

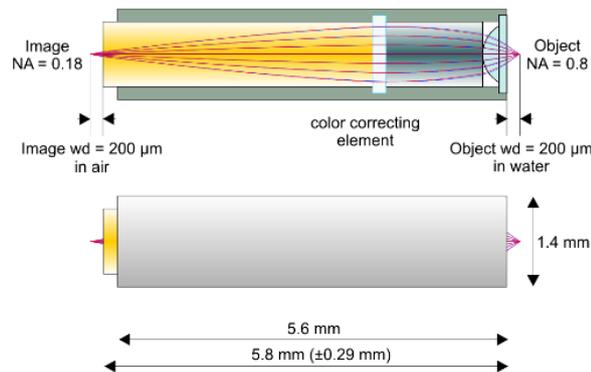
High-NA Endoscopic Imaging Objective as Achromatic Version

GRINTECH's high-NA Endoscopic Imaging Objectives with object Numerical Apertures of 0.8 are offered in an achromate version for applications where a wavelength depending focal shift between the excitation and detection is a problem and needs to be corrected.

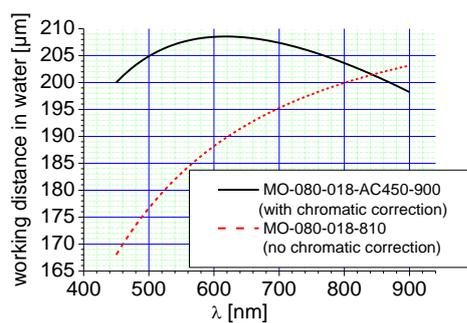
Applications: In vivo endomicroscopy, 2-photon endomicroscopy, deep brain and tissue imaging, flexible fluorescence microscopy

Product Code: GT-MO-080-018- AC900-450

- Features:**
- Object NA = 0.80
 - Object working distance 200 μm (water)
 - Image NA = 0.175
 - Magnification 4.76 x
 - Recommended Excitation 800 - 900 nm
 - Mounted in stainless steel holder
 - Color correction for 900 and 450 nm



Chromatic Aberration in Object Space



Variations due to modifications of the production process are possible. It is the user's responsibility to determine suitability for the user's purpose. For tolerances, handling and storage see page 26
Pat. US 7,511,891

Tolerances / Handling Instructions

Tolerances:

For of our single lenses we have the following fabrication tolerances and quality criteria:

Tolerances:

lens length z: $\pm 5\%$ due to variations of the gradient constant
working distance s: ± 0.02 mm (only LFRL- and CFRL lens series)
diameter d: $+ 0 / -0.01$ mm
- tighter diameter tolerances on request

Surface quality:

5 / 3 x 0.025; L 3 x 0.005; E 0
(defined by DIN ISO 10110-7:2000-02).
The surface quality is defined within 90 % of the lens diameter.
Outside of this area defects are allowed.

Storage and Handling of Lenses

Storage

GRIN lenses and lens systems should be stored in a dry environment. For short term storage, the plastic box or foam packing in which the lenses are shipped will provide adequate storage.

Recommended storage temperature: $-20^{\circ}\text{C} - 80^{\circ}\text{C}$.

Storage boxes should ensure that the lenses do not touch each other to prevent chipping and scratches. Best is to use the original box.

Handling

Lenses should be carefully handled with plastic tweezers, preferably those with a tapered end. Lenses should be picked up out of their individual compartments by firmly holding each on its side cylinder surface (not the polished ends). Especially small sized lenses may stick to the lens box material and can be lost during removal.

Cleaning

If it is necessary to clean the lens surfaces due some dust or other contaminant which may impair the optical performance GRINTECH generally recommends the use of ethyl alcohol as a cleaning solvent maybe combined with some smooth lintfree lens cleaning tissue. Acetone may also be used, but it should be pure enough otherwise it might leave some residue on the lens surface.