

## SPECTROMETER SPECIFICATIONS



The OneLight™ Spectrometer plays an integral role in both the calibration and the dynamic feedback control of the OneLight Spectra. The USB-controlled Spectrometer functions not only in its capacity as a wavelength and intensity calibration device, but also can create a digital feedback loop by relaying its measurements to the computer manipulating the Spectra. Through software, the Spectrometer's measurements are interpreted and plugged into an algorithm which intelligently adjusts the Spectra's micro-mirror array produce a desired spectrum. To achieve this, the Spectra is equipped with a beam splitter situated just behind its output port, which takes a small fraction of its emitted light and

directs it onto a white diffuser, which is then received by a fibre optic cable. This light is transmitted to an SMA fibre optic connector on the Spectra's rear panel, which, when the Spectrometer is cabled to it, allows users to quantitatively measure the wavelength and intensity of the Spectra's output signal. This means users can calibrate the Spectra based on the actual output from the light guide, ensuring the highest degree of accuracy in illumination.

The OneLight Spectrometer is designed for a low bench-top footprint, providing customers with maximum performance at the lowest possible cost. It is equipped with a standard diffraction grating optimized for the Spectra's spectral range (390-720 nm), but it can be configured for other applications by replacing its diffraction grating, such as the forthcoming NIR-version of the Spectra. Fused silica optical fibres with SMA terminations for connecting feedback spectrometers to the Spectra are available in a variety of lengths. The OSSPEC provides customers with a cost-effective, software-integrated method of measuring light output.

Physical/Detector Specifications	
Dimensions	89.1 mm x 63.3 mm x 34.4 mm
Weight	190g
Wavelength Range	350-1000 nm
Pixels	650 pixels
Entrance Aperture	25 µm wide slit
Focal Length	42 mm input; 68 mm output
Fibre Optic Connector	SMA 905
Pixel Size	14 µm x 200 µm
Pixel Well Depth	~62,500 electrons
Sensitivity	75 photons/count at 400 nm

Spectroscopic Specifications	
Optical Resolution	~2.0 nm FWHM
Signal-to-Noise Ratio	250:1 (at full signal)
A/D Resolution	12 bit
Dark Noise	3.2 RMS counts
Dynamic range	2 x 10 <sup>8</sup> (system); 1300:1 single acquisition
Integration Time	3 ms to 65 seconds
Stray Light	<0.05% at 600 nm; <0.10% at 435 nm
Corrected Linearity	>99.8%