

# HelioPulse3k

A helium compressor is the powerhouse behind closed-cycle cryocoolers, delivering the high-purity compressed helium that drives closed-cycle cryocoolers. The HelioPulse3K is precision-engineered to unlock the full potential of your cryocooler, ensuring seamless synchronization, peak performance, and long-term reliability.



## Specifications for Helium Compressor:

|                               |                                                        |
|-------------------------------|--------------------------------------------------------|
| • Model:                      | HelioPulse3k                                           |
| • Technology:                 | Scroll                                                 |
| • Power#:                     | 2.4 kW, 50Hz                                           |
| • Electrical rating:          | 415V, 3Ph, 50Hz                                        |
| • Cooling water requirement:  | @ 7 LPM @ 11 °C                                        |
| • Weight:                     | 125 kg                                                 |
| • Dimensions:                 | Approx. 0.6x 0.6 x 0.6 m                               |
| • Flexible pipes:             | 2 Nos. fitted with Helium leakproof Aeroquip couplings |
| • Helium Pressure (at start): | HP 245 ± 10 psig<br>LP 50 ± 5 psig                     |
| • Operating temp:             | 5°C to 45°C                                            |
| • Noise:                      | 65 dBA at 1 meter                                      |

# With our cryocooler at an operating temperature of 30 K.

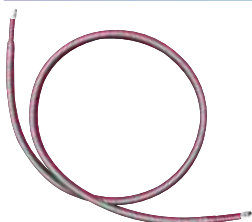
## Salient features:

- Engineered and manufactured by Indian innovations.
- Made from the components readily available in the market.
- Spare parts are locally available.
- This helium compressor is compatible with GM refrigerators of similar capacities, meeting the requirements of even the most demanding applications.
- Most of the maintenance can be performed in the field. However, the mean time between service intervals is 10,000 hours.



## Accessories for Cryogenic Applications

### Stainless steel braided corrugated hose pipes



- Suitable for Helium handling
- Tested with Helium at 25 bar or as per requirement along with test certificate
- For required length from 1m to any length
- Available with / without coupling

### Parker make Aeroquip Self sealing couplings of 5400 series



- Self sealing
- Zero leakage
- Suitable for Helium Gas

### Vacuum Jacketed Transfer Hose for Liquid Nitrogen



- Outer surface is safe to touch
- Reduced cryogen losses
- ¼" - 2" inner hose
- 150 psi standard design with higher pressures available
- Test Certificates for Jacket and Pipe shall be provided

The Raja Ramanna Centre for Advanced Technology, Indore a premier unit of the Department of Atomic Energy indigenously designed and developed a Helium Compressor.

This technology transferred to RJ Instruments Private Limited through the AIC RRCAT π- Hub.

## HELIOREF30K

At the core of every high-performance cryocooler refrigeration system lies the helium compressor - the powerhouse responsible for delivering the high-purity compressed helium gas that drives the closed-cycle process.

The HELIOREF30K system is designed with precision engineering to unlock the full potential of GM cryocooler. The helium compressor HelioPulse3k and refrigerator REF30K are designed to operate in sync with seamless precision and reliability.

### Compressor specifications:

|                               |                                                        |
|-------------------------------|--------------------------------------------------------|
| • Model:                      | <b>HelioPulse3k</b>                                    |
| • Technology:                 | Scroll                                                 |
| • Power#:                     | 2.4 kW, 50Hz                                           |
| • Electrical rating:          | 415V,3Ph, 50Hz                                         |
| • Cooling water requirement:  | @ 7 LPM @ 11 °C                                        |
| • Weight:                     | 125 kg                                                 |
| • Dimensions:                 | Approx. 0.6x 0.6x0.6m                                  |
| • Flexible pipes:             | 2 Nos. fitted with Helium leakproof Aeroquip couplings |
| • Helium Pressure (at start): | HP 245 ± 10 psig<br>LP 50 ± 5 psig                     |
| • Operating temp:             | 5°C to 45°C                                            |
| • Noise:                      | 65 dBA at 1 meter                                      |

### Refrigerator specifications:

|                                       |                            |
|---------------------------------------|----------------------------|
| • Model:                              | <b>REF30K</b>              |
| • Certified cooling capacity at 50Hz: | 3 W at 30 K & 27 W at 77 K |
| • Lowest temperature*:                | ≤ 27 K (without load)      |
| • Cooldown time:                      | ≤ 30 minutes               |

# With our cryocooler at an operating temperature of 30 K.

\* Lowest temperature and cooldown time are for reference only.

Specifications subject to change without notice.

### Salient features:

- Engineered and manufactured by Indian innovations.
- Made from the components readily available in the market.
- Spare parts are locally available.
- Its lightweight and compact design allows the cryocooler refrigerator to work at any angle even for the most demanding applications.
- Speed of motor can be ramp up to 90 RPM, this feature allows you to dynamically prioritize between peak cooling performance and optimized performance.
- Most of the maintenance can be performed in the field. However, the mean time between service intervals is 10,000 hours.

