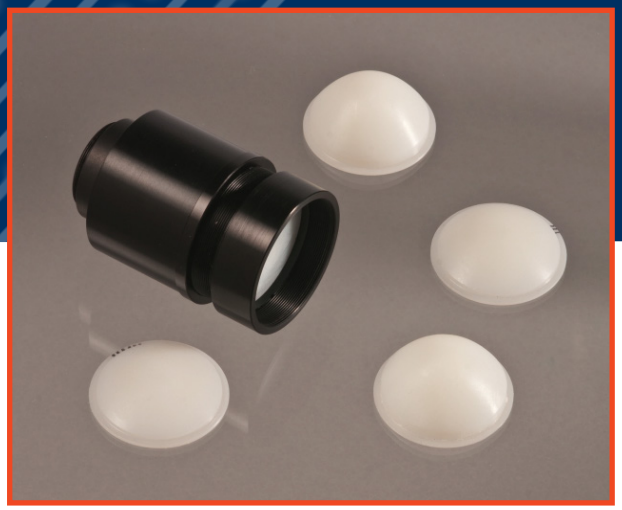
Lens Options

T-Ray® 5000



The T-Ray® 5000 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-Ray® 5000 can be configured to fit your specific application.

The basic system includes a T-Ray® 5000 Terahertz Controller, umbilical(s), a THz transceiver or, a THz transmitter and a THz receiver. The transmitter and receiver come standard with a 38mm diameter lens in an adjustable lens tube. The lenses are manufactured from high-density polyethylene (HDPE) and are manufactured to an aspheric profile for high quality focusing across a wide range of frequencies.

TeraMetrix has specifically designed these lenses for use with their fiber coupled transmitter and receiver sensor heads. When mounted on the front of a transmitter, the lens will provide a collimated or a focused beam. The "focal length" listed here is the distance from the lens surface to the beam waist.

Use relay lenses in conjunction with a collimating lens on the sensor head.

Lens tubes that mount on the transmitter or receiver are available for 1.5", and 3" lenses. The collinear adapter (AXA5001) and the integrated collinear transceiver (HXC50xn) are compatible with 1.5" diameter lenses.

KEY FEATURES

- Low loss
- Simple alignment
- No tool required for installation
- Compatible with transmitter or reveiver
- Compatible with Collinear Adapter

APPLICATIONS

- Time domain reflection tomography
- Nondestructive materials inspection
- Package inspection
- Semiconductor wafer inspection
- Medical and biological imaging and research

ORDERING INFORMATION

Product Description	Part Number
Lens, HDPE asphere, 1.5″ dia., 1″ focal length	LAH4202
Lens, HDPE asphere, 1.5″ dia., 3″ focal length	LAH4204
Lens, HDPE asphere, 1.5″ dia., 6″ focal length	LAH4205
Lens, HDPE asphere, 1.5″ dia., collimating	LAH4200
Lens, HDPE asphere, 3″ dia., 3″ focal length	LAH4404
Lens, HDPE asphere, 3″ dia., 6″ focal length	LAH4405
Lens, HDPE asphere, 3″ dia., 12″ focal length	LAH4406
Lens, HDPE asphere, 6″ dia., 12″ focal length	LAH4506
Lens Tube, 1.5″ dia., adjustable	LTA4201
Lens Tube, 3″ dia., adjustable	LTA4401

The HDPE lenses have an index of refraction of approximately 1.8, leading to a low Fresnel loss compared to silicon (Si) lenses (index of approximately 3).

The lenses have been designed to operate with the aspheric side toward the module, and the flat side toward the object. This maximizes the available working distance. HDPE does exhibit a small absorption region around 2.2 THz, but this does not effect the collection of data.

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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