

Complete M² Beam Quality Analysis Systems

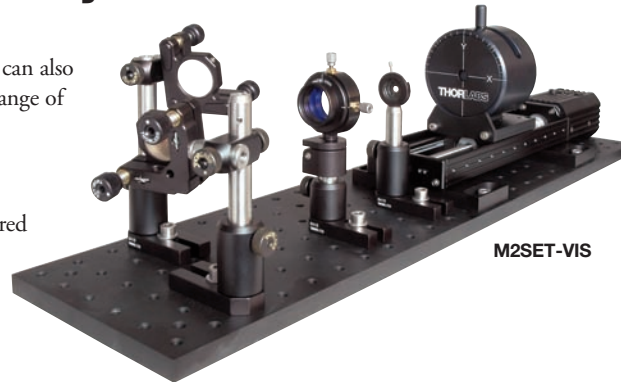
Thorlabs' M² Beam Analysis sets are designed to provide automated measurement of the diffraction-limit M² factor of a laser beam. They can also provide the divergence, waist diameter, waist position, and Rayleigh range of a laser beam.

Functionality

According to the ISO 11146 standard, at least ten beam profile measurements needs to be analyzed at several discrete positions, centered around the beam waist position, to obtain an accurate M² measurement. Approximately half of these measurements must be taken within one Rayleigh length around the beam waist, and the remainder need to be taken at positions exceeding twice the Rayleigh length in order to fully characterize the quality of a laser beam.

Using the M2SET the required measurements can be performed fast and accurately. The system consists of a BP109 Series Beam Profiler fixed on a 150 mm long translation stage, a lens mounted in a flip mount that can be easily inserted or removed from the beam path, an iris diaphragm, and two Ø1" mirrors in adjustable mounts. All of these components are mounted on a 24" x 6" (600 mm x 150 mm) breadboard.

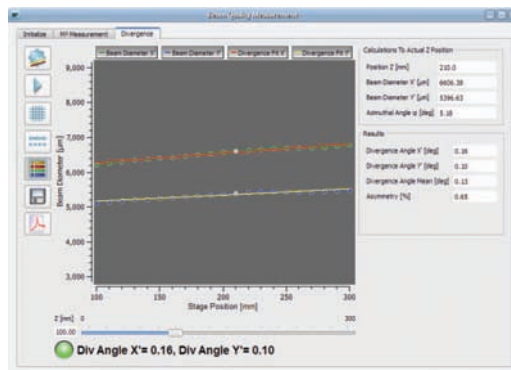
During operation, the profiler is automatically moved (step-wise) along the beam path, resulting in a beam analysis at various positions. The beam quality is determined via curve fitting of the beam diameter versus profiler position. The supplied software has an easy-to-operate Graphical User Interface (GUI). See page 1616 for details.



M2SET-VIS

Features

- Complete, Preassembled and Pre-Aligned System
- Fast and Accurate Beam Quality Measurements
- Measure M², Divergence, Waist Diameter, Waist Position, and Rayleigh Range
- Compatible with CW and Quasi-CW Pulsed Laser Sources
- ISO11146 Compliant



ITEM #	M2SET-VIS	M2SET-VIS/M	M2SET-IR	M2SET-IR/M
Components	Imperial	Metric	Imperial	Metric
Breadboard Footprint	24" x 6"	600 mm x 150 mm	24" x 6"	600 mm x 150 mm
Beam Profiler	BP109-VIS		BP109-IR	
Wavelength Range	400 - 1100 nm		700 - 1800 nm	
Beam Diameter Range ^a	20 µm - 9 mm			
Power Range ^b	10 nW - 10 W			
Translation Range	150 mm (-100 to 50 mm from Focal Point)			
Lens Focal Length	200 mm			
Optical Axis Height ^c	50 - 120 mm			
M ² Measurement Range	1.0 - No Upper Limit			
M ² Accuracy ^d	±5% (Typical)			
Maximum Input Beam Diameter ^e	14 mm (Max)		20 mm (Max)	
Accepted Beam Diameter for 5% Accuracy	20 µm - 4.5 mm at Beam Profiler Input Aperture			
Minimum Detectable Divergence Angle	<0.1 mrad			
Applicable Light Sources	CW and Pulsed Sources ≥300 kHz			
Typical Measurement Time	<1 Minute, Depending on Beam Shape and Settings			

^aAt beam profiler input aperture

^bDepending on Beam Diameter

^cCan be extended further

^dDepending on optics and alignment

^eDepending on Wavelength

ITEM #	\$	£	€	RMB	DESCRIPTION
M2SET-VIS	\$ 7,500.00	£ 5,400.00	€ 6,525.00	¥ 59,775.00	Complete M ² Analysis Set, 400 - 1100 nm, Imperial
M2SET-VIS/M	\$ 7,500.00	£ 5,400.00	€ 6,525.00	¥ 59,775.00	Complete M ² Analysis Set, 400 - 1100 nm, Metric
M2SET-IR	\$ 7,900.00	£ 5,688.00	€ 6,873.00	¥ 62,963.00	Complete M ² Analysis Set, 700 - 1800 nm, Imperial
M2SET-IR/M	\$ 7,900.00	£ 5,688.00	€ 6,873.00	¥ 62,963.00	Complete M ² Analysis Set, 700 - 1800 nm, Metric

* Translation stages available separately. Please contact tech support for a quote.