

OBJECTIVE LENS

[Product overview]

It is possible to choose best objective lens for measurement object from wide variation of lens lineup such as normal type, NIR type, high resolution type, long W.D. type, etc.

As for measurement of visible spectral range, M-plan apo series, having long working distance, is recommended.

As for measurement of NIR spectral range, M-Plan Apo NIR series, having good transmittance ratio and corrected for chromatic aberration in 480-1800nm spectral range, is recommended. Furthermore, M-Plan Apo HR series, improved resolution and N.A., is selectable.

About the field of view and pixel resolution corresponding to the combination of objective lens and imaging detector, refer to the table below.

[Specification of objective lens]

Magnification	N.A.	W.D.(mm)	Focal length(mm)	Resolution(μm)	Focal depth(μm)
M-Plan Apo series , infinity-corrected objective lens					
M-Plan Apo 5x	0.14	34.0	40.0	2.0	14.0
M-Plan Apo 10x	0.28	33.5	20.0	1.0	3.5
M-Plan Apo 20x	0.42	20.0	10.0	0.7	1.6
M-Plan Apo 50x	0.55	13.0	4.0	0.5	0.9
M-Plan Apo 100x	0.7	6.0	2.0	0.4	0.6
M-Plan Apo HR series, high-resolution infinity-corrected objective lens					
M-Plan Apo HR 10x	0.42	15.0	20.0	0.6	1.55
M-Plan Apo HR 50x	0.75	5.2	4.0	0.3	0.5
M-Plan Apo HR 100x	0.9	1.3	2.0	0.3	0.3
M-Plan Apo NIR series, infinity-corrected objective lens for NIR					
M-Plan Apo NIR 5x	0.14	37.5	40.0	2.0	14.0
M-Plan Apo NIR 10x	0.26	30.5	20.0	1.1	4.1
M-Plan Apo NIR 20x	0.40	20.0	10.0	0.7	1.7
M-Plan Apo NIR 50x	0.42	17.0	4.0	0.7	1.6
M-Plan Apo NIR 100x	0.50	12.0	2.0	0.6	1.1
M-Plan Apo NIR HR series, high-resolution infinity-corrected objective lens for NIR					
M-Plan Apo NIR HR 50x	0.65	10.0	4.0	0.42	0.65
M-Plan Apo NIR HR 100x	0.7	10.0	2.0	0.39	0.56

[Field of view and pixel resolution corresponding to the combination of objective lens and imaging detector]

Model	ISA011		ISA031		ISA041H2	
Detector name	High resolution digital CCD detector		Glass-less digital CCD detector		InGaAs high sensitivity NIR detector	
Spectral range	400 - 1100nm		400nm - 1100nm		950nm - 1700nm	
Sensor size	1/2inch		2/3inch		6.4mm x 5.12mm	
Pixels number	1392 x 1040		1392 x 1040		320 x 256	
Pixel pitch	4.65μm		6.45μm		20μm	
Magnification	Field of view:mm	Pixel resolution:μm	Field of view:mm	Pixel resolution:μm	Field of view:mm	Pixel resolution:μm
5x	1.28 x 0.96	0.92	1.8 x 1.3	1.29	1.28 x 1.024	4
10x	0.64 x 0.48	0.46	0.898 x 0.67	0.645	0.64 x 0.512	2
20x	0.32 x 0.24	0.23	0.449 x 0.335	0.323	0.32 x 0.256	1
50x	0.13 x 0.1	0.093	0.18 x 0.134	0.129	0.128 x 0.1024	0.4
100x	0.06 x 0.05	0.043	0.0898 x 0.067	0.065	0.064 x 0.0512	0.2

* Pixel Resolution : calculated value by (View)/(Number of effective pixels), means length equivalent to 1pixel of image sensor.

* In case of using 2x intermediate lens option (for NFP measurement optics M-Scope type S), these values are calculated as equivalent to using double of objective lens magnification.

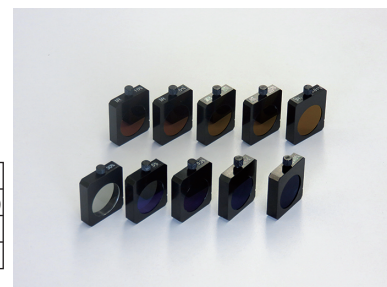


ND FILTER

[Product overview]

ND filter with filter frame for Synos' optical measurement optics M-Scope series. We can prepare not only standard type ND filter but also various type and specification of ND filter as customer's requirement, such as reduction ratio, special coating, application, etc. In addition, we can supply only filter frame for our M-Scope series optics. Various optical filters such as polarizer, etc. can be attached.

Model	Product name	Specification, component
NDF-5	ND filter set	For visible range, 5pieces/set (attenuation ratio:0.01%・0.1%・1%・5%・10%)
NDF IR-5	ND filter set for NIR	For NIR range, 5pieces/set(attenuation ratio:0.01%・0.1%・1%・5%・10%)
FH-25	Filter frame	25 mmφ filter frame for Synos' M-Scope series



FILTER FRAME WITH FILTER ROTATION STRUCTURE FHR-25

[Product overview]

Filter frame with filter rotation structure for Synos' optical measurement optics M-Scope series. It is possible to rotate and adjust filter such as polarizer.

