

PHOTONICS TECHNOLOGIES

The perfect solution for stabilisation of a
single-frequency laser

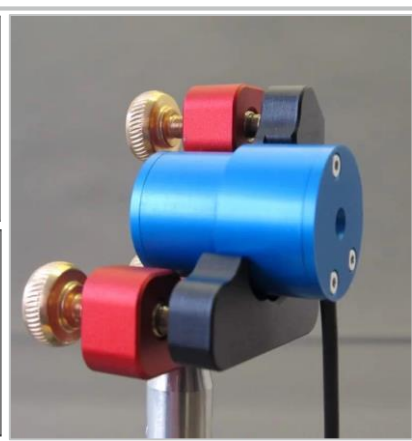
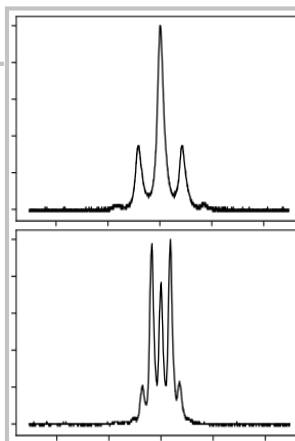
ELECTRO-OPTICAL MODULATOR (EOM)

EOM-01-XX-YY EOM-02-XX-YY

- The EOM is a phase modulator for a variety of modulation frequencies between 3 and 25 MHz (other frequencies possible on request).
- The laser wavelength range can also vary between 400-700nm, 650-1000nm, and 1000-1500nm. Coatings for different wavelength ranges are available.
- The EOM can be mounted in a standard 1-inch optical mirror mount, allowing for simple placement and alignment within your optical setup.

Applications

- Generation of side-bands on single-frequency lasers for high resolution locking techniques, such as frequency modulation saturation spectroscopy or stabilization to an optical resonator.
- Ideal to combine with spectroscopic cells for laser locking to atomic or molecular transitions
- The 6.25MHz, 12.5MHz and 25 MHz frequencies are specifically designed for use with the TOPTICA Photonics Digilock Module. It is the perfect solution for researchers wishing to stabilise single-frequency lasers by modulating a probe beam in a Frequency Modulation spectroscopy set-up, while leaving the main beam unaffected.



| Modulation Frequency (MHz) | Laser Wavelength Range (nm) | | |
|----------------------------|-----------------------------|---------------|------------------|
| | V / 650 - 1000 | U / 400 - 700 | IR / 1000 - 1500 |
| 3 | EOM-02-3-V | EOM-02-3-U | EOM-01-3-IR |
| 5 | EOM-02-5-V | EOM-02-5-U | EOM-01-5-IR |
| 6.25 | EOM-02-6.25-V | EOM-02-6.25-U | EOM-01-6.25-IR |
| 10 | EOM-02-10-V | EOM-02-10-U | EOM-01-10-IR |
| 12.5 | EOM-02-12.5-V | EOM-02-12.5-U | EOM-01-12.5-IR |
| 20 | EOM-02-20-V | EOM-02-20-U | EOM-01-20-IR |
| 25 | EOM-02-25-V | EOM-02-25-U | |

Standard Characteristics

| | |
|------------------------|--------------------------------------|
| Aperture Diameter | 3mm |
| Crystal Material | LiNbO3 (EOM 1) MgO:LiNbO3 (EOM 2) |
| Crystal Flatness | $\lambda/10$ |
| SWR at resonance | <1.1:1 |
| Diameter | 25.4mm (1") |
| Length | 35mm |
| Impedance at resonance | 50 Ω (nominal) |
| Modulation Bandwidth | ~3.3% of resonant frequency (-3dB) |

Optional Amplifier



| | |
|------------------------|--------------------------|
| Frequency Response | 0.4-150 MHz |
| Gain | 20dB |
| Max Input | 1 V |
| Max Output | 10 V |
| Input/Output Impedance | 50 Ω /50 Ω |
| Dimensions mm (HxWxL) | 67 x 204 x 180 |
| Weight | 1.6 kg |
| Power Supply | 240Vac(Max power 50VA) |
| Connectors | BNC Input and Output |

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