

TRICLOPS

400 - 4500 nm Spectrometer

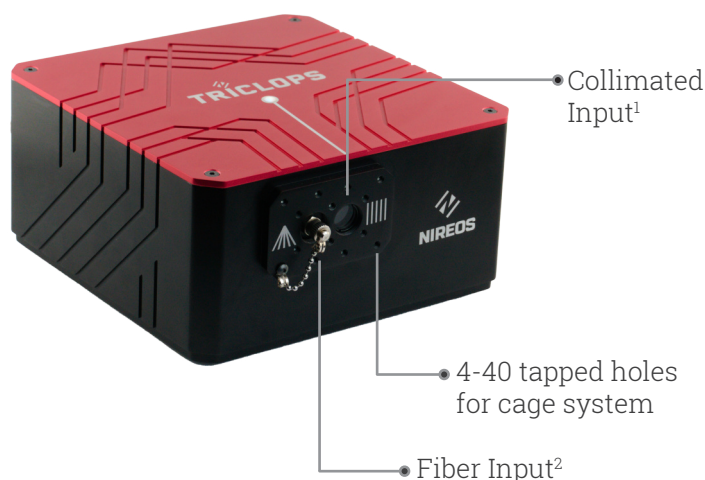
TRICLOPS is a compact and rapid scan **vis-NIR-SWIR-MIR spectrometer**. With its unique and patented technology based on **time-domain Fourier Transform**, it measures spectra in an extremely broad spectral range (400 – 4500 nm), with a spectral resolution of 10 cm⁻¹. Light can be coupled either in free space (collimated) or with a fiber, thus ensuring maximum flexibility.

Key Features

- Broadband spectral coverage
- High spectral resolution
- Adjustable and fast refresh rate
- High sensitivity and throughput
- Light input in free space or fiber coupled

Applications

- Monitoring emission of light sources
- Absorption/Transmission/Reflectance
- Materials characterization
- Optical coating characterization



¹SM05 threaded input, with removable CaF₂ window (to prevent dust ingress)

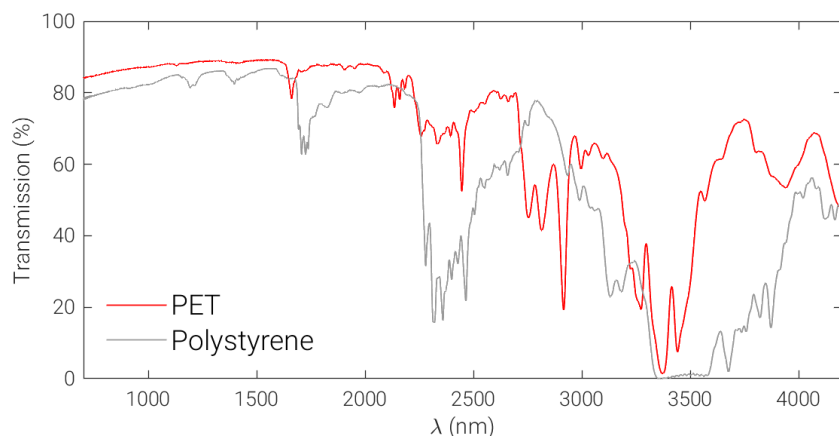
²Replaceable SMA fiber coupler

Technical specifications

Wavelength range	400 - 4500 nm
Spectra collection rate	0.5 - 2 Hz
Spectral resolution	10 cm ⁻¹
Light input method	Fiber-coupled or Collimated*
Fiber coupled input	Fiber core Ø ≤ 1 mm, NA = 0.33 (f/1.5)
Collimated input	10 mm Ø aperture
Light Source	CW or pulsed with rep. rate > 1 MHz
Input polarization	Diagonal
Photodetectors	Si, InGaAs, TE-cooled PbSe
Interface	USB-C 2.0
Dimensions	180 × 160 × 55 mm
Weight	1.5 kg
Power Supply	12 V / 2 A
Enclosure	Fanless, dust sealed
Software	Windows 10/11 OS

* Switchable via software

Examples

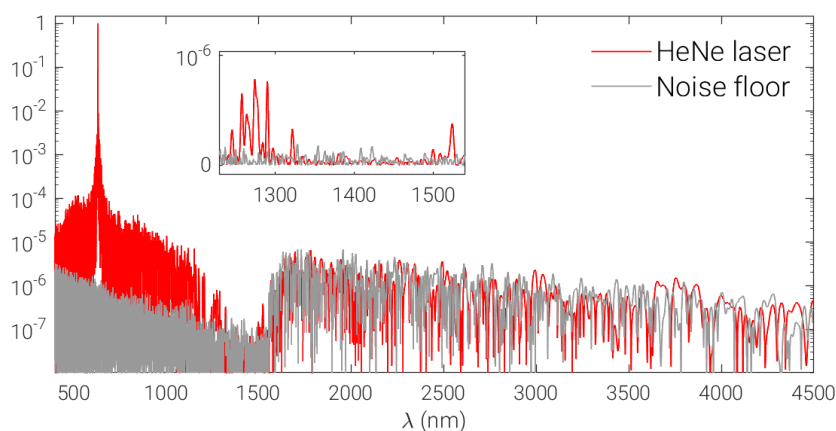
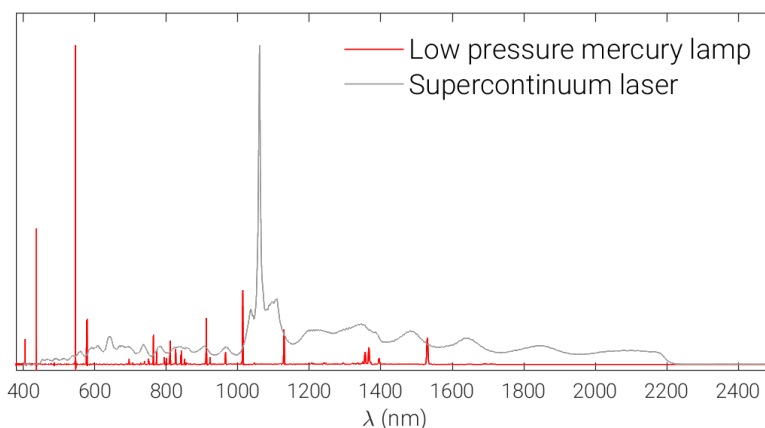


Using a broadband light source, **TRICLOPS** can do **rapid absorption spectroscopy** of many materials in transmission, transreflectance, or diffuse reflectance geometry.

In this example you can see a transmission spectra of different plastic polymers.

Structured light sources - such as the emission from a low pressure mercury lamp - can be easily measured and characterized.

Light sources must be continuous or pulsed with repetition rate above 1 MHz, such as the supercontinuum laser in the example shown here.



Narrowband light sources such as lasers take full advantage of **TRICLOPS**' high dynamic range.

HeNe laser spectrum was collected in 3 seconds. As TRICLOPS uses three internal sensors, the SWIR sensor (1050–1700 nm) was set to high gain, without saturation from the main peak at 632 nm. By zooming into the 1200-1550 nm region, we see the SWIR emission lines of the neon in the laser, more than 60 dB below peak intensity.