1.1.2.3 Low Power Thermal Sensors

1.1.2.3.1 Low Power BeamTrack-Power / Position / Size Sensors

20mW to 10W

Features (see introduction in pages 110-112)

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

Model	**10A-PPS** (a)
Use	Low power
Functions	Power / Energy / Position / Size
Absorber Type	Broadband
Spectral Range µm	0.19 - 20
Aperture mm	Ø6mm
Power Mode	
Power Range	20mW - 10W
Power Scales	10W / 5W / 0.5W
Power Noise Level	1mW
Thermal Drift (30min) %	NA
Maximum Average Power Density kW/cm ^{2}	28
Response Time with Meter (0-95%) typ. s	0.8
Calibration Uncertainty ±%	1.9
Power Accuracy ±% (e)	3
Linearity with Power ±%	1
Energy Mode	
Energy Range	6mJ - 2J
Energy Scales	2J / 200mJ
Minimum Energy	6mJ
Maximum Energy Density J/cm^2	
<100ns	0.3
0.5ms	2
2ms	2
10ms	2
Beam Tracking Mode	
Position	
Beam Position Accuracy mm (b)	0.15
Beam Position Resolution mm	0.02
Min Power for Position Measurement	50mW
Size (c)	
Size Accuracy (d)	±(5%+50µm) for centered beam
Size Range mm (4σ beam diameter)	1.5 - 10
Min Power for Size Measurement	50mW
Cooling	Convection
Weight Kg	0.3
Fiber Adapter Available (see page 119)	ST, FC, SMA, SC
Compliance	CE, UKCA, China RoHS
Part number	**7Z07904**

Note: (a) The BeamTrack features are supported by Centauri, StarBright, StarLite, Nova-II and Vega meters, Juno, Juno+, Juno-RS and EA-1 interfaces and StarLab application. Position and Size measurements work only in Power mode (but not in single shot Energy mode).

Note: (b) For position within inner 30% of aperture. 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.

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

Note: (d) Accuracy spec will be maintained for beams ≥1.8 mm not deviating from center by more than 15% of beam diameter.

Note: (e) The 3A-QUAD has a relatively large spectral variation in absorption and has a calibrated spectral curve at all wavelengths in its spectral range to the above specified accuracy. Nova, Orion and LaserStar meters do not support this feature and when used with those meters, the accuracy will be ±3% as above for 532nm, 905nm, 1064nm and 10.6µm but there will be an additional error of up to 3% at other wavelengths in the spectral range 190 – 3000nm.