

8kW Helium Compressor (HLC 4900)

HLC 4900 is the newest addition to Quantum Design's family of smart, energy-efficient helium compressors. Developed in collaboration with Sumitomo (SHI) Cryogenics of America, the HLC 4900's next generation variable speed technology helps to reduce operating costs of cryogenically cooled instrumentation – including both Gifford-McMahon (G-M) and pulse tube cold heads. The water-cooled HLC 4900 compressor is compact and quiet, making it ideal for operation in laboratories and work spaces. Pairing with the optional dedicated chiller enables easy integration for laboratories lacking available chilled water capacity. Variable speed operation is not only energy efficient but also reduces wear on key components, reducing servicing requirements in comparison with traditional one-speed compressors. Beyond extending the operational lifetime of the compressor, variable speed drive also allows users to decrease speeds for applications in which it is advantageous to reduce vibrations of the cold head.

Performance Characteristics

- Variable speed control
- Energy efficient
- Increased service life
- Remote control
- Real time diagnostics
- Modular architecture

Application

- Superconducting magnets
- Low temperature superconducting electronics
- SQUIDs
- Helium liquefiers

Accessories

- Input Power Cable – 2.5 m
- Software Development Kit (SDK)
- Computer Interface via USB
- Compact Chiller (optional)

Chiller Option Accessories

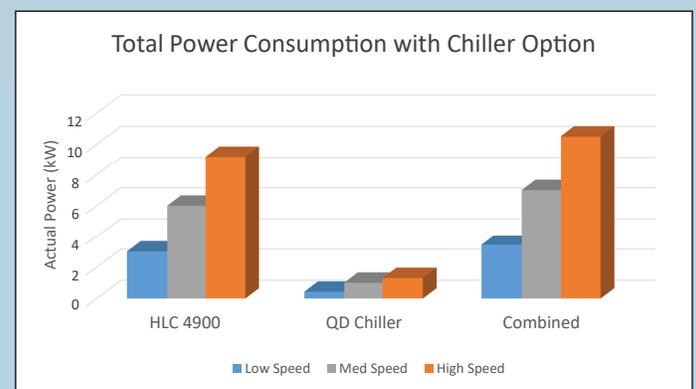
- Input Power Cable – 6 m
- Hose Kit – 30 m

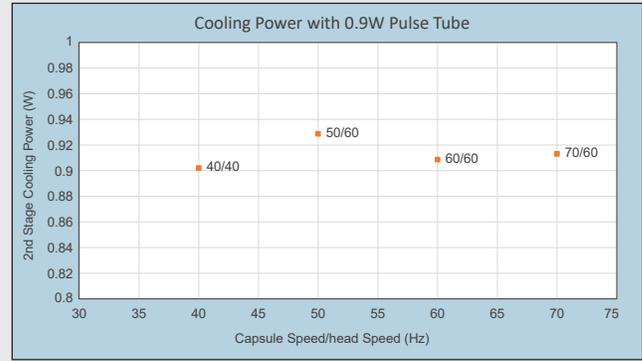
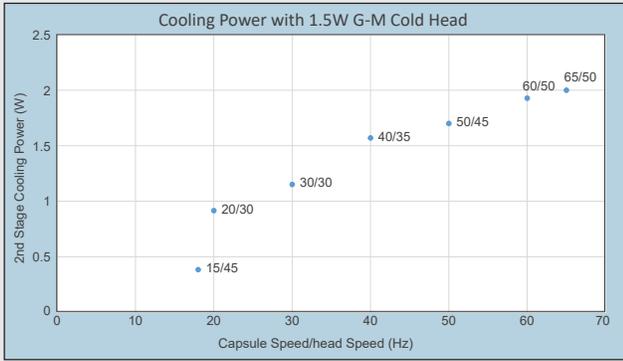


HLC 4900 Compressor

HLC 4900: Power Consumption

- Significant power saving at lower compressor speeds
- Lower speeds reduce wear and extends service life
- Modular design of chiller reduces power consumption and footprint



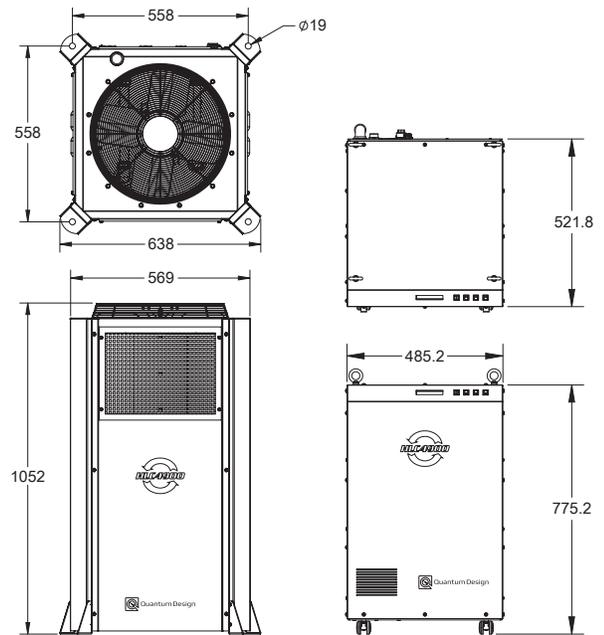


HLC 4900: Cooling Power

- Dynamic tuning of capsule and head speeds maximizes cooling power when needed
- Lower speeds prioritize energy efficiency when full cooling power is not required

Specifications

Model	HLC 4900
Static Charge Pressure (G-M Cold Head)	1.32–1.37 MPa
Static Charge Pressure (Pulse Tube)	1.53–1.57 Mpa
Supply Pressure (G-M Cold Head)	1.93 Mpa
Supply Pressure (Pulse Tube)	2.34 Mpa
Recommended GM Cold Head Pairing	1.5 W @ 4.2 K
Recommended Pulse Tube Pairing	0.9-1.0 W @ 4.2 K
Power Low Voltage Model	3 Phase 200–220 (50 Hz) or 200–230 VAC (60 Hz) +/-10%
Power High Voltage Model	3 phase 380–415 (50 Hz) or 480 VAC (60 Hz) +/-10%
Power Consumption High Speed (70 Hz)	9.2 kW Max
Power Consumption Normal Speed (50 Hz)	6 kW Max
Power Consumption Low Speed (35 Hz)	4 kW Max
Water Flow Required	6 to 9 liters/min
Water Temperature Required	5 to 25 °C
Ambient Operating Temperature	4 to 30 °C
Humidity Storage	10 to 90% non condensing
Installation of Equipment	Indoor Only
Weight	145 kg
Maintenance Interval	30,000 hours



QD Chiller and HLC 4900 Compressor Dimensions

Model	QD Chiller
Chiller Rating	3 ton
Discharge Pressure	130 to 210 kPa
Power	1 Phase 200–240 VAC (50/60 Hz) +/-10%
Power Consumption	1.5 kW Max
Ambient Operating Temperature	(-35) to 45 °C
Installation of Equipment	Indoor or Outdoor
Weight	135 kg (without water)



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Specifications subject to change without notice
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