Apollo

Self-contained mobile spectrometer

TRISTAN 5

efficient photonic solutions

深圳市新世联科技有限公司

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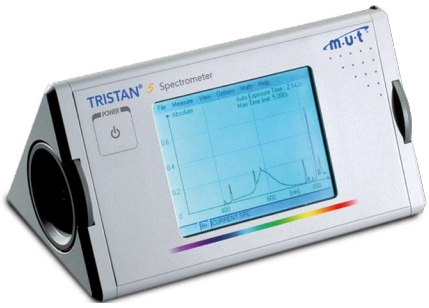
TRISTAN 5

Self-contained mobile spectrometer

The TRISTAN 5 is a compact and totally self-contained spectrometer with an integrated display. It is controlled via a color touch-screen display with a user interface similar to Windows or a PDA. Spectroscopy has never been so mobile and easy-to-handle before.
TRISTAN 5 comes as a complete package solution, containing everything you need for mobile spectroscopy: From the fully-equipped optical cell with entry slit to the calibration at our facility and the software package for professional spectroscopy.



- 14x2048 Pixel back-thinned CCD sensor
- Rechargeable battery
- Touch-screen color display

Latest sensor technology

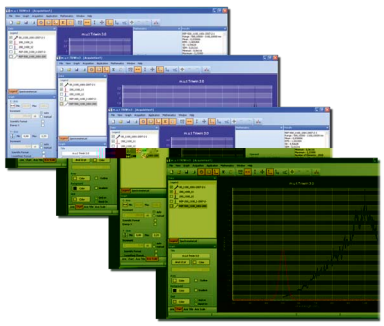
The TRISTAN 5 contains a back-thinned CCD sensor with 14 x 2048 pixels. Compared to regular CCD arrays, back-thinned sensors offer much higher sensitivity in UV and NIR region without need for additional filters and coatings. The four standard configurations of TRISTAN 5 set new standards for off-the-shelf spectrometers with regard to sensitivity, dynamics and noise and make it a professional measuring device in the field as well as for the lab.

Onboard data processing

TRISTAN 5 is ideally suited for spectral analysis in the field. TRISTAN 5 can operate without external power supply for about four hours with the integrated battery pack. Measurement results are displayed right away. The onboard software controls the spectrometer with all its functions including the ready-to-use data preparation. Processing data and storage is performed onboard within the spectrometer. The internal memory of 4 MB can store up to 100 spectra, and an additional memory card can increase storage to 128 MB.

PC operation by TRIWin 3 Pro

TRISTAN 5 is controlled via a color touch-screen display with a user interface similar to Windows or a PDA. It comes with an USB interface and a RS232 serial port and can be upgraded with an Ethernet port. The included TRIWin 3 Pro software provides full control of your spectrometer from any Windows-based PC. TRISTAN 5 is the perfect spectrometer in the field as well as for the lab.
When connected to a PC and operated by TRIWin the TRISTAN 5 becomes a professional desktop spectrometer without any limitations. It is operated through an intuitive Graphical User Interface which offers an unrivaled abundance of tools for working with collected data, from archiving and documenting to performing mathematical functions for data analysis and curve smoothing. Output can be exported directly to Excel or saved in graphical format, which makes documentation very easy. Separate laboratory software is not necessary.



TRIWin Software

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Options

Back-thinned CCD detector

Customized optical engine

The performance of any spectrometer is determined by the combination of wavelength range, resolution and sensitivity. Off-the-shelf spectrometers are targeted to the most frequently requested configurations. To meet your specific requirements the optical engine of all our TRISTAN spectrometers with back-thinned CCD arrays can be configured within a wide variety of specifications.
Please ask your local sales representative for further details.

Ethernet Port

One main feature of TRISTAN spectrometers is their stand-alone capability. With their onboard processing unit they can work on their own. This feature makes them the perfect device for remote measurements via LAN. With the Ethernet option TRISTAN can communicate with every PC in your LAN directly. The Ethernet port replaces the USB port in this design.

2nd Order Filter

Every dispersive element produces a signal in the desired direction, and it also produces a small reflection of this signal in the direction of higher wavelengths. This effect is called second order signal. For spectrometers with high bandwidth it is possible that such a second order signal might appear within the measured wavelength range. m-u-t offers second order filters to reduce this effect mounted directly on the surface of the detector.

Accessories

m-u-t offers a wide range of accessories for your spectroscopic measurement setup. These accessories help you to perform optical measurements without being an expert for optical measurement at all.

Light source Illumia VIS/NIR

Illumia light sources

m-u-t has developed a series of ready-to-use light sources for the most common applications. They are designed for easy handling, equipped with SMA 905 connector and a shutter with additional external trigger control.

Fiber optic cables

Quality fiber optic cables are an essential component of a spectroscopy toolbox.
m-u-t offers a whole range of fiber optic cables which are optimized for use in spectroscopy.

Sample presentation

m-u-t offers integrating spheres, cuvettes & sample holder, dip Probes and other equipment which is required to handle the light in your measuring setup.

For further information please consult the datasheet about accessories.

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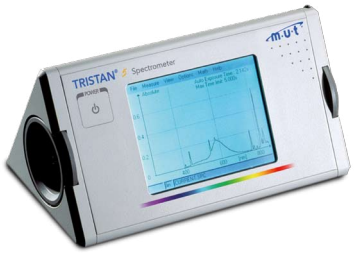
Technical specifications

Specifications	UV/VIS/NIR	UV/VIS	UV	VIS/NIR
Spectral range	200 - 1100 nm	200 - 800 nm	200 - 500 nm	500 - 1100 nm
Grating	300 l/mm	600 l/mm	1200 l/mm	600 l/mm
Slit size (w x h)	10 µm x 3 mm	40 µm x 3 mm	40 µm x 3 mm	40 µm x 3 mm
Detector		back-thinned CCD, 14x 2048 pixel		
Optical design		Asymmetrical Czerny-Turner		
Connection type		SMA 905		
Focal length		Input: 50 mm , Output: 80 mm		

Performance				
Resolution, optical	2.0 nm	1.0 nm	0.5 nm	1.0 nm
Stray light	0.1 %	0.1 %	0.15 %	0.15%
Dark noise	1.15 %	1.15 %	1.15 %	1.15 %
S/N (Detector, only)	400 : 1	400:1	400:1	400:1
Corrected linearity	> 95 %	> 95 %	> 95 %	> 95 %
Wavelength Accuracy	0.1 nm	0.1 nm	0.1 nm	0.1 nm

General	
A/D Converter	14 bit
Computer interfaces	USB, RS232
Power supplies	External power supply , battery charger, rechargeable battery, NiMH 14.4 V, 1500 mAh
Dimensions (w x d x h)	250 x 125 x 140 mm (10 x 5 x 6 in)
Weight	2.7 kg (6 lb)
Onboard Processor	32-bit RISC
Built-in display	Touch-screen, 256 colors
Triggers modes	In / out
Memorycard slot	Smart Media, up to 128 MB

Part numbers		
30-105414	TRISTAN 5 exUV/VIS/NIR-U-H	200 - 1100 nm
30-105413	TRISTAN 5 exUV/VIS-U-H	200 - 800 nm
30-105410	TRISTAN 5 exUV-U-H	200 - 500 nm
30-105997	TRISTAN 5 VIS/NIR-U-H	500 - 1100 nm



Content of delivery

- Spectrometer, fully configured
- Installed entrance slit
- Calibration Protocol and data
- TRIWin 3 Pro Software
- Power supply and charger
- USB interface cable
- rugged cargo box with soft inlay

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