

### 1.2.3 High Energy Pyroelectric Sensors

20μJ to 10J

Features

- Sensors with diffuser for high energies and high energy densities
- Metallic coating for high repetition rates up to 10kHz
- High damage threshold
- Wide spectral range. Measure YAG and harmonics, 193nm, 248nm and many more
- Measure lasers with pulse widths up to 20ms

PE50-DIF-C /  
PE50U-DIFH-C



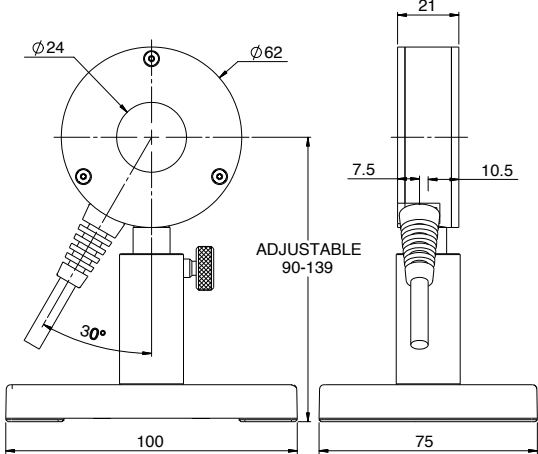
PE25BF-DIF-C



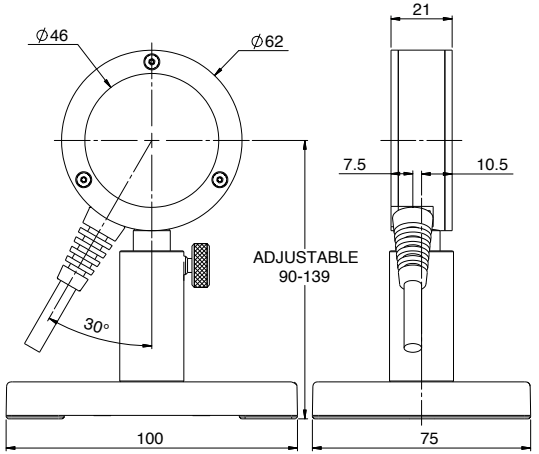
Model	PE50-DIF-C					PE50U-DIFH-C					PE25BF-DIF-C				
Use	High rep rate. Complete calibration curve					Complete calibration curve. Highest damage threshold, 193nm calibration					Complete calibration curve. High damage threshold				
Aperture mm	Ø35					Ø35					Ø20				
Absorber Type	Metallic with diffuser					Metallic with diffuser					BF with diffuser				
Spectral Range μm <sup>(a)</sup>	0.19 - 2.2, 2.94					0.19 - 2.2, 2.94					0.24 - 2.2				
Surface Reflectivity % approx.	25					25					25				
Calibration Uncertainty ±% <sup>(a)</sup>	3					3					3				
Max Pulse Width Setting <sup>(d)</sup>	2μs	30μs	500μs	1ms	5ms	2μs	30μs	500μs	1ms	5ms	1ms	2ms	5ms	10ms	20ms
Energy Scales	10J to 200μJ	10J to 200μJ	10J to 2mJ	10J to 2mJ	10J to 20mJ	10J to 2mJ	10J to 2mJ	10J to 2mJ	10J to 2mJ	10J to 20mJ	10J to 2mJ	10J to 2mJ	10J to 20mJ	10J to 20mJ	10J to 20mJ
Lowest Measurable Energy μJ <sup>(c)</sup>	20	20	100	120	200	100	100	100	100	100	100	150	200	200	300
Max Pulse Width ms	0.002	0.03	0.5	1	5	0.002	0.03	0.5	1	5	1	2	5	10	20
Maximum Pulse Rate pps	10kHz	5kHz	900Hz	450Hz	100Hz	10kHz	5kHz	900Hz	450Hz	100Hz	250Hz	100Hz	50Hz	40Hz	20Hz
Noise on Lowest Range μJ	1	2	20	20	40	10	10	10	10	10	15	30	40	40	60
Additional Error with Frequency %	±2% to 2kHz ±4.5% to 5kHz	±2%	±1% to 750Hz	±2% to 400Hz	±1% to 80Hz	±1.5%	±1.5%	±1% to 900Hz	±1% to 450Hz	±1% to 100Hz	±1% to 100Hz ±2.5% to 150Hz ±4.5% to 250Hz	±1%	±1%	±1%	±2%
Linearity with Energy for >10% of full scale <sup>(c)</sup>	±1.5%					±1.5%					±2%				
Damage Threshold J/cm² <sup>(b)</sup>															
<100ns	1					2					4				
1μs	2					6					5				
300μs	20					30					20				
2ms	40					90					60				
Maximum Average Power W	25, 40 with optional heat sink					25, 40 with optional heat sink					20, 30 with optional heat sink				
Maximum Average Power Density W/cm²	100					200					120				
Uniformity over surface	±2.5% over central 20mm					±2.5% over central 20mm					±2.5% over central 10mm				
Weight kg	0.25					0.25					0.25				
Compliance	CE, UKCA, China RoHS					CE, UKCA, China RoHS					CE, UKCA, China RoHS				
Version															
Part Number	7Z02939					7Z02957					7Z02941				
Note: (a) Calibration curve is verified and adjusted at specified wavelengths. At other wavelengths, there may be an additional error up to the value given.	Specified wavelengths: 355nm, 532nm, 1064nm and 2100nm.					Specified wavelengths: 193nm, 248-266nm, 355nm, 532nm, 1064nm, 2100nm and 2940nm.					Specified wavelengths: 355nm, 532nm, 1064nm and 2100nm.				
	Max additional error at other wavelengths not specified above: ±2%. <250nm not calibrated.					Max additional error at 193nm ±4%. Max additional error at other wavelengths not specified above: ±2%. 193nm reading may need 1min irradiation to stabilize.					Max additional error at other wavelengths not specified above: ±2%. <250nm not calibrated.				
Note: (b)	For wavelengths >2.1μm, derate to 40% of above values. For beam size ≤5mm. For 10mm beam, derate to 40% of above value.					For wavelengths >2.1μm, derate to 40% of above values. For beam size ≤5mm. For 10mm beam, derate to 40% of above values. For <100ns and wavelengths <240nm, derate by 50%.					For wavelengths below 600nm, derate to 60% of given values. For beam size ≤4mm. For 8mm beam, derate to 50% of above values.				
Note: (c) With the "user threshold" setting set to minimum. For other settings, the spec is for >10% of full scale or greater than twice the "user threshold", whichever is greater. The user threshold is not available with LaserStar, Nova/Orion, Pulsar, USBI and Quasar. For these meters, the threshold is set to minimum and the linearity spec is >10% of full scale. The PE-C series will only operate with Nova or Orion meters with an additional adapter Ophir P/N 7Z08272 (see page 138). The adapter can introduce up to 1% additional measurement error. The user threshold feature allows adjustment of the internal threshold up to 25% of full scale if desired to avoid false triggering in noisy environments. For further information, see the FAQs on our Website.															
Note: (d) With the LaserStar, Pulsar, USBI, Quasar and Nova/Orion with adapter, only 2 out of 5 pulse widths settings are available; for the PE50-DIF-C and PE50U-DIFH-C models the 2μs (displayed as "30μs") and 1ms settings, and for the PE25BF-DIF-C model the 1ms and 10ms settings.															

\* For drawings please see page 132

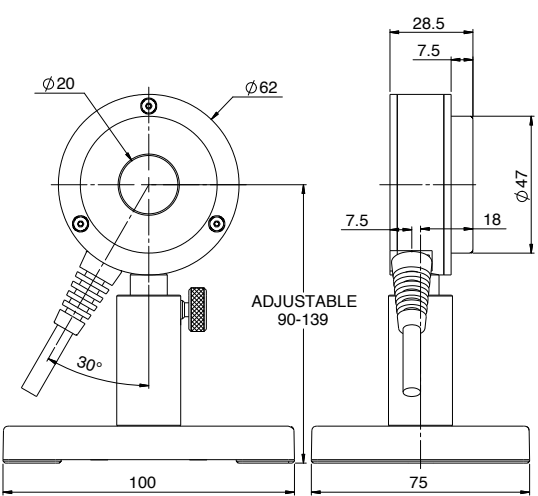
PE25-C / PE25BF-C



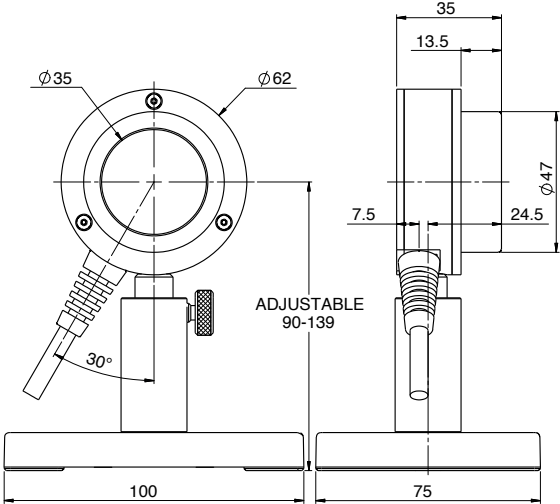
PE50-C / PE50BF-C



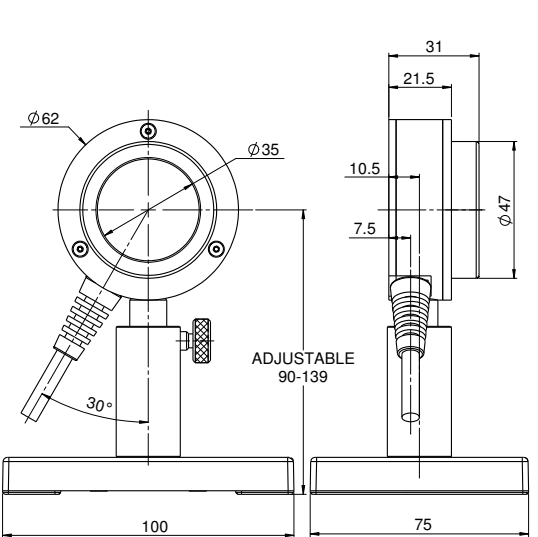
PE25BF-DIF-C



PE50BF-DIF-C / PE50-DIF-C



PE50BF-DIFH-C / PE50U-DIFH-C



PE50BB-DIF-C

