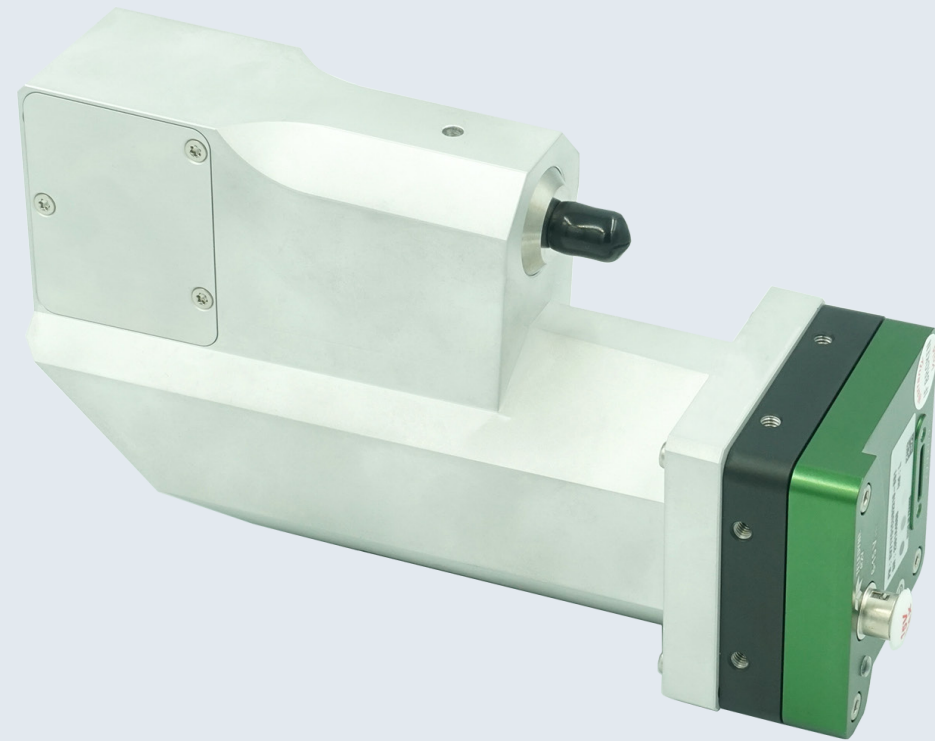


EAGLE OCT-S-M-90 SPECTROMETER

Industry Leading Roll-off Performance Spectrometer for SD-OCT from Ibsen Photonics





Form-factor optimized with uncompromised roll-off performance

The EAGLE OCT-S-M-90 is a spectrometer based on the EAGLE OCT-S-90, delivering the same exceptional optical performance in folded and a more compact, optimized form factor. Like the OCT-S-90, the OCT-S-M-90 is ideal for high-performance OCT spectroscopy, offering an axial resolution down to $4.1\ \mu\text{m}$ (in air) and depth measurements down to 4 mm (in air), with uncompromised roll-off.

At the core of this OCT spectrometer is Ibsen Photonics' fused silica transmission grating, which delivers the highest diffraction efficiency available in the OCT market. This enables the spectrometer to achieve exceptional sensitivity for optical coherence tomography (OCT) performance.

Key specifications of the EAGLE OCT-S-M-90

- 795 nm to 885 nm wavelength range
- Resolution: 0.05 nm (typical)
- 2048 tall pixel camera with $10 \times 200\ \mu\text{m}$ pixel size
- Multiple frame rate options
- High efficiency, transmission grating design
- High optical throughput
- Compact form-factor optimized design
- Robust and athermal design
- Customization for multiple wavelength ranges
- OEM integration friendly design that allows easy adaptation to your camera of choice

Stability and Customization

The EAGLE OCT-S-M-90 spectrometer is based on Ibsen Photonics' LGL platform, which utilizes a collimating lens, a transmission grating, and a focusing lens. It features a high-diffraction-efficiency fused silica transmission grating produced internally by Ibsen Photonics. The athermal design ensures a very low temperature-induced wavelength shift of $< 0.002\ \text{nm}/^\circ\text{C}$ and provides unmatched stability.

The EAGLE OCT-S-M-90 supports the Teledyne e2v OctoPlus camera as standard. However, we can customize the EAGLE OCT-S-M-90 spectrometer to accommodate almost any other camera.

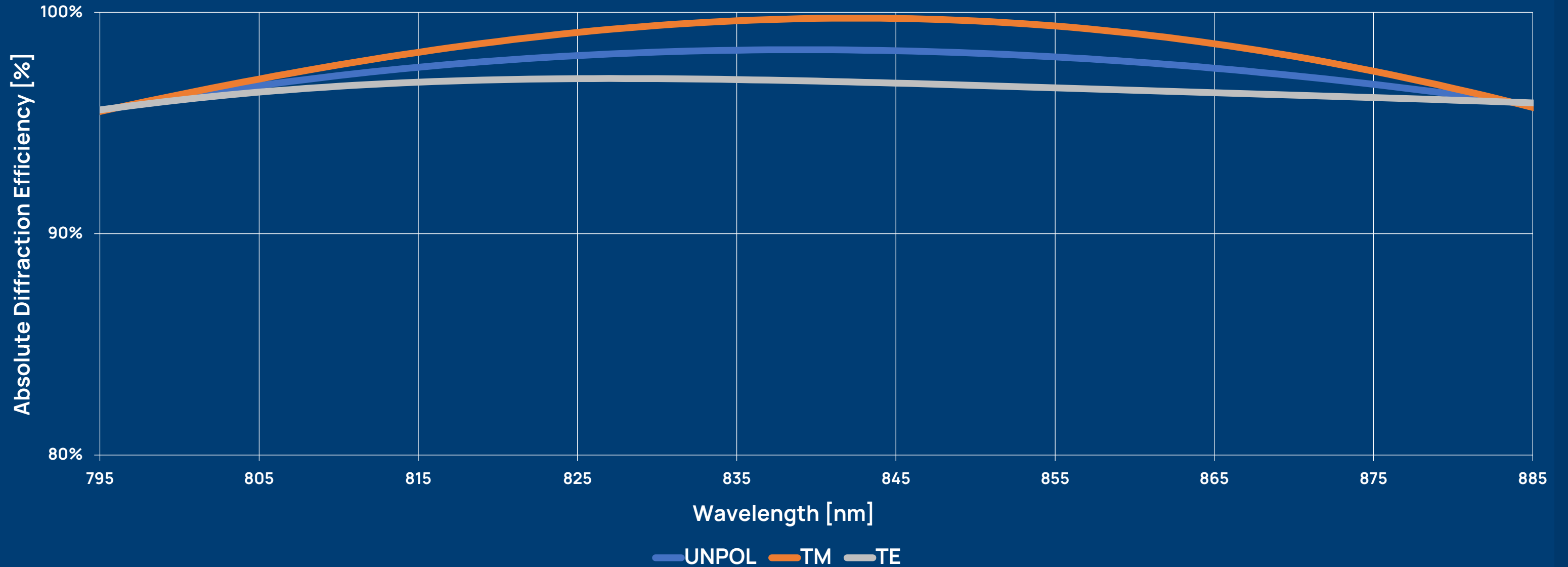
Please contact us to discuss spectrometer customization.

Technical Specifications

	EAGLE OCT-S-M-90	Comments
Optical entrance	FC/UPC adapter	
Wavelength range	795 - 885 nm	Other ranges available upon request
Resolution	0.05 nm	
Numerical aperture	0.13	To match SMF Corning HI780 fiber
Camera	Teledyne E2V OctoPlus	Available in USB3 or camera link
Number of pixels	2048 x 1 pixels	
Pixel size	10 μm x 200 μm	
Detector	CMOS	
Frame rate	20, 80, 130 or 250 kHz	20, 80 and 130 kHz interfaces: CameraLink or USB3 250 kHz interface: CameraLink
Maximum measurement depth (air/water)	4.0 mm / 3.0 mm	
Axial resolution (air/water)	4.1 μm / 3.1 μm *	
Operating temperature range	+10 to +45 $^{\circ}\text{C}$	Non-condensing
Storage temperature range	-10 to +50 $^{\circ}\text{C}$	
Wavelength shift with temperature	< 0.002 nm/ $^{\circ}\text{C}$	
Dimensions	95 mm x 182 mm x 60 mm	Including camera
Weight	970 grams	Including camera

*Assuming flattop SLED profile

EAGLE OCT-S-M-90 grating



Transmission Gratings

The compact EAGLE OCT-S-M-90 spectrometer utilizes the Ibsen Photonics OCT transmission grating. The grating provides a high even diffraction efficiency, as evident by the absolute diffraction efficiency graph displayed above.

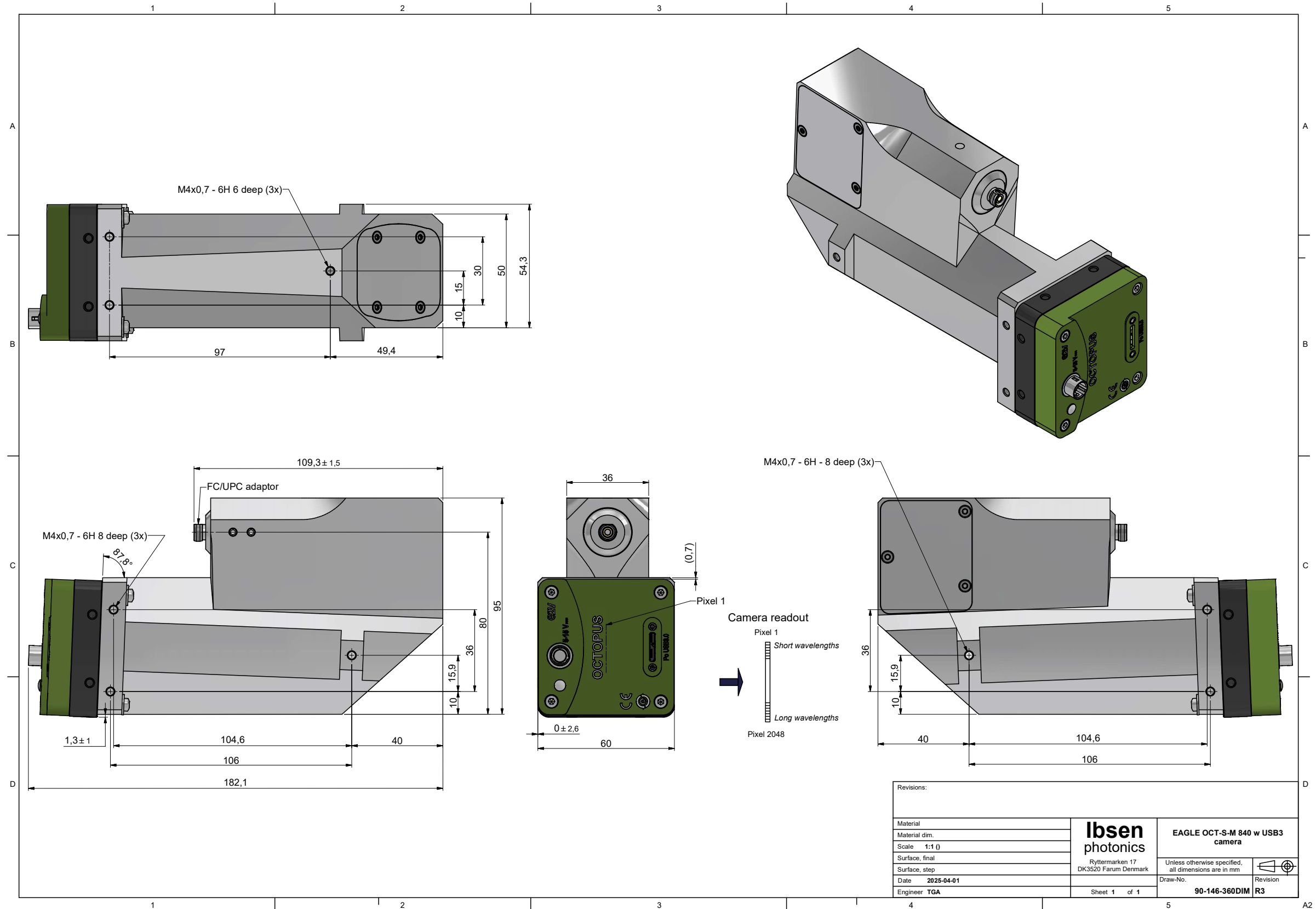
Additionally, the transmission grating itself, ensures impressive wavelength stability due to the inherent self-correction nature of transmission gratings, compensating for misalignment, shock or vibrations that the spectrometer may experience.

The design also provides very low polarization dependence as an added benefit.

Every grating used in the EAGLE OCT-S-M-90 spectrometer is a master grating fabricated at Ibsen Photonics' clean room facility in Denmark.

Mechanical Drawings

Please note, that dimensions may vary slightly between different variants of spectrometers. Therefore, you should always request a specific drawing for your specific spectrometer variants.



About Ibsen Photonics

Founded in 1991 by Per Ibsen, Ibsen Photonics has grown from a visionary startup into a global leader in the design and manufacture of the world's best gratings and spectrometers.

As a strong, long-term strategic partner for leading industrial companies, we are committed to helping our customers increase sales and win market share. Our deep expertise and collaborative approach ensure that every product we deliver is not just a component, but a competitive advantage.

Today, Ibsen Photonics is owned by Foss A/S - a leader in analytical solutions. Our team combines entrepreneurial agility with operational excellence. With over 30 years of experience and an average employee tenure of 10+ years, we bring unmatched expertise to every project, ensuring improved performance, on-time launches, and consistent supply. Headquartered in Denmark, our 85+ experts drive innovation from R&D to manufacturing, achieving an annual turnover of more than 20 M€.

Working with Ibsen Photonics

The core expertise of Ibsen Photonics lies in opto-mechanical design, grating technology and metrology. We master the entire cycle - from optics, grating simulation, and design to optical and semiconductor production technologies, high-volume assembly, packaging, and testing. Over the years, we have developed and patented numerous innovative designs, technologies, and processes.

Our customers are large to medium-sized manufacturers of advanced optical devices and instruments, where our products serve as critical components. With a highly organized production process, we ensure smooth instrument production, low unit-to-unit variation, a high first-time yield, no field returns, and minimal rework.

Our spectrometers are produced under strict quality control in our assembly facility in Denmark, certified to ISO 9001, ISO 13485, ISO 14001 and ISO 45001. This confirms Ibsen's capability to consistently produce high quality products that meet market standards and all regulatory requirements. Collaborate with our team to speed up your innovation.

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