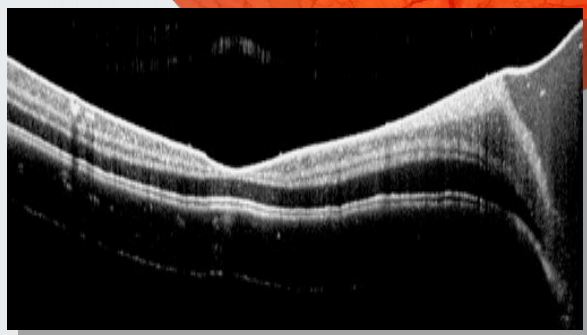
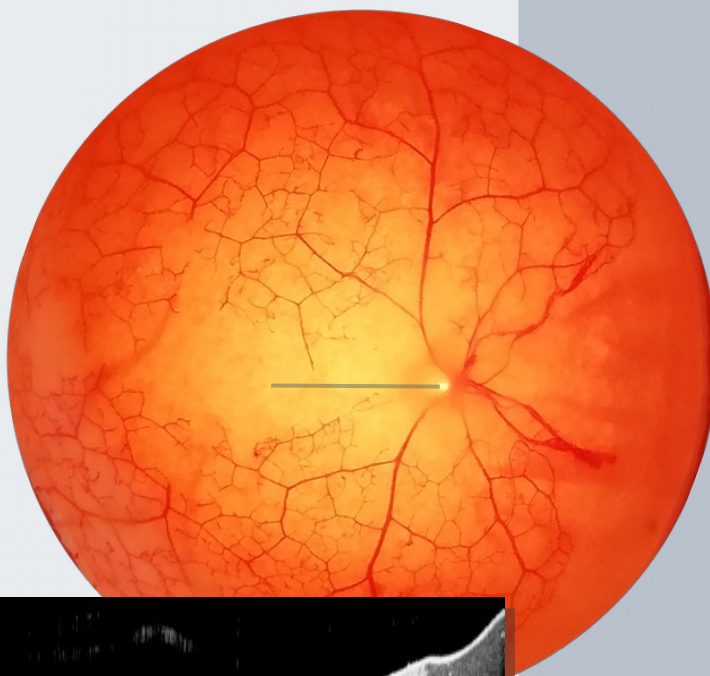


Modell-Augen Manufaktur

Dr. Eva Lankenau



Model Eye
for

Optical
Coherence
Tomography

Special benefit of the Model Eye

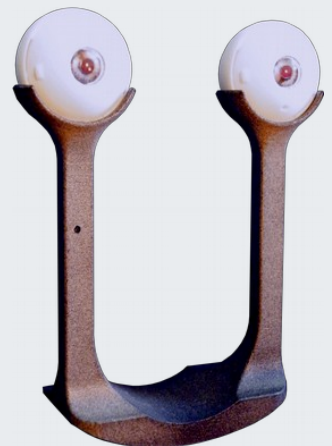
- Present your OCT device with a suitable model eye.
- Your OCT device training with a suitable model eye
- Train your end customer with a suitable model eye when handling your OCT device
- Compare your OCT device with those of the competition with a reproducible sample



Model eye with illuminated stand

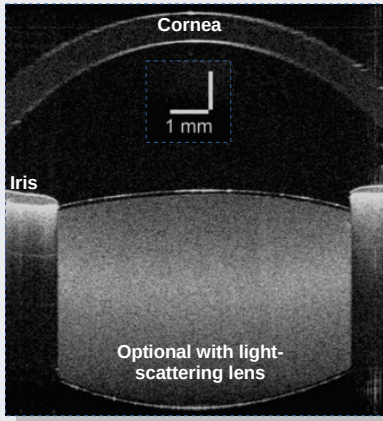
The Model Eye

- Anterior and posterior segment of the model eye looks in OCT nearly like a human eye
- Hand made model retina with vascular structure, retinal layering, macula and optic nerve
- Models the human retina
- Optionally, the model retina contains a fluorescent vascular structure



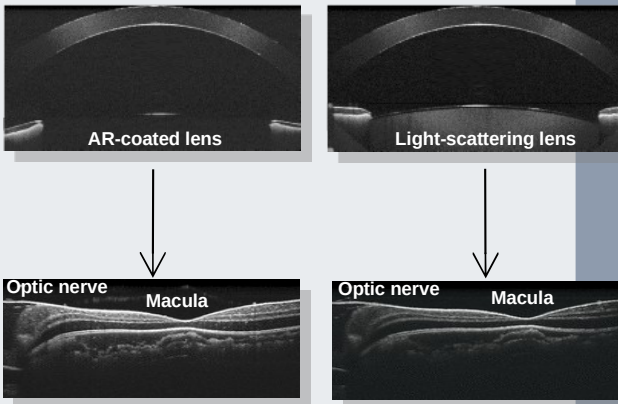
Two model eyes with chin holder

OCT imaging of the Model Eye



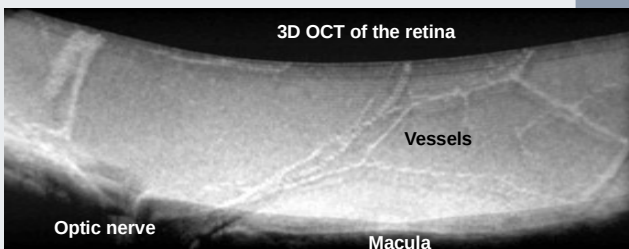
Elastic and light-scattering cornea for demonstrating curvatures

Curvature and thickness of the model cornea is nearly like a human cornea



Anti-reflective coated lens or alternatively with a light-scattering lens (nearly like a patient with natural lens). The light scattering lens reduces the image quality of the retina.

Central distance from corneal top to retina adjustable around the 24 mm (calculated with the refractive indices of a human eye at 840 nm)



Distance of macula to optic nerve about 5 mm

Model Imaging

Fig. 1
Model eye with
incident white light
illumination



Fig. 1

Fig. 2
Model eye with
transmission
illumination white



Fig. 2

Fig. 3
Fundus image of the
model retina 1 with
incident white light
illumination

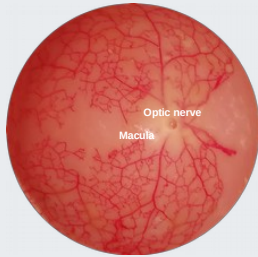


Fig. 3

Fig. 4
Fundus image of the
model retina 1 with
transmission
illumination white



Fig. 4

Fig. 5
Fundus image of the
model retina 2



Fig. 5

Fig. 6
Fluorescein image of
model retina 2



Fig. 6

Fig.7
Fundus image of the
model retina 3



Fig. 7

Fig. 8
ICG image of the
model retina 3

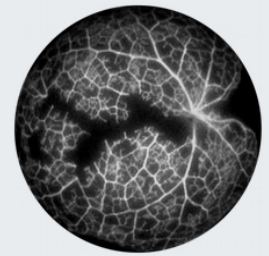
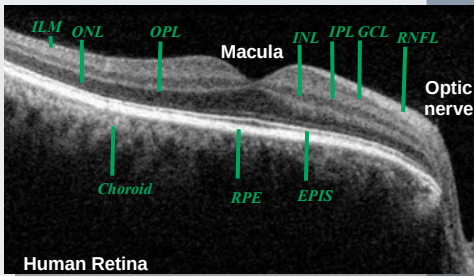
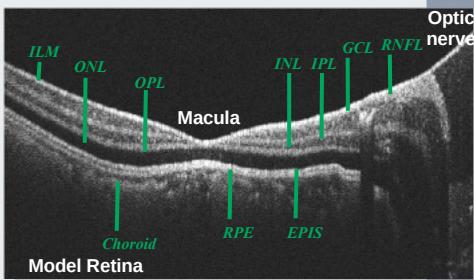


Fig. 8

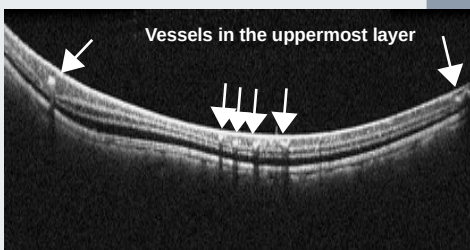
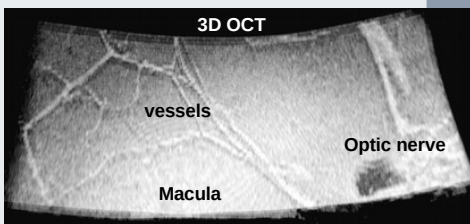
OCT imaging of the Retina



The model retina resembles the structures, layers and vessel structure of a human retina



Modeled retinal layers: ILM, RNFL, GCL, IPL, INL, OPL, ONL, EPIS, RPE and Choroid.



The retina contains a branching of vessels in the uppermost layer of the retina, branching out from the optic nerve around the macula.

Modular Assembly

Article no. 32x-y

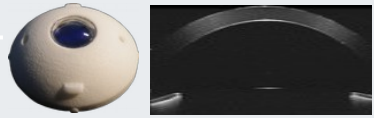
Anterior segment of the eye with AR-coated lens and elastic cornea:

x=1 for anterior segment without trokar accesses

x=2 for anterior segment with 2 trokar accesses

y=4 for Pupil diameter: approx. 4 mm

y=8 for Pupil diameter: approx. 8 mm



Article no. 33x-y

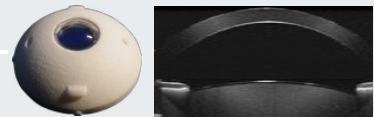
Anterior segment of the eye with light-scattering lens and elastic cornea:

x=1 for anterior segment without trokar accesses

x=2 for anterior segment with 2 trokar accesses

y=4 for Pupil diameter: approx. 4 mm

y=8 for Pupil diameter: approx. 8 mm



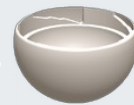
Article no. 327-1

Printed scleral vessels for the anterior segment



Article no. 323-1

Back eye-piece holder without retina

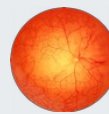
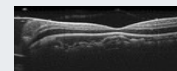


Article no. 324-z

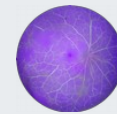
z=1 for Retina 1 with red vessels

z=2 for Retina 2 with fluorescein stained vessels

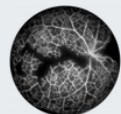
z=3 for Retina 3 with Indocyanine green stained vessels



z=1



z=2



z=3

Article no. 325-1

Stand holder



Article no. 325-2

Light source for the stand holder



Article no. 325-3

Chin holder for two model eyes



Specifications

Model Eye

- Fundus length adjustable together with diopter
- Fundus length: around 24 mm (calculated with the refractive indices of a human eye at 840 nm)
- Exterior color: white
- Significantly used materials: silicone, latex, polyamide, glass

Cornea

- Diameter: approx. 11 mm
- Slightly light-scattering property
- Similar to a human cornea

Iris

- Pupil diameter: approx. 4 mm (optionally 8 mm)
- Light-scattering property

Lens

- Central thickness: 2.5 mm
- AR coated for $R < 1.25\%$ at 400-1000 nm $< 0.25\%$ reflection at 880 nm
- Alternatively: light-scattering lens, Material: silicone. central thickness about 4mm

Retina

- Radius: approx. 15 mm
- Replica of the retinal layers
- Replica of the macula
- Replica of the optic nerve
- Red vessel structure in the uppermost retina layer
- optionally fluorescent vessels with Fluorescein or Indocyaningreen

Chin Holder

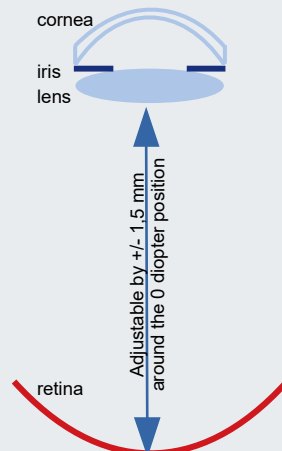
- Size (h, w, d): 115 mm, 140 mm, 40 mm
- Radius of curvature of the bottom: 75 mm
- PD (pupillary distance): 70 mm
- Distance between the pupillary center and the chinrest bottom: 121 mm
- Material: polyamide gray

Stand Holder

- Diameter: 57mm Height: 21mm
- Material: Polyamide black

Light source for Stand Holder

- Dimensions: 10cm x 2 cm, color: white
- Illuminant: 4 x 0.07 Watt LED
- Luminous flux: approx. 50 lumens
- Light color: warm white, approx. 3000K
- Battery life: up to 25 hours / set
- Batteries: 3 x 1.5 Volt LR6 (AA, AlMn)





Put together
your desired
combination



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