DataRay Inc.

Slit Scanning

Wavelength Range:	**190-1100 nm** **800-1800 nm**
New Dual Detector:	**190-2500 nm**
Resolution:	**0.1 µm**
Smallest Beam:	**2.0 µm**
Scanned Area:	**5 mm- Si** **3.5 mm- InGaAs** **2.0 mm – Ext. InGaAs**
BeamMap2	**X-Y-Z-θ-Φ-Focus**
Beam'R2	**X-Y**

Beam'R2™
BeamMap2™

***New* - Dual Detector wide λ range Heads**

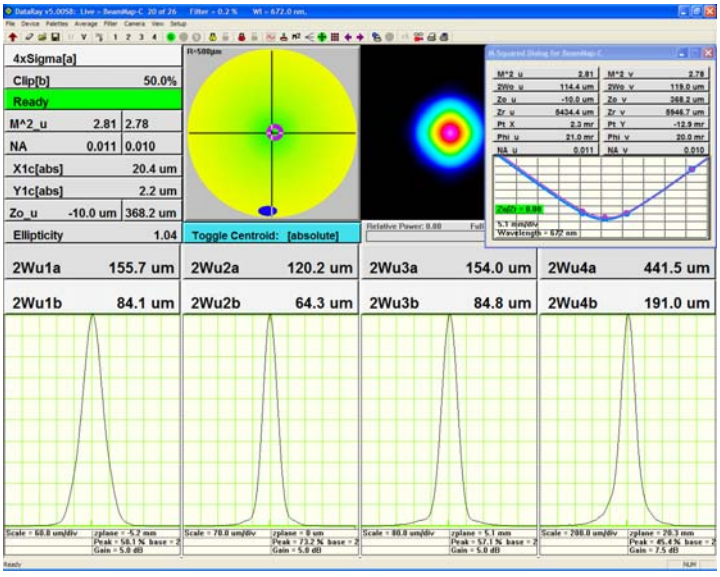
Typical Applications

Shown actual size
2.65 x 2.4 x 2.7" (W x H x D)

- ◊ Laser & Laser Assembly Verification e.g. Precision Focused Assemblies for
  - Laser Printing/Marking
  - Medical Lasers
  - Diode Laser instruments … etc.
- ◊ Lens Focus Testing for short focal lengths.
- ◊ Fiber Optic Telecom assembly focusing.
  LensPlate™ option for re-imaging waveguides and fiber ends.

Beam'R2™ single plane XY scanning of 2.5 & 25 µm slit pairs (5 & 50 µm for longer wavelengths).
High dynamic range Slit mode plus 0.1 µm resolution Knife-Edge mode, in one head:

- ◊ Linear & log X-Y profiles, centroid
- ◊ Resolution 0.1 µm
- ◊ Beams diameters 2 µm to 4 mm. Auto-zoom on profiles. Auto slit width compensation.
- ◊ Detector options, 190 nm to 2.5 µm



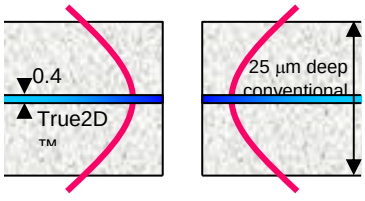
BeamMap2™ adds multiple z-plane scanning to allow the measurement of:

- ◊ XYZ profiles, Focus position & diameter
- ◊ Real-time M2, Divergence, Collimation

By measuring in multiple planes in z, the propagation direction, BeamMap can identify the focus positon with ±<1 µm repeatability. This dramatically speeds real-time diagnosis of focusing and alignment errors & the setting of multiple assemblies to the same focus.
[Protected under US Patent # 6,313,910.]

Configuration All systems comprise a compact, USB 2.0, port-powered head, 3 m cable and software for Windows XP & Vista.

True2D™ Slits Profile tightly focused beams more accurately with thin, True2D™ slits. 0.4 µm thick metallic multilayer films on a sapphire substrate avoid the tunnel effect of air slits. Air slits are frequently deeper than they are wide, and can buckle under high irradiance.



www.dataray.com (203) 210-5065
DataRay Inc., Bella Vista, CA

Parameter	Specification	BeamMap2	Beam'R2	Comments
NEW Wavelength options:	190-1150 nm, 650-1800 nm, 800-2500 nm, 190-2500 nm	Yes	Yes	Si, InGaAs Extended InGaAs Dual Detector Si/ InGaAs
Scanned beam diameters:	2.0 μm to 4 mm (2 mm for IGA-X.X)	Yes	Yes	
X-Y Profile & Centroid Resolution: Accuracy:	0.1 μm or 0.05% of scan range ± <2% ± ≤0.5μm	Yes	Yes	Slit scan
CW or Pulsed	CW, Pulsed > 100 kHz, high duty cycle	Yes	Yes	
X-Y-Z Focus Finder:	± <1 μm (beam dependent)	X-Y-Z	X-Y only	
Beam alignment:	± 1 mrad with BeamMap2 ColliMate	Yes	-	
M^2 measurement:	1 to >20, ± 5%	Yes	-	4 Z-plane hyperbolic fit
Real-time update:	5 Hz	Yes	Yes	Brushless DC motor
Maximum Power & Irradiance:	1 W Total & 0.5 mW/μm^2	Yes	Yes	Metallic film on Sapphire slits
Gain Range:	1600:1 Switched + 4096:1 ADC range	Yes	Yes	Full bandwidth 12-bit ADC
Display graphics:	All: X-Y position; Profiles, Zoom x1 to x16. BeamMap only: M^2, Focus; Divergence, Boresight/Pointing			
Measurement Analysis:	On-screen, for values & graphics, in selectable **Pass** / **Fail** colors			
Averaging:	User selectable running average (1 to ∞ samples)			
Statistics:	Min., Max., Mean, Standard Deviation. Log data over extended periods.			
Waist diameter measurement:	Second moment (4σ) diameter to ISO 11146; Fitted Gaussian & TopHat; 1/e^2 (13.5%) width; User selectable % of peak; Knife-Edge mode for very small beams			

Product Specifications are subject to change without notice.

Beam'R2

BR2-Si	Silicon detector; 2.5 μm & 25 μm XY dual axis Slits
BR2-IGA	InGaAs detector; 5 μm & 50 μm XY dual axis Slits
BR2-IGA-X.X	InGaAs extended λ detector options to 2.5 μm; 5 μm & 50 μm XY dual axis Slits
BR2-DD**	Dual Detector Si & InGaAs extended λ detector options to 2.5 μm; 5 μm & 50 μm XY dual axis Slits wavelength response from 190 – 1800 nm in a single unit
BR2-DD-X.X**	Dual Detector Si & InGaAs extended λ detector options to 2.5 μm; 5 μm & 50 μm XY dual axis Slits wavelength response from 190 – 2500 nm in a single unit

BeamMap2

BMS2-4XY250-Si	Silicon detector; 2.5 μm XY dual axis slits in 4 planes in z
BMS2-4XY250-IGA	InGaAs detector; 5 μm XY dual axis slits in 4 planes in z
BMS2-4XY250-IGA-X.X	InGaAs extended λ detector options to 2.5 μm; 5 μm XY dual axis slits in 4 planes in z
BMS2-4XY250-DD**	Dual Detector Si & InGaAs extended λ detector options to 2.5 μm; 5 μm XY dual axis slits in 4 planes in z, Wavelength range 190- 1800 nm in a single head
BMS2-4XY250-DD-X.X**	Dual Detector Si & InGaAs extended λ detector options to 2.5 μm; 5 μm XY dual axis slits in 4 planes in z, Wavelength range 190- 2500 nm in a single head

* Default unit has 250 μm plane spacing. 50, 100, 500, 750 & 5000 μm plane spacings available at standard pricing.

** DD = Dual Detector; Si & InGaAs. –X.X options to 2.2 μm and 2.5 μm (please state)