

**Low-Noise Photoreceiver
Fixed-Gain Mini-Module**

Features

- Compact 40 x 42 x 6 mm
- High Gain
- Low Noise

Applications

- Low Level Light Detection
- Spectroscopy
- Fluorescence Measurement

The A130X Series are state-of-the-art low-noise transimpedance amplifier modules with integrated photodiode. They provide simple and economic detection of low level visible and infrared light.

A Silicon- or InGaAs-Photodiode can be selected as the detector. Due to their small footprint these modules can be mounted easily into complex optical assemblies. Optical Input is Free Space.

Model	A1301-SI	A1302-SI	A1303-SI	A1304-SI	A1305-SI
Transimpedance Gain ±2%	10 ⁷ V/A	10 ⁸ V/A	10 ⁹ V/A	10 ¹⁰ V/A	10 ¹¹ V/A
Bandwidth ±10%	DC – 500 kHz	DC – 50 kHz	DC – 5 kHz	DC – 400 Hz	DC – 40 Hz
Spectral Range [nm]	320 to 1060	320 to 1060	320 to 1060	320 to 1100	320 to 1100
Max. Conversion Gain	6.4 x 10 ⁶ V/W @ 900 nm	6.4 x 10 ⁷ V/W @ 900 nm	6.4 x 10 ⁸ V/W @ 900 nm	6.0 x 10 ⁹ V/W @ 960 nm	6.0 x 10 ¹⁰ V/W @ 960 nm
Min. NEP (typ.)	100 fW/√Hz @10 kHz	40 fW/√Hz @1 kHz	12 fW/√Hz @200 Hz	4 fW/√Hz @40 Hz	1.5 fW/√Hz @10 Hz
Active Area	∅ 1.2 mm	∅ 1.2 mm	∅ 1.2 mm	1.1 x 1.1 mm ²	1.1 x 1.1 mm ²

Model	A1301-IN	A1302-IN	A1303-IN	A1304-IN	A1305-IN
Transimpedance Gain ±2%	10 ⁷ V/A	10 ⁸ V/A	10 ⁹ V/A	10 ¹⁰ V/A	10 ¹¹ V/A
Bandwidth ±10%	DC – 500 kHz	DC – 50 kHz	DC – 5 kHz	DC – 400 Hz	DC – 40 Hz
Spectral Range [nm]	900 to 1700	900 to 1700	900 to 1700	900 to 1700	900 to 1700
Max. Conversion Gain	9 x 10 ⁶ V/W @ 1550 nm	9 x 10 ⁷ V/W @ 1550 nm	9 x 10 ⁸ V/W @ 1550 nm	9 x 10 ⁹ V/W @ 1550 nm	9 x 10 ¹⁰ V/W @ 1550 nm
Min. NEP (typ.)	70 fW/√Hz @10 kHz	25 fW/√Hz @1 kHz	11 fW/√Hz @200 Hz	9 fW/√Hz @40 Hz	8 fW/√Hz @10 Hz
Active Area	∅ 0.5 mm	∅ 0.5 mm	∅ 0.5 mm	∅ 0.5 mm	∅ 0.5 mm

Common Characteristics	
Nonlinearity	< 0.1% (A1305 < 1%)
Output Voltage Range	± 10 V (>10 kΩ Load)
Output Impedance	50 Ω
Max. Output Current	± 10 mA
Power Supply Voltage	± 15 V
Power Supply Current	± 30 mA typ.
Shield	Tin-Plated Steel
Weight	17 g
Storage Temperature	-20 .. +80 °C
Operating Temperature	10 .. 50 °C

All characteristics are for ±15 V power supply and 25 °C ambient temperature.

Absolute Maximum Ratings	
Optical Input Power	10 mW
Power Supply Voltage	± 20 V

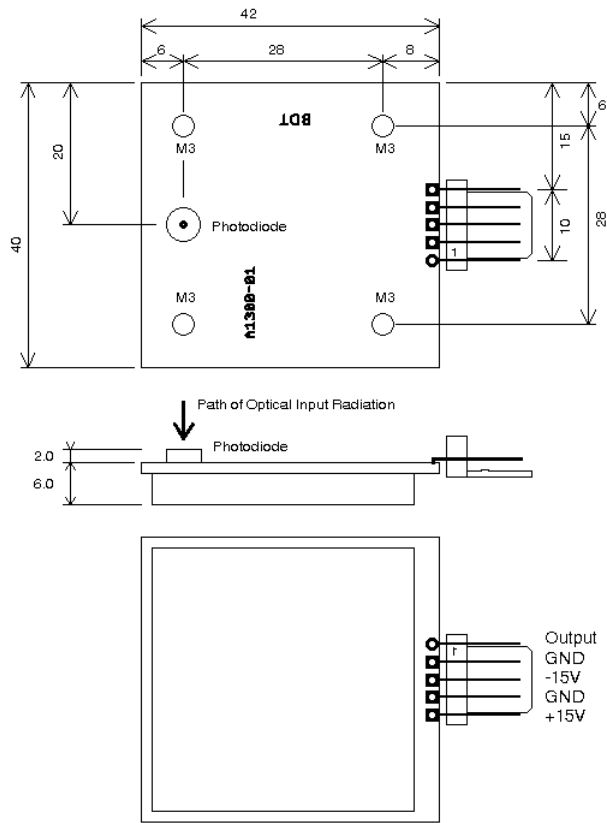
Ordering Information		
Ordering Code: A130X-Y-Z		
X = Gain:	Y = Detector:	Z = Output and Supply Configuration:
1 = 10 ⁷ V/A	SI = Silicon Photodiode	S = 5 Pin Header
2 = 10 ⁸ V/A	IN = InGaAs Photodiode	N = Without Connector, open solder pads
3 = 10 ⁹ V/A		
4 = 10 ¹⁰ V/A		
5 = 10 ¹¹ V/A		

Ordering Code Example:

A1303-SI-N = Gain 10⁹ V/A, Input with Silicon Photodiode, Output and Supply with open solder pads

Connections	
Input	Free Space Optical In
Output and Power Supply	5 Pin Header (2.54 mm Pitch): Pin 1 = Output Pin 2 = Ground Pin 3 = -15V Negative Supply Pin 4 = Ground Pin 5 = +15V Positive Supply

Dimensions



A130X Series Dimensions are in mm

The module can be fastened by means of four M3 threads. Do not drive the screws in more than 4 mm, otherwise mechanical damage may occur.

The output header 5 pin 2.54 mm pitch with friction lock is Molex KK compatible.