PROCESS SPECTROMETERS

T-Trace

High-speed multichannel process spectrometer

T-Trace is a compact industrial spectrometer for in-line and on-line process control. A transmission grating and a 3 mm slit image up to 8 fibre channels simultaneously on one 2D Sony sensor, without any mechanical multiplexing. Powered over USB 3 or PoE, it streams raw spectra to your PLCs, supervisors and chemometric platforms at up to 1,800 spectra per second.



1 – 8	1,800 /s	380–1700 nm	IP54	USB 3 / GigE
Synchronous channels	Spectra (1 channel)	4 spectral versions	Aluminium housing	PoE powered

Key features

- True parallel multichannel acquisition
- Hardware trigger, synchronous channels
- USB 3.0 or GigE with Power over Ethernet
- Up to 1,800 spectra/s (single channel)
- Drives 1 – 4 T-Light sources via T-Link
- IP54 anodised aluminium housing
- SpectroLab + Python API
- Expert & Capture chemometric deployment

Ecosystem

T-Light
High-power broadband fibre light source (400 – 950 nm) with 0 – 24 V trigger.

T-Link
Control box synchronising up to 4 T-Light sources.

T-Trace Edge
Version with embedded industrial PC for on-board models – see dedicated datasheet.

Typical applications

Colour & coating control · Multi-point process monitoring · Fluorescence tracers · Food & agriculture · Chemicals & pharma · OEM integration

OPTICAL	
Channels	1 to 8 simultaneous (no mechanical multiplexing)
Slit height	3 mm (multichannel)
Optical input	SMA (1 channel) · FC/APC (2 – 8 channels)
Slit width	25 µm standard · 70 / 100 / 150 / 200 µm on request
Grating	300 or 600 l/mm depending on version

ACQUISITION	
Single channel	50 lines · up to 1,800 spectra/s
8 channels	Full slit · up to 80 acq/s · 640 spectra/s (SWIR: 1,760)
Integration time	100 µs – 10 s (sensor-dependent)
Bit depth	12 bits

INTERFACES	
Communication	USB 3.0 high-speed or GigE
Power	USB 3 or PoE
Trigger	Hardware trigger input
Light control	1 – 4 T-Light via T-Link
Software	SpectroLab + Python API
Data formats	.txt · .csv · .spc

MECHANICAL	
Dimensions	150 × 40 × 40 mm
Weight	300 g
Protection	IP54
Mounting	Heat dissipation through base plate (metal support)

CALIBRATION	
Wavelength	Factory, Hg-Ar + Ne lamps

Spectral versions

Model	Range	Sensor	Resolution (25 µm)
T-Trace UV/Vis	380 – 780 nm	Sony IMX676 monochrome CMOS	< 1.5 nm
T-Trace VIS-NIR	400 – 1000 nm	Sony IMX676 CMOS	< 2.0 nm
T-Trace NIR	700 – 1100 nm	Sony IMX676 CMOS	< 2.0 nm
T-Trace SWIR	900 – 1700 nm	Sony SenSWIR InGaAs IMX993, 640 × 512	5 nm

Ordering information

AR00187 T-Trace UV/Vis
AR00188 T-Trace VIS-NIR
AR00189 T-Trace NIR
AR00190 T-Trace SWIR

Part numbers for information – please confirm with GoyaLab when ordering.

Ecosystem



T-Link control box



T-Light triggered fibre light source

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