

## 1.2.1 Photodiode Energy Sensors

10pJ to 15μJ

Features

- Silicon detectors
- Very sensitive - down to 10pJ
- Repetition rates to 20kHz
- Wide spectral range

PD10-C / PD10-pJ-C



Model	PD10-C		PD10-pJ-C	
Use	Low energies		Lowest energies	
Aperture mm	Ø10		Ø10	
Absorber Type	Si photodiode		Si photodiode	
Spectral Range μm <sup>(a)</sup>	0.19 - 1.1		0.2 - 1.1	
Surface Reflectivity % approx.	50		30	
Calibration Uncertainty ±% <sup>(a)</sup>	5		5	
Max Pulse Width Setting	2μs	5μs	2μs	5μs
Energy Scales	20μJ to 20nJ	20μJ to 20nJ	200nJ to 200pJ	200nJ to 200pJ
Lowest Measurable Energy nJ <sup>(b)</sup>	1 at 900nm	1 at 900nm	0.01 at 900nm	0.01 at 900nm
Max Pulse Width ms <sup>(c)</sup>	0.002	0.005	0.002	0.005
Maximum Pulse Rate pps	20kHz	20kHz <sup>(d)</sup>	20kHz	20kHz <sup>(f)</sup>
Noise on Lowest Range nJ	0.05	0.05	0.001	0.001
Additional Error with Frequency %	±1% to 10kHz ±1.5% to 20kHz	±1% to 20kHz <sup>(e)</sup>	±1% to 20kHz	±1% to 20kHz <sup>(g)</sup>
Linearity with Energy for > 10% of full scale <sup>(b)</sup>	±1.5%	±1.5%	±1.5%	±1.5%
Damage Threshold J/cm²	0.1	0.1	0.1	0.1
Maximum Average Power mW	50 at 800nm	50 at 800nm	0.5	0.5
Maximum Average Power Density W/cm²	50	50	5	5
Maximum Energy vs. Wavelength	Wavelength	Max Energy	Wavelength	Max Energy
	<300nm	5μJ	<300nm	13μJ
	350-550nm	2μJ	350-550nm	6μJ
	>800nm	1.1μJ	>800nm	3μJ
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	7Z02944		7Z02945	
Note: (a) This is basic calibration accuracy. In certain wavelength regions calibration there is additional error as tabulated here.	<250nm	add ±3% add ±2%	<250nm	add ±2% add ±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, USBI 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.				
Note: (c) With the LaserStar, Pulsar, USBI, Quasar and Nova/Orion with adapter, the pulse width settings are displayed as follows: 10μs (for 2μs setting) and 20μs (for 5μs setting).				
Note: (d) For energies up to 2μJ				
Note: (e) Additional Error with Frequency of ±1% only for energy scales up to 2μJ. For higher energies ±1% up to 5kHz, -6% at 10kHz.				
Note: (f) For energies up to 20nJ				
Note: (g) Additional Error with Frequency of ±1% only for energy scales up to 20nJ. For higher energies ±1% up to 5kHz, -6% at 10kHz.				

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