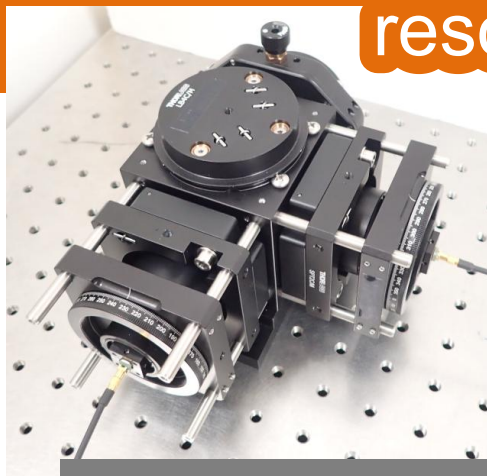


Exclusively for RTDs offered by ROHM

Terahertz-wave system kit for resonant-tunneling diodes (RTDs)



【Features】

- emission and detection of terahertz waves by resonant-tunneling diodes
- based on commercially available optical modules
- enables quick system assembly and customization

【Applications】

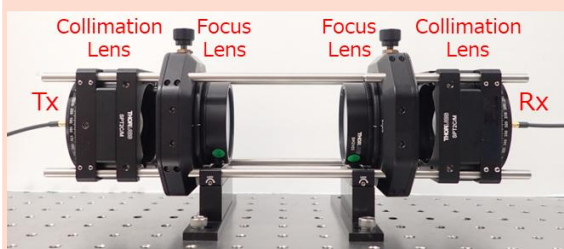
- terahertz-wave experiments, evaluation

■ Overview

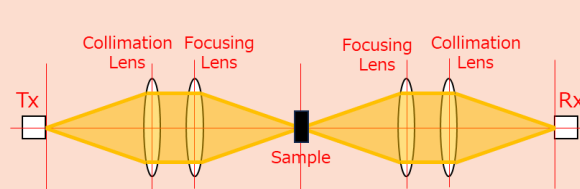
This kit allows users to easily build a terahertz-wave experiment and evaluation system by combining it with ROHM Co., Ltd.'s resonant-tunneling diode (RTD) evaluation kit. It adopts commercially available optical modules (Thorlabs' 60 mm cage system), enabling users to construct their desired system in a short time. The evaluation system includes an optical setup, a signal acquisition device (Analog Discovery 3 from Digilent Inc.), and signal acquisition software as a complete package.

■ System configuration

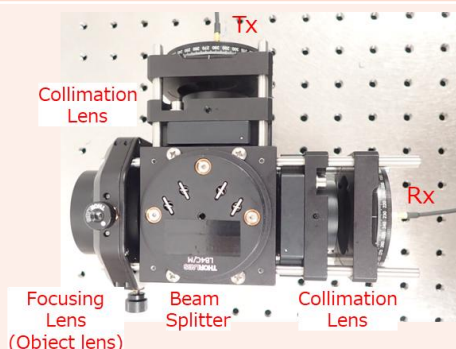
Transmission measurement system



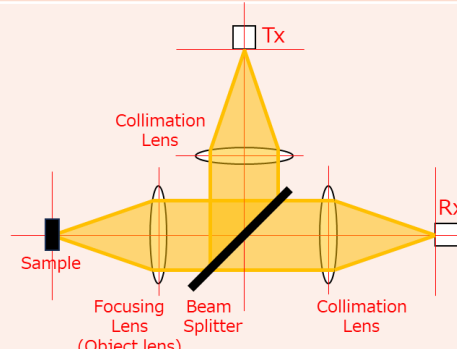
The optical system consists of RTD mounts, collimation lenses, and focusing lenses.



Reflection measurement system



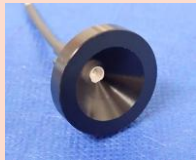
The optical system consists of RTD mounts, collimation lenses, a focusing lens, and a beam splitter.



Terahertz-wave system kit for resonant tunneling diodes (RTDs)

■ provided as separate units

Each unit that makes up the reflection and transmission systems is mounted on Thorlabs' 60-mm cage system modules and provided as separate units.

RTD mount unit	A dedicated mount for the RTD is included. This mount is compatible with standard $\phi 25.4$ mm optical mounts.	
Collimation lens unit	The aspheric lenses are made of HDPE. We provide large-aperture, high-NA lenses suitable for RTD transmitters (Tx) with wide radiation angles. Lenses with various focal lengths and outer diameters ranging from $\phi 38.1$ mm to $\phi 76.2$ mm are available.	
Focusing lens unit	The aspheric lenses are made of HDPE. They feature a large aperture and high-NA, enabling efficient focusing of terahertz radiation. Lenses with various focal lengths and outer diameters ranging from $\phi 38.1$ mm to $\phi 76.2$ mm are available.	
Beam splitter unit	A pellicle beam splitter is used as the optical element, ensuring that even monochromatic terahertz waves are free from interference effects caused by multiple reflections. The unit features a tilt-adjustment mechanism.	

■ Option: Imaging kit

We offer an imaging kit that can be integrated into both transmission and reflection measurement systems. It consists of an imaging unit—featuring a 2-axis automated stage and a stage controller—and imaging software that performs signal acquisition while controlling the imaging unit.

■ Option: Custom orders

We can also design and manufacture custom systems and lenses according to user requirements, such as building a measurement system tailored to the characteristics of the sample to be measured. Additionally, we develop software for signal analysis as well as for imaging in combination with users' existing stages and controllers.



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