

# 1.2.1 Photodiode Energy Sensors

30pJ to 600nJ

### Features

- Germanium detectors
- Very sensitive - down to 30pJ
- Repetition rates to 10kHz
- Wide spectral range

PD10-IR-C /  
PD10-IR-pJ-C



Model	PD10-IR-C	PD10-IR-pJ-C		
Use	Infrared	Infrared, lowest energies		
Aperture mm	Ø5	Ø5		
Absorber Type	Ge photodiode	Ge photodiode		
Spectral Range $\mu\text{m}^{(a)}$	0.7 - 1.8	0.7 - 1.8		
Surface Reflectivity % approx.	30	30		
Calibration Uncertainty $\pm\%$ <sup>(a)</sup>	5	5		
Energy Scales	600nJ to 6nJ	20nJ to 200pJ		
Lowest Measurable Energy nJ <sup>(b)</sup>	1 at 1550nm	0.03 at 1550nm		
Max Pulse Width ms	0.005	0.005		
Maximum Pulse Rate pps	10kHz	10kHz		
Noise on Lowest Range nJ	0.2	0.01		
Additional Error with Frequency %	$\pm 1.5\%$ to 10kHz	$\pm 1.5\%$ to 10kHz		
Linearity with Energy for > 10% of full scale <sup>(b)</sup>	$\pm 1.5\%$	$\pm 1.5\%$		
Damage Threshold J/cm <sup>2</sup>	0.1	0.1		
Maximum Average Power mW	6	0.2		
Maximum Average Power Density W/cm <sup>2</sup>	50	5		
Maximum Energy vs. Wavelength	Wavelength	Max Energy	Wavelength	Max Energy
	800 - 900nm	600nJ	800 - 900nm	14nJ
	1000 - 1300nm	240nJ	1000 - 1300nm	7nJ
	1300 - 1400nm	200nJ	1300 - 1400nm	6.5nJ
	1480 - 1560nm	170nJ	1480 - 1560nm	6nJ
Fiber Adapters Available (see page 137)	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	7Z02955	7Z02946		
Note: (a) This is basic calibration accuracy. In certain wavelength regions calibration there is additional error as tabulated here.	<900nm add $\pm 2\%$ >1700nm add $\pm 2\%$	<900nm add $\pm 2\%$ >1700nm add $\pm 2\%$		

Note: (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 not available with LaserStar, Nova/Orion, Pulsar, USB1 and Quasar. For these meters, the threshold is set to minimum and the linearity spec is >10% of full scale. The PD-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.

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