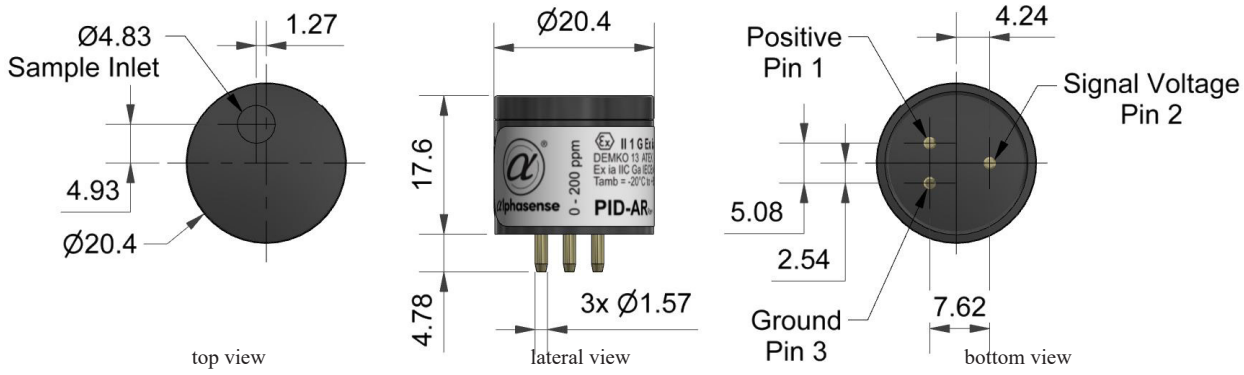
PID-AR5 Photoion detector

Technical Specification

Figure 1 PID-AR5 Diagram



remarks：

1. Please do not block the Ø4.83 sensing area
2. Pin definition:
   Pin 1 : Power input
   Pin 2: Signal output
   Pin 3: Grounding
3. Unless otherwise stated, all dimensional errors are ±0.1mm
4. You need to use a socket connection
5. Welding or cutting the connection pins may permanently damage the sensor and cause the warranty to become void

Performance (using a 10.6-eV bulb)

Target gas	VOCs with ionization potential less than 10.6eV		
Minimum detection level linear range over the scale	ppb isobutene		10
	ppm isobutene		200
	ppm linear range of isobutylene		200
Minimum sensitivity		mV / ppm isobutylene	6
Typical sensitivity	Linear range	mV / ppm isobutylene	11
full stabilization time	minutes		5
preheating time	Seconds (from start to full operation t)		5
offset voltage	mV		40~75
Response time (t90)	second	dispersal pattern	2

electrical	
power dissipation	80 MW ~ 200 mW depends on the supply voltage
service voltage	3.2 ~ 5.5 VDC
output signal	0.040~2.85V

environment		
temperature range	-20℃ ~ +60℃	
temperature characteristic	See figure below	
Relative humidity range humidity sensitivity	No condensation Working period: 0% ~ 75% rh instantaneously	0 ~ 95% close to zero

key parameter	
Working life,	5 years (excluding replaceable bulbs and grilles)
S approved	, ECEx Ex ia, C Ga; ATEX II 1 G Ex ia IIC Ga-20OC <Ta <+60OC filter
onboard filter	out liquids and micro-particles
membrane	Users can be replaced, life expectancy =10000 hours
bulb grid	Users can replace
weight	< 8g
Location sensitivity warranty period	not have
	Electronic components and casing 24 months, bulb 12 months. Bulb and grid replaceable. 10.6eV Bulb typical lifespan 10,000 hours.
Patent information	US Patent 6,646,444; Japanese Patent 3,793,757

Note: Unless otherwise specified to ensure sensor suitability ' all sensors shall comply with their own requirements. All testing shall be conducted under ambient conditions. As customer applications fall outside our control, the provided information does not carry any legal liability. Customers shall conduct tests under their own conditions.

Alphasense Ltd, Sensor Technology House, 300 Avenue West, Skyline 120, Great Notley. CM77 7AA. UK Telephone: +44 (0) 1376 556 700 Fax: +44 (0) 1376 335 899 E-mail: sensors@alphasense.com Website: www.alphasense.com

PID-AR5 performance parameter

Technical Specification

Figure 2 Linearity (0-200ppm)

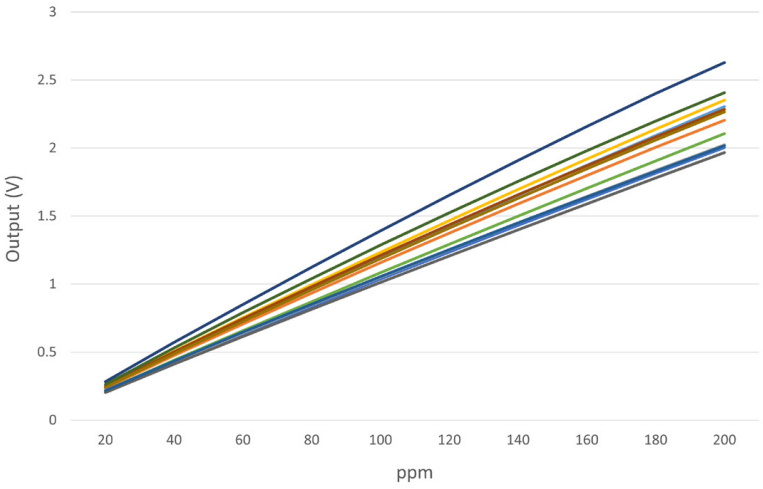


Figure 2 shows the response curves of the 20 sensors over their entire working range. The sensors are linear over their entire range.

Figure 3 Sensitivity Temperature Characteristics

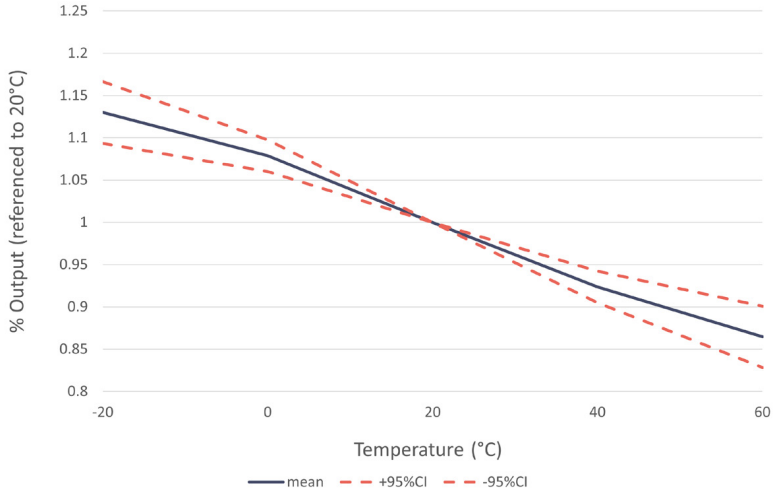


Figure 3 shows the temperature characteristics of sensitivity, which has been corrected for the gas law.

This data is derived from the test results of a typical batch PIDAR5 sensor in 30ppm isobutylene.

Figure 3 shows the mean percentage of output (reference 20℃) and± the 95% confidence interval.

Table 1: List of replacement parts/consumables

P / N	explain	P / N	explain
001-0036-00	gas hood	001-0043-00	Maintenance toolbox, including: 2 :: Polishing sheets 2 * 10 μm, bottom cloth filter 2 * 1 μm, top Teflon large filter 1 :: Padding swabs
001-0037-00	Lid with snap-on fastener		
001-0038-00	pad		
001-0039-00	1 μm, Teflon, top filter, large	001-0044-00	Sensors repair kit, including: 2 :: 10.6 eV lamp 1 :: Detector ionization chamber assembly 1 * 1 μm, Teflon made large top filter 1 * 1 0 μm, cloth bottom filter
001-0040-00	10 μm, cloth, bottom filter		
001-0041-00	Detector ionization chamber assembly		
001-0042-00	10.6 eV lamp	001-0045-00	Lightbulb cleaning kit
001-0046-00	10.6 Independent packaging of bulbs eV	001-0047-00	Quick response to 0 ~ 2000 ppm sensors

When a product reaches the end of its service life, do not dispose of electronic sensors, components, or instruments in household waste. Instead, contact the instrument manufacturer, Alphasense, or its authorized dealers for disposal instructions. Important: Unless otherwise specified, all sensors are tested under ambient conditions. As customer applications may exceed our control parameters, the provided information does not constitute legal liability. Customers should conduct their own testing to ensure the sensors meet specific requirements.