

Low Noise 400 kHz Photoreceiver with InGaAs PIN Photodiode



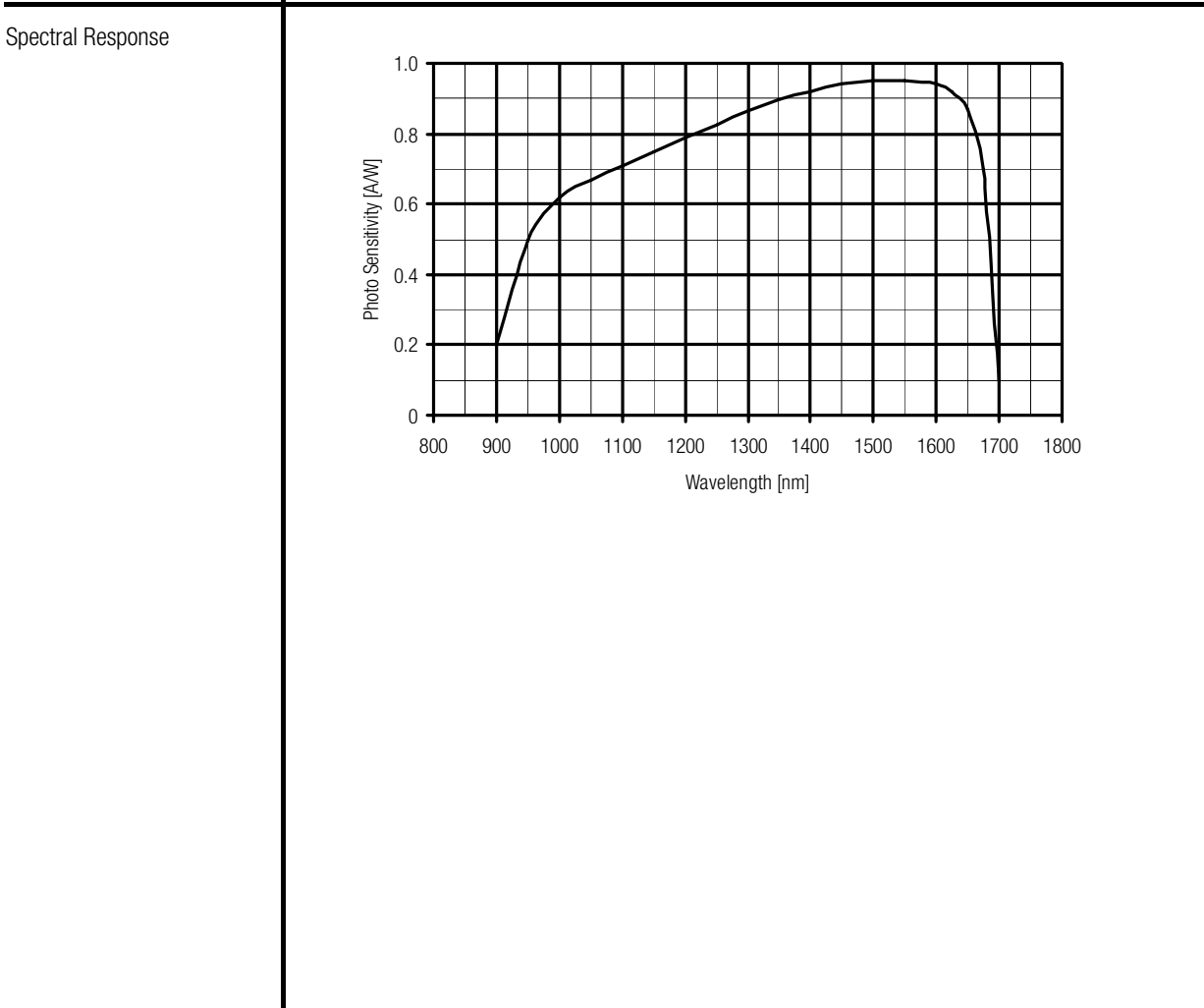
The photoreceiver will be delivered without post holder and post

Features	<ul style="list-style-type: none"> InGaAs PIN Detector, 0.5 mm Active Diameter Spectral Range 900 ... 1700 nm Amplifier Transimpedance (Gain) 1.0×10^7 V/A Max. Conversion Gain 9.5×10^6 V/W @ 1550 nm Bandwidth DC ... 400 kHz 																																																				
Applications	<ul style="list-style-type: none"> Spectroscopy General Purpose Opto-Electronic Measurements Optical Front-End for Oscilloscopes, A/D Converters and Lock-In Amplifiers 																																																				
Specifications	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;"></td> <td style="text-align: center;"><i>Test Conditions</i></td> <td style="text-align: center;"><i>Vs = ± 15 V, Ta = 25°C</i></td> <td></td> </tr> <tr> <td style="padding: 5px;">Gain</td> <td style="padding: 5px;">Transimpedance</td> <td style="padding: 5px;">1.0×10^7 V/A</td> <td style="padding: 5px;">(@ ≥ 1 MΩ load)</td> </tr> <tr> <td></td> <td style="padding: 5px;">Max. Conversion Gain</td> <td style="padding: 5px;">9.5×10^6 V/W</td> <td style="padding: 5px;">(@ 1550 nm)</td> </tr> <tr> <td style="padding: 5px;">Frequency Response</td> <td style="padding: 5px;">Lower Cut-Off Frequency</td> <td style="padding: 5px;">DC</td> <td></td> </tr> <tr> <td></td> <td style="padding: 5px;">Upper Cut-Off Frequency (- 3 dB)</td> <td style="padding: 5px;">400 kHz</td> <td></td> </tr> <tr> <td></td> <td style="padding: 5px;">Rise/Fall Time (10% - 90%)</td> <td style="padding: 5px;">1 μs</td> <td></td> </tr> <tr> <td></td> <td style="padding: 5px;">Gain Flatness</td> <td style="padding: 5px;">± 0.5 dB</td> <td></td> </tr> <tr> <td style="padding: 5px;">Detector</td> <td style="padding: 5px;">Detector Material</td> <td colspan="2" style="padding: 5px;">InGaAs PIN photodiode</td> </tr> <tr> <td></td> <td style="padding: 5px;">Active Area</td> <td colspan="2" style="padding: 5px;">Ø 0.5 mm</td> </tr> <tr> <td></td> <td style="padding: 5px;">Spectral Response</td> <td colspan="2" style="padding: 5px;">900 ... 1700 nm</td> </tr> <tr> <td style="padding: 5px;">Input</td> <td style="padding: 5px;">Input Offset Compensation Range</td> <td colspan="2" style="padding: 5px;">± 300 nA, adjustable by offset trimpot</td> </tr> <tr> <td></td> <td style="padding: 5px;">Optical Saturation Power</td> <td colspan="2" style="padding: 5px;">1 μW (for linear amplification, @ 1550 nm)</td> </tr> <tr> <td></td> <td style="padding: 5px;">Min. NEP</td> <td style="padding: 5px;">$75 \text{ fW}/\sqrt{\text{Hz}}$</td> <td style="padding: 5px;">(@ 1550 nm, 10 kHz)</td> </tr> </table>		<i>Test Conditions</i>	<i>Vs = ± 15 V, Ta = 25°C</i>		Gain	Transimpedance	1.0×10^7 V/A	(@ ≥ 1 MΩ load)		Max. Conversion Gain	9.5×10^6 V/W	(@ 1550 nm)	Frequency Response	Lower Cut-Off Frequency	DC			Upper Cut-Off Frequency (- 3 dB)	400 kHz			Rise/Fall Time (10% - 90%)	1 μs			Gain Flatness	± 0.5 dB		Detector	Detector Material	InGaAs PIN photodiode			Active Area	Ø 0.5 mm			Spectral Response	900 ... 1700 nm		Input	Input Offset Compensation Range	± 300 nA, adjustable by offset trimpot			Optical Saturation Power	1 μW (for linear amplification, @ 1550 nm)			Min. NEP	$75 \text{ fW}/\sqrt{\text{Hz}}$	(@ 1550 nm, 10 kHz)
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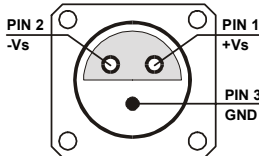
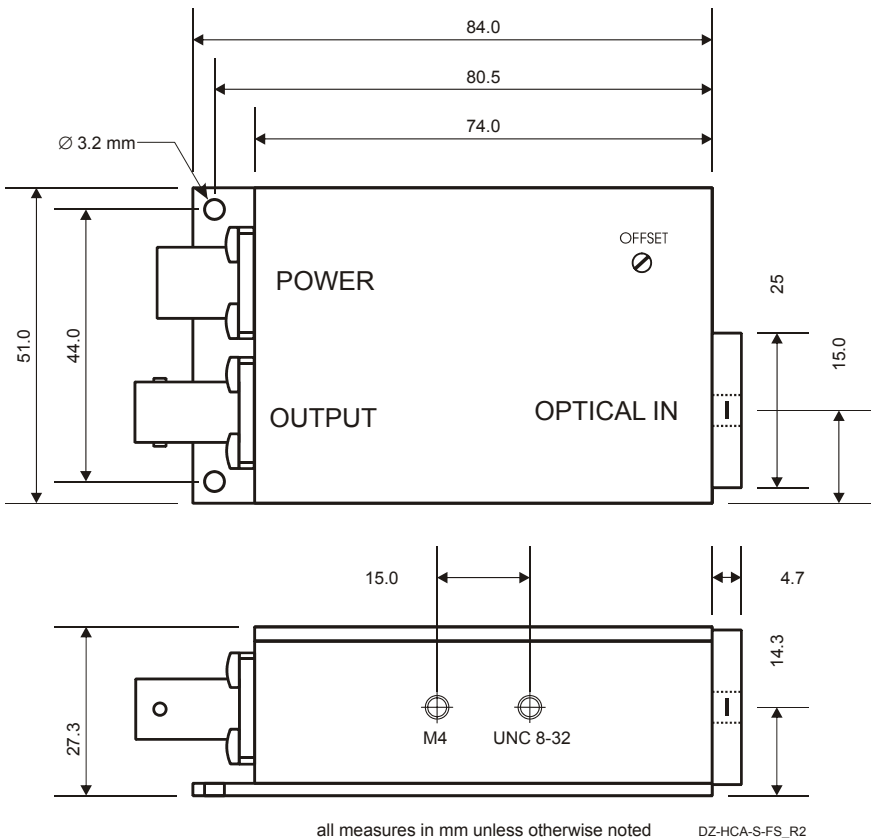
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Specifications (continued)	
Output	Output Voltage Range $\pm 10\text{ V}$ (@ $\geq 1\text{ M}\Omega$ load) Max. Output Current $\pm 30\text{ mA}$ Output Impedance $50\ \Omega$ (designed for $\geq 1\text{ M}\Omega$ load) Output Noise ca. 12 mV peak-peak or 2 mV rms (@ $\geq 1\text{ M}\Omega$ load, no signal on detector)
Power Supply	Supply Voltage $\pm 15\text{ V}$ Supply Current $\pm 40\text{ mA}$ typ. (depends on operating conditions, recommended power supply capability minimum $\pm 150\text{ mA}$)
Case	Weight 210 g (0.5 lbs) Material AlMg4.5Mn, nickel-plated
Temperature Range	Storage Temperature $- 40 \dots + 100\text{ }^\circ\text{C}$ Operating Temperature $0 \dots + 60\text{ }^\circ\text{C}$

Absolute Maximum Ratings	Optical Input Power 10 mW Power Supply Voltage $\pm 22\text{ V}$
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Connectors	<p>Input 25 mm round flange for free space applications (fiber optic input available as customized unit)</p> <p>Output BNC</p> <p>Power Supply LEMO series 1S, 3-pin fixed socket Pin 1: + 15V Pin 2: - 15V Pin 3: GND</p> 
Available Models	<p>LCA-S-400K-IN-FS free space input</p> <p>LCA-S customized version available on request</p>
Dimensions	 <p>all measures in mm unless otherwise noted DZ-HCA-S-FS_R2</p>

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