

Standard specification	MX50	MX100	MX250	MX400	400HA	VT	TLM
Base temperature	≤ 25 mK	≤ 15 mK	≤ 12 mK	≤ 7 mK	≤ 7 mK	≤ 25 mK	≤ 15 mK
Base temperature stability	± 1 mK	± 1 mK	± 1 mK	± 1 mK	± 1 mK	± 1 mK	± 1 mK
Maximum temperature	1 K	1 K	1 K	1 K	1 K	300 K	1 K
Continuous operation	Standard						
Sample environment	Vacuum	Vacuum	Vacuum	Vacuum	Vacuum	Vacuum (No liquid He in horizontal sample path)	Liquid
Cooling power at 100 mK	≥ 50 μW	≥ 100 μW	≥ 250 μW	≥ 400 μW	≥ 400 μW	≥ 15 μW	≥ 400 μW
Cooling power at 120 mK	≥ 70 μW	≥ 140 μW	≥ 360 μW	≥ 580 μW	≥ 580 μW	≥ 20 μW	≥ 580 μW
Sliding seal assembly	◆	◆	◆	◆	◆	◆	N/A
³ He/ ⁴ He mixture	◆	◆	◆	◆	◆	◆	◆

Key: ◆ = Included with system N/A = Not applicable

Experimental access

Kelvinox^{MX}

Uses 50 mm line-of-sight port on primary insert	EX100 Basic insert	Line of sight to IVC, 6 mm diameter
Uses 50 mm line-of-sight port on primary insert	EX200 High frequency insert	12 twisted pairs of constantan wired to the mixing chamber 2 x UT85-SS-SS semi-rigid co-axial cables wired to the mixing chamber 4 x S1 flexible co-axial cables wired to the mixing chamber Line-of-sight port to sample space, 15 mm diameter to mixing chamber
Uses 50 mm line-of-sight port on primary insert	EX300/EX310 Rotator insert	Retractable drive rod (Manual or Automatic) to suit Swedish rotator mounted on mixing chamber 12 twisted pairs of constantan wired to the mixing chamber 2 x UT85-SS-SS semi-rigid co-axial cables wired to the mixing chamber 2 x S1 flexible co-axial cables wired to the mixing chamber Sample space 15 mm x 15 mm x 15 mm
Uses 50 mm line-of-sight port on primary insert	EX400 Versatile insert	Line-of-sight port to sample space, 15 mm diameter to mixing chamber 3 x non line-of-sight ports to IVC, 8 mm diameter PT wiring options available
	VB100 Dipper insert	EX400 Versatile insert with VB100 IVC tail to allow use with He storage dewar
Kelvinox ^{400HA}	Ports 1, 2, 3	Line of sight to sample space, 38 mm diameter to mixing chamber
	Ports 4, 5, 6, 7	12.7 mm ports from the 4 K helium bath to the IVC, fitted with demountable soldered caps. Matching ports on the top plate for future expansion
Kelvinox ^{VT}	Port 1	Line of sight to IVC, 6 mm diameter
Kelvinox ^{TLM}	TLM Sample Probe	34 mm diameter sample access Top loading probe assembly with 6 x line of sight access ports One port used for diagnostic wiring One port used for 24-way constantan loom wired to the sample space 4 x ports for customer use, 6 mm diameter (nominal)

Note: 24-way twisted pairs terminated with 24-way Fischer connectors at room temperature and miniature D-type connector at mixing chamber

Note: UT85 co-axial cable terminated with SMA connectors at room temperature and mixing chamber

Note: S1 co-axial cable terminated with SMB connectors at room temperature and mixing chamber

Services and sample holders		MX50	MX100	MX250	MX400	400HA	VT	TLM
EX100	Basic experimental insert for KelvinoxMX	■	■	■	■	N/A	N/A	N/A
EX200	High frequency experimental insert for KelvinoxMX	■	■	■	■	N/A	N/A	N/A
EX300	Manual rotator experimental insert for KelvinoxMX	■	■	■	■	N/A	N/A	N/A
EX310	Automatic rotator experimental insert for KelvinoxMX	■	■	■	■	N/A	N/A	N/A
EX400	Versatile experimental insert for KelvinoxMX	■	■	■	■	N/A	N/A	N/A
PT100	24-way constantan loom wired to mixing chamber	Select from standard experimental Inserts or select PT wiring options for use with EX400 Versatile insert				■	■	■
PT110	24-way copper/supercon loom wired to mixing chamber					■	■	■
PT200	2 x S1 co-axial cables wired to mixing chamber					■	■	■
PT210	4 x S1 co-axial cables wired to mixing chamber					■	■	■
PT300	2 x UT85-SS-SS coaxial cables wired to mixing chamber					■	■	■
CAPV/CAP	Capillary line with or without valve					■	N/A	■
KELMSWR	Swedish rotator - manual					■	N/A	■
KELMSRWA	Swedish rotator - automatic	■	N/A	■				
LE100	LECSH low eddy current sample holder	■	■	■	■	■	■	N/A
CS100	ROTH1, 30 point calibrated RuO ₂ sensor to 50 mK	□	□	□	□	□	□	□
CS200	ROTH2, generic calibration RuO ₂ sensor	□	□	□	□	□	□	□
Control & automation								
RB100	AVS47 resistance bridge with rf filtering, cables & IEEE interface	■	■	■	■	■	■	■
TS530	Temperature controller for use with AVS47 resistance bridge	■	■	■	■	■	■	■
IPC	Isobus Picobus converter	■	■	■	■	■	■	■
KELIGH	Intelligent gas handling system	◆	◆	◆	◆	◆	◆	◆
Additional options								
VB100	Bucket IVC for EX400 insert	■	■	■	■	N/A	N/A	N/A
VM100	Magnet IVC for EX400 insert	■	■	■	■	N/A	N/A	N/A
VS100	Adapter baffle for EX400 insert	■	■	■	■	N/A	N/A	N/A
VI100	ISO-K adapter for EX400 insert	■	■	■	■	N/A	N/A	N/A
HCT	Helium cold trap	◆	◆	◆	◆	□	□	□
TTN2F	Transfer tubes are often customised items to suit relative heights of storage dewars and cryostats on site	●	●	●	●	●	●	●
TTN2FDH	Transfer tube, demountable in horizontal section	●	●	●	●	●	●	●
MSTM400HA	Tail set to suit 52 mm cold superconducting magnet	N/A	N/A	N/A	N/A	■	N/A	N/A
TLMP3	Spare top loading probe, 34 mm access - tested with system	N/A	N/A	N/A	N/A	N/A	N/A	■
TLMP4	Spare top loading probe, 34 mm access - supplied untested at later date	N/A	N/A	N/A	N/A	N/A	N/A	■
HE3F	³ He flow meter	■	■	■	■	■	■	■
BK100	Bucket IVC	■	■	■	■	■	N/A	N/A
VIN	Valves in pumping lines	□	□	□	□	■	□	■

Key: ◆ = Included with system ■ = Optional item ● = Needed to operate □ = Strongly recommended N/A = Not applicable

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