

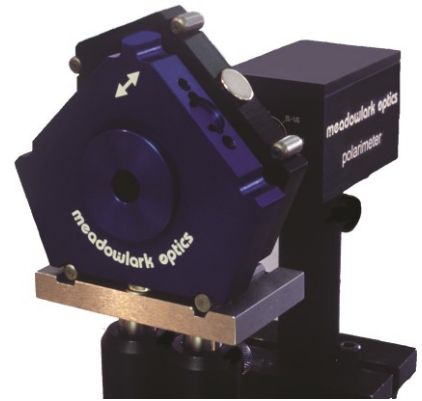
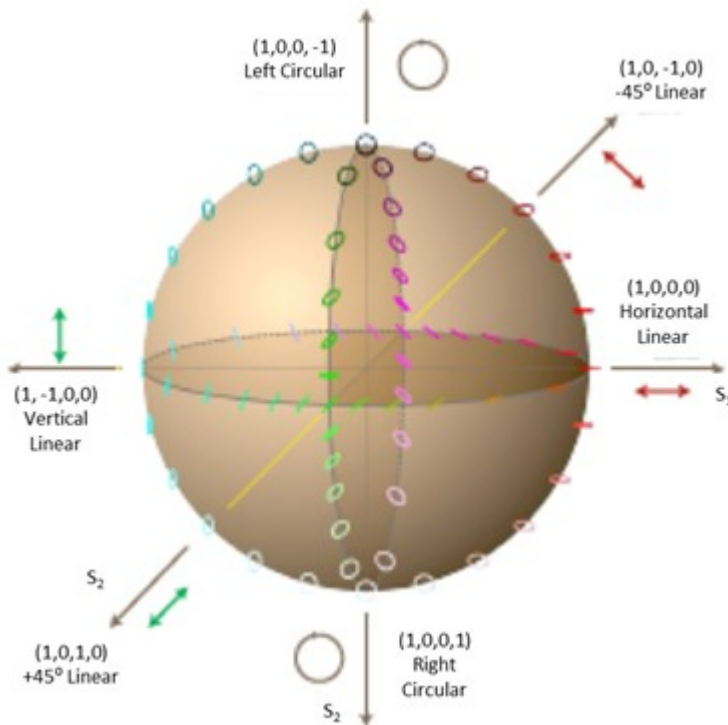
Eigenstate Calibration Set

Meadowlark Optics' Eigenstate Calibration Sets are tools which produces six polarization eigenstates: linear polarized light at angles of 0, 90, +45, -45 degrees as well as circular right-handed and circular left-handed polarized light.

These states are created by using a precision dichroic linear polarizer in a black housing and a precision quarter waveplate in a blue housing. The housings are CNC machined so that the accuracy of the angles is better than 1 arc minute. Pins on the housings mate to a v-groove and a flat groove in a quasi-kinematic fashion, while magnets provide holding force. This scheme facilitates precise, simple and fast indexing of the polarization eigenstates. Large arrows on the housing indicate the transmission axis of the polarizer and the fast axis of the waveplates for ease of use. Available for wavelength ranges from 450-2000 nm.

Eigenstate Retarders are additional retarders that can be purchased at the same time as your Eigenstate Calibration Set and Polarimeter. Wavelengths available from 450-2000 nm, with broadband options also available.

Poincaré Sphere showing six polarization eigenstates

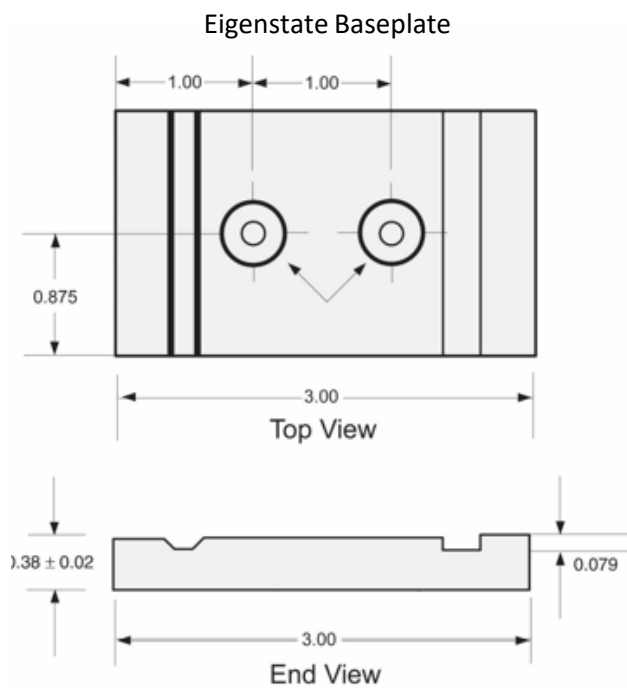
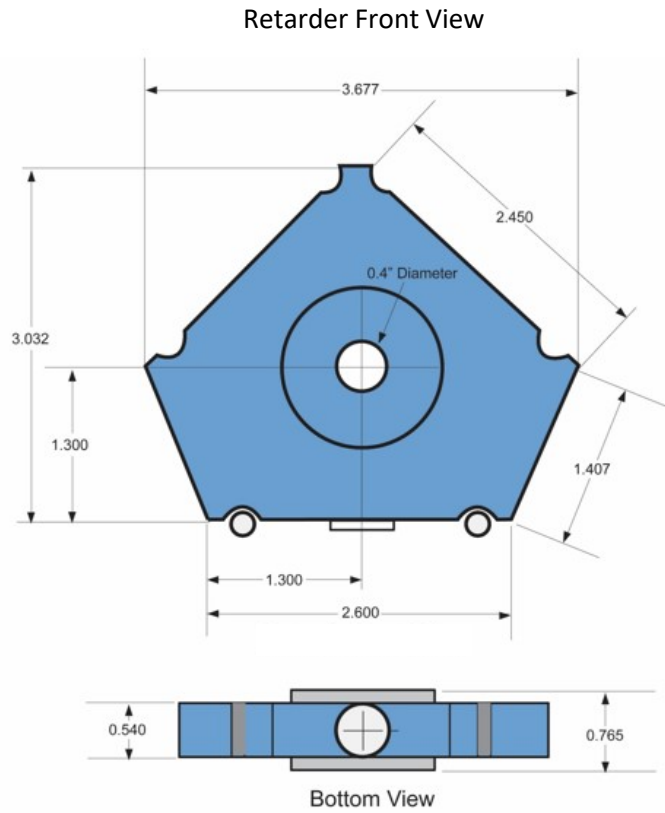
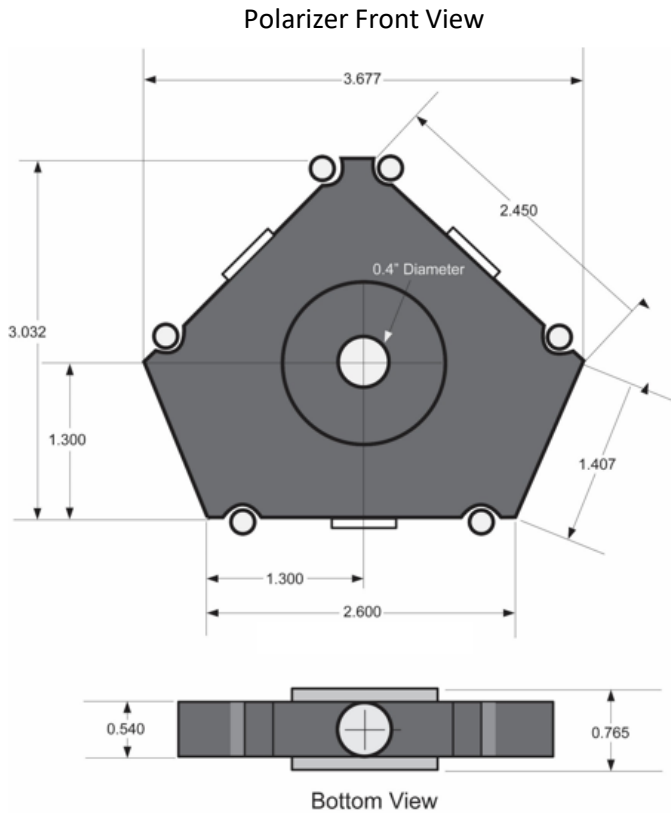


Key Features

- • •
- Ellipsometry
- Polarization control
- Polarization analysis
- Calibration accessory for PMI Series polarimeters

Other Systems

- • •
- Spatial Light Modulators
- Tunable Optical Filters
- Pockels Cell Modulators
- Photomultiplier Systems
- Tri-Color Filter



| Calibration Sequence | Stokes Vector | SOP Description | Polarizer Orientation | Waveplate Orientation |
|----------------------|---------------|-----------------|-----------------------|-----------------------|
| Step 1 | (1,1,0,0) | Horizontal | ↔ | Removed |
| Step 2 | (1,-1,0,0) | Vertical | ↕ | Removed |
| Step 3 | (1,0,1,0) | +45° | ↗ | Removed |
| Step 4 | (1,0,-1,0) | -45° | ↘ | Removed |
| Step 5 | (1,0,0,1) | Right Circular | ↻ | ↗ |
| Step 6 | (1,0,0,-1) | Left Circular | ↺ | ↘ |

Polarimeter calibration is greatly simplified by the Eigenstate Calibrator sequence outlined above



SPECIFICATIONS FOR MONOCHROMATIC EIGENSTATE CALIBRATION SET

| | |
|----------------------------|---|
| Retardance Accuracy | $\lambda/350$ |
| Thickness | 0.79 ± 0.015 in (20.06 \pm 0.38 mm) |
| Clear Aperture | 0.32 in (8.13 mm) |

SPECIFICATIONS FOR BROADBAND EIGENSTATE CALIBRATION SET

| | |
|-------------------------------|--|
| Wavelength Range – VIS | 450 – 800 nm |
| Wavelength Range – NIR | 690 – 1200 nm |
| Wavelength Range – IR | 1100 – 2000 nm |
| Retardance Accuracy | $\lambda/200$ |
| Thickness | 1.10 ± 0.02 in (27.94 \pm 0.51 mm) |
| Clear Aperture | 0.197 in (5.0 mm) |

ORDERING INFORMATION FOR CALIBRATION SETS (POLARIZER AND RETARDER)

| <i>Item</i> | <i>Part Number</i> |
|---|---|
| Single Wavelength Eigenstate Calibration Set | ECS – λ <i>(Please specify your operating wavelength λ in nm when ordering)</i> |
| Broadband Eigenstate Calibration Set – VIS | ECS – VIS |
| Broadband Eigenstate Calibration Set – NIR | ECS – NIR |
| Broadband Eigenstate Calibration Set – IR | ECS – IR |

ORDERING INFORMATION FOR CALIBRATION RETARDERS OR POLARIZERS (INDIVIDUAL COMPONENTS)

| | |
|---|---|
| Single Wavelength Eigenstate Retarder | EGR – λ <i>(Please specify your operating wavelength λ in nm when ordering)</i> |
| Broadband Eigenstate Polarizer (450 – 2000 nm) | EGP – GTP |
| Achromatic Eigenstate Retarder – VIS (450 – 800 nm) | EGR – VIS |
| Achromatic Eigenstate Retarder – NIR (690 – 1200 nm) | EGR – NIR |
| Achromatic Eigenstate Retarder – IR (1100 – 2000 nm) | EGR – IR |

Customs options available. Please contact one of our Solutions Engineers for more information.