

QE65000

The QE65000 is the most sensitive spectrometer Ocean Optics has ever developed. This scientific grade spectrometer is especially well suited for low light level and demanding applications, such as Raman spectroscopy and fluorescence.

Applications

- » Medical diagnosis
- » Material identification
- » Polymerisation monitoring
- » Thin-film reflectivity
- » Corrosion studies
- » Bio analysis
- » Astronomy research

Features

- » Back-thinned 2D FFT-CCD detector
- » Thermoelectric cooling
- » High-speed electronics
- » Onboard programmable micro-controller
- » 10 user-programmable digital inputs/outputs

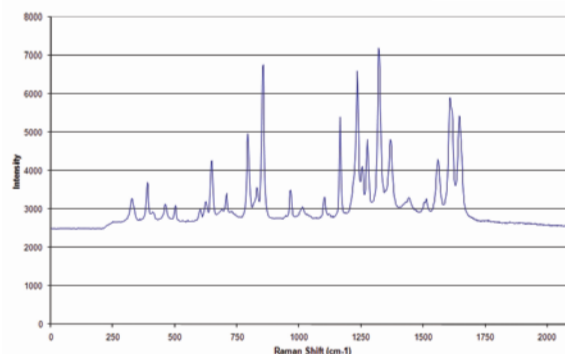
Advantages

- » 90% quantum efficiency
- » Very high UV response
- » Fast analysis
- » Excellent signal-to-noise ratio
- » Great system sensitivity
- » Low noise and low dark signal
- » Long integration times
- » Virtually no spectral distortion
- » User-friendly

Specifications

QE65000

| DETECTOR | |
|---|--|
| Type | Back-thinned 2D CCD Detector |
| Detector range | 200 – 1100 nm |
| Active Pixels | 1024 x 58 |
| Pixel size | 24.6 μm^2 |
| Pixel well depth | 1000 Ke- |
| Peak QE | 90% |
| QE @ 250 nm | 65% |
| Sensitivity | ~ 0.065 counts / e- |
| SPECTROSCOPIC | |
| Wavelength range | max. 825 nm |
| Optical resolution | ~ 0.14 - 7.7 nm (FWHM) |
| Signal-to-noise ratio | 1000 : 1 |
| Dark noise | 3 RMS counts |
| Dynamic range | 25000 : 1 |
| Integration time | 8 ms - 15 minutes |
| OPTICAL BENCH | |
| Design | f/4, Symmetrical crossed Czerny-Turner |
| Focal length | 101.6 mm input and output |
| Entrance aperture | 5, 10, 25, 50, 100 or 200 μm |
| Grating options | 14 different grating options, UV through Shortwave NIR |
| Fibre optic connector | SMA 905 to 0.22 numerical aperture single-strand optical fibre |
| PHYSICAL | |
| Dimensions | 182 x 110 x 47 mm |
| Weight | 1.18 kg (without power supply) |
| ELECTRONICS | |
| Power consumption | 500 mA @ 5 VDC no TE cool; 3.5 A @ 5 VDC with TE cool |
| Data transfer speed | Full spectrum every 7 ms with USB2.0 |
| Inputs/Outputs | 10 onboard digital user-programmable GPIOs |
| TEMPERATURE & THERMOELECTRIC (TE) COOLING | |
| Temperature limits | 0 °C to 50 °C for spectrometer, no condensation |
| Temperature range | 13 °C maximum range between the high and low |
| Lowest set point | 40 °C below ambient, to -15 °C |
| Stability | ± 0.1 °C of set temperature in < 2 minutes |
| COMPUTER | |
| Operating systems | Windows, Mac OS, Linux |
| Computer interfaces | USB 2.0 @ 480 Mbps; RS-232 (2-wire) @ 115.2 K baud |
| Peripheral interfaces | SPI (3-wire); I ² C integrated circuit |



QE-Raman spectrum of paracetamol



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