

## 1.1.2.5 Medium Power Large Aperture Thermal Sensors - Apertures 50mm

### 100mW to 250W and up to 10kJ

L40(250)A-BB-50

L40(250)A-LP2-50

L40(200)A-EX-50

L50(250)A A-BB-50



#### Features

- Thin profile
- CW to 50W, intermittent to 250W
- Pulse energies up to 10,000 Joules
- For continuous, long pulse and Excimer lasers
- Measure high power lasers by 0.3-2s exposures

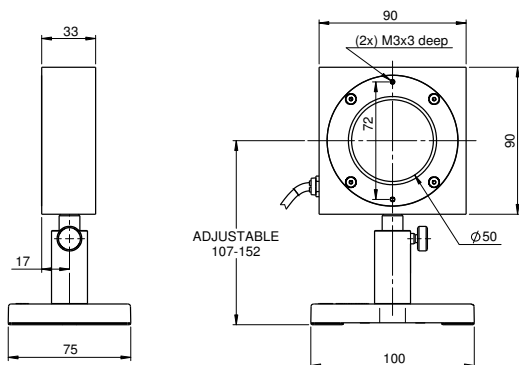
Model	L40(250)A-BB-50	L40(250)A-LP2-50	L40(200)A-EX-50	L50(250)A-BB-50
<b>Use</b>	<b>General purpose</b>	<b>CW and Long Pulse Lasers</b>	<b>Excimer lasers</b>	<b>General purpose</b>
Absorber Type	Broadband	LP2	EX	Broadband
Spectral Range $\mu\text{m}$	0.19 - 20	0.25 - 2.2, 2.94	0.15 - 0.7, 10.6	0.19 - 20
Absorption	~88%	>94% from 0.25 to 1.1 $\mu\text{m}$	~95%	~88%
Aperture mm	$\varnothing$ 50mm	$\varnothing$ 50mm	$\varnothing$ 50 mm	$\varnothing$ 50mm
<b>Power Mode</b>				
Power Range	300mW - 250W <sup>(b)</sup>	300mW - 250W <sup>(b)</sup>	300mW - 200W	300mW - 250W <sup>(b)</sup>
Maximum Intermittent Power	250W for 1.5min, 150W for 3min, 80W for 6min, 35W continuous <sup>(b)</sup>	250W for 1.5min, 150W for 3min, 80W for 6min, 40W continuous <sup>(b)</sup>	200W for 1.5min, 150W for 3min, 80W for 6min, 35W continuous	250W for 1.5min, 150W for 3min, 80W for 6min, 50W continuous <sup>(b)</sup>
Power Scales	250W / 30W	250W / 30W	200W / 20W	250W / 30W
Power Noise Level	15mW	15mW	15mW	15mW
Maximum Average Power Density $\text{kW}/\text{cm}^2$	10 at 250W 20 at 35W	20 at 250W 50 at 40W	2	10 at 250W 17 at 50W
Response Time with Meter (0-95%) typ. s	2.5	2.5	2.5	2.5
Power Accuracy +/-%	3	3 <sup>(a)</sup>	3	3
Linearity with Power +/-%	1	1	1	1
Beam Size Dependence	<1% for beams up to 35mm diameter			
<b>Energy Mode</b>				
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 $\text{J}/\text{cm}^2$				
<100ns	0.3	0.1	0.5	0.3
1 $\mu\text{s}$	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 <sup>(b,c)</sup>	See below <sup>(b,c)</sup>	NA	See below <sup>(b,c)</sup>
Cooling	convection / ballistic	convection / ballistic	convection / ballistic	convection / ballistic
Fiber Adapters Available (see page 86)	ST, FC, SMA, SC	ST, FC, SMA, SC	NA	ST, FC, SMA, SC
Weight kg	0.6	0.8	0.6	0.6
Compliance	CE, China RoHS	CE, China RoHS	CE, China RoHS	CE, China RoHS
Version				
<b>Part number</b>	<b>7Z02793</b>	<b>7Z02794</b>	<b>7Z02795</b>	<b>7Z02796</b>

Notes: (a) Above 1.1  $\mu\text{m}$  there is an additional calibration uncertainty of up to 2% except at the additional calibration point of 2.94  $\mu\text{m}$  where the additional uncertainty is 1%.

Notes: (b) Long pulses (0.5 – 4s) can be used to measure power of high power lasers by measuring the energy of a short exposure. The StarBright, Juno, Juno+ and Centauri meters have a Pulsed Power mode where the user may specify the pulse width and get a reading directly in units of power for this short exposure energy measurement. See also page 74

Notes: (c) Recommended exposure times and $1/\text{e}^2$ 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 $1/\text{e}^2$ beam dia. mm	
				L40(250)A-BB-50 / L50(250)A-BB-50	L40(250)A-LP2-50
500	2	20	14	9	
1000	1	20	14	9	
2000	1	10	21	12	
4000	1	5	32	16	
5000	1	4	NA	18	
10000	0.3	4	NA	22	

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L50(250)A-BB-50

