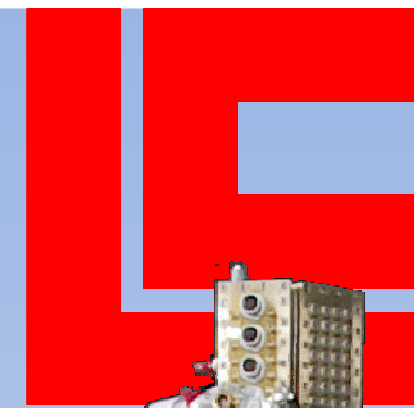


Leiden Cryogenics B.V.
Kenauweg 11
2331 BA Leiden
The Netherlands

Tel: +31 71 5721824
Fax: +31 71 5722734

www.leidencryogenics.com
info@leidencryogenics.com



MNK Models

www.leidencryogenics.com

LEIDEN CRYOGENICS B.V.

MNK Models:

- MNK126-100
- MNK126-250
- MNK126-500
- MNK126-650
- MNK200-450



MNK Models

www.leidencryogenics.com

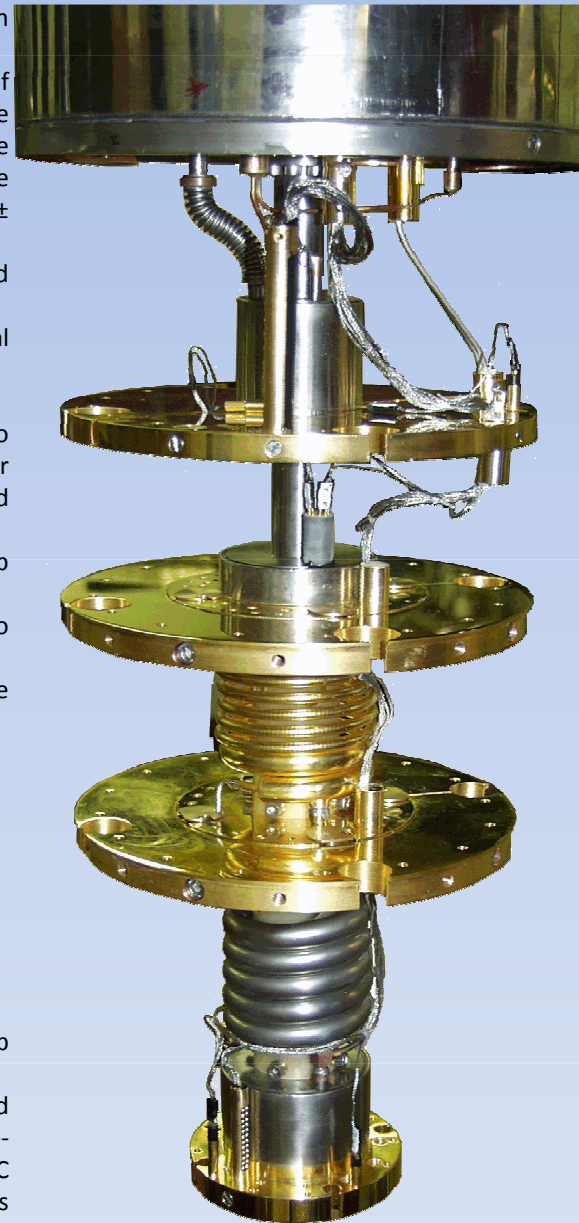
LEIDEN CRYOGENICS B.V.

Insert:

- Dilution refrigerator insert with an outer ϕ of 126 mm with 109mm IVC
- Silver heat-exchanger dilution refrigerator unit with ϕ of 94 mm mixing chamber with gold-plated copper bottom. The minimum temperatures outside the mixing chamber are typically 18,15,7 and 6mK with typical cooling power outside the mixing chamber of 100, 250, 500 and 700 μ W @ 120 mK (\pm 10%).
- Three ϕ = 17 mm clear shot tubes to IVC (one of them is used for wiring).
- 1 K pot and still resistance thermometers (with typical calibration).
- MC calibrated thermometer
- 48 shielded phosphor bronze wires in twisted pairs (two Fishers 24 pin connectors) anchored at the 50 mK plate or mixing chamber (8 wires are used for mixing chamber, still and 1 K pot thermometers).
- 6 wires in a Fischer connector for the still, MC and sorb pump heaters
- 10 flexible coaxial cables anchored to the still or 1 K plate (two used to measure the still level)
- Double 1 K pot circuit with bypass valve and double 3 He condensing circuit
- Radiation shields at the still and 50 mK plate (gold plated)

Oil-free 3 He- 4 He Gas Handling System comprising:

- Turbo pump mounted inside the cabinet, backed by dry pump
- Two external nitrogen cold traps including nitrogen dewar.
- Two helium traps inside insert.
- Vacuum gauges (1 Pirani and 1 Penning/Pirani)
- Flow meter.
- Sorb-pump
- Triple power supply for still, mixing chamber and sorb pump heaters provided with LabView drivers.
- Microprocessor controlled electrical valves with manual and automatic operation. Automatic operation using pre-programmed microprocessor with LabView drivers. Laptop PC with GPIB-USB interface and USB to 4x-RS 232 interfaces included in models 500 and 650.
- 4 He gas handling system for 1 K pot including pump.
- IVC vacuum system uses 3 He circulation turbo pump for pre-evacuation and sorb pump for final vacuum.
- Stainless steel pumping cabinet on wheels with two mixture dumps in the frame and containing all the primary pumps, traps, valves necessary to operate the refrigerator.
- Electropneumatic gate valve for insert (ISO 100) including flanges
- Optimized 3 He- 4 He mixture



MNK200-650

Performance

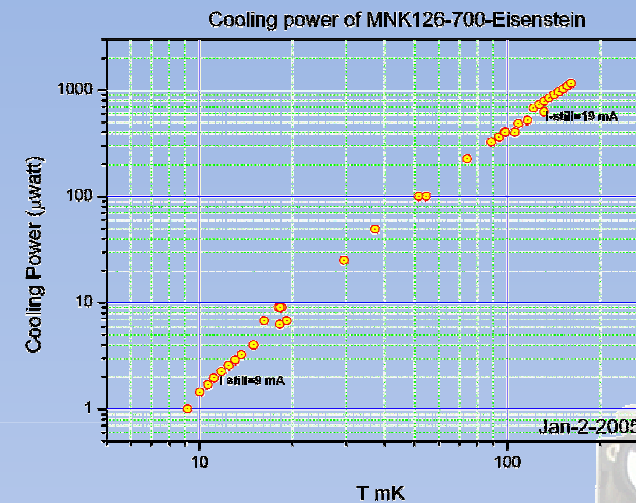


Figure 1. Cooling power

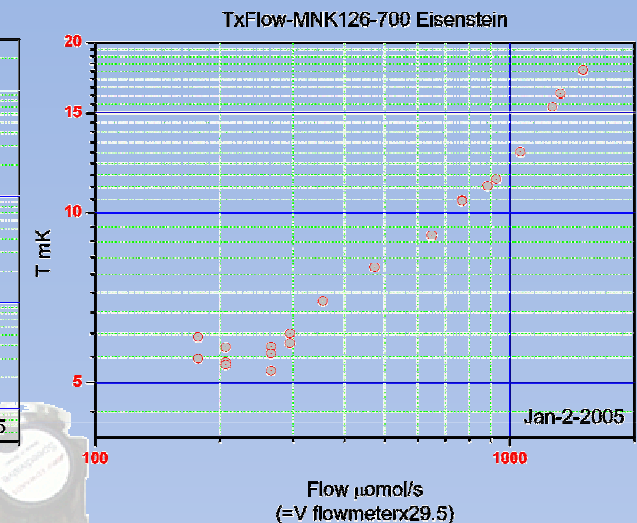


Figure 2. Flow vs temperature

MNK Models	Tmin (mK)	Q @120mK (μ W)
MNK126-100	< 18	100
MNK126-250	< 15	250
MNK126-500	< 7	500
MNK126-650	< 6	650

OPTIONS

- Aluminum superinsulated LHe dewar 73.5 liters reservoir (est.static loss rate 0.40 L/HR)
- Aluminum LN2 Shielded dewar 73.5 liters reservoir (est.static loss rate 0.50 L/HR)
- AC Resistance Bridge model AVS-47 with LabView drivers
- AV-47 IB Opt Isolated IEEE computer Interface
- Stainless steel flange with sliding seal including radiation shields
- Superconducting level gauge with controller
- 24 shielded phosphor bronze wires in twisted pairs in Fischer connector

