

# EPIC Online Technology Meeting on Endoscopy

Coating Solutions from Optics Balzers  
for the Medical Endoscopy Market

17.06.2020

## Company Overview



Balzers, Liechtenstein



Jena, Germany



Penang, Malaysia



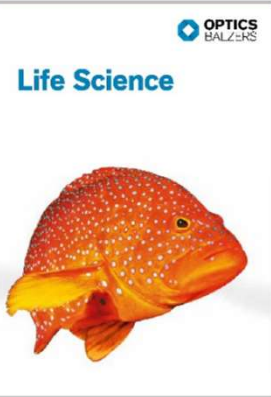


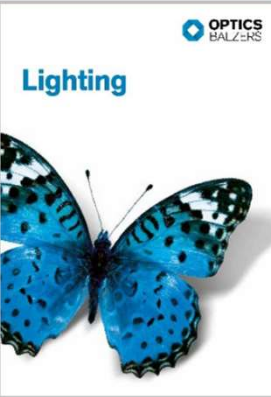

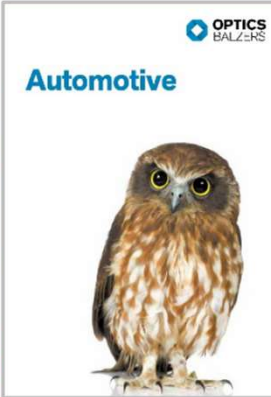
- Founded in 1946
- Ca. 500 FTE
- 3 Production Sites
- ww presence

**What we do:** In close collaboration with our customers, we design and manufacture optical coatings and components by adhering to strict specifications and maintaining high quality standards. Following market and technology trends in the photonics industry, we develop and offer advanced thin-film coating solutions for novel customer products and applications.

# Attractive Markets

## Unlimited applications for your high-tech markets

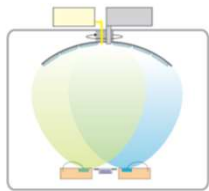


Life Science	Industry	Consumer	Lighting	Space	Automotive
					
Sub-Segments					

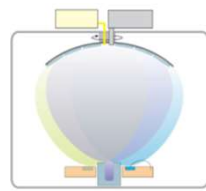
- |   |   |   |   |  |   |
|---|---|---|---|--|---|
| <ul style="list-style-type: none"> <li>▪ Microscopy</li> <li>▪ Diagnostics &amp; Analytics</li> <li>▪ Endoscopy</li> <li>▪ Surgery &amp; Treatment</li> <li>▪ others</li> </ul> | <ul style="list-style-type: none"> <li>▪ Laser Processing</li> <li>▪ 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 (Industrial Cameras)</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> <li>▪ other</li> </ul> | <ul style="list-style-type: none"> <li>▪ Entertainment Lighting</li> <li>▪ Technical Lighting</li> <li>▪ other</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> <li>▪ other</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> <li>▪ others</li> </ul> |
|---|---|---|---|--|---|

# Overview Optical Coating-Technologies

## Evaporation

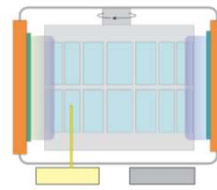


Evaporation  
(e-beam and boat sources)

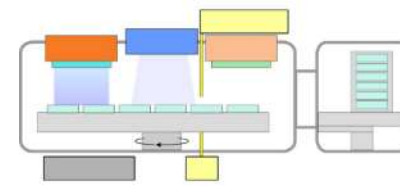


IAD Evaporation  
(Ion Assisted Deposition)

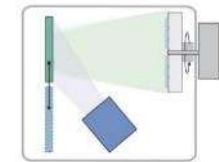
## Sputtering



Magnetron  
Sputter Deposition



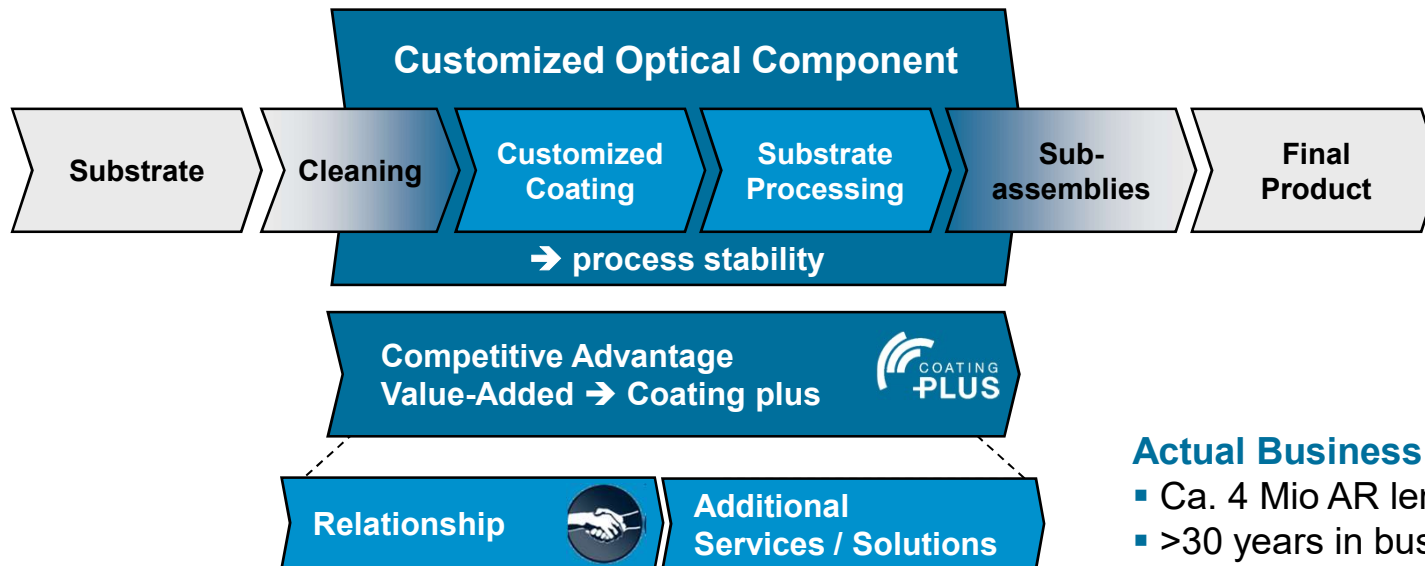
Plasma-Assisted Reactive  
Magnetron Sputter Deposition



Ion Beam  
Sputtering



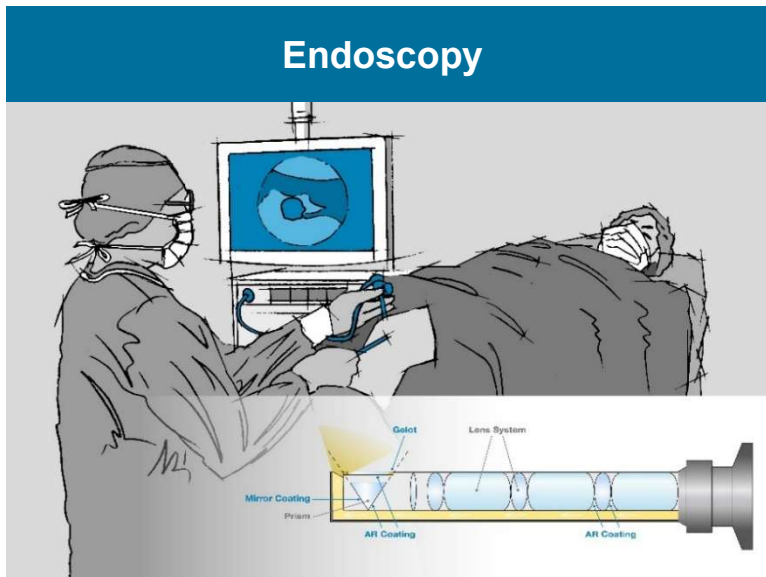
# Customer Value / Competitive Advantage



## Actual Business

- Ca. 4 Mio AR lens coatings /Y(1-side)
- >30 years in business experience
- highly expertise Teams in substrates processing, such as handling, automated cleaning, tooling, visual inspection.

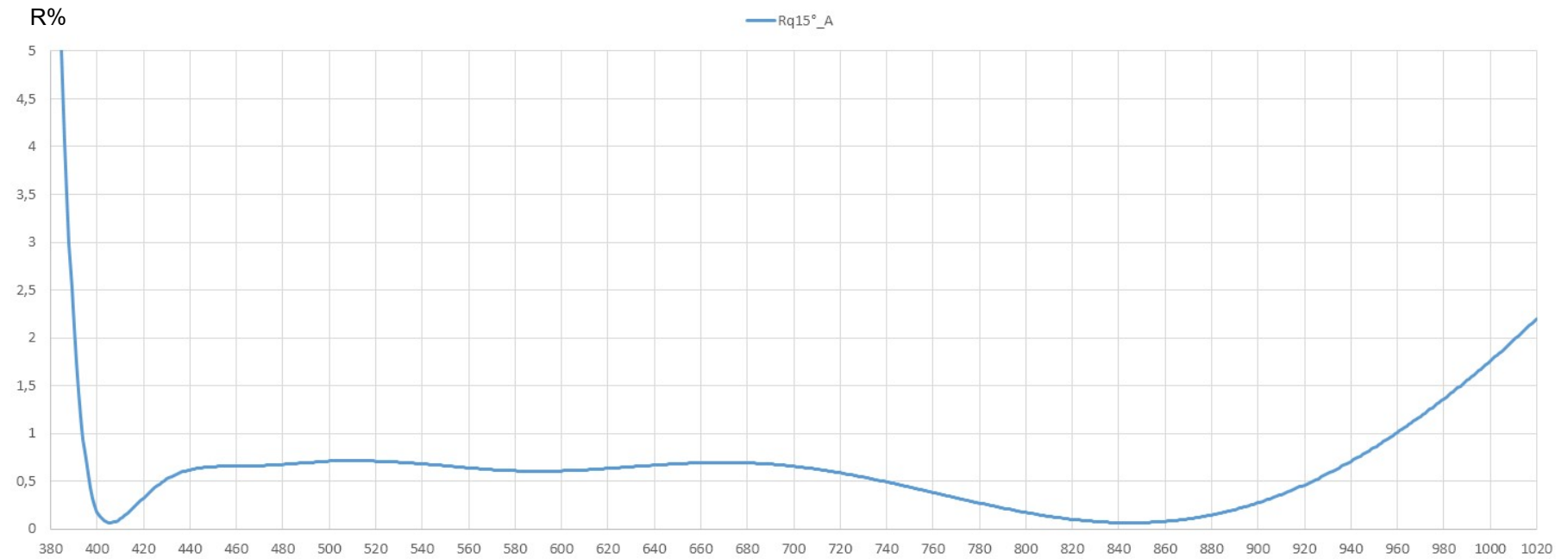




## Solutions

- Broadband AR Coatings VIS+NIR
- Single or Dual WL AR Coatings
- AR on sapphire windows
- Highly absorbing Black-Chrome Coating
- High Reflective Mirror Coatings (FSM & RSM)
- Solderable Coating Gelot™
- Low Temperature Coatings
- ICG edge Filters – Bandpass  
Short Pass / Long Pass  
Notch  
Beamsplitter

# Example of BB AR VIS + NIR Spectral curve





### Benefits

- highly precise Cut-on and Cut-off wavelengths
- steep spectral edges for optimal separation between excitation and emission signal
- excellent out-of-band blocking  $\geq$  OD6
- transmission values  $>$  95% in Pass-Band
- excellent environmental stability which is rigorously tested
- highly educated and experienced Engineering staff for advanced Coating design & - production
- sophisticated PARMS coating technology

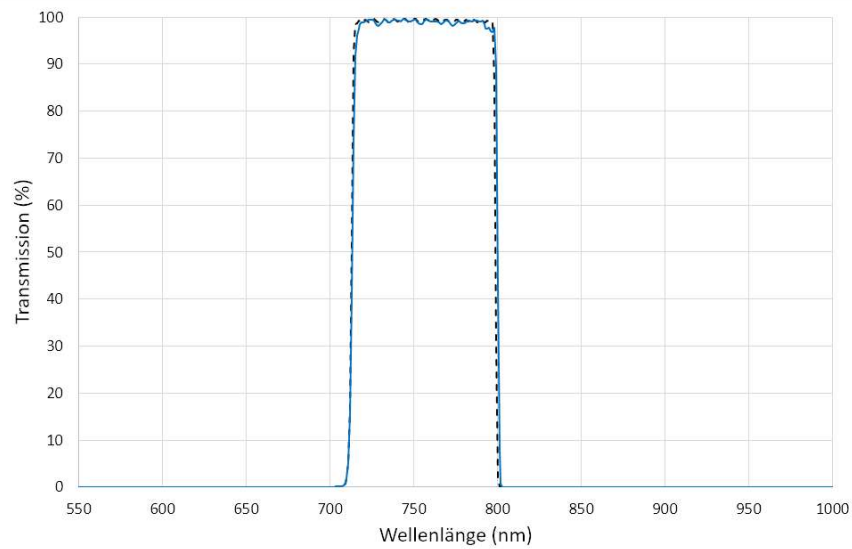


# Example of ICG Bandpass Filtercurve



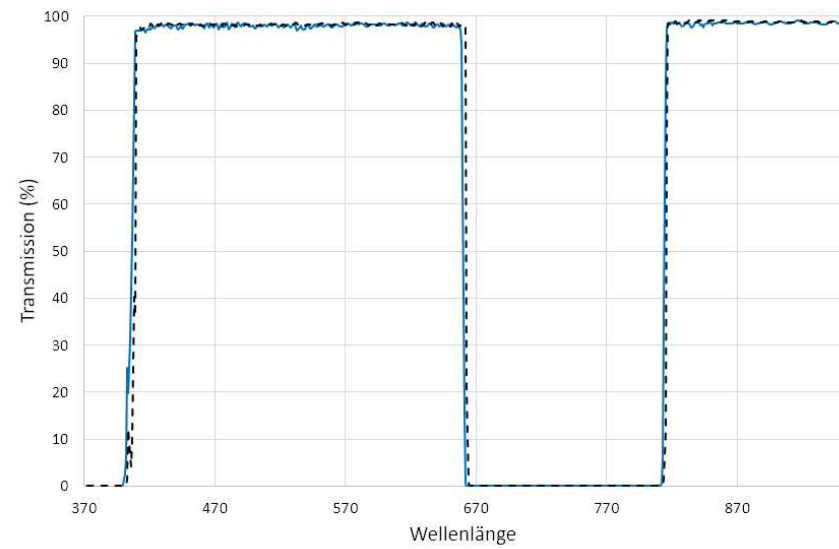
## Example Excitation Filter Curve

incl. Design vs. Production



## Example Emission Filter Curve

incl. Design vs. Production



## Contact

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Thank you for your attention!

Tell us your request, we will be pleased to support you!

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