

M² Beam

The M² Beam is a versatile multi-function PC based measurement system that provides analytical and graphical capability to measure the 2 axis M² figure of merit, waist size and location of CW lasers. The M² factor is measured in accordance with the proposed ISO standard ISO/CD 11 146. Additionally, the instrument measures the Profile width, Position and Power of the laser beam at intersection points along the beam propagation axis.

Main Applications:

- Laser printers QC
- Far field alignment of lasers
- Optical systems QC
- Construction of Lasers
- Laser Diode module construction
- Particle measurement



Easy Alignment

The instrument is designed to provide three degrees of freedom for aligning the M² Beam to the input beam. Horizontal and vertical axis angles can be adjusted $\pm 1.5^\circ$ relative to the mounting base. These adjustments along with the visual feedback provided by the beam locating software make the system very easy to align.

User Friendly Software

The M² Beam has a special software package for measuring the M² parameter.

Main Functions:

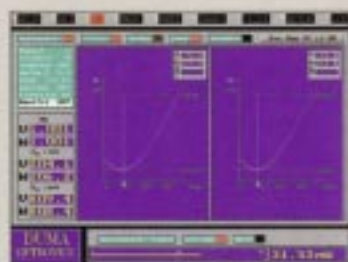
- The first screen presents the relative cross axis location of the beam and the beam waist in orthogonal directions along the direction of propagation, where the locations, M² values and beam sizes are all displayed digitally after completion of the measurement.
- The second screen is a 3D projection of the beam size along the axis of propagation. In either screen, a pointer can be scrolled to a location on the graph and the digital displays will show the values at those points. The software also provides easy file managements capabilities for logging the results for archival purposes.



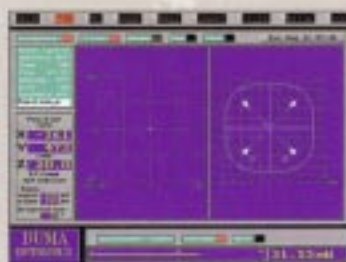
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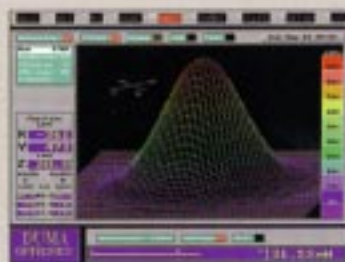
Main Screens



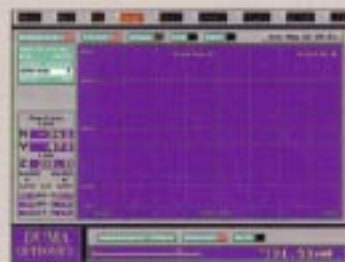
M² - 2D



Position



Projection



Profile

System Specifications

Input Beam:

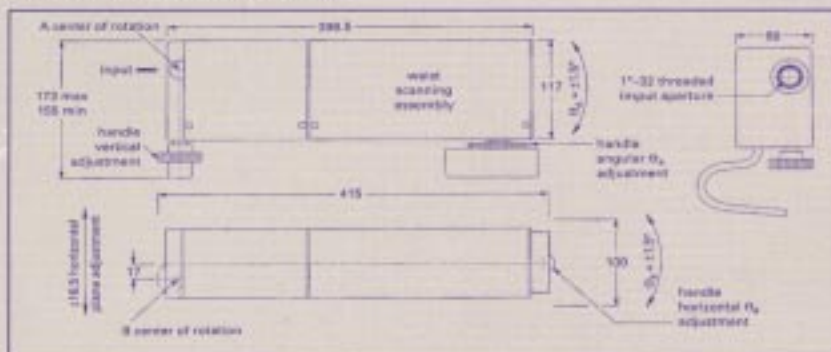
Wavelength Range: 350-1100nm (Si):	800-1800nm (InGaAs)	190-1100nm (UV)
Measurable Power: 100μW-1W	with supplied internal filters (NG4&NG9) for the Si version	
100 μW-5mW	for InGaAs & UV versions	
Beam size:	15mm diameter with lens (Si)	
	7mm diameter without lens (Si)	
	3mm diameter without lens (InGaAs), or 5mm diameter without lens (InGaAs)	

Accuracy

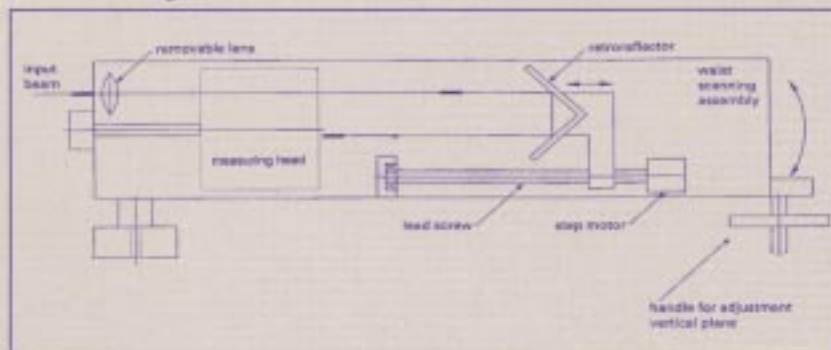
Waist Position as measured at the Transformed Waist:

V Axis: ±50μm	W Axis: ±50μm
Z Axis: ±50μm	M ² Value: ±10%

M² Beam outline and mounting



M² Beam Configuration



Stand Alone unit specification

Construction	Heavy - duty steel
Power supply maximum output	60 Watts AC input voltage: 90 to 264 VAC
Input frequency	47 to 63 Hz
Safety standards	Meets UL, CAS, VDE, FCC standards
FDD	Equipped with one 3.5" FDD 1.44MB
Printer port	Standard Parallel port, 25 Pin (LPT2)
Serial ports	One port for RS232 One port for mouse
Super VGA driver	Super VGA ISA board installed, 1MB

General Information

Construction Material:	Aluminum
Mounting:	M6 or 1/4" screws
Mechanical adjustment:	Horizontal Angle: ±1.5° Vertical Angle: ±1.5°
Operating Temperature:	10°-35°c
Outline dimensions:	100*173*415mm
Cable:	2.5m long

Models

M2-Beam-SI	7-blades profiler, Si
M2-Beam-IR 3mm	7-blades profiler, InGaAs - 3mm diameter
M2-Beam-IR 5mm	7-blades profiler, InGaAs - 5mm diameter
M2-Beam-UV	7-blades profiler, UV-enhanced