NANOCHEM® C/CL-Series Gas Purifiers

Features and Benefits

- Purification for all ultra-high purity source or point-of-use applications
- **Highest Lifetimes**
- **Best Impurity Removal Efficiencies**
  - Removes critical contaminants to sub parts-per-billion level (< 0.1 ppb in inert gases)
- **End-Point Detection for most non-corrosive gases**
- Built-in one-valve bypass
- **Ultra-clean construction**
- Enhances manufacturing process economy and improves equipment performance
- Provides consistently high purity gas under fluctuating inlet impurity conditions
- Does not require heating or cooling
- Low overall cost of ownership
- **C-Series provided with protective exhaustible enclosures** that satisfy Uniform Fire Code (UFC) requirements. Suitable for flammable gas service.

Specifications

- Recommended for flow up to 150 slpm (9 NM^3/hr)
- All gas-wetted parts constructed of Type 316L stainless steel, Ni 200, Elgiloy®, or Kel-F®
- 0.003 µm particle filter with 99.9999999% retention (PTFE or 316L SS)
- Internal surface finish <15 µin R_a
- Maximum operating temperature of 70°C
- Inlet, outlet, and bypass springless diaphragm valves
- Maximum allowable operating pressure of 150 psig (1.13 MPa) with the fiber optic endpoint detector or 500 psig (3.5 MPa) without endpoint detector

Connections

- Female inlet and male outlet 1/4 inch VCR®-compatible face seal fittings

Overview

The NANOCHEM® C/CL-Series Purifiers are designed for "ultra-clean" multi-tool, single-source or point-of-use applications.

NANOCHEM® C/CL-Series Purifiers eliminate virtually all variables that cause contamination. Gas impurities may be present in gas cylinders, and can also be introduced through leaks in the line or during cylinder changes.

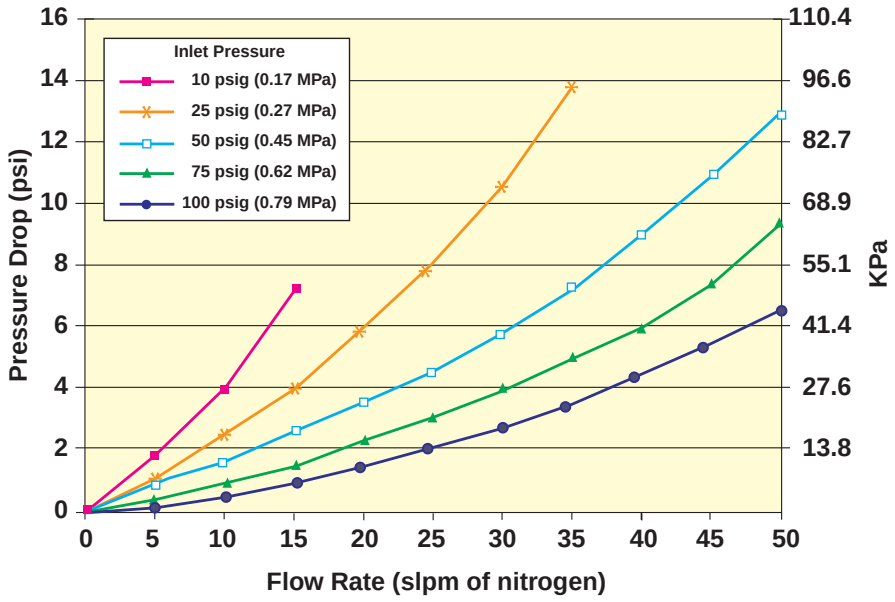
The C/CL-Series Purifiers are designed for the highest possible purity. The bypass valve allows purging to ensure no atmospheric contamination enters the purifier. The outlet particle filter is installed downstream of all valves to ensure no particles can escape the purifier. C-Series Purifiers are provided with exhaustible enclosure for use with flammable gases.

Standard purification media bed volumes for the three available C/CL-Series Purifiers are: 300, 500, 2000 ml.

Media refills are available through Matheson Tri-Gas, Inc., for all sizes.

CL-Series

C-500 and CL-500 Pressure Drop as a Function of Flow Rate



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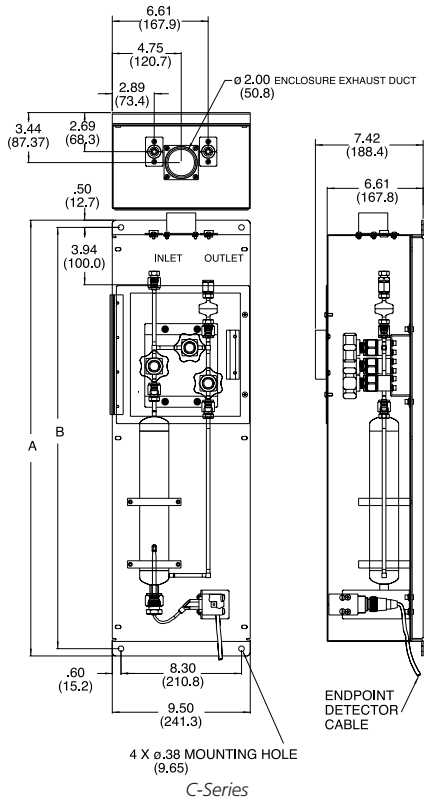
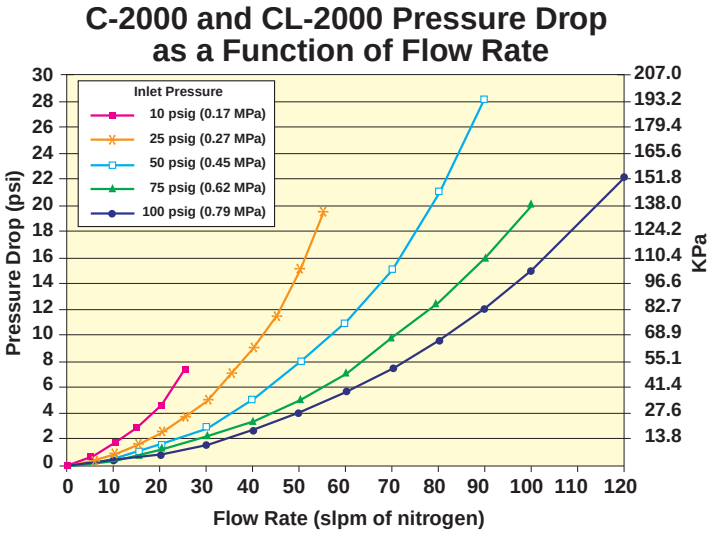
Dimensions in inches (mm)



C-Series



Dimensions inches (mm)		
C/CL-Series Purifiers	**C-300/500**	**C-2000**
A	30.00 (762.00)	38.5 (977.90)
B	29.00 (736.60)	37.50 (952.50)

Gas Type	Impurities Removed
Nitrogen (N_2), Argon (Ar), other inerts	< 0.1 ppb H_2O, O_2, CO_2 LDL < 1 ppb CO* < 0.1 ppb NMHC (with OMX-Plus™) LDL NO_x, SO_x, H_2S
Ammonia (NH_3)	< 0.1 ppb H_2O, O_2, CO_2 in inert gas LDL < 1 ppb CO* < 45 ppb H_2O in ammonia LDL NH_3-CO_2 complexes, SiH_4, Siloxanes, GeH_4, H_2S
Silane (SiH_4)	< 0.1 ppb H_2O, O_2, CO_2 LDL < 1 ppb CO* Chlorosilanes, disilane, siloxanes, arsine, phosphine
Arsine (AsH_3), Phosphine (PH_3)	< 0.1 ppb H_2O, O_2, CO_2 LDL < 45 ppb H_2O in phosphine LDL < 75 ppb H_2O in arsine LDL CO, oxyacids ($H_xAs_yO_z$, $H_xP_yO_z$)
Hydrogen (H_2), Methane CH_4), Ethane (C_2H_6), other HC	< 0.1 ppb H_2O, O_2, CO_2 LDL < 1 ppb CO* NO_x, SO_x, H_2S
Sulfur Hexafluoride (SF_6), Carbon Tetrafluoride (CF_4), other fluorocarbons	< 0.1 ppb H_2O, O_2, CO_2 in inert gas LDL < 10 ppb O_2, H_2O in sulfur hexafluoride LDL
Oxygen (O_2), Carbon Dioxide (CO_2), Nitrous Oxide (N_2O)	< 10 ppb H_2O
Carbon Monoxide (CO)	Metal Carbonyls: Fe, Ni
Corrosives (HCl, HBr, Cl_2, SiH_2Cl_2, $SiHCl_3$, BCl_3)	< 1 ppb H_2O in inert gas < 100 ppb H_2O in HBr LDL < 150 ppb H_2O in HCl Volatile Metals: Fe, Mo, Cr, Ni, Mn, Ti

LDL – Lower Detection Limit by State-of-the-Art Analytical Instrumentation
NMHC – Non-methane Hydrocarbons
*NOTE: CO is removed efficiently by OMX & OMX-Plus™ media at low flow rates (recommend 1/10 of normal flow rate)

For a detailed list of purification media and impurities removed, refer to the Purification Media Table in NANOCHEM® Purification Solutions Brochure.

Specifications are subject to change.

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