

1.3.2 Pyroelectric Energy Sensors

0.2μJ to 10mJ

Features

- φ8mm and φ12mm apertures
- Repetition rates up to 25,000Hz
- Highest sensitivity sensors
- Pulse widths up to 5ms
- New compact PE-C series

PE9-C

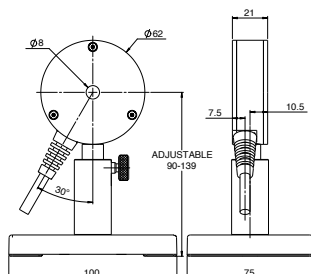


PE10-C / PE10BF-C

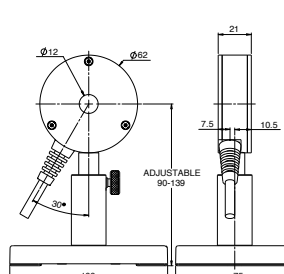


Model	PE9-C	PE10-C	PE10BF-C
Use	Most sensitive	Sensitive	High damage threshold
Aperture mm	φ8	φ12	φ12
Absorber Type	metallic	metallic	BF
Spectral Range μm ^(a)	0.15 - 12	0.15 - 12	0.15 - 3, 10.6 ^(e)
Surface Reflectivity % approx.	50	50	20
Calibration Accuracy +/- % ^(a)	3	3	3 ^(f)
Max Pulse Width Setting ^(g)	1μs 2μs 20μs	1μs 30μs	1ms 5ms
Energy Scales	1mJ to 2μJ 1mJ to 2μJ 1mJ to 20μJ	10mJ to 2μJ 10mJ to 20μJ	10mJ to 20μJ 10mJ to 200μJ
Lowest Measurable Energy μJ ^(c, d)	0.5	1	7
Max Pulse Width μs	1	1	1000
Maximum Pulse Rate pps	25kHz	25kHz	250Hz
Noise on Lowest Range μJ	0.04	0.1	1
Additional Error with Frequency %	±1% to 15kHz, ±6% to 25kHz	±1% to 10kHz, ±2% to 15kHz, ±3% to 25kHz	±1% to 50Hz, ±1% to 500Hz
Damage Threshold J/cm ²			
<100ns	0.1	0.1	0.8 ^(b)
1μs	0.2	0.2	1 ^(b)
300μs	3	3	2 ^(b)
Linearity with Energy ^(c)	±1%	±1.5%	±2%
Maximum Average Power W	2	2	3
Maximum Average Power Density W/cm ²	30	50	50
Fiber Adapters Available (see page 76)	ST, FC, SMA, SC	ST, FC, SMA, SC	ST, FC, SMA, SC
Weight kg	0.25	0.25	0.25
Version			
Part Number: Standard Sensor	7Z02933	7Z02932	7Z02938
Previous Model Part Number	PE-9: 7Z02877 PE9-F: 7Z02882		
StarLink Sensor: Direct USB link to PC (p. 75)		787152	
Note: (a) Calibrated curve is checked and adjusted at the following wavelengths (μm)	0.193, 0.355, 1.064, 1.48-1.6	0.193, 1.064, 0.355	0.193, 0.248, 0.355, 0.532, 1.064
For other wavelengths in the curve there is additional calibration error as stated.	240 - 800nm add ±4%, 2-3μm add ±8%, 10.6μm add ±15%		0.2-3μm ±2%, 10.6μm ±5%
Note: (b) For wavelengths below 600nm, derate damage threshold to 60% of given values. Below 300nm, derate to 40% of given values.			
Note: (c) For >7% of full scale, 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 available with Nova II, Vega, StarLite or Juno. For other 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 sensors with an additional adapter Ophir P/N 7Z02872 (see page 77). 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. The user threshold setting represents the approximate minimum energy for pulse widths below ~50% of the pulse width setting. For longer pulse widths, the actual minimum may be higher. For highest accuracy, it is recommended to zero the sensor against the meter the first time it is used with a particular meter. For further information, see the FAQs on our Website.			
Note: (d) A shock absorbing mounting post is available for situations in which sensor is mounted on a surface subject to shock or vibration. This can prevent false triggering and allow working at lower minimum energies (see accessory page 77 for mounting post).			
Note: (e) The 3000nm setting is calibrated for 10.6μm as well. To measure CO ₂ laser, set to the 3000nm setting. The additional error for measuring 10.6μm is ±5%.			
Note: (f) Add 3% to error for wavelengths >2μm.			
Note: (g) For PE9-C: with the Laserstar, Pulsar, USBI, Quasar and Nova/Orion with adapter only 2 of the 3 pulse width settings are available; the 1μs and 2μs settings.			

PE9-C



PE10-C / PE10BF-C



1.3.2 Pyroelectric Energy Sensors

8μJ to 10J

Features

- φ24mm 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
- New compact PE-C series



Model	PE25-C	PE25BF-C
Use	High rep rate	High damage threshold
Aperture mm	φ24	φ24
Absorber Type	metallic	BF
Spectral Range μm ^(a)	0.15 - 3	0.15 - 3, 10.6 ^(f)
Surface Reflectivity % approx.	50	20
Calibration Accuracy +/- % ^(a)	3	3
Max Pulse Width Setting ^(e)	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 2mJ 10J to 2mJ 10J to 2mJ
Lowest Measurable Energy μJ ^(c,d)	8 10 60 80 100	60 100 120 120 200
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 20 20 40
Additional Error with Frequency %	±2% to 5kHz ±4% to 10kHz ±1.5% ±2% to 750Hz ±1.5% to 400Hz ±1.5% to 80Hz	±1% ±1% ±1% ±1% ±2%
Linearity with Energy for >7% of full scale ^(c)	±1.5%	±2%
Damage Threshold J/cm² ^(b)		
<100ns	0.1	0.8
1μs	0.2	1
300μs	2	5
2ms	6	10
Maximum Average Power W ^(d)	15, 25 with optional heat sink	15, 25 with optional heat sink
Maximum Average Power Density W/cm²	20	20
Uniformity over surface	±2% over central 50% of aperture	±2% over central 50% of aperture
Fiber Adapters Available (see page 76)	ST, FC, SMA, SC	ST, FC, SMA, SC
Weight kg	0.25	0.25
Version		
Part Number: Standard Sensor	7Z02937	7Z02935
StarLink Sensor: Direct USB link to PC (p. 75)	787156	787154
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, 1064nm and 2940nm.
At other wavelengths, there may be an additional error up to the value given.	Max additional error at other wavelengths: ±2%.	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 available with Nova II, Vega, StarLite or Juno. For other 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 77). 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. The user threshold setting represents the approximate minimum energy for pulse widths below ~50% of the pulse width setting. For longer pulse widths, the actual minimum may be higher. For highest accuracy, it is recommended to zero the sensor against the meter the first time it is used with a particular meter. For further information, see the FAQs on our Website.

Note: (d) A shock absorbing mounting post is available for situations in which sensor is mounted on a surface subject to shock or vibration. This can prevent false triggering and allow working at lower minimum energies. Note however, that in this case the maximum average power will be reduced to 10W without heat sink and 20W with heat sink (see accessory pages 76-77 for heat sink and mounting post).

Note: (e) With the Laserstar, Pulsar, USBI Quasar and Nova or Orion with adapter only 2 of the 5 pulse width settings are available. For the PE-C models the 30μs and 1ms settings and for the PE-BF models the 1ms and 10ms settings.

Note: (f) The 3000nm setting is calibrated for 10.6μm as well. To measure CO₂ laser, set to the 3000nm setting. The additional error for measuring 10.6μm is ±5%.

* For sensors drawings please see page 71

1.3.2 Pyroelectric Energy Sensors

10μJ to 10J

Features

- φ46mm 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
- New compact PE-C series

PE50-C



PE50BF-C



Energy Sensor with optional heat sink



Model	PE50-C					PE50BF-C				
Use	High rep rate					High damage threshold				
Aperture mm	φ46					φ46				
Absorber Type	metallic					BF				
Spectral Range μm ^(a)	0.15 - 3					0.15 - 3, 10.6 ^(f)				
Surface Reflectivity % approx.	50					20				
Calibration Accuracy +/- % ^(a)	3					3				
Max Pulse Width Setting ^(e)	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,d)	10	10	60	80	100	120	300	600	600	600
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	30	60	100	100	100
Additional Error with Frequency %	±2% to 2kHz ±45% to 5kHz	±2%	±2% to 750Hz	±2% to 400Hz	±1% to 80Hz	±1%	±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					5				
2ms	6					10				
Maximum Average Power W ^(d)	15, 25 with optional heat sink					15, 25 with optional heat sink				
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 76)	ST, FC, SMA, SC					ST, FC, SMA, SC				
Weight kg	0.25					0.25				
Version										
Part Number: Standard Sensor	7Z02936					7Z02934				
StarLink Sensor: Direct USB link to PC (p. 75)	787155					787153				
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, 1064nm and 2940nm.				
At other wavelengths, there may be an additional error up to the value given.	Max additional error at other wavelengths: ±2%.					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 available with Nova II, Vega, StarLite or Juno. For other 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 77). 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. The user threshold setting represents the approximate minimum energy for pulse widths below ~50% of the pulse width setting. For longer pulse widths, the actual minimum may be higher. For highest accuracy, it is recommended to zero the sensor against the meter the first time it is used with a particular meter. For further information, see the FAQs on our Website.

Note: (d) A shock absorbing mounting post is available for situations in which sensor is mounted on a surface subject to shock or vibration. This can prevent false triggering and allow working at lower minimum energies. Note however, that in this case the maximum average power will be reduced to 10W without heat sink and 20W with heat sink (see accessory pages 76-77 for heat sink and mounting post).

Note: (e) With the Laserstar, Pulsar, USBi Quasar and Nova or Orion with adapter only 2 of the 5 pulse width settings are available. For the PE-C models the 30μs and 1ms settings and for the PE-BF models the 1ms and 10ms settings.

Note: (f) The 3000nm setting is calibrated for 10.6μm as well. To measure CO₂ laser, set to the 3000nm setting. The additional error for measuring 10.6μm is ±5%.

* For sensors drawings please see page 71

1.3.3 High Energy Pyroelectric Sensors

20μJ to 10J

Features

- Sensors with diffuser for high energies and high energy densities
- Metallic coating for high rep rates
- BF coating for highest damage threshold
- Wide spectral range. Measure YAG and harmonics and many more.
- Rep rates up to 10kHz
- Measure lasers with pulse widths up to 20ms

PE50-DIF-C



PE25BF-DIF-C



Model	PE50-DIF-C						PE25BF-DIF-C				
Use	High rep rate. Complete calibration curve						Complete calibration curve. High damage threshold				
Aperture mm	φ35						φ20				
Absorber Type	Metallic with diffuser						BF with diffuser				
Spectral Range μm ^(a)	0.19 - 3						0.19 - 2.2				
Surface Reflectivity % approx.	25						25				
Calibration Accuracy +/--% ^(a)	3						3				
Max Pulse Width Setting ^(e)	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 20mJ	10J to 20mJ	10J to 20mJ
Lowest Measurable Energy μJ ^(c,d)	20	20	100	120	200		100	150	200	200	300
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	1	2	20	20	40		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%	±1%	±1%	±1%	±2%
Linearity with Energy for >7% of full scale ^(c)	±1.5%						±2%				
Damage Threshold J/cm ² ^(b)											
<100ns	1						3				
1μs	2						5				
300μs	20						25				
2ms	40						50				
Maximum Average Power W ^(d)	20, 30 with optional heat sink						20, 30 with optional heat sink				
Maximum Average Power Density W/cm ²	100						120				
Uniformity over surface	±2.5% over central 20mm						±2.5% over central 10mm				
Weight kg	0.25						0.25				
Version											
Part Number: Standard Sensor	7Z02939						7Z02941				
StarLink Sensor: Direct USB link to PC (p. 75)	787157										
Notes: (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: 193nm, 248-266nm, 1064nm, 2100nm and 2940nm. Additional error at 193nm ±6%. Max additional error at other wavelengths not specified above: ±2%. 193nm reading may need 1min irradiation to stabilize.						Specified wavelengths: 193nm, 248-266nm, 355nm, 532nm, 1064nm and 2100nm. Additional error at 193nm ±6%. Max additional error at other wavelengths not specified above: ±3%. 193nm reading may need 1min irradiation to stabilize.				
Notes: (b)	For wavelengths >2μm, derate to 10% of above values. For beam size <=5mm. For 10mm beam, derate to 50% of above value.						For wavelengths below 600nm, derate to 60% of given values. For wavelengths below 240nm, derate to 1J/cm². For beam size <=5mm. For 10mm beam, derate to 50% of above values.				
Notes: (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 available with Nova II, Vega, StarLite or Juno. For other 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 77). 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. The user threshold setting represents the approximate minimum energy for pulse widths below ~50% of the pulse width setting. For longer pulse widths, the actual minimum may be higher. For highest accuracy, it is recommended to zero the sensor against the meter the first time it is used with a particular meter. For further information, see the FAQs on our Website.											
Notes: (d) A shock absorbing mounting post is available for situations in which sensor is mounted on a surface subject to shock or vibration. This can prevent false triggering and allow working at lower minimum energies. Note however, that in this case the maximum average power will be reduced to 13W without heat sink and 25W with heat sink (see accessory pages 76-77 for heat sink and mounting post).											
Notes: (e) With the Laserstar, Pulsar, USBi, Quasar and Nova/Orion with adapter only 2 of the 5 pulse width settings are available. For the PE-C models the 30μs and 1ms settings and for the PE-BF models the 1ms and 10ms settings.											

*For sensors drawings please see page 71

1.3.3 High Energy Pyroelectric Sensors

100μJ to 40J

Features

- Sensors with diffuser for high energies and high energy densities
- BF coating for highest damage threshold
- BB coating for spectral flatness
- Wide spectral range. Measure YAG and harmonics and many more.
- Rep rates up to 250Hz
- Measure lasers with pulse widths up to 20ms
- PE50BF-DIFH-C sensor - highest damage threshold

PE50BF-DIF-C / PE50BF-DIFH-C



PE50BB-DIF-C

DIFFUSER IN

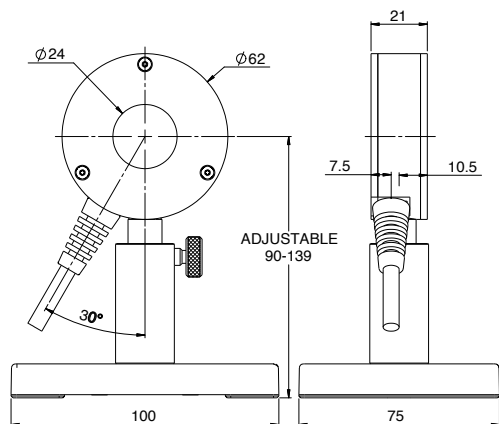
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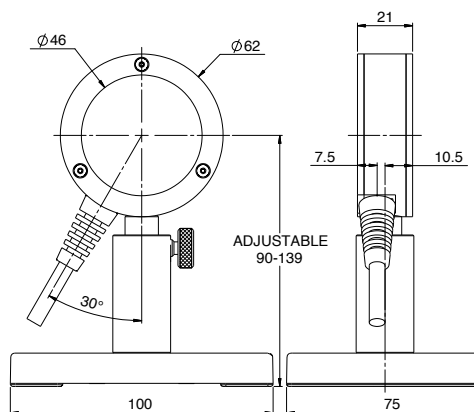
Model	PE50BF-DIF-C / PE50BF-DIFH-C					PE50BB-DIF-C					
Use	Complete calibration curve. Highest damage threshold					Removable diffuser. Spectrally flat					
Diffuser	Fixed					Diffuser out			Diffuser in		
Aperture mm	φ35					φ46			φ33		
Absorber Type	BF with diffuser					BB			BB with diffuser		
Spectral Range μm ^(a)	0.19 – 2.2, 2.94					0.19 – 20			0.4 – 2.5		
Surface Reflectivity % approx.	25					5			15		
Calibration Accuracy +/--% ^(a)	3					3			3		
Max Pulse Width Setting ^(e)	1ms	2ms	5ms	10ms	20ms	3ms	10ms	20ms	3ms	10ms	20ms
Energy Scales	10J to 2mJ	10J to 2mJ	10J to 20mJ	10J to 20mJ	10J to 20mJ	10J to 2mJ	10J to 20mJ	10J to 20mJ	40J to 8mJ	40J to 80mJ	40J to 80mJ
Lowest Measurable Energy mJ ^(c,d)	0.2	0.4	0.8	0.8	0.8	0.1	1	2	0.5	5	10
Max Pulse Width ms	1	2	5	10	20	3	10	20	3	10	20
Maximum Pulse Rate pps	250Hz	100Hz	50Hz	40Hz	20Hz	40Hz	10Hz	5Hz	40Hz	10Hz	5Hz
Noise on Lowest Range μJ	40	80	200	200	200	15	40	80	80	200	400
Additional Error with Frequency %	±1%	±1%	±1%	±2%	±2%	±2%	±2%	±2%	±2%	±2%	±2%
Linearity with Energy for >7% of full scale ^(c)	±2%					±2%					
Damage Threshold J/cm ² ^(b)	PE50BF-DIF-C		PE50BF-DIFH-C			Diffuser out			Diffuser in		
<100ns	4		6			0.3			3		
1μs	8		10			0.3			3		
300μs	30		30			1			10		
2ms	50		50			2			20		
Maximum Average Power W ^(d)	20, 30 with optional heat sink					10, 15 with optional heat sink			20, 40 with optional heat sink		
Maximum Average Power Density W/cm ²	200					10			500		
Uniformity over surface	±2.5% over central 20mm					±2% over 70% of diameter			±5% over central 20mm		
Weight kg	0.25					0.25					
Version											
Part Number: Standard Sensor	7Z02940		7Z02943			7Z02947 available Q2 2013					
Previous Model Part Number						7Z02866 till new model released					
StarLink Sensor: Direct USB link to PC (p. 75)	787158										
Notes: (a) Calibration curve is verified and adjusted at specified wavelengths.	Specified wavelengths: 193nm, 248-266nm, 355nm, 532nm, 1064nm, 2100nm and 2940nm.					Calibrated at 1064nm Max additional error at other wavelengths is ±2%			Calibrated at 1064nm, 532nm and 2100nm only		
At other wavelengths, there may be an additional error up to the value given.	Additional error at 193nm ±6%. Max additional error at other wavelengths not specified above: ±3%. 193nm reading may need 1min irradiation to stabilize.										
Notes: (b)	For wavelengths >2μm, derate to 10% of above values. For wavelengths below 600nm, derate to 60% of given values (for DIFH 50% of given values). For wavelengths below 240nm, derate to 1J/cm ² . For beam size <=5mm. For 10mm beam, derate to 50% of above values.										
Notes: (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 available with Nova II, Vega, StarLite or Juno. For other 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 77). 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. The user threshold setting represents the approximate minimum energy for pulse widths below ~50% of the pulse width setting. For longer pulse widths, the actual minimum may be higher. For highest accuracy, it is recommended to zero the sensor against the meter the first time it is used with a particular meter. For further information, see the FAQs on our Website.											
Notes: (d) A shock absorbing mounting post is available for situations in which sensor is mounted on a surface subject to shock or vibration. This can prevent false triggering and allow working at lower minimum energies. Note however, that in this case the maximum average power will be reduced to 13W without heat sink and 25W with heat sink (see accessory pages 76-77 for heat sink and mounting post).											
Notes: (e) With the Laserstar, Pulsar, USBi, Quasar and Nova/Orion with adapter only 2 of the pulse width settings are available. For the PE-BF models the 1ms and 10ms settings and for the PE-BB model the 3ms and 10ms settings.											

*For sensors drawings please see page 71

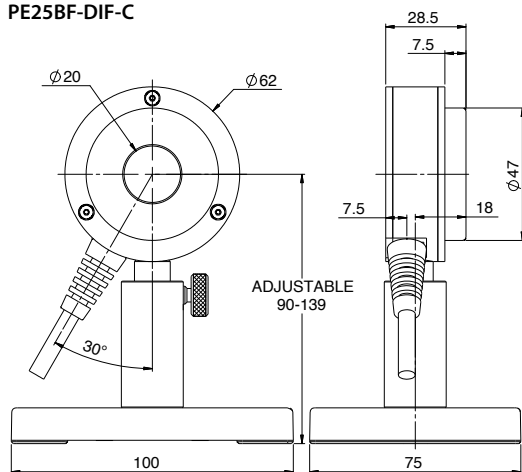
PE25-C / PE25BF-C



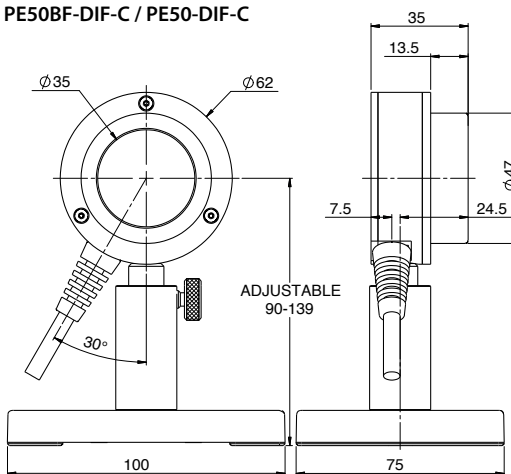
PE50-C / PE50BF-C



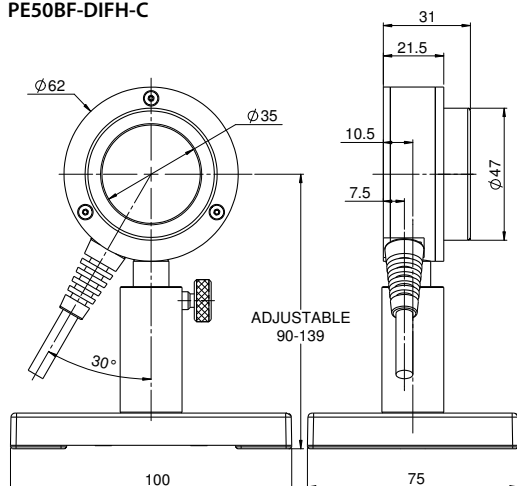
PE25BF-DIF-C



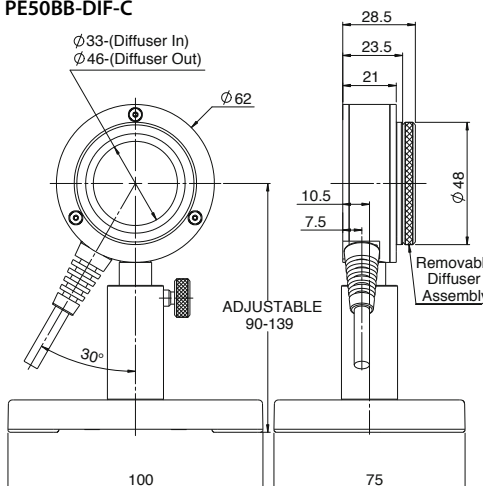
PE50BF-DIF-C / PE50-DIF-C



PE50BF-DIFH-C



PE50BB-DIF-C



1.3.3 High Energy Pyroelectric Sensors

10μJ to 40J

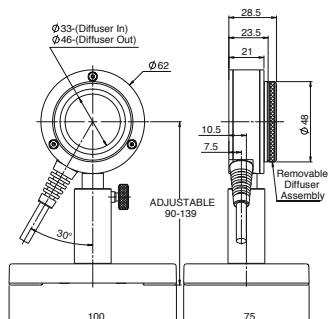
Features

- Removable diffusers
- PE50-DIF-ER-C mainly for NIR lasers
- PE100BF-DIF-C for very large beams
- Rep rates up to 10kHz
- Measure lasers with pulse widths up to 20ms



Model	PE50-DIF-ER-C										PE100BF-DIF-C									
Use	Mainly for 1064nm, 2.1μm and 2.94μm										Very large aperture									
Diffuser	Diffuser out					Diffuser in					Diffuser out					Diffuser in				
Aperture mm	φ46					φ33					φ96					φ85				
Absorber Type	Metallic					Metallic with diffuser					BF					BF with diffuser				
Spectral Range μm ^(a)	0.19 - 3					0.4 - 3					0.15 - 3					0.4 - 2.5				
Surface Reflectivity % approx.	50					50					20					50				
Calibration Accuracy +/--% ^(a)	3					3					3					3				
Max Pulse Width Setting ^(c)	2μs	30μs	500μs	1ms	5ms	2μs	30μs	500μs	1ms	5ms	1ms	2ms	5ms	10ms	20ms	1ms	2ms	5ms	10ms	20ms
Energy Scales	10J to 200μJ	10J to 200μJ	10J to 2mJ	10J to 2mJ	10J to 2mJ	30J to 600μJ	30J to 600μJ	30J to 6mJ	30J to 6mJ	30J to 6mJ	10J to 2mJ	10J to 2mJ	10J to 2mJ	10J to 2mJ	10J to 2mJ	40J to 40mJ	40J to 40mJ	40J to 40mJ	40J to 40mJ	40J to 40mJ
Lowest Measurable Energy mJ ^(b, d)	0.01	0.01	0.06	0.08	0.1	0.05	0.05	0.3	0.4	0.5	0.4	0.7	1.5	1.5	1.5	2	3	5	5	5
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	1	2	5	10	20
Maximum Pulse Rate pps	10kHz	5kHz	900Hz	450Hz	100Hz	10kHz	5kHz	900Hz	450Hz	100Hz	200	100	50	35	25	200	100	50	35	25
Noise on Lowest Range μJ	0.5	1	6	10	20	2.5	5	30	50	100	80	150	250	200	200	300	500	1000	600	600
Additional Error with Frequency %	±2% to 2kHz	±2% to 45%	±2%	±2%	±1% to 80Hz	±2% to 2kHz	±2% to 45%	±2%	±2% to 80Hz	±1% to 80Hz	±1%									
Linearity with Energy for > 10% of full scale ^(b)	±1.5%										±1%									
Damage Threshold J/cm ²																				
<100ns	0.1					1.5					0.8					3				
1μs	0.2					3					1					3				
300μs	2					40					5					10				
2ms	6					80					10					25				
Maximum Average Power W ^(d)	15, 25 with optional heat sink					30, 40 with optional heat sink					15					40				
Maximum Average Power Density W/cm ²	20					500					20					500				
Weight kg	0.3										1.2									
Version																				
Part Number	7Z02948 available Q2 2013										7Z02942									
Previous Model Part Number	7Z02867 till new model released										7Z02890									
Notes: (a)	Calibrated at 532nm and 1064nm only					Calibrated at 1064nm, 2100nm and 2940nm					Calibrated at 532nm and 1064nm only					Calibrated at 532nm, 1064nm and 1550nm only				
Notes: (b) 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 available with Nova II, Vega, StarLite or Juno. For other 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 77). 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. The user threshold setting represents the approximate minimum energy for pulse widths below ~50% of the pulse width setting. For longer pulse widths, the actual minimum may be higher. For highest accuracy, it is recommended to zero the sensor against the meter the first time it is used with a particular meter. For further information, see the FAQs on our Website.																				
Notes: (c) With the Laserstar, Pulsar, USBI, Quasar and Nova/Orion with adapter only 2 of the 5 pulse width settings are available. For the PE50-DIF-ER-C, the 30μs and 1ms settings and for the PE100BF-DIF-C, the 1ms and 10ms settings.																				
Notes: (d) A shock absorbing mounting post is available for situations in which sensor is mounted on a surface subject to shock or vibration. This can prevent false triggering and allow working at lower minimum energies. Note however, that in this case the maximum average power will be reduced to 13W without heat sink and 25W with heat sink (see accessory pages 76-77 for heat sink and mounting post). Not available for model PE100BF-DIF-C.																				

PE50-DIF-ER-C



PE100BF-DIF-C

