

Model	IR-312M	IR-314M	IR-315M	IR-322M	IR-324M	IR-322MB	IR-324MB	
Gas cell optical path length	5 mm			50 mm		50 mm		
Target precursor / full-scale concentration *1	TMGa / 25 vol% , DEZn / 10 vol% IPA / 5 vol% , IPA / 10 vol%			TMIn / 1 vol% , TMIn / 2.5 vol% , TEGa / 1 vol% , TMGa / 1 vol% TMAI / 2 vol% , DEZn / 2.5 vol% , IPA / 1 vol%		B ₂ H ₆ 10 vol% / H ₂ or He		
Measurement concentration range	0-100 % of full scale							
Repeatability *2	≤ 0.5 % of full scale							
Linearity *2	≤ 1.0 % of full scale							
Accuracy *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	30-300 kPa (A)					100-300 kPa (A)		
Proof pressure	500 kPa (A)							
Operating flow rate range *2*5	50-1000 SCCM							
Operating ambient temperature	15-35 °C					20-35 °C		
Setting gas cell temperature	60 °C (Need temperature controller prepared by users) *6					Non-heated		
Gas cell temperature sensor	Type K Thermocouple (Connector type : OMEGA SMP-K-F)							
Thermal switch	100 °C (Self-holding type)							
Warming up time	1 hour or more							
Wetted material	Body : SUS316L, Gas cell window : Sapphire, Ag, Cu, Ti, Ni *7					Body : SUS316L, Gas cell window : Sapphire, Ni, Al		
Leak integrity	≤ 5 × 10 ⁻¹² Pa·m ³ /s (He)							
Fitting	1/4 inch VCR male or equivalent							
Communication interface	Analog / RS-485	DeviceNet™	CC-Link®	Analog / RS-485	DeviceNet™	Analog / RS-485	DeviceNet™	
Power requirement	Main unit	± 15 VDC / 3.8 W	DC24 V / 12 W	DC24 V ±10 % / 12 W	± 15 VDC / 3.8 W	DC24 V / 12 W	± 15 VDC / 3.8 W	DC24 V / 12 W
	Gas cell heater	200-240 VAC, Maximum 50 VA (Connector type : Molex Standard 093 1545-P1)					—	
Dimensions	124 mm(W) × 50.8 mm(D) × 135 mm(H) *8 Not including protrusions							
Mounting orientation	Free							
Weight	Approx. 1.2 kg			Approx. 1.5 kg		Approx. 1.5 kg		

*1 Please contact HORIBASTEC regarding precursor and/or full-scale concentration other than those shown above.

*2 The specification is guaranteed under the standard conditions of HORIBASTEC.
Ambient temperature: 23±2 °C/ Gas cell temperature: 60 °C / Measurement flow rate: 1000 SCCM / Calibration gas : C₂H₆ balanced in N₂ at 105 kPa (A).

*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 second. (It is necessary to number 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

*7 Optional wetted material : Body ; SUS316L, Gas cell optical window ; Sapphire, Ni

*8 The height of IR-315M is 145 mm.