

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 ^(b)		PD10-pJ-C ^(b)					
Use	Low energies		Lowest energies					
Aperture mm	Ø10		Ø10					
Absorber Type	Si photodiode		Si photodiode					
Spectral Range μm ^(a)	0.19 - 1.1		0.2 - 1.1					
Surface Reflectivity % approx.	50		30					
Calibration Uncertainty ±% ^(a)	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 ^(c)	1 at 900nm	1 at 900nm	0.01 at 900nm	0.01 at 900nm				
Max Pulse Width ms ^(d)	0.002	0.005	0.002	0.005				
Maximum Pulse Rate pps	20kHz	20kHz ^(e)	20kHz	20kHz ^(g)				
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 ^(f)	±1% to 20kHz	±1% to 20kHz ^(h)				
Linearity with Energy for > 10% of full scale ^(c)	±1.5%		±1.5%					
Damage Threshold J/cm ²	0.1		0.1					
Maximum Average Power mW	50 at 800nm		0.5					
Maximum Average Power Density W/cm ²	50		5					
Maximum Energy vs. Wavelength	Wavelength	Max Energy	Wavelength	Max Energy	Wavelength	Max Energy	Wavelength	Max Energy
	<300nm	5μJ	<300nm	13μJ	<300nm	80nJ	<300nm	180nJ
	350-550nm	2μJ	350-550nm	6μJ	350-550nm	30nJ	350-550nm	70nJ
	>800nm	1.1μJ	>800nm	3μJ	>800nm	17nJ	>800nm	40nJ
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	7Z02944 (1.5m cable)		7Z02945					
Sensor with different cable length	7Z02944C (10m cable)							
Note: (a) This is basic calibration accuracy. In certain wavelength regions calibration there is additional error as tabulated here.	<250nm	add ±3%	>950nm	add ±2%	<250nm	add ±2%	>950nm	add ±2%

Note: (b) The PD10-C & PD10-pJ-C sensors are not under ISO/IEC 17025:2017 accreditation.

Note: (c) 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 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, the pulse width settings are displayed as follows: 10μs (for 2μs setting) and 20μs (for 5μs setting).

Note: (e) For energies up to 2μJ

Note: (f) Additional Error with Frequency of ±1% only for energy scales up to 2μJ. For higher energies ±1% up to 5kHz, -6% at 10kHz.

Note: (g) For energies up to 20nJ

Note: (h) 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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