



## TIA-3000 O/E Converter Optical Oscilloscope Probe



### Benefits:

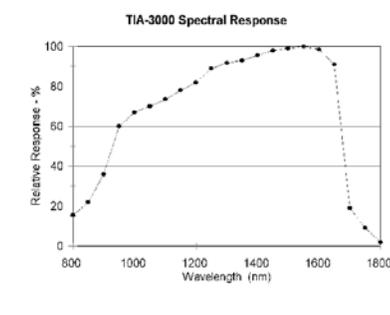
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- Wavelength Response 800 nm to 1600 nm
- Bandwidth - 10 GHz (SM) 8.5 GHz (MM)
- Low Noise, High Gain
- SMA Output Electrical Connector
- Conversion Gain to 400 V/W
- FC Style Fiber Optic Input Connector

The TIA-3000 is an instrument for the laboratory or for field use. This amplified optical-electrical converter can be used with a wide range of oscilloscopes and digitizers to provide the utility of a convenient, easy to use fiber optic probe. Energizing the unit, the optical signal presented to it is faithfully reproduced on the CRT of the oscilloscope or digitizer.

Applications for this instrument include: checking the output of fiber optic communication links, data links, fiber optic computer networks, eye pattern testing, the operation of laser sources, and the signal from an optical transmitter. Patch cords with various style fiber optic connectors can expand the utility of the instrument.

Note: This is an amplified unit



### Specifications

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- Responsivity @1550 nm = 0.7 A/W**
- Conversion Gain @ 1550 nm = 400 V/W**
- Amplifier Power Gain = 20 dB**
- Bandwidth @ 1550 nm = 10 GHz**
- Noise (typical) = 15 pA/sq rt Hz**
- Digital Sensivity = -20.0 dBm @ BER 10<sup>-10</sup>**
- Operating Temp -40/+85 C**

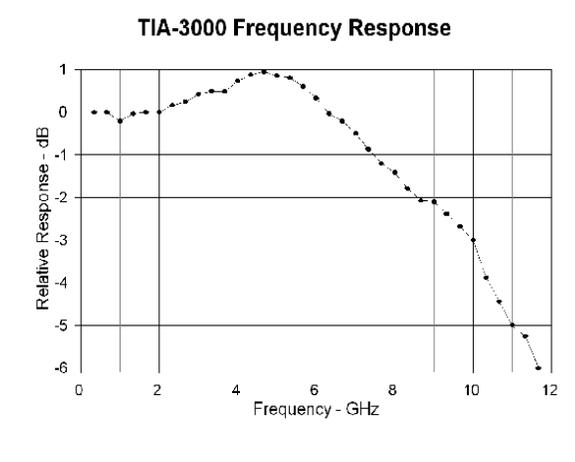
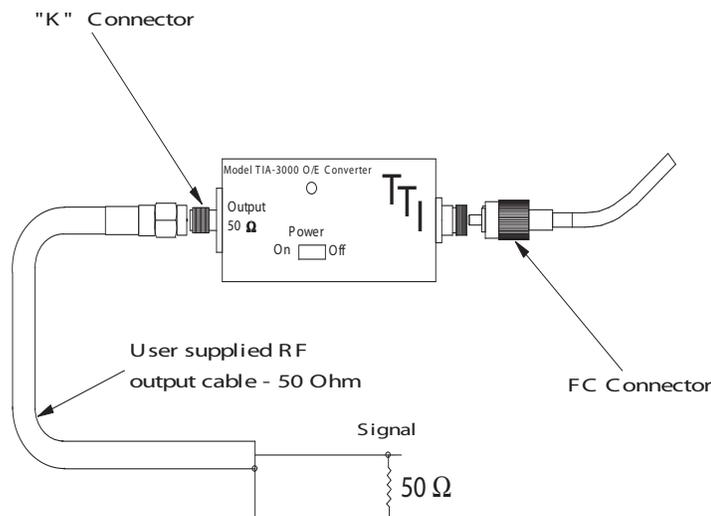
## Operating Considerations

The TIA-3000 is comprised of a fiber coupled InGaAs detector coupled with a reverse bias voltage network and fast transimpedance amplifier. The output of the unit brought out to a type K female SMA connector. Light falling on the detector generates a positive-going proportional current. This current, multiplied by the transimpedance of the preamplifier, produces a voltage that is proportional to the light incident on the detector surface.

Normally the unit is used to drive a coaxial cable, this cable should have a 50 ohm characteristic impedance and be terminated with a 50 ohm load at the oscilloscope or other measuring device to be used.

Typical optical return loss is 35 dB and is caused primarily by the FC/PC connector employed. If higher return loss is needed, The unit may be optionally equipped with singlemode angled PC connectors for ORLs of approximately 52 dB..

### Setup



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