



## COOLERS

# STIRLING CYCLE CRYOGENIC COOLERS

## High Reliability Linear Split Cryocoolers

Leonardo DRS has a 60-year legacy of design innovation and high volume manufacture of Stirling Cycle cryogenic coolers. LDRS' family of coolers are constructed with our flexure spring suspension architecture that help drive industry leading cooler life performance across even the harshest environmental conditions. Each cooler variant has been extensively tested and formally qualified to US Government standards.

We provide a variety of cooling capacity options that have been qualified for ground vehicle, airborne and weapon mounted platforms. From small, battery sized "micro" coolers perfect for low Size, Weight and Power (SWaP) or High Operating Temperature (HOT) Mid-wave Infrared (MWIR) to large format, high power applications—LDRS can meet your needs.

Our coolers have long been key enablers for our flagship programs and are now being offered commercially as Export Administration Regulation (EAR) products. All these coolers are linear, dual-opposed piston designs that offer extremely low vibration with virtually no audible noise. LDRS coolers are designed to meet most standard Dewar interfaces but our experienced team of experts will support customization as needed. Companion drive electronics are also available in a number of configurations.



## COMMON APPLICATIONS

- Ground Vehicles
- Fixed and Rotary Wing Platforms
- Weapon Sight/Dismounted
- Surveillance/Security
- Commercial/Non-military

## COMMON FEATURES

- Dual-opposed piston, linear drive architecture
- Flexure spring designs
- Integral Dewar integration
- Internal and external drive electronics options
- Customizable transfer tube configurations
- 2X minimum pressure burst-test margin

### DRS2019 (MICRO)

Component	Description
Compressor Size	DIA: 1.19 in, LN: 2.10 in
Displacer/Regen Stem Size	DIA: 0.188 in, LN: 1.28 in
Heatload/Power/Temp	120 mW/ 1.6 W <sub>AC</sub> / 140K
Ambient Temp Range	-40°C to +71°C
Weapon Shock Tested	Passed
Power	Battery Operated

### DRS2525-2

Compressor Size	DIA: 1.53 in, LN: 4.24 in
Displacer/Regen Stem Size	DIA: 0.250 in, LN: 2.22 in
Heatload/Power/Temp	160mW/ 1.6 W <sub>AC</sub> / 110K
Ambient Temp Range	-40°C to +85°C

### DRS3825/3838

Compressor Size	DIA: 1.75 in, LN: 4.68 in
Displacer/Regen Stem Size	DIA: 0.250 in, LN: 2.22 in (3825) DIA: 0.375 in, LN: 2.97 in (3838)
Heatload/Power/Temp	190mW/ 5.0 W <sub>AC</sub> / 110K (3825) 230mW/ 5.0 W <sub>AC</sub> / 110K (3838)
Ambient Temp Range	-40°C to +71°C

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### DRS5050-1/5038

Component	Description
Compressor Size	DIA: 2.38 in, LN: 4.81 in
Displacer/Regen Stem Size	DIA: 0.500 in, LN: 2.758 in (5050-1) DIA: 0.375 in, LN: 2.97 in (5038)
Heatload/Power/Temp	660 mW/ 18 W <sub>AC</sub> / 77K (5050-1) 400 mW/ 14 W <sub>AC</sub> / 77K (5038)
Ambient Temp Range	-40°C to +71°C

### DRS5050-2

Compressor Size	DIA: 2.38 in, LN: 6.28 in
Displacer/Regen Stem Size	DIA: 0.500 in, LN: 2.758 in
Heatload/Power/Temp	660mW/ 28W <sub>DC</sub> / 67K
Ambient Temp Range	-40°C to +71°C
Control Electronics	Internal

