High Magnification Module (HMM)

☝₁ Preparation

✔ Prior to acquisition, ensure that the:

- Subject is properly seated and positioned.
- Subject is able to see the fixation light.
- Eye being examined is not dilated.
- Objective lens is clean.

Prior to acquisition, follow these steps:

☝₁ Acquire a 30-degree NIR image to assess the overall quality (illumination, signal, etc.), to optimize the focus, and to identify ROIs.

✌₂ Attach the objective lens and re-adjust camera if necessary. *Focus will change -8.00 D after attaching the objective.*

🤟₃ Re-adjust the focus to match the previous focus setting.

🖐₄ Disable the auto-brightness option before starting the acquisition to ensure optimal illumination can be achieved.

ⓘ Position the objective lens 5 cm from the cornea.
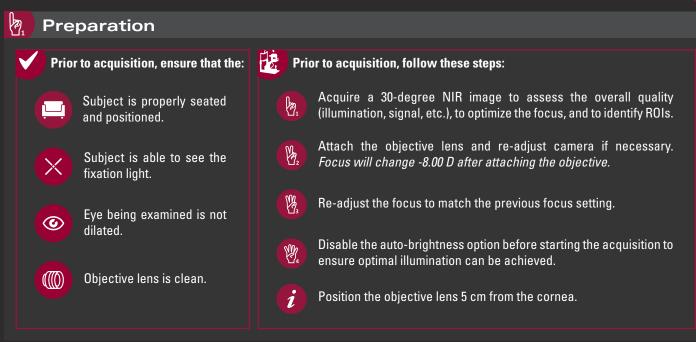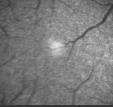
✌₂ Challenges and Remedies

Focus adjustment

may vary depending on the curved fundus: some areas may be in focus while others are out of focus.

- Check the fine adjustments of the joystick and focusing knob.
- Use artificial tears to improve media clarity.

💡 When a mosaic of bright circular features (possibly photo-receptors) appears, the focus is optimized for visualization of outer retinal structures. From this point, with a focus shift of -0.5 D, fine stripes within the inner retina (possibly RNFL bundles) may be visualized.

Lens accommodation

may change the image quality acutely in the absence of focus changes.

- Wait a few seconds so that accommodation stabilizes.
- Use external fixation to minimize accommodation if necessary.

ⓘ Depending on each of these factors and the quality of the ocular optics of the patient, high feature contrast in each area of interest may not be achievable.

Larger pupils

may lead to more optical aberrations. Optimal imaging is possible with pupils that are ~1.5 mm in diameter.

- Illuminate the fellow eye using an external light in order to decrease the optical aberrations by reducing the pupil size.

High refractive error and/or astigmatism

are susceptible to image blur and distortions due to focus changes.

- Images acquired with spectacles or contact lenses could improve image quality, especially in cases of significant astigmatism.

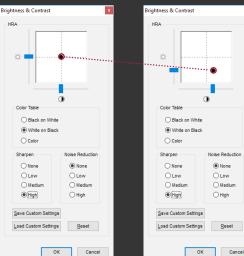# High Magnification Module (HMM)

3 Image Analysis

Review the original images
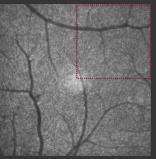
Zoom in to better assess the microstructures.

"Brightness & Contrast"

- Sharpness set to "Low-Medium-High" may increase the contrast of features of interest.

- Noise reduction should remain on default ("None") as adjustments of this option may lead to blurring of the image.

- A minor decrease of brightness and increase of contrast may increase the contrast of features of interest.
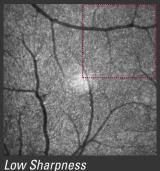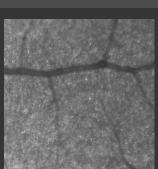
Original image

Original image (zoomed-in)

Low Sharpness

Low Sharpness (zoomed-in)

Original image

Individual brightness and contrast setting

Original image

Individual brightness and contrast setting

4 Image Export

„Export as picture"

After making changes in the image contrast brightness dialog, please make sure to press "OK" to apply all changes. After this, exported images have the setting applied.

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