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CM05-PBS203 - Aug. 17, 2016

Item # CM05-PBS203 was discontinued on Aug. 17, 2016. For informational purposes, this is a copy of the website content at that time and is valid only for the stated product.

BROADBAND POLARIZING BEAMSPLITTER CUBES IN 16 MM CAGE CUBES

- **Transmitted Beam Extinction Ratio: >1000:1**
- **Reflects S Polarization by 90°**
- **SM05 Lens Tube and 16 mm Cage System Compatible**
- **AR-Coated on All Four Optical Faces**

Application Idea

CM05-PBS203 Beamsplitter Cube Connected in a 16 mm Cage System with a CM05-E03 Turning Mirror Cube via Four SRSCA Adapters

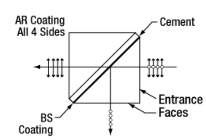
CM05-PBS201
420 - 680 nm

CM05-PBS203
900 - 1300 nm

Hide Overview

OVERVIEW

Features



Coating and Cement Layer Not to Scale

- 16 mm Cage System and SM05 Lens Tube Compatible Mounts
- Wavelength Ranges Available
  - 420 - 680 nm
  - 620 - 1000 nm
  - 900 - 1300 nm
  - 1200 - 1600 nm
- Extinction Ratio
  - T_P:T_S > 1000:1
  - R_S:R_P ~ 100:1

These 16 mm Cage-Compatible Polarizing Beamsplitter Cubes have a dielectric coating along the diagonal interface between the two right angle prisms that make up the cube. This coating reflects s-polarized light, while transmitting p-polarized light. For polarization-insensitive applications, we also offer Non-Polarizing Beamsplitter Cubes, as well as Cube-Mounted Turning Prism Mirrors.

For highest polarization purity, use the transmitted beam, which offers a 1000:1 (T_p:T_s) extinction ratio. The reflected beam will only have an extinction ratio of roughly 20:1 to 100:1, depending on the beamsplitter. The entrance and exit faces of this cube have broadband antireflective coatings that minimize losses due to reflections. The dielectric beamsplitting coating is applied to the hypotenuse of one of the two prisms that make up the cube. Then, cement is used to bind the two prism halves together. For the best performance the light must enter through the entrance face, as depicted by the engraving on the mount. The engraving is similar to the diagram to the right.

These mounted beamsplitter cubes are compatible with both our 16 mm Cage Systems as well as our SM05 Lens Tubes. A bottom-located M6 x 0.5 or M4 tap is included for post mounting. Cubes with M6 x 0.5 taps come with 8-32 and M4 adapters for imperial and metric post compatibility (the M6 x 0.5 tap is only compatible with the included adapters). The housings feature four SM05-threaded entrance and exit ports for compatibility with our SM05 (0.535"-40.0) Lens Tubes. Four 4-40 tapped holes surrounding each port provide compatibility with our 16 mm Cage Systems. The Mounted Beamsplitters can be connected to other cage cubes through the use of our cage rods and SRSCA adapters.

For an overview of our complete selection of beamsplitting optics, please see the *BS Selection Guide* tab. For applications requiring a higher damage threshold, we also offer 1" unmounted High-Power Polarizing Beamsplitting Cubes. These may be mounted in our 30 mm Cage Cubes and incorporated into 16 mm cage systems using our Cage Size Adapters.

Please note that each beamsplitter cube is epoxied within the cage cube mount and cannot be removed.

Hide Specs

SPECS

Item #	CM05-PBS201 and CCM5-PBS201/M	CM05-PBS202 and CCM5-PBS202/M	CM05-PBS203 and CCM5-PBS203/M	CM05-PBS204 and CCM5-PBS204/M
AR Coating Range	**420 - 680 nm**	**620 - 1000 nm**	**900 - 1300 nm**	**1200 - 1600 nm**
AR Coating (All Four Surfaces)	R_{avg} < 0.5% at 0° AOI from 420 - 680 nm	R_{avg} < 0.5% at 0° AOI from 620 - 1000 nm	R_{avg} < 0.5% at 0° AOI from 900 - 1300 nm	R_{avg} < 0.5% at 0° AOI from 1200 - 1600 nm
Ports	4 Ports, Each with SM05 (0.535"-40) Threading and Four 4-40 Taps for Cage Rods			
Beamsplitter Material	N-SF1			
Extinction Ratio[a]	T_p:T_s >1000:1			
Transmission Efficiency[b]	T_p > 90%			
Reflection Efficiency[b]	R_s > 99.5%			
Transmitted Beam Deviation[c]	<5 arcmin			
Reflected Beam Deviation[d]	90° ± 20 arcmin			
Clear Aperture	Ø12.5 mm			
Surface Flatness	<λ/4 @ 633 nm			
Wavefront Distortion[e]	<λ/4 @ 633 nm			
Surface Quality	40-20 Scratch-Dig			

- The extinction ratio (ER) is the ratio of the maximum transmission of a linearly polarized signal when the polarizer's axis is aligned with the signal to the minimum transmission when the polarizer is rotated by 90°.
- Transmission and reflection data is based on that of the beamsplitter coating and does not account for the BBAR surface coating.
- Defined with respect to the non-polarizing beamsplitter cube, not the mechanical housing.
- Defined with respect to the mechanical housing.
- Wavefront distortion is for both transmitted and reflected beams.

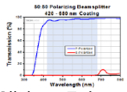
Coating Range	Damage Threshold	
420 - 680 nm	CW[a]	50 W/cm at 532 nm, Ø0.015 mm
	Pulse	2 J/cm^2 at 532 nm, 10 ns, 10 Hz
620 - 1000 nm	CW[a]	50 W/cm at 810 nm, Ø0.019 mm
	Pulse	2 J/cm^2 at 810 nm, 10 ns, 10 Hz
900 - 1300 nm	CW[a,b]	2000 W/cm at 1064 nm, Ø0.018 mm
	Pulse	2 J/cm^2 at 1064 nm, 10 ns, 10 Hz
1200 - 1600 nm	CW[a,b]	2000 W/cm at 1542 nm, Ø0.033 mm
	Pulse	5 J/cm^2 at 1542 nm, 10 ns, 10 Hz

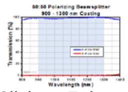
- The power density of your beam should be calculated in terms of W/cm. For an explanation of why the linear power density provides the best metric for long pulse and CW sources, please see the *Damage Thresholds* tab.
- The stated damage threshold is a certification measurement, as opposed to a true damage threshold (i.e., the optic was able to withstand the maximum output of the laser with no damage).

Hide Graphs

GRAPHS

The shaded regions in the graphs below denote the transmission bands of the beamsplitters for which the performance is guaranteed to meet the stated specifications. Performance outside the shaded regions will vary from lot to lot and is not guaranteed.


Click to Enlarge
Click Here for Raw Data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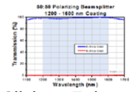
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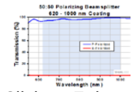

Click to Enlarge
Click Here for Raw Data

Hide BS Selection Guide

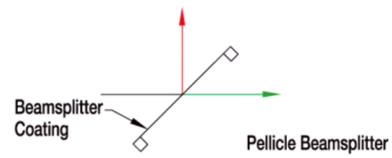
BS SELECTION GUIDE

Beamsplitter Selection Guide

Thorlabs offers five main types of beamsplitters: Pellicle, Cube, Plate, Economy, and Polka Dot. Each type has distinct advantages and disadvantages.

Legend for Beam Diagrams

Reflected Beam: (red line) Transmitted Beam: (green line)

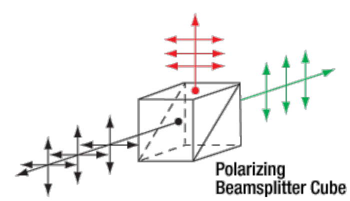


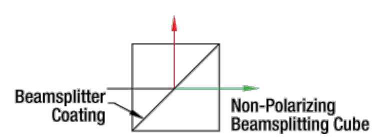
Pellicle Beamsplitters - Pellicle beamsplitters are the best choice when dispersion must be kept to a minimum. They virtually eliminate multiple reflections commonly associated with thicker glass beamsplitters, thus preventing ghosting. In addition, unlike plate beamsplitters, there is a negligible effect on the propagation axis of the transmitted beam with respect to the incident beam.

Pellicle beamsplitters have two disadvantages: They exhibit sinusodial oscillations in the splitting ratio as a function of wavelength, due to thin film interference effects. Click Here for more details. They are also extremely delicate. Since they are fabricated by stretching a nitrocellulose membrane over a flat metal frame, the beamsplitter cannot be touched without destroying the optic. Thorlabs offers pellicle beamsplitters mounted in metal rings for use in kinematic mounts as well as 30 mm cage cube-mounted pellicles.

Beamsplitting Cubes

Thorlabs' beamsplitter cubes are composed of two right-angled prisms. A dielectric coating, which is capable of reflecting and transmitting a portion of the incident beam, is applied to the hypotenuse surface. Since there is only one reflecting surface, this design inherently avoids ghost images, which sometimes occur with plate-type beamsplitters. Antireflection coatings are available on the entrance and exit faces of certain models to minimize back reflections. As well as providing a cost-effective solution, another advantage of the beamsplitting cube is the minimal shift it causes to the path of the transmitted beam. Thorlabs offers both polarizing and nonpolarizing beamsplitting cubes, in mounted and unmounted configurations. Mounted beamsplitters are available that are compatible with our 16 mm cage systems as well as our 30 mm cage systems.

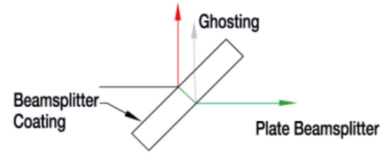




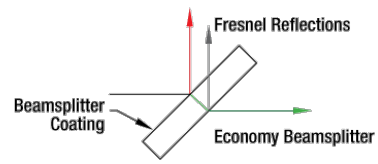
Polarizing Beamsplitters - Thorlabs' polarizing plate and cube beamsplitters split randomly polarized beams into two orthogonal, linearly polarized components (S and P), as shown in the diagram to the right. S-polarized light is reflected at a 90° angle with respect to the incident beam while p-polarized light is transmitted. Polarizing beamsplitters are useful in applications where the two polarization components are to be analyzed or used simultaneously. Thorlabs offers broadband 16 mm cage cube-mounted, broadband 30 mm cage cube-mounted, and broadband unmounted polarizing beamsplitter cubes, as well as laser line 30 mm cage cube-mounted and laser line unmounted cubes. Additionally, Thorlabs offers wire grid polarizing beamsplitters which have a larger Angle of Incidence and work with uncollimated light. For applications requiring higher power, we also offer high-power polarizing beamsplitting cubes.

Non-Polarizing Beamsplitting Cubes - These cubes provide a 50:50 splitting ratio that is nearly independent of the polarization of the incident light. The low polarization dependence of the metallic-dielectric coating allows the transmission and reflection for s- and p-polarization states to be within 10% or 15% of each other. These beamsplitters are particularly useful with randomly polarized lasers and are specifically designed for applications in which polarization effects must be minimized. Thorlabs offers 16 mm cage cube-mounted, 30 mm cage cube-mounted, and unmounted beamsplitter cubes.

Plate Beamsplitters - Thorlabs' plate beamsplitters are optimized for an incidence angle of 45° and feature a dielectric coating on the front surface for long-term stability. To help reduce unwanted interference effects (e.g., ghost images) caused by the interaction of light reflected from the front and back surfaces of the optic, a wedge has been added to the round versions of these beamsplitters. Dispersion, ghosting, and shifting of the beam may all be potential problems, however. These are the best choice for a general-purpose beamsplitter. Thorlabs offers both polarizing and nonpolarizing plate beamsplitters.

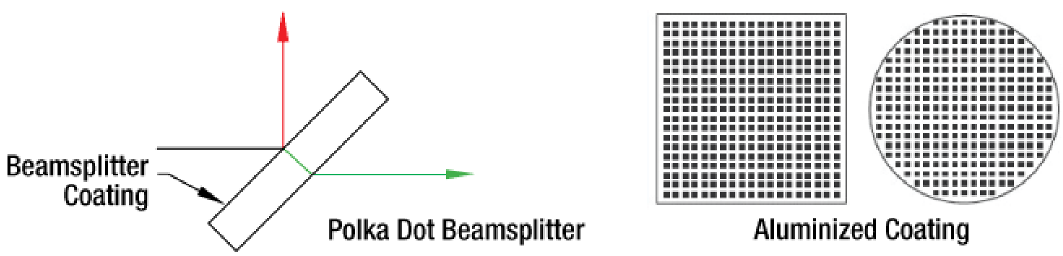


Economy Beamsplitters - These are the most cost effective of all the beamsplitter types. Thorlabs' economy beamsplitters, which have an exposed oxide coating on one side and are uncoated on the other side, are designed to have either a 50:50 or 30:70 splitting ratio throughout the visible spectrum (450 - 650 nm) when used with unpolarized light incident at 45°.



Please note that the Fresnel reflections off of the uncoated back surface of these economy beamsplitters can lead to interference effects in the reflected beam. For applications sensitive to these effects, consider using a beamsplitting cube or a pellicle beamsplitter.

Polka Dot Beamsplitters - This type of beamsplitter consists of a glass substrate with a vacuum-deposited reflective coating that is applied over an array of apertures, giving the beamsplitter a "polka dot" appearance. Half of the incident beam is reflected from the coating, and half of the beam is transmitted through the uncoated portion of the substrate.



Polka dot beamsplitters are useful over a wide wavelength range and are negligibly angle sensitive, which makes them ideal for splitting the energy emitted from a radiant source. These are not recommended for imaging applications, such as interferometry, as the polka dot pattern will affect the image.

Hide Damage Thresholds

DAMAGE THRESHOLDS

Damage Threshold Data for Thorlabs' Polarizing Beamsplitters

The specifications to the right are measured data for Thorlabs' polarizing beamsplitters.

Coating Range	Damage Threshold	
420 - 680 nm	CW[a]	50 W/cm at 532 nm, Ø0.015 mm
	Pulse	2 J/cm^2 at 532 nm, 10 ns, 10 Hz
620 - 1000 nm	CW[a]	50 W/cm at 810 nm, Ø0.019 mm
	Pulse	2 J/cm^2 at 810 nm, 10 ns, 10 Hz
900 - 1300 nm	CW[a,b]	2000 W/cm at 1064 nm, Ø0.018 mm
	Pulse	2 J/cm^2 at 1064 nm, 10 ns, 10 Hz
1200 - 1600 nm	CW[a,b]	2000 W/cm at 1542 nm, Ø0.033 mm
	Pulse	5 J/cm^2 at 1542 nm, 10 ns, 10 Hz

- The power density of your beam should be calculated in terms of W/cm. For an explanation of why the linear power density provides the best metric for long pulse and CW sources, please see below.
- The stated damage threshold is a certification measurement, as opposed to a true damage threshold (i.e., the optic was able to withstand the maximum output of the laser with no damage).

Laser Induced Damage Threshold Tutorial

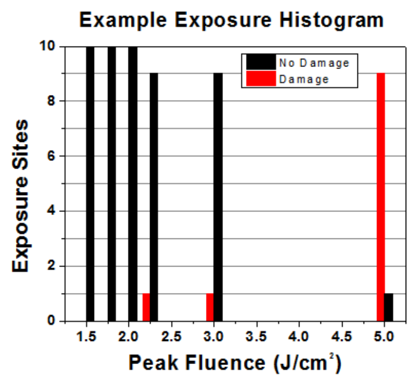
The following is a general overview of how laser induced damage thresholds are measured and how the values may be utilized in determining the appropriateness of an optic for a given application. When choosing optics, it is important to understand the Laser Induced Damage Threshold (LIDT) of the optics being used. The LIDT for an optic greatly depends on the type of laser you are using. Continuous wave (CW) lasers typically cause damage from thermal effects (absorption either in the coating or in the substrate). Pulsed lasers, on the other hand, often strip electrons from the lattice structure of an optic before causing thermal damage. Note that the guideline presented here assumes room temperature operation and optics in new condition (i.e., within scratch-dig spec, surface free of contamination, etc.). Because dust or other particles on the surface of an optic can cause damage at lower thresholds, we recommend keeping surfaces clean and free of debris. For more information on cleaning optics, please see our *Optics Cleaning* tutorial.

Testing Method

Thorlabs' LIDT testing is done in compliance with ISO/DIS11254 specifications. A standard 1-on-1 testing regime is performed to test the damage threshold.

First, a low-power/energy beam is directed to the optic under test. The optic is exposed in 10 locations to this laser beam for a set duration of time (CW) or number of pulses (pulse repetition frequency specified). After exposure, the optic is examined by a microscope (~100X magnification) for any visible damage. The number of locations that are damaged at a particular power/energy level is recorded. Next, the power/energy is either increased or decreased and the optic is exposed at 10 new locations. This process is repeated until damage is observed. The damage threshold is then assigned to be the highest power/energy that the optic can withstand without causing damage. A histogram such as that below represents the testing of one BB1-E02 mirror.

The photograph above is a protected aluminum-coated mirror after LIDT testing. In this particular test, it handled 0.43 J/cm^2 (1064 nm, 10 ns pulse, 10 Hz, Ø1.000 mm) before damage.



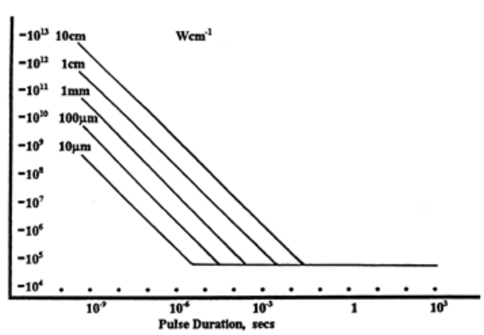
Example Test Data			
Fluence	# of Tested Locations	Locations with Damage	Locations Without Damage
1.50 J/cm^2	10	0	10
1.75 J/cm^2	10	0	10
2.00 J/cm^2	10	0	10
2.25 J/cm^2	10	1	9
3.00 J/cm^2	10	1	9
5.00 J/cm^2	10	9	1

According to the test, the damage threshold of the mirror was 2.00 J/cm^2 (532 nm, 10 ns pulse, 10 Hz, Ø0.803 mm). Please keep in mind that these tests are performed on clean optics, as dirt and contamination can significantly lower the damage threshold of a component. While the test results are only representative of one coating run, Thorlabs specifies damage threshold values that account for coating variances.

Continuous Wave and Long-Pulse Lasers

When an optic is damaged by a continuous wave (CW) laser, it is usually due to the melting of the surface as a result of absorbing the laser's energy or damage to the optical coating (antireflection) [1]. Pulsed lasers with pulse lengths longer than 1 µs can be treated as CW lasers for LIDT discussions. Additionally, when pulse lengths are between 1 ns and 1 µs, LIDT can occur either because of absorption or a dielectric breakdown (must check both CW and pulsed LIDT). Absorption is either due to an intrinsic property of the optic or due to surface irregularities; thus LIDT values are only valid for optics meeting or exceeding the surface quality specifications given by a manufacturer. While many optics can handle high power CW lasers, cemented (e.g., achromatic doublets) or highly absorptive (e.g., ND filters) optics tend to have lower CW damage thresholds. These lower thresholds are due to absorption or scattering in the cement or metal coating.

Pulsed lasers with high pulse repetition frequencies (PRF) may behave similarly to CW beams. Unfortunately, this is highly dependent on factors such as absorption and thermal diffusivity, so there is no reliable method for determining when a high PRF laser will damage an optic due to thermal effects. For beams with a large PRF both the average and peak powers must be compared to the equivalent CW power. Additionally, for highly transparent materials, there is little to no drop in the LIDT with increasing PRF.



LIDT in linear power density vs. pulse length and spot size. For long pulses to CW, linear power density becomes a constant with spot size.

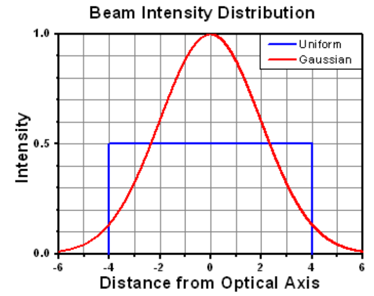
In order to use the specified CW damage threshold of an optic, it is necessary to know the following:

1. Wavelength of your laser
2. Linear power density of your beam (total power divided by 1/e^2 beam diameter)

3. Beam diameter of your beam (1/e)
4. Approximate intensity profile of your beam (e.g., Gaussian)

This graph was obtained from [1].

The power density of your beam should be calculated in terms of W/cm. The graph to the right shows why expressing the LIDT as a linear power density provides the best metric for long pulse and CW sources. In this regime, the LIDT given as a linear power density can be applied to any beam diameter; one does not need to compute an adjusted LIDT to adjust for changes in spot size. This calculation assumes a uniform beam intensity profile. You must now consider hotspots in the beam or other non-uniform intensity profiles and roughly calculate a maximum power density. For reference, a Gaussian beam typically has a maximum power density that is twice that of the uniform beam (see lower right).



Now compare the maximum power density to that which is specified as the LIDT for the optic. If the optic was tested at a wavelength other than your operating wavelength, the damage threshold must be scaled appropriately. A good rule of thumb is that the damage threshold has a linear relationship with wavelength such that as you move to shorter wavelengths, the damage threshold decreases (i.e., a LIDT of 10 W/cm at 1310 nm scales to 5 W/cm at 655 nm):

$$Adjusted\ LIDT = LIDT\ Power\left(\frac{Your\ Wavelength}{LIDT\ Wavelength}\right)$$

While this rule of thumb provides a general trend, it is not a quantitative analysis of LIDT vs wavelength. In CW applications, for instance, damage scales more strongly with absorption in the coating and substrate, which does not necessarily scale well with wavelength. While the above procedure provides a good rule of thumb for LIDT values, please contact Tech Support if your wavelength is different from the specified LIDT wavelength. If your power density is less than the adjusted LIDT of the optic, then the optic should work for your application.

Please note that we have a buffer built in between the specified damage thresholds online and the tests which we have done, which accommodates variation between batches. Upon request, we can provide individual test information and a testing certificate. The damage analysis will be carried out on a similar optic (customer's optic will not be damaged). Testing may result in additional costs or lead times. Contact Tech Support for more information.

Pulsed Lasers

As previously stated, pulsed lasers typically induce a different type of damage to the optic than CW lasers. Pulsed lasers often do not heat the optic enough to damage it; instead, pulsed lasers produce strong electric fields capable of inducing dielectric breakdown in the material. Unfortunately, it can be very difficult to compare the LIDT specification of an optic to your laser. There are multiple regimes in which a pulsed laser can damage an optic and this is based on the laser's pulse length. The highlighted columns in the table below outline the relevant pulse lengths for our specified LIDT values.

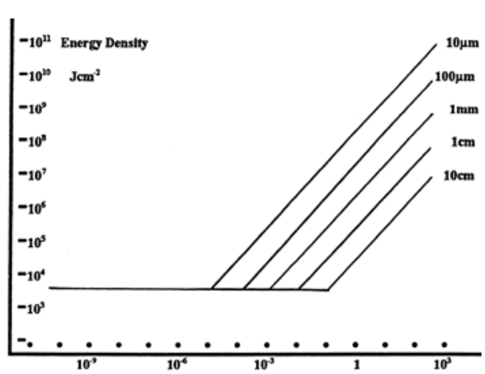
Pulses shorter than 10^{-9} s cannot be compared to our specified LIDT values with much reliability. In this ultra-short-pulse regime various mechanics, such as multiphoton-avalanche ionization, take over as the predominate damage mechanism [2]. In contrast, pulses between 10^{-7} s and 10^{-4} s may cause damage to an optic either because of dielectric breakdown or thermal effects. This means that both CW and pulsed damage thresholds must be compared to the laser beam to determine whether the optic is suitable for your application.

Pulse Duration	$t < 10^{-9}$ s	$10^{-9} < t < 10^{-7}$ s	$10^{-7} < t < 10^{-4}$ s	$t > 10^{-4}$ s
Damage Mechanism	Avalanche Ionization	Dielectric Breakdown	Dielectric Breakdown or Thermal	Thermal
Relevant Damage Specification	N/A	Pulsed	Pulsed and CW	CW

When comparing an LIDT specified for a pulsed laser to your laser, it is essential to know the following:

1. Wavelength of your laser
2. Energy density of your beam (total energy divided by $1/e^2$ area)
3. Pulse length of your laser
4. Pulse repetition frequency (prf) of your laser
5. Beam diameter of your laser ($1/e^2$)
6. Approximate intensity profile of your beam (e.g., Gaussian)

The energy density of your beam should be calculated in terms of J/cm^2. The graph to the right shows why expressing the LIDT as an energy density provides the best metric for short pulse sources. In this regime, the LIDT given as an energy density can be applied to any beam diameter; one does not need to compute an adjusted LIDT to adjust for changes in spot size. This calculation assumes a uniform beam intensity profile. You must now adjust this energy density to account for hotspots or other nonuniform intensity profiles and roughly calculate a maximum energy density. For reference a Gaussian beam typically has a maximum energy density that is twice that of the $1/e^2$ beam.



LIDT in energy density vs. pulse length and spot size. For short pulses, energy density becomes a constant with spot size. This graph was obtained from [1].

Now compare the maximum energy density to that which is specified as the LIDT for the optic. If the optic was tested at a wavelength other than your operating wavelength, the damage threshold must be scaled appropriately [3]. A good rule of thumb is that the damage threshold has an inverse square root relationship with wavelength such that as you move to shorter wavelengths, the damage threshold decreases (i.e., a LIDT of 1 J/cm^2 at 1064 nm scales to 0.7 J/cm^2 at 532 nm):

$$Adjusted\ LIDT = LIDT\ Energy\sqrt{\frac{Your\ Wavelength}{LIDT\ Wavelength}}$$

You now have a wavelength-adjusted energy density, which you will use in the following step.

Beam diameter is also important to know when comparing damage thresholds. While the LIDT, when expressed in units of J/cm^2, scales independently of spot size; large beam sizes are more likely to illuminate a larger number of defects which can lead to greater variances in the LIDT [4]. For data presented here, a <1 mm beam size was used to measure the LIDT. For beams sizes greater than 5 mm, the LIDT (J/cm2) will not scale independently of beam diameter due to the larger size beam exposing more defects.

The pulse length must now be compensated for. The longer the pulse duration, the more energy the optic can handle. For pulse widths between 1 - 100 ns, an approximation is as follows:

$$Adjusted\ LIDT = LIDT\ Energy\sqrt{\frac{Your\ Pulse\ Length}{LIDT\ Pulse\ Length}}$$

Use this formula to calculate the Adjusted LIDT for an optic based on your pulse length. If your maximum energy density is less than this adjusted LIDT maximum energy density, then the optic should be suitable for your application. Keep in mind that this calculation is only used for pulses between 10^{-9} s and 10^{-7} s. For pulses between 10^{-7} s and 10^{-4} s, the CW LIDT must also be checked before deeming the optic appropriate for your application.

Please note that we have a buffer built in between the specified damage thresholds online and the tests which we have done, which accommodates variation between batches. Upon request, we can provide individual test information and a testing certificate. Contact Tech Support for more information.

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[1] R. M. Wood, Optics and Laser Tech. **29**, 517 (1997).
[2] Roger M. Wood, *Laser-Induced Damage of Optical Materials* (Institute of Physics Publishing, Philadelphia, PA, 2003).
[3] C. W. Carr *et al*., Phys. Rev. Lett. **91**, 127402 (2003).
[4] N. Bloembergen, Appl. Opt. **12**, 661 (1973).

Hide Polarizer Guide

POLARIZER GUIDE

Polarizer Selection Guide

Thorlabs offers a diverse range of polarizers, including wire grid, film, calcite, alpha-BBO, rutile, and beamsplitting polarizers. Collectively, our line of wire grid polarizers offers coverage from the visible range to the beginning of the Far-IR range. Our nanoparticle linear film polarizers provide extinction ratios as high as 100,000:1. Alternatively, our other film polarizers offer an affordable solution for polarizing light from the visible to the Near-IR. Next, our beamsplitting polarizers allow for use of the reflected beam, as well as the more completely polarized transmitted beam. Finally, our Alpha-BBO (UV), calcite (visible to Near-IR), and rutile (Near-IR to Mid-IR) polarizers each offer an exceptional extinction ratio of 100,000:1 within their respective wavelength ranges.

To explore the available types, wavelength ranges, extinction ratios, transmission, and available sizes for each polarizer category, click *More [+]* in the appropriate row below.

Wire Grid Polarizers	More [+]
Film Polarizers	More [+]
Beamsplitting Polarizers	More [+]
alpha-BBO Polarizers	More [+]
Calcite Polarizers	More [+]
Quartz Polarizers	More [+]

Magnesium Fluoride Polarizers More [+]

Rutile Polarizers More [+]

- Click on the graph icons in this column to view a transmission curve for the corresponding polarizer. Each curve represents one substrate sample or coating run and is not guaranteed.
- Mounted in a protective box, unthreaded ring, or cylinder that indicates the polarization axis.
- Available unmounted or in an SM05-threaded (0.535"-40) mount that indicates the polarization axis.
- Available unmounted or in an SM1-threaded (1.035"-40) mount that indicates the polarization axis.
- Available unmounted or mounted in cubes for cage system compatibility.
- Calcite's transmittance of light near 350 nm is typically around 75% (see *Transmission* column).
- Available unmounted or in an unthreaded Ø1/2" housing.
- The transmission curves for calcite are valid for linearly polarized light with a polarization axis aligned with the mark on the polarizer's housing.
- The 1064 nm V coating corresponds to a -C26 suffix in the item number.
- Available unmounted or mounted in a protective box or unthreaded cylinder that indicates the polarization axis.

Hide Part Numbers

Part Number	Description	Price	Availability
CCM5-PBS201/M	**Customer Inspired!16 mm Cage-Cube-Mounted Polarizing Beamsplitter Cube, 420-680 nm, M4 Tap**	**$254.95**	**Lead Time**
CCM5-PBS202/M	**Customer Inspired!16 mm Cage-Cube-Mounted Polarizing Beamsplitter Cube, 620-1000 nm, M4 Tap**	**$254.95**	**Today**
CCM5-PBS203/M	**Customer Inspired!16 mm Cage-Cube-Mounted Polarizing Beamsplitter Cube, 900-1300 nm, M4 Tap**	**$254.95**	**Today**
CCM5-PBS204/M	**Customer Inspired!16 mm Cage-Cube-Mounted Polarizing Beamsplitter Cube, 1200-1600 nm, M4 Tap**	**$254.95**	**Today**
CM05-PBS201	**16 mm Cage-Cube-Mounted Polarizing Beamsplitter Cube, 420-680 nm, 8-32 and M4 Adapters**	**$263.00**	**Today**
CM05-PBS202	**16 mm Cage-Cube-Mounted Polarizing Beamsplitter Cube, 620-1000 nm, 8-32 and M4 Adapters**	**$263.00**	**Lead Time**
CM05-PBS203	**16 mm Cage-Cube-Mounted Polarizing Beamsplitter Cube, 900-1300 nm, 8-32 and M4 Adapters**	**$263.00**	**Today**
CM05-PBS204	**16 mm Cage-Cube-Mounted Polarizing Beamsplitter Cube, 1200-1600 nm, 8-32 and M4 Adapters**	**$263.00**	**Today**