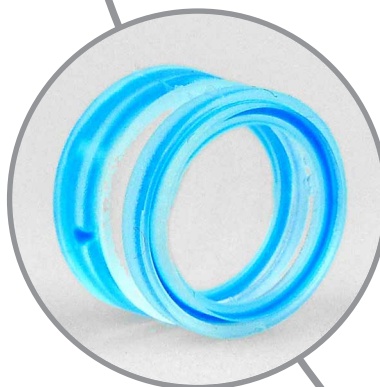




Precise and intuitive alignment

Tunable prism for laser alignment and image stabilization

Optotune's tunable prism (TP) is suitable for optical alignment and beam-steering in transmission. The core element can be combined with your preferred actuation method and achieve a compact form factor. The low absorption makes it suitable for high-power applications. Thanks to the low dispersion liquid it can also be used for polychromatic applications.



Tunable prism for laser alignment and image stabilization

TP-12-16



Precise and intuitive alignment

The tunable prism is a tunable wedge that allows to tilt two optically flat and AR coated glass windows with respect to each other. The two glass windows are held together by a bellow structure that is filled with a low dispersion clear optical fluid. The core element can be integrated with a large variety of actuation principles such as mechanical or motorized lead screws, voice-coil and piezo actuators. Typical applications include laser beam-steering in transmission configuration and alignment between source and detector.

Advantages

- > Compact
- > Intuitive alignment
- > Low dispersion

Applications

- > Laser range finder
- > Boresight alignment
- > Image stabilization

The following table outlines the specifications of our standard tunable prism core element for a particular fluid (OL1129). Cover glass coatings and fluids can be adapted on demand.

Specifications¹

Clear aperture	12 mm
External diameter	16 mm
Thickness	12 ± 0.5 mm
Weight	3.4 g
Max. mechanical tilt angle (center pivot point) ²	20°
Max optical deflection @ 525nm	8.2°
Refractive index (25°C, @525nm)	1.38
Abbe number V (at 25°C)	63
Wavefront error of windows @525nm (P-V)	$\lambda/2$
Refractive index vs temperature (dn/dT)	-3.3e-4
Absorption	<0.1%
Polarization	preserving
Storage and operating temperature ³	[-40,+85] °C

