

## Gas Concentration Monitor IR-300 Series

### Specifications

Model		IR-312M	IR-314M	IR-322M	IR-324M
Gas cell optical path length		5mm		50mm	
Target chemical/ full-scale concentration *1		TMGa/25 vol% , IPA/5 vol%		TMIn/1 vol% , TEGa/1 vol% TMAI/2 vol% , IPA/1 vol%	
Measurement concentration range		0 to 100% of full scale			
Repeatability *2		≤±0.5% of full scale			
Linearity *2		≤±1.0% of full scale			
Accuracy *2*3		≤±1.0% of full scale			
Zero drift *2		≤±1.0% of full scale/day			
Response (T90) *4		≤ 4 sec			
Sensor response		≤ 0.4 sec			
Operating pressure range *2*5		30 kPa to 300 kPa (A)			
Proof Pressure		500 kPa (A)			
Operating flow rate range*2*5		50 to 1000 SCCM			
Operating ambient temperature		15 to 35°C			
Setting gas cell temperature		60 °C (Need temperature controller prepared by users ) *6			
Gas cell temperature sensor		Thermocouple K Type (Connector type: OMEGA SMP-K-F)			
Thermal switch		100°C (self-hold)			
Warming up time		More than 1 hour			
Wetted material		Body: SUS316L, Gas cell optical window: Sapphire, Ag, Cu, Ti, Ni			
Leak integrity		≤ 5×10 <sup>-12</sup> Pa·m <sup>3</sup> /s (He)			
Fitting		1/4 VCR male or equivalent			
Communication type		Analog/Digital	DeviceNet™	Analog/Digital	DeviceNet™
Power requirement	Main unit	±15 V DC/3.8 W	24 V DC/12 W	±15 V DC/3.8 W	24 V DC/12 W
	Gas cell heater	200 to 240 V AC/Max. 50 VA (Connector type: Molex Standard .093 1545-P1)			
Dimensions		124 x 50.8 x 135 mm exception of projection			
Mounting orientation		Free			
Mass		Approx.1.2 kg		Approx.1.5 kg	

\*1 Please contact HORIBA STEC regarding chemical and/or full-scale concentration other than those shown above.

\*2 The specification is guaranteed under the standard conditions of HORIBA STEC.

Ambient temperature: 23 ± 2°C / Gas cell temperature: 60°C / Measurement flow rate: 1000 SCCM / Calibration gas: C<sub>3</sub>H<sub>8</sub> balanced in N<sub>2</sub>.

\*3 Accuracy is based on concentration of the calibration gas.

\*4 Gas replacement time (Td: time delay) is not included in the response.

The typical Td in our inspection equipment is approx. 1.0 second.

※The response without moving average is approx. 1.5 seconds.

It is necessary to change # of moving average of firmware settings by digital communication.

\*5 This is recommended operating condition.

\*6 Required specification of temperature controller

PID operation by auto tuning

Control cycle : 1 second or less