PRODUCT DATA SHEET

POLYCOLD®
PCC COMPACT COOLERS

EFFICIENT HEAT REMOVAL FOR DEMANDING APPLICATIONS

edwardsvacuum.com

The Polycold® PCC is a compact, high-performance cooling system that brings efficiency and reliability to your applications. PCC delivers proven, dependable cooling and is designed to ensure repeatable performance and minimise maintenance costs. Its compact design and remote cold end give you a robust system with a small footprint. This low-vibration heat removal system is capable of maintaining temperatures as low as -203° C (70 Kelvin).

Polycold® PCC Compact Cooler Compressor, Gas Lines and Cold End

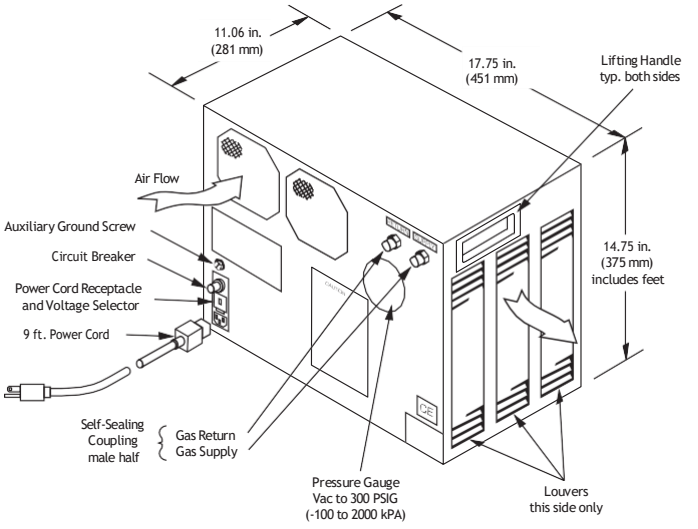
PCC Components

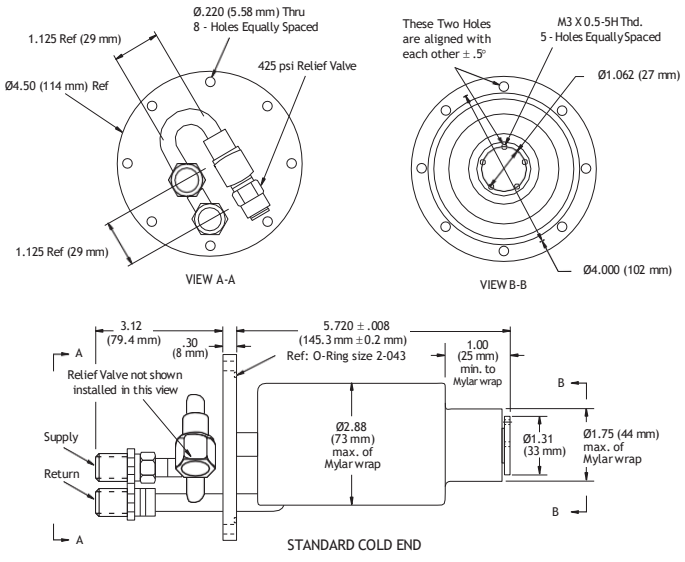
Cold End: The rugged, low-vibration PCC cold end can be used in any orientation, and located remotely from the compressor. Available nickel plated or Mylar wrapped. For PT blends, options include standard or high performance.

Compressor: The closed cycle PCC compressor uses patented gas blends and innovative oil management for quiet and reliable performance in a small footprint. Electricity is the only utility required for operation.

Gas Lines: Self-sealing couplings ensure quick and easy hook-up, and the compressor can be located up to 120 feet from the cold end. Refrigerant travels through the gas lines at room temperature.

Refrigerant Blends: Different patented mixed gas refrigerant blends tailor the temperature and cooling capacity for a wide variety of applications.





Features and Benefits

- Compact size, remote cold end and minimal connections make this a smart solution for most applications
- Low vibration
- Cooling to -203°C (70 K)
- Rapid cooldown
- Eliminates the need for liquid nitrogen

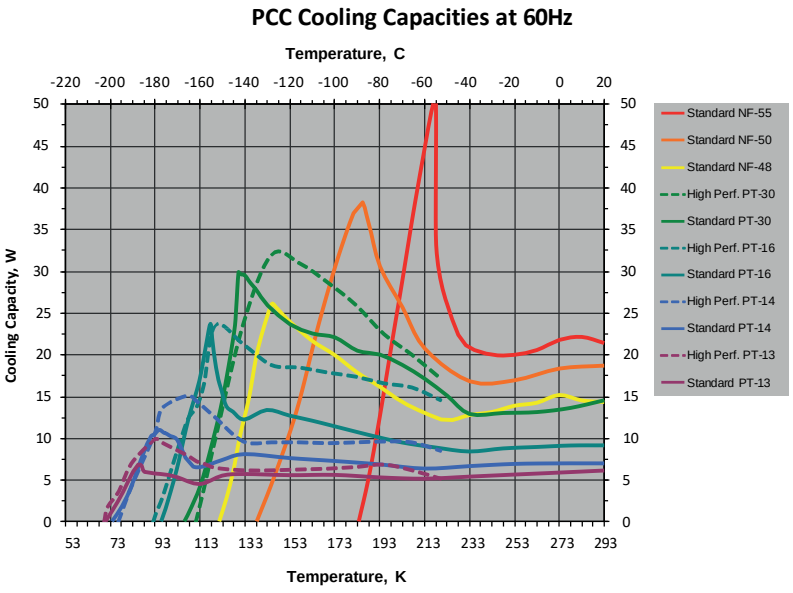
Compressor and Gas Lines

Compressor	
Weight	31.1 kg (68.5 lbs.)
Orientation	Base down required (level to within 10°)
Power requirement	Single phase, 50/60 Hz, 500 Watts nominal. External switch allows you to select 100, 120, 220, or 240 Volt operation.
Cooling	Air-cooled
Agency approvals	CE, NRTL, SEMI S2, SEMI F47
Gas Lines	
Construction	Braided stainless steel
Diameter	0.5 inch (12.9 mm) nominal
Lengths	5, 10, 25, 50 or 75 ft. (1.5, 3.1, 7.6, 15.2 or 22.9 m)
Minimum static centerline bend radius	4 in. (102 mm)
Maximum distance from cold end to compressor	120 ft

Accessories

Edwards provides a variety of accessories for the PCC system, including 90° adapters for gas lines, electrical line isolators and line-to-line connectors.

Performance



Standard Cold End Specifications

Weight	1.5 kg (3.2 lbs.)
Vacuum insulation requirement	≤ 10^{-4} torr
Weight supported at the cold tip	≤ 1.4 kg (3.0 lbs)
Orientation	Any

NF blends*

Cooldown Time (with no load):
NF-55: -55°C (218 K) in 7 minutes
NF-50: -89°C (184 K) in 11 minutes
NF-48: -128°C (145 K) in 19 minutes

Maximum cooling capacity for each gas blend:
NF-55: 50 Watts @ -55°C (218K)*
NF-50: 38 Watts @ -89°C (184K)*
NF-48: 26 Watts @ -128°C (145K)*

Temperature Stability:
+/- 1.0 K. Performance with 10' Gas Lines.

*NF indicates non-flammable gas.

PT blends

Cooldown Time (with no load):
PT-30: -144°C (129K) in 22 minutes
PT-16: -156°C (117K) in 26 minutes
PT-14: -177°C (96K) in 45 minutes
PT-13: -187°C (86K) in 61 minutes

Maximum cooling capacity for each gas blend:
PT-30: 29 Watts @ -144°C (129K)
PT-16: 23 Watts @ -156°C (117K)
PT-14: 10 Watts @ -177°C (96K)
PT-13: 6 Watts @ -187°C (86K)

Temperature Stability
+/- 1.0 K. Performance with 10' Gas Lines.

Note: 50 Hz operation may derate cooling capacity.

High Performance Cold End Specifications

Weight	1.8 kg (4.0 lbs.)
Vacuum insulation requirement	≤ 10^{-4} torr
Weight supported at the cold tip	≤ 1.4 kg (3.0 lbs)
Orientation	Any

Cooldown Time (with no load):
PT-30: -128°C (145K) in 19 minutes
PT-16: -153°C (120K) in 25 minutes
PT-14: -166°C (107K) in 35 minutes
PT-13: -179°C (94K) in 54 minutes

Maximum cooling capacity for each gas blend:
PT-30: 32 Watts @ -128 °C (145K)
PT-16: 24 Watts @ -153°C (120K)
PT-14: 15 Watts @ -166°C (107K)
PT-13: 7 Watts @ -179°C (94K)

Temperature Stability:
+/- 1.0 K. Performance with 10' Gas Lines.

Note: 50 Hz operation may derate cooling capacity.

Official Distributor in Australia

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