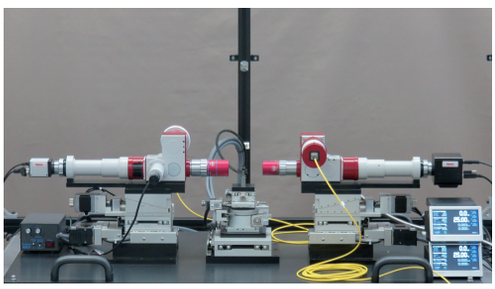
OPTICAL METHOD INSERTION LOSS AUTOMATIC MEASUREMENT SYSTEM FOR MICROSTRUCTURAL WAVEGUIDE DEVICE

Insertion loss automatic measurement system targeting for micro structural waveguide modules, using optical measurement optics M-Scope type J

Optical method insertion loss automatic measurement system is insertion loss test system with automatic alignment using optical measurement optics **M-Scope type J**. In this system, the observation camera mounted on **M-Scope type J** directly observes input and output end faces of the measured optical waveguide. At the same time, optical power alignment is performed using optical fiber connected to the optical fiber port. By using both coarse alignment by image processing and fine alignment by optical power, high speed insertion loss measurement of fine waveguides such as Si-photonics devices can be efficiently realized with high reproducibility.



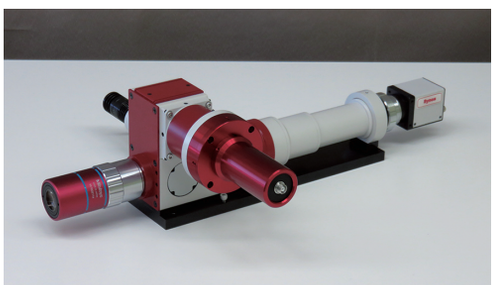
【Features】

○ **M-Scope type J/PF**, Simplified optical measurement optics
- ●It is possible to easily adjust the incident position of measuring beam and the detecting position of emitted beam while observing the image of the object directly by equipped coaxial observation camera system.
- ●Polarization compensation type fiber port is used.
- ●Various objective lenses such as NIR type and HR type can be selected.

○Possible to measure insertion loss similar to conventional optical fiber alignment method
- ●Input side: Irradiate the sample surface with a 1: 1 core diameter of the optical fiber connected to the optical fiber port.
- ●Output side: Light flux, with the diameter equivalent to the core diameter of the optical fiber connected to the optical fiber port, is relayed 1: 1 from the sample surface to the optical fiber.

○Dedicated image processing and automatic alignment software is available.
- ●With motorized stage system, high performance automatic measurement is realized. Applicable to mass production inspection.

○Applicable to measurement from visible to IR spectral range by selecting detector.



○M-Scope type J/PF with variable spot size converter port **MS-OP012-VFPJ** (option)

【Standard component】

○Optics (input side/output side)
- ● Simplified optical measurement optics **M-Scope type J/PF**
- ● (Option) variable spot size converter unit **MS-OP012-VFPJ**

○Measurement wavelength: Please specify measurement wavelength.

○Available detectors selection
- ● 400-1100nm : Hi-resolution CMOS detector **ISA071/ISA071GL**
- ● 950-1700nm : InGaAs NIR detector **ISA041M, ISA041H2**
- ● 400~1700nm : InGaAs high resolution NIR detector **ISA041HRA/HRVA**

○Stage system (input side, output side, sample position adjustment)
- ● Various motorized stage system

*Please contact us for stage configuration and selection

○Support structure (Equipment support structures, brackets, etc.)

○Accessories
- ●Sample holder
- ●Measurement instrument (Optical powermeter, etc.)
- ●Control & data analysis system (PC, stage system controller,system control & data analysis software, etc.
- ●Measurement light source (LED, SLD, LD light source, etc.)
- ●Peripherals (Vibration isolating table, breadboard, Safety control box Instrument rack, etc.)

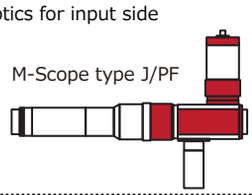
*We will propose system with various configurations and specifications depending on the measurement sample, specifications, operating method, and budget.

○System control & data analysis software

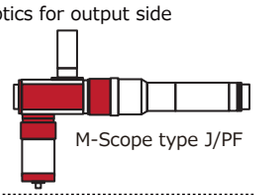
【Component selection of optical method insertion loss automatic measurement system】

○Optics for input side

M-Scope type J/PF



○Optics for output side



M-Scope type J/PF

○Accessories

Objective lens

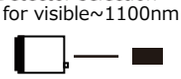
ND filter

Variable spot size converter unit MS-OP012-VFPJ

Coaxial epi-illumination system

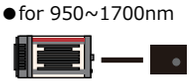
○Detector selection

●for visible~1100nm



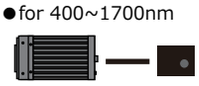
High resolution CMOS detector **ISA071**

●for 950~1700nm



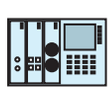
InGaAs high sensitivity NIR detector **ISA041H2**

●for 400~1700nm



InGaAs high resolution NIR detector **ISA041HRA/HRVA**

○measurement instruments & data analysis



●Optical powermeter, etc. (Optical measurement instruments)

●Measurement light source (LED, SLD, LD, etc.)

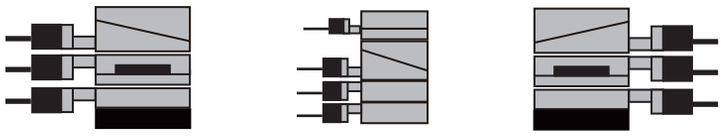
●PC for data analysis & image observation

●System control & data analysis software

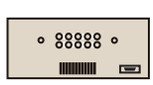
・System control
・Image acquisition & processing
・Motorized stage system control
・Measurement instrument control
・Data analysis, data storage
・Management of variety, operation

○Motorized stage system and equipment support structure

(input side) (sample adjustment) (output side)



●High precision motorized stage system



Stage control hardware

●Vibration isolation table, bread board, support structure, brackets, safety control unit, instrument rack, etc.