

User's Guide

Optical Isolator Alignment Procedure

700 Series

Warranty Information

ConOptics, Inc. guarantees its products to be free of defects in materials and workmanship for one year from the date of purchase.

Information in this document is subject to change without notice. Please check www.conoptics.com for the latest release of product information and instruction guides.

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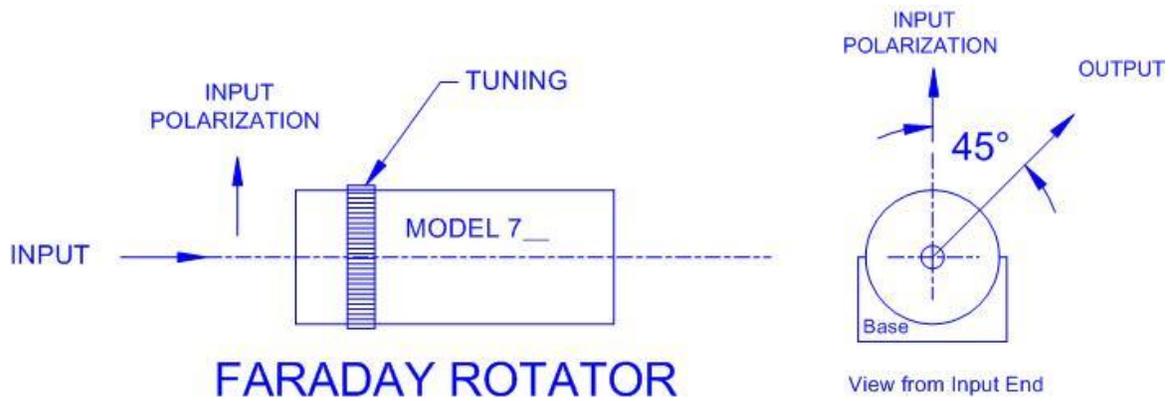
Overview

Conoptics offers three configurations for our Optical Isolators.

1. Faraday Rotator – supplied without polarizer's
2. Optical Isolator with input and output polarizer's pre-aligned to the rotator rod.
 - a. In this configuration the "input end" is the end with the tuning ring. The arrow on the mounting base shows the beam path direction
 - b. The input polarizer is aligned for vertical input polarization and the output polarizer is 45 degrees to the input.
 - c. Our standard setup is "Vertical" Input Polarization. If your source is horizontally polarized, simply remove the two socket CAP screws on the mounting base and rotate the isolator 90 degrees, so that the other two tapped holes on the cylinder are aligned with the mounting screws on the base. Re-tighten the screws so they are "snug". The polarizer's on the isolator should not be adjusted at any time. They are preset for maximum performance.
3. Optical Isolator with a Model 730 rotator installed between the Faraday rod and the output polarizer.
 - a. In this configuration, the input and output polarizer's may be set parallel or crossed to each other. The product will be aligned for parallel polarizer's, unless specified differently.
 - b. The Model 730 is a quartz 45 degree rotator for use at a specified wavelength.

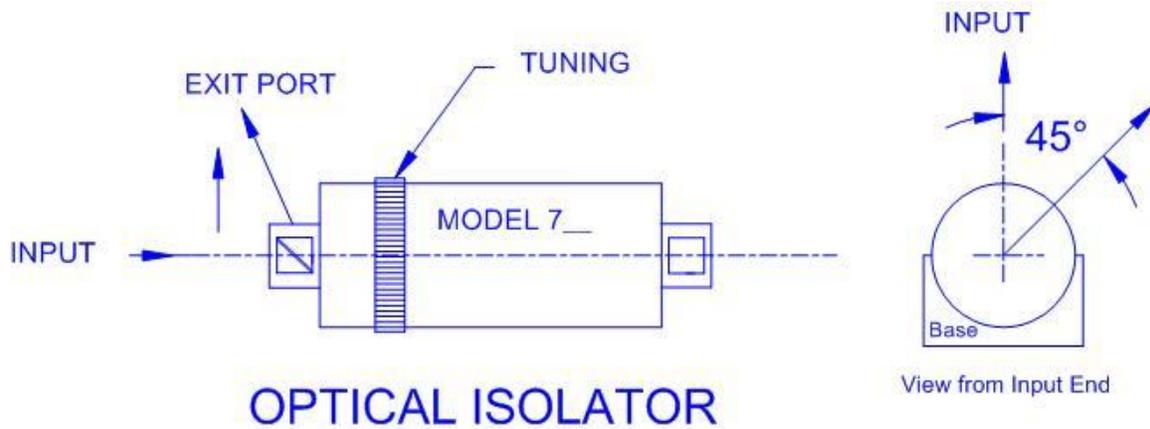
The tuning ranges of our Optical Isolators are listed by model number on our product offerings page. This is the optical wavelength range that will yield 45 degrees rotation. The wavelength is tuned by rotating the tuning ring; this moves the Faraday rod either in or out of the axial magnetic field.

Faraday Rotator



The input end of the faraday rotator is the end with the tuning ring. Place the isolator in a suitable mount and align the laser at the lower power to center the beam on the entrance.

Optical Isolator

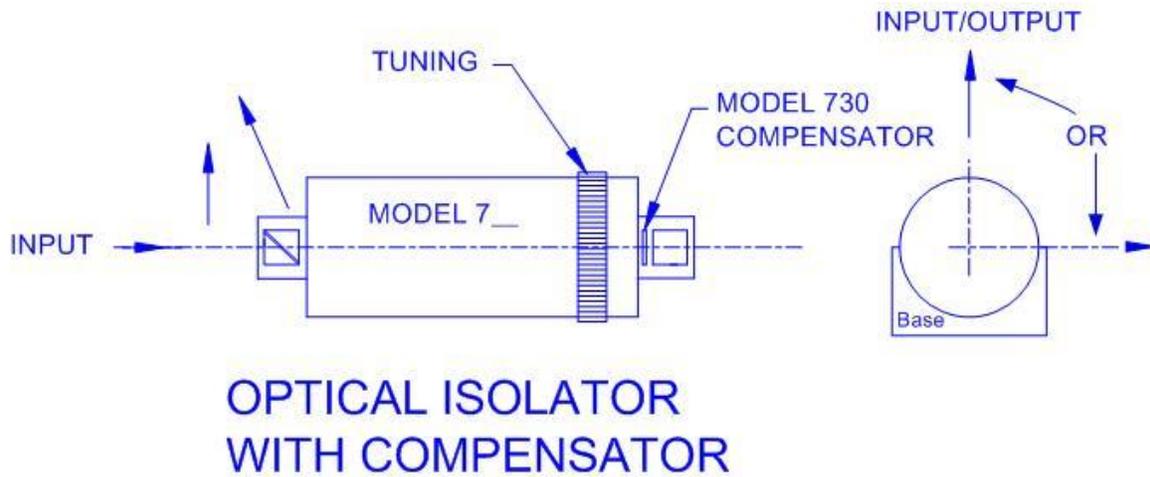


If the isolator has mounted GLAN polarizer's at each end, the input end is the end with the tuning ring. Place the isolator in a suitable mount and align the laser at the lower power to center the beam on the entrance and exit polarizer's.

To adjust the isolator for maximum isolation, reverse the isolator so that the tuning ring is toward the output.

Adjust the tuning ring for minimum transmission. Then rotate the isolator end for end (tuning ring is now towards the laser).

Optical Isolator with Compensator Installed



To adjust the isolator for maximum isolation, reverse the isolator so that the tuning ring is toward the output.

Adjust the tuning ring for minimum transmission. Then rotate the isolator end for end (tuning ring is now towards the laser).

- a. In this configuration, the input and output polarizer's may be set parallel or crossed to each other. The product will be aligned for parallel polarizer's, unless specified differently.
- b. The Model 730 is a quartz 45 degree rotator for use at a specified wavelength.

Product Notes:

If the polarizer's have been removed

- Place the input polarizer on the input end of the isolator (nearest the tuning ring).

If the input polarization is vertical

- Align the input polarizer so that the two polished faces are horizontal. Align the output polarizer at 45 degrees to the vertical. 45-45-90 triangle may be useful for this alignment. Lock the polarizer in place and then tune the isolator ring as described above.

Safety Warning:

The magnetic fields associated with these products require special handling on your part to prevent damage to the product or harm to you or your associates.

- Do not attempt to disassemble the housing
- The magnetic fields extend beyond the housing and can attract other magnet materials
- Keep small ferromagnetic objects like tools, razor blades, screws away from the rotator. Remove your watch, and be sure to keep your credit cards and floppy discs at a safe distance.

Make sure that the polarizer covers are replaced to prevent the rejected light from being accidentally viewed. This also protects the polarizer's.

Always wear protective eyewear when operating a laser.