Multimode Laser
High Power, Spectrum Stabilized

Our Multimode Laser Subsystem features high output power with a narrow spectral bandwidth. This unit's stabilized peak wavelength remains locked, regardless of case temperature (-10 °C to +55 °C).

Devices can be spectrally tailored to suit application needs and offer side mode suppression ratios better than 40 dB. This provides an extremely high signal-to-noise performance and makes this source ideal for Raman spectroscopy and pump laser applications.

We integrate this source with our high performance laser drive and temperature control M-Laser-Module for a truly turnkey solution for the laboratory. This module has a digital readout for easy set point adjustment, an independent master power key switch and laser enable switch, a remote interlock and an Emergency Power Off (EPO) button. Modular diodes and single mode options are also available.

Specifications	
Dimensions:	110 mm x 89 mm x 53 mm
Weight:	600 g
Noise:	<0.5% RMS
Output fiber:	100 µm @ 0.22 NA
Warm-up:	15 minutes
Temperature:	-10 °C to 40 °C
Stability:	<3% peak-to-peak in 8 hours
Humidity:	5-95% non-condensing
Laser life:	10,000 hours
Power consumption:	3.0 A @ 5 VDC
Power output (CW):	>500 mW
Peak wavelengths:	785 +/- 0.3 nm
Spectral line width:	0.2 nm (typical)
Rise time:	<500 msec
Control:	TTL modulation -- 0 to 100 kHz
Connector:	SMA 905 or FC

Making Raman More Accessible

For decades, Raman spectroscopy was a cumbersome, expensive research tool relegated to laboratories and arcane experiments. But today's economical, compact lasers and detectors make Raman spectroscopy a practical solution for non-destructive chemical identification across a range of new markets, including pharmaceutical processing, forensics and law enforcement and homeland security.

Raman has been considered a high resolution application, but for many identification problems in commercial markets, such laboratory-level resolution is not necessary. A high-performance Raman system will typically achieve resolutions of 2 to 4 cm^{-1}. Depending on choice of grating and entrance slit, lower-cost systems like the units in this section can still reach resolution of 6 to 11 cm^{-1}. In other words, it is possible to obtain a system with resolution only 2-3x that of a laboratory instrument, for a cost that is an order of magnitude lower.

Our Raman systems are robust enough to operate in a range of environments. Thermal drift in the excitation wavelength may compromise SNR over time, but regular yearly or monthly calibration will catch this. The Raman signature will still be emitted at the correct wavelengths. Likewise, possible variations in power stability over time will affect intensity but not the shape or positioning of the peak.