

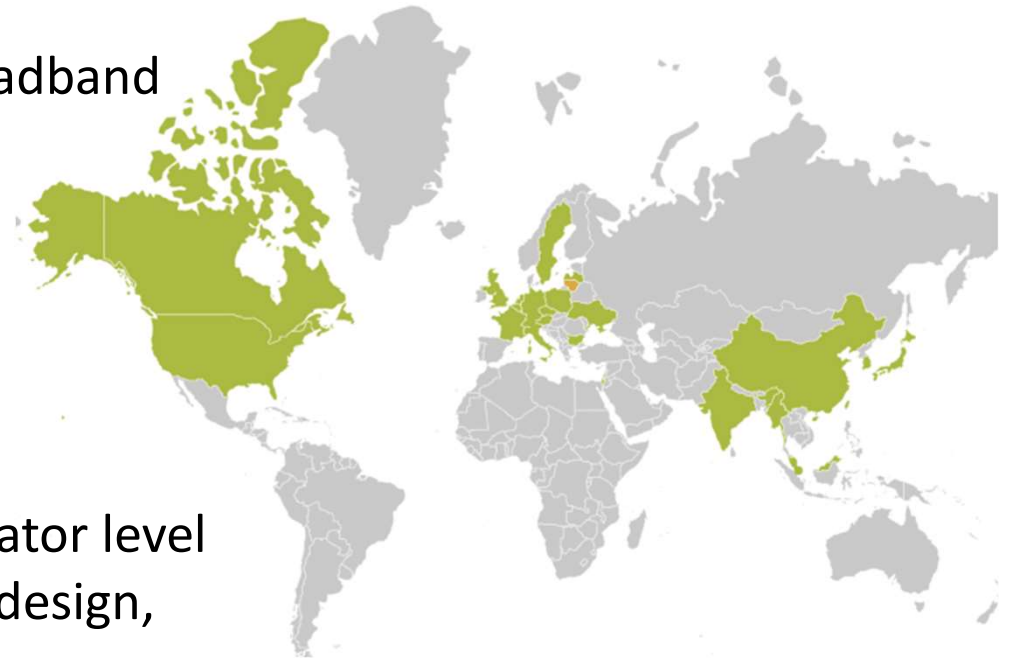
Broadband metrology solutions for high-end quality inspection of optical coatings

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Business Development / EssentOptics Europe

EPIC Online Technology Meeting on Photonics
for Thin Films Fabrication and Characterization
May 13, 2024

About EssentOptics

- Founded in 2009. Office in Vilnius, Lithuania
- We design and build high-performance, broadband spectrophotometers for quality inspection of optical coatings
- Customer base: more than 30 countries
- In-house technologies down to monochromator level (hardware, software, firmware, mechanical design, PCB design, optical design)



Product line up: Easy choice, we cover it all!

PHOTON RT Spectrophotometers: Flats



PHOTON RT: 0.18 μ m - 5.2 μ m



PHOTON RT 7512: 7.5 μ m - 14.0 μ m



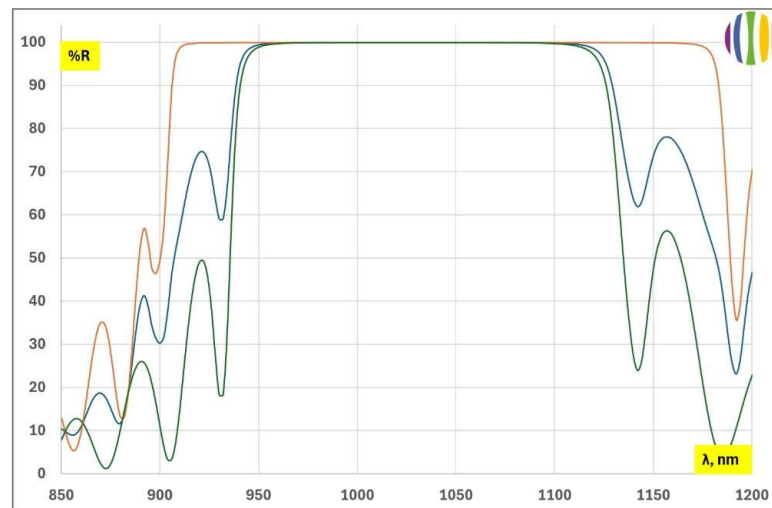
LINZA Spectrophotometers : Lenses



LINZA 150: 0.18 μ m - 1.7 μ m



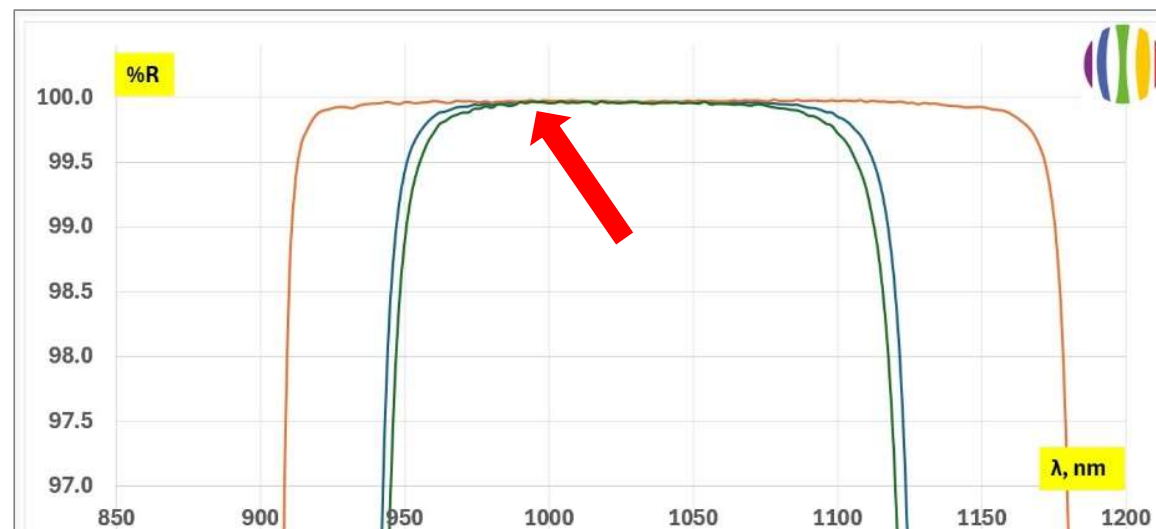
LINZA 2752: 2.5 μ m - 5.2 μ m



**No visible changeovers !!!
(signal jumps at changes
of gratings and detectors)**

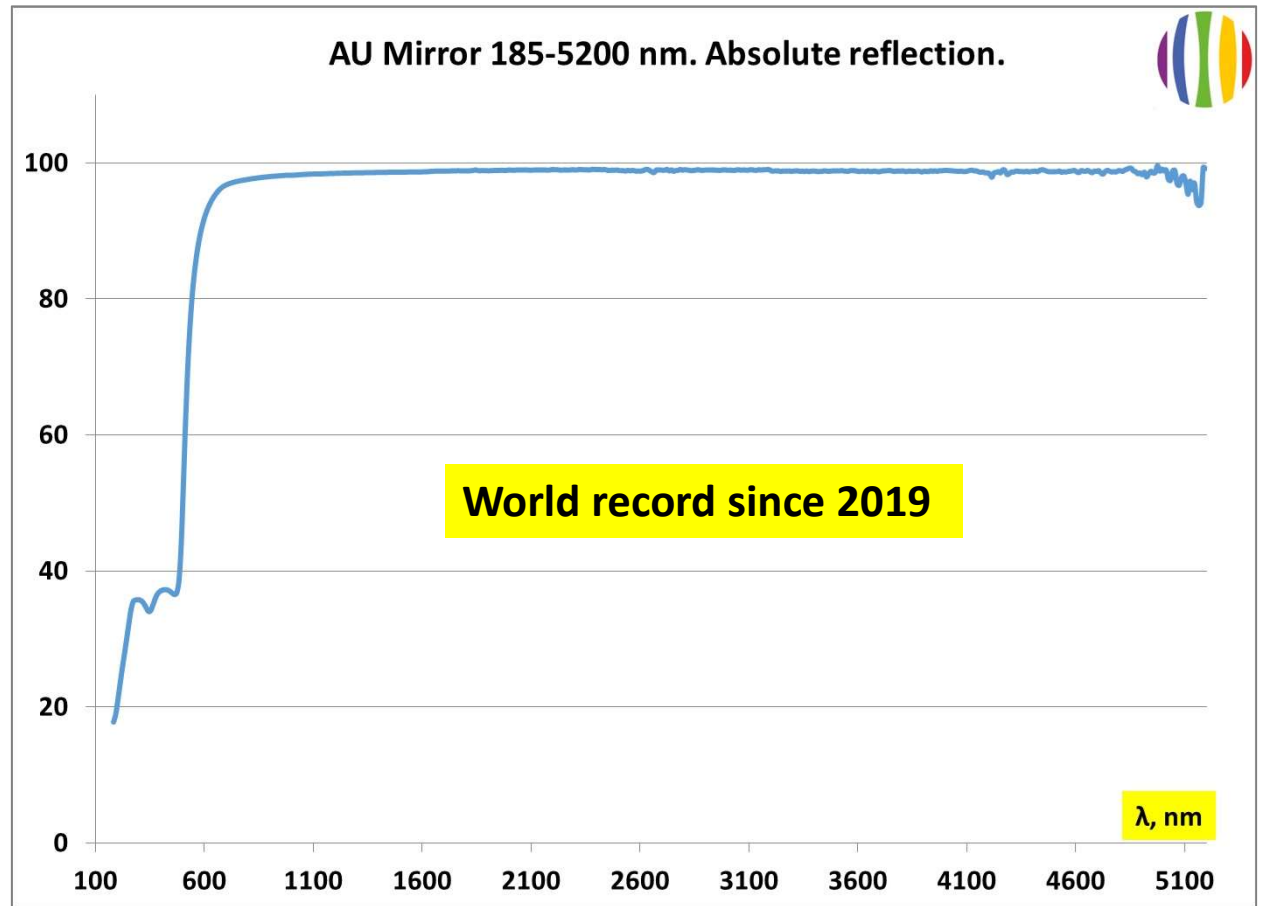
PHOTON RT 0252 Spectrophotometer:

- WL range: 0.18 μm - 5.2 μm
- Transmission / Absolute Reflection
- 0-75 deg AOI
- S-pol / P-pol polarization
- Min/Max sample size: 4mm / 152mm
- No fixtures or accessories
- Small footprint / Fast operation



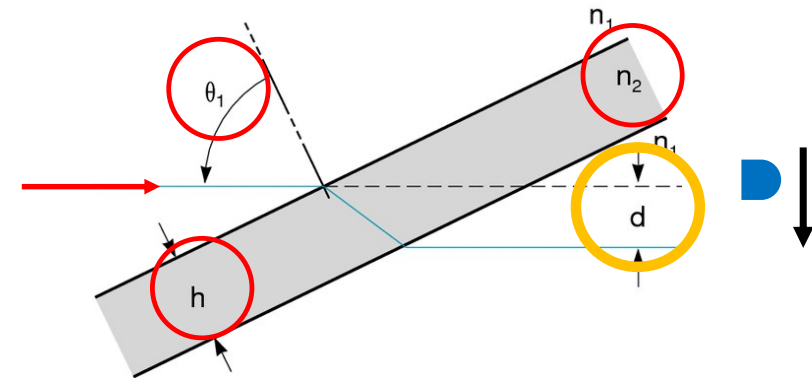


**PHOTON RT 0252 Spectrophotometer
(185nm – 5200nm)**

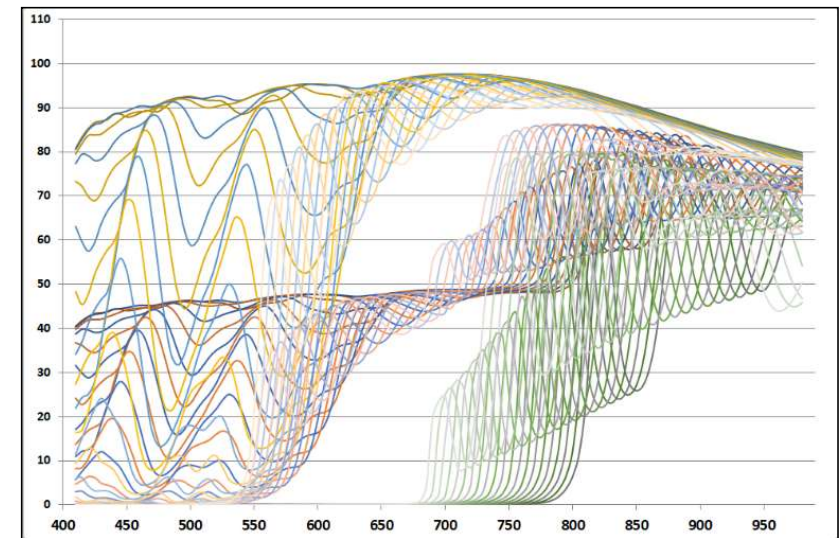
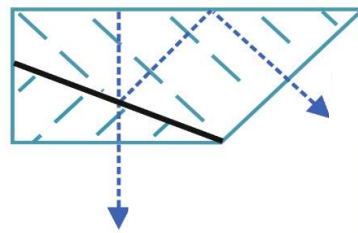
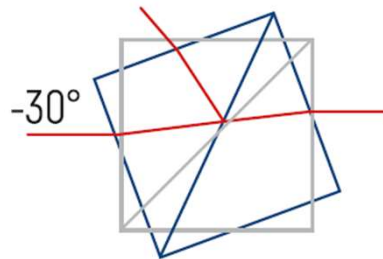


Beam displacement influencing factors:

- Sample's thickness
- Angle of incidence
- Refractive index



**PHOTON RT 0252 Spectrophotometer
(185nm – 5200nm)**

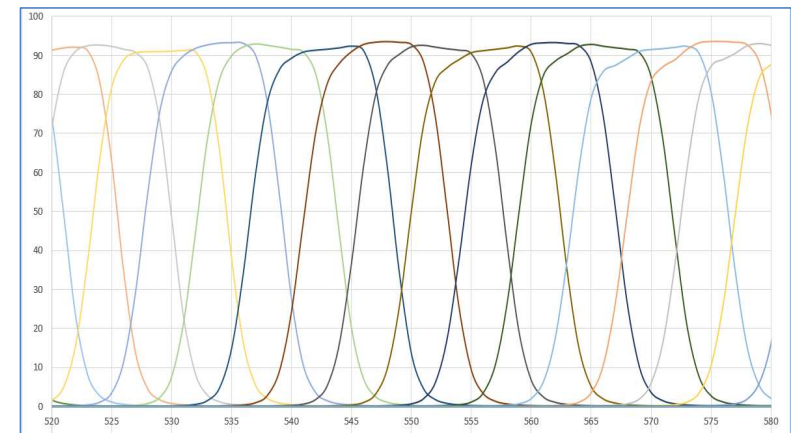
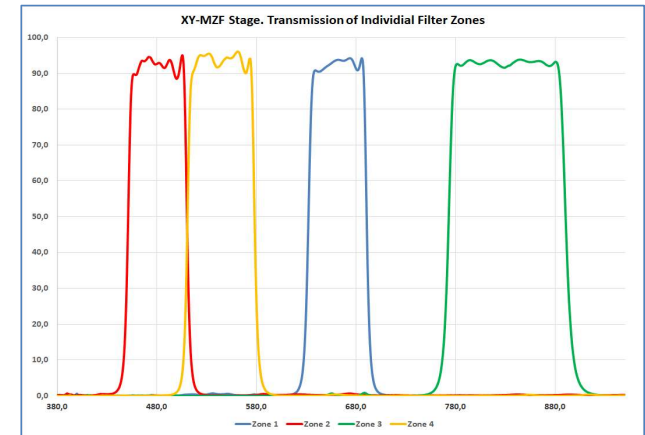




**PHOTON RT 0252 Spectrophotometer
(185nm – 5200nm)**



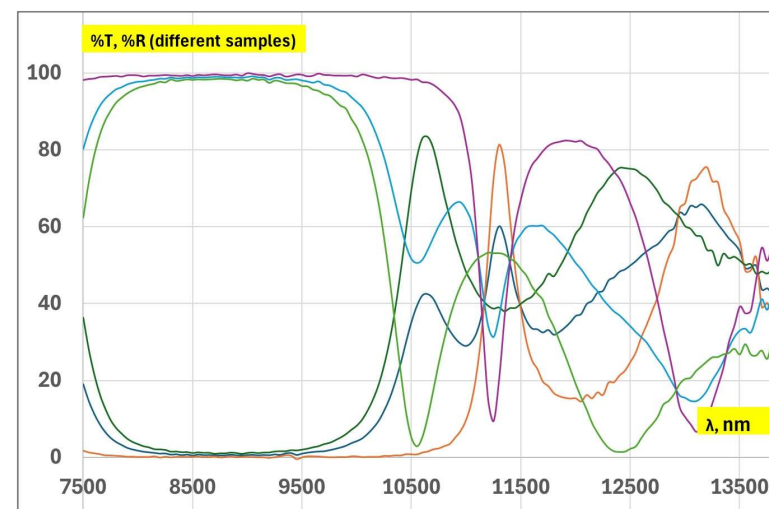
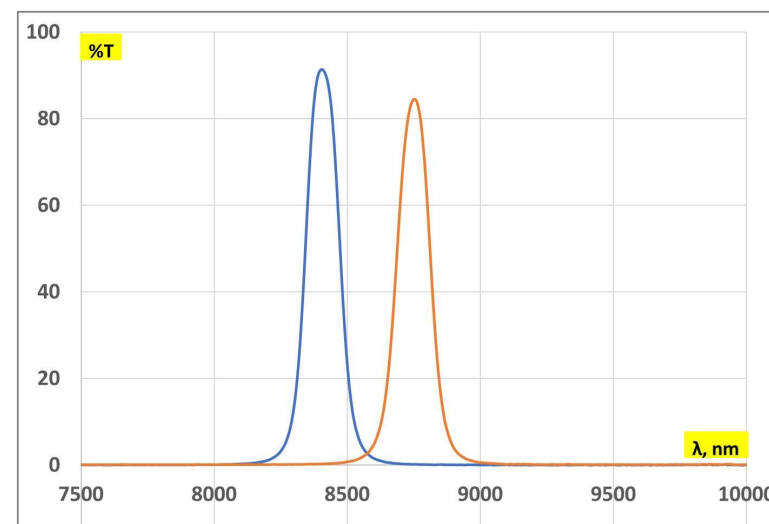
Zone measurement

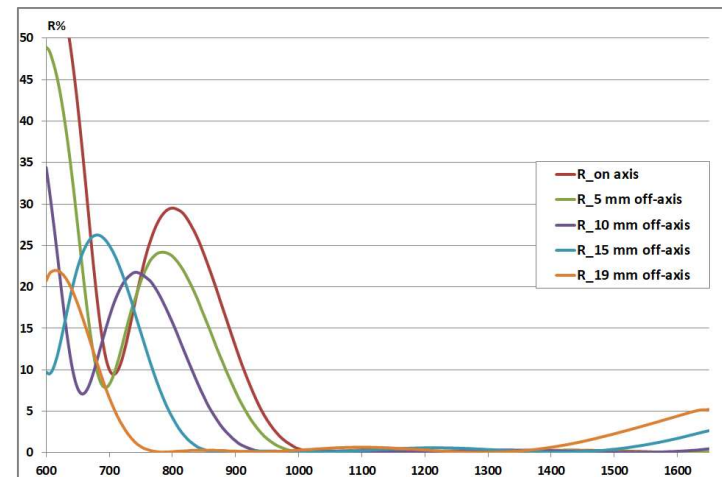
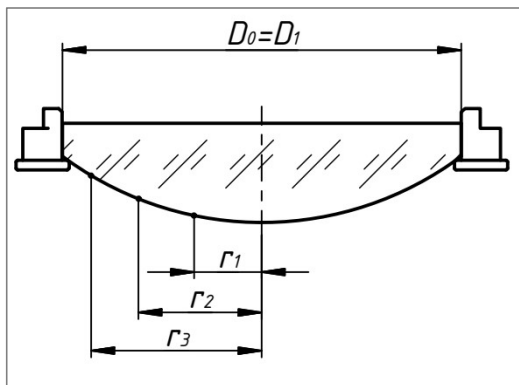




PHOTON RT 7512 Spectrophotometer

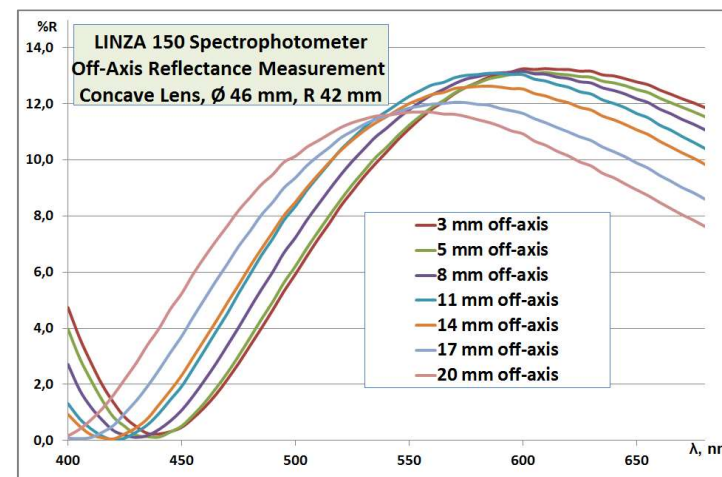
- Gratings-based / Cryocooled detector
- WL range: 7.5um – 14.0um
- Transmission / Reflection
- 0-60 deg AOI
- S-pol / P-pol polarization
- Max samples size: 150 x 200 x 40 (mm)
- Beam off-set management





LINZA 150 Spectrophotometer

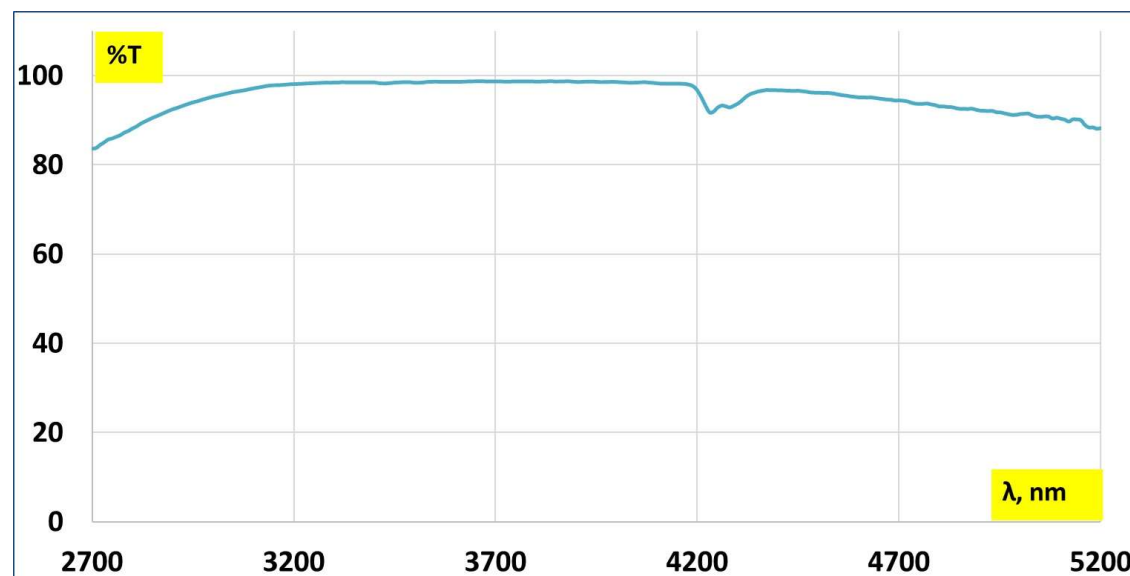
- WL range: 185 nm – 1700nm
- Transmission: on-axis (lenses & assemblies)
- Reflection: On-axis & Off-axis
- Min/Max lens diameter 10mm / 150mm
- Min end-to-end length: 240mm
- Types of lenses:
Convex/Concave, Spherical/Aspheric, Cylindrical





LINZA 2752 Spectrophotometer

- WL range: 2.5 μ m – 5.2 μ m
- Transmission: on-axis (lenses & assemblies)
- Max lens diameter 200 mm
- Min lens diameter: 10 mm
- Max end-to-end: 680 mm



The New PHOTON RT 0420 Ultra Spectrophotometer



Main applications of coatings:

- LIDAR
- Fluorescence microscopy
- Laser safety
- Optical data transmission
- Space exploration / Earth observation
- Defense and security

Key focus:

- VIS-NIR transmission measurement of ultra narrow (nanoband) filters, cut-off filters with steep edges and coatings with high optical density

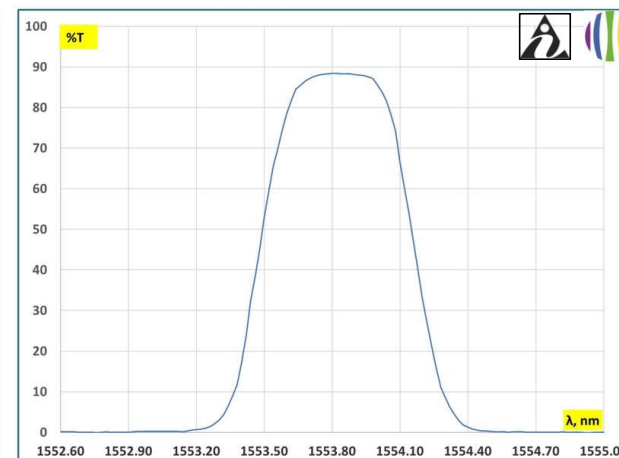
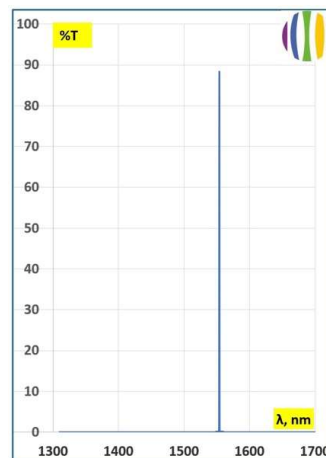
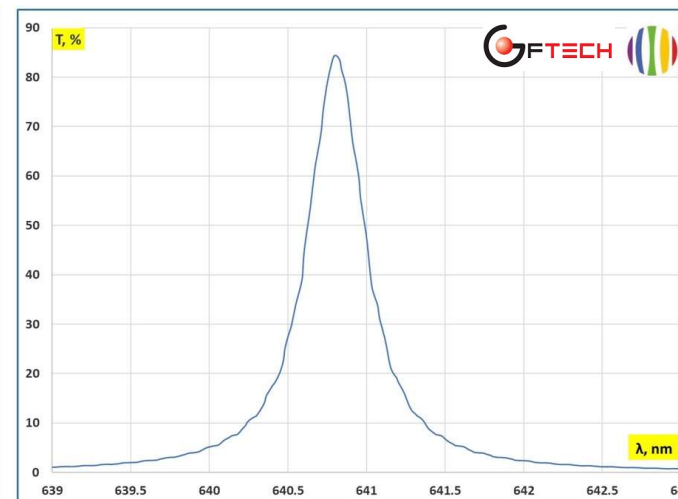
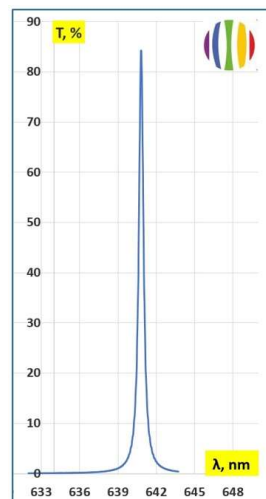
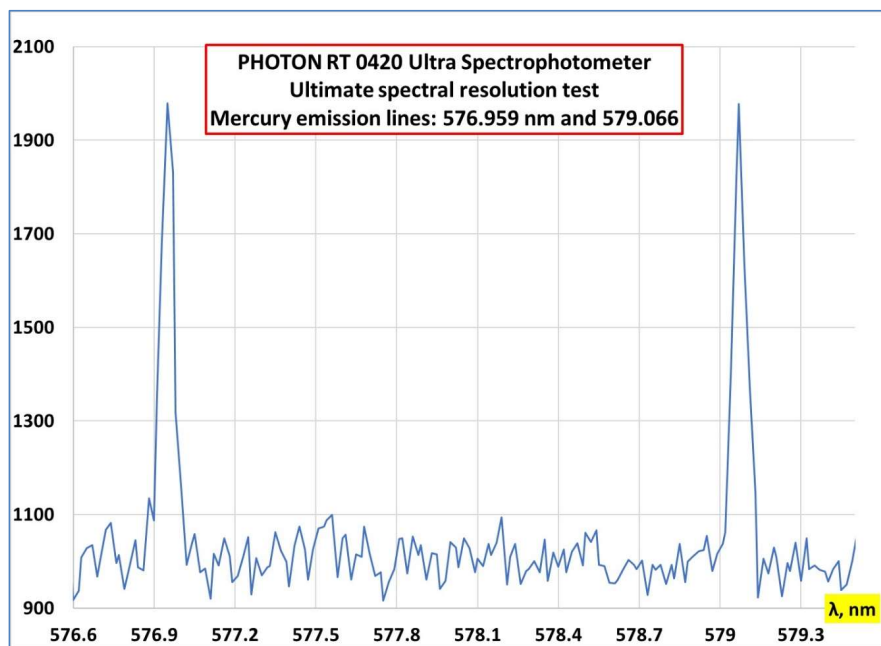
Specifications:

- Wavelength range: 340 - 2000 nm
- Max sample size: up to 150 mm
- Beam spot: 4 x 3 mm
- Spectral resolution: down to 0,06 nm

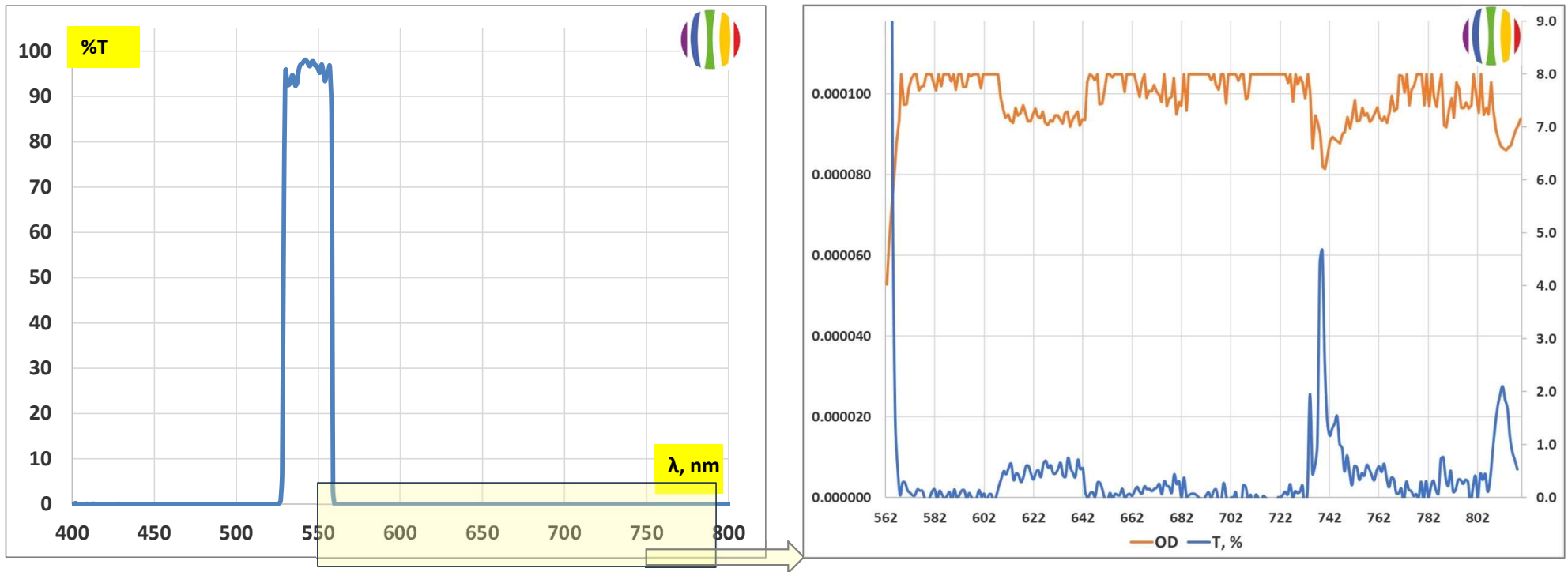
Measurement capability:

- Optical density: up to OD8
- Filter bandwidth: down to 0,1 nm FWHM
- Slope steepness: down to 0,02 %

PHOTON RT 0420 Ultra: High spectral resolution



PHOTON RT 0420 Ultra: Broadband OD Measurement



PHOTON RT 0420 Ultra will be officially demonstrated **tomorrow** at Optatec 2024. Our booth #130

1. What can we do for EPIC members?

A. Foster advanced research

B. Help bringing cutting-edge coatings to market

(You cannot produce any better than you measure!)

2. What can EPIC members do for us?

A. Reference standards → independent qualification

B. Intensive tests of our latest instruments → Ultimate performance

EssentOptics

**We serve leading companies with
high-end thin film optical metrology solutions**

Thank you

www.essentoptics.com