



OpreX™ Analyzers

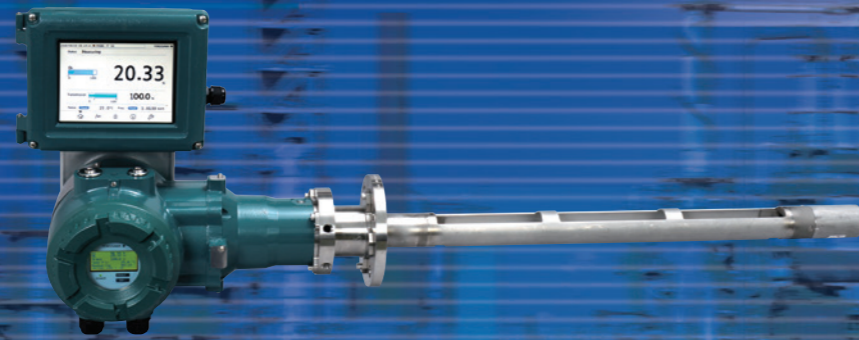
## TDLS8200

Probe type Tunable Diode Laser Spectrometer  
(Probe type, Flowcell type, Reflect type)

# Easy install, the best just got better

Yokogawa's new probe type TDLS greatly reduces installation costs.

- Easy installing probe type
- Long-term stable measurement realized by excellent probe design
- Intuitive touchscreen HMI
- Fully field repairable with 50 days of data and spectra storage
- Hazardous area classification Zone1 / Division 1



## Fired Heater Combustion, Safety, and Lifecycle Management

Yokogawa TDLS8200 simultaneously measures multi-gas like O<sub>2</sub>, CO, and CH<sub>4</sub>, providing, FAST, quick and reliable information to achieve;

- Combustion Efficiency Improvement
- Safety Improvement
- Longer Life time of the coils and coil hangers
- Higher throughput thru optimizing heating



## Limiting O<sub>2</sub> Concentration for safety and process monitoring & control

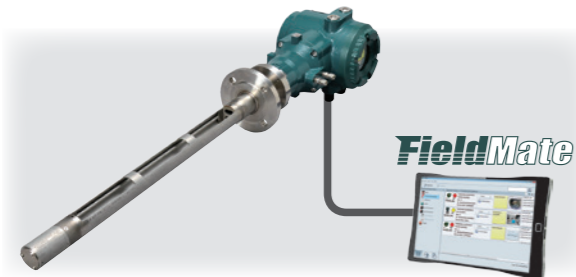
Yokogawa TDLS8200 O<sub>2</sub> analyzer achieves;

- No Sampling system required so less maintenance
- Fast Response Analysis
- No Interference Analysis (TruePeak measurement technology)
- Internal reference cell for peak locking during trace measurement

### System Configuration

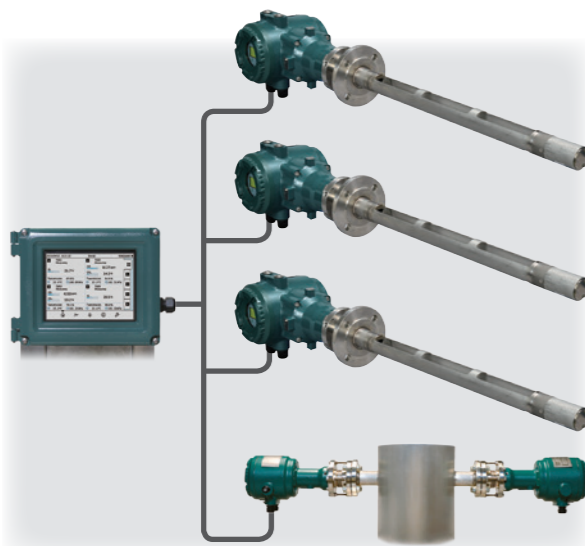
#### ■ Standard System configuration

- LCD display for process parameters and system status
- HART communication available



#### ■ System configuration with HMI

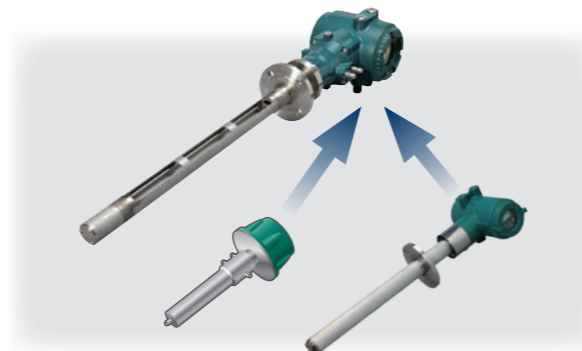
- Up to 4 units connection available
- TDLS8000 mixed system available



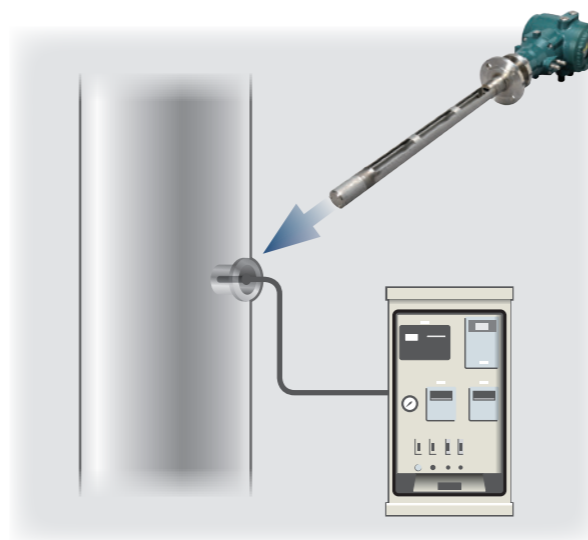
### Easy installation

#### ■ Access on one side only

- One flange only: no alignment required



Easy replacement of existing analyzer

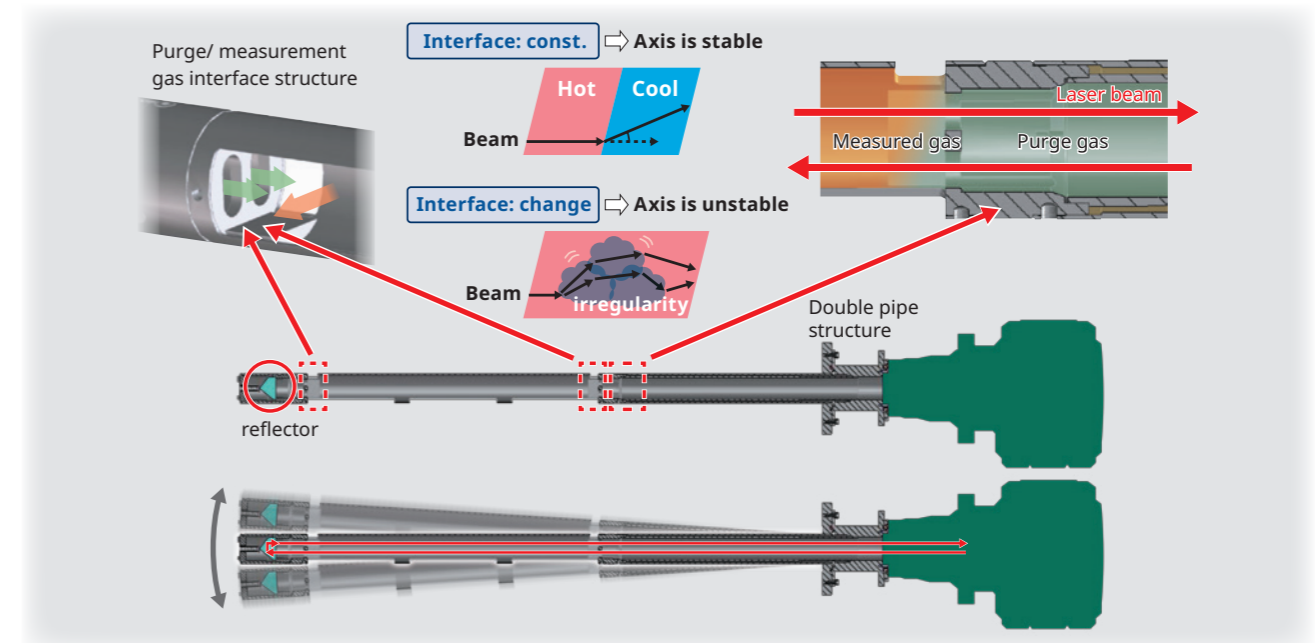


Easy replacement from gas sampling system

### High Reliability

#### ■ Long-term stable measurement

- Optical, hydrodynamics, thermal and vibration designed Probe to stabilize laser optical axis and optical path length for a long time

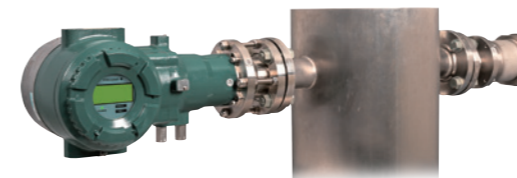


#### ■ Reference cell

- Internal reference cell in the laser module ensures peak locking during trace measurement (for O<sub>2</sub> and CO only)

#### ■ Reflect type

- Adopting a reflective configuration doubles the optical path length, allowing measurement even with a pipe diameter of 0.5 m or less.



#### ■ Flowcell type

- Replacing the probe part with a flow cell allows the use of the existing sampling system for installation.



# Specifications

## TDLS8200

### STANDARD SPECIFICATIONS

<b>Measurement object</b>	O <sub>2</sub> +CO, O <sub>2</sub> +CO or CH <sub>4</sub> , O <sub>2</sub> , CO, CO or CH <sub>4</sub> , NH <sub>3</sub> , HCl	
<b>Measurement system</b>	Tunable diode laser spectroscopy	
<b>Measured component</b>	<b>Min. range</b>	<b>Max. range</b>
O <sub>2</sub>	0-1%	0-25%
CO (ppm)	0-200 ppm	0-10,000 ppm
CO or CH <sub>4</sub>	CO	0-200 ppm
	CH <sub>4</sub>	0-5%
NH <sub>3</sub>	0-30 ppm	0-5,000 ppm
HCl	0-50 ppm	0-5,000 ppm
<b>Probe length</b>	0.7 m, 1.0 m, 1.5 m, 2.0 m	
<b>Optical path length</b>	1 m	
<b>Analog output</b>	5 points, 4 to 20 mA DC Output types: Gas concentration, Transmission, Process gas temperature, Process gas pressure	
<b>Digital communication</b>	HART, Ethernet	
<b>Digital output</b>	2 points, contact rating 24 V DC, 1 A DO: Function: Activate during Warning / Calibration / Validation / Warm up / Maintenance conditions Fault: Function: Activate during Fault condition or when the system power is off	
<b>Power supply</b>	24 V DC ±10%	
<b>Protection degree</b>	IP66/NEMA 4X	
<b>Process gas condition</b>	Process gas temperature: Max 850°C Process gas pressure: 90 to 500 kPa abs. Process gas flow velocity: 1 to 30 m/sec	
<b>Installation condition</b>	Ambient operating temperature: -20 to +55°C Storage temperature: -30 to +70°C Humidity: 0 to 95%RH at 40°C (non-condensing)	
<b>Functional safety</b>	IEC61508 SIL2 (SC3)	
<b>Hazardous area classifications</b>	Division1, Zone1: Explosionproof FM (US, Canada), ATEX, IECEx, NEPSI, Korea, Japan	

### PERFORMANCE

Measured component	Repeatability	Linearity
O <sub>2</sub>	±1% reading or ±0.01% O <sub>2</sub> , whichever is greater	±1% F.S.
CO (ppm)	±2% reading or ±1 ppm CO, whichever is greater	±1% F.S.
CO or CH <sub>4</sub>	CO	±2% reading or ±1 ppm CO, whichever is greater
	CH <sub>4</sub>	±4% reading or ±0.02% CH <sub>4</sub> , whichever is greater
NH <sub>3</sub>	±2% reading or ±1 ppm NH <sub>3</sub> , whichever is greater	±2% F.S.
HCl	±1% reading or ±2.5 ppm HCl, whichever is greater	±2% F.S.

Measurement conditions: 25°C, 0.1 MPa abs., optical path length 1 m

## YH8000

<b>Display</b>	Touchscreen 7.5 inch TFT color LCD panel, 640 x 480 (VGA)
<b>Communication</b>	Ethernet: RJ-45 connector, Communication speed: 100 Mbps
<b>Protection degree of enclosure</b>	IP65, NEMA Type 4X
<b>Weight</b>	Approx. 4 kg
<b>Mounting</b>	Analyzer mount (Front, left-side, right-side) with tilt function, Pipe mount or Panel mount
<b>Cable Entries</b>	1/2NPT or M20 x 1.5 mm, two holes
<b>Installation conditions</b>	Ambient operating temperature: -20 to +55°C Storage temperature: -30 to +70°C Humidity: 10 to 90%RH at 40°C (Non-condensing)
<b>Power Supply</b>	24 V DC ±10%
<b>Hazardous area classifications</b>	Division 2, Zone2: Non-Incendive/Type n; FM (US, Canada), ATEX, IECEx, Korea, NEPSI, EAC

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