

Femtowatt Photoreceiver with InGaAs PIN Photodiode



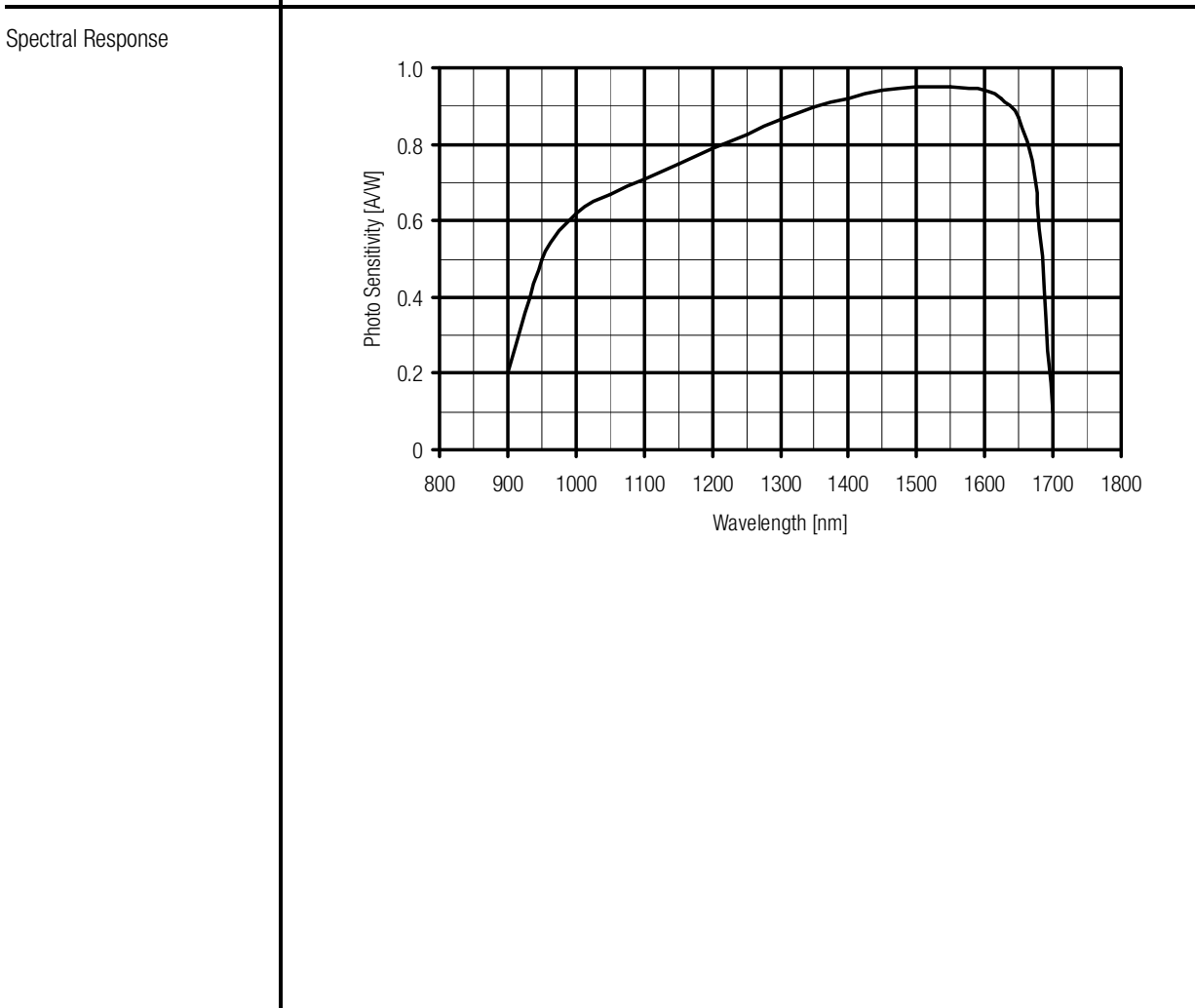
The photoreceiver will be delivered without post holder and post.

<p>Features</p>	<ul style="list-style-type: none"> • InGaAs PIN Photodiode, 0.5 mm Active Diameter • Ultra Low Noise, Minimum NEP 7.5 fW/√Hz • Amplifier Transimpedance Gain 1×10^{11} V/A • Max. Conversion Gain 0.95×10^{11} V/W @ 1550 nm • Wavelength Range 900 ... 1700 nm 																																				
<p>Applications</p>	<ul style="list-style-type: none"> • Fluorescence Measurements • NIR Spectroscopy • Electrophoresis • Replacement for (Liquid Nitrogen) Cooled Ge Photodiodes and Avalanche Photodiodes (APDs) 																																				
<p>Specifications</p>	<p><i>Test Conditions</i> $V_s = \pm 15$ V, $T_a = 25^\circ$C <i>Warm-up 20 minutes (min. 10 minutes recommended)</i></p> <table border="0" style="width: 100%;"> <tr> <td style="width: 20%;">Gain</td> <td style="width: 40%;">Transimpedance</td> <td style="width: 40%; text-align: right;">1.0×10^{11} V/A</td> <td style="width: 10%;">(@ ≥ 1 MΩ load)</td> </tr> <tr> <td></td> <td>Max. Conversion Gain</td> <td style="text-align: right;">0.95×10^{11} V/W</td> <td>(@ 1550 nm)</td> </tr> <tr> <td rowspan="3">Frequency Response</td> <td>Lower Cut-Off Frequency</td> <td colspan="2">DC</td> </tr> <tr> <td>Upper Cut-Off Frequency (- 3 dB)</td> <td colspan="2">20 Hz</td> </tr> <tr> <td>Rise/Fall Time (10% - 90%)</td> <td colspan="2">18 ms</td> </tr> <tr> <td rowspan="3">Detector</td> <td>Detector Material</td> <td colspan="2">InGaAs PIN Photodiode</td> </tr> <tr> <td>Active Area</td> <td colspan="2">\varnothing 0.5 mm</td> </tr> <tr> <td>Spectral Response</td> <td colspan="2">900 ... 1700 nm</td> </tr> <tr> <td rowspan="2">Input</td> <td>Optical Saturation Power</td> <td colspan="2">110 pW (for linear amplification, @ 1550 nm)</td> </tr> <tr> <td>Min. NEP</td> <td style="text-align: right;">7.5 fW/√Hz</td> <td>(@ 1550 nm, 1 Hz)</td> </tr> </table>		Gain	Transimpedance	1.0×10^{11} V/A	(@ ≥ 1 M Ω load)		Max. Conversion Gain	0.95×10^{11} V/W	(@ 1550 nm)	Frequency Response	Lower Cut-Off Frequency	DC		Upper Cut-Off Frequency (- 3 dB)	20 Hz		Rise/Fall Time (10% - 90%)	18 ms		Detector	Detector Material	InGaAs PIN Photodiode		Active Area	\varnothing 0.5 mm		Spectral Response	900 ... 1700 nm		Input	Optical Saturation Power	110 pW (for linear amplification, @ 1550 nm)		Min. NEP	7.5 fW/√Hz	(@ 1550 nm, 1 Hz)
Gain	Transimpedance	1.0×10^{11} V/A	(@ ≥ 1 M Ω load)																																		
	Max. Conversion Gain	0.95×10^{11} V/W	(@ 1550 nm)																																		
Frequency Response	Lower Cut-Off Frequency	DC																																			
	Upper Cut-Off Frequency (- 3 dB)	20 Hz																																			
	Rise/Fall Time (10% - 90%)	18 ms																																			
Detector	Detector Material	InGaAs PIN Photodiode																																			
	Active Area	\varnothing 0.5 mm																																			
	Spectral Response	900 ... 1700 nm																																			
Input	Optical Saturation Power	110 pW (for linear amplification, @ 1550 nm)																																			
	Min. NEP	7.5 fW/√Hz	(@ 1550 nm, 1 Hz)																																		

Femtowatt Photoreceiver with InGaAs PIN Photodiode

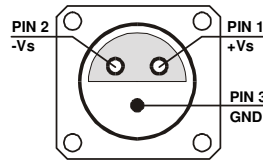
Specifications (continued)	
Output	Output Voltage Range $\pm 10\text{ V}$ ($@ \geq 1\text{ M}\Omega$ load) Output Impedance $50\ \Omega$ (designed for $\geq 1\text{ M}\Omega$ load) Offset Voltage 0 V, adjustable by offset trimpot within $\pm 1.6\text{ V}$ Max. Output Current $\pm 25\text{ mA}$ Output Noise ca. 20 mV peak-peak or 3 mV rms ($@ \geq 1\text{ M}\Omega$ load, no signal on detector)
Power Supply	Supply Voltage $\pm 15\text{ V}$ Supply Current $\pm 15\text{ mA}$ typ. (depends on operating conditions, recommended power supply capability minimum $\pm 50\text{ mA}$)
Case	Weight 190 g (0.42 lbs) Material AlMg4.5Mn, 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 $\pm 22\text{ V}$
--------------------------	--



Femtowatt Photoreceiver with InGaAs PIN Photodiode

Connectors	Input	25 mm round flange for free space applications (fiber optic input available as customized unit)
	Output	BNC
	Power Supply	LEMO series 1S, 3-pin fixed socket Pin 1: + 15V Pin 2: - 15V Pin 3: GND



Available Models	FWPR-20-IN-FS FWPR-S	free space input customized version available on request
------------------	-------------------------	---

Dimensions	<p style="text-align: right;">all measures in mm unless otherwise noted DZ-HCA-S-FS_R2</p>	
------------	---	--

FEMTO Messtechnik GmbH
 Klosterstr. 64
 10179 Berlin · Germany
 Tel.: +49-(0)30-280 4711-0
 Fax: +49-(0)30-280 4711-11
 e-mail: info@femto.de
 http://www.femto.de

Specifications are subject to change without notice. Information furnished herein is believed to be accurate and reliable. However, no responsibility is assumed by FEMTO Messtechnik GmbH for its use, nor for any infringement of patents or other rights granted by implication or otherwise under any patent rights of FEMTO Messtechnik GmbH. Product names mentioned may also be trademarks used here for identification purposes only.
 © by FEMTO Messtechnik GmbH
 Printed in Germany