

# NANOCHEM<sup>®</sup>

## NANOCHEM<sup>®</sup> L-Series<sup>®</sup> Purifiers

### Features and Benefits

- Purification for all ultra-high purity applications from source to point-of-use
- **Highest Lifetimes**
- **Best Impurity Removal Efficiencies**
  - Removes critical contaminants to sub parts-per-billion level
- **End-Point detection available**
- Enhances manufacturing process economy and improves equipment performance
- Provides consistently high purity gas under fluctuating inlet impurity conditions
- Improves component lifetime and reduces particle generation by removing moisture and volatile metals from corrosive gases
- Low overall cost of ownership
- Requires little or no conditioning of purification media
- Easy to install and operate. Does not require heating or cooling
- Resin refills available
- All metal parts, Type 316L stainless steel, Elgiloy<sup>®</sup> or Nickel 200 (except Kel-F<sup>®</sup> valve seat)
- Inlet and outlet springless diaphragm valves included
- Mounting bracket

### Specifications

- 0.003  $\mu\text{m}$  particle filter with 99.9999999% retention (PTFE or 316L SS)
- Recommended for flow 10 sccm (0.0006  $\text{NM}^3/\text{hr}$ ) up to 150 slpm (9  $\text{NM}^3/\text{hr}$ )
- Internal surface finish < 15  $\mu\text{in } R_a$
- Maximum allowance working pressure of 150 psig (1.13 MPa) with fiber-optic end-point detector or 500 psig (3.5 MPa) without end-point detector
- Maximum operating temperature of 40°C

### Connections

- Female inlet and male outlet connections 1/4" face seal fittings



### Overview

The NANOCHEM<sup>®</sup> L-Series<sup>®</sup> Purifier provides economical purification in multi-tool or single-source applications. Gas impurities such as moisture and oxygen adversely affect process quality. Those impurities are present in gas cylinders and can also be introduced through leaks in the line or during cylinder changes.

NANOCHEM<sup>®</sup> purification media react with such impurities to deliver consistently pure gas to the process, improving product consistency and yields.

### Options

- Fiber optic end-point detector
  - Not available with L-60 Model
- Bypass assembly for isolating the purifier from the gas stream
- Pneumatically-actuated valves
- Upgraded particle filter for higher flow applications



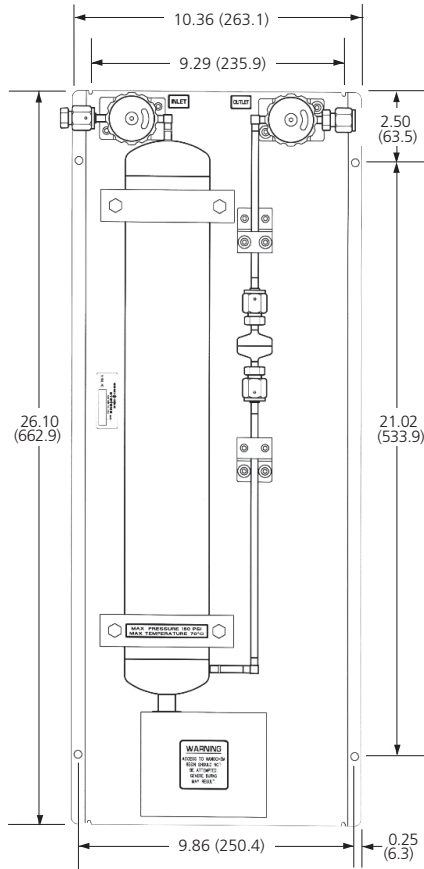
**MATHESON**  
The Gas Professionals

GASES PURIFIED	IMPURITIES REMOVED	EFFICIENCY
<b>Inerts</b>	H <sub>2</sub> O, O <sub>2</sub> , CO, CO <sub>2</sub> H <sub>2</sub> C <sub>6</sub> H <sub>6</sub> C <sub>6</sub> H <sub>5</sub> CH <sub>3</sub> Ethylbenzene m,p-Xylene o-Xylene Refractories** THC except CH <sub>4</sub> Halocarbons except CF <sub>4</sub>	<100 ppt, LDL <1 ppb <156 ppq LDL <93 ppq LDL <96 ppq LDL <79 ppq LDL <112 ppq LDL <134 ppq LDL <1 ppt <1 ppt
<b>Carbon Tetrafluoride (R 14)</b>	H <sub>2</sub> O, O <sub>2</sub> , CO, CO <sub>2</sub> H <sub>2</sub> C <sub>6</sub> H <sub>6</sub> C <sub>6</sub> H <sub>5</sub> CH <sub>3</sub> Ethylbenzene m,p-Xylene o-Xylene TMDSO THC except CH <sub>4</sub> Halocarbons except CF <sub>4</sub>	<100 ppt, LDL <1 ppb <156 ppq LDL <211 ppq LDL <279 ppq LDL <506 ppq LDL <363 ppq LDL <134 ppq LDL <1 ppt <1 ppt
<b>Ammonia</b>	H <sub>2</sub> O CO <sub>2</sub> O <sub>2</sub> GeH <sub>4</sub> H <sub>2</sub> S SiH <sub>4</sub> TEOS	<45 ppb, LDL <11 ppb, LDL <5 ppb, LDL <1 ppb, LDL <45 ppb, LDL <1 ppb, LDL <40 ppb, LDL
<b>Arsine</b>	<75 ppb H <sub>2</sub> O in AsH <sub>3</sub> , LDL	
<b>Phosphine</b>	<33 ppb H <sub>2</sub> O in PH <sub>3</sub> , LDL	
<b>Carbon Monoxide Nitric Oxide</b>	H <sub>2</sub> O <100 ppb, LDL Fe(CO) <sub>5</sub> <50 ppb Volatile Metals-Fe, Mo, Cr, Ti, Ni, Mn*	
<b>Carbon Dioxide Nitrous Oxide</b>	Isopropyl Alcohol Acetone Propene Ethanol Carbon Disulfide Hexane Benzene Heptane Toluene m,p-Xylene o-Xylene Ethyl Toluene 1,3,5-Trimethyl Benzene 1,2,4-Trimethyl Benzene Dichloro Benzene Halocarbons except CF <sub>4</sub>	<0.2 ppb <0.093 ppb <0.001 ppb <0.001 ppb <0.001 ppb <0.001 ppb <0.001 ppb <0.001 ppb <0.001 ppb <0.001 ppb <0.001 ppb <0.001 ppb <0.001 ppb <0.001 ppb <0.001 ppb <0.001 ppb <100 ppt, LDL
<b>Oxygen</b>	H <sub>2</sub> O	<10 ppb

ppm = part per million  
ppb = part per billion  
ppt = part per trillion  
ppq = part per quadrillion

THC = Total Hydrocarbons  
LDL = Lower Limit of Detection by state-of-the-art analytical instrumentation.  
\*MATHESON does not guarantee removal of volatile metals  
\*\*Refractories as TMDSO (Tetramethyldisiloxane)

## Dimensions, Flow Rates and Options

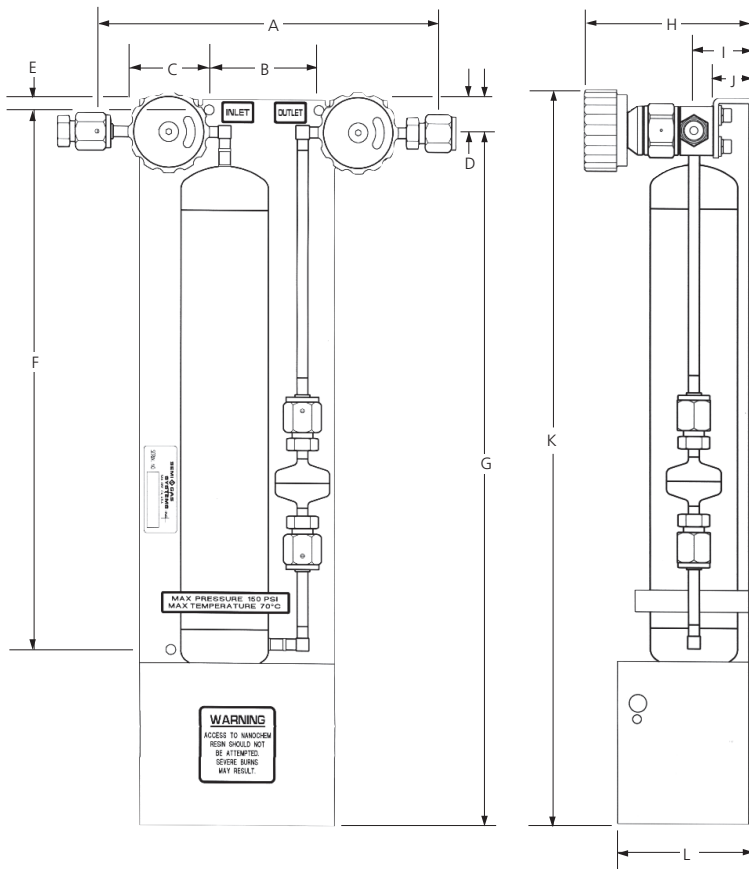


**L-2000**

	L-60	L-300	L-500
<b>A</b>	8.00	8.00	8.00
	(203.20)	(203.20)	(203.20)
<b>B</b>	2.51	2.51	2.51
	(63.75)	(63.75)	(63.75)
<b>C</b>	1.59	1.59	1.59
	(40.39)	(40.39)	(40.39)
<b>D</b>	0.76	0.76	0.76
	(19.05)	(19.05)	(19.05)
<b>E</b>	0.25	0.25	0.25
	(6.35)	(6.35)	(6.35)
<b>F</b>	7.90	7.90	12.34
	(200.66)	(200.66)	(313.44)
<b>G</b>	11.40	11.40	15.84
	(289.56)	(289.56)	(402.34)

	L-60	L-300	L-500	L-2000
<b>H</b>	3.88	3.88	3.88	4.81
	(98.55)	(98.55)	(98.55)	(122.17)
<b>I</b>	1.38	1.38	1.38	2.32
	(35.05)	(35.05)	(35.05)	(58.93)
<b>J</b>	0.94	0.94	0.94	1.87
	(23.88)	(23.88)	(23.88)	(47.50)
<b>K</b>	12.15	12.15	16.59	26.10
	(308.60)	(308.60)	(421.39)	(662.90)
<b>L</b>	3.13	2.88	2.88	3.25
	(79.50)	(73.15)	(73.15)	(82.55)

All dimensions are in inches (approx. mm)



**L-60, L-300, L-500**

Purifier	L-60	L-300	L-500	L-2000
Purification Medium bed volume - milliliters	60	300	500	2000
Maximum recommended flow rating - slpm nitrogen (NM <sup>3</sup> /hr) nitrogen	8 (0.5)	15 (0.9)	50 (3.0)	50 (3.0)
With upgraded filter - slpm nitrogen (NM <sup>3</sup> /hr) nitrogen		50 (3.0)	75 (4.5)	150 (3.0)

#### L-SERIES® OPTIONS

	End-Point Detection	High Flow Particle Filter Upgrade	Purifier Bypass	Pneumatic Actuated Valves
<b>L-60</b>		●	●	●
<b>L-300</b>	●	●	●	●
<b>L-500</b>	●	●	●	●
<b>L-2000</b>	●	●	●	●

Specifications are subject to change. Please check [www.mathesongas.com](http://www.mathesongas.com) for most current information.

NANOCHEM and L-Series are registered trademarks of Matheson Tri-Gas, Inc..

Elgiloy is a registered trademark of Elgiloy Corporation.

Kel-F is a registered trademark of 3M.

Printed in USA PB026 R04/2025



# MATHESON

The Gas Professionals

[www.mathesongas.com](http://www.mathesongas.com)

Tel: 800-416-2505

Email: [Info@mathesongas.com](mailto:Info@mathesongas.com)