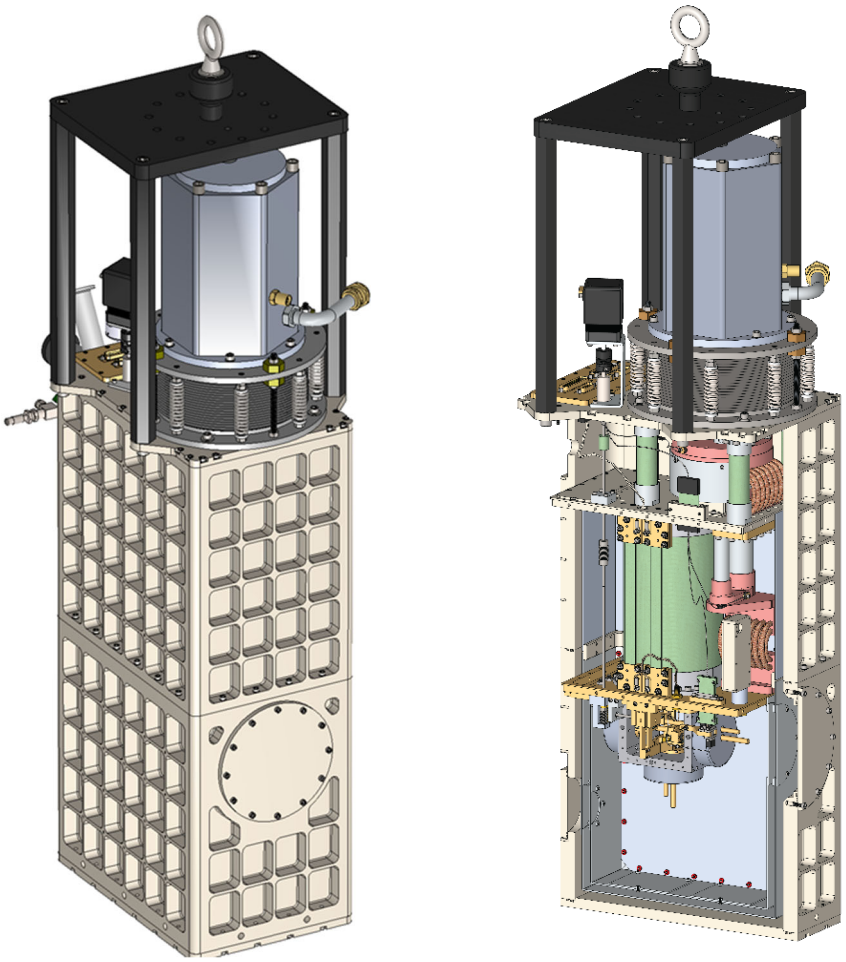
STAR CRYOELECTRONICS

Model DRC-100
ADR Cryostat



- Cryogen-free ADR design with 0.6 W or 0.9 W pulse tube cooler.
- Fully automated ADR control and temperature regulation.
- Base temperature <50 mK, stability <10 μK_{rms} 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

25-A Bisbee Court, Santa Fe, NM 87508
Phone: 505.424.6454 • FAX: 505.424.8225 • Email: info@starcryo.com

STAR CRYOELECTRONICS

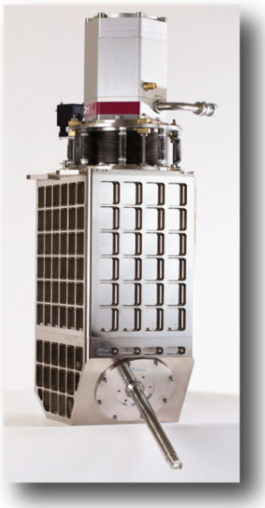
Model DRC-100
ADR Cryostat

DRC-100 Specifications

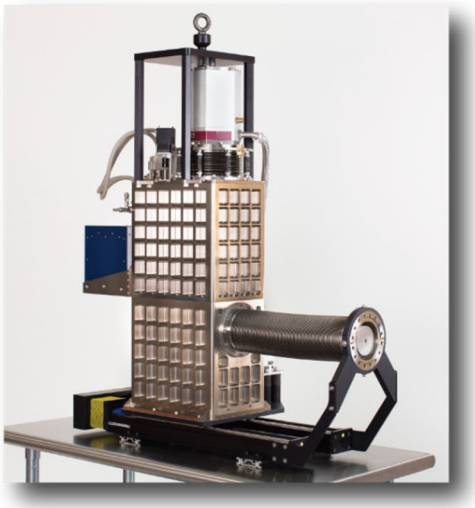
Parameter	Value
Vacuum Jacket Size	33 × 22 × 66 (L×W×H, cm)
Weight	70 kg
Experimental Volume	24 × 15 × 14 (L×W×H, cm)
Primary Cooling	Cryomech PT-407 pulse tube cryocooler with remote valve, with CP2800 water-cooled compressor; or Sumitomo RP-082B2S pulse tube cryocooler with remote valve, F70 Series compressor
1st Stage Cooling Power	22 W at 55 K (PT-407), 35 W at 45 K (RP-082B2S)
2nd Stage Cooling Power	0.6 W at 4.2 K (PT-407), 0.9 W at 4.2 K (RP-082B2S)
Secondary Cooling	Two-stage ADR, GGG and FAA paramagnetic salt pills
GGG Cooling Capacity (1 K)	1.2 J (typical)
FAA Cooling Capacity (100 mK)	118 mJ with 4 T magnet (typical) 130 mJ with 5 T magnet (typical)
ADR Base Temperature	<50 mK
Hold Time	>150 hours regulation at 100 mK with no load
Temperature Control Range	Up to 1.5 K
Temperature Stability	<10 μK_{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

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