FEP, Temp.	1	2021-Jul.
		NOx / SO2	3	2021-Nov.
		Flow	1	2021-Nov.
HaeUnDae Hillstate We've APT	Cogeneration Supply #1	D/L, Temp.	1	2021-Nov.
		NOx / O2	1	2021-Nov.

Company	Project	Gas Analyzer	Q'ty	Date
GS Donghae Elec. Power	BukPyeong #2	O2	1	2022-Apr.
Samil C&S	ChungJu #1	NOx / SO2	1	2022-May
		Flow	1	2022-May
Samyeong	KimHae #1,2	D/L, Temp.	1	2022-May
		NOx / SO2	2	2022-May
		Flow	2	2022-May
KUKDO	Busan Fac. 2	D/L, FEP, Temp.	2	2022-May
		NOx	1	2022-May
		O2	1	2022-May
DR AXION	WonSan	Flow	1	2022-May
		D/L, Temp.	1	2022-May
		NOx	1	2022-Jul.
Green Chemical	SeoSan #1	Flow	1	2022-Jul.
		D/L, Temp.	1	2022-Jul.
		NOx / O2	1	2022-Aug.
Yeonghwa Metal	ChangWon #1	Flow	1	2022-Aug.
		D/L, Temp.	1	2022-Aug.
		SO2	1	2022-Aug.
POSCO Chemical	GuMi Cathode Material #17	Flow	1	2022-Aug.
		D/L, Temp.	1	2022-Aug.
		HCl	1	2022-Aug.
Inus	ASan #1 HaDong #1	GES #1	1	2022-Oct.
		NOx / SO2	1	2022-Oct.
		Flow	1	2022-Oct.
KONEC	SeoSan #1	D/L, Temp.	1	2022-Oct.
		NOx / SO2	1	2022-Oct.
		Flow	1	2022-Oct.
Pacific Metals	GuMi #1~3	D/L, Temp.	1	2022-Oct.
		NOx	1	2022-Oct.
		Flow	1	2022-Oct.
DongChun C&C	DongChun C&C #1 Stack	D/L, FEP, Temp.	3	2022-Oct.
		NOx / SO2 / O2	1	2022-Dec.
		HCl	1	2022-Dec.
Lee Ku Industrial	Lee Ku Industrial #A5, A28	Dust	1	2022-Dec.
		D/L	1	2022-Dec.
		NOx / O2	2	2023-Apr.
GS EPS	DangJin LNG Plant #7,8	Flow	2	2023-Apr.
		Temp.	2	2023-Apr.
		NOx / O2	2	2023-May
VPH (PHC Groups)	#1	CO / CO2	2	2023-May
		Dust	1	2023-Jul.
		Flow	1	2023-Jul.
Samwoo	DangJin Factory 2 #1	Temp.	1	2023-Jul.
		NOx / O2	1	2023-Oct.
		Flow	1	2023-Oct.
Nhon Trach [Alpha Control System]	Nhon Trach #3, 4 (Vietnam)	Temp.	1	2023-Oct.
		O2	1	2023-May
		Flow	1	2023-May
Quang Trach [Woori Environmental Technology]	Quang Trach #1 (Vietnam)	NOx / SO2 / O2	2	2023-May
		CO / CO2	2	2023-May
		Flow	2	2023-May
Datang Huainan Power Plant (大唐淮南发电厂)	Datang Huainan Power #2 (China)	SO2, NOx	1	2017-Feb.
		O2	1	2017-Feb.
		Temp., Flow, Pressure	1	2017-Feb.
TRUSUR	TRUSUR (Indonesia)	Flow	1	2018-Aug.
		NOx / SO2 / O2	1	2019-Nov.
		CO	1	2019-Nov.
Lankawi Incineration [SRS Environment Plant]	Lankawi Incineration (Malaysia)	HCl	1	2019-Nov.
		Dust	1	2019-Nov.
		D/L, Temp.	1	2019-Nov.
PT Tanjung Enim Lestari.	PT Tanjung Enim Lestari. (Indonesia)	O2	3	2022-Feb.
		Dust	3	2022-Feb.
		Flow	3	2022-Feb.
Swan Environmental PVT. LTD.	AMNS Steel	Flow	1	2023-Jun.

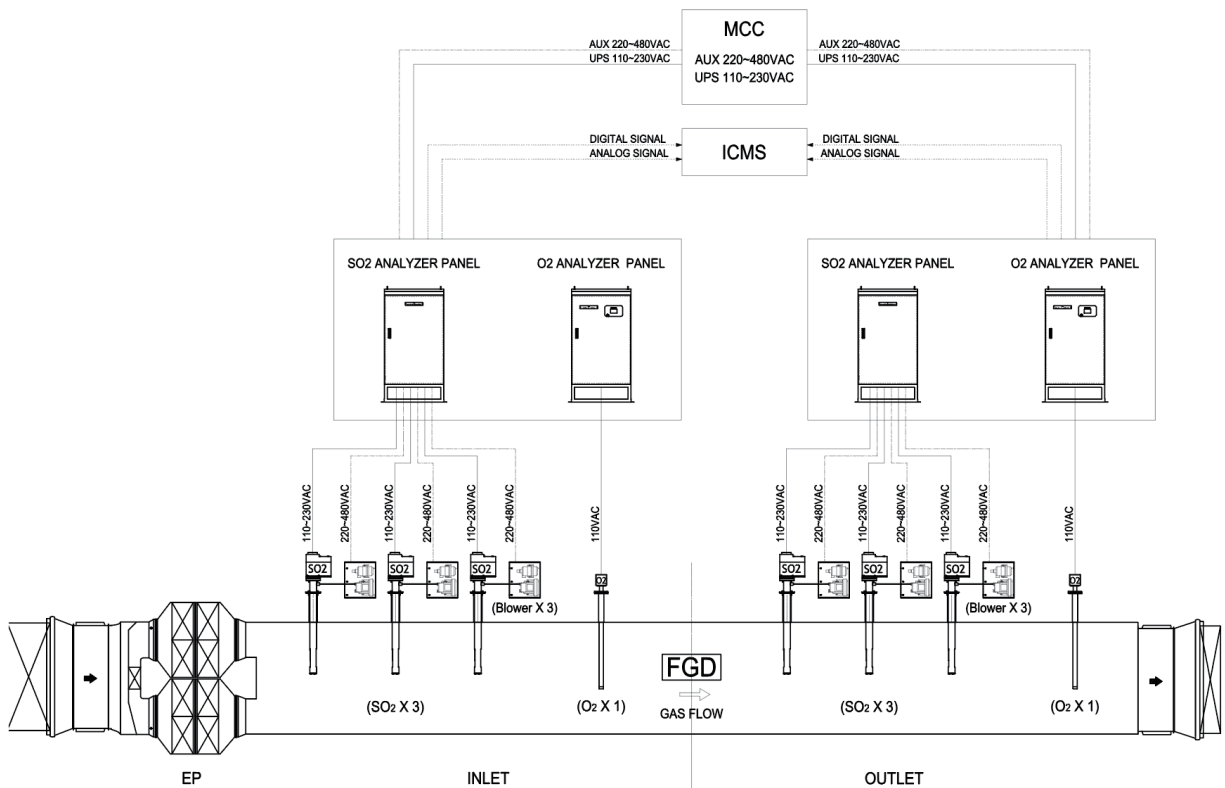
## Etc.

Company	Project	Gas Analyzer	Q'ty	Date
Carbon Korea (KC Kotrell) [Kiryoon E&C]	Carbon Korea CCUS (Carbon Capture Facility)	CO2	3	2023-Jul.
Sungshin Cement [Keumkang CNT]	Sungshin Cement 3,5 Kiln K/C Line Stack	NH3	3	2023-Nov.
Hana E&G	Ulsan R&D Center	SO2 / O2	1	2017-May
KangWon Univ.	KangWon Univ.	NOx	1	2018-Apr.
Green System	BuSan Sewage Treatment Plant	CO2	1	2018-Jun.
ETI	Authorized Organization for Gas Analyzer Certificate	NOx / SO2 / O2	1	2021-Mar.
		HCL	1	2021-Mar.
		CO	1	2021-Mar.
		Dust	1	2021-Mar.
		D/L	1	2021-Mar.
Tsinghua University (清华大学)	Institute of Thermal Energy (China)	NOx / SO2 / O2	1	2016-Jun.
		CO2	1	2016-Jun.
Sinograin (中储粮)	Granary Storehouse (China)	Dust	5	2019-Jan.
		Dust	2	2022-Aug.

# SCR

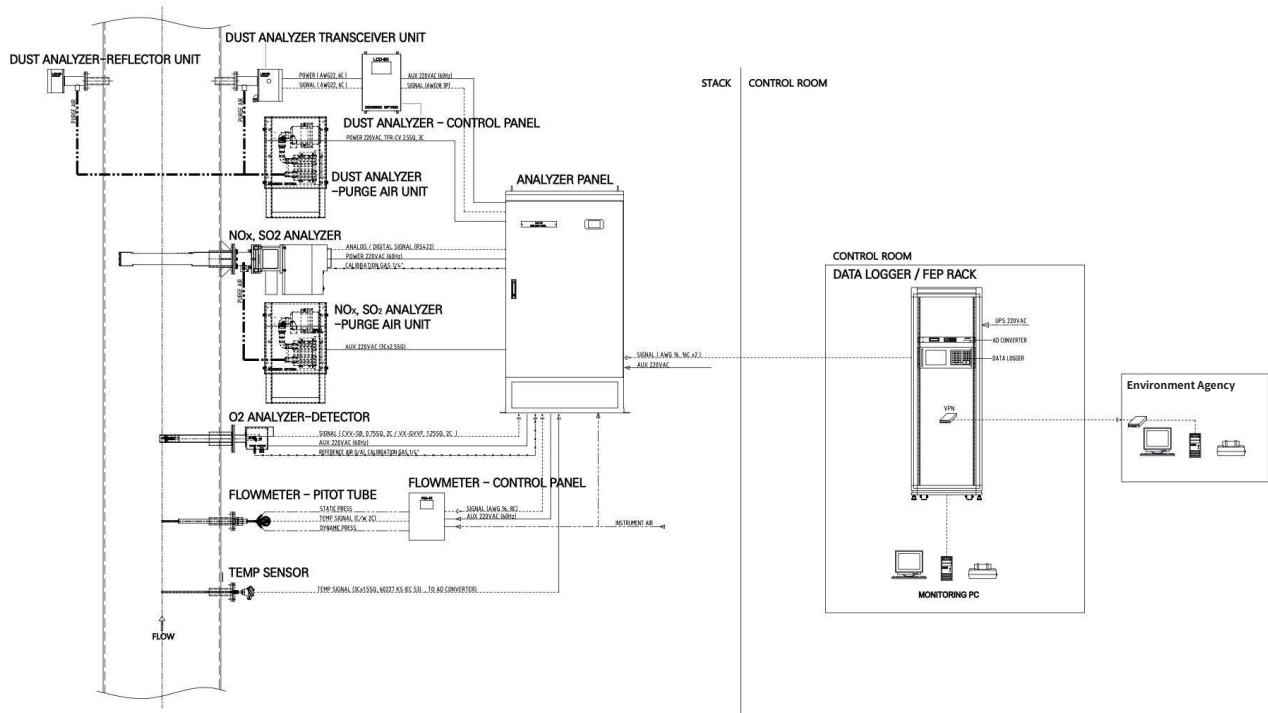


# FGD

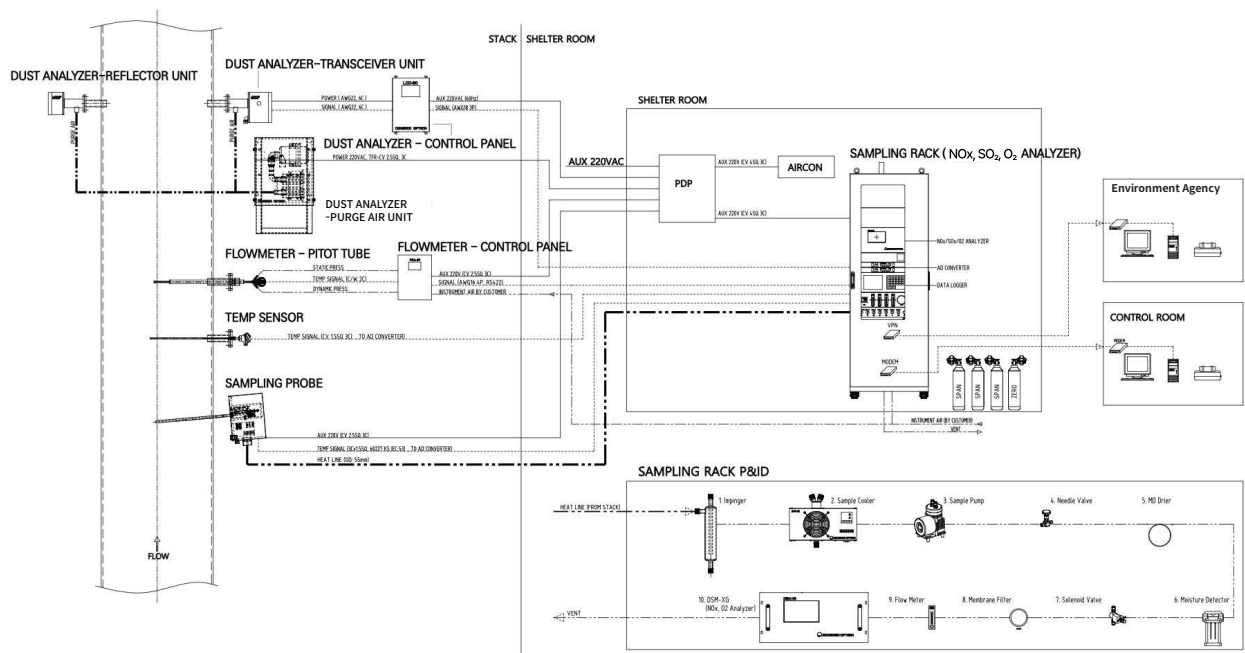




# CEMS IN-SITU



# CEMS EXTRACTIVE





**DXG Ltd.** 3th floor, 11, Yeoksam-ro 3-gil, Gangnam-gu, Seoul

**Tel** +82-2-564-3772

**Fax** +82-2-564-0222

**Web** [www.dyg.kr](http://www.dyg.kr)

**Email** [os@dyg.kr](mailto:os@dyg.kr)

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