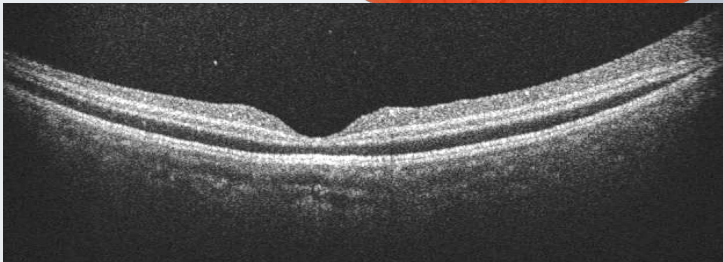
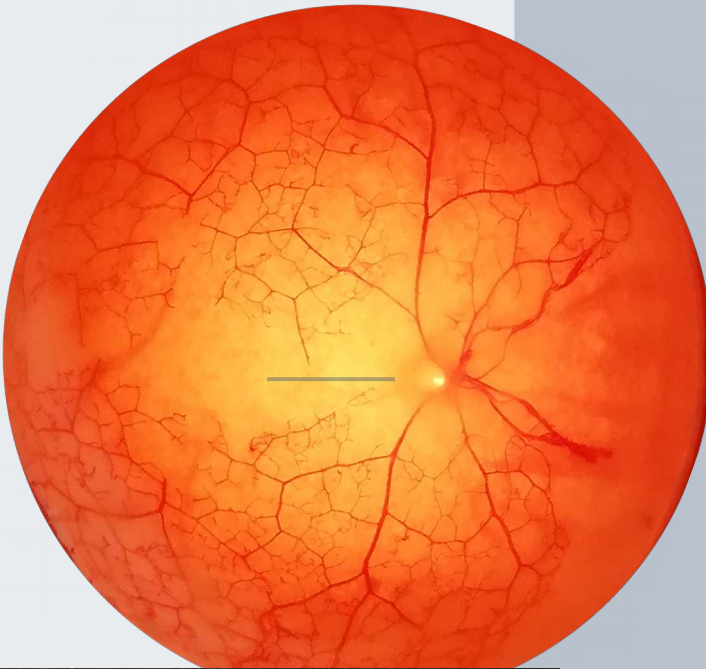


# Modell-Augen Manufaktur

Dr. Eva Lankenau

**New: solid model eye without any air inside**



Solid Model Eye  
for

Optical  
Coherence  
Tomography

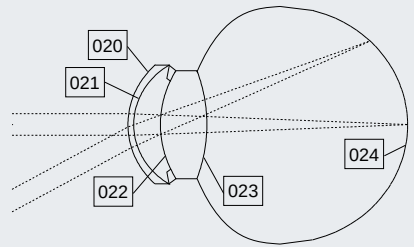
# Special benefit of the Model Eye

- 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

## The Model Eye

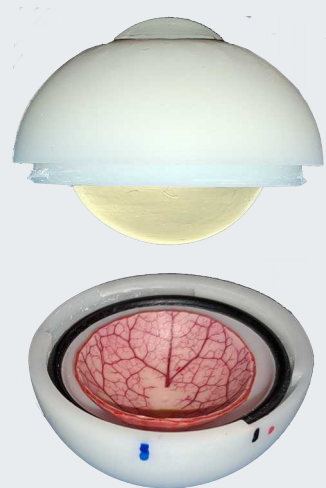
- New: without any air inside
- Anterior and posterior segment of the model eye looks in OCT nearly like a human eye
- Hand made model retina with vascular structure, retinal layering, macula and optic nerve
- Models the human retina
- Optionally, the model retina contains a fluorescent vascular structure

**New: without any air inside**



### Optics of the solid model eye

- 020 = surface of the cornea  $\Delta n \sim 0,4$
- 021 = back of the cornea  $\Delta n \sim 0,006$
- 022 = surface of the lens  $\Delta n \sim 0,053$
- 023 = back of the lens  $\Delta n \sim 0,053$
- 024 = back of the posterior chamber  $\Delta n$  depending on index matching to the retina

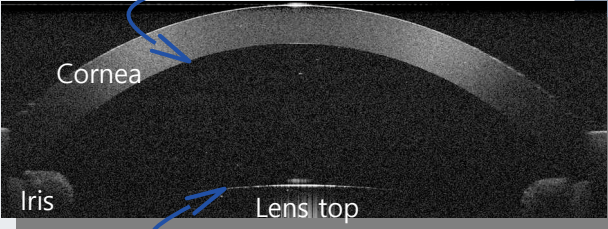


**Hand made model retina with vascular structure, retinal layering, macula and optic nerve**

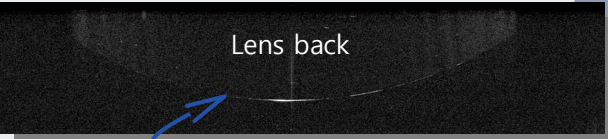
# OCT imaging of the model eye

New: without any air inside

Reduced reflex ( $\Delta n \sim 0,006$ )

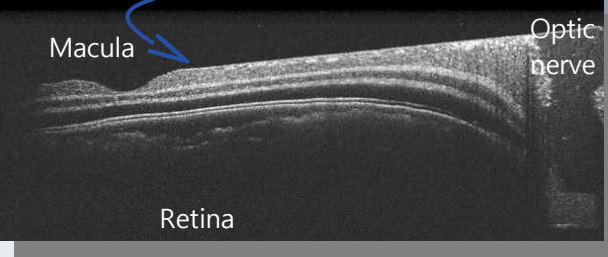


Reduced reflex ( $\Delta n \sim 0,053$ )



Reduced reflex ( $\Delta n \sim 0,053$ )

Reduced reflex with index matching oil



- Anterior chamber similar to that in humans

- Translucent silicone cornea for demonstrating curvatures

- Crystal clear silicone anterior chamber without any air

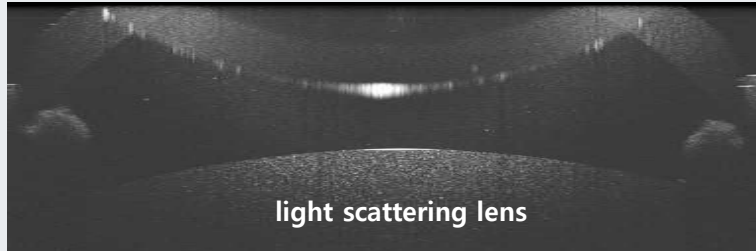
- Translucent silicone lens

- Transparent silicone posterior chamber without any air

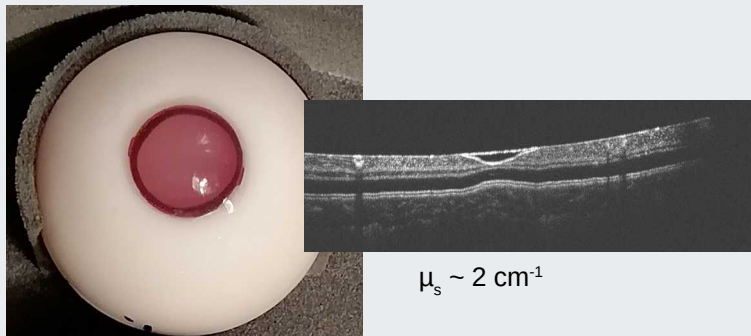
- Model retina with vascular structure, retinal layering, macula and optic nerve

# Cataract Model eye

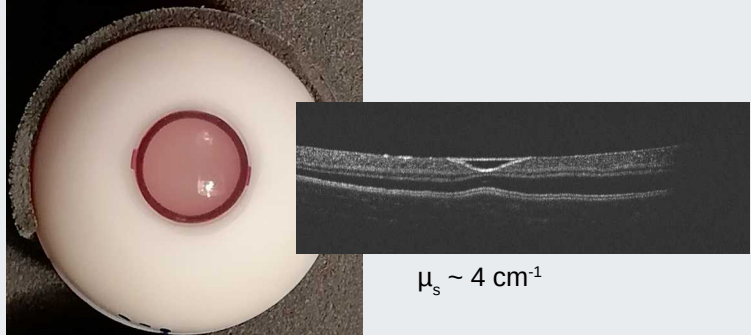
Model eye with  
Cataract lens:



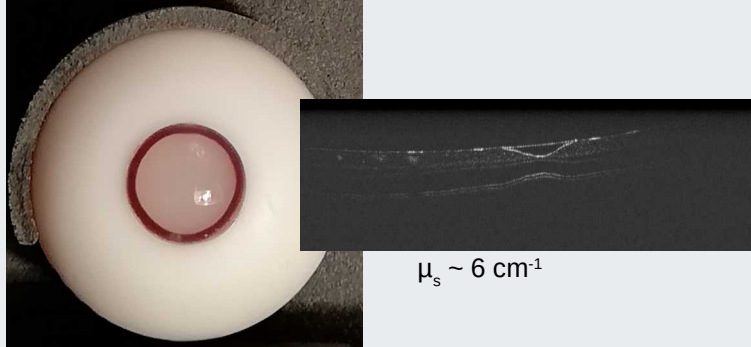
➤ slight cataract  
with light  
scattering  
lens:  $\mu_s \sim 2 \text{ cm}^{-1}$



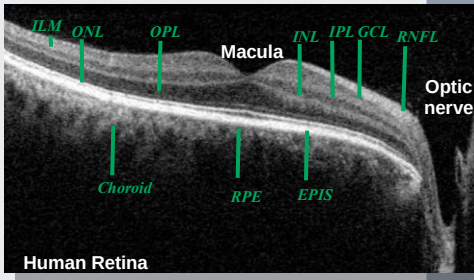
➤ moderate  
cataract with  
light scattering  
lens:  $\mu_s \sim 4 \text{ cm}^{-1}$



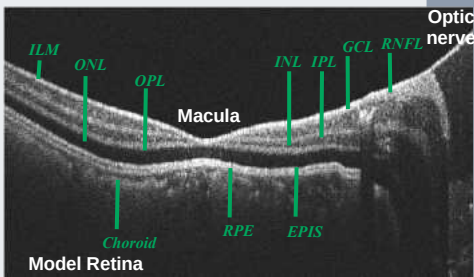
➤ severe cataract  
with light  
scattering  
lens:  $\mu_s \sim 6 \text{ cm}^{-1}$



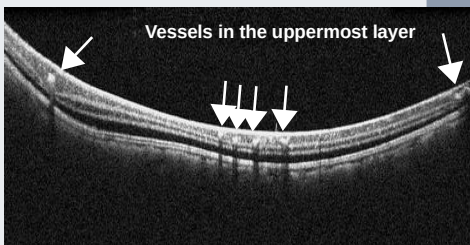
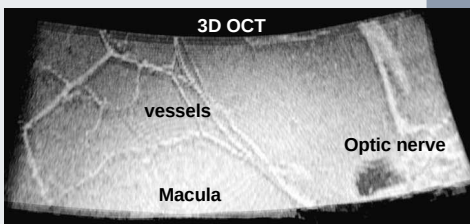
# OCT imaging of the Retina



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. 40y-x

Solid model eye with light-scattering cornea, transparent silicone anterior chamber, light-scattering iris, silicone lens and transparent silicone posterior chamber (without Retina)

x = 4 (Pupil diameter: approx. 4 mm)

x = 5 (Pupil diameter: approx. 5 mm)

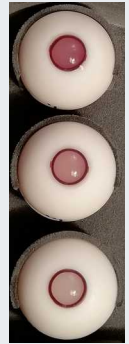
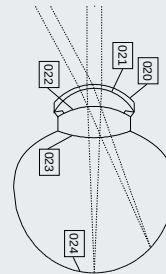
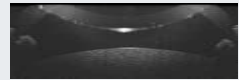
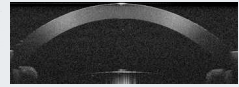
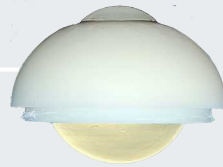
x = 8 (Pupil diameter: approx. 8 mm)

y = 0 (transparent silicone lens)

y = 2 (slight cataract lens)

y = 4 (moderate cataract lens)

y = 6 (severe cataract lens)



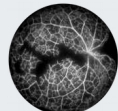
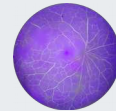
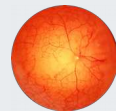
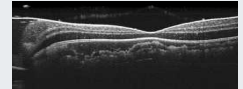
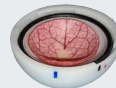
## Article no. 410-z

Retina holder with model retina: Radius: approx. 10 mm, Replica of the retinal layers, Replica of the macula, Replica of the optic nerve, Red vessel structure in the uppermost retina layer

z=1 for Retina 1 with red vessels

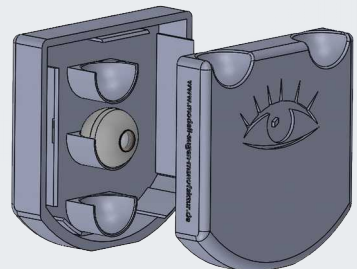
z=2 for Retina 2 with fluorescein stained vessels

z=3 for Retina 3 with Indicyaningreen stained vessels



## Article no. 420-1

Multifunctional, reusable protective packaging including chin holder



# Specifications

## Solid Model Eye

- Fundus length: around 24 mm (calculated with the refractive indices of a human eye)
- Exterior color: white
- Significantly used materials: silicone, latex, white resin

## Cornea

- Diameter: approx. 11 mm
- Central thickness approx 500  $\mu\text{m}$ ,
- Material: Silicone  $n_g(840 \text{ nm})=1,416$
- Slightly light-scattering property
- Similar to a human cornea

## Anterior chamber

- Material: Silicone  $n_g(840 \text{ nm})=1,41$

## Iris

- Pupil diameter approx. 8 mm (optionally 4 mm or 5 mm)
- Light-scattering property

## Lens

- Central thickness approx 4 mm
- Material: Silicone  $n_g(840 \text{ nm})=1,463$
- Optionally as Cataract lens with  $\mu_s \sim 2 \text{ cm}^{-1}$ ,  $\mu_s \sim 4 \text{ cm}^{-1}$  or  $\mu_s \sim 6 \text{ cm}^{-1}$

## Posterior chamber

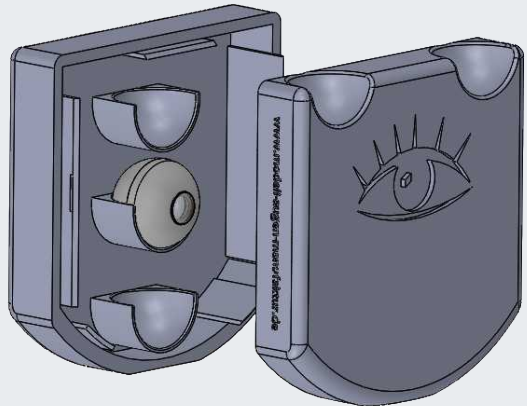
- Material: Silicone  $n_g(840 \text{ nm})=1,41$

## Retina

- Radius: approx. 10 mm
- Replica of the retinal layers
- Replica of the macula
- Replica of the optic nerve
- Red vessel structure in the uppermost layer
- (optional fluorescent vessel structure)

## Multifunctional, reusable protective packaging including chin holder

- Size (h, w, d): 115 mm, 110 mm, 45 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: rubber like TPU, gray





# Modell-Augen Manufaktur

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