STS Series OEM Microspectrometer

Amazing Full-Spectrum Performance in a Tiny Footprint

The STS introduces a family of compact, low-cost spectrometers that's ideal for embedding into OEM devices. At just 40 mm x 42 mm x 24 mm (1.6" x 1.7" x 0.9"), the STS provides full spectral analysis with low stray light (≤0.2% SRPR @ 450 nm), high signal-to-noise ratio (>1500:1) and great optical resolution (~1.5 nm FWHM) – remarkable performance for a spectrometer its size. The STS is an especially attractive option for high-intensity applications such as LED characterization and absorbance/transmission measurements, yet versatile enough for an extensive range of spectral sensing requirements.

Key Features

Full Spectral Analysis in a Small Footprint
CMOS-based unit is less than 50 mm (2") square, weighs just 68 g (2.4 oz.)

Ideal for OEM Devices
Compact unit available at low cost and reproducible in large production quantities

UV-NIR Coverage
Now available with models covering ranges within 200-1100 nm

Remarkable Performance
Meets or exceeds optical resolution, stability, sensitivity and other performance criteria associated with larger, more expensive spectrometers

Physical	
Dimensions:	40 mm x 42 mm x 24 mm
Weight:	68 g (2.4 oz.), incl. fixed fiber
Operating temperature:	0-50 °C, 10 °C change/hour ramp
Storage temperature:	-20 to +75 °C
Detector	
Detector type:	ELIS-1024, 1024 pixel linear CMOS
Detector range:	200-1100 nm (uncoated)
Pixels/size:	1024, 7.8 x 125 µm
Pixel well depth:	800,000 e-
Optical Bench	
Design:	Crossed Czerny Turner, focal length 28 mm
Entrance aperture:	Shaped aperture; 10 µm, 25 µm, 100 µm and 200 µm slits
Gratings:	600 g/mm
Fiber optic connector:	~2 cm x 400 µm fixed fiber assembly (not detachable)
Quantum efficiency:	60% (@ 675 nm)
Spectroscopic	
Wavelength range:	UV (200-600 nm), VIS (350-800 nm), NIR (650-1100 nm)
Optical resolution:	FWHM 1.0 nm (10 µm slit), 1.5 nm (25 µm slit), 6.0 nm (100 µm slit), 12.0 nm (200 µm slit)
Signal-to-noise ratio:	>1500:1 (at maximum signal)
A/D resolution:	14 bits
Dark noise:	≤3 counts RMS
Dynamic range:	5 x 10^9 (system, 10 s max integration), 4600 single acq.
Integration time:	10 µs-10 s
Stray light:	≤0.25% @ 450 nm; ≤0.1% @ 750 nm
Corrected linearity:	< +/-0.5% from 15-95% full scale
Max dark current:	~150 counts/second at 60 °C; ~50 counts/second at 35 °C
Electronics	
Power consumption:	0.75 W (average)
Power options:	USB or GPIO port
Data transfer speed:	USB full speed
Acquisition time:	60 scans/second (max) (more scans with binning)
Connector:	Micro-USB
Inputs/Outputs:	GPIO
Trigger modes:	3 modes
Strobe functions:	Single/Continuous
Gated delay feature:	Yes
Computer Requirements	
Computer interface:	USB 2.0, RS-232
Operating systems:	Any supported by OmniDriver/SeaBreeze or RS-232
Compliance	
CE mark:	Yes
RoHS:	Yes
Software	
Operating software:	SpectraSuite support (extra)
Dev. software:	OmniDriver/SeaBreeze driver support (extra)