# M-Scope type J SIMPLIFIED OPTICAL BEAM IRRADIATION & DETECTION MEASUREMENT OPTICS

Monocular and small body type simplified optical beam irradiation & detection measurement optics. Best for built-in use in various measurement system

#### [Product overview]

**M-Scope type J** is a compact and simplified optical system designed for multipurpose optical measurement application such as optical irradiation, optical beam observation and image observation at the same time.

By combining the optical components according to the measurement purpose, it is easy to build an optical system best suited for the measurement purpose.

As **M-Scope type J** has small and simplified body structure, it is suitable for bulitin use for various optical measurement system such as optical loss measurement system etc.

\* There are restrictions on functions and optical components that can be combined for **M-Scope type J**. Depending on the measurement purpose, it is encouraged to use it together with Sophisticated-type optics **M-Scope Type I**.

#### [Feature]

\* Optical fiber connect port is equipped. Available for various optical measurement

in combination with various optical measurement system.

- Optical beam irradiation measurement : Pinpoint irradiation of measurement 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, etc.

\* Imaging port for optical sensor (camera) is equipped. Direct observation of irradiating beam position, light detecting position, etc. Furthermore, available as high functionality NFP/beam profile measurement optics.

- In case of beam irradiation, it is possible to observe the beam irradiating position directly and easy to introduce measurement light on to the target.
- In case of light detection, it is possible to observe the measurement light on the sample directly and easy to introduce measurement light to the optical fiber connected to the fiber port.
- It is possible to apply for NFP/beam profile measurement.

## [Summery of specification]

Optical fiber port	Light irradiation : irradiate the core diameter of connected fiber onto the target sample surface with 1:1 magnification. (using 10x objective lens)
	Litgt detection : detect the light from the area of target sample surface equivalent to the core diameter of
	connected fiber with 1:1 magnification. (using 10x objective lens)
Light irradiation/	Objective lens 10x : equal to the core diameter of the connected fiber
detection area/size	Objective lens 20x : 1/2 size of the core diameter of the connected fiber
	Objective lens 50x : 1/5 size of the core diameter of the connected fiber
	Objective lens 100x : 1/10 size of the core diameter of the connected fiber
Obj. lens switching	Monocular (replace by manual)
Objective lens	Mitsutoyo M-Plan Apo series (standard)
Intermediate lens	Intermediate lens magnification for imaging port : 1x
Total magnification	Maximum total magnification : 100x (with 100x objective lens)
of imaging port	
Coaxial epi-	Port : φ8mm (external diameter) port for coaxial epi-illumination light unit
illumination port	Option : Coaxial epi-illumination unit
Extinction method	by Neutral Density filter
Camera mount	C mount

[Option]

\* Accessory

\* Imaging detector

#### [Standard component]

\* Main optics (optical fiber connect port, imaging port (1x), coaxial epi-illumination port, monocular) : 1unit

# \* Optics base : 1

[Customize]

\* Optional unit related to **M-Scope type J** main optics - Poralization free type

## M-Scope type J / Customized version



## [Polization-free type optical beam irradiation & detection optics / M-Scope type J/PF]

When the measurement is performed using a single-mode fiber for the introduction and irradiation of the measurement light, it may take stress on optical fiber under the external influence. In this case, it may change the polarization status in single-mode fiber, the stability of the measurement accuracy would be degraded in the entire measurement system. In case using half mirror(HM) in the optical system branching 2 or 3, when measuring the sample having such polarization characteristics, it may affect the measurement results due to polarization characteristics of HM.

- For visible-1100nm:High resolution digital CCD detector ISA011

- About accessory in details, please refer to P31-32.

For 950nm-1700nm:InGaAs high sensitivity NIR detector ISA041H2
About imaging detector in details, please refer to P25-28.

M-Scope type J/PF is an optical system that achieves stable and high precision measurements even when the measurement sample has such polarization characteristics by removing the effects of polarization with special position of half mirror.



# [Optical method high resolution insertion loss measurement system for ultra fine structual waveguide module powered by M-Scope type J]

Optical method insertion loss measurement system, targeting on high resolution measurement of ultra fine structual waveguide module such as Si-photonics waveguide, near field optical device, and so on. Quick measurement by direct irradiation and detection of measurement light in combination with **M-Scope type J** and manual/motorized stage system.



Synos