### VS7000-PDA Miniature PDA Spectrometer

**Highest SNR**

Available for OEM customers only

- **High-performance fiber-optic spectrometer for OEM volumes**

#### Feature | Spectroscopy Benefits for OEMs
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Most popular UV-VIS range | Excellent peak symmetry in a miniature grating spectrometer
High readout speed | 3.5 ms maximum readout speed
Advanced electronics | Low noise, Multi-Acq (streaming data through USB for improved speed)
PDA (Linear photodiode array) | More than 100 times deeper full well than any CCD mini-spectrometer
High signal-to-noise ratio | More than 10 times the S/N of any uncooled CCD mini-spectrometer
USB 2.0 high and full-speed | Standard connection interfaces to PCs with 100% data integrity
Order-sorting filter | Eliminates second-order interference
Windows® acquisition software and LabVIEW™ VIs and DLLs available | Software to integrate VS7000 as an OEM component
Sturdy single-optic design | Excellent light purity, with concave grating design
No moving parts or shutter | Excellent reliability for OEM integration

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**Concave-grating mini-spectrometer for UV-VIS VIS UV-NIR**

Explore the future
This VS7000 system for industrial applications uses a modified VS70 optical engine optimized for UV-VIS and a linear photodiode array.

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| **Spectral coverage** | UV-VIS (200–860 nm), 250 nm optimized grating, built-in order-sorting filter  
VIS (380–750 nm), VIS-blazed grating, built-in long-pass filter  
UV-NIR (200–1050 nm), dual-blaze grating, built-in order-sorting filter |
| **Numerical aperture** | f/2.8 |
| **Stray-light rejection** | 0.01% (0.02%) for UV-VIS configuration with 500 µm tall PDA, measured at 700 nm  
(measured with broad bandpass 510 nm filter, 75 µm slit-width)  
>2.4 AU linear range (5% variation) with caffeine 273 nm absorption peak in 10 mm cuvette and D_2 lamp. |
| **PDA detector response** | High UV sensitivity. Response range from 200 nm to 1000 nm |
| **Detector height** | 500 µm PDA height standard (2.5 mm optional);  
600 µm dia., 1.5 m long fiber-optic;  
or special bundle |
| **Thermoelectric stabilization** | None. Dark current and PDA-pattern noise must be subtracted. User must switch off light source or install manual shutter in optical path. |
| **Spectral resolution** | UV-VIS: 75 µm slit, 1024 pixels, 2.7 nm resolution on 500 µm tall PDA;  
Pixel resolution: 0.33 nm/pixel (can be customized for 512 pixels)  
Slit (factory configuration): Available slits: 12-25-37-50-62-75-100-125-150-200 µm (contact us for other gratings) |
| **Improved PDA full well** | 100 Me− (1 Ge− optional) |
| **Typical dynamic range** | 26 000:1 |
| **A/D converter** | 16 bit, 500 kHz |
| **Typical dark current** | 0.16 count/ms at 20°C (room temperature); typical offset = 300 counts |
| **Typical readout noise** | 2.6 counts (3900 e−); maximum = 3.5 counts |
| **Readout speed** | Multi-acquisition: 3.5 ms; 285 spectra/s  
Single acquisition: 10 ms; 100 spectra/s (with 0 exposure time) |
| **Typical signal-to-noise ratio** | 10 000:1 |
| **Gain selection** | 1500 e−/count |
| **Dimensions (W × D × H)** | 4.6" × 4.3" × 2.9" (117 mm × 109 mm × 73.7 mm) |
| **Weight** | 1.8 lb (0.82 kg) |

*Specifications, form factor, and spectrometer cover subject to change without notice.

Acquisition software included (LabVIEW™ 2011 only)  
* VIs and top-level code are provided for customization  
* Handles acquisition and signal-processing (smoothing, absorbance, transmittance, etc.)  
* Save data to Excel® or text file  
* On-board spectral calibration

No LabVIEW™ license is needed to run our acquisition software. LabVIEW™ license ver. 2011 required to edit our code. No code customization supported in price.