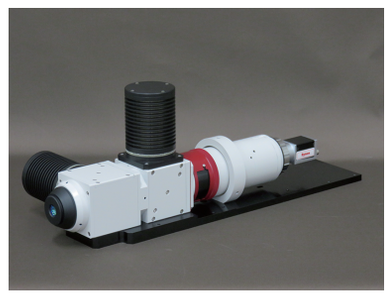
M-Scope type HF　FFP MEASUREMENT OPTICS FOR HIGH POWER LASER

Far field pattern measurement optics, customized especially for output ~10W class high power laser.



M-Scope type HF is optics for measuring FFP(Far-Field Pattern) of output 1~10 W class high power laser. After passing through f-θ lens, the luminous flux from sample is 99.99% attenuated by two-stage beam sampler, and imaged on the detector.

【Features】
○Uses specially designed f-θ lens module for high power laser measurement
○Attenuation of incident beam with two-stage beam sampler and ND filters
○High-performance FFP measurement system can be constructed by using Synos' optical beam analysis module AP013 together.

【Optics selection】 * Please contact us regarding the measurement wavelength.
○for 850-940nm　**M-Scope type HF/NIR**

【Summary of specification】
○Measurement method: Dedicated f−θ optics & image processing
○Attenuation method: Approx. 99.99% attenuated by two-stage beam sampler, and ND filter (combined)
○Polarization dependent compensation: Compensated by 2-stage orthogonal arrangement of attenuation mirrors in beam sampler
○Target input power: Approx. ~10W
○Measurement luminous flux diameter: Approx. 3mmφ
○W.D.: Approx. 4mm±0.4mm
○Intermediate lens: 1×
○Camera mount: C mount

【Standard component】
○Main optics: 1
○Optics base: 1

【Option】
○Accessories for optics
●ND filter (dedicated φ35mm), optics bench, etc.

【Detector selection, measurement angle, pixel resolution】

Detector	1" CMOS detector　ISA061	
Spectral range	400-1100nm	
Total pixels	2048×2048 pixels	
Pixels pitch	5.5μm sq.	
Meas. angle/ Pixel resolution	Measurement angle	Pixel resolution
	approx.±43°/N.A. 0.68	Approx. 0.05°

M-Scope type HF+　FFP MEASUREMENT OPTICS FOR HIGH POWER LASER (LARGE EMITTING AREA)

Far field pattern measurement optics, customized especially for high power laser having large emitting area device.

M-Scope type HF+ is optics for measuring FFP(Far-Field Pattern) of output 1~10 W class high power laser, covering large luminous flux diameter of approx. 10mmφ.

【Features】
○Covers large luminous flux diameter of approx. 10mmφ.
○Uses specially designed f-θ lens module for high power laser measurement
○Attenuation of incident beam with beam sampler and ND filters
○High-performance FFP measurement system can be constructed by using Synos' optical beam analysis module AP013 together.

【Optics selection】 * Please contact us regarding the measurement wavelength.
○for 850-940nm　**M-Scope type HF+/NIR**

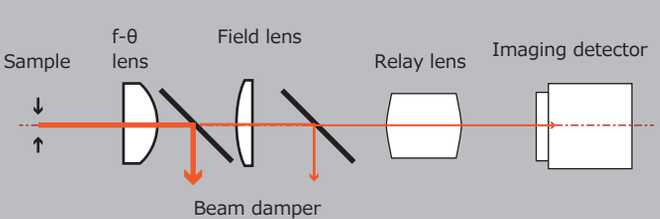
【Summary of specification】
○Measurement method: Dedicated f−θ optics & image processing
○Attenuation method: Approx. 90% attenuated by beam sampler, and ND filter (combined)
○Target input power: Approx. ~10W
○Measurement luminous flux diameter: Approx.10mmφ
○W.D.: Approx. 30mm
○Camera mount: C mount

【Standard component】
○Main optics: 1
○Optics base: 1

【Option】
○Accessories for optics
●ND filter (dedicated φ30mm), optics bench, etc.

【Detector selection, measurement angle, pixel resolution】

Detector	2/3" CCD detector　ISA011-01	
Spectral range	400-1100nm	
Total pixels	1392×1040 pixels	
Pixels pitch	6.45μm sq.	
Meas. angle/ Pixel resolution	Measurement angle	Pixel resolution
	approx.±12°/N.A. 0.2	Approx. 0.026°



☞Technical information【Simple structure of M-Scope type HF】
The light flux emitted from the sample is attenuated to approximately 99.99% by two beam samplers installed in the latter stage of f-θ lens. The beam reflected by the beam sampler is absorbed by the beam damper installed in the optical system. The beam that has passed through the beam sampler is further attenuated to an appropriate amount by ND filter and then introduced to image detector for image processing analysis.

The f-θ lens module uses a high-power laser compatible lens module that takes into consideration damage caused by high-power lasers.