

**FOS**  
Inon optics



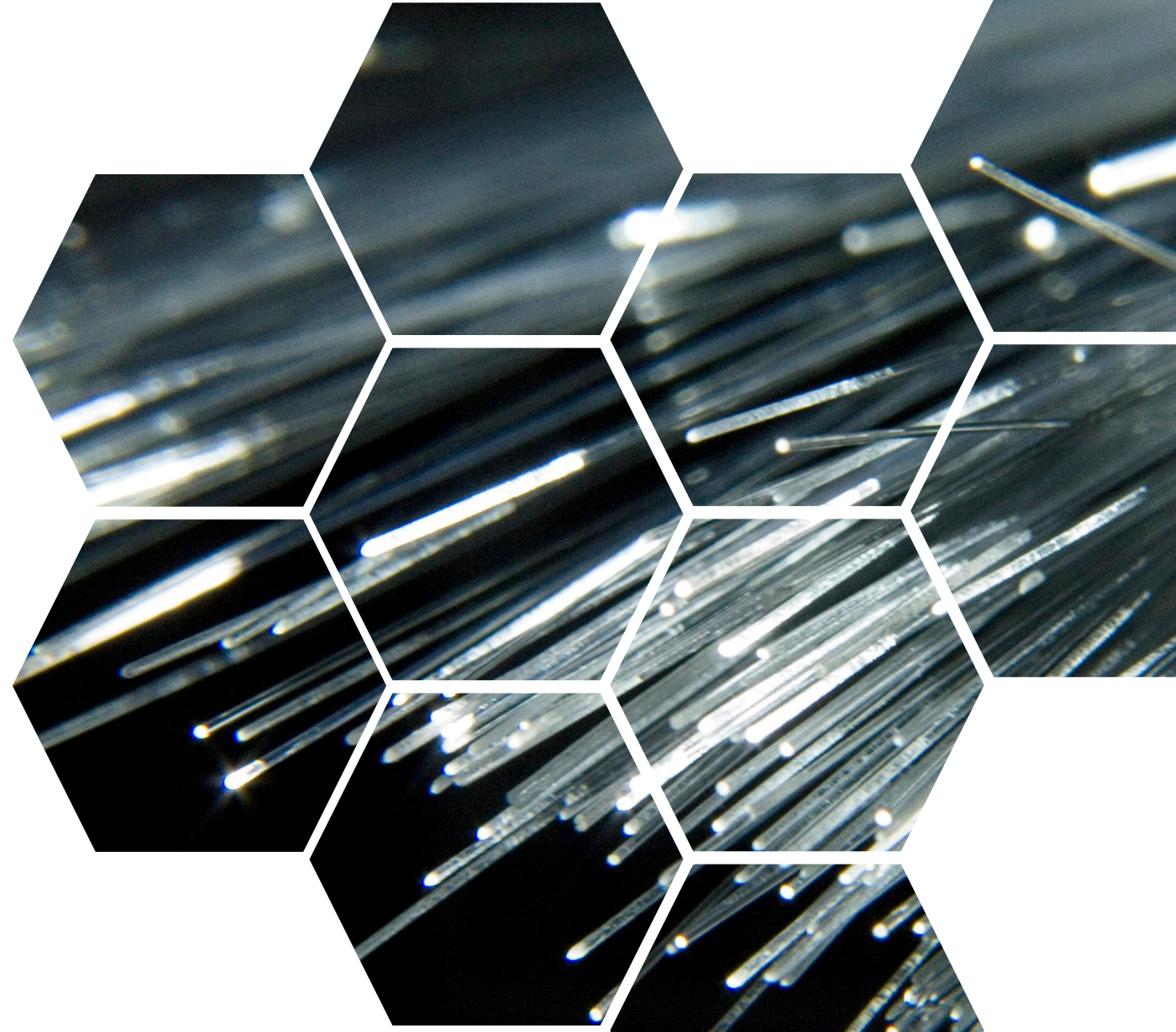


## **FOS Inon Optics**

- Production side and
- Legal Office: Eiserfelder Strasse 316, 57080 Siegen



High-performance  
Manufacturing.  
Specialized in producing optical  
fiber bundles and cables for  
wide industrial and scientific  
applications.









**FOS Inon Optics is specialized  
in design and producing  
a full range of custom  
Products.**



# We work with all Fibers

**Borosilica | PMMA | Silica-Hard Clad | Silica-Silica for UV and NIR wavelength**

*„We make the impossible happen “*

**We offers you:**

Custom-made **Fiber Optics Solutions** from **1st piece**

**10µm** up to **2400µm**, all fibers Ferrules and Connectors. We meet up with your requirements.



# Production technics

- **Glued Bundles and Cables**, for laboratory use
- Fused / **Welded Fiber Bundle Tips**, for special Environments or Temperature issues
- **Sorted fiber Bundle**, for perfect randomization
- **Deep UV-wavelength** Applications from 189nm
- **NIR-wavelength** Application till 2380nm
- **Illumination Borosilica Bundles**

$$\varnothing_{\text{core}} = 10 - 2400\mu\text{m}$$

$$\Delta\varnothing_{\text{core}} = \pm 2\%$$

$$\varnothing_{\text{core}} : \varnothing_{\text{clad}} = 1 : 1.05 - 1.4$$

$$\varnothing_{\text{jacket}} = 100 - 2900\mu\text{m}$$

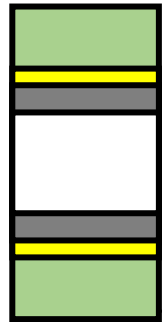
$$\Delta\varnothing_{\text{jacket}} = \pm 5\%$$

$$\text{NA} = 0.06 - 0.27 \text{ (silica/silica F-doped)}$$
$$0.37 \text{ (silica/silica Ge-doped)}$$
$$0.5 \text{ (hardclad)}$$





# All fibers



Core (n1): Fused silica, quartz,  $\text{SiO}_2$

- a) pure
- b) Germanium doped
- c) PMMA

Clad (n2): Fused silica, quartz,  $\text{SiO}_2$

- a) Fluorine doped
- b) no clad
- c) PMMA doped

Buffer:

- a) Polymer Clad, "Hardclad"  $\rightarrow$  n2 (n3)
- b) Silicone
- c) no buffer

Jacket:

- a) Polyimide
- b) Nylon
- c) ETFE ("Tefzel")
- d) Acrylate

Temp.  $< 70^\circ\text{C}$

Temp.  $< 200^\circ\text{C}$

Temp.  $-190^\circ\text{C} \dots 390^\circ\text{C}$ , vacuum ok

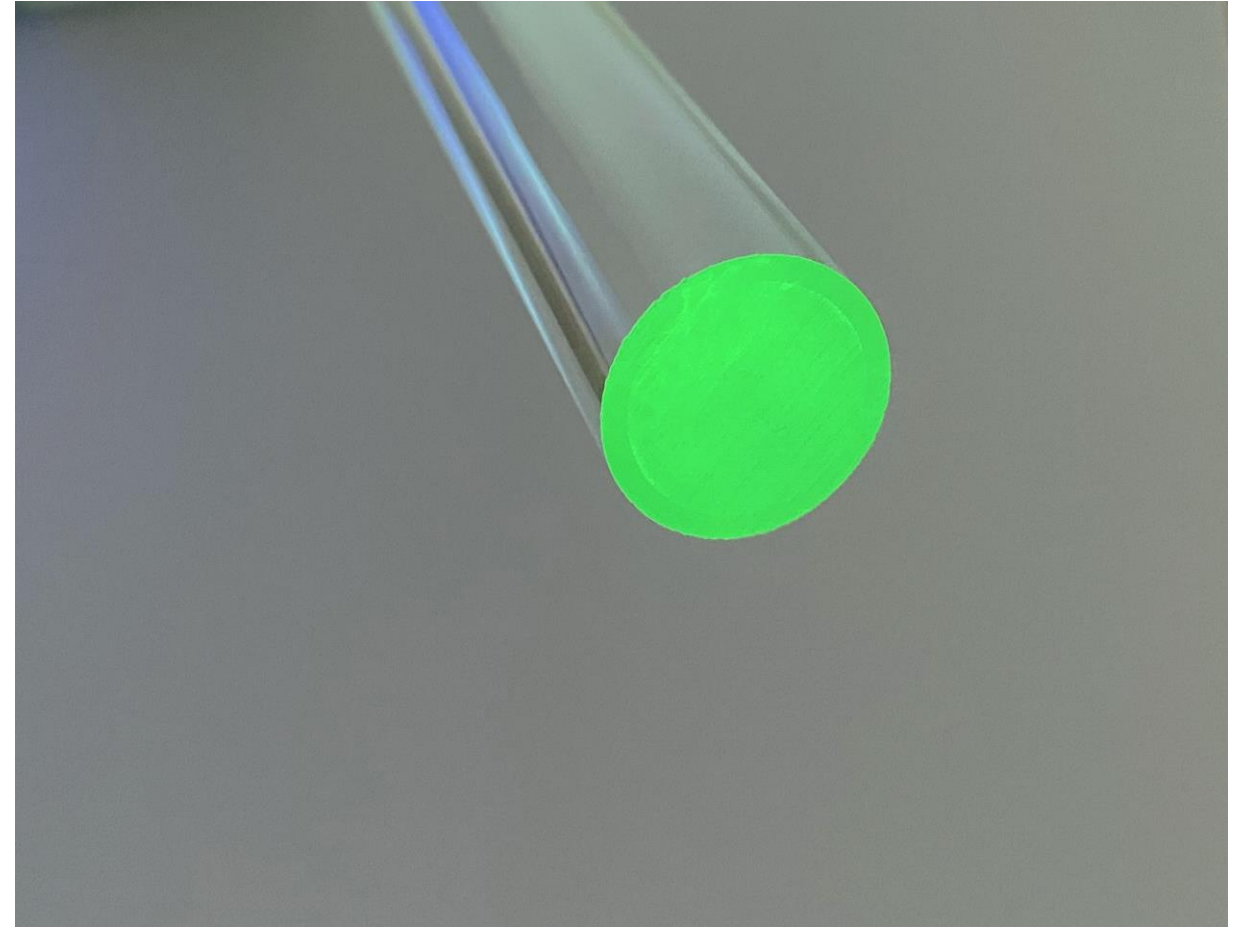
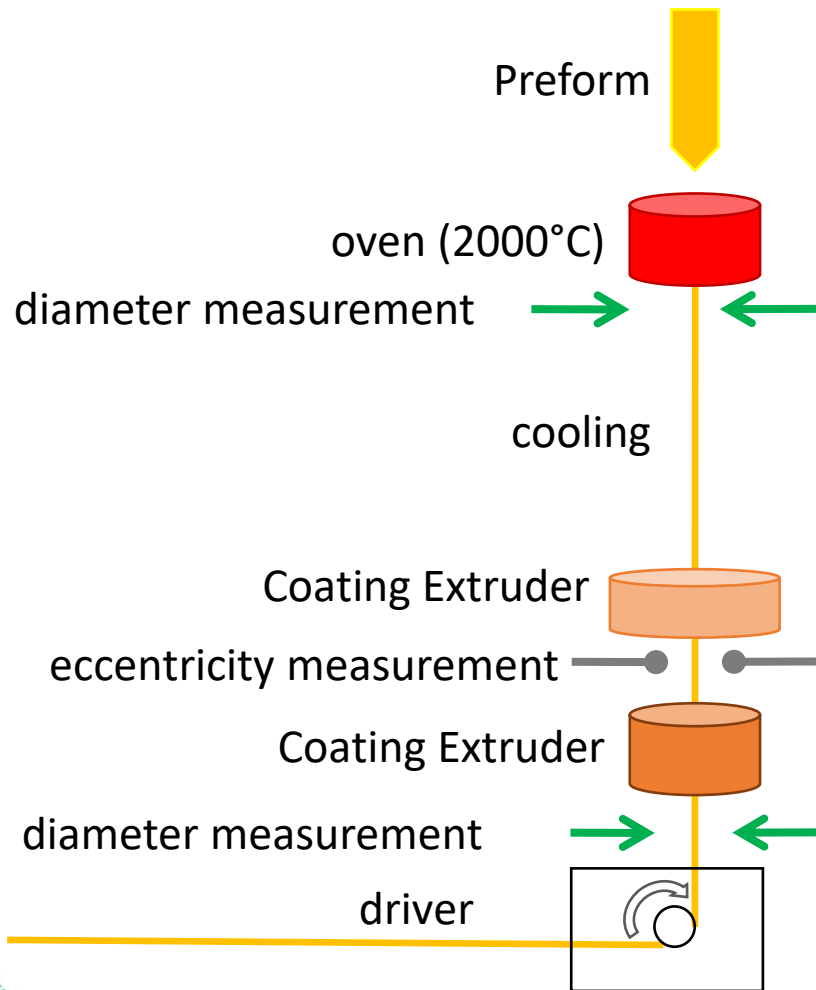
Temp.  $< 100^\circ\text{C}$

Temp.  $< 150^\circ\text{C}$

Temp.  $< 85^\circ\text{C}$

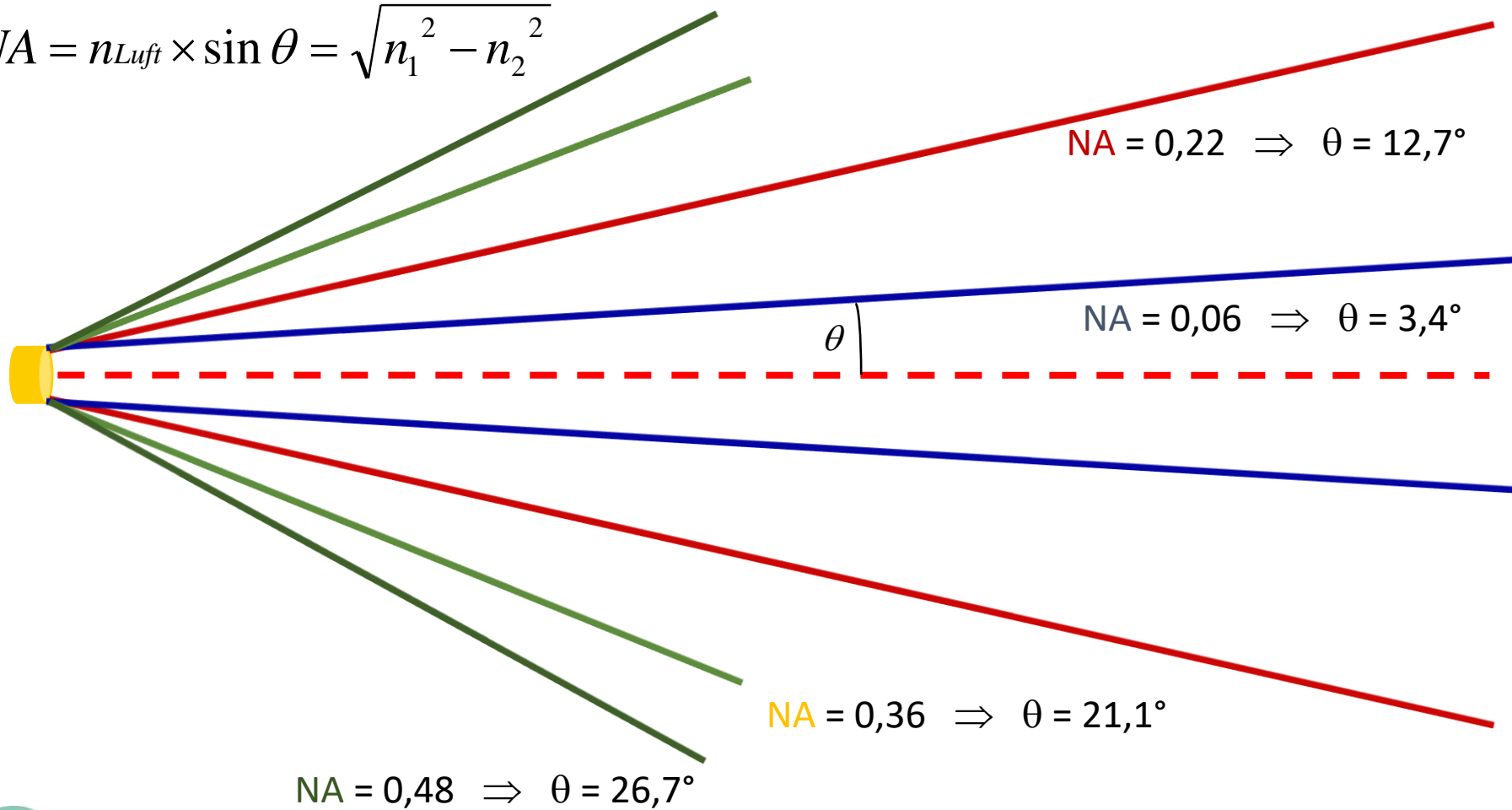


# Fiber Manufacturing

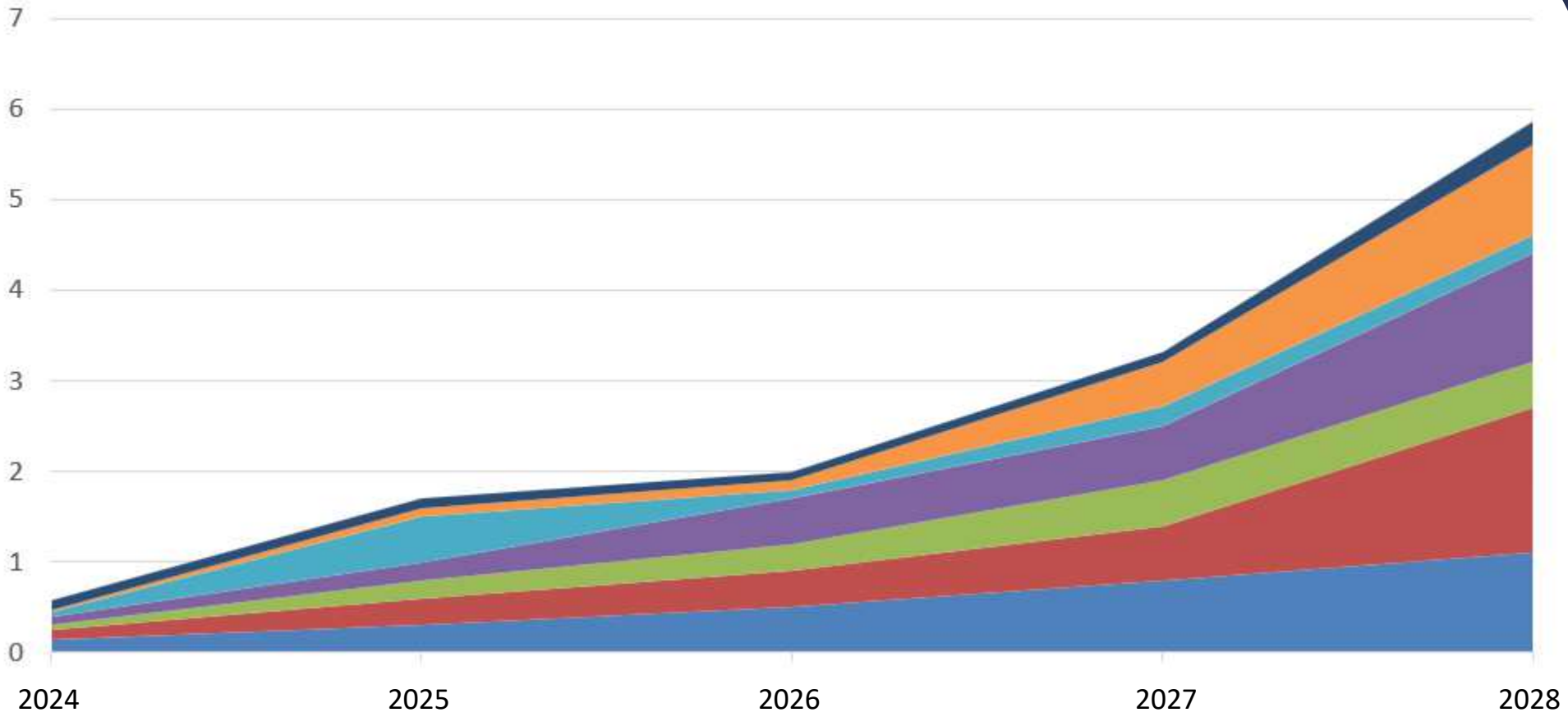


# Numerical Aperture

$$NA = n_{Luft} \times \sin \theta = \sqrt{n_1^2 - n_2^2}$$



### Expected Growth of FOS – Industrial side



# Quality control and testing

FOS Inon has its own independent production Quality Control, which will make sure that the requirements stated in technical drawings have been met accordingly.

Our ISO 9001: 2015 certification underlines this; within a short time, less than two years after the company was founded, we have proven that our quality standards are not just an idea.



# Thank you!

Contact:

**FOS Inon Optics GmbH**  
Eiserfelder Strasse 316  
57080 Siegen  
Germany

@. info@fsoptics.de  
Tel. +49 271 3875 1340  
www. fsoptics.de

