

**Gas Monitor** 

**IR-400 Series** 

HORIBA

# Chamber cleaning end point monitoring for deposition process





## **Product Specifications**

Model		IR-422		IR-432		
Measurement gas and full scale		SiF4: 100 mTorr, CF4: 100 mTorr	WF6: 200 mTorr, NF3: 200 mTorr	SiF4: 3800 mTorr		
Cell length		200 mm		30 mm		
Cell set temperature		180 °C				
Heater jacket		Temperature sensor: Thermocouple K-type, Thermostat: Manual reset				
Repeatability <sup>*1</sup>		±0.5 %F.S.				
Linearity *1		±1 %F.S.				
Zero noise <sup>∗</sup> 1		±0.5 %F.S. (3σ)				
Ambient temperature		20-35 °C		20-50 °C		
Storage temperature		0-70 °C				
Warm-up time		≥ 120 min				
Wetted material		SUS316L, BaF2, FFKM	SUS316L, ZnSe, FFKM	SUS316L (Clean S <sup>®</sup> treatment AF type $^{\circ 2}$ ), BaF_2, FFKM		
Fitting		NW25				
Leak rate		≤ 1 × 10 <sup>.6</sup> Pa · m³/s (He)				
Proof pressure		300 kPa (A)				
Analog communication		Analog output: 0-5 VDC Contact output: Error, High · Low alarm, Warm-up status Contact intput: Zero calibration		Analog output: 4-20 mA Contact output: Error, High • Low alarm, Warm-up status Contact intput: Zero calibration		
Digital communication		RS-485 (F-Net Protocol)				
Power supply	Sensor					
	Heater jacket	208 V, 84 VA		115 V, 132 VA		
Dimensions (mm)		W433 × H117.5 × D83		W259 × H130 × D86		
Weight		3.2 kg		2.8 kg		

\*1 The specifications are guaranteed under HORIBA STEC's inspection conditions using calibration gas.

\*2 Clean S is a registered trademark of Resonac Corporation.

Model		IR-427		IR-437	
Measurement gas	and full scale	SiF4: 100 mTorr, CF4: 100 mTorr	WF6: 200 mTorr, NF3: 200 mTorr	SiF4: 3800 mTorr	
Cell length		200 mm		30 mm	
Cell set temperature		180 °C			
Heater jacket		Temperature sensor: Thermocouple K-type, Thermostat: Manual reset			
Repeatability *1		±0.5 %F.S.			
Linearity *1		±1 %F.S.			
Zero noise *1		±0.5 %F.S. (3σ)			
Ambient temperature		20-35 °C		20-50 °C	
Storage temperature		0-70 °C			
Warm-up time		≥ 120 min			
Wetted material		SUS316L, BaF2, FFKM	SUS316L, ZnSe, FFKM	SUS316L (Clean S <sup>®</sup> treatment AF type <sup>'2</sup> ), BaF <sub>2</sub> , FFKM	
Fitting		NW25			
Leak rate		≤ 1 × 10 <sup>-6</sup> Pa · m³/s (He)			
Proof pressure		300 kPa (A)			
Digital communication		EtherCAT <sup>®</sup> Protocol			
Power Sens	sor	24 VDC, 1.5 A			
supply Heat	ter jacket	208 V, 84 VA		115 V, 132 VA	
Dimensions (mm)		W433 × H117.5 × D83		W259 × H130 × D86	
Weight		3.2 kg		2.8 kg	

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#### Reliable, High-performance

#### Non-dispersive Infrared Absorptiometry (NDIR)

The infrared absorptiometry method employed by the IR-300 Series uses the principle of the absorption by gas molecules of the infrared light emitted from an infrared light source. The sample output from a sample that has absorbed the gas being measured is compared to a reference output with no absorbance, and the result is converted into a gas concentration. The use of this double beam method enables long-term, stable measurement results to be obtained.



The optical system is made up of a light source, gas cell and double beam detectors. The stability of the double beam detector has been proven over a period of more than 40 years.





The HORIBA Group adopts IMS (Integrated Management System) which integrates Quality Management System ISO9001, Environmental Management System ISO14001. and Occupational Health and Safety Management System ISO45001. We have now integrated Business Continuity Management System ISO22301 in order to provide our products and services in a stable manner, even in emergencies.



Applying to the EU RoHS Directive : This products is compliant with the restriction of the designated 10 hazardous substances(\*). (\*) lead, cadmium, mercury, hexavalent chromium, polybrominated biphenyls (PBB), polybrominated diphenyl ethers (PBDE), bis (2-ethylhexyl) phthalate (DEHP), butyl benzyl phthalate (BBP), dibutyl phthalate (DBP) and diisobutyl phthalate (DIBP) Using lead-free soldering : Lead-free soldering is used for mounting components of printed circuit boards. - Many countries consider the reinforcement of regulations concerning the risk caused by lead to human body and the environment

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Please read the operation manual before using this product to ensure safe and proper handling of the product.

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