

## 1.2.2 Pyroelectric Energy Sensors

### 0.1μJ to 1mJ

#### Features

- Ø8mm aperture
- Repetition rates up to 20,000Hz
- High sensitivity sensors
- Pulse widths up to 20μs

PE9-C / PE9-ES-C



Model	PE9-C (b)			PE9-ES-C (b)		
Use	Very Sensitive			Most Sensitive		
Aperture mm	Ø8			Ø8		
Absorber Type	metallic			metallic		
Spectral Range μm (a)	0.15 - 12			0.15 - 12		
Surface Reflectivity % approx.	50			50		
Calibration Uncertainty ±% (a)	3			3		
Max Pulse Width Setting (d)	1μs	2μs	20μs	1μs	2μs	20μs
Energy Scales	1mJ to 2μJ	1mJ to 2μJ	1mJ to 20μJ	200μJ to 200nJ	200μJ to 200nJ	200μJ to 2μJ
Lowest Measurable Energy μJ (c)	0.5	0.2	0.5	0.1	0.1	0.1
Max Pulse Width μs	1	2	20	1	2	20
Maximum Pulse Rate pps	25kHz	15kHz	10kHz	20kHz	15kHz	10kHz
Noise on Lowest Range μJ	0.04	0.05	0.1	0.01	0.01	0.02
Additional Error with Frequency %	±1% to 15kHz, ±6% to 25kHz	±1% to 15kHz	±1% to 10kHz	±1.5% to 20kHz	±1.5% to 15kHz	±1.5% to 10kHz
Damage Threshold J/cm <sup>2</sup>						
<100ns	0.1			0.1		
1μs	0.2			0.2		
300μs	3			3		
Linearity with Energy (c)	±1%			±1.5%		
Maximum Average Power W	2			2		
Maximum Average Power Density W/cm <sup>2</sup>	30			30		
Fiber Adapters Available (see page 147)	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	7Z02933			7Z02949		
Note: (a) Calibrated curve is checked and adjusted at the following wavelengths (μm)	0.193, 0.355, 1.064, 1.48-1.6			0.355, 1.064, 1.48-1.6		
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%			240-800nm add ±4%, 2-3μm add ±8%, 10.6μm add ±15%.		
	In order to avoid measurement degradation at UV wavelengths extra care must be taken to protect sensor from contaminants			<240nm not calibrated		
				In order to avoid measurement degradation at UV wavelengths extra care must be taken to protect sensor from contaminants		

Note: (b) The PE9-C & PE9-ES-C sensors are not under ISO/IEC 17025:2017 accreditation.

Note: (c) With "user threshold" setting set to minimum. For >7% (>10% for PE9-ES-C) of full scale. For other settings, the spec is for >7%/>10% of full scale or greater than twice the "user threshold", whichever is greater. The user threshold is not available with LaserStar, Nova, 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 meter with an additional adapter Ophir P/N 7Z08272 (see page 148). 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 with adapter, only 2 out of 3 pulse widths settings are available; the 1μs (displayed as "10μs") and the 2μs (displayed as "20μs").

PE9-C / PE9-ES-C

