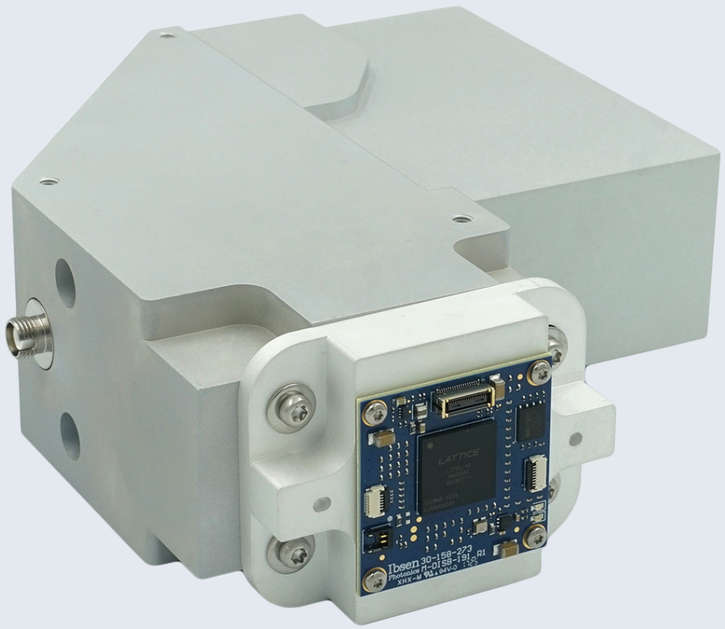
EAGLE C-OCT-S-28

12.9 mm axial depth OCT spectrometer with fast hardware-near interface for volume production

Ibsen photonics



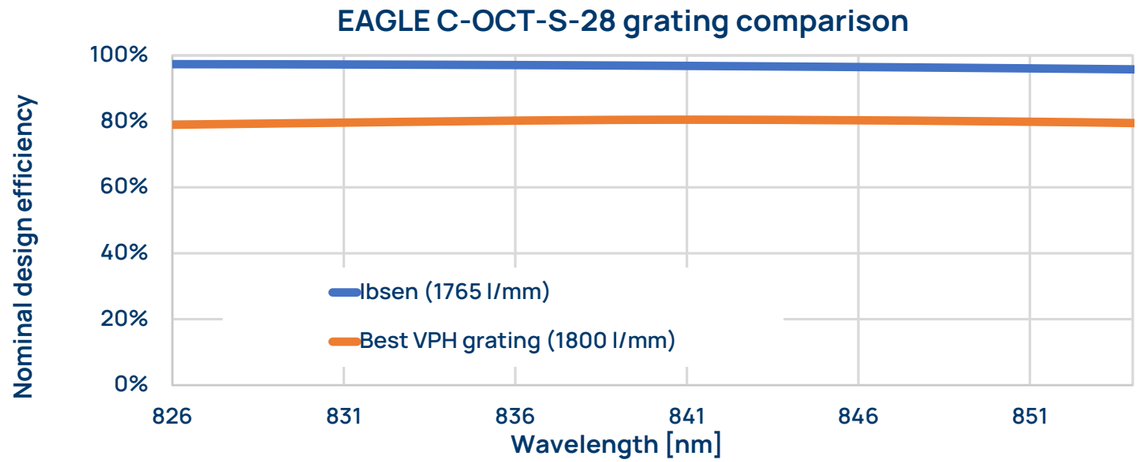
Achieve high axial depth with a compact design for scalability and customized solutions

The EAGLE C-OCT-S-28, is an innovative OCT spectrometer that sets a new standard in long-range OCT imaging, roll-off performance, and efficiency. At the core of this innovation is the high axial depth capability, which delivers 12.9 mm of axial depth in a compact, space-optimized design, with a 28 nm bandwidth and an 840 nm center wavelength. This is achieved through a pioneering Ibsen multi-grating optical design, paired with Ibsen Photonics high-speed M-DISB-191 electronics platform. These features enables the EAGLE C-OCT-S-28 to capture exceptionally long-range OCT images, with an axial resolution of down to 11 µm (in air).

The EAGLE C-OCT-S-28 also features an innovative, space-efficient design with a compact footprint of just 166 x 138 x 50 mm³ and a weight of 1.3 kg. This lightweight and portable design facilitates seamless integration into clinical and industrial settings. Its compact form factor ensures it occupies minimal space, enhancing flexibility and ease of use.

The EAGLE C-OCT-S-28 is designed to maximize the potential of our diffraction transmission grating technology by combining the benefits of athermal opto-mechanics with highly efficient fused silica gratings. This ensures robustness and reliable performance across all units, even in high-volume production.

If your project requires features beyond the standard capabilities of the EAGLE C-OCT-S-28, we also provide tailored solutions to meet specific needs. Don't hesitate to contact our sales team to explore the best approach for your spectrometer project.



Unmatched roll-off performance in compact design

The EAGLE C-OCT-S-28 stands out with its industry-leading roll-off performance, ensuring effective long-range OCT imaging. This feature makes it a cost-effective alternative to expensive Swept Source OCT systems, eliminating the need for complex multi-depth imaging techniques. By delivering high-quality results without added complexity, it streamlines workflows and reduces operational costs.

DT4GK29 Rev 1 - 2026-04-28

Technical Specifications

	EAGLE C-OCT-S-28	Comments
Optical entrance	FC/UPC adapter	
Wavelength range	826 - 854 nm	Other ranges available upon request
Resolution	0.015 nm	Average resolution across wavelength range
Numerical aperture	0.13	To match SMF Corning HI780 fiber
Camera	Ibsen Photonics M-DISB-191	
Frame rate	61 kHz (2048 pixels) 101 kHz (1024 pixel binning)	
Electrical interface	MIPI CSI-2 interface 12-bit Raw	Developers kit for USB3 available
Number of pixels	2048 x 1 pixels	
Pixel size	7 µm x 200 µm	
Detector	Hamamatsu S17122	
Operating temperature range	10 to 45 °C	Non-condensing
Storage temperature range	-10 to 50 °C	
Wavelength shift with temperature	< 0.002 nm/°C	
Dimensions	166 mm x 138 mm x 50 mm	Including camera
Weight	1.3 kg	Including camera

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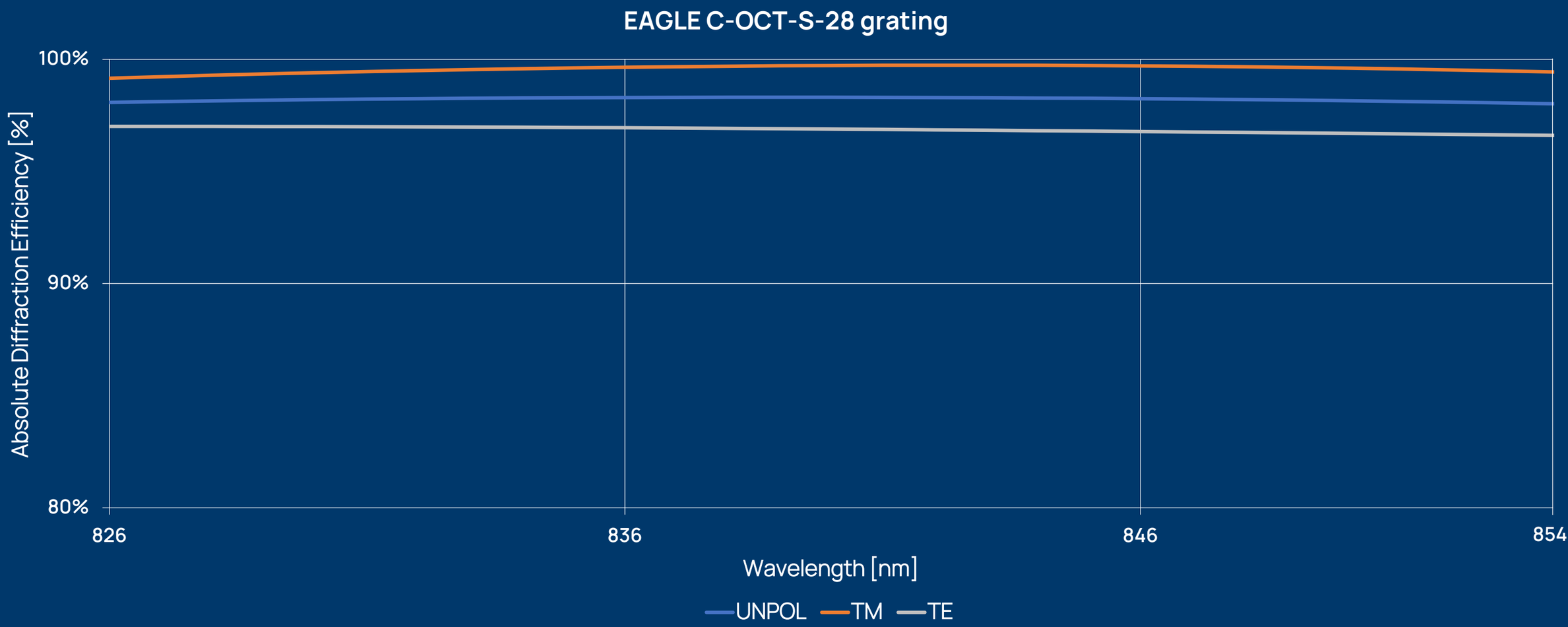


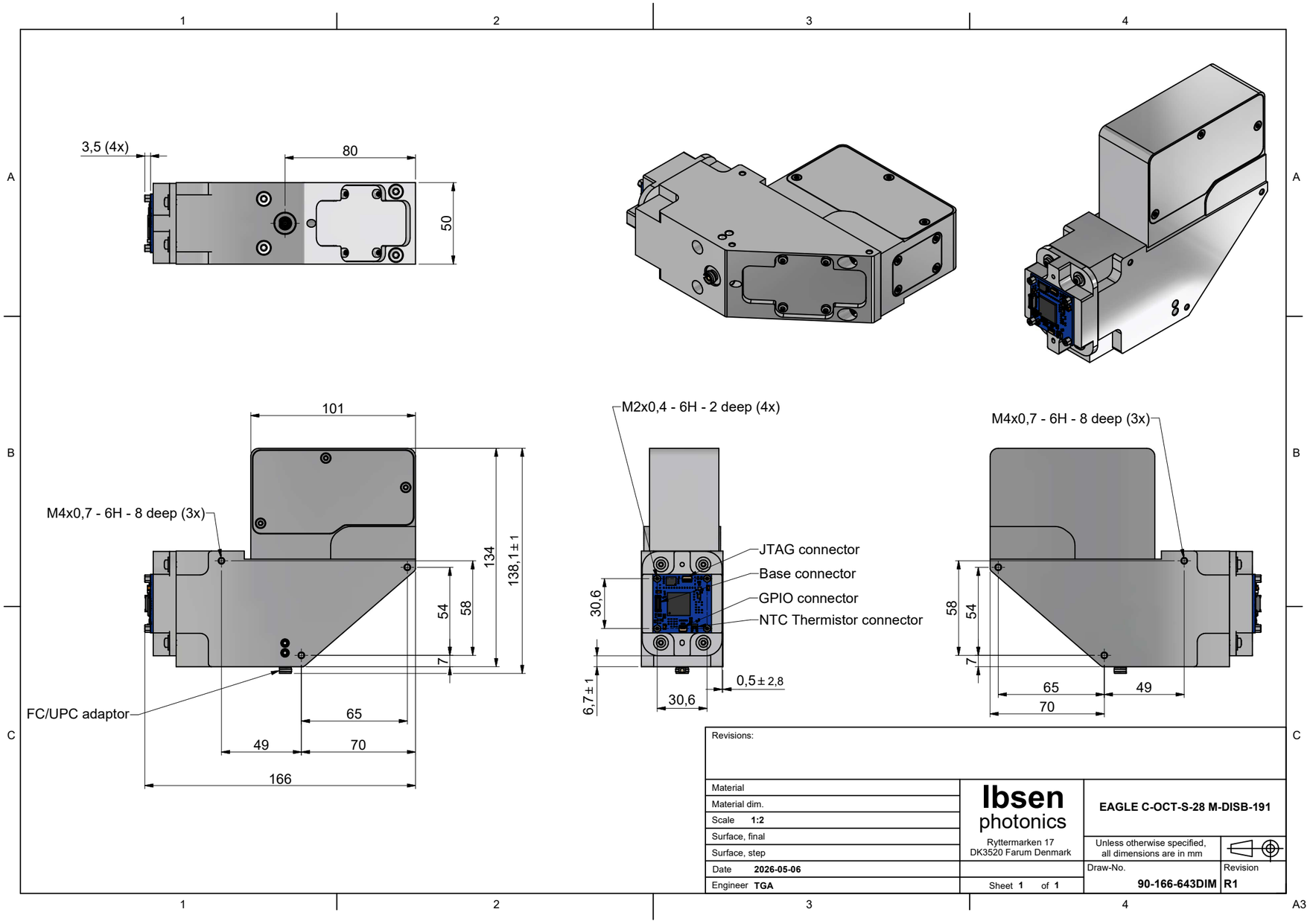
Transmission Gratings

The compact EAGLE C-OCT-S-28 spectrometer utilizes the Ibsen Photonics OCT transmission grating. The grating provides high and even diffraction efficiency, as evidenced by the absolute diffraction efficiency graph displayed above. The design also provides very low polarization dependence as an added benefit.

Every grating used in the compact EAGLE C-OCT-S-28 spectrometer platform is a master grating fabricated at Ibsen Photonics' cleanroom facility in Denmark.

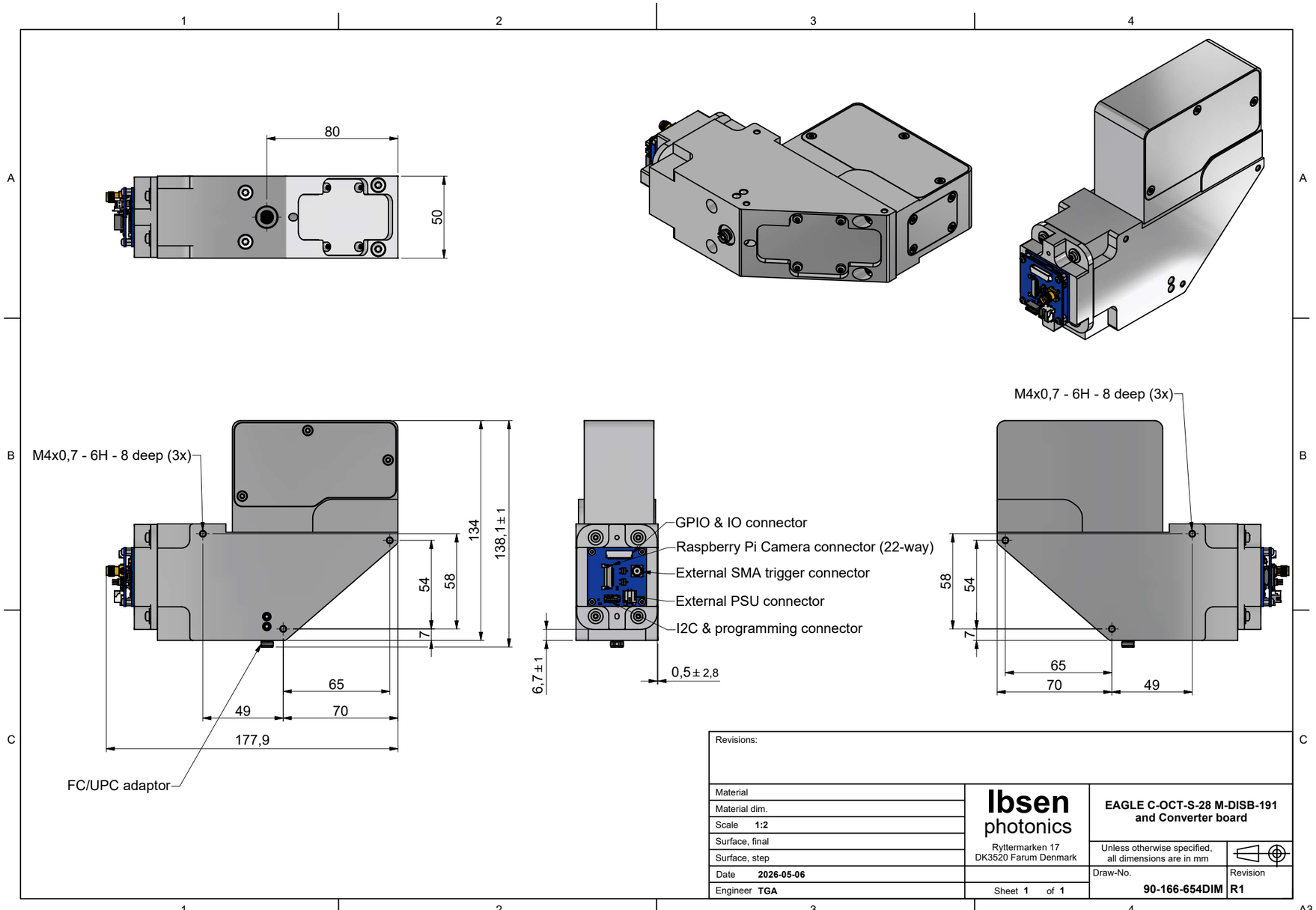
Mechanical Drawings

EAGLE C-OCT-S-28 including M-DISB-191 board



Mechanical Drawings

EAGLE C-OCT-S-28 including M-DISB-191 board and M-DISB-191 Converter board



Revisions:			
Material	**Ibsen** photonics	**EAGLE C-OCT-S-28 M-DISB-191 and Converter board**	
Material dim.			
Scale **1:2**	Ryttermarken 17 DK3520 Farum Denmark	Unless otherwise specified, all dimensions are in mm	
Surface, final			
Surface, step		Draw-No.	Revision
Date **2026-05-06**		**90-166-654DIM**	**R1**
Engineer **TGA**	Sheet **1** of **1**		

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 entrpreneurial 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 patente 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 i strument 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.

Contact us

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Ibsen photonics