

M-Scope type G UNDERFILLED LAUNCH OPTICAL SYSTEM

Possible to control underfilled launch condition such as N.A., diameter of input light. Best for evaluation of multi-mode optical device

[Product summary]

M-Scope type G is underfilled launch optical system, possible to control launch condition such as N.A., diameter of input light by specially designed optical method. As **M-Scope type G** has CCD camera system for observation, it is possible to observe the launch light position and launch condition directly. It is widely applicable for optical characteristic evaluation and measurement of MMF, POF, polymer waveguide in OPCB substrate, and various multimode devices and modules under controlled underfilled launch condition. Additionally, in combination with SYNOS' NFP measurement system, FFP measurement system, EF/EAF measurement system etc, highly advanced optical characteristic evaluation and measurement of various multimode device will be realized.

[Feature]

- *Evaluation and measurement of various multimode device by changing launch light condition
 - Adjustable launch light spot diameter and N.A.
- *Possible to select various kind of measurement light source such as LED, SLD, LD.
 - Possible to select various lightsource
 - Possible to select measurement wavelength by selection of light source
- *Equips CCD camera system for coaxial direct observation. make it possible to observe the launch light position and launch light condition onto the sample surface.



[Summary of specification]

- *N.A. adjustment of launch light: 0.1-0.65 (Sequentially variable)
- *Diameter of launch light: $\phi 10, 20, 40, 80, 120$ (variable by aperture)
- *Measurement wavelength: 850nm (reccomendation)
- *Optical fiber: $\phi 1\text{mm}$ Large core fiber
- *Camera mount: C-mount

M-Scope type ML MODE-SELECTIVE LAUNCH OPTICAL SYSTEM

Possible to control launch condition by specified N.A. Best for evaluation of multi-mode optical device

[Product summary]

M-Scope type ML is mode-selective type launch optical system, possible to select specified angle (N.A.) component of launch light to the sample fibers by specially designed optical method. As **M-Scope type ML** has CCD camera system for observation, it is possible to observe the launch light position and launch condition directly. It is widely applicable for optical characteristic evaluation and measurement of MMF, POF, polymer waveguide in OPCB substrate, and various multimode devices and modules under controlled underfilled launch condition. Additionally, in combination with SYNOS' NFP measurement system, FFP measurement system, EF/EAF measurement system etc, highly advanced optical characteristic evaluation and measurement of various multimode device will be realized.

[Feature]

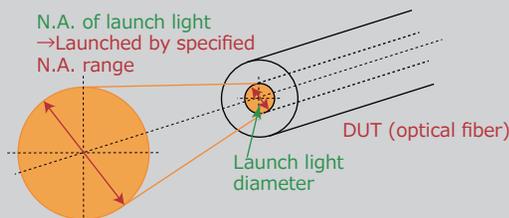
- *Evaluation and measurement of various multimode device by changing launch light condition
 - Select specified angle (N.A.) component of launch light to the sample fibers.
- *Possible to select various kind of measurement light source such as LED, SLD, LD.
 - Possible to select various lightsource
 - Possible to select measurement wavelength by selection of light source
- *Equips CCD camera system for coaxial direct observation make it possible to observe the launch light position and launch light condition onto the sample surface.



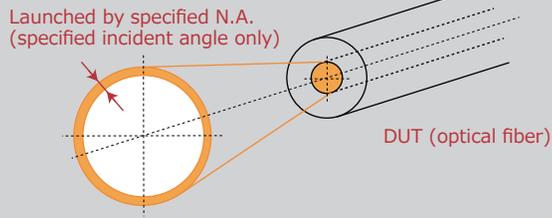
[Summary of specification]

- *Mode-selective port
- N.A. adjustment of launch light: 0.1-0.6 (Sequentially variable)
- Launch light width: approx. 0.05 / 0.1 (convert into N.A.) (variable by aperture)
- *Optical magnification for observation: approx. 2.95x
- *View of observation: approx. 2.17mm x 1.63mm (with 1/2 inch CCD camera)
- *Fiber connector type for input light: FC connector

[Underfilled launch and mode-selective launch]



(Underfilled launch)
Underfilled launch optical system is the special launch optics that changes the spot size and irradiation N.A. (Numerical Aperture) of launch light, and analyze the optical diffusion of multimode optical fiber, plastic optical fiber, etc. Image of underfilled launch method is shown above. In case of underfilled launch, sample fiber is launched by all the light flux as specified N.A. In this case, beam profile of launch light on sample fiber core has flat shape.



(Mode selective launch)
In case of mode-selective launch, sample fiber is launched by the light flux of only the specified N.A. In other words, mode-selective launch optics generate the launch light that has the specified incident angle only. Image of mode-selective launch method is shown above. Launch light has only specified N.A. light flux (specified incident angle light flux), launch light has ring condition incident angle light flux.

[Application]

- *Evaluation and measurement under various launch condition of input N.A. of optical parameter of MMF(Multi-mode optical fibers), POF(Plastic optical fibers), etc.
- *Evaluation and measurement under various launch condition of input N.A. of optical parameter of waveguide in OPCB substrate.