

1.1.3.6 Medium - High Power BeamTrack-Power / Position / Size Sensors

150mW to 1000W

Features

- All the features of standard power sensors plus...
- Accurate tracking of beam position to fractions of a mm
- Monitoring of the laser beam size

FL250A-BB-50-PPS



1000W-BB-34-QUAD



Model	FL250A-BB-50-PPS (a)	1000W-BB-34-QUAD (a)
Use	General purpose	General purpose
Functions	Power / Energy / Position / Size	Power / Energy / Position
Absorber Type	Broadband	Broadband
Spectral Range μm	0.19 - 20	0.19 - 20
Aperture mm	$\varnothing 50\text{mm}$	$\varnothing 34\text{mm}$
Power Mode		
Power Range	150mW - 250W (b)	5W - 1000W
Power Scales	250W / 30W	1000W / 200W
Power Noise Level	15mW	200mW
Maximum Average Power Density kW/cm^2	10 at 250W, 12 at 150W	10 at 500W, 7 at 1000W
Response Time with Meter (0-95%) typ. s	2.8	2.5
Power Accuracy +/-%	3	3 (f)
Linearity with Power +/-%	1.5	2
Energy Mode		
Energy Range	80mJ - 300J	500mJ - 300J
Energy Scales	300J / 30J / 3J	300J / 30J
Minimum Energy mJ	80	500mJ
Maximum Energy Density J/cm^2		
<100ns	0.3	0.3
1 μs	0.4	0.4
0.5ms	5	5
2ms	10	10
10ms	30	30
Beam Tracking Mode		
Position		
Beam Position Accuracy	0.2mm + 5% of distance from center (c)	0.5mm (h)
Beam Position Resolution mm	0.1	0.1
Min Power for Position Measurement	2W	10W
Size (d)		
Size Accuracy mm (e)	$\pm 5\%$ for centered beam	NA
Size Range mm (4 σ beam diameter)	$\varnothing 5-35$	NA
Min Power Density for Size Measurement	$3\text{W}/\text{cm}^2$	NA
Cooling	fan	water
Minimum Water Flow Rate at Full Power	NA	10 liter/min (g)
Fiber Adapter Available (see page 86)	ST, FC, SMA, SC	Consult Ophir representative
Accessories for High Power Sensors	NA	See pages 76-79
Weight Kg	0.9	0.9
Compliance	CE, China RoHS	CE, China RoHS
Version		
Part number	7Z07902	7Z07936

Notes: (a) The BeamTrack features are supported by Centauri, StarBright, StarLite, Nova II and Vega meters, Juno, Juno+ and EA-1 interfaces and StarLab application.

Notes: (b) For powers up to 30W it is recommended to work with the fan off and then the noise level is ~3 times lower. It is also recommended to measure energy with the fan off.

Notes: (c) Position accuracy for the central 20mm of the aperture as limited by beam position resolution. Position can be tracked with $\pm 1\text{mm}$ accuracy over central 32mm of the aperture. Accuracy is reduced by a factor of 3 at minimum power. Position measuring center corresponds to geometrical center within <1mm. Position center can be software reset to geometric center or other desired position with Centauri, StarBright or StarLab.

Notes: (d) Assumes laser beam with Gaussian (TEM_{00}) distribution. For other modes, size measurement is relative.

Notes: (e) Accuracy spec will be maintained for beams from 6 to 35mm not deviating from center more than 15% of beam diameter.

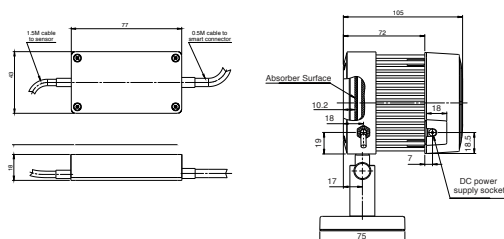
Notes: (f) Calibrated for $\sim 0.8\mu\text{m}$, $1.064\mu\text{m}$ and $10.6\mu\text{m}$

Notes: (g) Water temperature range 18-30°C, Water temperature rate of change <1°C/min. Pressure drop across sensor 0.03MPa.

Notes: (h) Position accuracy for the central 10 mm of the aperture as limited by beam position resolution. Position measuring center corresponds to geometrical center within <1mm. Position center can be software reset to geometric center or other desired position with Centauri, StarBright or StarLab.

Interface Module on cable

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