

1.2.2 Pyroelectric Energy Sensors

8μJ to 10J

Features

- Ø24mm apertures
- Metallic coating for high rep rates
- BF coating for highest damage threshold
- Rep rates up to 10kHz
- Measure lasers with pulse widths up to 20ms



| Model | PE25-C | | | | | PE25BF-C | | | | |
|--|--|--------------|--------------|----------------|---------------|--|------------|-------------|-------------|-------------|
| Use | High rep rate | | | | | High damage threshold | | | | |
| Aperture mm | Ø24 | | | | | Ø24 | | | | |
| Absorber Type | metallic | | | | | BF | | | | |
| Spectral Range μm ^(a) | 0.15 - 3 | | | | | 0.15 - 3, 10.6 ^(e) | | | | |
| Surface Reflectivity % approx. | 50 | | | | | 20 | | | | |
| Calibration Uncertainty ±% ^(a) | 3 | | | | | 3 | | | | |
| Max Pulse Width Setting ^(d) | 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 2mJ | 10J to 2mJ | 10J to 2mJ | 10J to 20mJ | 10J to 20mJ | 10J to 20mJ |
| Lowest Measurable Energy μJ ^(c) | 8 | 10 | 60 | 80 | 100 | 60 | 100 | 400 | 400 | 400 |
| Max Pulse Width ms | 0.002 | 0.03 | 0.5 | 1 | 5 | 1 | 2 | 5 | 10 | 20 |
| Maximum Pulse Rate pps | 10kHz | 5kHz | 900Hz | 450Hz | 100Hz | 250Hz | 100Hz | 50Hz | 40Hz | 20Hz |
| Noise on Lowest Range μJ | 0.5 | 1 | 6 | 10 | 20 | 10 | 20 | 40 | 40 | 50 |
| Additional Error with Frequency % | ±2% to 5kHz ±4% to 10kHz | ±1.5% | ±2% to 750Hz | ±1.5% to 400Hz | ±1.5% to 80Hz | ±1% to 100Hz ±2.5% to 150Hz ±4.5% to 250Hz | ±1% | ±1% | ±1% | ±2% |
| Linearity with Energy for >7% of full scale ^(c) | ±1.5% | | | | | ±2% | | | | |
| Damage Threshold J/cm ² ^(b) | | | | | | | | | | |
| <100ns | 0.1 | | | | | 0.8 | | | | |
| 1μs | 0.2 | | | | | 1 | | | | |
| 300μs | 2 | | | | | 4 | | | | |
| 2ms | 6 | | | | | 10 | | | | |
| Maximum Average Power W | 15, 25 with optional heat sink (P/N 7Z08267) | | | | | 15, 25 with optional heat sink (P/N 7Z08267) | | | | |
| Maximum Average Power Density W/cm ² | 20 | | | | | 20 | | | | |
| Uniformity over surface | ±2% over central 50% of aperture | | | | | ±2% over central 50% of aperture | | | | |
| Fiber Adapters Available (see page 138) | ST, FC, SMA, SC | | | | | ST, FC, SMA, SC | | | | |
| Weight kg | 0.25 | | | | | 0.25 | | | | |
| Compliance | CE, UKCA, China RoHS | | | | | CE, UKCA, China RoHS | | | | |
| Version | | | | | | | | | | |
| Part Number: Standard Sensor | 7Z02937 (1.5m cable) | | | | | 7Z02935 | | | | |
| Sensor with different cable length | 7Z02937C (10m cable) | | | | | | | | | |
| Note: (a) Calibration curve is verified and adjusted at specified wavelengths. | Specified wavelengths: 248-266nm, 355nm, 1064nm and 2940nm. | | | | | Specified wavelengths: 193nm, 248-266nm, 355nm, 532nm and 1064nm. | | | | |
| At other wavelengths, there may be an additional error up to the value given. | Max additional error at other wavelengths: ±2%. <240nm not calibrated | | | | | Max additional error at 2940nm ±3%. Max additional error at other wavelengths: ±2%. | | | | |
| Note: (b) | | | | | | For wavelengths below 600nm, derate damage threshold to 60% of given values. Below 300nm, derate to 40% of given values. | | | | |

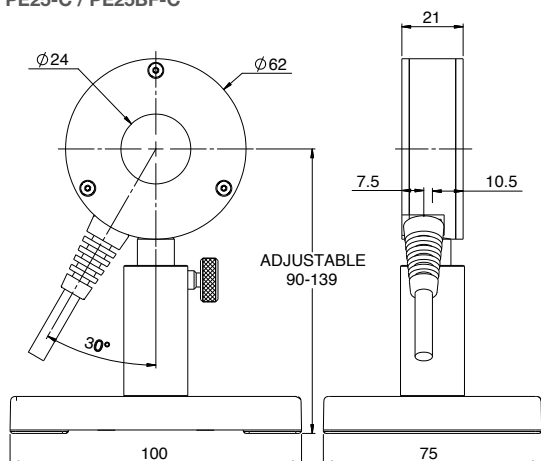
Note: (c) With the "user threshold" setting set to minimum. For other settings, the spec is for >7% of full scale or greater than twice the "user threshold", whichever is greater. The user threshold is not available with LaserStar, Nova/Orion, Pulsar, USBI and Quasar. For these meters, the threshold 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 139). 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 PE25-C model the 2μs (displayed as "10μs") and 1ms settings, and for the PE25BF-C model the 1ms and 10ms settings.

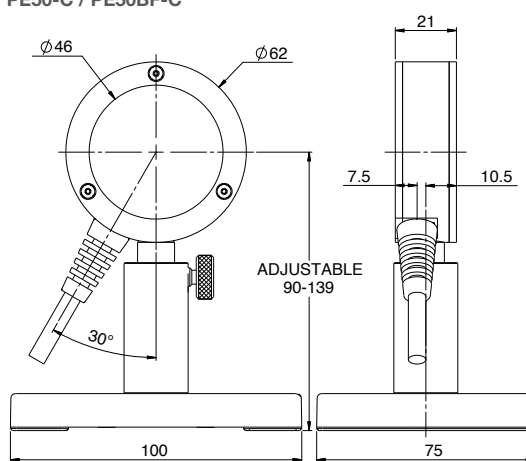
Note: (e) If the sensor is set to the 1064nm wavelength, then when measuring 10.6μm pulses, the reading will be approximately 1.19X the correct reading. If you use the attenuate function and set the attenuation to read 0.84, then you will have the correct reading at 10.6μm. The additional error at 10.6μm is ±5%.

* For drawings please see page 133

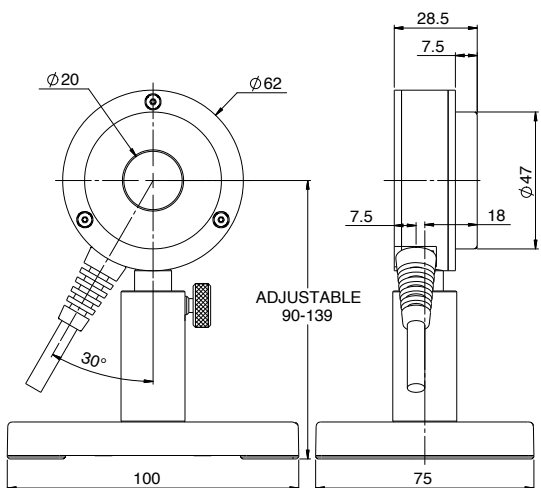
PE25-C / PE25BF-C



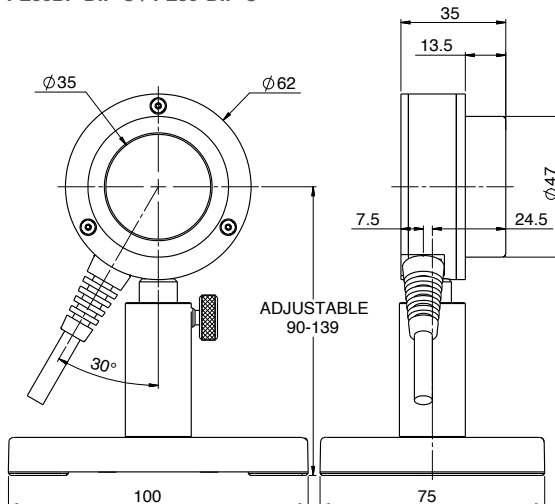
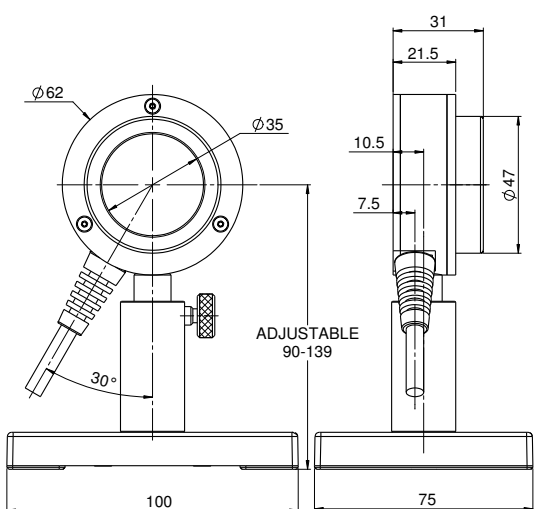
PE50-C / PE50BF-C



PE25BF-DIF-C



PE50BF-DIF-C / PE50-DIF-C

PE50-DIFH2-C / PE50BF-DIFH2-C /
PE50-UV-DIFH-C / PE50BF-UV-DIFH-C

PE50BB-DIF-C

