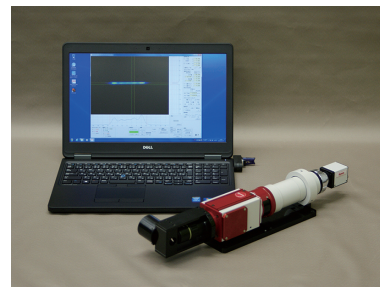


SIMPLIFIED OPTICAL BEAM NFP MEASUREMENT SYSTEM FOR HIGH POWER LASER

Simplified optical beam profile and NFP measurement system especially targeting for high power laser.

Simplified optical beam NFP measurement system for high power laser is a optical beam profile measurement system targeting for ~10W class high power laser. NFP measurement optics for high power laser **M-Scope type HL** is used. The light flux emitted from high power laser sample is attenuated by beam sampler unit placed before objective lens, and is further attenuated by ND filter at subsequent stage. The NFP image that has been attenuated to appropriate beam power is captured and image processing analysis is performed.



[Features]

- **M-Scope type HL**, simplified NFP measurement optics for high power laser
 - Attenuation of incident beam with beam sampler placed before objective lens and ND filters
 - Optical magnification is maximum 20x (option, 10x objective lens and 2x intermediate lens)
- Optical beam analysis module **AP013**, specially designed high-functional image processing software for optical beam profile analysis
 - All-in-one package of PC, optical beam analysis software, detector driver, calibration data.
 - High-performance image processing software for optical beam profile measurement **Optometrics BA Standard** is pre-installed.

[Standard component]

- Optics
 - **M-Scope type HL**
 - *Please specify the measurement wavelength from 400~1100 range because AR coating to some optical parts is required.
- Objective lens
 - M-Plan Apo 10x (fixed)
- Detector selection
 - 400-1100nm : Hi-resolution CMOS detector **ISA071/ISA071GL**
- Optical beam analysis module **AP013**
 - PC for image processing, optical beam analysis software **Optometrics BA Standard**, detector driver, calibration data, USB key
- Accessories
 - Cables, instruction manuals, etc.

[Option]

- Option for optics (for **M-Scope type HL**)
 - 2x intermediate lens port **MS-OP011-RL2**
 - Intermediate lens unit that doubles the overall magnification
 - 1/2x intermediate lens port **MS-OP011-RLH**
 - Intermediate lens unit that halves the overall magnification
 - Coaxial epi-illumination port **MS-OP011-CEP**
 - Coaxial epi-illumination port with removable half mirror
- ND filter (for M-Scope type HS, dedicated 30φ)
 - Visible (400~700nm): **NDF-5** (5 types per set)
 - NIR (700~1100nm): **NDF NIR-5** (5 types per set)
- Coaxial epi-illumination light source
 - Visible~NIR: LED epi-illumination system
- Optics bench
 - Optics bench for fiber measurement with manual stages
 - Vertical setting optics bench

[Detector selection, field of view, pixel resolution (approx. value)]

Detector	High resolution CMOS detector ISA071/ISA071GL	
Spectral range	400~1100nm	
Sensor size	1/1.8 inch	
Total pixels	2048×1536	
Pixels pitch	3.45μm	
Magnification	Field of view (unit:mm)	Pixel resolution (unit:μm)
10x	0.7×0.52	0.345

*Pixel resolution: The measurement length equivalent to 1 pixel of the detector calculated from field of view and sensor pitch of the detector.
 *The optical magnification when using **MS-OP011-RL2** is 2 times the magnification in the table on the left, and the actual field of view and pixel resolution are 1/2. The maximum optical magnification is 20x when using a 10x objective lens.
 *The optical magnification when using the **MS-OP011-RLH** is 1/2 of each magnification in the table on the left, and the actual field of view and pixel resolution are 2 times.

[Component selection of simplified NFP measurement system for high power laser]

○ Stages · optics bench

Sample stages
Optics stages

Optics bench for fiber measurement

Vertical setting optics bench

* Can be combined with various motorized/manual stages

○ Optics selection

Simplified NFP measurement optics for high power laser
M-Scope type HL
Objective lens 10x (fixed)

● Option

- 2x intermediate lens port **MS-OP011-RL2**
- 1/2x intermediate lens port **MS-OP011-RLH**
- Coaxial epi-illumination port **MS-OP011-CEP**

○ Detector selection

● for 400~1100nm

Hi-resolution CMOS detector
ISA071/ISA071GL

○ Optical beam analysis module **AP013**

- Personal computer
 - Main unit
 - Accessories
- Optical beam analysis software **Optometrics BA Standard**
- Detector driver
- Calibration data
- USB licence key

○ Accessories

- ND filter
- Coaxial epi-illumination system