

New High-NA chromatic and field corrected Endomicroscopic Imaging Objectives

GRINTECH's new high-NA Endomicroscopic Imaging Objectives with object Numerical Apertures of 0.75 are offered in a broad achromatic and field corrected version to significantly increase the usable field of view. A GRIN-refractive multilens hybrid design allows a broader chromatic and off-axis correction resulting also in a higher confocal sensitivity (confocal signal throughput) compared to the previous versions with diffractive correcting elements.

Applications:

In vivo endomicroscopy, single photon fluorescence microscopy, nonlinear optical imaging modalities (SHG, TPF), tissue imaging, flexible fluorescence microscopy, NA conversion

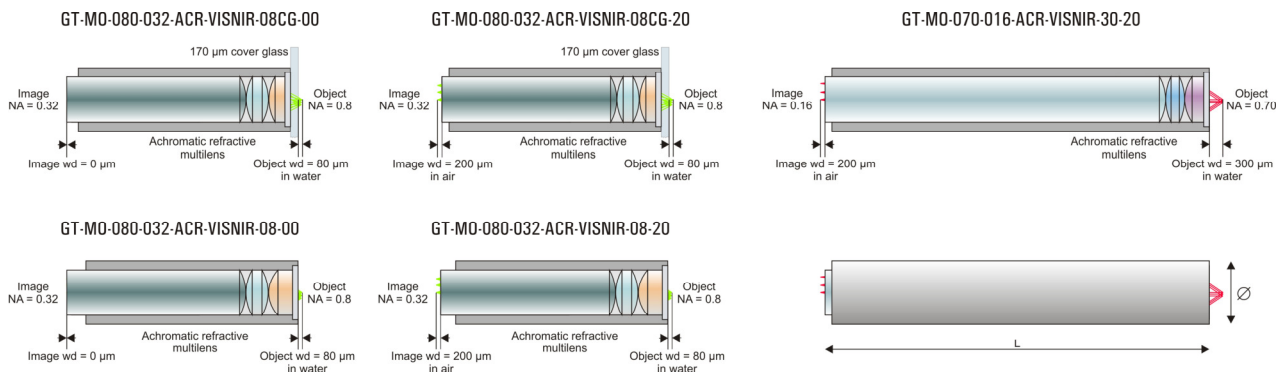
GT-MO-080-032-ACR-VISNIR-xx-xx series represents high resolution field and color corrected objectives with a magnification of 2.3. The image side NA of 0.32 matches to imaging fiber bundles. Color correction is from 450 nm to 900 nm with an optimal performance from 488 nm to 520 nm. The objectives are assembled in stainless steel mounts.

GT-MO-070-016-ACR-VISNIR-30-20 is optimized for wavelengths of 450 nm and 900 nm to achieve an ideal performance in SHG and TPF applications within a large field of view.

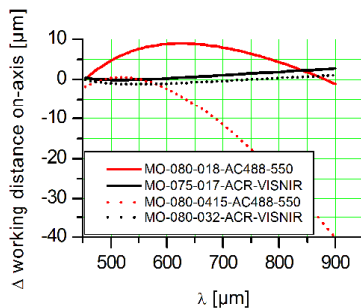
Four combinations of proximal and distal working distances are offered as listed below:

GT-MO-080-032-ACR-VISNIR-...	...08CG-00	...08CG-20	...08-00	...08-20
Object NA	0.7	0.7	0.75	0.75
Object WD in water [μm]	80	80	80	80
Designed for cover glass [μm]	170	170	none	none
Image NA	0.32	0.32	0.32	0.32
Image WD in air [μm]	0	200	0	200
Magnification	2.2	2.2	2.3	2.3
Dimensions \varnothing / L [mm]	1.4 / 4.89	1.4 / 4.57	1.4 / 5.02	1.4 / 4.7

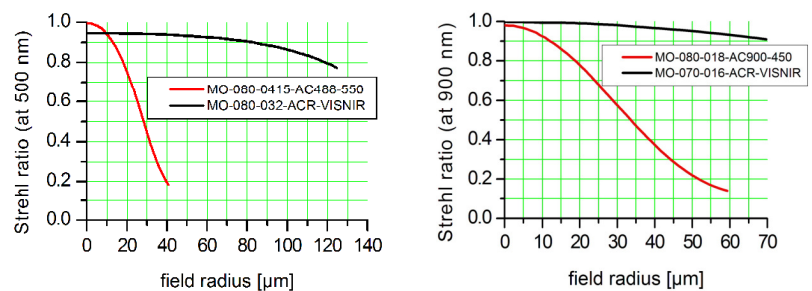
GT-MO-070-016-ACR-VISNIR-30-20	
Object NA	0.7
Object WD in water [μm]	300
Designed for cover glass [μm]	none
Image NA	0.16
Image WD in air [μm]	200
Magnification	4.5
Dimensions \varnothing / L [mm]	1.4 / 8.36



Chromatic Aberration in Object Space



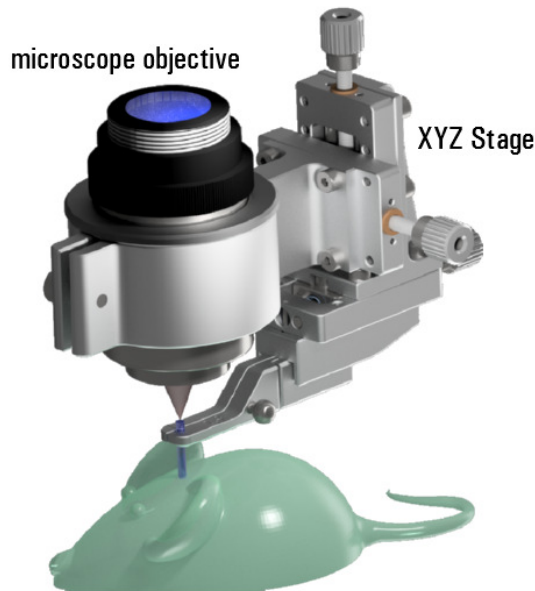
Field Dependent Strehl Ratio in Object Space (From Optical Design)



Variations due to modifications of the production process are possible. It is the user's responsibility to determine suitability for the user's purpose.

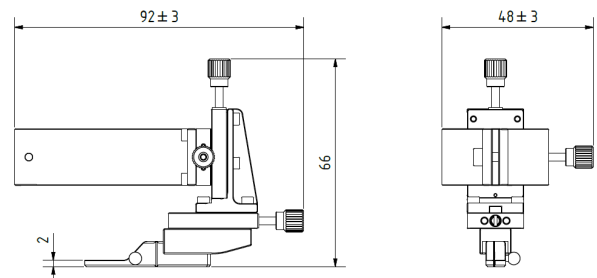
Positioning Stage for GRIN-Needle Endomicroscopes and High NA objectives

XYZ Stage and objective mounting to connect and align to microscope objectives



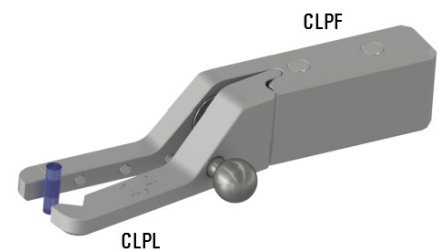
Applications and properties:

- holding, handling and three-axis-positioning of GRIN-microsystem relative to microscope objectives
- mounting for microscope objective diameter 30 mm (standard)
- smaller microscope objectives diameters are possible with assistance of an adapter ring (for ordering see table below)
- stable and reliable construction of the XYZ-stage
- adjustment travel: X - 7.5 mm, Y - 6.5 mm, Z - 6.5 mm
- thread pitch 0.2 mm
- easy pick and drop of the jaws with magnetic pull
- durable anodized aluminum surface



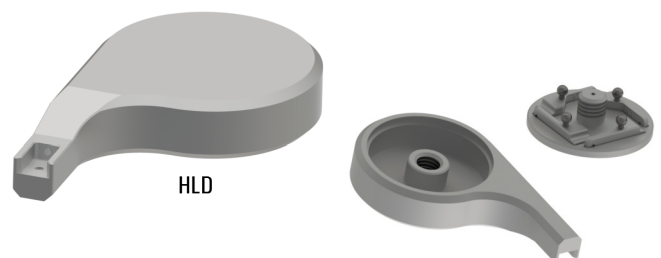
Clamping unit (CLPF + CLPL)

- consisting of fixed and loose jaw (CLPF+CLPL)
- holding and fixation of GRIN-microsystems
- different movable jaws for diameter: 0.5 / 0.7 / 1.0 / 1.2 / 1.4 mm
- easy change of movable jaw due to magnetic pull
- ball handle for moving the movable jaw for picking and dropping the microsystem



Holder for clamping unit (HLD) with movable jaw magazine

- holding and handling of the jaws including the GRIN-microsystem
- easy pick and place of the jaws because of magnetic pull
- allows the one-hand-usage to pick and drop the GRIN-microsystems
- magazine with four places for the not used movable jaws inside the handlebar
- anodized aluminum



Set includes:

- XYZ Stage (XYZSTG)
- fixed jaw of the clamping unit (CLPF)
- holder for clamping unit inclusive magazine for three jaw of different diameters (HLD)
- one movable jaw of your choice (CLPL)
- other movable jaws for different diameter can be ordered separately

XYZSTG-B	XYZ Stage (B=blue)
CLPLXX-B	Loose jaw (XX = 1.4 / 1.2 / 1.0 / 0.7 / 0.5 mm; B=Blue)
CLPF-B	Fixed jaw (B=blue)
ADPXX	Adapting for microscope objective XX=Diameter
HLD-B	Holder for clamping unit (B=blue)

Variations due to modifications of the production process are possible. It is the user's responsibility to determine suitability for the user's purpose. Please ask for customized solutions.