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Thales Cryogenics Product Overview

LINEAR		UP (MTTF _{base} 30,000 hr)*				LSF (MTTF _{base} 45,000 hr) – LPT (MTTF _{base} 200,000 hr)*		
		81xx	84xx	70xx	70xx	99xx	95xx	93xx
Cooling power Typical values @23°C / 80K**		 Ø 30 mm 62 mm	 Ø 35 mm 117 mm	 Ø 44 mm 120 mm	 Ø 55 mm 122 mm	 Ø 45 mm 119 mm	 Ø 60 mm 122 mm	 Ø 90 mm 204 mm
Slip-on	 5 mm			UP 7086 25 W 600 mW	UP 7080 40 W 1000 mW			
	 7 mm		UP 8487 18 W 600 mW		UP 7087 40 W 1300 mW	LSF 9987 18 W 650 mW		
	 10 mm				UP 7088 50 W 1900 mW			
	 13 mm						LSF 9589 80 W 2700 mW	
	 20 mm							LSF 9340 170 W 9000 mW
IDCA	 1/4 " SWaP	UP 8197 15 W 1000 mW @ 150K						
	 1/4 "	UP 8197 15 W 1000 mW @ 150K	UP 8497 18 W 600 mW	UP 7097 35 W 1200 mW	UP 7097-x 50 W 1400 mW	LSF 9997 18 W 650 mW	LSF 9597 45 W 1300 mW	
	 8 mm						LSF 9508 40 W 850 mW	
	 9 mm						LSF 9548 40 W 1200 mW	
	 1/2 "				UP 7098 50 W 2000 mW		LSF 9599 80 W 2300 mW	
	 20 mm							LSF 9350 170 W 9000 mW
Pulse tube	 18 mm						LPT 9510 85 W 1400 mW	
	 24 mm							LPT 9310 180 W 5100 mW

* Ref. White paper MTTF01_Z84

** Ref. White paper Qe01_Z84

Space Coolers

COOLER	PICTURE	MASS	MAX INPUT POWER	COOLING POWER (TYPICAL, 20 °C SKIN)	CONFIGURATION
LPT 6510		<3.2 kg	60 W	2.3 W at 80 K 1 W at 60 K	Designed-for-space integral Pulse-tube cooler
LPT 9310 COTS+		<7 kg	180 W	5.1 W at 80 K	LPT 9310 COTS split Pulse-tube cooler, with additional testing & screening to justify use in a flight application
LPT 9310 HP COTS+		<7 kg	180 W	5.7 W at 80 K 3 W at 60 K	Upgraded design of the LPT 9310 COTS split Pulse-tube cooler for lower tip temperatures Additional testing & screening to justify use in a flight application
LPT 9510 COTS+		<3 kg	85 W	1.4 W at 80 K	LPT 9510 COTS split Pulse-tube cooler, with additional testing & screening to justify use in a flight application
LSF 9199/30		<3 kg	85 W	5.5 W at 150 K 1 W at 50 K	Designed-for-space cost-effective Flexure-bearing Stirling cooler with high power efficiency Compatible with ½" SADA-2 IDCA dewar cold finger interface
30-50K Dual stage		<9 kg	180 W	1st stage: 3 W at 105 K 2nd stage: 0.9 W at 33 K	Two-stages split configuration Pulse-tube cooler based on the LPTC compressor

Cooler Drive Electronics

COOLER DRIVE ELECTRONICS FOR LINEAR COOLERS					
	LPCDE 1220	MPCDE 2450	HPCDE 2465	XPCDE 4865	CDE 7232 (optional AVR)
Vdc nom. IN	12 / 24 V	24 V	24 V	48 V	220 Vac
Vdc range IN	8 - 28 V	18 - 32 V	18 - 32 V	36 - 55 V	100 - 240 Vac
Vac_rms max OUT	0.67 * Vdc	0.657 * Vdc	0.657 * Vdc	0.657 * Vdc	32 V
Iac_rms max OUT	2.0 A	5 A	6.5 A	6.5 A	7 A
Frequency range	30 - 140 Hz	30 - 100 Hz	30 - 100 Hz	30 - 100 Hz	35 - 100 Hz
Setpoint range	0 - 1200 mV	0 - 2000 mV	0 - 2000 mV	0 - 2000 mV	10 - 2000 mV
Efficiency	>85% (@ 5W)	>88% (@ 60W)	>90% (@ 60W)	>90% (@ 120W)	
Sensor type	TSD 0.1 mA	TSD 0.1 / 1 mA	TSD 0.1 / 1 mA	TSD 0.1 / 1 mA / Pt100	TSD 0.1 / 1 mA / Pt100
	Best CDE match for application is dependent on required Vac and Iac				

