

S-Type Essential

Product Overview



The S-Type Essential is a versatile, rack-mountable sub-Kelvin platform designed for the operation of low-temperature electronic devices, such as single-photon detectors or light sources, or the integration of complex customer setups. In its standard configuration, the system provides continuous cooling at 300 mK and “one-shot” operation down to 100 mK – independent of the supply with cryogenes.

S-Type Essential

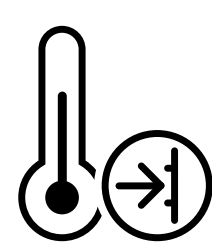
Integrated. Automatic. Flexible.

Detectors

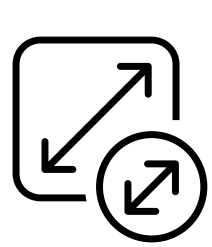
Quantum Technologies



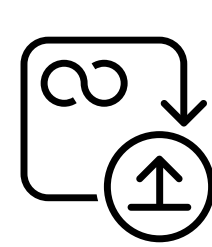
- **Versatile cryogenic platform**
Two large user ports and a large sample platform for the integration of complex customer setups or detector arrays
- **Various wiring options**
Up to 48 DC lines, 16 RF lines and 4 optical fibers available on request
- **Continuous operation at 300 mK**
The combination of two ADR units offers continuous operation at 300 mK and one-shot operation to 100 mK
- **Rack integration**
Due to its small size the cryostat and all control equipment can be mounted in a 19" rack.



Temperature Range
100 mK - 300 K



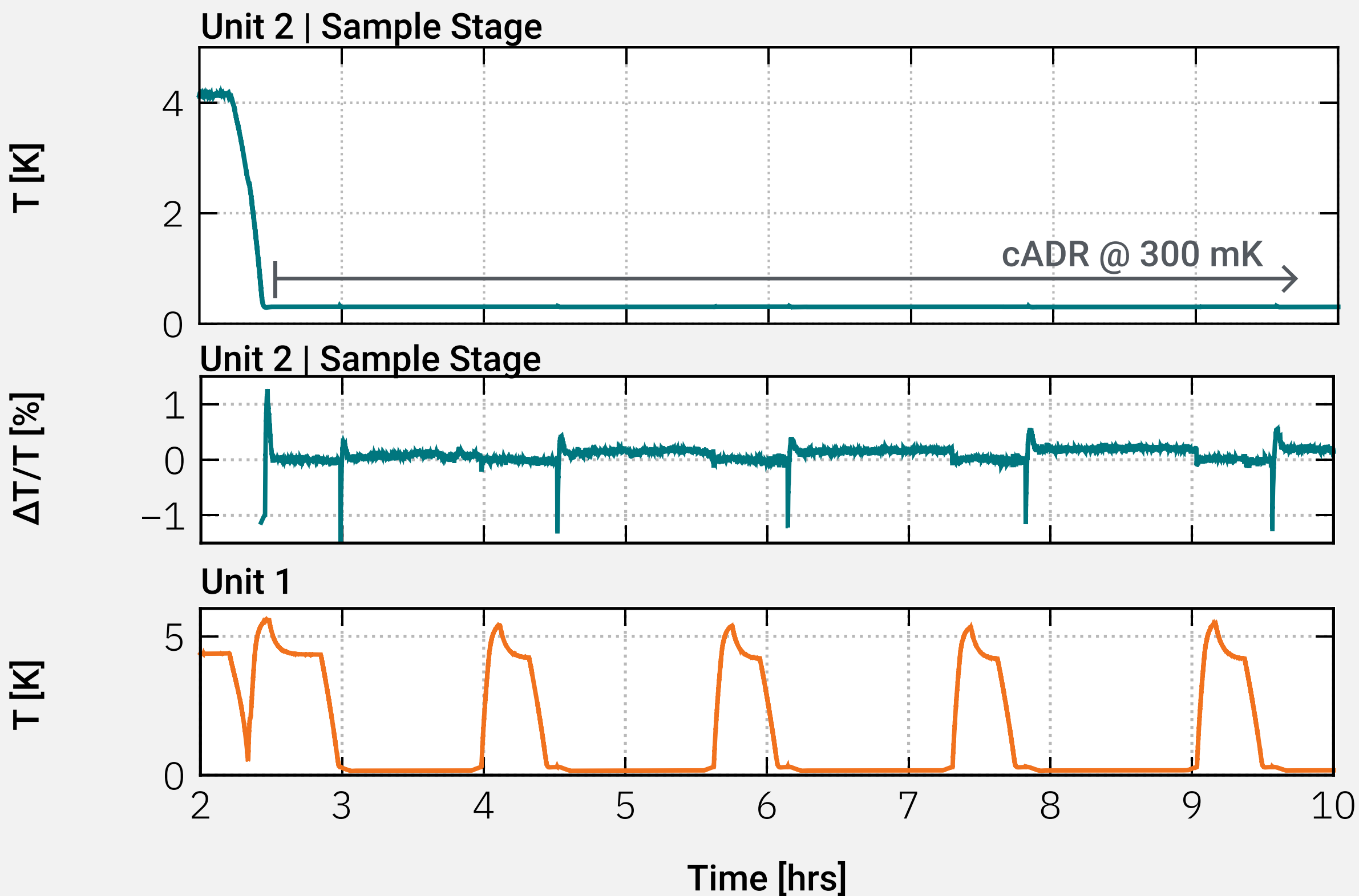
Large Sample Platform
150 x 300 mm



Continuous Operation above
300 mK

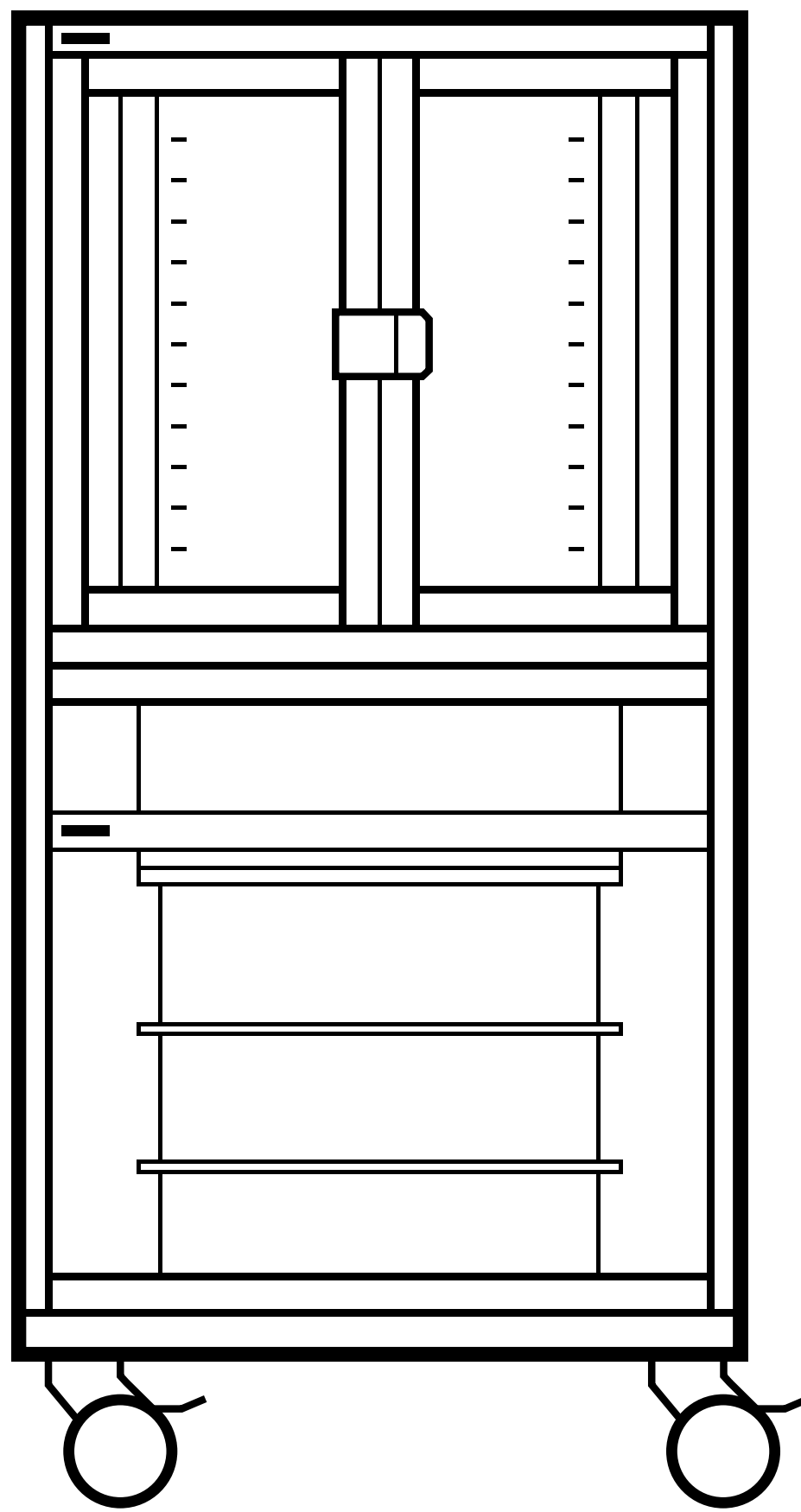
Continuous Operation at 300 mK

By combining multiple ADR units, kiutra’s cryostats can provide both “one-shot” and additionally continuous sub-Kelvin cooling (cADR) independent of the supply with cryogenes. In its standard configuration, the S-Type Essential uses two ADR units to generate continuous magnetic cooling. The figure shows the temperatures of both ADR units running in cADR mode at 300 mK. While the first unit cycles between the 4 K main heat bath (provided by the cryocooler) and a temperature below the target temperature, the second unit controls the sample temperature. As a result, the sample stage can maintain a constant temperature of 300 mK with a typical temperature stability <0.1 %, and a slightly reduced stability <2 % when activating its heat switch to initialize the regeneration.



Tech Specs

System size (cm) (w x l x h)	cryostat	80 x 80 x 71	Temperature Range (K)	continuous	0.3 - 300
	rack	80 x 80 x 71		one-shot	0.1 - 300
	compressor	54 x 45 x 50			
Operation time	@ 100 mK	3 hours	Cooldown time	cryostat	23 hours
Cooling power (μW)	@ 500 mK	50	Temperature stability	typical	< 0.1 %
	@ 1K	160		while switching stages	< 2 %
Size of sample platform (mm)	width x length	150 x 300			
	height	100			



Available Options

- Up to 4 optical fibers
- Up to 16 RF lines
- Low resistance wiring

For further informations visit kiutra.com