

Raman CCD spectrometer with high sensitivity and dynamic range for OEM Raman hand-held applications

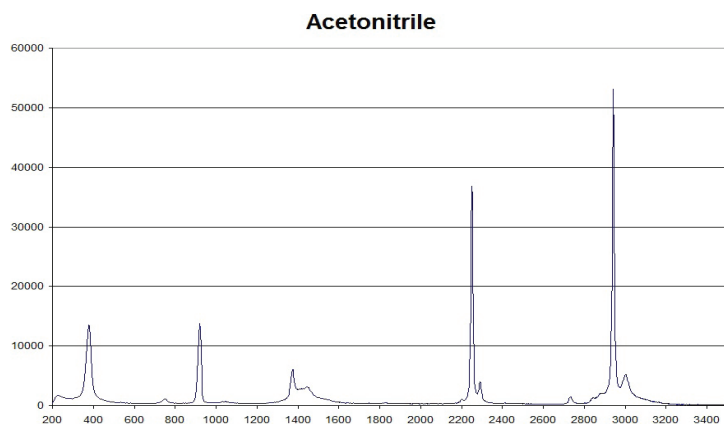
MINI-CCT+ Mini Raman Spectrometer



Available for OEM customers only

- High throughput (f/3.1)
- Three Raman laser ranges: 532 nm, 660 nm, and 785 nm
- Ultra-miniaturization with CCD USB 2.0 electronics
- 7000:1 dynamic range
- SMA or permanent fiber-optic connection
- VIS- or NIR-optimized back-illuminated CCD
- CCT optical layout (Crossed-Czerny-Turner)

| Feature | Spectroscopy Benefits for OEMs |
|---|--|
| Raman range with 785 nm | 210 to 2700 cm^{-1} coverage |
| High dynamic range | 7000:1 with low readout-noise of 35 e^- |
| Back-illuminated linear CCD | QE = 77% at 600 nm; 55% at 850 nm with VIS-optimized (NIR-optimized option: yields 75% QE at 850 nm) |
| USB 2.0 high and full-speed | Standard connection interfaces to PCs with 100% data integrity |
| Windows [®] acquisition software and LabVIEW [™] VIs and DLLs available | Software to integrate MINI-CCT+ as an OEM component |
| No moving parts or shutter | Excellent reliability for OEM integration |



Visit www.OEMRaman.com to select Raman laser sources and miniature probes to build a Modular OEM Raman System



Specifications* Patented!

| | |
|--|--|
| Spectral coverage | With 532 nm laser: 210 to 3500 cm^{-1} With 660 nm laser: 400 to 3150 cm^{-1} With 785 nm laser: 210 to 2700 cm^{-1} |
| Numerical aperture | f/3.1 |
| Stray-light rejection Typical (Maximum) | 0.1% (0.2%) (measured with bandpass filter 780BP10) |
| CCD detector Typical QE | Back-illuminated CCD with low etaloning in NIR 55% peak QE at 850 nm (VIS optimized) |
| Detector height Fiber-optic option | 300 μm CCD height standard (1000 μm optional) 200 or 300 μm dia., 1 m long fiber optic (for 1 mm tall CCD, RTS bundle is offered) |
| Thermoelectric stabilization | None. Dark current and CCD-pattern noise must be subtracted. User must switch off laser or install manual shutter in optical path. QE shifts slightly with temperature. |
| Spectral resolution Pixel resolution Slit (factory configuration) | 785 nm configuration; 25 μm slit; 2048 pixels; 8–12 cm^{-1} resolution; 0.19 nm/pixel (configuration with 300 μm tall CCD) Available slits: 12-25-37-50-62-75-100-125-150-200 μm (contact us for other gratings) |
| Improved CCD full well Raw non-linearity Factory-corrected non-linearity | >250 ke^- (sensitivity mode) <1% (sensitivity mode) <0.4% (sensitivity mode) |
| Typical dynamic range | 7000:1 in sensitivity mode |
| A/D converter | 16 bit, 500 kHz (pixel rate); optional 2 MHz VIS-CCD |
| Typical dark current | 1 count/ms at 20°C (room temp.); typical offset = 1000 counts |
| Typical readout noise | 35 e^- (max = 45 e^-) in sensitivity mode (4 e^- /count) |
| Readout speed | 8.6 ms (500 kHz mode); 116 spectra/s with 0 exposure time (Multi-Acq mode) Max: 4.5 ms (Ultra mode); 223 spectra/s with 0 exposure time (Multi-Acq mode) |
| Gain selection | 4 e^- /count and 6 e^- /count |
| Dimensions (H × W × D) | 4" × 2.71" × 1.49" (101.6 mm × 68.8 mm × 37.8 mm) |
| Weight | 1.8 lb (0.82 kg) |

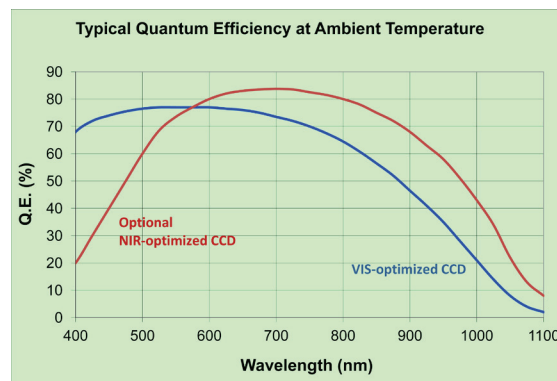
*Specifications, form factor, and spectrometer cover subject to change without notice.

Acquisition software included (LabVIEW™ 2011 only)

- VIs and top-level code are provided for customer customizations
- Access to data with raw CCD linearity and corrected linearity done at factory for each CCD chip
- CCD settings and dark-subtract
- On-board or software averaging
- Scale selection between pixel, wavelength, and wavenumber
- On-board spectral calibration
- Linearity correction on/off
- Save function to Excel® or text file

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.



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