# Viavi Solutions Optical Security and Performance Products (OSP)

Dr. Georg Ockenfuss Director Field Applications Engineering June 2020



# **Over 70 Years of Innovation**

OCLI FOUNDED	MANNED SPACEFLIGHT	OFFICE AUTOMATION	COUNTERFEIT PROTECTION	ASTRONOMY & TELECOM	PROJECTION DISPLAY	CONSUMER & MOBILE	SENSOR DEMOCRATIZATION
OCLI helped pioneer the optical coating industry by introducing antireflection coatings for military applications.	Developed High Efficiency Antireflection (HEA) and IR rejection filters for all NASA manned spacecraft.	Designed and built the high- performance, multilayer continuous optical coater (MAC) for printer and copier applications.	Introduced color-shifting pigments based on roll coating technology for currency anti- counterfeiting.	Coated the Chandra X-ray spacetelescope and scaled up wavelength- multiplexing filters for telecom.	Acquired by JDSU. Introduced components and modules for projection displays. Commissioned the innovative Ucp-1 coating platform.	Introduced filters for 3D cinema and gesture recognition for consumer electronics and mobile applications. Launched the MicroNIR miniature spectrometer.	Developed precision patterned filters for low-cost miniaturized optical sensors. Acquired RPC Photonics to expand 3D Sensing capabilities with Engineered Diffusers™.
1948	> 1960	> 1970	1980	1990	2000	2010	2018





### Consumer Electronics

### **3D Depth Sensing**

Enhancing utility of smart devices by giving them spatial awareness

Biometrics increase safety

Multiple design wins with Tier 1 customers

Integrated Diffusers – sending light where it is needed

### **Optical Sensors**

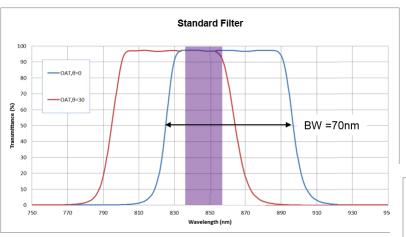
Ambient light, RGB hue, UV, and NIR proximity sensors

Multispectral sensors for precision color measurement and spectroscopy





# Low Angle Shift Filter

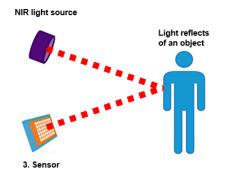


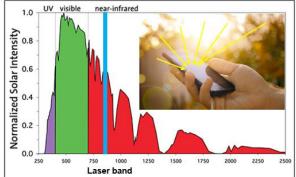
- Reduced bandwidth
- Larger FOV
- Larger Distance
- Lower power

VIAVI

**VIAVI** Solutions

Increase in SNR







4

# **Technology Differentiation**

Optical Coating—Advanced Sputtering Technology UCP Platform

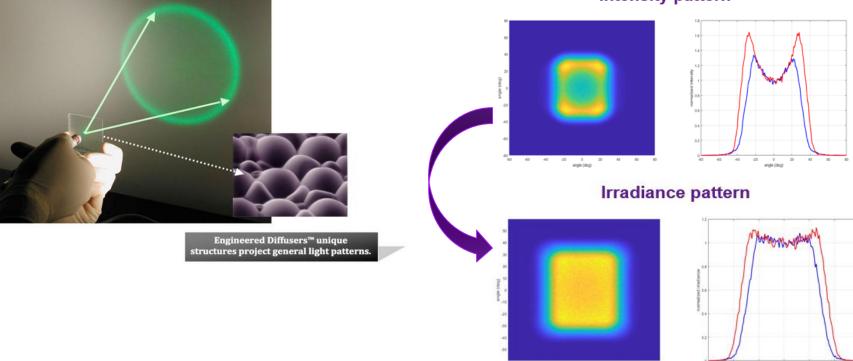
- High transmission
- Deep blocking over wide spectral ranges
- Precise edge placement
- UV to mid-infrared (220nm to 5.0microns) coatings
- Polarization control coatings





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### 3D Imaging Illumination for TOF and Structured Light with Engineered Diffusers<sup>™</sup>



.60

10 20 30 40 50

angle (deg)

#### Intensity pattern



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angle (deg)

#### OSP Sites Santa Rosa, CA

- Division HQ
- Optical and mechanical design facilities
- Photolithography facilities
- ISO certified

#### **Rochester**, NY

- Formerly RPC Photonics
  Optical and mechanical design facilities
- Photolithography facilities

#### Beijing, China

- 10+ years in operation
- Pigments for security applications
- ISO certified

#### Suzhou, China

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**VIAVI** Solutions

- Facility completed in 2010
- Advanced UCP Coating Technology
- ISO 9001, ISO 14001 and OHSAS 18001 certified

