

# PRODUCT CATALOG



[www.dayoptics.com](http://www.dayoptics.com)

## HO

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## BO

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V2601

## About DayOptics

Dayoptics is an experienced optical solutions provider specializing in R&D and manufacturing of precision optical component and module. We provide custom-made products and services to our global customers such as United States, Europe, Japan, Middle East, and other regions and covering industries such as industrial lasers, optical communications, semiconductor manufacturing, bio-medicine, industrial inspection, and smart vehicles.

With the corporate spirit of "Pursuing Perfection, Striving for Excellence and Innovation," Dayoptics makes innovative breakthroughs surrounding the pain points of the laser industry. We are working on tackling key core technologies including precision optics, optical coating, automated processes, and laser testing. And striving for new heights in technical directions such as ultra-precision, micro-miniaturization, ultra-fast processing, and ultra-high power. Dayoptics continuously breaking through laser component process technologies, we have applied for dozens of invention patents, and its relevant technological achievements have reached the international advanced level through scientific and technological achievement evaluation.

Strictly following international management standards, Dayoptics has established and improved a comprehensive management system with ISO9001 Quality Management System, IATF16949 Automotive Industry-Specific Quality Management System, ISO14001 Environmental Management System, ISO45001 Occupational Health and Safety Management System, and ISO56005 Innovation Management and Intellectual Property System.

Since established in April 2013, Dayoptics has gradually completed its strategic layout of regional expansion and global outreach. In January 2021, Fujian Dayoptics established, a wholly-owned subsidiary. Changsha Branch established in May 2023. Thailand Subsidiary set up in November 2024. In July 2025, it completed vertical integration with ZMAX-Optech (Stock Code: 688307), a STAR Market-listed company, achieving significant development through resource complementarity and capital empowerment. Relying on the industrial resources and capital advantages of ZMAX-Optech Optics, Dayoptics will continue to deepen the research on key core technologies, improve the full-chain technical system from optical elements to optical modules, provide global customers with more efficient and precise one-stop optical solutions, and contribute to the innovative development of the next-generation information technology and high-end equipment industries.

## Strategic Layout



**50+**  
Countries/Regions Delivered

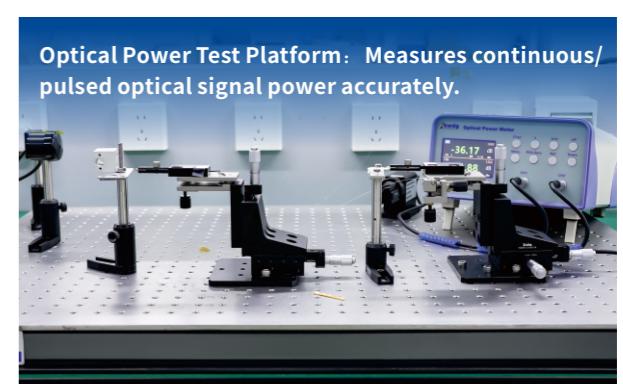
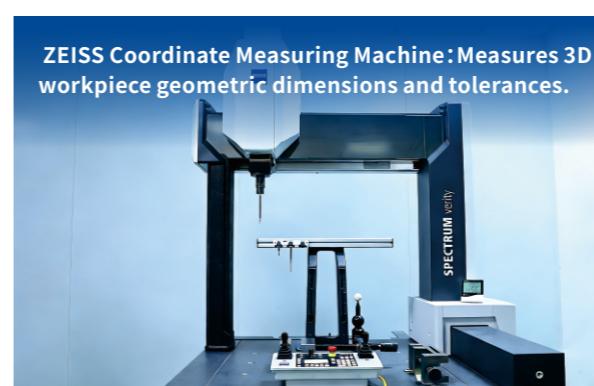
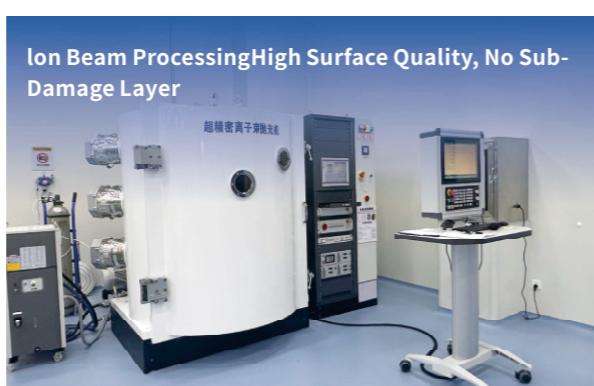
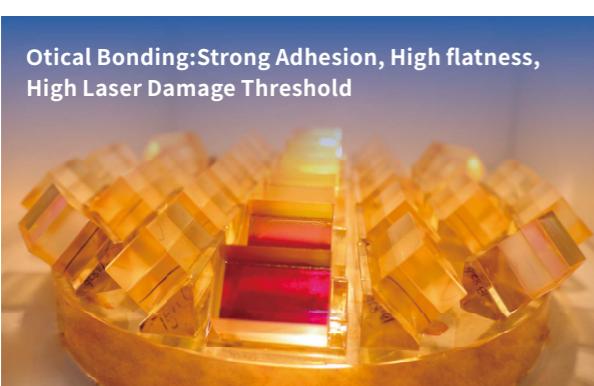
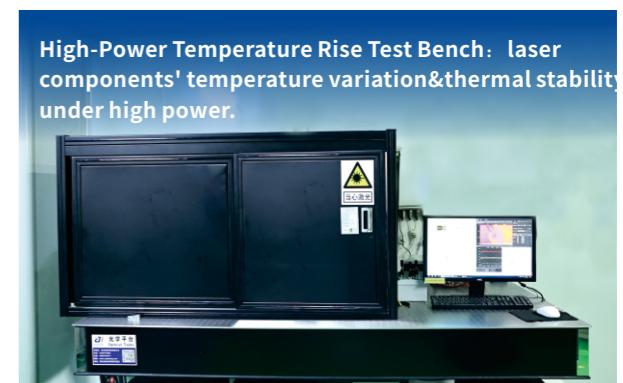
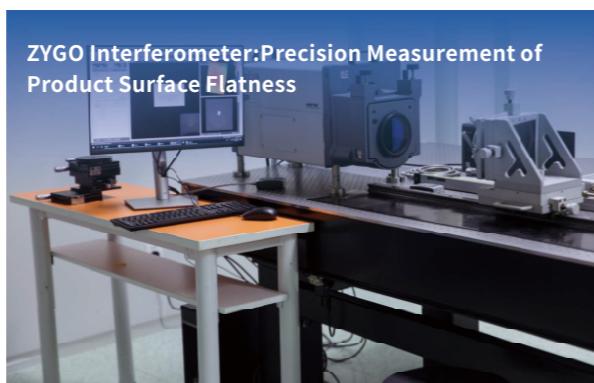
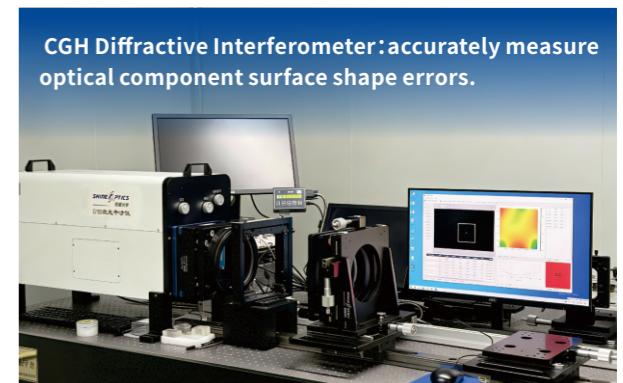
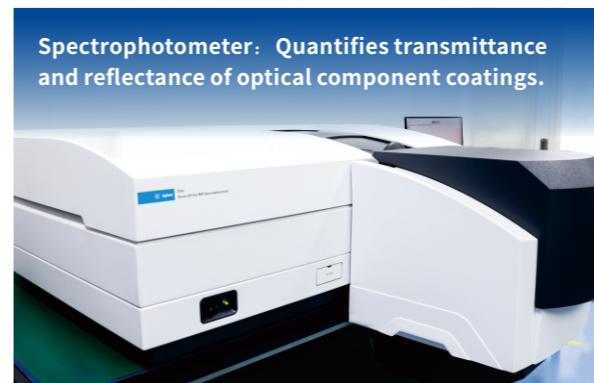
**20%**  
Annual Capacity Increase

**70M**  
Annual Production

**10000+**  
Cooperating Partners



# Company Capability



# 光学器件 LASER COMPONENTS CONTENTS

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## Inline Acousto-Optic Modulator

### ► Description

High-power,high-speed Inline Acousto-Optic Modulators are one of the core components of all-fiber laser links.They offer the advantages of ultra-high extinction ratio,low insertion loss, and fast rise time,enabling pulse laser selection and modulation.These are suitable for applications in optical communication,laser technology, and fiber optic sensing.



Dayoptics' delivers top-quality crystals,advanced machining,expert coatings, and ensures meticulous fiber coupling to guarantee outstanding optical performance.Moreover,we offer customized design and production services to address the specific needs of our clients.

### ► Applications

Ultrafast Laser,Industrial Laser,Laser Sensing,Optical Communication

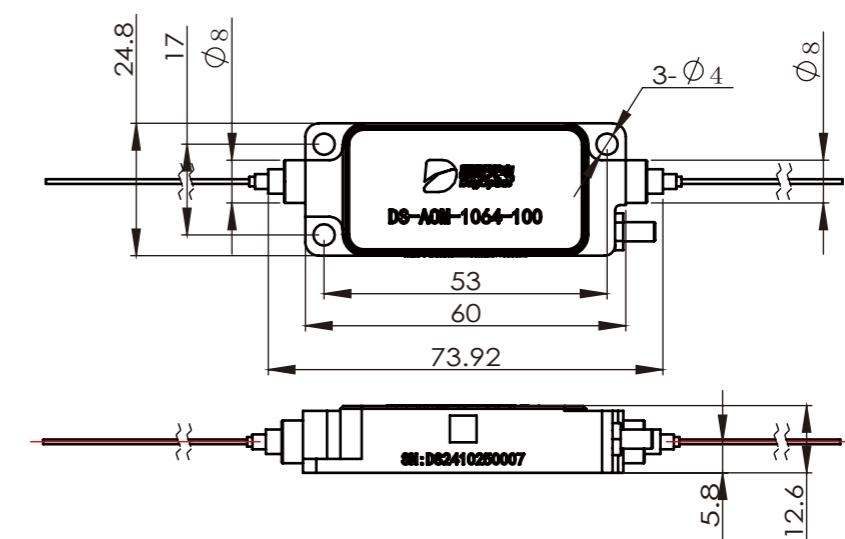
### ► Specification

Wavelength (nm)	Frequency (MHz)	Extinction Ratio (ER) (dB)	Rise Time (10% - 90%)	Optical Power Handling (W)	Insertion Loss (dB)	Peak Optical Power (kW)	Speed of Sound (m/s)
1064	80	>45	45	3	2	3	4200
1064	100	>45	45	3	2	3	4200
1064	200	>45	10	3	3	3	4200

Material: TeO<sub>2</sub>,Quartz

Dayoptics' provides customized acousto-optic devices and RF drivers, including wavelength/frequency customization and performance optimization, to meet diverse industry needs

### ► Mechanical Dimensions(mm)



# Free-Space Acousto-Optic Modulator

## Description

Acousto-optic modulators, which utilize the acousto-optic effect to achieve optical modulation, employ acoustic waves generated by a modulation signal within the modulator to alter the device's refractive index. This, in turn, modifies the phase of light passing through the device, achieving the modulation objective.

Dayoptics' offers acousto-optic modulators made from  $\text{TeO}_2$  material, characterized by high laser damage thresholds, high power handling, and high extinction ratios. Our standard product line includes key operating wavelengths such as 1030 nm and 1064 nm, with modulation frequencies available in 80, 100, 120, 150 and 200 MHz.

Additionally, our free-space series features various aperture sizes and can be customized to meet specific customer requirements.



## Application

Ultrafast Laser, Industrial Laser, Laser Sensing, Free-Space Optical Communication

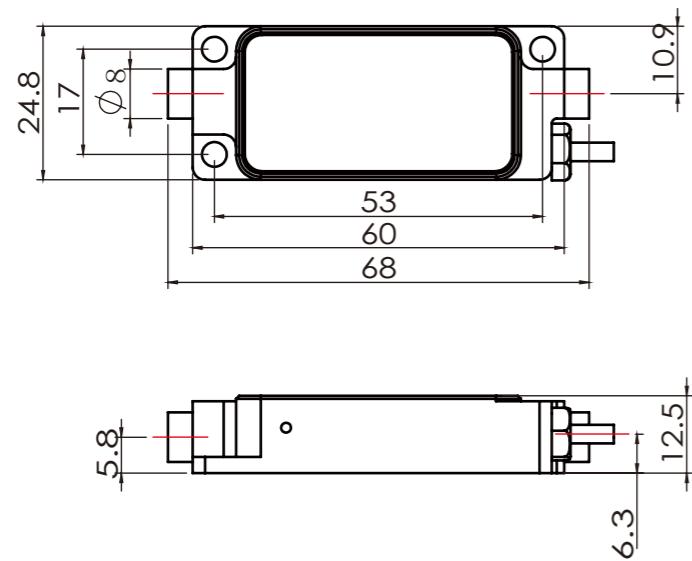
## Specifications

Wavelength (nm)	Frequency (MHz)	Optical Aperture (L × H mm)	Diffraction Efficiency (%)	Optical Power Density (W/mm <sup>2</sup> )	Drive Power (W)	Input Impedance ( $\Omega$ )
1064	80	0.7	85	250	1.8	50
1064	100	0.7	85	250	1.8	50
1064	120	0.7	85	250	1.8	50
1064	150	0.5	85	250	2.5	50
1064	200	0.3	70	250	2.5	50

Material:  $\text{TeO}_2$ , Quartz

Dayoptics' provides customized acousto-optic devices and RF drivers, including wavelength/frequency customization and performance optimization, to meet diverse industry needs

## Mechanical Dimensions(mm)

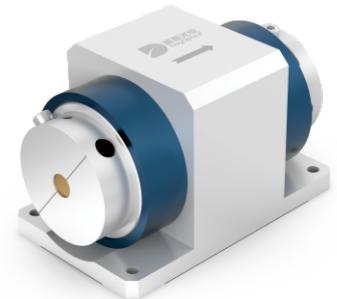


# Free-Space Isolators

## Description

Free-space isolators can be categorized into polarization-dependent and polarization-independent isolators. As critical components in fiber lasers, they are primarily composed of a polarizing beam splitter and a Faraday rotator. These isolators are typically used to prevent the effects of back-reflected noise or interference on the light source or optical system, effectively maintaining the stability of the optical system.

Dayoptics' selects high-quality magneto-optic crystals, offering low absorption, high extinction ratio, and low loss, ensuring exceptional and reliable product performance. We also provide customized design and manufacturing services to meet the specific needs of different applications.



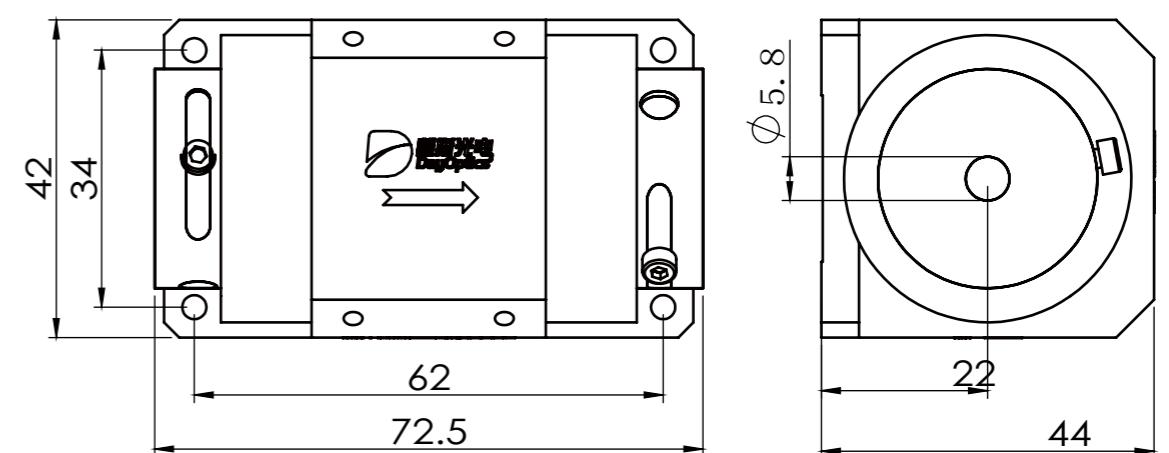
## Application

Ultrafast Laser, Industrial Laser, Laser Sensing, Biomedical Equipment, OCT (Optical Coherence Tomography)

## Specifications

Center Wavelength	1030nm, 1064nm (customized)
Minimum Isolation ( $\lambda_c, 23^\circ\text{C}$ )	25dB
Maximum Isolation ( $\lambda_c, 23^\circ\text{C}$ )	>30dB
Minimum Extinction Ratio	25dB
Insertion Loss ( $\lambda_c, 23^\circ\text{C}$ )	0.3dB
Maximum Insertion Loss ( $\lambda_c, 23^\circ\text{C}$ )	0.4dB
Peak Transmission	>95%
LIDT	10 J/cm <sup>2</sup>
Tilt Angle ( $\lambda_c, 23^\circ\text{C}$ )	45°
Clear Aperture	2mm-5mm
Max Average Power	10°C-30°C
Operating Temperature	0°C-60°C

## Mechanical Dimensions(mm)



# Inline Isolators

## Description

Inline isolators can be categorized into non-polarization-maintaining and polarization-maintaining types. These laser components are engineered to ensure the stable transmission of linearly polarized light while preserving its polarization state. They are mainly composed of a polarizing beam splitter, a Faraday rotator, and a pair of collimators.

Dayoptics' in-line isolators feature high isolation, robust power handling, high return loss, and low insertion loss, and are known for their stability and reliability. We also provide customized design and manufacturing services tailored to the specific requirements of various applications.



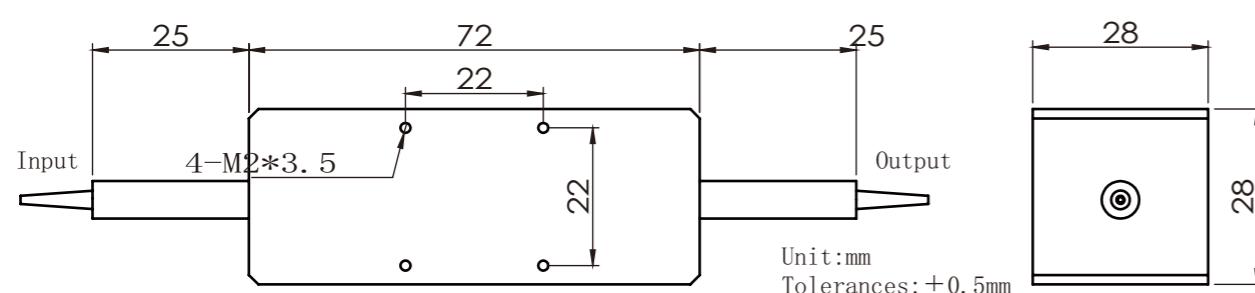
## Application

Ultrafast Laser, Industrial Laser, Laser Sensing, Biomedical Equipment, OCT (Optical Coherence Tomography)

## Specifications

Center Wavelength ( $\lambda_c$ )	1030, 1064nm (customized)
Operating Wavelength	$\pm 10\text{nm}$
Maximum Isolation	30dB
Minimum Isolation ( $\lambda_c, 23^\circ\text{C}$ )	28dB
Typical Insertion Loss ( $\lambda_c, 23^\circ\text{C}$ )	0.5dB
Maximum Insertion Loss ( $\lambda_c, 23^\circ\text{C}$ )	0.7dB
Return Loss (Input/Output)	50dB
Minimum Extinction Ratio	22dB
Maximum Average Optical Power	10, 20, 30W
Fiber Type	PM980 or Customer-Specified Model
Operating Temperature	10-30°C
Storage Temperature	0-60°C

## Mechanical Dimensions(mm)



# Faraday Rotators

## Description

Faraday rotators provide non-reciprocal rotation while maintaining the beam's linear polarization. When light passes through the Faraday rotator in one direction, the polarization state rotates by 45°; in the opposite direction, the polarization state rotates by another 45° in the same direction relative to the magnetic field. This allows the return light to be effectively blocked when paired with a polarizer.

Dayoptics' offers Faraday rotators with high reliability and minimal  $M^2$  degradation. Utilizing a high damage threshold process, we customize a wide range of Faraday rotators to meet the specific requirements of various applications.



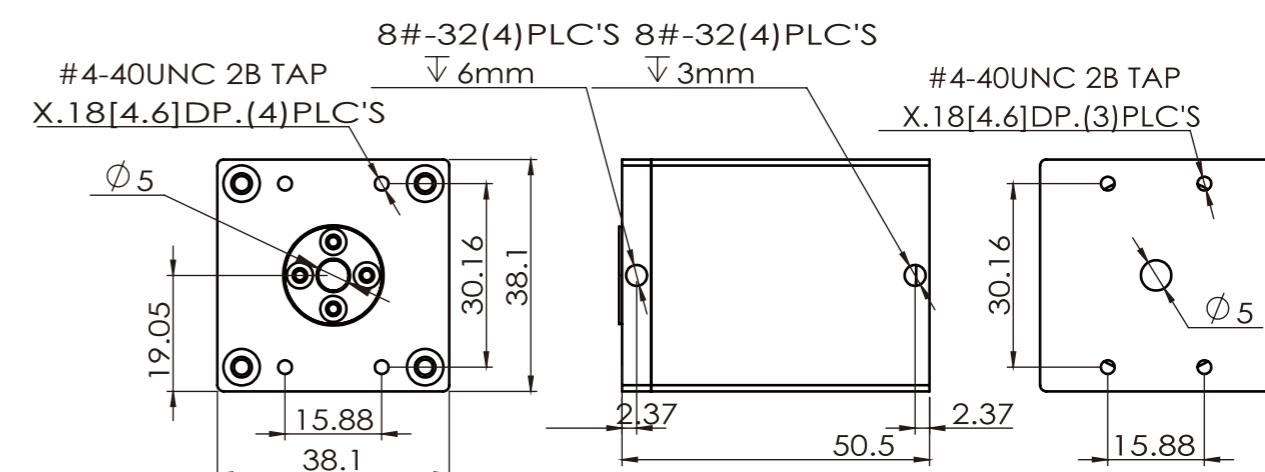
## Application

Ultrafast Laser, Industrial Laser, Laser Sensing, Biomedical Equipment, OCT (Optical Coherence Tomography)

## Specifications

Center Wavelength ( $\lambda_c$ )	1030nm (customized)
Operating Wavelength	$\pm 10\text{nm}$
Typical Insertion Loss ( $\lambda_c, 23^\circ\text{C}$ )	0.1dB
Maximum Insertion Loss ( $\lambda_c, 23^\circ\text{C}$ )	0.2dB
Clear Aperture	5mm
Transmission	$\geq 98\%$
Extinction Ratio	$\geq 30\text{dB}$
Tilt Angle	$45 \pm 0.5^\circ$
Withstand Power	75W
Minimum Return Loss	50dB
Operating Temperature	10-30°C
Storage Temperature	0-60°C

## Mechanical Dimensions(mm)



# Output Isolator

## Description

The collimated output fiber isolator is a device with fiber input and free-space collimated beam-expanding output. It serves as a key component at the laser output port of fiber lasers.

Dayoptics' standard output isolators apply high-quality crystals and optical components, composed of a collimator, polarizing beam splitter, Faraday rotator, and beam expander.

These isolators provide an output beam with excellent beam quality and a small divergence angle. We offer customized design and manufacturing services to meet specific parameter requirements based on customer needs.



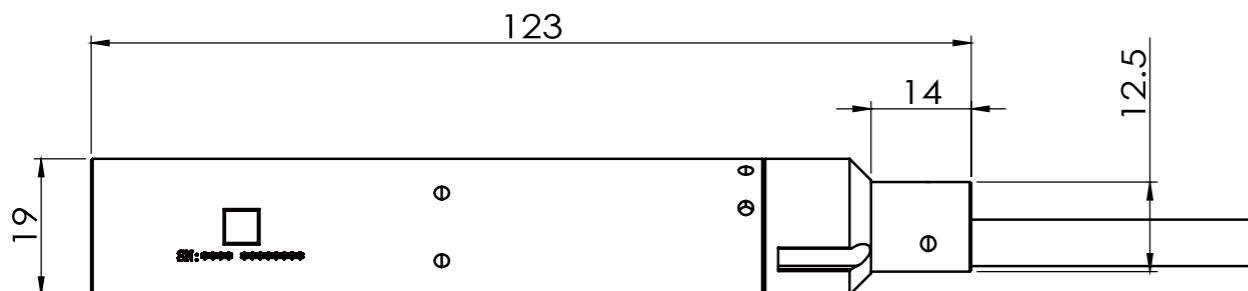
## Application

Ultrafast Laser, Industrial Laser, Laser Sensing

## Specifications

Center Wavelength ( $\lambda_c$ )	1064nm(customized)
Operating Wavelength	$\pm 5\text{nm}$
Insertion Loss	0.4dB
Peak Isolation	35dB
Minimum Isolation	28dB
Typical Output	93%
Minimum Return Loss	50dB
Output Beam Diameter	$5\pm 0.5, 6\pm 0.5, 7\pm 0.5$ (customized)
$M^2$ Degradation Rate	<10%
Ellipticity	>90%
Peak Power	10,20kW(customized)
Maximum Average Optical Power	30,100,150,200W
Fiber Type	Customer-Specified Model
Operating Temperature	10-50°C
Storage Temperature	0-60°C

## Mechanical Dimensions(mm)



# QCS

## Description

QCS fiber collimators are compact fiber-coupled collimation output components specifically designed for direct semiconductor and fiber lasers. They enable precise beam collimation, beam expansion, or long-focus low-reflection spatial output.

Dayoptics' QCS collimators provide excellent beam quality, stable performance, and high reliability. We offer customized design and manufacturing services to meet specific parameter requirements based on customer needs.



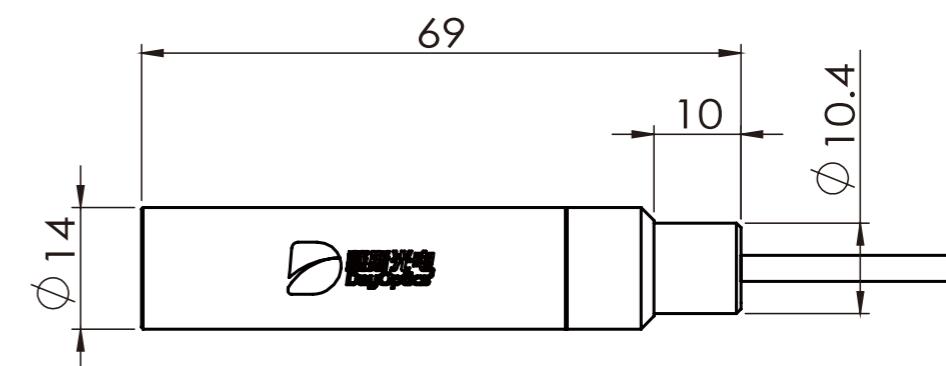
## Application

Ultrafast Laser, Industrial Laser, Laser Sensing

## Specifications

Center Wavelength	1064nm(customized)
Operating Wavelength Range	$\pm 5\text{nm}$
Spot Size	5-7mm(customized)
Spot Ellipticity	92%
Transmission	98%
Beam Divergence Angle	<0.5mrad
Maximum Output Power	20,30,50,100W
$M^2$ Degradation Rate	10%
Maximum Insertion Loss(at 1064nm)	0.3dB
Maximum Insertion Loss(at 650nm)	1.5dB
Minimum Return Loss	50dB
Output Beam Diameter	6 $\pm$ 0.5mm or Customer-Specified Model
Maximum Tensile Load	5N
Fiber Type	Customer-Specified Model
Operating Temperature	0-50°C
Storage Temperature	-5-70°C

## Mechanical Dimensions(mm)



### > Description

QBH is a specialized interface used to connect high-power fiber lasers with output fibers or transmission fibers. It is designed to handle high-power density laser beams while providing a quick, reliable, and safe connection. Dayoptics' QBH interfaces feature high power handling capacity, excellent sealing, stable performance, and high reliability. We also offer customized QBH interface solutions to meet the specific needs of different customers in fiber laser applications.



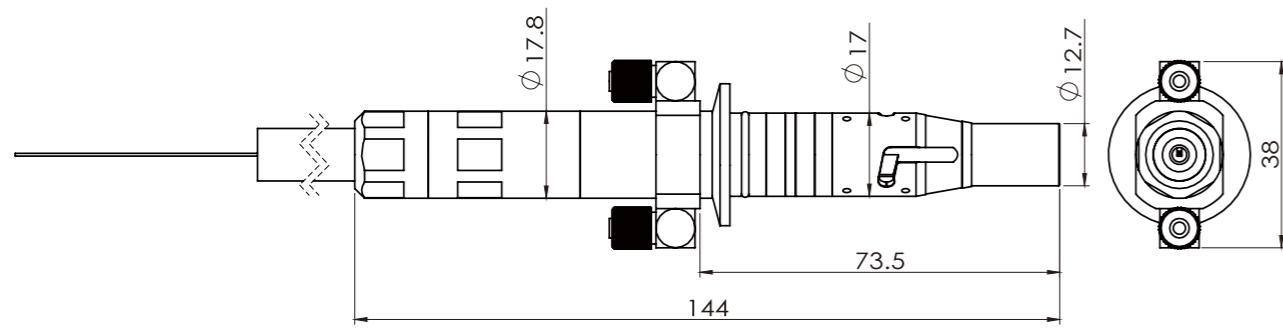
### > Application

Ultrafast Laser, Industrial Laser, Laser Sensing

### > Specifications

<b>Operating Wavelength</b>	1030-1090nm(customized)
<b>Transmission</b>	99%
<b>Minimum Transmission</b>	98%
<b>Maximum Withstand Power</b>	3000W(customized)
<b>Impulse Power</b>	Max.10kW@10ns,Max.50kW@1ms,Max.1MW@50ns
<b>Beam Pointing Accuracy</b>	17mrad
<b>Ellipticity</b>	92%
<b>Maximum Tensile Load</b>	5N
<b>Packaging Materials</b>	Stainless Steel, Aluminum, Copper
<b>Operating Temperature</b>	10-50°C
<b>Storage Temperature</b>	-10-75°C
<b>Maximum Water Pressure</b>	8bar
<b>Bare Fiber Length ≤15m</b>	Fiber Length-10cm
<b>15m≤ Bare Fiber Length ≤30m</b>	Fiber Length-20cm

### > Mechanical Dimensions(mm)



## F-theta Lenses

### > Description

The 355nm UV laser F-theta lens focuses the collimated laser beam to a single point, increasing the energy density of the laser beam. When the direction of the incident laser beam changes, the F-theta lens maintains a consistent spot size and energy density, allowing the laser beam to process points on different material positions. Dayoptics' F-theta lenses feature low laser energy loss, high damage resistance, and superior beam quality. We also offer customized design and manufacturing services to meet specific parameter requirements based on customer needs.



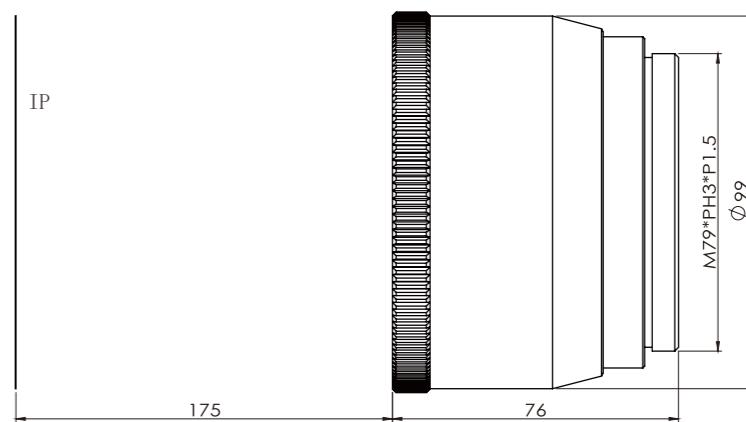
### > Application

Ultrafast Laser, Industrial Laser, Biomedical Equipment, OCT (Optical Coherence Tomography)

### > Specification

<b>Center Wavelength</b>	355nm,450nm,532nm,1064nm
<b>Operating Wavelength</b>	±10nm (supports single-wavelength and multi-wavelength customization)
<b>Effective Focal Length</b>	136mm(customized)
<b>Maximum Input Beam</b>	10.0mm
<b>Working Distance</b>	175mm(customized)
<b>Scan Field</b>	70mm×70mm (supports customization of specifications ≤ 250mm × 250mm)
<b>Telecentricity error</b>	<1°
<b>Transmission</b>	>94%
<b>Lens Material</b>	Fused Silica (supports selecting cost-effective materials based on operating power)
<b>Suitability for ultrashort pulses</b>	Yes
<b>LIDT</b>	0.2 J/cm²@15ps, 355nm, 800kHz
<b>Weight</b>	2.45kg

### > Mechanical Dimensions(mm)



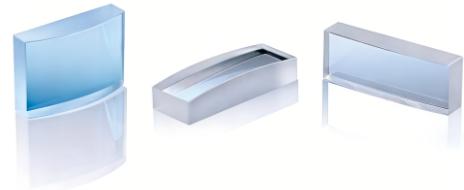
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## Cylindrical Lens

### Product Description

Dayoptics'cylindrical lenses are designed for applications requiring one-dimensional beam shaping.Cylindrical lenses are available in plano-concave and plano-convex configurations,used for diverging or converging light beams.The substrate materials include N-BK7 glass,UVFS,or customer-specified materials.A wide range of sizes is available and can be customized according to customer needs.



### Advantage

High laser damage threshold,low absorption,excellent surface quality,wide operational wavelength range,compatible with automated installation processes.

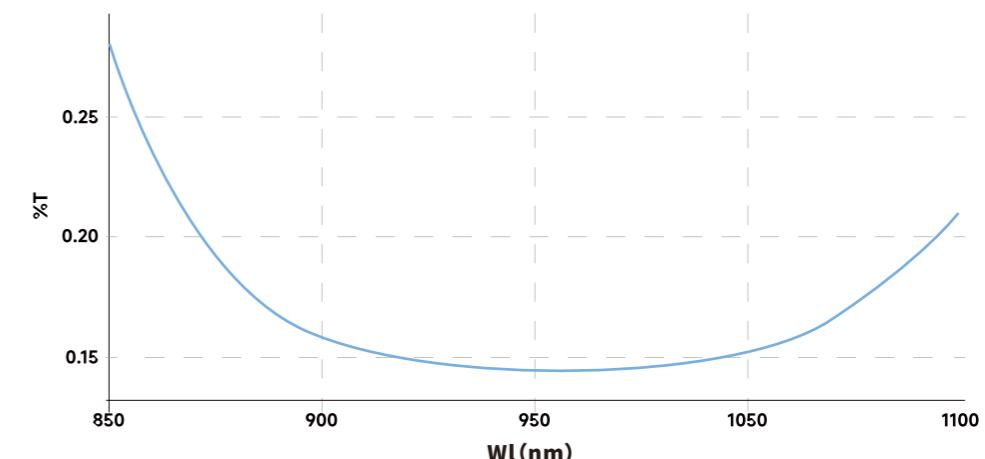
### Application

Industrial Laser,Industrial Inspection,Automotive LiDAR

### Specification

Material	C7980,BK7,SF11(or customer-specified material)
Product type	Plano-Convex Cylindrical Lens,Plano-Concave Cylindrical Lens,Double-Convex Cylindrical Lens,Double-Concave Cylindrical Lens,Meniscus Cylindrical Lens
Dimensions	3mm-80mm(customized)
Curvature	R2-R60
Surface Quality	40-20 or better
Clear Aperture (CA)	90%
Coating	400-500nm,900-1000nm,1310nm,1550nm(customized)
Laser Damage Threshold (LDT)	15J/cm <sup>2</sup>
Operating temperature	≤60°C@600W

### Typical Coating Curve(Example)



# Spherical Lens

## Product Description

Dayoptics'spherical lenses are available in plano,concave, and convex configurations. Materials include N-BK7, UV-grade fused silica, and other customer-specified materials. Broadband anti-reflection coatings are available for UV,visible,near-infrared, and mid-infrared wavelengths.



## Advantage

High laser damage threshold, low absorption, excellent surface quality, wide operational wavelength range, compatible with automated installation processes

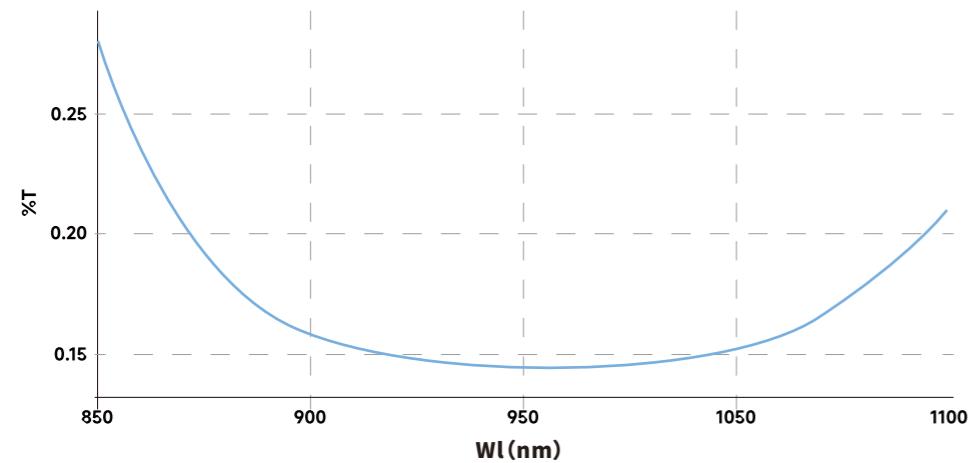
## Application

Industrial Laser, Industrial Inspection, Automotive LiDAR, Medical Testing

## Specification

Material	BK7,C7980(or customer-specified materials)
Product type	Plano-Convex Spherical Lens,Plano-Concave Spherical Lens,Biconvex Spherical Lens,Biconcave Spherical Lens, Meniscus Spherical Lens
Dimensions	φ4mm-φ80mm(customized)
Curvature	R2-R70
Surface Quality	40-20
Clear Aperture (CA)	90%
Coating	400-500nm,900-1000nm,1310nm,1550nm (customized)
Laser Damage Threshold (LDT)	15J/cm <sup>2</sup>

## Typical Coating Curve(Example)



# Windows

## Product Description

Optical windows are optical glass with precisely parallel polished surfaces. Dayoptics offers both plane and wedge-shaped windows in various substrate materials and sizes. Customization services are available to meet specific customer requirements.



## Advantage

Protection, high transmission, excellent wavefront transmission

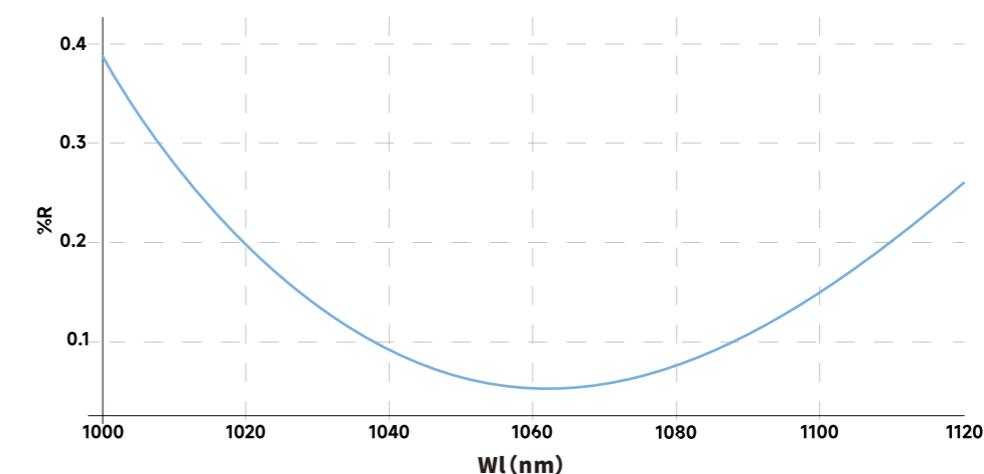
## Application

Industrial Laser

## Specification

Material	C7980(or customer-specified material)
Product type	Windows
Dimensions	φ6.35-50.8mm(customized)
Clear Aperture (CA)	90%
Surface Quality	10-5
Coating	1030-1080nm(customized)
Laser Damage Threshold (LDT)	15J/cm <sup>2</sup>
Operating Power	3000W,6000W,12000W

## Typical Coating Curve(Example)



# Mirrors

## Product Description

Mirrors are essential components in laser beam transmission systems. Dayoptics offers optical mirrors suitable for ultraviolet, visible, and infrared wavelengths, with an average reflectivity exceeding 99.9%. Appropriate reflective substrate materials can be selected according to the corresponding wavelengths.



## Advantage

High laser damage threshold, low absorption, excellent surface quality, wide operational wavelength range, compatible with automated installation processes.

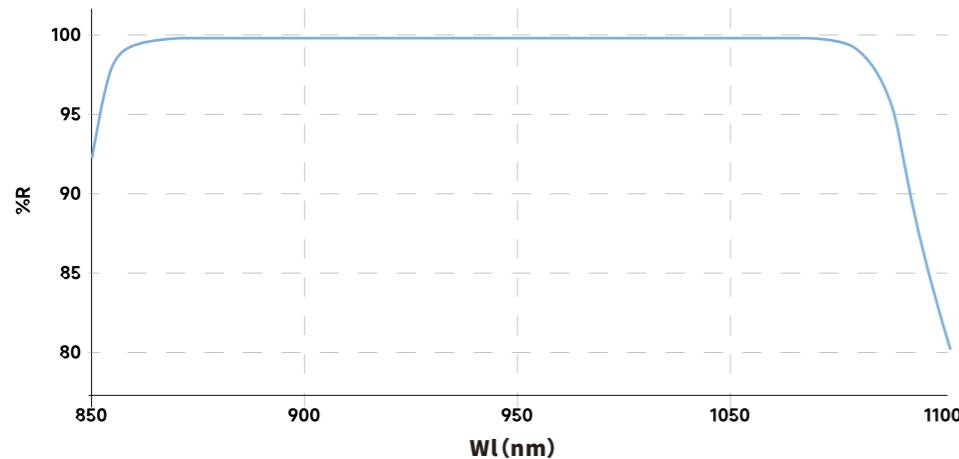
## Application

Industrial Laser, Industrial Inspection, Semiconductor Manufacturing

## Specification

<b>Material</b>	BK7, C7980 (or customer-specified material)
<b>Product type</b>	Plano Mirrors
<b>Dimensions</b>	2mm-30mm (customized)
<b>Surface Quality</b>	40-20
<b>Clear Aperture (CA)</b>	90%
<b>Coating</b>	400-500nm, 900-1000nm, 1310nm, 1550nm (customized)
<b>Laser Damage Threshold (LDT)</b>	15J/cm <sup>2</sup>
<b>Operating temperature</b>	≤60°C@600W

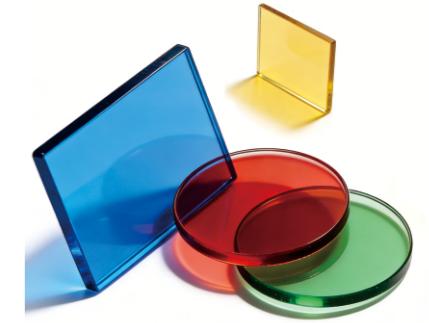
## Typical Coating Curve (Example)



# Filter

## Product Description

Filters are used to select or filter specific wavelength bands. Dayoptics offers long-pass filters, narrow-band filters, band-pass filters, and color glass filters. Customization for size and coating requirements is available based on customer needs.



## Advantage

High laser damage threshold, low absorption, excellent surface quality, wide operational wavelength range, compatible with automated installation.

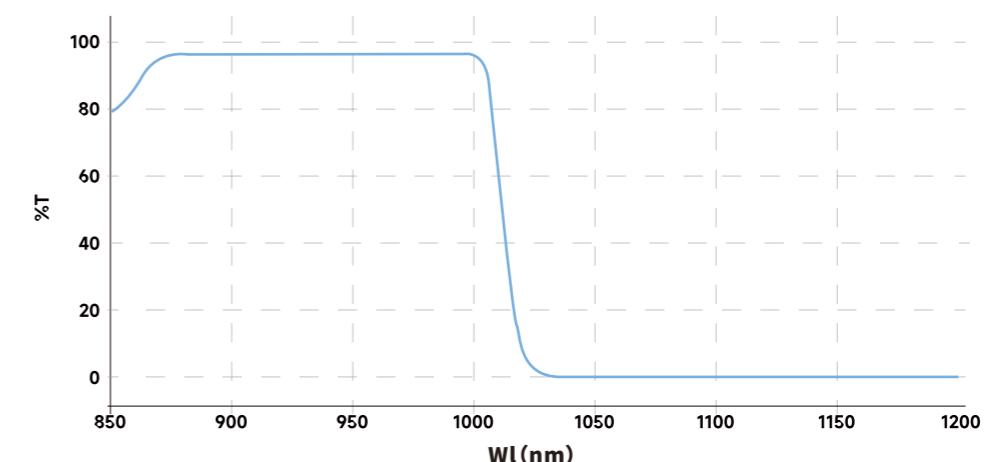
## Application

Industrial Laser, Industrial Inspection, Automotive LiDAR, Semiconductor Manufacturing, Medical Testing, Optical Communication

## Specification

<b>Material</b>	C7980 (or customer-specified material)
<b>Product type</b>	Bandpass Filters, Color Filters, Shortpass Filters, Longpass Filters, Dichroic Filters
<b>Dimensions</b>	3mm-30mm (customized)
<b>Surface Quality</b>	40-20
<b>Clear Aperture (CA)</b>	90%
<b>Coating</b>	Tavg > 99.5% @ 900-990nm, Ravg > 99.5% @ 1020-1180nm (customized)
<b>Laser Damage Threshold (LDT)</b>	15J/cm <sup>2</sup>
<b>Operating temperature</b>	≤ 60°C @ 600W

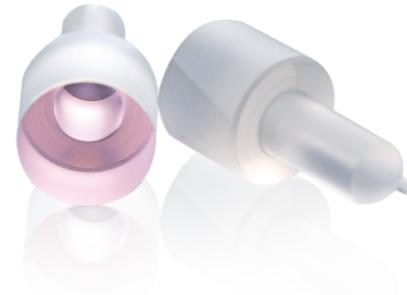
## Typical Coating Curve (Example)



# End Caps

## Product Description

End caps are high-power devices designed for the output end faces of high-power fiber lasers and fiber amplifiers, providing protection for the fiber end face. Dayoptics' end caps are available in materials such as C7979, C7980, and Heraeus-Suprasil 313, with customization options available according to customer requirements.



## Advantage

High power endurance, low absorption, low beam distortion, and large beam expansion capacity

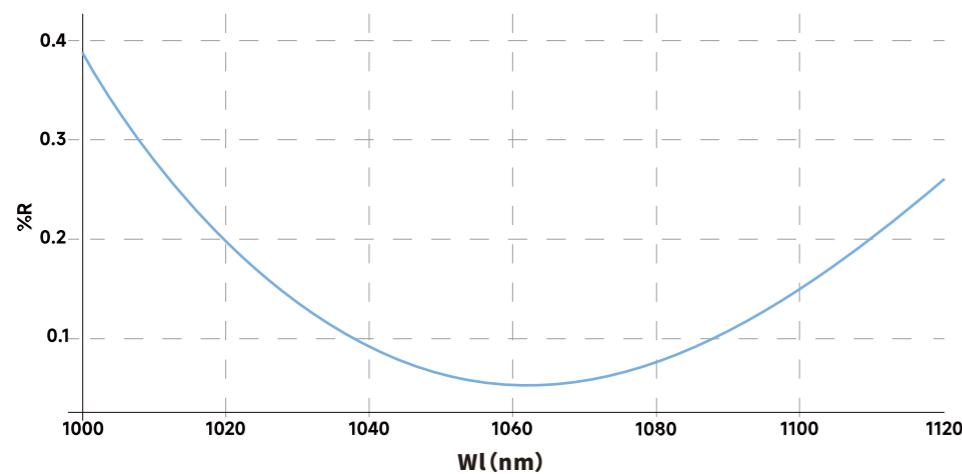
## Application

Industrial Laser

## Specification

<b>Material</b>	C7979, C7980, Heraeus-Suprasil 313 (or customer-specified materials)
<b>Product type</b>	Flat End Cap, Spherical End Cap, Fused End Cap
<b>Dimensions</b>	$\phi 1.7\text{-}\phi 8\text{mm}$ (customized)
<b>Length range</b>	3mm-25mm
<b>Surface Quality</b>	10-5
<b>Clear Aperture (CA)</b>	90%
<b>Flatness</b>	$\lambda/4 @ 632.8\text{ nm}$
<b>Parallelism</b>	$<2'$
<b>Perpendicularity</b>	$\leq 12'$
<b>Coating</b>	1030nm-1080nm (customized)
<b>Laser Damage Threshold (LDT)</b>	$15\text{J/cm}^2$
<b>Operating Power</b>	3000W, 6000W, 12000W

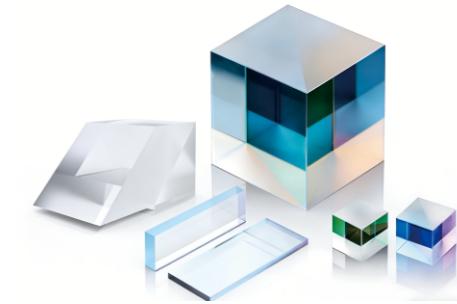
## Typical Coating Curve (Example)



# Optical Assembly

## Product Description

Optical Assembly typically refers to an integrated device that takes a polarization beam splitter (PBS) as its core, is equipped with a waveplate integration unit, and can achieve composite functions such as polarization beam splitting, beam combining, and optical path adjustment.



Dayoptics' polarization optical components are suitable for UV, visible, and infrared spectral ranges. Our products include PBC (Polarization Beam Combiner), PBS (Polarization Beam Splitter), Polarizer + Waveplate, and more.

## Advantage

High laser damage threshold, low absorption, excellent surface quality, wide operational wavelength range, compatible with automated installation processes

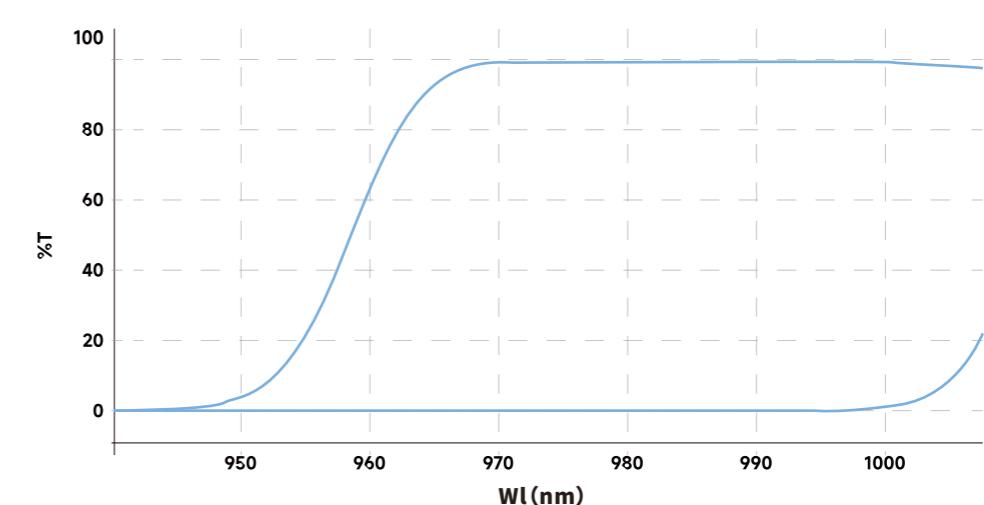
## Application

Industrial Laser, Industrial Inspection, Automotive LiDAR, Medical Testing, Optical Communication

## Specification

<b>Material</b>	N-BK7+Quartz, C7980+Quartz (or customer-specified materials)
<b>Product type</b>	PBC (Polarization Beam Combiner), PBS (Polarization Beam Splitter), Polarizer + Waveplate
<b>Dimensions</b>	5mm-30mm (customized)
<b>Surface Quality</b>	40-20
<b>Clear Aperture (CA)</b>	$\geq 85\%$
<b>Beam Deviation</b>	$<3'$
<b>Coating</b>	450nm, 915nm, 976nm, 1310nm, 1550nm (customized)
<b>Laser Damage Threshold (LDT)</b>	$15\text{J/cm}^2$
<b>Operating temperature</b>	$\leq 60^\circ\text{C}$ @ 600W
<b>Cement Mode</b>	Epoxy-Free

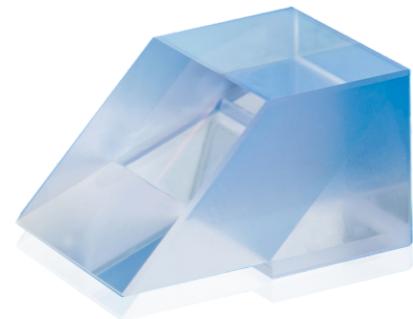
## Typical Coating Curve (Example)



## PBC (Polarization Beam Combiner)

### Product Description

The PBC (Polarization Beam Combiner) efficiently combines two laser beams with orthogonal polarization states (e.g., horizontal polarization and vertical polarization) into a single high-quality beam, while preserving the optical transmission properties and ensuring the polarization direction is stably propagated along the slow axis of the polarization-maintaining fiber.



### Advantage

High Power, High Laser Damage Threshold (LDT), Wide Operating Wavelength Range, Low Insertion Loss

### Application

Industrial Laser, Industrial Inspection, Optical Communication

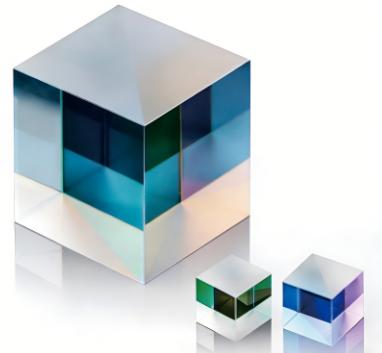
### Specification

Material	BK7, C7980 (or customer-specified materials)
Design Wavelength	915nm, 976nm (customized)
Transmitted Wavefront Distortion	$\lambda/4$ @ 632.8 nm
Surface Quality	40-20
Clear Aperture (CA)	85%
Beam Deviation	$<3'$
Coating	$T_p > 97\%$ , $T_s < 0.1\%$ , $AR < 0.2\%$ , $AOI = 0^\circ$
Laser Damage Threshold (LDT)	$15\text{J/cm}^2$

## PBS (Polarization Beam Splitter)

### Product Description

Polarization Beam Splitter (PBS) prisms are a type of core polarization optical device that can efficiently separate incident natural light or unpolarized light into two linearly polarized beams with mutually perpendicular polarization directions. One of the polarized beams is transmitted along the incident direction, while the other is reflected at a  $90^\circ$  angle to the incident light, achieving precise separation of polarization states. The end faces of the prism are coated with anti-reflective (AR) coatings, and the beveled surfaces are coated with beam-splitting coatings.



### Advantage

High Power, High Laser Damage Threshold (LDT), Wide Operating Wavelength Range, Low Insertion Loss

### Application

Industrial Laser, Industrial Inspection, Automotive LiDAR

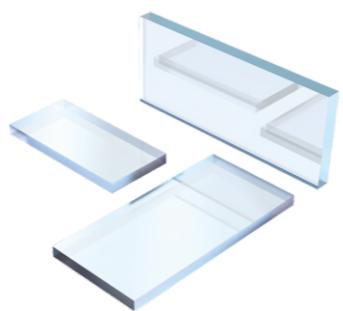
### Specification

Product Name	Standard PBS	High-Power PBS
Interface	Cemented	Optical Bonded
Beam Deviation	$<3'$	$<3'$
Flatness	$\lambda/4$ @ 632.8 nm	$\lambda/8$ @ 632.8 nm
Transmittance @ 1064nm	$T_p > 95\%$	$T_p > 97\%$ ; $T_p > 96\%$ @ 355nm
Surface Figure	60-40	40-20 (20-10) Scratch/Dig
Damage Threshold @ 1640nm	$0.3\text{J/cm}^2$	$>15\text{J/cm}^2$
Extinction Ratio	$>500:1$	$>1000:1$

# Polarizer

## Product Description

A polarizer is an optical component that converts natural light into linearly polarized light. Its core function is to select light vibrating in a specific direction while filtering out light vibrating in the perpendicular direction, transforming natural light (with random vibration directions) into polarized light (with ordered vibration directions).



## Advantage

High Laser Damage Threshold (LDT), High Transmittance, High Reflectance, High Extinction Ratio

## Application

Industrial Inspection, Medical Testing, Optical Communication

## Specification

Dimensional Tolerance	+0/-0.2mm
Thickness Tolerance	±0.2mm
Surface Quality	40-20
Clear Aperture (CA)	≥85%
Transmitted Wavefront Distortion	λ/4 @ 632.8 nm
Protective Chamfer	<0.5mm × 45°
Transmittance @ 1064nm	Tp > 95% (Tp > 97%)
Coating	450nm, 915nm, 976nm, 1310nm, 1550nm (customized)
Laser Damage Threshold (LDT)	15J/cm²

# Crystal (α-BBO)

## Product Description

The  $\alpha$ -phase barium borate crystal ( $\alpha$ -BaB<sub>4</sub>O<sub>7</sub>, abbreviated as  $\alpha$ -BBO) is a negative uniaxial birefringent crystal. Its optical transmission band covers 220–3500 nm, and it exhibits significant birefringent properties within this wide spectral range. With high ultraviolet transmittance and excellent mechanical stability,  $\alpha$ -BBO crystal can serve as an alternative material to traditional crystals such as calcite, TiO<sub>2</sub>, and LiNbO<sub>3</sub>. It is widely used in Glan-Taylor polarizers, Glan-Thompson polarizers, and walk-off beam splitters, and is particularly suitable for the fabrication of polarizing devices in ultraviolet bands and high-power laser scenarios.



## Advantage

High Ultraviolet Transmittance, Large Birefringence, Low Volume Absorptivity, Suitable for High-Power Applications, High Laser Damage Threshold (LDT), Stable Physical and Mechanical Properties

## Application

Industrial Laser, Industrial Inspection, Optical Communication

## Physical Properties

Transparency Range	220nm-3500nm
Density	3.85g/cm³
Therm-Optic Coefficients	$d\text{no}/dT = -9.3 \times 10^{-6}/\text{K}; d\text{ne}/dT = -16.63 \times 10^{-6}/\text{K}$
Optical Homogeneity	$<1 \times 10^{-6}/\text{cm}$
Laser Damage Threshold (LDT)	1GW/cm² @ 1064nm, 500 MW/cm² @ 532nm, 20Hz, 20ns
Hygroscopic Susceptibility	Low
Thermal Expansion Coefficients (25°C-900°C)	$\alpha_{\text{a}} = 4 \times 10^{-6}/\text{K}, \alpha_{\text{c}} = 4 \times 10^{-6}/\text{K}$
Linear Absorption Coefficients	$\alpha < 0.005 \text{cm}^{-1} @ 300\text{nm}-2300\text{nm}$
Refractive Indices, Birefringence ( $\Delta n = n_{\text{e}} - n_{\text{o}}$ ) and Walk-Off Angle at 45°C ( $\rho$ )	$n_{\text{e}} = 1.58462, n_{\text{o}} = 1.65790, \Delta n = -0.07328; \rho = -4.9532^\circ @ 1064\text{nm}$ $n_{\text{e}} = 1.60206, n_{\text{o}} = 1.67755, \Delta n = -0.075491; \rho = -5.0407^\circ @ 532\text{nm}$ $n_{\text{e}} = 1.67190, n_{\text{o}} = 1.76171, \Delta n = -0.089805; \rho = -5.6926^\circ @ 266\text{nm}$

## Specification

Diameter	max:40mm-50mm
Length	max:25mm-35mm
Surface Quality	20-10
Optical Deviation	<1'
Optical Axis Orientation	+/-0.5°
Flatness	<λ/8 @ 632.8nm
Wave Front	<λ/8 @ 632.8nm
Coating	customized

# Crystal-YVO<sub>4</sub>

## Product Description

Yttrium Orthovanadate (YVO<sub>4</sub>) is a positive uniaxial crystal grown by the Czochralski method. It has good temperature stability, physical and mechanical properties. It is ideal for optical polarizing components because of its wide transparency range and large birefringence. It is an excellent synthetic substitute for Calcite (CaCO<sub>3</sub>) and Rutile (TiO<sub>2</sub>) crystals in many applications including fiber-optic isolators and circulators, interleavers, beam displacers and other polarizing optics.



## Advantage

Superior Physical & Mechanical Properties, Broad Spectral Transmittance Range, Large Birefringence Coefficient, High Transmittance

## Application

Industrial Laser, Industrial Inspection, Optical Communication

## Physical Properties

Transparency Range	High transmittance from 0.4 to 5 $\mu$ m
Crystal Structure	Zircon Tetragonal
Crystal System	Positive Uniaxial
Lattice Parameter	$a=b=7.12\text{\AA}; c=6.29\text{\AA}$
Density	4.22g/cm <sup>3</sup>
Mohs Hardness	5 Mohs (glass-like)
Hygroscopic Susceptibility	Non-hygroscopic
Thermal Expansion Coefficient	$aa=4.43 \times 10^{-6}/\text{K}; ac=11.37 \times 10^{-6}/\text{K}$
Optical Homogeneity	$10^{-6}/\text{cm}$
Absorption Coefficient	$<0.1\% @ 1064\text{nm}$
Refractive Indices, Birefringence ( $\Delta n = n_e - n_o$ ) and Walk-off Angle at 45°(p)	$n_o=1.9929, n_e=2.2154, \Delta n=0.2225, p=6.04^\circ @ 630\text{nm}$ $n_o=1.9500, n_e=2.1554, \Delta n=0.2054, p=5.72^\circ @ 1300\text{nm}$ $n_o=1.9447, n_e=2.1486, \Delta n=0.2039, p=5.69^\circ @ 1550\text{nm}$
Sellmeier Equation ( $\lambda$ in $\mu\text{m}$ )	$n_o=3.77834+0.069736/(\lambda^2-0.04724)-0.0108133\lambda^2$ $n_e=4.59905+0.110534/(\lambda^2-0.04813)-0.0122676\lambda^2$

# Crystal-YVO<sub>4</sub>

## Specifications of Birefringent Wedges for Fiber-Optic Isolators

Aperture	1mm*1mm to 4mm*4mm
Dimension Tolerance	$\pm 0.05\text{mm}$
Wedge Angle Tolerance	$\pm 0.1^\circ$
Optical Axis Orientation	$\pm 0.5^\circ$
Flatness	$\lambda/4 @ 632.8\text{ nm}$
Surface Quality (Scratch/Dig)	20-10
AR-Coating	$R < 0.2\% @ 1550\text{nm} \text{ or } 1310\text{nm}$
Standard Size	1.25mm*1.2mm*0.5mm, wedge angle:13° or 15°, $\pi=22.5^\circ$

## Specifications of YVO4 Beam Displacers for Fiber-Optic Circulators or Interleaver

Dimension Tolerance	$(W \pm 0.05\text{mm}) * (H \pm 0.05\text{mm}) * (L \pm 0.1\text{mm})$
Optical Axis Orientation	$\pm 0.5^\circ$
Parallelism	20"
Perpendicularity	15'
Flatness	$\lambda/4 @ 632.8\text{ nm}$
Surface Quality (Scratch/Dig)	20-10
AR-Coating	$R < 0.2\% @ 1550\text{nm} \text{ or } 1310\text{nm} \pm 40\text{nm}$
Standard Size	2.6mm*2.6mm*10mm, $\theta=45^\circ, \pi=0^\circ$

# Crystal-Calcite

## Product Description

Dayoptics' high-quality calcite crystal products, which can be used for manufacturing polarization beam splitters, phase compensators, polarization prisms, and other optical components. Also known as Iceland spar, calcite is a natural birefringent material that exhibits excellent optical performance in the visible to near-infrared range. It features stable performance, resistance to deliquescence, and outstanding properties even in high and low temperature environments.



## Advantage

Resistance to Deliquescence, Birefringent Property, Natural Irreplaceability

## Application

Industrial Laser, Industrial Inspection, Optical Communication

## Physical Properties

Transparency Range	350nm-2300nm
Crystal Structure	trigonal system
Density	2.7g/cm <sup>3</sup>
Hygroscopic Susceptibility	Low
Mohs Hardness	3
Thermal Conductivity	$aa=24.39 \times 10^{-6}/K; ac=5.68 \times 10^{-6}/K$
Laser Damage Threshold (LDT)	$>1GW/cm^2$
Sellmeier Equation	$no_2=2.69705+0.0192064/(\lambda^2-0.01820)-0.0151624\lambda^2$ $ne_2=2.18438+0.0087309/(\lambda^2-0.01018)-0.0024411\lambda^2$

## Specification

Diameter	max:40mm-50mm
Length	max:25mm-35mm
Surface Quality	20-10
Optical Deviation	<1'
Optical Axis Orientation	+/-0.5°
Flatness	<λ/8@632.8nm
Wave Front	<λ/8@632.8nm
Coating	customized

# Crystal-MgF<sub>2</sub>

## Product Description

Magnesium fluoride (MgF<sub>2</sub>) crystals possess excellent optical, thermal, and mechanical properties. Their transmittance range spans from 120 nm to 8500 nm, maintaining good transmittance even in the deep ultraviolet (DUV) region (over 80% at 170 nm). They are commonly used as materials for optical components such as UV windows, lenses, and prisms, and are widely applied in ultraviolet and infrared optical systems requiring environmental durability. Due to the birefringent effect induced by their optical anisotropy, magnesium fluoride crystals can also serve as polarizing elements.



## Advantage

Resistance to Deliquescence, Corrosion Resistance, High Transmittance, Low Refractive Index, High Laser Damage Threshold (LDT)

## Application

Industrial Laser, Industrial Inspection, Optical Communication

## Physical Properties

Transparency Range	120nm-8500nm
Crystal Structure	Tetragonal system
Crystal System	Positive Uniaxial
Lattice Parameter	$a=b=4.621\text{\AA}, c=3.053\text{\AA}$
Density	3.18g/cm <sup>3</sup>
Hygroscopic Susceptibility	Low
Mohs Hardness	6
Thermal Expansion Coefficient	$aa=6.23-9.25 \times 10^{-6}/k; ac=10.86-14.54 \times 10^{-6}/k$
Optical Homogeneity	$10^{-6}/\text{cm}$
Absorption Coefficient	0.07@0.2um; 0.02@5.0um; 0.02@500nm
Refractive Indices, Birefringence ( $\Delta n = ne - no$ ) and Walk-off Angle at 45°(ρ)	$ne=1.38876, no=1.37698$ $\Delta n=0.01178$ $\rho=0.488^\circ@632.8\text{nm}$

## Specification

Diameter	Max:50mm
Length	Max:100mm
Surface Quality	40-20
Optical Deviation	<10'
Optical Axis Orientation	+/-0.2°
Flatness	<λ/8@632.8nm
Wave Front	<λ/4 @ 632.8 nm
Coating	customized

# Crystal-Quartz

## Product Description

Quartz crystal is a single crystal of silicon dioxide ( $\text{SiO}_2$ ), existing in left-handed and right-handed forms. It features low stress birefringence and high refractive index homogeneity, with a transmittance range of 0.15  $\mu\text{m}$  to 4  $\mu\text{m}$ . Thanks to its piezoelectric properties, low thermal expansion coefficient, and excellent mechanical and optical characteristics, quartz crystal is widely used in electronics, precision optics and laser technology, optical communications, X-ray optics, and pressure sensors.



## Advantage

Piezoelectric Properties, High Frequency Stability, Wide Transmittance Range, Low Stress Birefringence

## Application

Industrial Laser, Industrial Inspection, Optical Communication

## Physical Properties

Transparency Range	200nm-2300nm
Crystal Structure	trigonal system
Crystal System	Negative Uniaxial
Density	2.65g/cm <sup>3</sup>
Hygroscopic Susceptibility	Low
Mohs Hardness	7
Thermal Expansion Coefficient	$\alpha = 6.2 \times 10^{-6}/\text{K}$ ; $\alpha_c = 10.7 \times 10^{-6}/\text{K}$
Optical Homogeneity	$10^{-6}/\text{cm}$
Absorption Coefficient	$0.1\%/\text{cm}$ @ 1064nm
Refractive Indices, Birefringence ( $\Delta n = n_e - n_o$ ) and Walk-off Angle at 45°( $\rho$ )	$n_e = 1.55170, n_o = 1.54265$ $\Delta n = 0.00905$ $\rho = 0.335^\circ$ @ 532nm

## Specification

Diameter	Max:100mm
Length	Max:100mm
Surface Quality	40-20
Optical Deviation	<10'
Optical Axis Orientation	+/-0.2°
Flatness	< $\lambda/8$ @ 632.8nm
Wave Front	< $\lambda/4$ @ 632.8 nm
Coating	customized

# Waveplate Overview

Dayoptics	Waveplate Type			Appearance
	Type	Structure	Power Level	
Low Order Waveplate			High Power > 20 J/cm <sup>2</sup>	0.2-0.5mm
Single True Zero Order Waveplate			High Power > 20 J/cm <sup>2</sup>	0.05-0.2mm
Zero-Order Optically Contacted Waveplate			Medium Power > 5 J/cm <sup>2</sup>	1-2mm
Achromatic Waveplate			Low Power > 1 J/cm <sup>2</sup>	0.5-4mm
Zero Order Air-spaced Waveplate			High Power > 20 J/cm <sup>2</sup>	1-3mm Bracket Thickness:(3-15mm)
True Zero Order Optically Contacted waveplate			Medium-High Power > 10 J/cm <sup>2</sup>	0.5-3mm
True Zero Order Cemented Waveplate			Low Power > 1 J/cm <sup>2</sup>	0.5-3mm
Optical Rotator			High Power > 20 J/cm <sup>2</sup>	0.1-10mm

Remarks: Custom coating is available; Mounts are optional.

# Low Order Waveplate

## Product Description

Low-order waveplates are fabricated from a single piece of quartz crystal, producing a phase retardation of several orders for the operating wavelength. With a typical thickness of approximately 0.3 mm, they feature a narrow wavelength bandwidth and inferior temperature stability and field of view compared to zero-order waveplates; they are suitable for use in light source systems with excellent monochromativity.



## Advantage

Wide Temperature Variation Range, Broad Wavelength Range, Accurate Phase Retardation

## Application

Industrial Laser, Industrial Inspection, Optical Communication

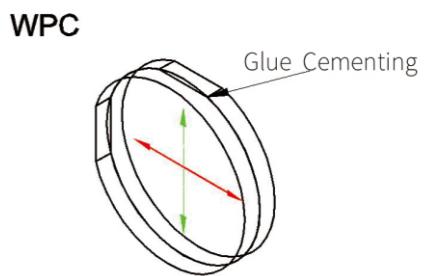
## Specification

Material	Quartz
Dimensional Tolerance	(+0.0,-0.1)mm
Wavefront Distortion	$\lambda/8$ @632.8nm
Retardation Tolerance	$\lambda/60-\lambda/150$ ( $\lambda < 400$ nm) $\lambda/150-\lambda/300$ (400nm $< \lambda < 700$ nm) $\lambda/300-\lambda/500$ ( $\lambda > 700$ nm)
Parallelism	<3"
Surface Quality	20-10
Clear Aperture (CA)	90%
Coating	R<0.2%@wavelength

# Zero Order Cemented Waveplate

## Product Description

Zero Order Cemented Waveplate is fabricated by cementing two multi-order waveplates with mutually perpendicular optical axes. Thus, the phase retardation of one plate is canceled out by the other, and the actual phase change is generated by the difference in their thicknesses. Therefore, they can be tailored for the production of waveplates with any desired wavelength and phase difference.



## Advantage

Glue Bonding, Wide Temperature Band, Large Wavelength Bandwidth

## Application

Industrial Laser, Industrial Inspection, Optical Communication

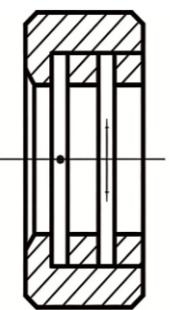
## Specification

Standard Products	Half-Waveplate, Quarter-Waveplate
Material	Quartz
Dimensional	10.0mm, 12.7mm, 15.0mm, 20.0mm, 25.4mm, 30.0mm
Cement Method	Glue Cementing
Coating(AR)	R<0.2%@Wavelength
Standard Wavelength	532nm, 632.8nm, 780nm, 808nm, 980nm, 1064nm, 1310nm, 1550nm
Clear Aperture (CA)	90%
Surface Quality	20-10
Retardation Tolerance	$\lambda/60-\lambda/150$ ( $\lambda < 400$ nm) $\lambda/150-\lambda/300$ (400nm $< \lambda < 700$ nm) $\lambda/300-\lambda/500$ ( $\lambda > 700$ nm)

## Zero Order Air-spaced Waveplate

### Product Description

Zero Order Air-spaced Waveplate is an optical component consisting of two quartz waveplates with an air gap in between, whose core function is to generate a fixed phase difference (typically  $\lambda/4$  or  $\lambda/2$ ) between the two orthogonal components of the incident polarized light.



### Advantage

Dual-plate air-spaced design, High damage threshold, Wide wavelength range adaptation, High thermal stability, No adhesive layer stress interference

### Application

Industrial Laser, Industrial Inspection, Optical Communication

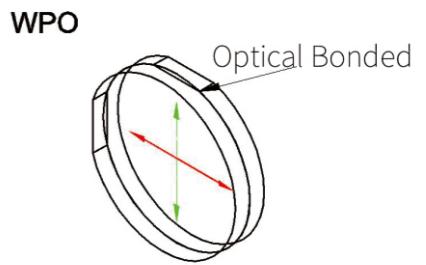
### Specification

Standard Products	Half-Waveplate,Quarter-Waveplate
Material	Quartz
Dimensional	10.0mm,12.7mm,15.0mm,20.0mm,25.0mm,30.0mm
Holder Dimensions	25.4mm,30.0mm,38.1mm,50.8mm
Holder Thickness	6.0mm
Coating(AR)	$R < 0.2\% @ \text{Wavelength}$
Standard Wavelength	266nm,355nm,632.8nm,780nm,808nm,980nm,1064nm,1310nm,1550nm
Clear Aperture (CA)	90%
Surface Quality	20-10
Retardation Tolerance	$\lambda/60-\lambda/150 (\lambda < 400\text{nm})$ $\lambda/150-\lambda/300 (400\text{nm} < \lambda < 700\text{nm})$ $\lambda/300-\lambda/500 (\lambda > 700\text{nm})$
Parallelism	3"

## Zero-Order Optically Contacted Waveplate

### Product Description

Composed of two quartz crystals with mutually crossed fast axes through optical bonding, it is commonly utilized for accurately adjusting the polarization state of light beams and extensively employed in high-precision optical systems.



### Advantage

High damage threshold, Wide temperature range, Wavelength bandwidth, No adhesive layer stress, High stability, Excellent interfacial optical performance

### Application

Industrial Laser, Industrial Inspection, Optical Communication

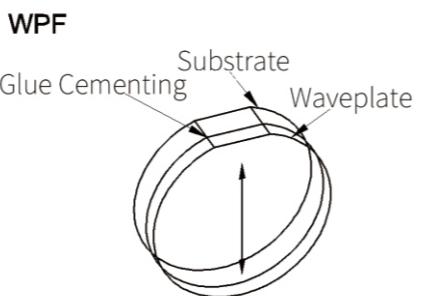
### Specification

Standard Products	Half-Waveplate,Quarter-Waveplate
Wavefront Distortion	$\lambda/8 @ 632.8\text{nm}$
Material	UVFS+Quartz,N-BK7+Quartz
Dimensional	10.0mm,12.7mm,15.0mm,20.0mm,25.4mm,30.0mm
Cement Method	Optical Bonded
Standard Wavelength	266nm,355nm,632.8nm,780nm,808nm,980nm,1064nm,1310nm,1550nm
Clear Aperture (CA)	90%
Surface Quality	20-10
Retardation Tolerance	$\lambda/60-\lambda/150 (\lambda < 400\text{nm})$ $\lambda/150-\lambda/300 (400\text{nm} < \lambda < 700\text{nm})$ $\lambda/300-\lambda/500 (\lambda > 700\text{nm})$
Parallelism	3"

## True Zero Order Cemented Waveplate

### Product Description

True Zero Order Cemented Waveplate is composed of a single ultra-thin quartz crystal true zero-order waveplate and an N-BK7 substrate bonded together. The quartz crystal has a thickness of true zero-order, while the N-BK7 substrate serves to enhance its mechanical strength.



### Advantage

wide wavelength bandwidth, wide temperature bandwidth, large field of view

### Application

Industrial Laser, Industrial Inspection, Optical Communication

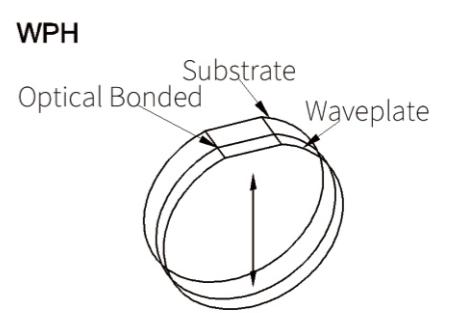
### Specification

Standard Products	Half-Waveplate, Quarter-Waveplate
Material	UVFS+Quartz, N-BK7+Quartz
Dimensional Tolerance	(+0.0,-0.1)mm
Wavefront Distortion	$\lambda/8$ @632.8nm
Dimensional	10.0mm, 12.7mm, 15.0mm, 20.0mm, 25.4mm, 30.0mm
Standard Wavelength	632.8nm, 780nm, 808nm, 980nm, 1064nm, 1310nm, 1550nm
Clear Aperture (CA)	90%
Surface Quality	20-10
Retardation Tolerance	$\lambda/60$ - $\lambda/150$ ( $\lambda < 400$ nm) $\lambda/150$ - $\lambda/300$ (400nm $< \lambda < 700$ nm) $\lambda/300$ - $\lambda/500$ ( $\lambda > 700$ nm)
Parallelism	3"

## True Zero Order Optically Contacted Waveplate

### Product Description

True Zero Order Optically Contacted waveplate is an optical device fabricated by bonding two or more pieces of quartz crystal via the optical contact process. It is used to generate precise phase retardation (e.g.,  $\lambda/4$  or  $\lambda/2$ ) and features high wavelength stability and temperature stability.



### Advantage

High phase retardation accuracy, broad spectral and temperature stability, low wavefront distortion, and reliable mechanical structure.

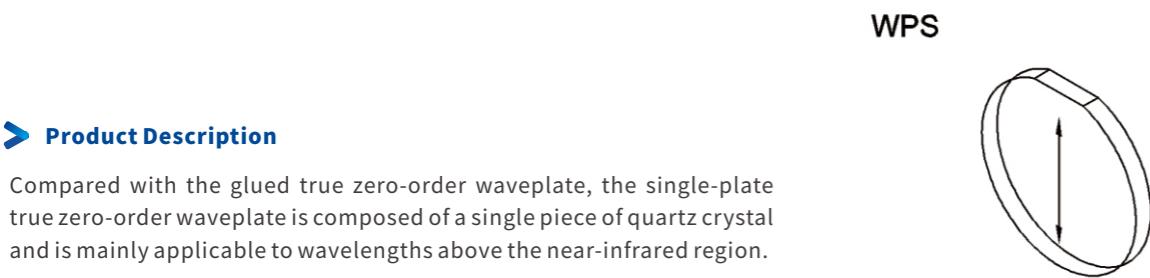
### Application

Industrial Laser, Industrial Inspection, Optical Communication

### Specification

Standard Products	Half-Waveplate, Quarter-Waveplate
Material	UVFS+Quartz, N-BK7+Quartz
Dimensional Tolerance	(+0.0,-0.1)mm
Wavefront Distortion	$\lambda/8$ @632.8nm
Dimensional	10.0mm, 12.7mm, 15.0mm, 20.0mm, 25.4mm, 30.0mm
Standard Wavelength	266nm, 355nm, 632.8nm, 780nm, 808nm, 980nm, 1064nm, 1310nm, 1550nm
Clear Aperture (CA)	90%
Surface Quality	20-10
Retardation Tolerance	$\lambda/60$ - $\lambda/150$ ( $\lambda < 400$ nm) $\lambda/150$ - $\lambda/300$ (400nm $< \lambda < 700$ nm) $\lambda/300$ - $\lambda/500$ ( $\lambda > 700$ nm)
Parallelism	3"
Coating	$R < 0.2\%$ @ wavelength

# Single True Zero Order Waveplate



## Product Description

Compared with the glued true zero-order waveplate, the single-plate true zero-order waveplate is composed of a single piece of quartz crystal and is mainly applicable to wavelengths above the near-infrared region.

## Advantage

high polarization control accuracy, high damage threshold, strong adaptability to environment and optical path

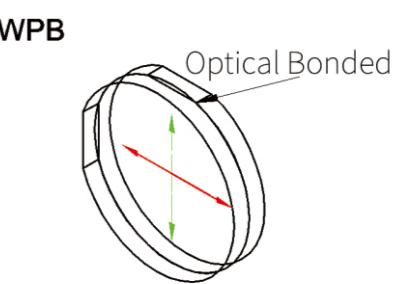
## Application

Industrial Laser, Industrial Inspection, Medical Testing, Optical Communication

## Specification

Standard Products	Half-Waveplate, Quarter-Waveplate
Dimensional	10.0mm, 12.7mm, 15.0mm, 20.0mm, 25.4mm, 30.0mm
Standard Wavelength	$\lambda/4$ : 1310nm, 1480nm, 1550nm $\lambda/2$ : 980nm, 1064nm, 1310nm, 1480nm, 1550nm
Minimum thickness	0.038mm
Retardation Tolerance	$\lambda/60$ - $\lambda/150$ ( $\lambda < 400$ nm) $\lambda/150$ - $\lambda/300$ ( $400$ nm $< \lambda < 700$ nm) $\lambda/300$ - $\lambda/500$ ( $\lambda > 700$ nm)

# Achromatic waveplate



## Product Description

Composed of a combination of two different birefringent materials such as quartz crystal and magnesium fluoride, it achieves stable phase retardation over a broad spectral range (e.g., 400 nm-2200nm) by matching the dispersion characteristics of the materials, and features temperature-insensitive performance.

## Advantage

wide wavelength operating range, high and stable phase retardation accuracy, excellent mechanical stability, good environmental resistance (temperature and humidity), high optical transmittance

## Application

Industrial Laser, Industrial Inspection, Optical Communication

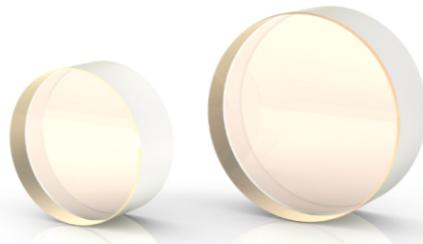
## Specification

Standard Products	Half-Waveplate, Quarter-Waveplate
Material	Quartz, MgF <sub>2</sub>
Wavefront Distortion	$\lambda/4$ @ 632.8 nm
Dimensional Tolerance	(+0.0, -0.1)mm
Retardation Tolerance	$\lambda/100$
Parallelism	<10"
Surface Quality	40/20
Clear Aperture (CA)	90%
Coating (AR)	Ravg < 1% @ wavelength
Standard Wavelength	465nm-650nm, 650nm-1100nm, 1000nm-1750nm
Interface	Optical Contact or Air Gap

# Optical Rotator

## Product Description

An optical rotator is an optical component that rotates the polarization direction of linearly polarized light by utilizing the optical rotation effect. Its core function is to alter the polarization plane of polarized light without changing its other properties. It rotates the polarization direction of linearly polarized light by virtue of the optical activity of materials (e.g., quartz crystal). The rotation angle is correlated with the material thickness, and both left-handed and right-handed rotation directions are supported.



## Advantage

Fixed optical rotation direction, Controllable optical rotation angle, Definite wavelength dependence, Excellent stability

## Application

Industrial Laser, Industrial Inspection, Optical Communication

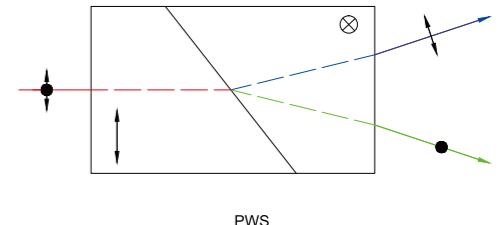
## Specification

<b>Material</b>	Quartz
<b>Operating wavelength range</b>	200nm-2300nm
<b>Coating(AR)</b>	$R < 0.2\%$ @ wavelength
<b>Dimensional</b>	12.7mm, 15.0mm, 20.0mm, 25.4mm
<b>Standard Wavelength</b>	532nm, 632.8nm, 1064nm
<b>Standard rotation angle</b>	45°, 90°
<b>Clear Aperture (CA)</b>	90%
<b>Surface Quality</b>	20-10
<b>Rotation accuracy</b>	5'
<b>Parallelism</b>	10"

# Wollaston Polarizer(PWS)

## Product Description

Wollaston Polarizer is fabricated by cementing or optical contacting two prisms made of negative uniaxial crystals (e.g., calcite or  $\alpha$ -BBO) with mutually perpendicular optical axes. When natural light is incident on it, two linearly polarized beams with mutually orthogonal polarization directions and a certain separation angle are obtained at the transmission end of the prism.



## Advantage

Excellent polarization beam splitting performance, robust structure, high extinction ratio, broad operating wavelength range, high customizability

## Application

Industrial Laser, Industrial Inspection, Optical Communication

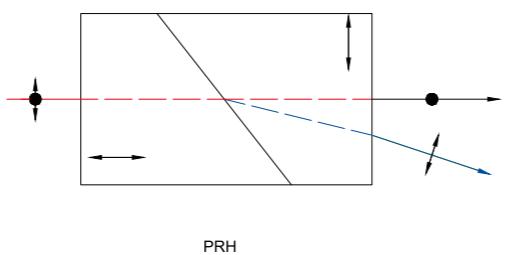
## Specification

<b>Material</b>	$\alpha$ -BBO	Calcite	$\text{YVO}_4$	Quartz
<b>wavelength range</b>	220nm-3500nm	350nm-2300nm	500nm-4000nm	200nm-2300nm
<b>Extinction ratio</b>	$\leq 5 \times 10^{-6}$	$\leq 5 \times 10^{-5}$	$\leq 5 \times 10^{-6}$	$\leq 5 \times 10^{-5}$
<b>Surface Quality</b>	20-10			
<b>Flatness</b>	$\lambda/4$ @ 632.8 nm			
<b>Laser Damage Threshold (LDT)</b>	$\geq 500 \text{ MW/cm}^2$			
<b>Coating</b>	$\text{MgF}_2$ (single-layer)			
<b>Mount</b>	Aluminum (anodized)			

# Rochon Polarizer(PRH)

## Product Description

Rochon Polarizer is formed by cementing two uniaxial birefringent crystals. The optical axis of the first crystal is parallel to the incident plane, while that of the second crystal is perpendicular to the incident plane. When unpolarized light is incident, the ordinary ray (o-ray) propagates along the optical axis direction at the refractive index of the ordinary ray in both crystals without changing its direction. The extraordinary ray (e-ray) travels in the same direction as the ordinary ray in the first crystal; upon entering the second crystal, due to the change in the optical axis direction, its refractive index switches from that of the ordinary ray to that of the extraordinary ray, resulting in refraction. This achieves spatial separation from the ordinary ray, and two linearly polarized beams with different polarization directions are output.



## Advantage

high extinction ratio, low insertion loss, broad wavelength range

## Application

Industrial Laser, Industrial Inspection, Optical Communication

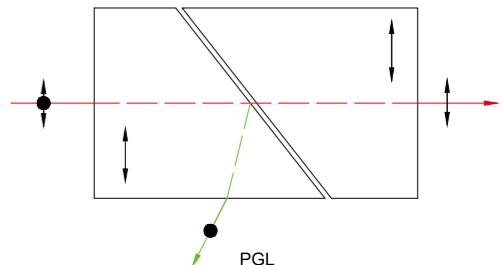
## Specification

Material	$\alpha$ -BBO	Calcite	$YVO_4$	Quartz	$MgF_2$
wavelength range	220-3500nm	350-2300nm	500-4000nm	200-2300nm	130-7000nm
Extinction ratio	$\leq 5 \times 10^{-6}$	$\leq 5 \times 10^{-5}$	$\leq 5 \times 10^{-6}$	$\leq 5 \times 10^{-5}$	$\leq 10^{-4}$
Parallelism			$\leq 1'$		
Surface Quality			20-10		
Beam Deflection			$\leq 3'$		
Wavefront Distortion			$\leq \lambda/4$ @ 632.8 nm		
Laser Damage Threshold (LDT)			$\geq 500MW/cm^2$		
Coating			$MgF_2$ (single-layer)		
Mount			Aluminum (anodized)		

# Glan Laser Polarizer(PGL)

## Product Description

It is composed of two birefringent crystal wedges, adopting an air-gap design instead of an adhesive layer, with the crystal cut angle close to Brewster's angle. During operation, when the incident unpolarized light reaches the air-gap interface, the s-polarized light undergoes total internal reflection (TIR) and then exits through the two side escape windows; while the p-polarized light can pass through the air gap and the prism smoothly, finally outputting linearly polarized light with ultra-high purity. This design not only avoids the problem that the adhesive layer is prone to damage under high-power conditions, but also improves the light transmission efficiency.



## Advantage

high-power scenarios, advantage of dual escape windows, excellent polarization and transmission performance, broad applicable spectral range

## Application

Industrial Laser, Industrial Inspection, Optical Communication

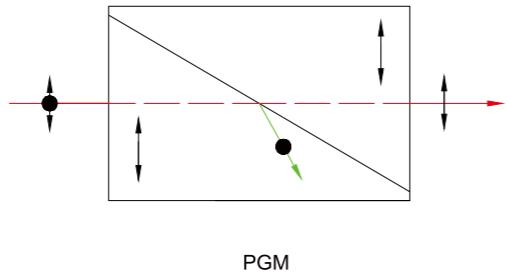
## Specification

Material	$\alpha$ -BBO	Calcite	$YVO_4$
wavelength range	220nm-3500nm	350nm-2300nm	500nm-4000nm
Extinction ratio	$\leq 5 \times 10^{-6}$	$\leq 5 \times 10^{-5}$	$\leq 5 \times 10^{-6}$
Dimensional (Max)	30mm	30mm	20mm
Surface Quality	20-10		
Beam Deflection	$\leq 3'$		
Wavefront Distortion	$\leq \lambda/4$ @ 632.8 nm		
Laser Damage Threshold (LDT)	$\geq 500MW/cm^2$		
Coating	$MgF_2$ (single-layer)		
Mount	Aluminum (anodized)		

# Glan-Thompson Polarizer(PGM)

## Product Description

Glan-Thompson Polarizer is fabricated by cementing two right-angled birefringent crystals. The optical axes of the crystals are perpendicular to the reflection plane. When a light beam is incident, birefringence occurs in the first crystal, splitting the beam into an ordinary ray (o-ray) and an extraordinary ray (e-ray). At the cement interface, the o-ray undergoes total internal reflection, leaving only the e-ray to be transmitted, thus achieving polarized beam splitting.



## Advantage

high extinction ratio, broad spectral range, large acceptance angle, high transmittance

## Application

Industrial Laser, Industrial Inspection, Optical Communication

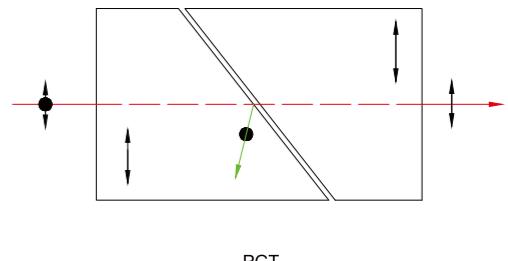
## Specification

Material	$\alpha$ -BBO	Calcite
wavelength range	220nm-3500nm	350nm-2300nm
Extinction ratio	$\leq 5 \times 10^{-6}$	$\leq 5 \times 10^{-5}$
Surface Quality	20-10	
Beam Deflection	$\leq 3'$	
Wavefront Distortion	$\leq \lambda/4$ @ 632.8 nm	
Laser Damage Threshold (LDT)	$\geq 200\text{MW/cm}^2$	
Coating	$\text{MgF}_2$ (single-layer)	
Mount	Aluminum (anodized)	

# Glan-Taylor Polarizer(PGT)

## Product Description

Glan-Taylor Polarizer consists of two right-angled prisms made of the same birefringent crystal (e.g.,  $\alpha$ -BBO or calcite), with their optical axes parallel to the incident plane. An air gap is formed between the prisms by edge gaskets. When unpolarized light is incident, a linearly polarized beam (extraordinary ray, e-ray) with a high extinction ratio can be obtained at the transmission end, while the ordinary ray (o-ray) undergoes total internal reflection at the cut surface and is deflected sideways.



## Advantage

Air-gap structure, no escape windows, High polarization degree, Cut angle close to Brewster's angle, Compact structure

## Application

Industrial Laser, Industrial Inspection, Optical Communication

## Specification

Material	$\alpha$ -BBO	Calcite	$\text{YVO}_4$
wavelength range	220nm-3500nm	350nm-2300nm	500nm-4000nm
Extinction ratio	$\leq 5 \times 10^{-6}$	$\leq 5 \times 10^{-5}$	$\leq 5 \times 10^{-6}$
Surface Quality	20-10		
Beam Deflection	$\leq 3'$		
Wavefront Distortion	$\leq \lambda/4$ @ 632.8 nm		
Laser Damage Threshold (LDT)	$\geq 200\text{MW/cm}^2$		
Coating	$\text{MgF}_2$ (single-layer)		
Mount	Aluminum (anodized)		

# Depolarizer

## Product Description

Optical depolarizer can convert incident linearly polarized light into unpolarized light. Lyot depolarizer is composed of two crystals, with the angle between the optical axes of the two crystals being 45 degrees, and it can be used for the depolarization of polychromatic light.



## Advantage

Good degree of polarization, Broad-spectrum compatibility, High depolarization efficiency

## Application

Industrial Laser, Industrial Inspection, Automotive LiDAR, Optical Communication

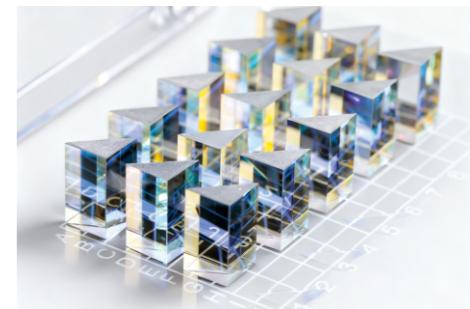
## 参数规格

Material	Calcite	YVO <sub>4</sub>	Quartz
wavelength range	350nm-2300nm	500nm-4000nm	200nm-2300nm
Standard Dimensions		5*5mm,10*10mm	
Dimensional Tolerance		+0/-0.2mm	
Parallelism		<20'	
Flatness		$\lambda/10$ @632.8nm	
Surface Quality		20-10	
Interface		Optical Bonded	
Coating		customized	
Mount		customized	
Length		6mm	

# Right-angle Prism

## Product Description

It is generally used to bend the image path or deflect the optical path by 90 degrees. A right-angle prism is a type of prism designed based on the 90-degree concept. It can produce an inverted or reverted left-handed image, depending on the orientation of the prism. Combining two right-angle prisms can also be used to synthesize images and offset light beams.



## Advantage

right-angle structure, multi-functional optical performance, low distortion, excellent stability, wavelength customization

## Application

Industrial Laser, Industrial Inspection, Medical Testing, Projection and Display Equipment

## Specification

Material	BK7, C7980 (or customer-specified material)
Standard Dimensions	A=B=C=2mm, 3.2mm, 5mm, 10mm, 12.7mm, 15mm, 20mm, 25.4mm, 30mm
Dimensional (Max)	100mm
Dimensional Tolerance	(+0.0, -0.2)mm
Clear Aperture (CA)	>80%
Angle tolerance	3', 1', 30"
Flatness	$\lambda/2$ @632.8nm
Surface Quality	60-40
Edge chipping	<0.5mm
Coating	customized

# Rhombic Prism

## Product Description

Rhombic prism, also known as a diamond prism, is commonly used to offset a laser beam without changing its direction. In imaging applications, the rhombic prism will shift the optical axis without inverting the image; the lateral displacement is equal to the length of the prism.



## Advantage

lateral beam displacement, optical axis shift without image inversion, high parallelism, simple structure

## Application

Industrial Laser, Industrial Inspection, Medical Testing, Projection and Display Equipment

## Specification

Material	N-BK7, C7980 (or customer-specified material)
Standard Dimensions	3.5*3.5-6.3mm, 10*10-14.2mm, 15*15-21.2mm
Dimensional (Max)	50*50-71mm
Dimensional Tolerance	+0.0/-0.2mm
Clear Aperture (CA)	>80%
Angle tolerance	3'(3'')
Flatness	$\lambda/4$ @ 632.8 nm
Surface Quality	60-40 (20-10)
Edge chipping	<0.2mm-0.5mm
Coating	customized

# Roof Prisms

## Product Description

Roof prisms are capable of reverting and inverting images as well as deflecting light rays at a 90° angle. They are suitable for telescopes and any optical instruments that require image inversion from the objective lens, image reversion (right-side correction), and 90° light deflection to maintain the correct viewing orientation.

The key feature of a roof prism lies in the presence of the roof surface. The so-called roof surface refers to a roof-shaped reflective surface in the optical path, which is formed by two intersecting reflective planes. The edge line of these two planes is located exactly in the center of the optical path. That is why some roof prisms show a dividing line in the middle. In essence, it can also be understood as splitting the light beam into two halves and then recombining them.



## Advantage

correct image inversion, compact optical path design, high optical path folding efficiency

## Application

Telescope, Telescopic Sight, Portable Observation Equipment, Optical Instrument, Special Imaging Equipment

## Specification

Material	BK7C7,980 (or customer-specified material)
Standard Dimensions	15*15-12mm, 23*23-18mm, 31.5*31.5-23mm
Dimensional Tolerance	+/-0.1mm
Clear Aperture (CA)	>80%
Angle tolerance	+/-30'
Flatness	$\lambda/4$ @ 632.8 nm
Surface Quality	60-40
Edge chipping	0.2mm-0.5mm
Coating	Customized

# Corner Cube Prism

## Product Description

The design purpose is to reflect the light rays or light beams reaching the prism surface back. A corner cube prism reflects images or light beams retroreflectively back to the original direction through three reflections. Even when the incident angle is non-zero, the light beam or image will be inverted and reflected by 180°. These corner cube prisms are not affected by alignment, making them ideal for retroreflective optical components.



## Advantage

Light Retroreflection along the Original Path, Insensitivity to Incident Angle, High Reflective Efficiency, Strong Structural Stability, Wide Applicable Spectral Range

## Application

Industrial Laser, Industrial Inspection, Optical Communication, Spectral Analysis Equipment

## Specification

<b>Material</b>	BK7, C7980 (or customer-specified material)
<b>Standard Dimensions</b>	15*15-12mm, 23*23-18mm, 31.5*31.5-23mm
<b>Dimensional Tolerance</b>	+/-0.1mm
<b>Clear Aperture (CA)</b>	>80%
<b>Angle tolerance</b>	+/-30"
<b>Flatness</b>	$\lambda/4$ @ 632.8 nm
<b>Surface Quality</b>	60-40
<b>Edge chipping</b>	0.2mm-0.5mm
<b>Coating</b>	Customized

# Dispersive Prism

## Product Description

Most dispersive prisms have a triangular cross-section, with equilateral dispersive prisms used for dispersion compensation. Dispersion-compensating prisms are specifically designed to counteract the pulse broadening effect occurring in ultrafast laser systems without introducing significant power loss.



## Advantage

Decomposing polychromatic light by virtue of refraction differences, Having the dual function of refraction and beam redirection, Exhibiting wavelength-selective response, Capable of accurately separating light of different frequency bands

## Application

Industrial Laser, Industrial Inspection, Optical Communication, Medical Detection, Spectral Analysis Equipment

## Specification

<b>Material</b>	SF11 (or customer-specified material)
<b>Standard Dimensions</b>	12*12-8.5mm
<b>Dimensions (Max)</b>	50*50-50mm
<b>Dimensional Tolerance</b>	(+0.0, -0.2)mm
<b>Clear Aperture (CA)</b>	>80%
<b>Theta(θ)</b>	60° (Equilateral)
<b>Flatness</b>	$\lambda/8$ @ 632.8 nm
<b>Surface Quality</b>	60-40
<b>Coating</b>	MgF <sub>2</sub> (Customized)

# Dispersive Prism

## Product Description

Pentagonal prism is an optical component with five optical surfaces and a pentagonal cross-section. It can deflect the incident light beam and image by 90° without forming an inverted or reversed image. Slight displacement of the prism will not exert a significant impact on the reflected light beam.



## Advantage

90° precise beam steering, no image rotation, angle-insensitive

## Application

Industrial Laser, Industrial Inspection, Optical Instrument

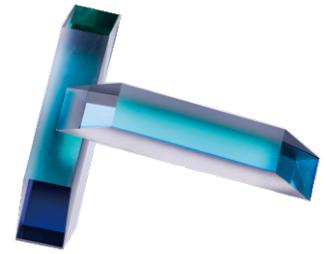
## Specification

<b>Material</b>	N-BK7, C7980 (or customer-specified material)
<b>Standard Dimensions</b>	$A*B=2.5*2.5\text{mm}, 7*5\text{mm}, 7*6\text{mm}, 10*10\text{mm}, 15*15\text{mm}, 20*20\text{mm}$
<b>Dimensional Tolerance</b>	$+-0.2\text{mm}$
<b>Flatness</b>	$\lambda/2@632.8\text{nm}$ (Standard), $\lambda/4 @ 632.8 \text{ nm}$ (high-precision)
<b>Surface Quality</b>	60-40
<b>Reflectivity</b>	$R_{avg}>95\% @400-700\text{nm}$
<b>Coating</b>	Customized

# Dove prism

## Product Description

Dove prism, also known as a Duffer prism, can be regarded as a right-angle prism with its triangular apex removed. Its shape is similar to a right-angle prism whose vertex angle has been truncated, and its base angles are usually 45°. Depending on the rotation angle of the prism and the different incident surfaces of the light, a Dove prism can rotate, invert an image or achieve retroreflection.



## Advantage

image rotation function, beam direction control, high transmittance, retroreflective performance, excellent stability

## Application

Industrial Laser, Industrial Inspection, Optical Instrument, Photography and Imaging Equipment

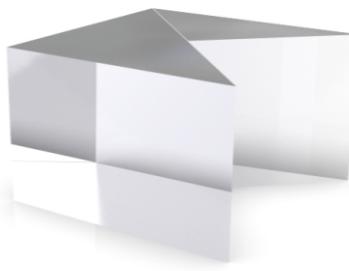
## Specification

<b>Material</b>	N-BK7, C7980 (or customer-specified material)
<b>Standard Dimensions</b>	$A*B*C=5*21.1*5\text{mm}, 10*42*10\text{mm}, 15*64*15\text{mm}$
<b>Dimensional Tolerance</b>	$(+0.0, -0.2)\text{mm}$
<b>Clear Aperture (CA)</b>	>80%
<b>Angle tolerance</b>	$+-3'$
<b>Flatness</b>	$\lambda/2@632.8\text{nm}$
<b>Surface Quality</b>	60-40
<b>Edge chipping</b>	0.2mm-0.5mm
<b>Coating</b>	Customized

# Pechan prism

## Product Description

This prism assembly consists of two prisms separated by an air gap. Multiple total reflections result in the vertical inversion of the image, while the "roof" structure of the second prism causes lateral inversion of the image. Together, these two effects lead to a 180° rotation of the image, with the handedness of the image remaining unchanged.



## Advantage

High Imaging Accuracy, Excellent Stability, High Light Transmittance, Customizable Angular Accuracy

## Application

Telescope, Microscope, Optical Instruments, Consumer Electronics

## Specification

<b>Material</b>	K9L (Advantage: Good transmittance in the visible light region; Disadvantage: Moderate acceptance angle), H-ZF1 (Advantage: Larger acceptance angle achievable; Disadvantage: Slightly low ultraviolet transmittance)
<b>Dimensional Tolerance</b>	±0.2 mm
<b>Roof Prism Accuracy</b>	<10 arcseconds (Optional: 5 arcseconds for higher image resolution)
<b>Flatness</b>	λ/4 @ 632.8 nm (λ/8 optional; high surface figure accuracy reduces imaging distortion)
<b>Surface Quality</b>	60-40
<b>Coating</b>	Input surface: Ravg<0.5%@420-680nm Reflection surface: Ravg>85%@400-700nm Dielectric coating optional (R>98%) for improved overall system definition

# Aspherical Lens

## Product Description

Aspherical lenses, as rotationally symmetric optical components, feature a curvature radius that varies flexibly along the central axis. This unique design endows them with distinct advantages over traditional spherical lenses. By reducing the number of required optical elements, aspherical lenses can significantly improve the imaging quality of optical systems while cutting down the overall design costs.

Regarding the molding processes for aspherical lenses, the mainstream methods include precision glass molding, precision polishing molding, and hybrid molding, each of which has its own unique applicable scenarios. Dayoptics flexibly selects the most suitable molding process according to customers' specific requirements, and provides comprehensive solutions covering optical design, material selection, process optimization and other aspects, to meet diverse application needs.



## Advantage

High Laser Damage Threshold(HLDT), Broad-Spectrum Focusing Capability, Superior Spherical Aberration Correction

## Application

Industrial Inspection, Medical Equipment, Consumer Electronics

## Specification

<b>Dimensional</b>	10mm-200mm
<b>Dimensional Tolerance</b>	±0.1mm
<b>Thickness Tolerance</b>	±0.1mm
<b>Sagitta</b>	±0.05mm
<b>Maximum Measurable Sagitta</b>	25mm
<b>Aspheric Local P-V</b>	3um
<b>Curvature</b>	±0.3%
<b>Centering Error</b>	3'
<b>RMS Surface Roughness</b>	20Å
<b>Surface Quality</b>	80-50(40-20)