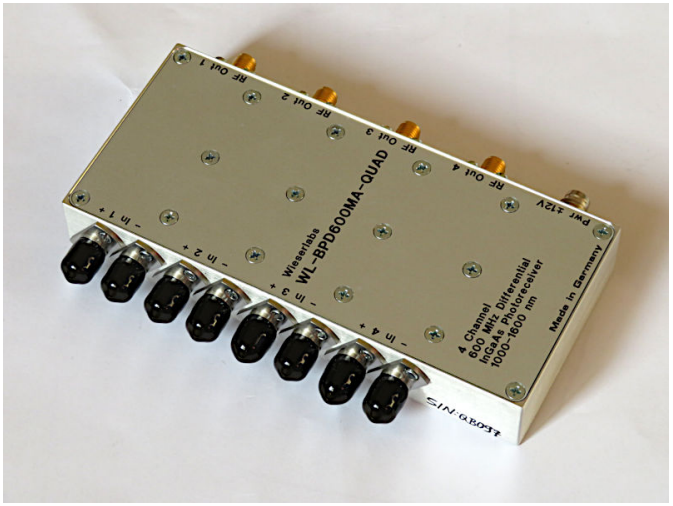
WL-BPD600MA-QUAD

(Rev. 2e, 07/2025)

600 MHz Dual-Balanced InGaAs Low Noise Photodetector

Features

- High transimpedance gain: 5 000 V/W
- 4 differential channels in one package
- Low noise: below -130 dBm/Hz
- NEP: 20 $\mathrm{pW}/\sqrt{\mathrm{Hz}}$ typ.
- 650 MHz bandwidth
- AC coupled; low cutoff below 30 kHz (30 kHz to 5 MHz on request)
- Wavelength range: 1000 nm to 1650 nm
- Fiber Coupled: FC receptables
- Output: 50 Ω SMA plug



Typical Application

- Interferometry
- High speed Swept-Source OCT imaging
- Balanced (differential) detection

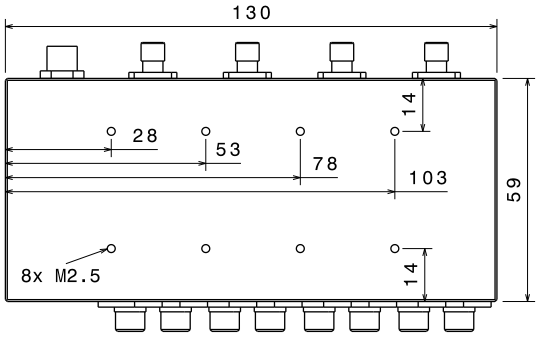
General Description

The WL-BPD600MA-QUAD is an AC-coupled high-speed dual-balanced (differential) InGaAs photoreceiver. The device features 4 independent differential channels in one space-saving package.

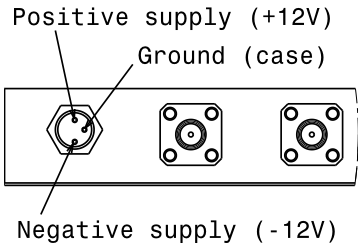
The WL-BPD600MA-QUAD comes in a rugged aluminum case with 8 FC fiber receptables and four 50 Ω SMA outputs. It operates from a dual 11–15 V DC supply.

Mechanical Properties

- Fiber coupling: FC PC/APC receptables
- RF output: SMA (female)
- Supply voltage: 3-pin M8 connector
- Small form factor: 130×59×20 mm (weight: 310 g)
- Mounting: 8x M2.5 threaded holes on bottom (screw length 4 mm)



Electrical Connectors



Male 3-pin supply connector with external M8 thread (front view). The case is electrically connected to ground. Do not hot plug the power cable.

The supplied cable has the following color scheme:
brown (positive), black (ground), blue (negative)

The device features a reverse polarity protection. Example M8 part numbers:
Connector: ELST 3308 RV FM 805, 0830 03 T8CW 0,5M
Cable: 0800 03 300 2M, PXPPVC08RAF03ACL010PVC, 21348081388015, 1095921

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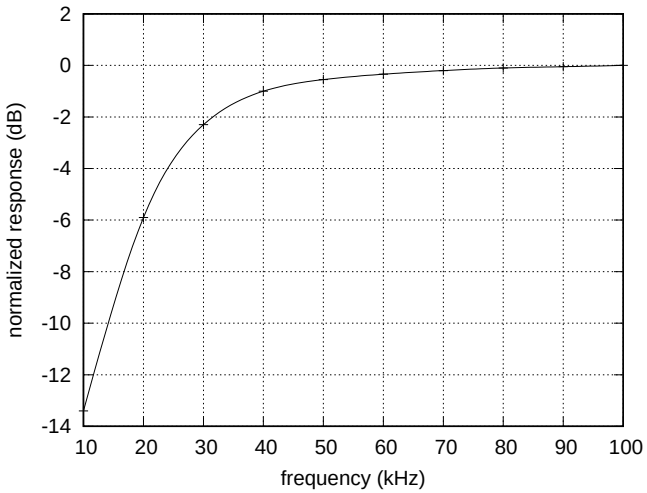
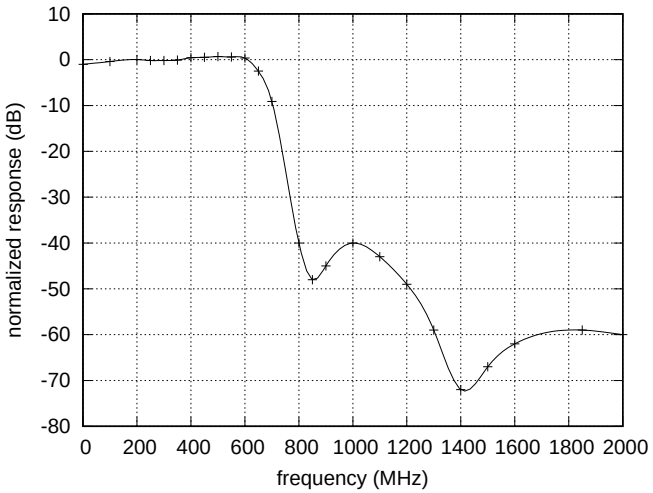
Specifications

Parameter	Conditions	Min	Typ	Max	Units
DC Characteristics					
Positive Supply Voltage ($+V_S$)		11	12	15	V
Positive Supply Current			320		mA
Negative Supply Voltage ($-V_S$)		-11	-12	-15	V
Negative Supply Current	(dominated by photocurrent)		5	50	mA
AC Characteristics					
3dB Bandwidth		600	650	670	MHz
AC Low Frequency Cutoff			26	30	kHz
Output IP3			31		dBm
Noise Spectral Density	1 MHz – 800 MHz		-130	-125	dBm/Hz
	$>$ 800 MHz			-150	dBm/Hz
Noise Equivalent Power (NEP)	1 MHz – 650 MHz, 1550 nm		20	35	$\mathrm{pW}/\sqrt{\mathrm{Hz}}$
Channel-to-channel crosstalk	$<$ 400 MHz			-80	dB
	$>$ 400 MHz			-70	dB
Output Impedance			50		Ω
Optical Characteristics					
Input Wavelength Range		1000		1650	nm
Transimpedance Gain	wavelength 1550 nm		5 000		$\mathrm{V/W}_{optic}$
	wavelength 1310 nm		4 600		$\mathrm{V/W}_{optic}$
Common Mode Rejection Ratio		25	30		dB
Maximum Input Power	(damage threshold)	10			mW
Environmental Characteristics					
Operating Temperature Range[1]	non-condensing	-20		$+80$	°C
Storage Temperature Range	non-condensing	-20		$+120$	°C

Typical Performance Characteristics

Frequency response: RF output power versus frequency





Test conditions: Light input 100 μW at 1550 nm, modulated via EOM.

[1] Test show operation up to 120°C ambient temperature for multiple days without failure, contact us for more information.