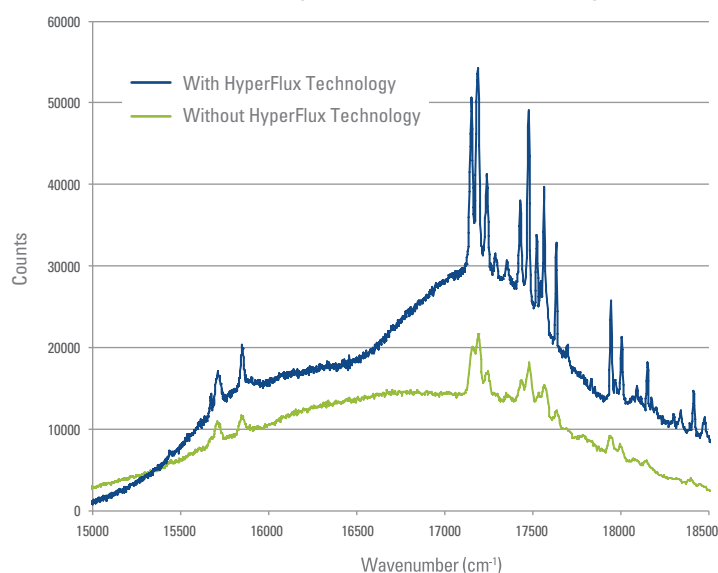# HyperFlux Spectrometer

The ultimate high resolution slit-less spectroscopy solution

Overcomes the trade-off between light throughput and spectral resolution

The HyperFlux Spectrometer leverages High Throughput Virtual Slit technology to achieve a ten-fold improvement in quality factor

✓ Uses proprietary High Throughput Virtual Slit (HTVS) technology to dramatically increase light throughput at virtually no cost to resolution

✓ Achieves highest quality factor of any device in its class

✓ Integrates easily into a wide array of OEM platforms

✓ Efficient solution for demanding spectroscopic applications

✓ Significantly shortens integration times

✓ Compact, robust and customizable design

Raman-532 Spectrum of Acetaminophen

— With HyperFlux Technology
— Without HyperFlux Technology

Counts

Wavenumber (cm^{-1})

tornado
medical systems

Product Specifications

		HyperFlux 532	HyperFlux 785
Spectroscopic Performance	**Spectral Range**	480–720 nm (5,000 cm^{-1} from 532 nm laser)	671-1153 nm (4065 cm^{-1} from 785 nm laser)
	Spectral Resolution	R=3000 at 600 nm (0.2 nm FWHM, 7 cm^{-1}), dispersion = 0.06 nm/pixel	R=1800 at 900 nm (0.5 nm FWHM, 8 cm^{-1}), dispersion = 0.25 nm/pixel
	Grating	1800 lines/mm volume phase holographic, peak efficiency 85%	1200 lines/mm volume phase holographic, peak efficiency 80%
	Slit	Patented High Throughput Virtual Slit	Patented High Throughput Virtual Slit
	Input Source	SMA fiber optic cable, NA=0.22 core diameter 200 µm	SMA fiber optic cable, NA=0.22 core diameter 200 µm

		HyperFlux 532	HyperFlux 785
Detector Specifications	**Detector**	Mightex TCN-1304U, Linear CCD array: Toshiba TCD1304DG or equivalent	Hamamatsu S11510-1106 spectroscopic CCD chip or equivalent
	Pixel Size	8 µm × 200 µm	14 µm × 14 µm
	Detector Size	3648x1 pixels (29.2 mm x 0.2 mm)	2068x64 pixels (28.672 mm x 0.896 mm)
	Wavelength Range	200 nm – 1,100 nm	200 nm – 1,100 nm
	A/D Resolution	16 bits	16 bits
	Typical SNR	300:1	550:1
	Integration Time	100 µsec–6.5 sec	10 ms – 10 minutes
	Full Frame Readout Rate	138 Hz (at 100 µs integration)	103 Hz (at 100 µs integration)
	Linearity	< 1% deviation from linear fit	< 1% deviation from linear fit

		HyperFlux 532	HyperFlux 785
Computer Requirements	**Computer Interface**	USB 2.0	USB 2.0
	Operating Systems	Windows 7, XP, Vista	Windows 7, XP, Vista
	Minimum Requirements	RAM > 64 MB, hard disk space > 10 MB	RAM > 64 MB, hard disk space > 10 MB
	External Trigger	✓ yes	✓ yes
	Software Libraries	DLL files and static library file	DLL files and static library file
	Evaluation Unit Size	10.1″ Length x 6.7″ Width x 2.4″ Height	10.1″ Length x 6.7″ Width x 3.5″ Height