

M-Scope type I SOPHISTICATED OPTICAL MEASUREMENT OPTICS

Synos' original and specially-designed multi-purpose optics for optical beam irradiation & detection, beam profile measurement.

Sophisticated optical measurement optics **M-Scope type I** is designed to correspond with various requirements in optical measurement. **M-Scope type I** has two functional ports, optical fiber connect port and imaging detector port. Furthermore, **M-scope type I** has the enhanced scalability for various purpose, and additional optical measurement ports can be added.

M-Scope type I is the high-end optics available for wide range of optical measurement application such as optical beam irradiation to various light receiving devices, bio cells, etc., and light detection measurement of light emitting devices, optical waveguides, etc.

[Features]

- Optical fiber connect port is equipped.
 - Optical beam irradiation: Pinpoint irradiation of measurement light beam onto the target sample precisely and easily.
 - Light detection measurement: Pinpoint detection of measurement light from the target sample and relay to the optical fiber. Best for optical power measurement, wavelength measurement, optical alignment, etc.
- Imaging port for imaging detector is equipped.
 - Direct observation of beam irradiating and detecting position.
 - It is also possible to apply for NFP/beam profile measurement.

[Summary of specifications]

- Optical fiber connect port
 - Relay magnification: 1 : 1 (when using 10x objective lens)
 - Irradiation and detection beam diameter:

Obj. lens	Irradiation and detection beam diameter
10x (std)	1:1 of core diameter of connected optical fiber
20x	1/2 of core diameter of connected optical fiber
50x	1/5 of core diameter of connected optical fiber

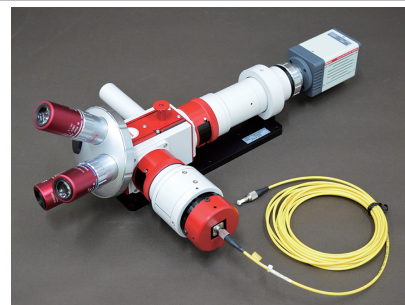
- Objective lens change: by manual revolver
- Objective lens: Mitsutoyo M-Plan Apo series
- Imaging port
 - Intermediate lens: 1x
 - Maximum optical magnification: 100x (100x objective lens)
- Epi-illumination port: Standard (Outer diameter: 8mmφ)
- Epi-illumination system: Option
- Attenuate: By neutral density filter
- Camera mount: C mount

[Available detectors selection]

- for 400~1100nm: Hi-resolution CMOS detector **ISA071**, etc.
- for 950~1700nm: InGaAs NIR detector **ISA041H2**, etc.
- for 400~1700nm: InGaAs NIR derector **ISA041HRA**, etc.

[Standard component]

- Main optics: 1
- Fiber connect port: 1
- Imaging port (1x): 1
- Epi-illumination port: 1
- Optics base: 1



[Option]

- Intermediate lens port
 - 2x intermediate lens port **MS-OP011-RL2**
Intermediate lens unit that doubles the overall magnification of the optical system. (up to 200x with 100x objective lens)
 - 1/2x intermediate lens port **MS-OP011-RLH**
Intermediate lens unit that halves the overall magnification of the optical system.
- Variable spot size converter unit **MS-OP011-VFPJ**
Fiber port that can continuously change irradiation and receiving diameters.

Obj. lens	Continuous variable range
10x (std)	1.11~3.33x of core diameter of connected optical fiber
20x	0.55~1.66x of core diameter of connected optical fiber
50x	0.22~0.66x of core diameter of connected optical fiber

[Accessories]

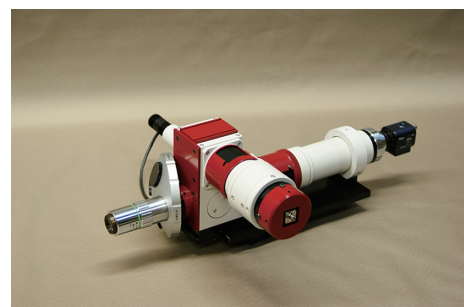
- Objective lens, ND filter, coaxial epi- illumination system, optics bench, etc.

[Customization of optics]

- M-Scope type I allows customized design of optical components and port layout according to the purpose and application.
 - Customized items
 - Additional measurement optical port and new design
 - Specification of built-in optical parts (mirror, lens, etc.)
 - Customization of Irradiation/reception relay magnification etc.

M-Scope type I/PF POLARIZATION COMPENSATION SOPHISTICATED OPTICAL MEASUREMENT OPTICS

Improves measurement stability by polarization compensation by arrangement of half mirror



○Polarization compensation sophisticated optical measurement optics **M-Scope type I/PF**
When using single mode optical fiber for introducing measurement light, polarization state may changes inside the single mode fiber due to the influence of stress such as bending applied to the optical fiber due to the influence of the external environment. For this reason, the measurement accuracy of the entire system may become unstable due to the polarization dependence of half mirror for splitter. **M-Scope type I/PF** is the optics that realizes stable and highly accurate measurement by removing the influence of polarization by arrangement of half mirror.

