Femtowatt Photoreceiver with Si Photodiode

The photoreceiver will be delivered without post holder and post.

Features	• **Si photodiode, 1.1 x 1.1 mm² active area** • **Ultra low noise, NEP 0.7 fW/√Hz** • **Amplifier transimpedance gain 1 x 10^{12} V/A** • **Max. conversion gain 0.6 x 10^{12} V/W @ 960 nm** • **Wavelength range 320 … 1100 nm**		
Applications	• **Fluorescence measurements** • **Spectroscopy** • **Electrophoresis** • **Replacement for photomultiplier tubes (PMTs) and avalanche photodiodes (APDs)**		
Specifications	Test conditions	$V_S = \pm 15$ V, $T_A = 25$°C Warm-up 20 minutes (min. 10 minutes recommended)	
Gain	Amplifier transimpedance	1.0 x 10^{12} V/A	(@ ≥ 100 kΩ load)
	Max. conversion gain	0.6 x 10^{12} V/W	(@ 960 nm)
Frequency Response	Lower cut-off frequency	DC	
	Upper cut-off frequency (–3 dB)	20 Hz	(±20 %)
	Rise/fall time (10 % - 90 %)	18 ms	(±20 %)
Detector	Detector material	Si photodiode	
	Active area	1.1 x 1.1 mm²	
	Spectral response	320 … 1100 nm	
Input	Optical saturation power	18 pW (for linear amplification, @ 960 nm)	
	NEP	0.7 fW/√Hz	(@ 960 nm, 1 Hz)

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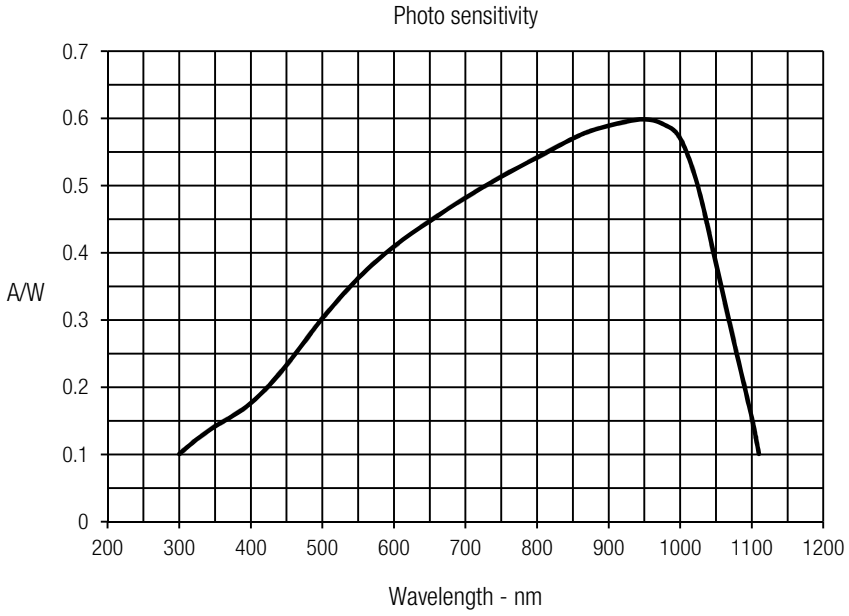
Specifications (continued)

Output	Output voltage range	±10 V	(@ ≥ 100 kΩ load)
	Output impedance	50 Ω	(designed for ≥ 100 kΩ load)
	Offset voltage	0 V, adjustable by offset potentiometer within ±1.6 V	
	Max. output current	±25 mA	
	Output noise	ca. 40 mV_{PP} or 6 mV_{RMS} (@ ≥ 100 kΩ load, no signal on detector)	
Power Supply	Supply voltage	±15 V	
	Supply current	±15 mA typ. (depends on operating conditions, recommended power supply capability min. ±50 mA)	
Case	Weight	190 g (0.42 lbs)	
	Material	AlMg3/4.5Mn, nickel-plated	
Temperature Range	Storage temperature	–40 … +100 °C	
	Operating temperature	0 … +60 °C	

Absolute Maximum Ratings	Optical input power	10 mW
	Power supply voltage	±22 V

Spectral Response



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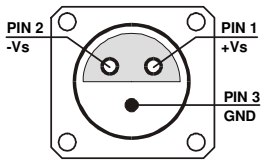
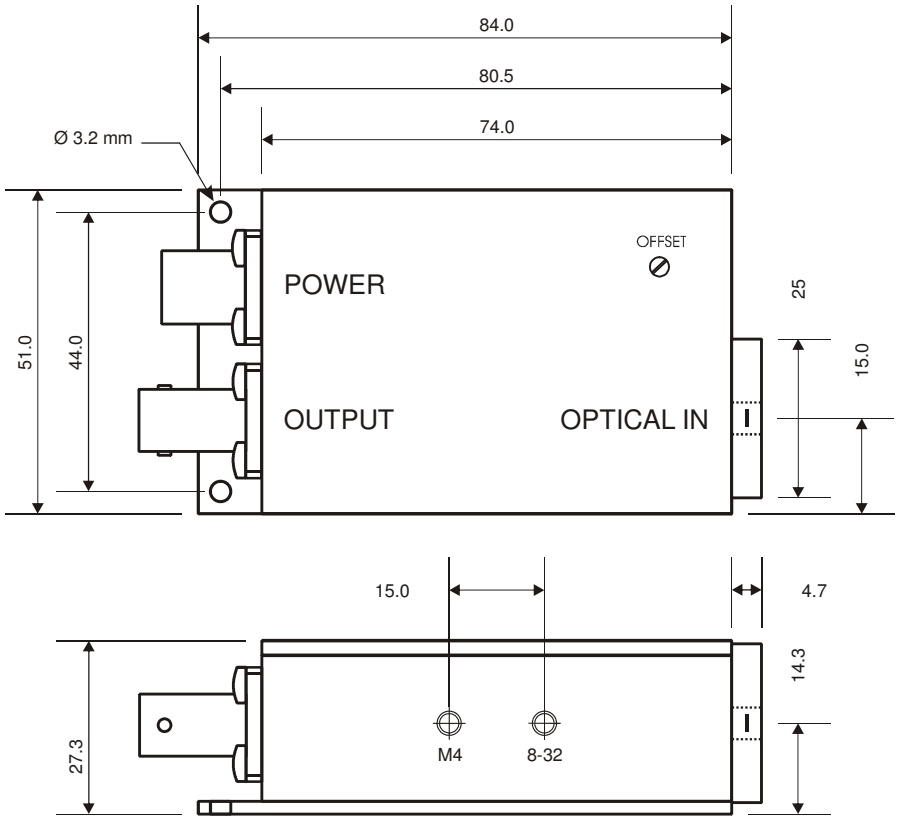
Connectors	Input	25 mm round flange for free space applications (fiber optic input available as customized unit)
	Output	BNC jack (female)
	Power Supply	Lemo® series 1S, 3-pin fixed socket (Mating plug type: FFA.1S.303.CLAC52) Pin 1: +15V Pin 2: –15V Pin 3: GND



Available Models	FWPR-20-SI-FS	Free space input
	FWPR-S	Customized version available on request

Dimensions



all measures in mm unless otherwise noted

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