



LUMINOUSGARD™ GAS PURIFIERS

For hydrocarbons, acids and amines removal in lithography applications

Overview

Luminousgard™ point-of-use, in-line gas purifiers effectively remove hydrocarbon in gases, as well as organic matter, basic and acid impurities and particles. These ultrapure activated and precision gas filters are especially effective for purifying purge gases in lithography applications in the semiconductor manufacturing process.

Applications

- Clean dry air (CDA)
- Lens purge gas line for exposure equipment
- Purge gas line for laser generator
- Inert gas supply line

Features and Benefits

- Effectively removes the following impurities in purge gas: CDA, N₂, Ar and He
- Maintains high retention in the following volatile impurities:
 - Hydrocarbons (>C₆)
 - Acids: SO₂, SO₃, NO₂, HCl, HF CH₃COOH, H₂S
 - Amines: NH₃, CH₃NH₂, (CH₃)₃N
- Excellent initial cleanliness
 - Less than 1 ppb of hydrocarbons (>C₆) degassing at 1 SLPM
- Effectively removes particles in gas stream



Luminousgard Gas Purifier



Luminousgard 1000 Gas Purifier



Luminousgard 2000 Gas Purifier

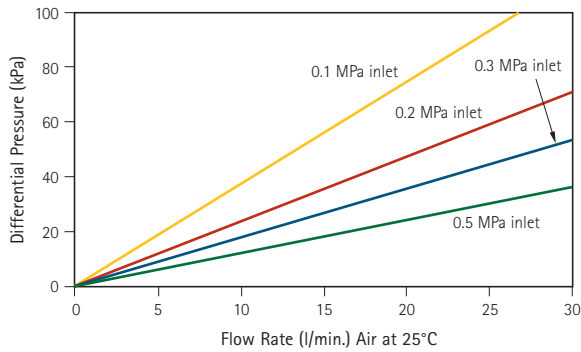
Luminougard Gas Purifier

Specifications

Materials:	Adsorbent	Ultrapure activated carbon
	Filter	Nickel
	Housing	Electropolished 316L/304 stainless steel
Retention:	Gaseous organic	>99.9% (>C ₆ hydrocarbon)
	Gaseous acid	>99.9% (ex. SO ₂ , SO ₃ , NO ₂ , HCl, H ₂ S)
	Gaseous basic	>99.9% (ex. NH ₃ , CH ₃ NH ₂ , [CH ₃] ₃ N)
	Particles	>99.999999% removal of all particles >0.01 μm
Downstream cleanliness:	Volatiles	<1 ppb (more than C ₆ number of gaseous organic hydrocarbon at 1 l/min.*
	Particle	<0.03 particles/L >0.01 μm at 30 l/min.
Operating conditions:	Connection	6.35 mm gasket seal (1/4" VCR® compatible) male connector
	Recommended flow rate	<30 l/min.*
	Maximum operating pressure	0.97 MPa (9.7 bar/140.7 PSIG)
	Maximum differential pressure	0.97 MPa (9.7 bar/140.7 PSID)
	Maximum operating temperature	60°C (inactive gas)

*20°C, 101 kPa

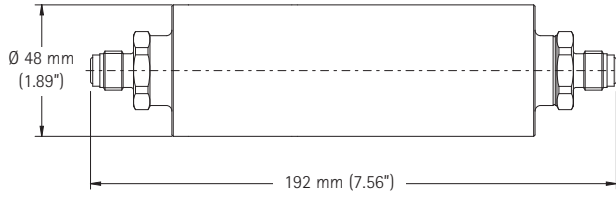
Performance Data



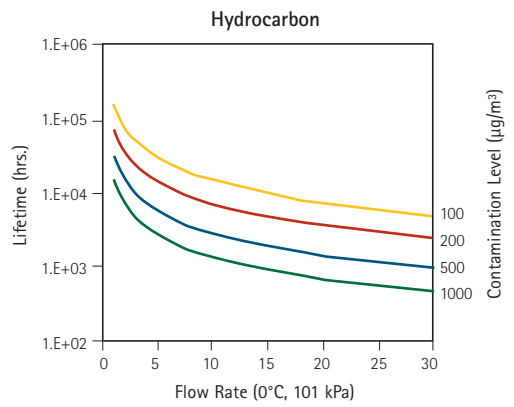
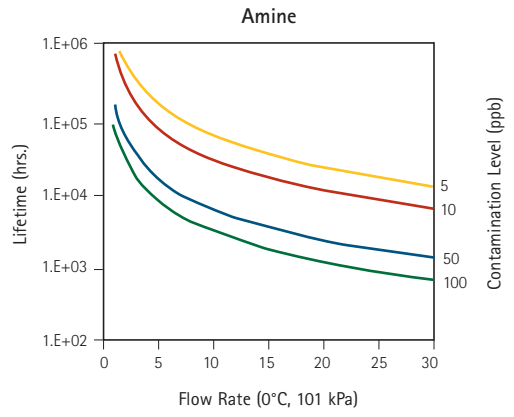
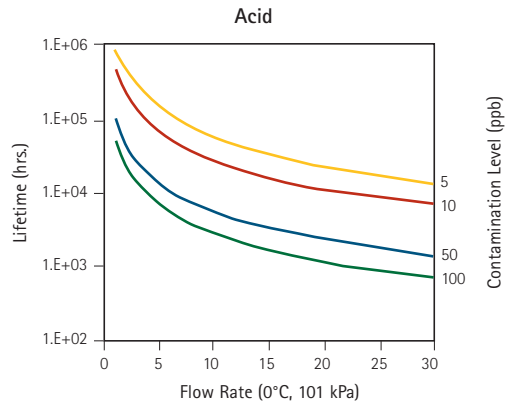
Ordering Information

Part Number	Description
LPDN ACR R2	Luminousgard gas purifier 1/4" VCR

Dimensions



Lifetime Curves



Note: Purifier lifetime is dependent upon operating conditions.

Luminousgard 1000 Gas Purifier

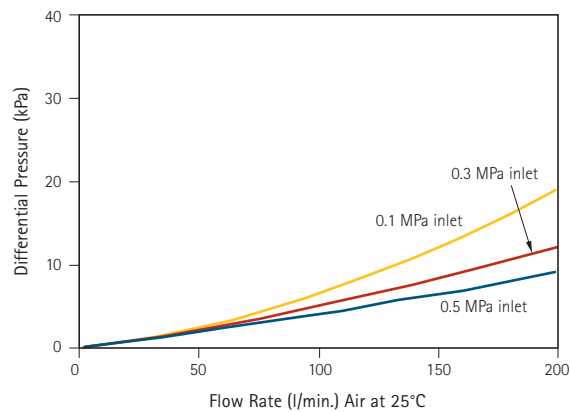
Specifications

Materials:	Adsorbent	Ultrapure activated carbon
	Filter	PTFE/PFA
	Housing	Electropolished 316L/304 stainless steel
Retention:	Gaseous organic	>99.9% (>C ₆ hydrocarbon)
	Gaseous acid	>99.9% (ex. SO ₂ , SO ₃ , NO ₂ , HCl, H ₂ S)
	Gaseous basic	>99.9% (ex. NH ₃ , CH ₃ NH ₂ , [CH ₃] ₃ N)
	Particles	>99.9999999% removal of all particles >0.01 μm
Downstream cleanliness:	Volatiles	<1 ppb (>C ₆ hydrocarbon at 1 SLPM)
	Particles	<0.03 particles/L >0.01 μm at 30 SLPM
Connection:	Inlet/outlet	1/2" gasket seal (1/2" VCR compatible) male connector
Attachments:	1/2" VCR cap and gasket*, 2 sets on unit	
Operating conditions:	Gas type	Inert gases**
	Recommended flow rate	<200 SLPM
	Maximum operating pressure	0.9 MPa (9 bar/130.5 PSIG)
	Maximum forward differential pressure	0.7 MPa (7 bar/101.5 PSID)
	Maximum reverse differential pressure	0.25 MPa (2.5 bar/36.3 PSID)
	Maximum operating temperature	50°C (122°F) – inert gas
	Approximate product weight	3.21 kg (7.08 lbs)

*No reuse

**Please contact Entegris for other gases

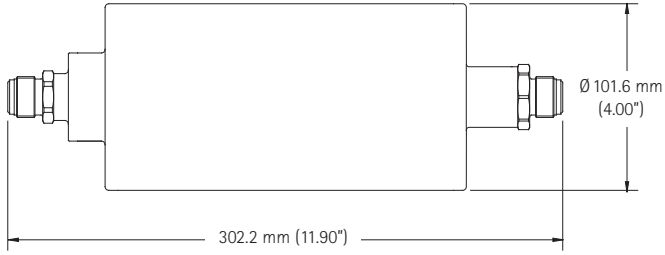
Performance Data



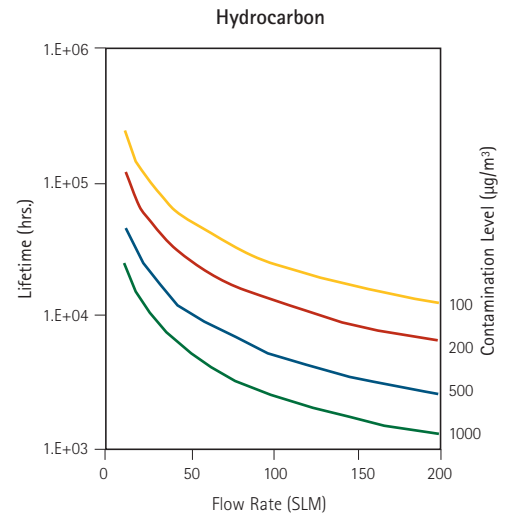
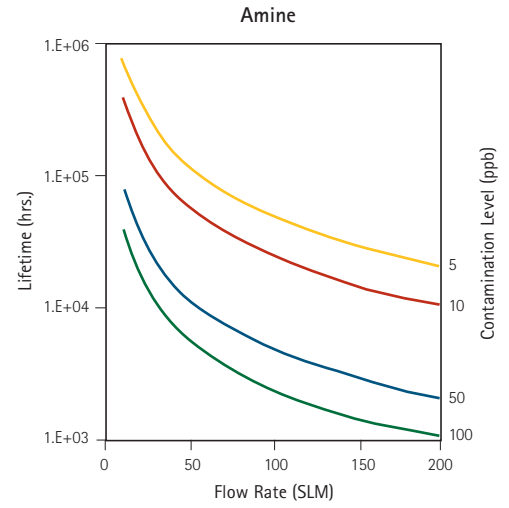
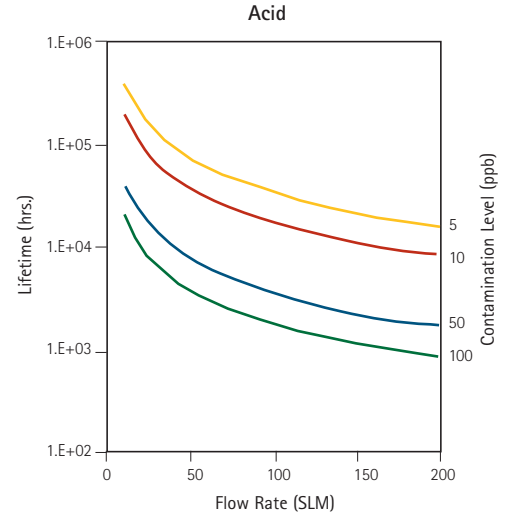
Ordering Information

Part Number	Description
LPDF 10R R4	Luminousgard 1000 gas purifier

Dimensions



Lifetime Curves



Note: Purifier lifetime is dependent upon operating conditions.

Luminousgard 2000 Gas Purifier

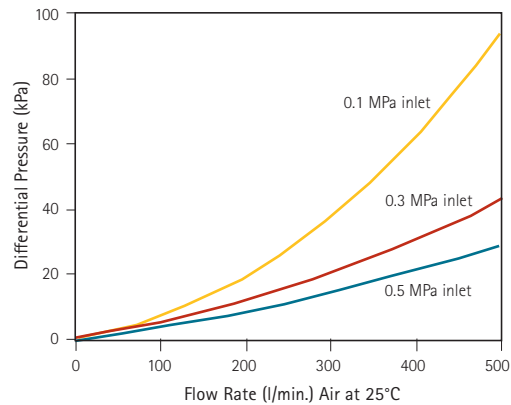
Specifications

Materials:	Adsorbent	Ultrapure activated carbon
	Filter	PTFE/PFA
	Housing	Electropolished 316L/304 stainless steel
Retention:	Gaseous organic	>99.9% (>C ₆ number of hydrocarbon)
	Gaseous acid	>99.9% including SO ₂ , SO ₃ , NO ₂ , HCl, H ₂ S
	Gaseous basic	>99.9% including NH ₃ , CH ₃ NH ₂ , (CH ₃) ₃ N
	Particles	>99.9999999% removal of all particles >0.003 μm
Downstream cleanliness:	Volatiles	<1 ppb (hydrocarbon >C ₆) at 1 SLPM
	Particles	<0.03 particles/L >0.01 μm at 30 SLPM
Connections:	Inlet/outlet	12.7 mm gasket seal (1/2" VCR compatible) male 12.7 mm compression seal (1/2" Swagelok® compatible)
	Attachment:	VCR type Swagelok type
Operating conditions	Gas type	Inert gases**
	Recommended flow rate	<500 NL/min.
	Maximum operating pressure	0.9 MPa (9 bar/130.5 PSIG)
	Maximum forward differential pressure	0.7 MPa (7 bar/101.5 PSID)
	Maximum reverse differential pressure	0.25 MPa (2.5 bar/36.3 PSID)
	Maximum operating temperature	50°C (122°F) – inert gas
	Product weight	4.17 kg (9.19 lbs)

* Gasket is non-reusable

** Please contact Entegris for other gases

Performance Data

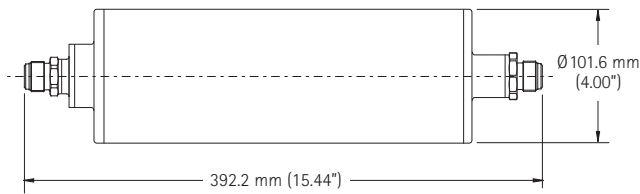


Ordering Information

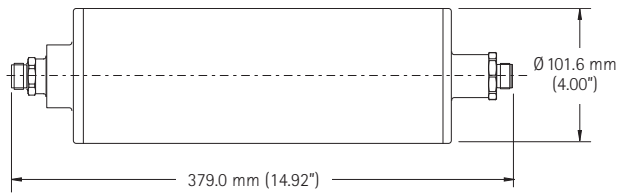
Part Number	Description
LPDF 20R R4	Luminousgard 2000 gas purifier 12.7 mm gasket seal (1/2" VCR compatible) male
LPDF 20S S4	Luminousgard 2000 gas purifier 12.7 mm compression seal (1/2" Swagelok compatible)

Dimensions

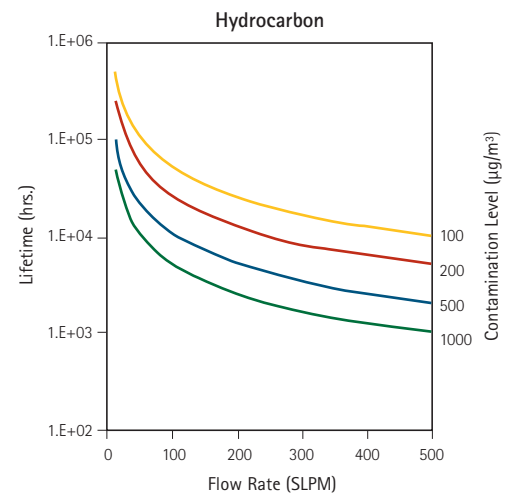
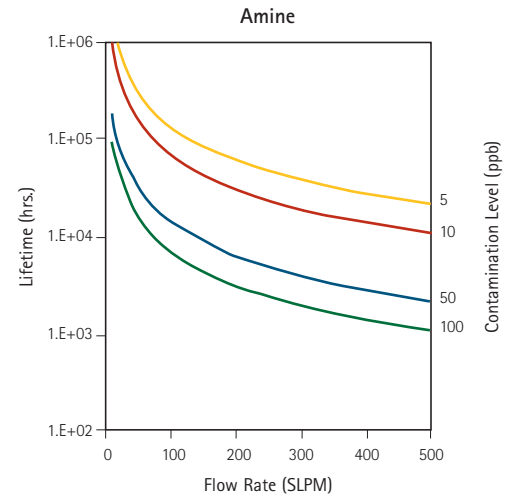
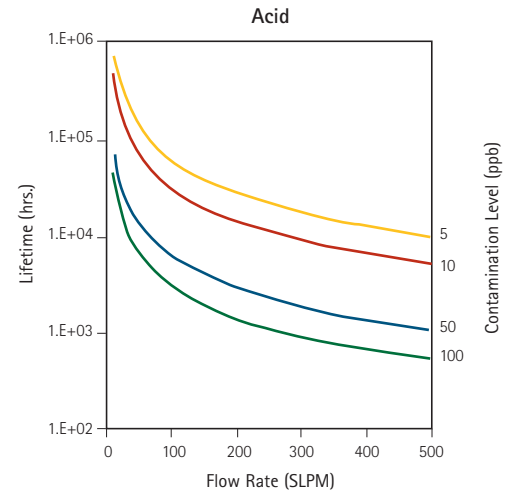
LPDF 20R R4



LPDF 20S S4



Lifetime Curves



Note: Purifier lifetime is dependent upon operating conditions.

For More Information

Please call your Regional Customer Service Center today to learn what Entegris can do for you. Visit www.entegris.com and select the "Customer Service" link for the center nearest you.

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