

# Wafergard® SG PA/PAL Gas Filters

*Particulate filtration for photovoltaic  
and display applications*

Wafergard® SG PA/PAL gas filters provide particulate filtration designed for flow rate range up to 200 slpm\* to maximize photovoltaic cell and display manufacturing production yields. The PTFE membrane and PFA support filter cartridge are compatible with process gases\*\* as well as inert gas and CDA applications.

Entegris has provided solutions to critical materials and processing challenges to maximize high-technology productivity and reduce production costs. Our filtration, purification, and materials integrity management products and technologies provide our customers with leading-edge product performance capabilities.

\*20°C, 101 kPa

\*\*Not compatible for F<sub>2</sub>



## APPLICATIONS

- Process gases for photovoltaic cells
- Process gases for flat panel displays
- Gas cabinets
- Valve manifold boxes
- Gas panels: Downstream of MFC, upstream of MFC, upstream of pressure regulator
- Upstream of process chamber
- Purge/vent/pressure control line: process/transfer/load-lock chambers, back side wafer cooling

## FEATURES & BENEFITS

- ≥99.99% and high flow rate/low pressure drop characteristics
- Removal of particles greater than 0.0015 µm from incoming gas minimizes process defects
- Interior surface of this product is ≤25 µin Ra and provides cost-effective solution for filtration of compressed air, inert gases, and process gases
- Cleanroom manufactured, welded, and tested for reliability
- Compact footprint with a maximum diameter of 19 mm allows installation even when space is limited

## SPECIFICATIONS

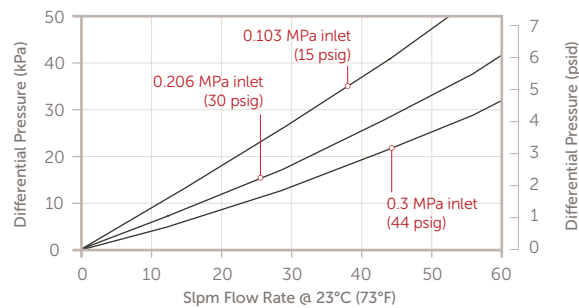
<b>Materials</b>	Filter element	Hydrophobic PTFE membrane supported by molded PFA
	O-ring	PFA O-Ring (SG PAL only)
	Housing	Electropolished 316L stainless steel
<b>Particle retention</b>	≥99.99% (4 LRV) (referenced at the most penetrating particle size)	@ 30 slpm: SG PA @ 90 slpm: SG PAL
<b>Removal rating</b>	≥0.0015 µm	
<b>Surface finish interior</b>	≤25 µin Ra	
<b>Helium leak rating</b>	Qualified	$2 \times 10^{-11}$ Pa m <sup>3</sup> /sec ( $2 \times 10^{-10}$ atm cc/sec)
	Tested	$1 \times 10^{-9}$ Pa m <sup>3</sup> /sec ( $1 \times 10^{-8}$ atm cc/sec)
<b>Operating conditions</b>	Maximum operating pressure: 20 MPa (200 bar; 2900 psig) @ 23°C (73°F)	
	Maximum forward differential pressure: 0.414 MPa (4.14 bar; 60 psid) @ 23°C (73°F)	
	Maximum reverse differential pressure: 0.069 MPa (0.69 bar; 10 psid) @ 23°C (73°F)	
	Maximum operating temperature: 120°C (248°F) in inert gases	
<b>Flow rating</b>	Refer to performance data	

## PERFORMANCE DATA

### Wafgard SG PA Gas Filters

YY5001HS1 ¼" Compression Seal

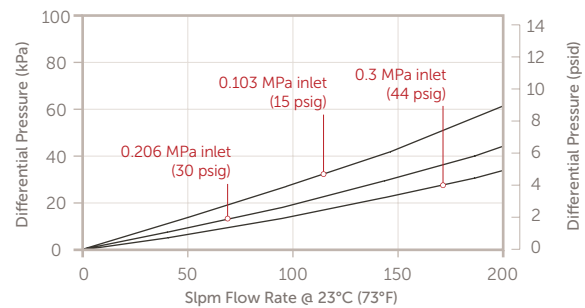
YY5001HR1 ¼" Gasket Seal



### Wafgard SG PAL Gas Filters

YY5032PS1 ⅜" Compression Seal

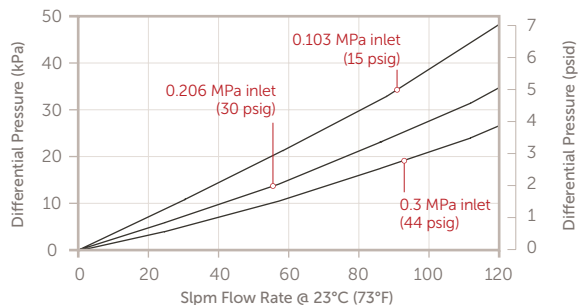
YY5032PR1 ½" Gasket Seal



### Wafgard SG PAL Gas Filters

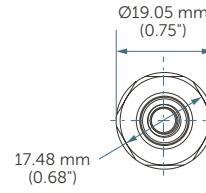
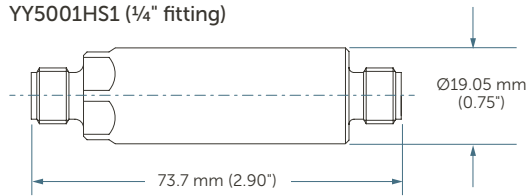
YY5002PS1 ¼" Compression Seal

YY5002PR1 ¼" Gasket Seal

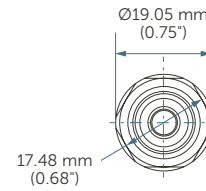
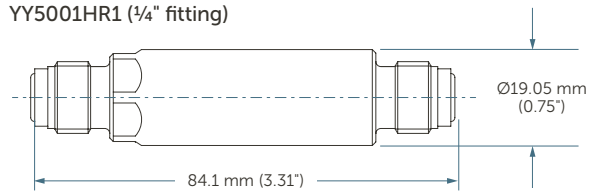


## DIMENSIONS

YY5001HS1 (1/4" fitting)

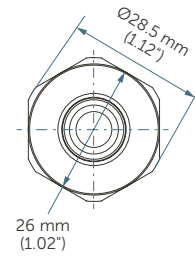
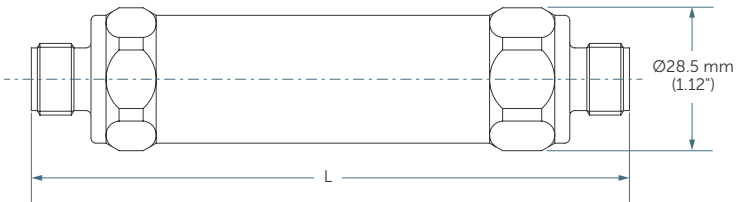


YY5001HR1 (1/4" fitting)



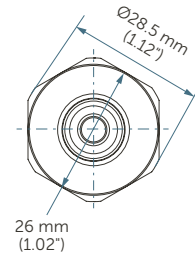
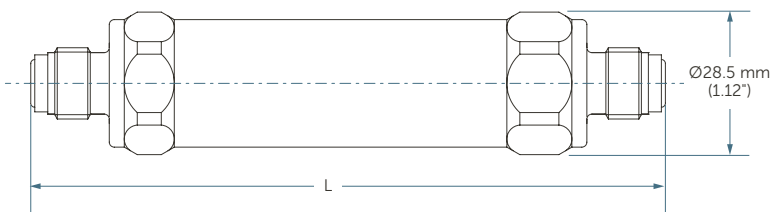
YY5002PS1 (1/4" fitting): L = 115.5 mm (4.55")

YY5032PS1 (3/8" fitting): L = 119.3 mm (4.70")



YY5002PR1 (1/4" fitting): L = 127.0 mm (5.00")

YY5032PR1 (1/2" fitting): L = 133.5 mm (5.26")



## ORDERING INFORMATION

PART NUMBER			
Compression seal (Swagelok® tube fitting compatible)	Gasket seal (VCR® compatible)	Description	Fitting size
YY5001HS1	YY5001HR1	Wafergard SG PA gas filter	1/4"
YY5002PS1	YY5002PR1	Wafergard SG PAL gas filter	1/4"
YY5032PS1		Wafergard SG PAL gas filter	3/8"
	YY5032PR1	Wafergard SG PAL gas filter	1/2"

## FOR MORE INFORMATION

Please call your Regional Customer Service Center today to learn what Entegris can do for you. Visit [entegris.com](https://www.entegris.com) and select the [Contact Us](#) link to find the customer service center nearest you.

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