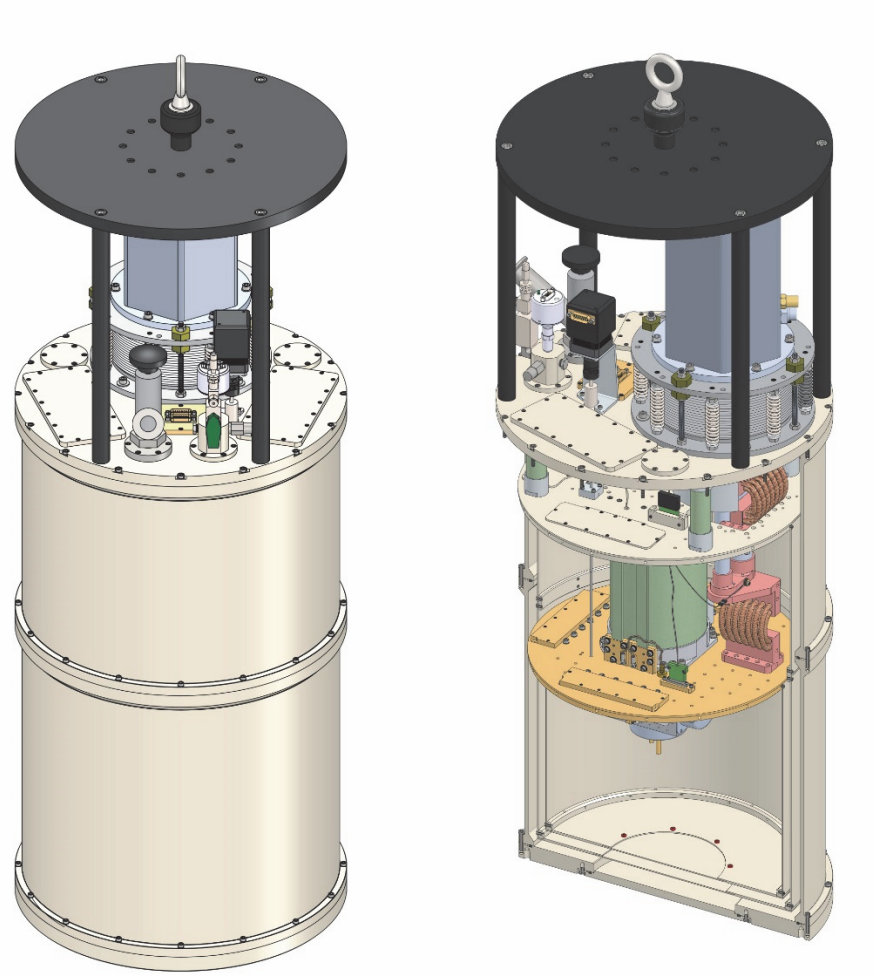
STAR CRYOELECTRONICS

Model DRC-200
ADR Cryostat



- Cryogen-free ADR design with 0.7 or 1 W pulse tube cooler.
- Fully automated ADR control and temperature regulation.
- Base temperature <50 mK, stability <5 μK_{rms} at 100 mK.
- Remote rotary valve and vibration isolation at 300 K, 60 K, and 3 K.
- Lightweight aluminum vacuum shells.
- Configurable with:

  TES or STJ X-ray detectors

  SQUID readouts, cryocables, custom IR filters

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DRC-200 Specifications

Parameter	Value
Vacuum Jacket Size	41.9 cm diameter × 72.3 cm height
Weight	95 kg
Experimental Volume	33 cm diameter x 18 cm height
Primary Cooling Options	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
1st Stage Cooling Power	25 W at 55 K (PT-407), 35 W at 45 K (RP-082B2S)
2nd Stage Cooling Power	0.7 W at 4.2 K (PT-407), 0.9 W at 4.2 K (RP-082B2S)
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 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 Two 25 mm Diameter Ports Two 152 mm x 55 mm Ports
Optional Accessories	Service stand; pump and vent manifold SQUIDs, cryocables, snout with detector arrays

System electronics rack

DRC-200 with GM cooler

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