

- Cryogen-free ADR design with 0.7 W or 1 W pulse tube cooler.
- Fully automated ADR control and temperature regulation.
- Base temperature <math><50\text{ mK}</math>, stability <math><5\ \mu\text{K}_{\text{rms}}</math> at 100 mK.
- Remote rotary valve and vibration isolation at 300 K, 60 K, and 3 K.
- Configurable with:
 - TES microcalorimeter X-ray detector arrays
 - STJ X-ray detector arrays
 - SQUID readouts, cryocables, custom IR filters

DRC-100 Specifications

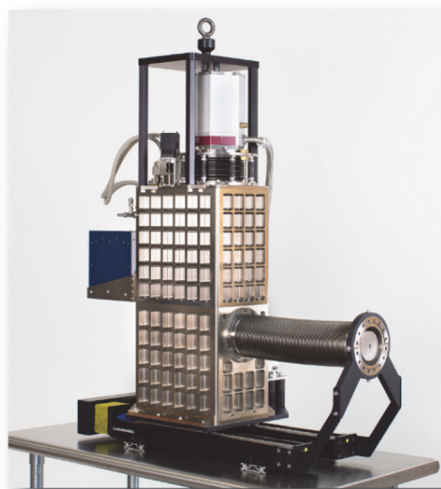
Parameter	Value
Vacuum Jacket Size	33 × 22 × 66 (L×W×H, cm)
Weight	70 kg
Experimental Volume	24 × 15 × 14 (L×W×H, cm)
Primary Cooling	Cryomech PT-407 pulse tube cryocooler with remote valve, with CP2800 water-cooled compressor Sumitomo RP-082B2S pulse tube cryocooler with remote valve, F70 Series compressor
1 st Stage Cooling Power	25 W at 55 K
2 nd Stage Cooling Power	0.7 W at 4 K
Secondary Cooling	Two-stage ADR, GGG and FAA, 4 T superconducting magnet
GGG Cooling Capacity	1.2 J at 1 K
FAA Cooling Capacity	118 mJ at 100 mK
ADR Base Temperature	<50 mK
Hold Time	>150 hours regulation at 100 mK with no load
Temperature Control Range	Up to 250 mK
Temperature Stability	<5 μ K _{rms} at 100 mK
Heat Switch	Automated
Pressure Monitoring	Pirani Gauge, atmosphere to 10 ⁻⁶ Torr
Electrical Feedthrough	DB-25 M, Magnet HDDB-26, Thermometry DB-25 M, Snout coil; auxiliary HDDB-78 M (two); may be customized per customer requirements
Optional Accessories	Service stand; pump and vent manifold SQUIDs, cryocables, snout with detector arrays



System electronics rack



MICA-1600 microcal
X-ray spectrometer



X-ray spectrometer with
112-pixel STJ X-detector array for
synchrotron science applications