

Fiber Optical Detector Array

(8, 12, 24 channels, on amplifier PCB option)



DATASHEET

[Return to the Webpage](#)



Features

- Low Dark Current
- Ease PCB Mount
- Wide Wavelength
- High Stability

Applications

- WDM Channel Monitor
- System Monitor
- Sensor



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Rev 04/13/26

The Integrated Fiber Optical Detector Array (IFDA) is a compact, multi-channel power monitoring solution that combines an array of fiber-optic detectors into a single device. It delivers low dark current and excellent temperature stability across a broad wavelength range, ensuring reliable performance in demanding applications. The IFDA is packaged in a standard 12- or 14-pin configuration for straightforward PCB integration and is thoroughly cleaned to remove solder flux, minimizing flux-induced noise. An optional readout amplification PCB is available, offering USB and RS232 interfaces for easy system connectivity. Custom configurations can also be developed to meet specific application needs.

Due to their high sensitivity to electrostatic discharge, warranty coverage applies only to fully metal covered modules the benchtops, which include proper protection. Other versions of the lasers and photodetectors are not covered by any warranty. Please use them with great caution.

Specifications

Parameter	Min	Typical	Max	Unit
Operation Wavelength	1100		1620	nm
Respond Speed	0		0.5	GHz
Saturate Optical Input Power	0.1	0.2	1	W
Polarization Dependent Loss			0.05	dB
Return Loss	45			dB
Responsivity ^[2]	10		32	mA/W
Responsivity Temperature Dependence			0.3	dB
Responsivity Polarization Dependence			0.1	dB
Dark Current ^[3]	2.5		10	nA
Reverse Voltage			20	V
Forward Current			10	mA
Input Optical Power	2%		21	dBm
	5%		16	
	10%		12	
Operating Temperature	-5		70	°C
Storage Temperature	-40		85	°C
Fiber Type		SM-28		

Notes:

[1]. @ λ_{op} , Top, All SOP, Exclude Connector

[2]. Relative to input power

[3]. Measured at -5V bias, 70 °C

Warning: The device is extremely ESD-sensitive. Its dark current increases by unprotected handling. It is recommended to be handled under a certified ion fan once the package is removed.

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Fiber Optical Detector Array

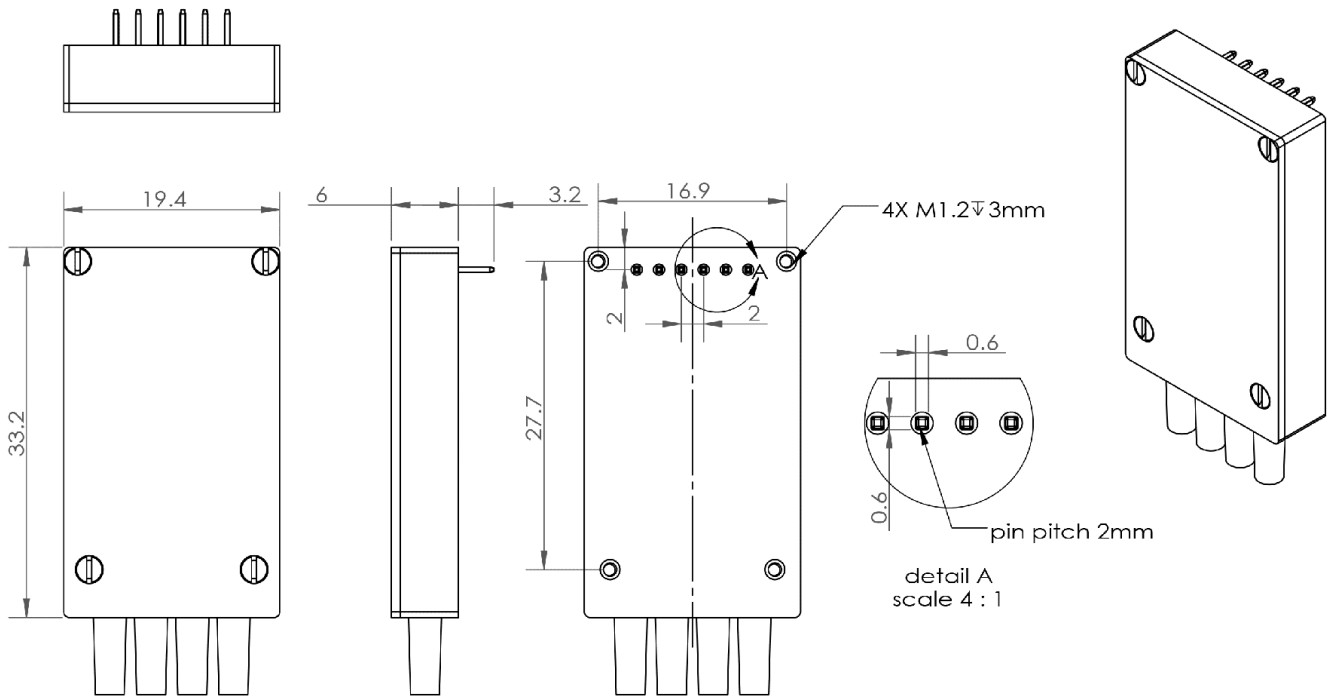
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Mechanical Dimensions (mm)

1) 4-ch ITMA

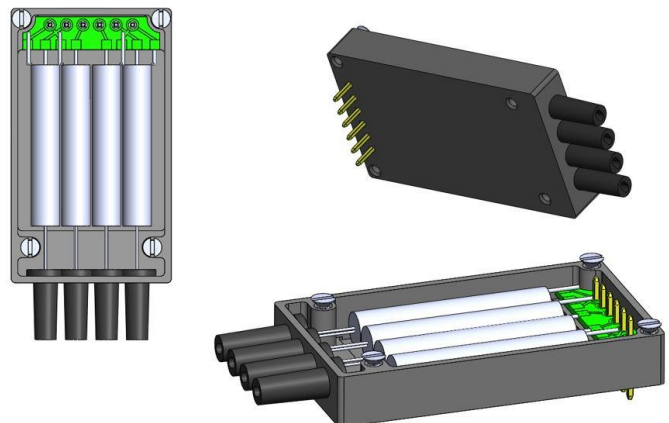


*Product dimensions may change without notice. This is sometimes required for non-standard specifications.

Electrical/Computer Connection

4-ch ITMA

Electrical Pin Assignment	
Pin #:	Common Cathode Assignment
Pin 1:	Common Cathode for Ch1 - 2
Pin 2:	Anode Ch1
Pin 3:	Anode Ch2
Pin 4:	Common Cathode for Ch3 - 4
Pin 5:	Anode Ch3
Pin 6:	Anode Ch4



Fiber Optical Detector Array

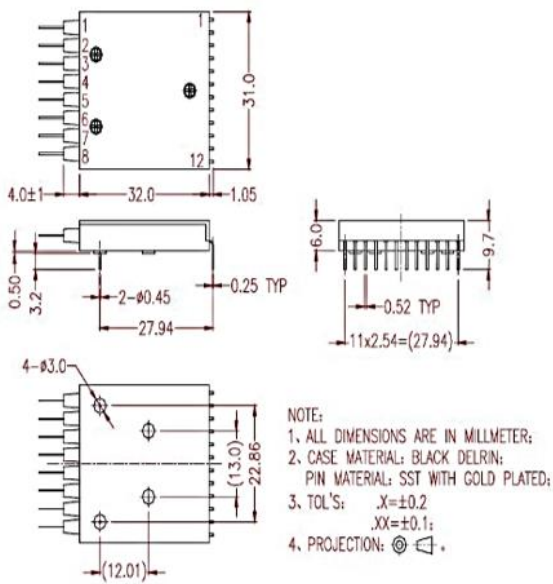
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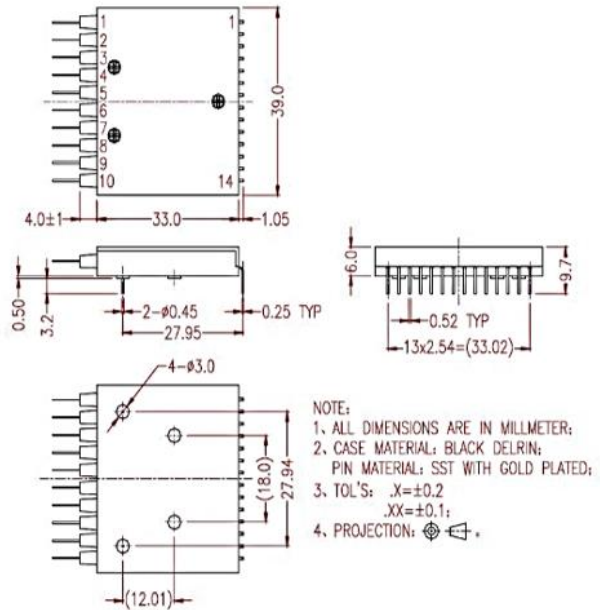
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Mechanical Dimensions (mm)

2) 8-ch ITMA



3) 10-ch ITMA



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Electrical/Computer Connection

8-ch ITMA

Electrical Pin Assignment	
Pin #:	Common Cathode Assignment
Pin 1:	Common Cathode for Ch1 - 2
Pin 2:	Anode Ch1
Pin 3:	Anode Ch2
Pin 4:	Common Cathode for Ch3 - 4
Pin 5:	Anode Ch3
Pin 6:	Anode Ch4
Pin 7:	Anode Ch5
Pin 8:	Common Cathode for Ch5 - 6
Pin 9:	Anode Ch6
Pin 10:	Anode Ch7
Pin 11:	Common Cathode for Ch7 - 8
Pin 12:	Anode Ch8

10-ch ITMA

Electrical Pin Assignment	
Pin #:	Common Cathode Assignment
Pin 1:	Common Cathode for Ch1 - 4
Pin 2:	Anode Ch1
Pin 3:	Anode Ch2
Pin 4:	Anode Ch3
Pin 5:	Anode Ch4
Pin 6:	Anode Ch5
Pin 7:	Common Cathode for Ch5 - 8
Pin 8:	Anode Ch6
Pin 9:	Anode Ch7
Pin 10:	Anode Ch8
Pin 11:	Anode Ch9
Pin 12:	Common Cathode for Ch9 - 10
Pin 13:	Anode Ch10
Pin 14:	Not connected

Fiber Optical Detector Array

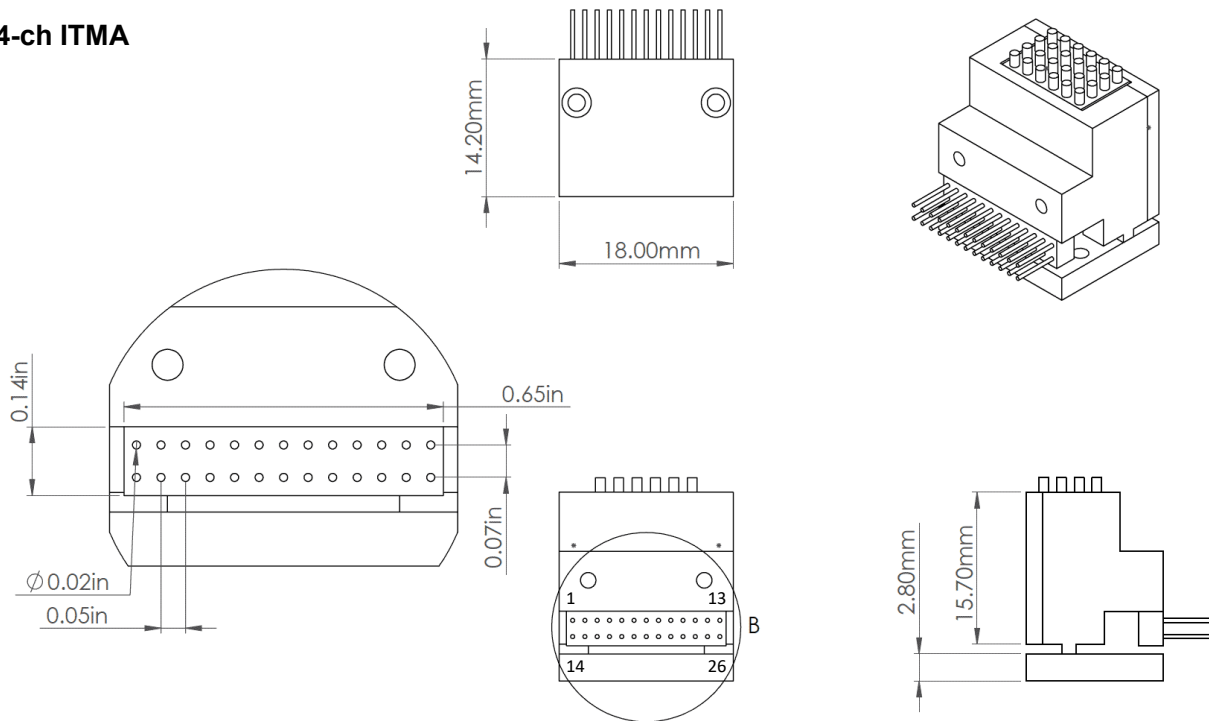
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Mechanical Dimensions

24-ch ITMA



*Product dimensions may change without notice. This is sometimes required for non-standard specifications.

Electrical/Computer Connection

24-ch ITMA

Pin #:	Common Cathode Assignment
Pin 1:	Anode Ch1
Pin 2:	Anode Ch2
Pin 3:	Anode Ch3
Pin 4:	Anode Ch4
Pin 5:	Anode Ch5
Pin 6:	Anode Ch6
Pin 7:	Anode Ch7
Pin 8:	Anode Ch8
Pin 9:	Anode Ch9
Pin 10:	Anode Ch10
Pin 11:	Anode Ch11
Pin 12:	Anode Ch12
Pin 13:	Common Cathode for Ch1 - 12

Pin #:	Common Cathode Assignment
Pin 14:	Anode Ch13
Pin 15:	Anode Ch14
Pin 16:	Anode Ch15
Pin 17:	Anode Ch16
Pin 18:	Anode Ch17
Pin 19:	Anode Ch18
Pin 20:	Anode Ch19
Pin 21:	Anode Ch20
Pin 22:	Anode Ch21
Pin 23:	Anode Ch22
Pin 24:	Anode Ch23
Pin 25:	Anode Ch24
Pin 26:	Common Cathode for Ch13 - 24

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Ordering Information (Part Number)

Prefix	No. Channel	Tap Ratio	Configuration	Package ^[1]	Fiber Type	Fiber Cover	Fiber Length	Connector ^{[2] [3]}
ITMA-	8 = 08 24 = 24	3% = 3	Standard = 1 Common Cathode = 2	Component = 1 on Amplifier PCB = 3	SMF-28 = 1	Bare fiber = 1 Special = 0	0.25m = 1 0.5m = 2 1.0 m = 3 Special = 0	None = 1 FC/PC = 2 FC/APC = 3 SC/PC = 4 SC/APC = 5 ST/PC = 6 LC/PC = 7 LC/APC = A LC/UPC = U Special = 0

[1]. Mount on PCB: amplifier PCB with 0-5V output or USB/RS232 interface with GUI. \$990

[2]. Bare Fiber with connector is easy to beak

[3]. The connector cannot be installed directly onto bare fiber, as it is prone to damage during shipping. However, the connector can be assembled on bare fiber if a 3 cm protective loose tube is added for reinforcement. The customer can remove this protective tube after testing. The optical power handling of a standard connector is less than 0.5 W for SM28 fiber and decreases further with smaller core fibers.

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Monitor GUI



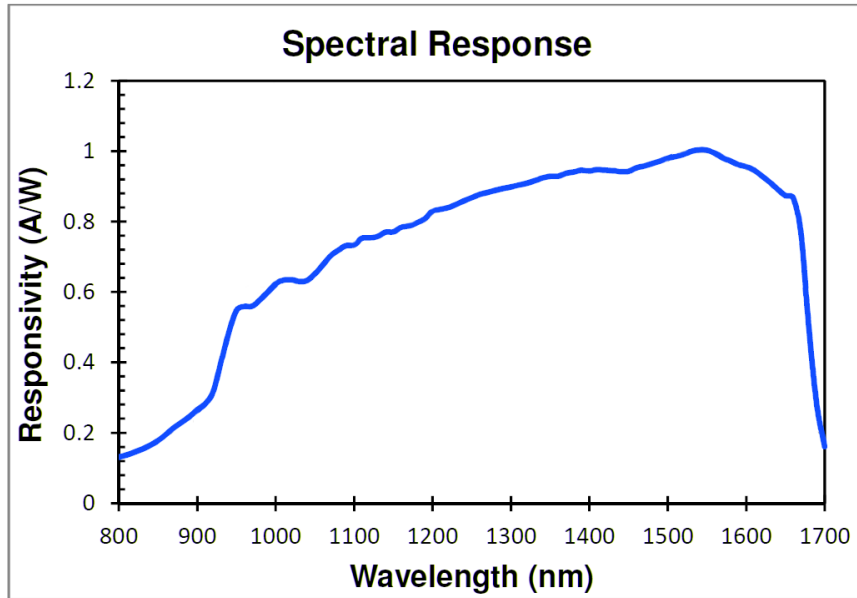
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Spectral Response



Application Notes

Fiber Core Alignment

Note that the minimum attenuation for these devices depends on excellent core-to-core alignment when the connectors are mated. This is crucial for shorter wavelengths with smaller fiber core diameters that can increase the loss of many decibels above the specification if they are not perfectly aligned. Different vendors' connectors may not mate well with each other, especially for angled APC.

Fiber Cleanliness

Fibers with smaller core diameters ($<5 \mu\text{m}$) must be kept extremely clean, contamination at fiber-fiber interfaces, combined with the high optical power density, can lead to significant optical damage. This type of damage usually requires re-polishing or replacement of the connector.

Maximum Optical Input Power

Due to their small fiber core diameters for short wavelength and high photon energies, the damage thresholds for device is substantially reduced than the common 1550nm fiber. To avoid damage to the exposed fiber end faces and internal components, the optical input power should never exceed 20 mW for wavelengths shorter 650nm. We produce a special version to increase the handling by expanding the core side at the fiber ends.

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DATASHEET

Caution Electrostatic Sensitivity



- Never touch laser diode and the module using hands
- Always use protections when handle a laser diode
- Recommend mounting the laser diode using an ionic gun and ESD finger cots



Laser Safety

This product meets the appropriate standard in Title 21 of the Code of Federal Regulations (CFR). FDA/CDRH Class 1M laser product. This device has been classified with the FDA/CDRH under accession number 0220191. All versions of this laser are Class 1M laser products, tested according to IEC 60825-1:2007 / EN 60825-1:2007. An additional warning for Class 1M laser products. For diverging beams, this warning shall state that viewing the laser output with certain optical instruments (for example eye loupes, magnifiers, and microscopes) within a distance of 100 mm may pose an eye hazard. For collimated beams, this warning shall state that viewing the laser output with certain instruments designed for use at a distance (for example telescopes and binoculars) may pose an eye hazard.

Wavelength = 1.3/1.5 μm .

Maximum power = 30 mW.



*Caution - Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

*IEC is a registered trademark of the International Electrotechnical Commission.