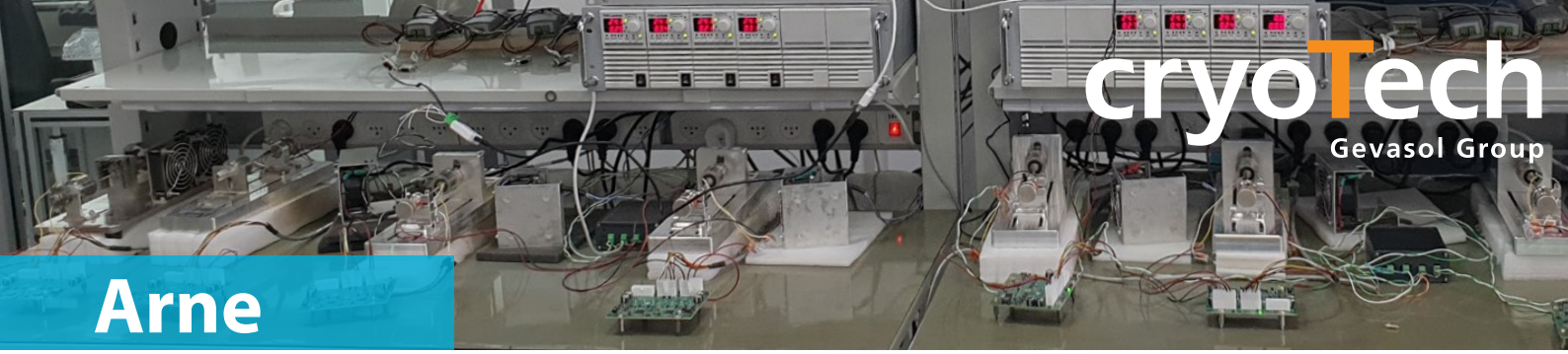

cryoTech
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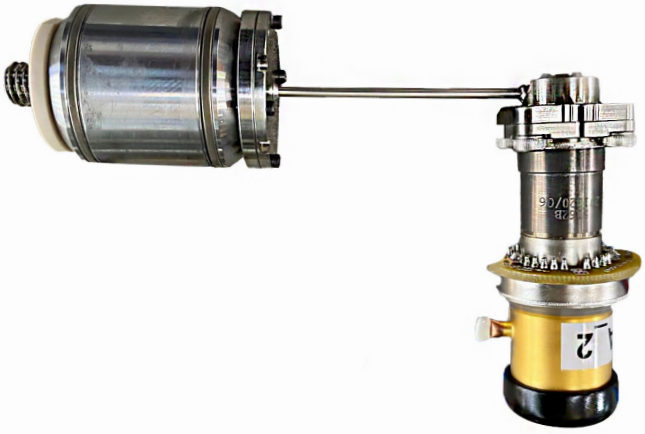
Arne

Ultimate Cryocooler for IR Imaging

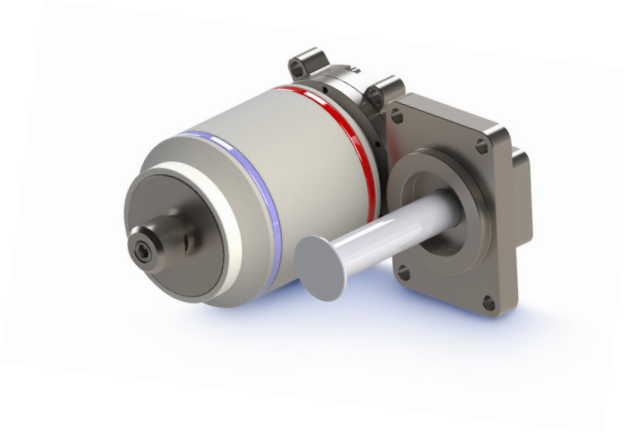
- Low cost and compact linear split Stirling cryocooler benefits from multiyear practical experience accumulated in various industries along with recent theoretical and practical advances in cryogenics.
- The 'Arne' cryocooler is a perfect match for commercial marketplace in terms of low ownership costs, high reliability, ease of integration and replacement, adaptation to different power sources, low Size Weight and Power (SWaP) , low vibration export and aural stealth distance.
- Both compressor and expander feature integrated mounting surfaces for rugged support and effective heat-sinking.
- Highly efficient, small footprint programmable controller (under development).

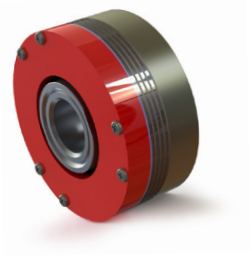


* Simulation Dewar relies on generic titanium cold finger, courtesy of LYNRED

Main Features

- High driving frequency
- Single-piston "moving cylinder" compressor with lightweight moving assembly
- Low cost "moving iron" actuator with built-in magnet spring (patent pending)
- Replaceable external stator with low cost axially polarized magnet rings and high fill factor edgewise coil
- Tool steel rubbing seals
- Low side forces, friction and seals wear by geometry optimization
- Resonant rodless pneumatic expander with lightweight displacer and microfiber polymeric regenerative heat exchanger (patent pending)
- Cold finger materials: SST 304L (base), L605 (tube), Invar (front plug)
- Optional low weight tuned dynamic absorber





Cooled IR vision @ Uncooled Cost

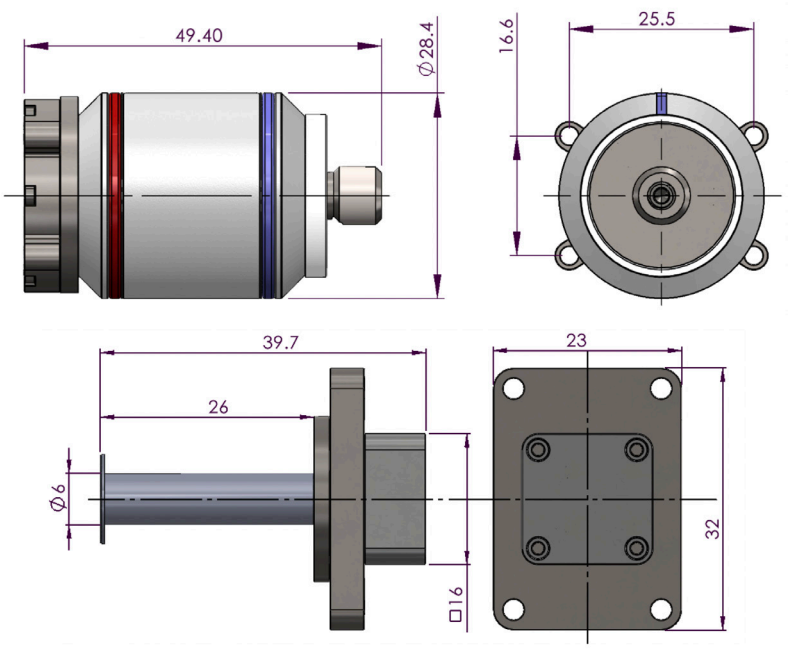
Arne

Ultimate Cryocooler for IR Imaging

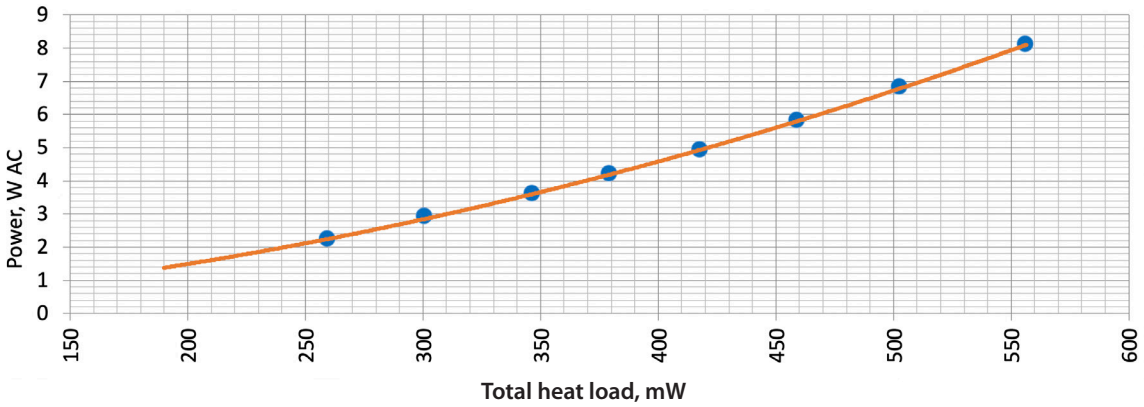
Main Specifications

Maximum cooling capacity @ 150K (23 °C) (mW)	**800**
Power consumption in typical working point 180mW @150K (23°C) (W AC)	**1.5**
Environment temperature range (°C)	**-40 to +71**
Non operational environment temp. range (°C)	**-55 to +85**
Compressor size (mm)	**L50; Ø28.4**
Cold head length (mm)	**40**
Cold finger dimensions (mm)	**Ø6; L28**
Compressor weight (gr)	**110**
Cold head weight (excluding cold finger) (gr)	**10**
Tuned dynamic absorber (optional) (gr)	**50**
Cooldown time, 150J@ 50K (23°C) (min.)	**2.5**
MTTF baseline (goal) (hr)	**45,000**
Environmental qualification	**IEC 60068, MIL-STD 810**
Standard warranty (hr / yr)	**5,000 / 2**
Controller (optional)*	
COP	**>95%@2W**
Dimensions (mm)	**30x30**
Weight (gr)	**10**

*Under development



Performance at 150K (23°C)



Gevasol Group

Gevasol is oriented toward developing and producing customized and tailored products developed together with its customers. The design process starts with listening to the customer and fully understanding his needs.
Gevasol' skilled engineers and operational teams allow us to turn an idea into a product quickly, using transparent processes. Our customers rely on our responsiveness.

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