1.1.2.5 Medium Power Large Aperture Thermal Sensors - Apertures 50mm

100mW to 150W and up to 10kJ

Features

- Thin profile
- CW to 35W or 50W, intermittent to 150W
- Pulse energies up to 10,000 Joules
- For continuous, long pulse and Excimer lasers
- Measure high power lasers by 0.3-2s exposures

L40(150)A

L40(150)A-LP2-50

L40(150)A -EX

L50(150)A

Model	**L40(150)A**	**L40(150)A-LP2-50**	**L40(150)A-EX**	**L50(150)A**
Use	**General purpose**	**CW and Long Pulse Lasers**	**Excimer lasers**	**General purpose**
Absorber Type	Broadband	LP2	EX	Broadband
Spectral Range µm	0.19 - 20	0.25 - 2.2, 2.94	0.15 - 0.7, 10.6	0.19 - 20
Absorption	~88%	>94% from 0.25 to 1.1µm	~95%	~88%
Aperture mm	Ø50mm	Ø50mm	Ø50 mm	Ø50mm
Power Mode				
Power Range [b]	100mW - 150W	300mW - 150W	100mW - 150W	100mW - 150W
Maximum Intermittent Power [b]	150W for 3min, 80W for 5.5min, 35W continuous	150W for 4min, 80W for 8min, 40W continuous	150W for 3min, 80W for 5.5min, 35W continuous	150W for 4min, 100W for 6min, 50W continuous
Power Scales	150W / 20W	150W / 20W	150W / 20W	150W / 20W
Power Noise Level	5mW	15mW	5mW	5mW
Maximum Average Power Density kW/cm²	12 at 150W 20 at 35W	33 at 150W 50 at 40W	2	12 at 150W 17 at 50W
Response Time with Meter (0-95%) typ. s	2.5	2.5	2.5	2.5
Power Accuracy +/-%	3	3 [a]	3	3
Linearity with Power +/-%	1	1	1	1
Energy Mode				
Energy Range	100mJ - 4000J	100mJ - 10,000J	100mJ - 200J	100mJ - 4000J
Energy Scales	4kJ / 400J / 40J / 4J	10kJ / 1kJ / 100J / 10J	200J / 30J / 3J	4kJ / 400J / 40J / 4J
Minimum Energy mJ	100	100	100	100
Maximum Energy Density J/cm²				
<100ns	0.3	0.1	0.5	0.3
1µs	0.4	0.9	0.6	0.4
0.5ms	5	50	6	5
2ms	10	130	12	10
10ms	30	400	25	30
>300ms	See below [b, c]	See below [b, c]	NA	See below [b, c]
Cooling	convection / ballistic	convection / ballistic	convection / ballistic	convection / ballistic
Fiber Adapters Available (see page 83)	ST, FC, SMA, SC	ST, FC, SMA, SC	NA	ST, FC, SMA, SC
Weight kg	0.6	0.8	0.6	0.6
Version	V2		V1	
Part number	**7Z02626**	**7Z02783**	**7Z02614**	**7Z02633**

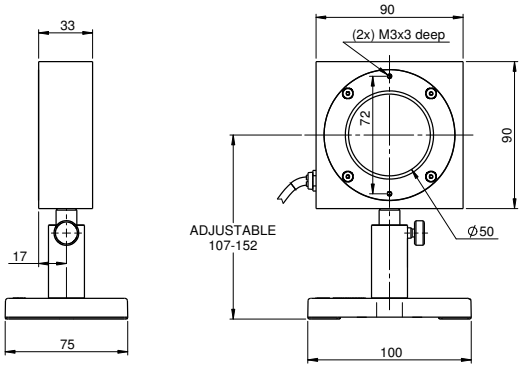
Notes: (a) Above 1.1µm there is an additional calibration uncertainty of up to 2% except at the additional calibration point of 2.94µm where the additional uncertainty is 1%.

Notes: (b) This mode is used to measure power of high power lasers by measuring the energy of a short exposure. The StarBright meter has a Pulsed Power mode where the user may specify the pulse width and get a reading directly in units of power for a short exposure energy measurement. See also page 71

Notes: (c) Recommended exposure times and 1/e² Gaussian beam diameters for very long pulses. Total energy for a series of measurements should not exceed 20kJ. Cooling down time before another 20kJ series, <10min. Recommended time between shots 12s.

Laser Power W	Recommended Exposure s	Number of shots before cooling down	Min 1/e² beam dia. mm	
			L40(150)A / L50(150)A	L40(150)A-LP2-50
500	2	20	15	9
1000	1	20	20	9
2000	1	10	30	12
4000	1	5	40	15
5000	1	4	NA	18
10000	0.3	2	NA	22

L40(150)A / L40(150)A-LP2-50 / L40(150)A-EX



L50(150)A