

# Receiver

## T-Ray® 5000 HRS40n1

The T-Gauge® is the first compact pulsed terahertz measurement system that is robust enough to be deployed in an industrial environment and has all of the flexibility provided by our fiber coupled sensor heads in a rack mount package. By having replaceable sensor heads, the T-Gauge® can be configured to fit your specific application.

Operating in reflection or transmission mode, the fiber coupled sensor heads deliver a picosecond duration time-domain terahertz pulse, allowing high speed, scanned images to be easily produced.

The HRS40n1 Receiver for the T-Ray® 5000 provides high spectral bandwidth when coupled with any of the HTS40nm transmitters. The HRS40n1 provides bandwidth over 3.5THz and signal to noise ratio above 70 dB. By embedding amplification close to the signal source, the receiver is able to produce high signal to noise, and eliminate the need for a lock-in amplifier.

### APPLICATIONS

- Gas, liquid and solid spectroscopy
- Nondestructive materials inspection
- Package inspection
- Semiconductor wafer inspection
- Reaction kinetics monitoring
- Medical and biological imaging research
- Remote threat detection
- Sub-surface corrosion detection
- Homeland Security capabilities

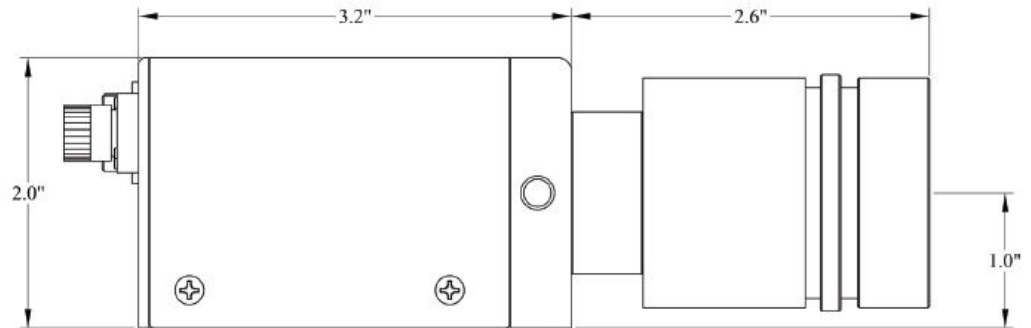


### KEY FEATURES

- Fiber coupled to allow movement
- Ultra-broadband measurement
- Transmitted or reflected data collection
- Mates with collinear adaptor (AXA4001)
- High signal to noise ratio
- Hot swappable
- Low noise to enable rapid data collection
- Adjustable lens tube for focusing
- Multiple lens configurations available

Frequency	Signal Noise	Units
0.1Thz	94.5	dB
0.3THz	93	dB
0.5THz	89	dB
1.0THz	75	dB
2.0THz	56	dB
3.0THz	37	dB

Typical performance with an HTS40n2 Transmitter (Type 2) one-minute average



Parameter	Specification	Units	Comments
Polarization Extinction Ratio	> 20:1		Horizontal
Standard Lens	25, 75, 150	mm	Collimating lens also available
Beam Diameter	38	mm	
Mounting Hardware	1/4-20		Threaded mounting holes
Size (W x H x D)	7 x 6.4 x 7	cm	
Weight	275	gm	

## ORDERING INFORMATION

### Included

- HDPE Lens (1, 3, or 6 inch)

### Typical Configuration

- Terahertz Controller
- Umbilical pair (5, 10, or 30 m)
- Umbilical Adapter (UMA5001)
- T-Ray® Basic and T-Gauge® Software

### Industry Leading Regulatory Compliance

The T-Ray 5000 intelligent TCU has been certified by Underwriters Laboratories has received the CE mark, is fully compliant with FDA CDRH laser safety regulations, and has been tested to meet FCC part 18 regulations.



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