



# **EPIC Online Meeting on Medical Lasers**

**Stefan Gliech, Optics Balzers**

# Production Sites

Balzers, Liechtenstein



**Building Neugrüt**

Jena, Germany









**Building Otto-Eppenstein-Strasse**

Penang, Malaysia



**Building Lorong Perusahaan 4, Penang**





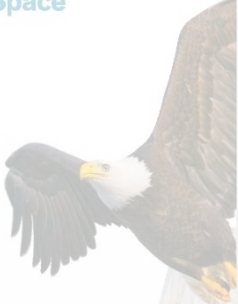

About 600 employees worldwide

Life Science	Industry	Consumer	Lighting	Space	Automotive
					

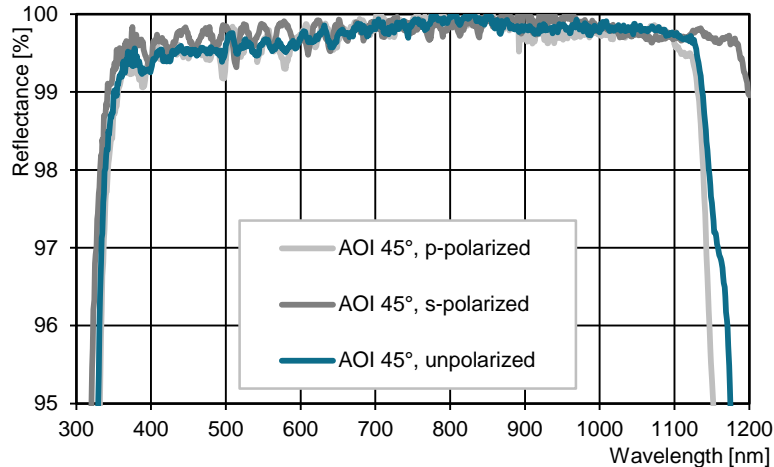
## Sub-Segments

- |   |  |  |  |   |   |
|---|--|--|--|---|---|
| <ul style="list-style-type: none"> <li>▪ Microscopy</li> <li>▪ Diagnostics &amp; Analytics</li> <li>▪ Endoscopy</li> <li>▪ Surgery &amp; Treatment</li> </ul> | <ul style="list-style-type: none"> <li>▪ Laser Processing</li> <li>▪ Construction &amp; Logistics</li> <li>▪ Factory Automation</li> <li>▪ Metrology &amp; Inspection</li> <li>▪ Environmental Protection</li> <li>▪ Safety &amp; Security</li> <li>▪ Digital Imaging</li> </ul> | <ul style="list-style-type: none"> <li>▪ Digital Photography</li> <li>▪ Mobile Devices</li> <li>▪ Augmented &amp; Mixed Reality</li> <li>▪ Smart Home</li> <li>▪ Projectors</li> </ul> | <ul style="list-style-type: none"> <li>▪ Entertainment Lighting</li> <li>▪ Technical Lighting</li> </ul> | <ul style="list-style-type: none"> <li>▪ Earth Observation &amp; Space Exploration</li> <li>▪ Satellite Communication</li> <li>▪ Ground Based Astronomy</li> <li>▪ Defense</li> </ul> | <ul style="list-style-type: none"> <li>▪ HUD &amp; Digital Instrument Cluster</li> <li>▪ LIDAR</li> <li>▪ Cameras</li> <li>▪ Puddle Lights</li> <li>▪ Headlights</li> </ul> |
|---|--|--|--|---|---|

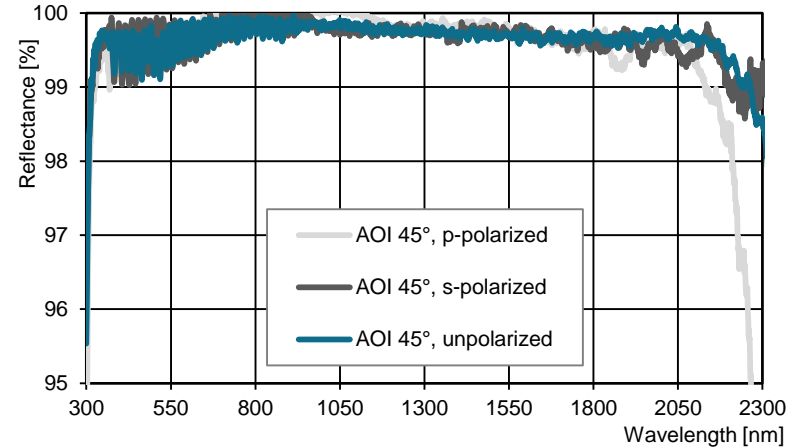
# Focus on the following examples

Life Science	Industry	Consumer	Lighting	Space	Automotive
					
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## Diflex™1100 spectral curve



## Diflex™2000 spectral curve



## Specification

Diflex 1100:  $R > 99\%$  for 350-1100 nm

Diflex 2000:  $R > 99\%$  for 320-2000 nm  
(for wide range of angle of incidence)

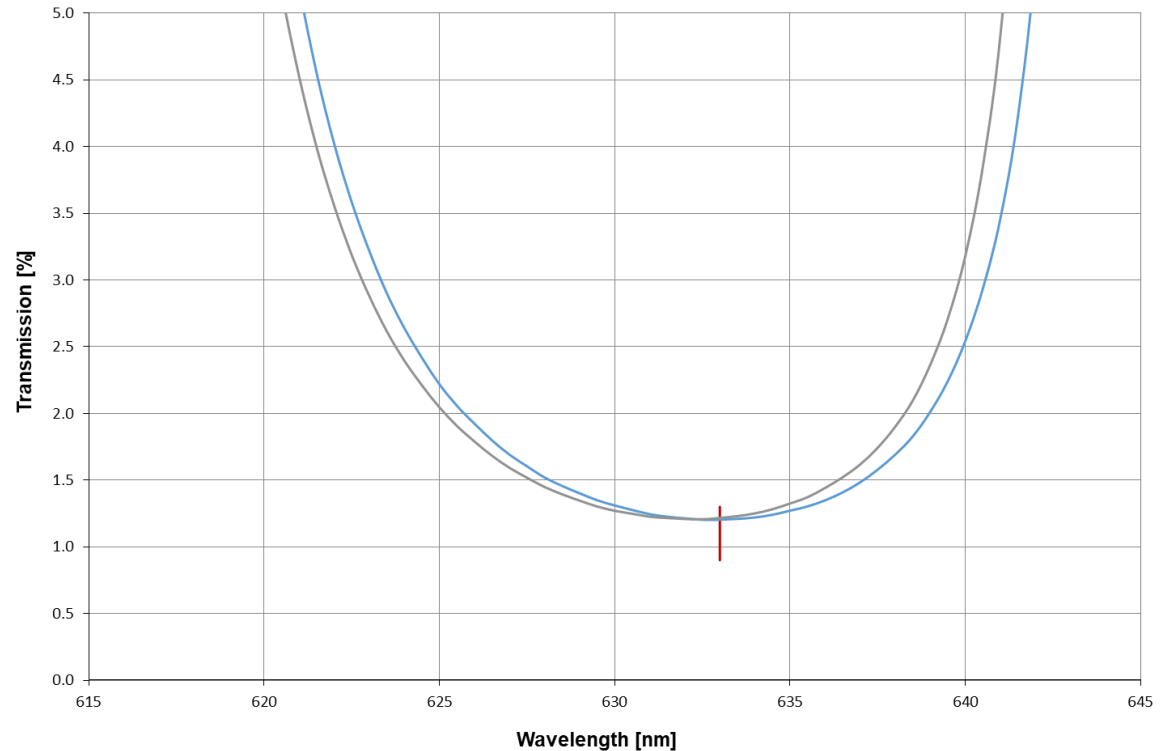
## Product / Solution

- consistent and high reflectivity over the full VIS and NIR spectral range
- long-term shift-free spectral performance
- high environmental stability
- wide flexibility in filter size

## Value proposition:

- High spectral performance
- Customized transmission for output coupler mirror
- High reflectance for mirror:  
 $R > 99.995\%$
- Mode hopping free design +  
side line suppression

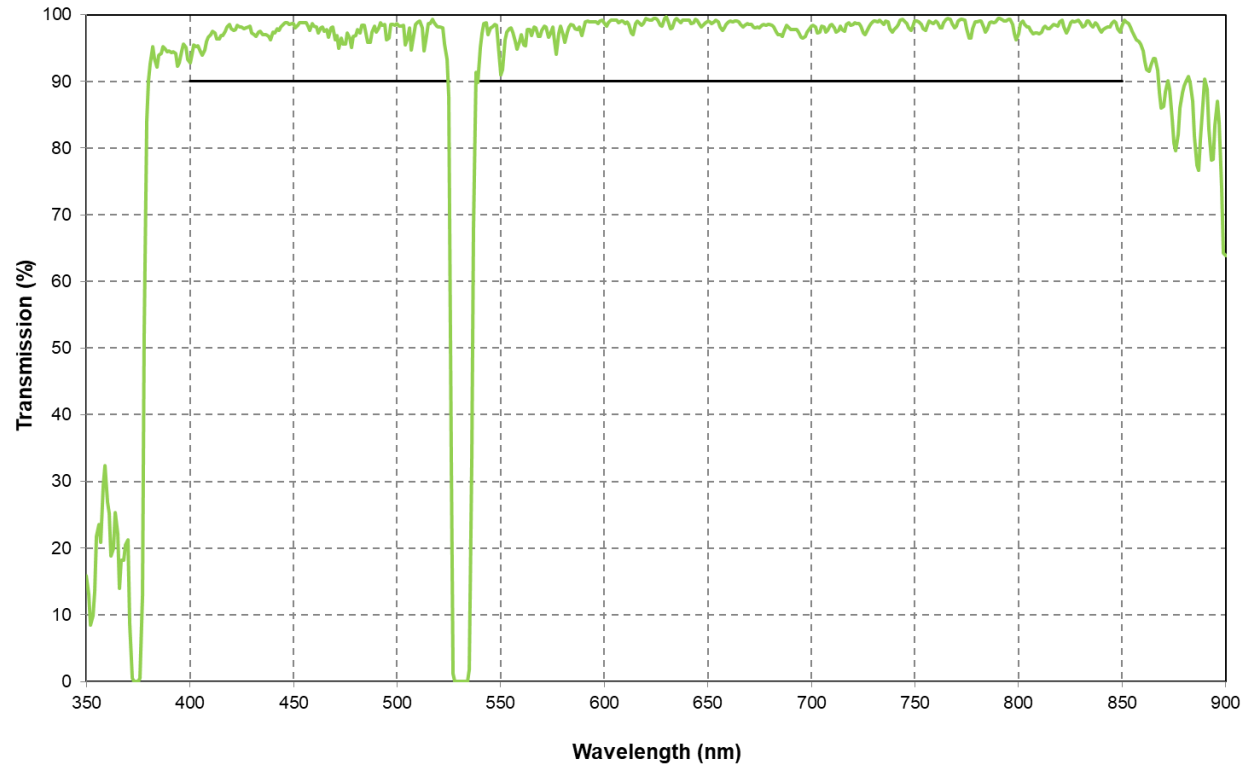
## Example: Output Coupler Mirror



## Value proposition:

- Deep blocking level
- High transmission
- Steep spectral edges
- High stability
- All parameters are customizable

## Example: Notch filter @ 532 nm, bandwidth 10 nm, OD6 blocking

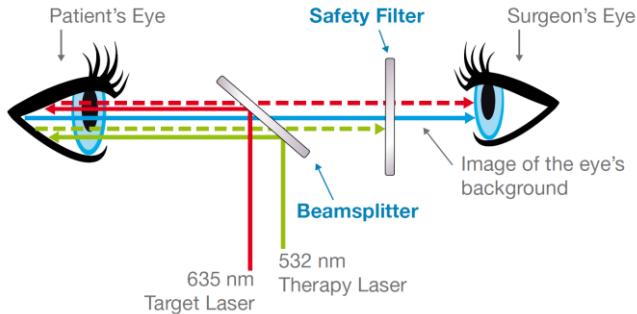


# Laser Safety Filters with Color Correction

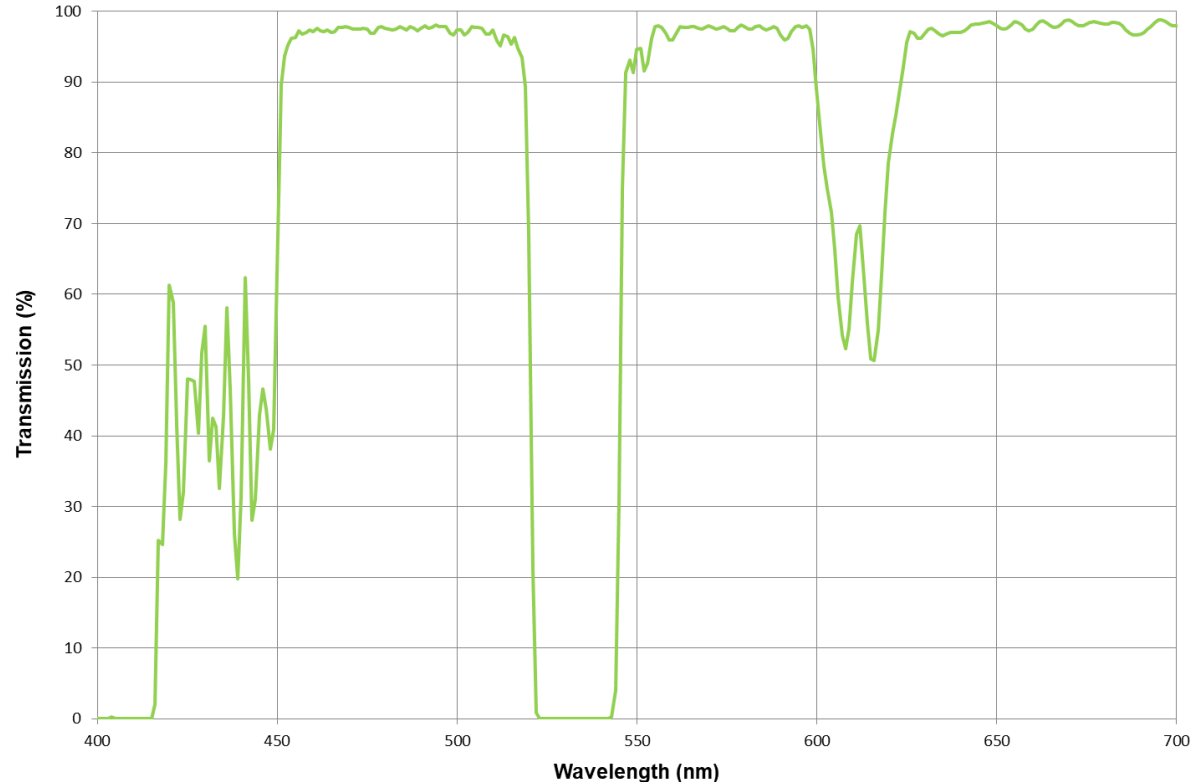
## Value proposition:

- Deep blocking level
- High transmission
- High stability
- All parameters are customizable

## Application: Eye surgery



## Example: Notch filter @ 532 nm with color corr., OD5 blocking



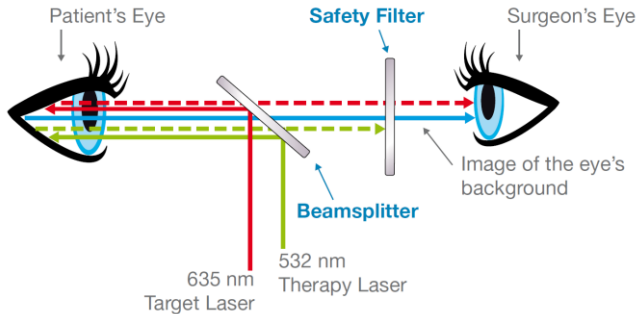


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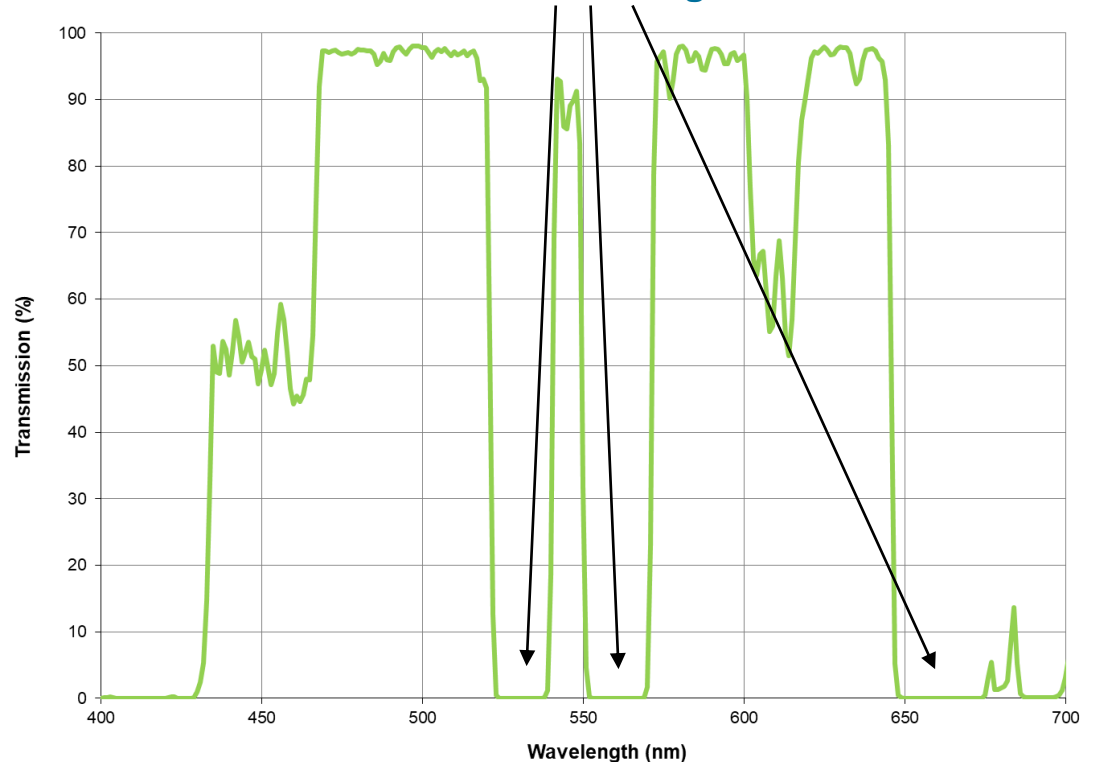
## Value proposition:

- Deep blocking level
- High transmission
- High stability
- All parameters are customizable

## Application: Eye surgery



## Example: Multi notch filter with color correction, OD5 blocking Three notch ranges



**Thank you very much  
for your attention**

## **Contact Details**

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