THORLABS
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Newton, NJ 07860 | Sales: (973) 300-3000 | www.thorlabs.com

CERTIFIED LASER SAFETY GLASSES

- CE Certified Laser Safety Glasses
- Wide Selection of Wavelength Ranges
- Variety of Frame Styles and Included Carrying Case

LG2
Universal Style

LG4A
Comfort Style

LG10B
Sport Style

LG14C
Modern Goggle Style

CE

Universal Style

Comfort Style

Sport Style

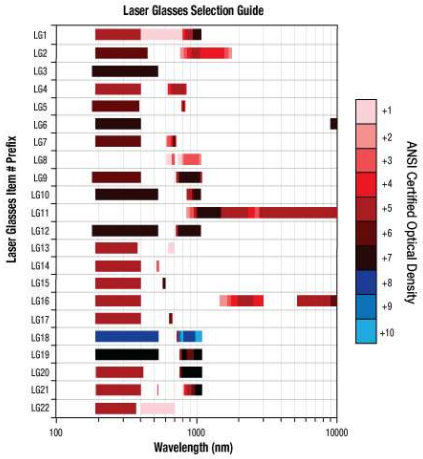
Modern Goggle Style

OVERVIEW

Features

- Absorptive Dye Encased in Hardened Polycarbonate Lenses (Resistant to Breaking)*
- Protection Lasts for a Minimum of 10 seconds at Maximum EN 207 Rated Exposure (See *Specs Tutorial* Tab)
- Specifications printed at the top of the lenses or on the frame
- Laser Glasses Available in Multiple Frame Styles
- Certificates of Conformity Available for Compliance with:
    - ANSI Z136.1 Standards for Safe Use of Lasers
    - ANSI Z87.1-2003 Standards for Occupational and Educational Personal Eye and Face Protection Devices
    - EN 207 Standards (Except LG14 Series, See *Specs Tutorial* Tab)
    - EN 208 Laser Alignment Standards (LG13, LG14, LG21, and LG22 Series Only, See *Specs Tutorial* Tab)

Click on the row with your desired specification to open link to products.



These Laser Safety Glasses provide CE certified laser radiation protection. The lenses of all glasses except for the LG11 series are made from absorptive dye encapsulated in hardened polycarbonate, which provides superior resistance to breakage and prevents minor scratches from affecting laser protection. The LG11(A) Laser Safety glasses use a Schott glass substrate.*

The optical density (OD) and LB-Rating for specific wavelength ranges are indelibly printed on the lens or frame for permanent identification without blocking the field of view†. For a complete list of optical densities and LB-Ratings, please click on the row corresponding to each item # in the selection guide to the right.

Thorlabs offers laser safety glasses in up to four different frame styles (see the *Frame Styles* tab for details).

- The Universal style frame* can be worn over prescription glasses and features side and top shield protection from peripheral laser radiation.
- The Comfort style frame features detachable inserts for prescription lenses (please consult your doctor to fit lenses for the inserts) and an extended nose piece that may be more comfortable for users who have a low nose bridge.
- The Sport style frame is designed to wrap around the user's face, providing full laser protection with a continuous field of view.
- Finally, the Modern Goggle style comes with detachable inserts for prescription lenses and a built-in adjustable strap, making it the most secure of the frame styles. They have a gasket to create a seal around the customer's eyes as well as vents to prevent fogging.

Each pair of laser safety glasses comes with a protective storage case, cleaning cloth, and adjustable neck strap. However, the Modern Goggle style does not come with the separate neck strap as the neckstrap for the Modern Goggles is built in.

Care Instructions

When not being used, the laser safety glasses should be stored in their protective case and in an area where the temperature does not exceed 80 °F (26.6 °C). The cleaning cloth included with each pair of laser safety glasses can be used for removing dust from the surface of the lens. Products used for cleaning prescription eyeglasses are safe to use with our laser safety glasses. For disinfection of the glasses, we recommend mild detergent or soap and hot water or a dilution of isopropyl alcohol (up to 70% solution). We do not recommend any highly caustic solutions. The laser safety rating will not be affected by any of the above cleaning procedures.

Click to Enlarge
Universal style glasses shown with included neck strap. This separate neck strap is included with Universal, Comfort, and Sport styles.

Click for Details
Modern Goggle style shown with built-in neck strap and detachable inserts for prescription lenses. Click on the image to show a front and rear view.

Picking the Appropriate Laser Safety Glasses

Since the correct choice of laser safety eyewear depends upon many local factors that cannot be evaluated remotely, including the beam path, laser parameters, and lab environment, Thorlabs cannot recommend specific eyewear for your application. We would recommend discussing your needs with your organization's laser safety officer.

*The LG11 and LG11A are made using Schott glass, and therefore use a different frame design than our other Universal style laser glasses. Fit over prescription glasses may be affected (see the *Frame Styles* tab for details). To ensure CE compliance, only two styles are offered. OD and LB-Rating specifications for the LG11 and LG11A are printed on the frame.

†For maxmimum protection, our laser safety glasses should not be used more than five years from the production date. All of our laser safety glasses except for the LG11 and LG11A are inscribed with a production date code on the bottom-right corner of the right lens, as can be seen here. The date code is represented as a five-digit number, with the first two digits defining the year and the last three defining the day of the year. Thorlabs will not ship glasses with less than three years of usable life remaining.

OD to % Transmission Conversions

OD	Transmission	OD	Transmission
0.0	100%	5.0	0.001%
1.0	10%	6.0	0.0001%
2.0	1%	7.0	0.00001%
3.0	0.1%	8.0	0.000001%
4.0	0.01%	9.0	0.0000001%

$$OD = \log_{10}\frac{1}{T}$$

$$T = 10^{-OD}$$

OD = Optical Density
T = Transmission (decimal)

FRAME STYLES

Universal Style

Universal Style laser safety glasses feature a large (145 mm x 53 mm) frame that can be worn comfortably on top of prescription glasses. They are equipped with lensed side shields and solid top shields to protect the user's eyes from laser radiation while maintaining peripheral vision. The frame has adjustable arm lengths to accommodate different temple sizes. Laser safety ratings are indelibly printed on the lenses to indicate the level of protection provided for specific wavelength ranges.

The LG11 is composed of a Schott Glass substrate, and uses a different frame than other universal style laser glasses that features side shields made from solid plastic providing full laser protection but at the expense of peripheral vision. These laser glasses may not fit over prescription glasses. Laser ratings on the LG11 are indelibly printed on the left side shield, not on the lenses.

Comfort Style

Comfort Style glasses feature a medium (145 mm x 47 mm) frame with solid side shields for full protection from peripheral laser radiation. While these laser safety glasses cannot be worn over prescription glasses, each pair includes a detachable insert for prescription lenses (seen by clicking on the the image to the right). Contact your doctor to fit lenses for the inserts. These frames are equipped with an extended nosepiece that allows the glasses to sit more comfortably on the noses of users who have a low nose bridge. Laser safety ratings are indelibly printed on the lenses (LG11A laser ratings are printed on the frame) to indicate the level of protection provided for specific wavelength ranges.

Sport Style

The Sport Style glasses have a compact (134 mm x 48 mm) frame designed for full laser safety coverage without the need for side shields and provide the user with a wide field of view. Glasses with this frame style have arms that feature adjustable lengths and an adjustable joint (seen by clicking on the image to the right) to customize the fit for different head shapes and sizes. These sport style glasses cannot be worn over prescription glasses and do not include inserts for prescription lenses. Laser safety ratings are indelibly printed on the lenses to indicate the level of protection provided for specific wavelength ranges.

Modern Goggle Style

The Modern Goggle Style features an adjustable strap, a gasket to create a seal around the eyes, as well as vents to prevent fogging. The interior dimensions of these laser goggles are 133 mm x 51 mm. The lenses have a diagonal length of 66 mm. Laser Safety Goggles are equipped with detachable inserts for prescription lenses (please consult your doctor to fit prescription lenses for the insert). Laser safety ratings are indelibly printed on the lenses to indicate the level of protection provided for specific wavelength ranges.

Click for Details
Modern Goggle Style

Click for Details
Sport Style

Click for Details
Comfort Style

Click to Enlarge
Universal Style

LG1 Universal Style Laser Glasses on 1 x 1 cm Grid for Measuring Interior Dimensions

Click to Enlarge
Each pair of glasses and goggles comes with a protective carrying case, cleaning cloth, and adjustable neck strap (separate neck strap not included with Modern Goggles).

***** This guide is not intended as a substitute for reading and understanding the ANSI Z136 or EN 207 or EN 208 Laser Safety Standards. It is only meant to provide an introductory overview to understanding the markings on the lenses of the LG series of laser glasses. *****

ANSI Z136 and EN 207 Standards

Indelibly printed on the laser safety glasses are two sets of numbers: Optical Density (OD) and LB-Rating, which are both used to indicate the level of protection provided for specific wavelength ranges. The OD numbers indelibly printed on the laser safety glasses can be used to determine if the glasses meet the ANSI Z136 standards of laser safety protection for a given laser product. In addition, the OD can be used to calculate the transmission (T) of light through the laser safety glasses.

$$\mathrm{OD} = \log_{10}\left(\frac{1}{T}\right), \text{ or } \; T = 10^{-\mathrm{OD}}$$

The European EN 207 standard for laser safety glasses requires that the protective eyewear be labeled with the CE mark and that the LB-Rating specifications are indelibly printed on the lens. In addition, the lenses and frames must be able to provide the stated level of protection for 10 seconds or 100 pulses depending on the mode of the laser. The LB-Rating is composed of 3 components: a wavelength range, a laser mode designation, and a scale number. The wavelength range engraved on the laser safety glasses is given in nm and is extremely important since the level of protection provided by the laser safety glasses is wavelength dependent. The laser mode designation is based on the duration of laser pulse emitted by the laser.

Laser Mode Designation

Laser Mode	Engraved Symbol	Pulse Duration
Continuous Wave (CW)	D	>0.25 s
Pulsed Mode	I	>1 µs - 0.25 s
Giant Pulsed Mode	R	1 ns - 1 µs
Mode Locked	M	< 1ns
Please refer to the official EN 207 standard that can be purchased from BSI.		

The scale number (LBn) is intended to be used in conjunction with the wavelength range and the laser mode designation in order to determine if the laser safety glasses meets the minimum required level of protection for a given laser; see the table below. If one component of the LB-Rating is shared, a plus sign is used to separate multiple wavelength ranges or laser modes and scale numbers in order to save space. In addition, a greater than, >, sign preceding a wavelength range indicates that the mode and scale number ratings for that wavelength range are valid for wavelengths of light greater than the bottom number in the range up to and including the top number in the range. For example, if the glasses were rated as 330-370 D LB2 and >370-500 D LB3 then at 370 nm the rating would be D LB2 and for all wavelengths greater than 370 nm up to and including 500 nm would be rated at D LB3.

European Norm for the Selection of Laser Safety Glasses

Wavelength Range	Laser Mode	Maximum Power Density (P) or Maximum Energy Density (E)	Minimum Scale Number (LBn)
180 - 315 nm	D	$1\times10^{n-3}$ W/m^2 ($1\times10^{n-7}$ W/cm^2)	$\log_{10}(P)+3$
	I and R	$3\times10^{n+1}$ J/m^2 ($3\times10^{n-3}$ J/cm^2)	$\log_{10}(E/3)-1$
	M	$3\times10^{n+10}$ W/m^2 ($3\times10^{n+6}$ W/cm^2)	$\log_{10}(P)-10$
>315 - 1400 nm	D	$1\times10^{n+1}$ W/m^2 ($1\times10^{n-3}$ W/cm^2)	$\log_{10}(P)-1$
	I and R	$5\times10^{n-3}$ J/m^2 ($5\times10^{n-7}$ J/cm^2)	$\log_{10}(E/5)+3$
	M	$1.5\times10^{n-4}$ J/m^2 ($1.5\times10^{n-8}$ J/cm^2)	$\log_{10}(E/1.5)+4$
>1400 - 1000000 nm	D	$1\times10^{n+3}$ W/m^2 ($1\times10^{n-1}$ W/cm^2)	$\log_{10}(P)-3$
	I and R	$1\times10^{n+2}$ J/m^2 ($1\times10^{n-2}$ J/cm^2)	$\log_{10}(E)-2$
	M	$1\times10^{n+11}$ W/m^2 ($1\times10^{n+7}$ W/cm^2)	$\log_{10}(P)-11$
Please refer to the official EN 207 standard that can be purchased from BSI.			

There are two ways to use the table above: start with the scale number and calculate the maximum safe power density or start with a power density and calculate the minimum safe scale number. This is demonstrated by the two examples below.

Example 1: The LG3 laser safety glasses have an LB-Rating line that reads "180-315 D LB7 + IR LB4". So if the LG3 glasses are being used with a 10 µs pulsed 280 nm light source the table above can be referenced to find that, $E=3\times10^{n+1}$ J/m^2, where in this example the scale number is LB4 so n=4. As a result, when the LG3 laser safety glasses are being used in this situation the maximum power density of the light source should not exceed 3×10^5 J/m^2.

Example2: A CW Krypton Ion laser lasing at 647.1 nm has a maximum power density of 2.2×10^4 W/m^2. Using the table above, the scale number can be calculated using $LBn=\log_{10}(P)-1$, which results in a rounded up scale number of 4. The LG4 laser safety glasses meet the safety specifications of the European EN 207 standard

for this example.

Alignment Rating (EN 208)

The LG13 and LG14 series of glasses are rated for laser alignment applications. This rating allows the lens to transmit a portion of the light for alignment purposes, while attenuating the light to eye-safe power levels in the event of accidental direct exposure to a beam. The rating is given as RB# where # is replaced by the minimum optical density at the specified wavelength or wavelength range (in nm). Along with this RB value is the maximum allowable power and energy of the laser over a Ø7 mm aperture. Power is given for pulses greater than 0.2 ms, while energy is specified for pulses from 1 ns to 0.2 ms. When using a pulsed laser, a correction factor of N1/4 must be multiplied by the maximum energy rating, replacing N with the number of pulses the laser produces in a 10 s interval.

Example: The LG14 laser safety glasses have an alignment rating of 1 W 2 x 10^{-4} J 532 RB3. At 532 nm, the glasses will have an optical density between 3 and 4, correlating to transmission between 0.1% and 0.01%. The maximum power/energy over a Ø7 mm aperture that these glasses can be used with at 532 nm is 1 W for CW or pulses greater than 0.2 ms, and 2 x 10^{-4} J for pulses from 1 ns to 0.2 ms.

Please refer to the official EN 208 standard that can be purchased from BSI.

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dBm to mW Power Conversions

dBm	mW	dBm	mW
0.0	1.0000	10.0	10.0000
2.0	1.5849	20.0	100.0000
4.0	2.5119	30.0	1,000.0000 (1 W)
6.0	3.9811	40.0	10,000.0000 (10 W)
8.0	6.3096	50.0	100,000.0000 (100 W)

$$dBm = 10\log_{10}\frac{P\,(mW)}{1\,mW}$$

$$P(mW) = 10^{(dBm/10)}$$

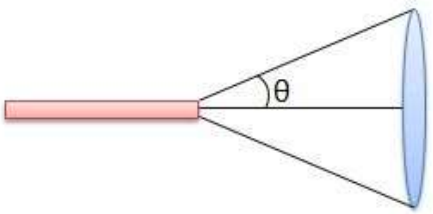
P(mW) = Power in mW

Light Exiting a Fiber

NA	Divergence Half Angle, Θ	Beam Area @ 25.4 mm (1") From Fiber
0.10	5.7°	20 mm^2
0.15	8.6°	46 mm^2
0.20	11.5°	83 mm^2
0.25	14.4°	133 mm^2
0.30	17.4°	199 mm^2
0.35	20.4°	280 mm^2
0.40	23.5°	383 mm^2
0.45	26.7°	512 mm^2
0.50	30.0°	675 mm^2

Note: The values in this table are rounded down to provide conservative beam areas.

When working with fiber optics, light emitted directly from the endface of a fiber is diverging. Thus, the power density is decreasing as the beam spreads and the danger of damage to the eye decreases. The table to the left lists the beam area created by light exiting a fiber for fibers with numerical apertures (NA) between 0.10 and 0.50. If you know the total power emitted from the fiber, you can calculate the power density at 25.4 mm (1") from the fiber tip. This power density will allow you to determine the safe fiber-tip viewing distances.



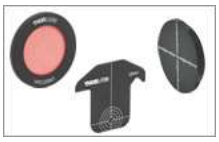
Laser Safety and Classification

Safe practices and proper usage of safety equipment should be taken into consideration when operating lasers. The eye is susceptible to injury, even from very low levels of laser light. Thorlabs offers a range of laser safety accessories that can be used to reduce the risk of accidents or injuries. Laser emission in the visible and near infrared spectral ranges has the greatest potential for retinal injury, as the cornea and lens are transparent to those wavelengths, and the lens can focus the laser energy onto the retina.

Safe Practices and Light Safety Accessories





- Laser safety eyewear must be worn whenever working with Class 3 or 4 lasers.
- Regardless of laser class, Thorlabs recommends the use of laser safety eyewear whenever working with laser beams with non-negligible powers, since metallic tools such as screwdrivers can accidentally redirect a beam.
- Laser goggles designed for specific wavelengths should be clearly available near laser setups to protect the wearer from unintentional laser reflections.
- Goggles are marked with the wavelength range over which protection is afforded and the minimum optical density within that range.
- Laser Safety Curtains and Laser Safety Fabric shield other parts of the lab from high energy lasers.
- Blackout Materials can prevent direct or reflected light from leaving the experimental setup area.
- Thorlabs' Enclosure Systems can be used to contain optical setups to isolate or minimize laser hazards.
- A fiber-pigtailed laser should always be turned off before connecting it to or disconnecting it from another fiber, especially when the laser is at power levels above 10 mW.
- All beams should be terminated at the edge of the table, and laboratory doors should be closed whenever a laser is in use.
- Do not place laser beams at eye level.
- Carry out experiments on an optical table such that all laser beams travel horizontally.
- Remove unnecessary reflective items such as reflective jewelry (e.g., rings, watches, etc.) while working near the beam path.
- Be aware that lenses and other optical devices may reflect a portion of the incident beam from the front or rear surface.
- Operate a laser at the minimum power necessary for any operation.
- If possible, reduce the output power of a laser during alignment procedures.
- Use beam shutters and filters to reduce the beam power.
- Post appropriate warning signs or labels near laser setups or rooms.
- Use a laser sign with a lightbox if operating Class 3R or 4 lasers (i.e., lasers requiring the use of a safety interlock).
- Do not use Laser Viewing Cards in place of a proper Beam Trap.

Laser Classification

Lasers are categorized into different classes according to their ability to cause eye and other damage. The International Electrotechnical Commission (IEC) is a global organization that prepares and publishes international standards for all electrical, electronic, and related technologies. The IEC document 60825-1 outlines the safety of laser products. A description of each class of laser is given below:

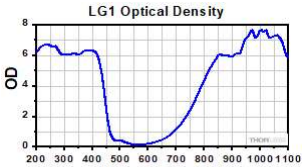
Class	Description	Warning Label
1	This class of laser is safe under all conditions of normal use, including use with optical instruments for intrabeam viewing. Lasers in this class do not emit radiation at levels that may cause injury during normal operation, and therefore the maximum permissible exposure (MPE) cannot be exceeded. Class 1 lasers can also include enclosed, high-power lasers where exposure to the radiation is not possible without opening or shutting down the laser.	
1M	Class 1M lasers are safe except when used in conjunction with optical components such as telescopes and microscopes. Lasers belonging to this class emit large-diameter or divergent beams, and the MPE cannot normally be exceeded unless focusing or imaging optics are used to narrow the beam. However, if the beam is refocused, the hazard may be increased and the class may be changed accordingly.	

Class	Description	Warning Label
2	Class 2 lasers, which are limited to 1 mW of visible continuous-wave radiation, are safe because the blink reflex will limit the exposure in the eye to 0.25 seconds. This category only applies to visible radiation (400 - 700 nm).	
2M	Because of the blink reflex, this class of laser is classified as safe as long as the beam is not viewed through optical instruments. This laser class also applies to larger-diameter or diverging laser beams.	
3R	Class 3R lasers produce visible and invisible light that is hazardous under direct and specular-reflection viewing conditions. Eye injuries may occur if you directly view the beam, especially when using optical instruments. Lasers in this class are considered safe as long as they are handled with restricted beam viewing. The MPE can be exceeded with this class of laser; however, this presents a low risk level to injury. Visible, continuous-wave lasers in this class are limited to 5 mW of output power.	
3B	Class 3B lasers are hazardous to the eye if exposed directly. Diffuse reflections are usually not harmful, but may be when using higher-power Class 3B lasers. Safe handling of devices in this class includes wearing protective eyewear where direct viewing of the laser beam may occur. Lasers of this class must be equipped with a key switch and a safety interlock; moreover, laser safety signs should be used, such that the laser cannot be used without the safety light turning on. Laser products with power output near the upper range of Class 3B may also cause skin burns.	
4	This class of laser may cause damage to the skin, and also to the eye, even from the viewing of diffuse reflections. These hazards may also apply to indirect or non-specular reflections of the beam, even from apparently matte surfaces. Great care must be taken when handling these lasers. They also represent a fire risk, because they may ignite combustible material. Class 4 lasers must be equipped with a key switch and a safety interlock.	
All class 2 lasers (and higher) must display, in addition to the corresponding sign above, this triangular warning sign.		

Laser Safety Glasses: 59% Visible Light Transmission

OD Specs (ANSI Z136)[a]
190 to 400 nm, OD = 5+
808 to 840 nm, OD = 4+
>840 to 950 nm, OD = 5+
>950 to 1080 nm, OD = 7+
>1080 to 1090 nm, OD = 5+

LB-Rating Specs (EN 207)[a]
190 to 315 nm (D LB8 + IR LB4 + M LB6Y)
>315 to 425 nm (DIRM LB5)
790 to <808 nm (DIRM LB3)
808 to 840 nm (DIRM LB4)
>840 to 950 nm (DIRM LB5)
>950 to 1080 nm (D LB6 + IRM LB7[b])
>1080 to 1090 nm (DIRM LB5)



Click to Enlarge
Click Here for Raw Data
Plotted Values are Nominal; Refer to Printed Specifications

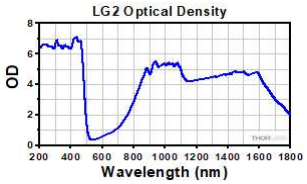
- The OD and LB-Rating Specifications are determined by the filters in the glasses, NoIR model # YG3. Refer to the *Specs Tutorial* tab above for explanations of the terms in these tables.
- For the M rating of LB7 in the wavelength range of >950 to 1064 nm, the glasses were tested at pulses between 12 ps and 170 fs.

Part Number	Description	Price	Availability
LG1	**Laser Safety Glasses, Light Green Lenses, 59% Visible Light Transmission, Universal Style**	**$203.24**	**Today**
LG1A	**Laser Safety Glasses, Light Green Lenses, 59% Visible Light Transmission, Comfort Style**	**$203.24**	**Today**
LG1B	**Laser Safety Glasses, Light Green Lenses, 59% Visible Light Transmission, Sport Style**	**$203.24**	**Today**
LG1C	**Laser Safety Goggles, Light Green Lenses, 59% Visible Light Transmission, Modern Goggle Style**	**$203.24**	**Today**

Laser Safety Glasses: 19% Visible Light Transmission

OD Specs (ANSI Z136)[a]
180 to 450 nm, OD = 6+
770 to 1800 nm, OD = 2+
820 to 1720 nm, OD = 3+
870 to 1600 nm, OD = 4+
940 to 1070 nm, OD = 5+

LB-Rating Specs (EN 207)[a]
180 to 315 nm (D LB6 + R LB4)
>315 to 400 nm (DR LB4)
>770 to 820 nm (DIR LB2)
>820 to 865 nm (DIR LB3)
>865 to 940 nm (DIR LB4)
>940 to 1064 nm (DIRM LB5)
>1064 to 1400 nm (DIRM LB4)
>1400 to 1850 nm (DI LB2)



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Click Here for Raw Data
Plotted Values are Nominal; Refer to Printed Specifications

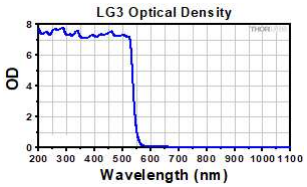
- The OD and LB-Rating Specifications are determined by the filters in the glasses, NoIR model # IRD. Refer to the *Specs Tutorial* tab above for explanations of the terms in these tables.

Part Number	Description	Price	Availability
LG2	**Laser Safety Glasses, Green Lenses, 19% Visible Light Transmission, Universal Style**	**$215.80**	**Today**
LG2A	**Laser Safety Glasses, Green Lenses, 19% Visible Light Transmission, Comfort Style**	**$215.80**	**Today**
LG2B	**Laser Safety Glasses, Green Lenses, 19% Visible Light Transmission, Sport Style**	**$215.80**	**Today**
LG2C	**Laser Safety Goggles, Green Lenses, 19% Visible Light Transmission, Modern Goggle Style**	**$215.80**	**Today**

Laser Safety Glasses: 48% Visible Light Transmission

LB-Rating Specs (EN 207)[a]
180 to 315 nm (D LB7 + IR LB4)
>315 to 532 nm (DIRM LB6)

OD Specs (ANSI Z136)[a]
180 to 532 nm, OD = 7+



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Plotted Values are Nominal; Refer to Printed Specifications

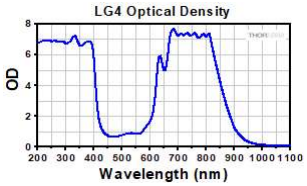
- The OD and LB-Rating Specifications are determined by the filters in the glasses, NoIR model # ARG. Refer to the *Specs Tutorial* tab above for explanations of the terms in these tables.

Part Number	Description	Price	Availability
LG3	**Laser Safety Glasses, Light Orange Lenses, 48% Visible Light Transmission, Universal Style**	**$178.12**	**Today**
LG3A	**Laser Safety Glasses, Light Orange Lenses, 48% Visible Light Transmission, Comfort Style**	**$178.12**	**Today**
LG3B	**Laser Safety Glasses, Light Orange Lenses, 48% Visible Light Transmission, Sport Style**	**$178.12**	**Today**
LG3C	**Laser Safety Goggles, Light Orange Lenses, 48% Visible Light Transmission, Modern Goggle Style**	**$178.12**	**Today**

Laser Safety Glasses: 12% Visible Light Transmission

OD Specs (ANSI Z136)[a]
190 to 400 nm, OD = 5+
625 to 850 nm, OD = 4+
662 to 835 nm, OD = 5+
633 nm, OD = 5+

LB-Rating Specs (EN 207)[a]
180 to 315 nm (D LB7 + R LB3)
>315 to 395 nm (D LB5 + R LB6)
625 to 670 nm + >800 to 830 nm (I LB4)
625 to 830 nm (DR LB4)
>670 to 800 nm (I LB5)
>830 to 850 nm (DIR LB3)
>850 to 860 nm (DIR LB2)
10,600 nm (DI LB2)



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Plotted Values are Nominal; Refer to Printed Specifications

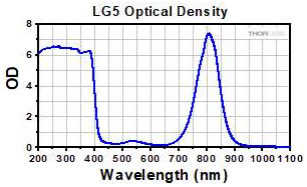
- The OD and LB-Rating Specifications are determined by the filters in the glasses, NoIR model # DI4. Refer to the *Specs Tutorial* tab above for explanations of the terms in these tables.

Part Number	Description	Price	Availability
LG4	**Laser Safety Glasses, Dark Blue Lenses, 12% Visible Light Transmission, Universal Style**	**$190.68**	**Today**
LG4A	**Laser Safety Glasses, Dark Blue Lenses, 12% Visible Light Transmission, Comfort Style**	**$190.68**	**Today**
LG4B	**Laser Safety Glasses, Dark Blue Lenses, 12% Visible Light Transmission, Sport Style**	**$190.68**	**Today**
LG4C	**Laser Safety Goggles, Dark Blue Lenses, 12% Visible Light Transmission, Modern Goggle Style**	**$190.68**	**Today**

Laser Safety Glasses: 61% Visible Light Transmission

OD Specs (ANSI Z136)[a]
180 to 390 nm, OD = 6+
785 to 830 nm, OD = 5+
800 to 818 nm, OD = 6+

LB-Rating Specs (EN 207)[a]
180 to 315 nm, (D LB6 + R LB4)
>315 to 390 nm (D LB4 + R LB6)
785 to 800 nm (D LB4 + I LB5)
>800 to 818 nm (DR LB5 + IM LB6)
>818 to 830 nm (D LB4 + I LB5)
10,600 nm (DI LB2)



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Plotted Values are Nominal; Refer to Printed Specifications

- The OD and LB-Rating Specifications are determined by the filters in the glasses, NoIR model # DI2. Refer to the *Specs Tutorial* tab above for explanations of the terms in these tables.

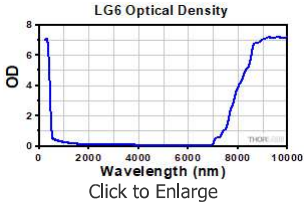
Part Number	Description	Price	Availability
LG5	**Laser Safety Glasses, Pink Lenses, 61% Visible Light Transmission, Universal Style**	**$203.24**	**Today**
LG5A	**Laser Safety Glasses, Pink Lenses, 61% Visible Light Transmission, Comfort Style**	**$203.24**	**Today**
LG5B	**Laser Safety Glasses, Pink Lenses, 61% Visible Light Transmission, Sport Style**	**$203.24**	**Today**
LG5C	**Laser Safety Goggles, Pink Lenses, 61% Visible Light Transmission, Modern Goggle Style**	**$203.24**	**Today**

Laser Safety Glasses: 93% Visible Light Transmission

LB-Rating Specs (EN 207)[a]
190 to 315 nm (D LB7 + IR LB4)
>315 to 398 nm (DIRM LB5)
9,000 to 11,000 nm (DI LB3)

OD Specs (ANSI Z136)[a]
190 to 398 nm, OD = 7+
9,000 to 11,000 nm, OD = 7+

- The OD and LB-Rating Specifications are determined by the filters in the glasses, NoIR model # EC2. Refer to the *Specs Tutorial* tab above for explanations of the terms in these tables.



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Plotted Values are Nominal; Refer to Printed Specifications

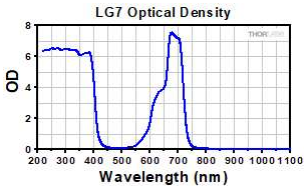
Part Number	Description	Price	Availability
LG6	Laser Safety Glasses, Clear Lenses, 93% Visible Light Transmission, Universal Style	$178.12	Today
LG6A	Laser Safety Glasses, Clear Lenses, 93% Visible Light Transmission, Comfort Style	$178.12	Today
LG6B	Laser Safety Glasses, Clear Lenses, 93% Visible Light Transmission, Sport Style	$178.12	2 Weeks
LG6C	Laser Safety Goggles, Clear Lenses, 93% Visible Light Transmission, Modern Goggle Style	$178.12	Today

Laser Safety Glasses: 35% Visible Light Transmission

LB-Rating Specs (EN 207)[a]
180 to 315 nm (D LB6 + R LB4)
>315 to 400 nm (DR LB4)
>615 to 660 nm (DIR LB3)
>660 to 665 nm (DIR LB4)
>665 to 715 nm (D LB4 + IR LB5)
694 nm (IR LB7)

OD Specs (ANSI Z136)[a]
190 to 400 nm, OD = 6+
615 to 720 nm, OD = 3+
651 to 670 nm, OD = 4+
671 to 715 nm, OD = 5+
680 to 710 nm, OD = 6+
690 to 700 nm, OD = 7+

- The OD and LB-Rating Specifications are determined by the filters in the glasses, NoIR model # RB2. Refer to the *Specs Tutorial* tab above for explanations of the terms in these tables.



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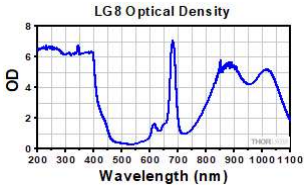
Plotted Values are Nominal; Refer to Printed Specifications

Part Number	Description	Price	Availability
LG7	Laser Safety Glasses, Teal Lenses, 35% Visible Light Transmission, Universal Style	$246.62	Today
LG7A	Laser Safety Glasses, Teal Lenses, 35% Visible Light Transmission, Comfort Style	$246.62	Today
LG7B	Laser Safety Glasses, Teal Lenses, 35% Visible Light Transmission, Sport Style	$246.62	Today
LG7C	Laser Safety Goggles, Teal Lenses, 35% Visible Light Transmission, Modern Goggle Style	$246.62	Today

Laser Safety Glasses: 35% Visible Light Transmission

OD Specs (ANSI Z136)[a]
610 to 664 nm, OD = 1+
665 to <670 nm, OD = 2+
670 to 690 nm, OD = 3+
>690 to 698 nm, OD = 2+
735 to 789 nm, OD = 1+
790 to <808 nm, OD = 2+
808 to 1050 nm, OD = 3+
>1050 to 1080 nm, OD = 2+

LB-Rating Specs (EN 207)[a]
610 to 664 nm (DIR LB1)
665 to <670 nm (DIR LB2)
670 to 690 nm (DIR LB3)
>690 to 698 nm (DIR LB2)
735 to 789 nm (DIR LB1)
790 to <808 nm (DIR LB2)
808 to 1050 nm (DIR LB3)
>1050 to 1080 nm (DIR LB2)



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Plotted Values are Nominal; Refer to Printed Specifications

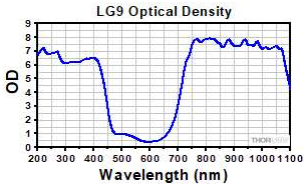
- The OD and LB-Rating Specifications are determined by the filters in the glasses, NoIR model # DI6. Refer to the *Specs Tutorial* tab above for explanations of the terms in these tables.

Part Number	Description	Price	Availability
LG8	**Laser Safety Glasses, Emerald Lenses, 35% Visible Light Transmission, Universal Style**	**$246.62**	**Today**
LG8A	**Laser Safety Glasses, Emerald Lenses, 35% Visible Light Transmission, Comfort Style**	**$246.62**	**Today**
LG8B	**Laser Safety Glasses, Emerald Lenses, 35% Visible Light Transmission, Sport Style**	**$246.62**	**Today**
LG8C	**Laser Safety Goggles, Emerald Lenses, 35% Visible Light Transmission, Modern Goggle Style**	**$246.62**	**Today**

Laser Safety Glasses: 25% Visible Light Transmission

OD Specs (ANSI Z136)[a]
180 to 400 nm, OD = 6+
720 to 1090 nm, OD = 5+
750 to 1064 nm, OD = 7+

LB-Rating Specs (EN 207)[a]
180 to 315 nm (D LB6 + R LB4)
>315 to 400 nm (DR LB4)
720 to 725 nm (DM LB5)
720 to 750 nm (IR LB5)
>1064 to 1075 nm (IR LB5)
>725 to 1075 nm (DM LB6)
>750 to 1064 nm (IRM LB7)[b]



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Plotted Values are Nominal; Refer to Printed Specifications

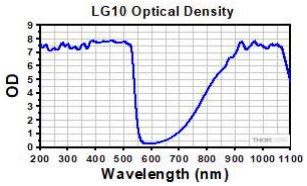
- The OD and LB-Rating Specifications are determined by the filters in the glasses, NoIR model # YG2. Refer to the *Specs Tutorial* tab above for explanations of the terms in these tables.
- For the M rating of LB7 in the corresponding wavelength range, the glasses were tested at pulses between 12 ps and 170 fs.

Part Number	Description	Price	Availability
LG9	**Laser Safety Glasses, Amber Lenses, 25% Visible Light Transmission, Universal Style**	**$228.35**	**Today**
LG9A	**Laser Safety Glasses, Amber Lenses, 25% Visible Light Transmission, Comfort Style**	**$228.35**	**Today**
LG9B	**Laser Safety Glasses, Amber Lenses, 25% Visible Light Transmission, Sport Style**	**$228.35**	**Today**
LG9C	**Laser Safety Goggles, Amber Lenses, 25% Visible Light Transmission, Modern Goggle Style**	**$228.35**	**Today**

Laser Safety Glasses: 35% Visible Light Transmission

OD Specs (ANSI Z136)[a]
190 to 534 nm, OD = 7+
850 to 925 nm, OD = 5+
>925 to 1070 nm, OD = 6+
960 to 1064 nm, OD = 7+

LB-Rating Specs (EN 207)[a]
180 to 315 nm (D LB7 + R LB4)
>315 to 534 nm (D LB5 + IRM LB6)[b]
850 to 925 nm (DIRM LB5)
>925 to 980 nm (D LB5 + IRM LB6)
>980 to 1064 nm (D LB6 + IRM LB7)[b]
>1064 to 1085 nm (DIRM LB5 S)



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Plotted Values are Nominal; Refer to Printed Specifications

- The OD and LB-Rating Specifications are determined by the filters in the glasses, NoIR model # DBY. Refer to the *Specs Tutorial* tab above for explanations of the terms in these tables.
- For M ratings of LB6 and LB7 in the corresponding wavelength ranges, the glasses were tested at pulses between 12 ps and 170 fs.

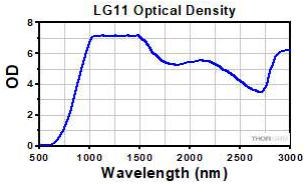
Part Number	Description	Price	Availability
LG10	**Laser Safety Glasses, Amber Lenses, 35% Visible Light Transmission, Universal Style**	**$228.35**	**Today**
LG10A	**Laser Safety Glasses, Amber Lenses, 35% Visible Light Transmission, Comfort Style**	**$228.35**	**Today**
LG10B	**Laser Safety Glasses, Amber Lenses, 35% Visible Light Transmission, Sport Style**	**$228.35**	**Today**
LG10C	**Laser Safety Goggles, Amber Lenses, 35% Visible Light Transmission, Modern Goggle Style**	**$228.35**	**Today**

Laser Safety Glasses: 75% Visible Light Transmission

Note: The LG11 and LG11A are made using Schott glass, and therefore use a different frame design than our other Universal style laser glasses. Fit over prescription glasses may be affected (see the *Frame Styles* tab for details). To ensure CE compliance, only two styles are offered. OD and LB-Rating specifications for the LG11 and LG11A are printed on the frame.

OD Specs (ANSI Z136)[a]
850 to 2800 nm, OD = 3+
900 to 2600 nm, OD = 4+
950 to 1010 nm, OD = 5+
>1010 to 1500 nm, OD = 7+
>1500 to 2350 nm, OD = 5+
>2800 to 10,600 nm, OD = 5+

LB-Rating Specs (EN 207)[a]
850 to 900 nm (DIR LB3)
>900 to 950 nm (DIR LB4)
>950 to 1000 nm (DIR LB5)
>1000 to 1063 nm (DIR LB6)
>1063 to 1400 nm (D LB6)
>1063 to 1400 nm (IRM LB7Y)
1400 to 2200 nm (DIR LB4)
2900 to 3200 nm (DI LB4)
10,600 nm (DI LB4)



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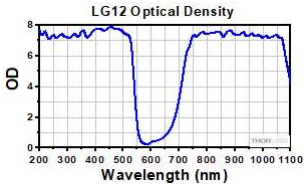
Plotted Values are Nominal; Refer to Printed Specifications

- The OD and LB-Rating Specifications are determined by the filters in the glasses, NoIR model # FG1. Refer to the *Specs Tutorial* tab above for explanations of the terms in these tables.

Part Number	Description	Price	Availability
LG11	**Laser Safety Glasses, Clear Lenses, 75% Visible Light Transmission**	**$401.92**	**Today**
LG11A	**Laser Safety Glasses, Clear Lenses, 75% Visible Light Transmission, Comfort Style**	**$401.92**	**Today**

Laser Safety Glasses: 11% Visible Light Transmission

LB-Rating Specs (EN 207)[a]
180 to 315 nm (D LB7 + R LB4)
>315 to 534 nm (D LB5 + IRM LB6)[b]
730 to 740 nm (D LB5 + IRM LB6)
>740 to 1070 nm (D LB6 + IRM LB7)[b]



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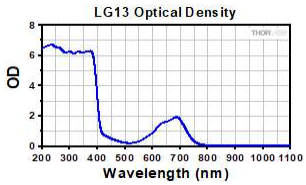
Plotted Values are Nominal; Refer to Printed Specifications

OD Specs (ANSI Z136)[a]
180 to 534 nm, OD = 7+
720 to 730 nm, OD = 5+
>730 to 740 nm, OD = 6+
>740 to 1070 nm, OD = 7+

- The OD and LB-Rating Specifications are determined by the filters in the glasses, NoIR model # YAD. Refer to the *Specs Tutorial* tab above for explanations of the terms in these tables.
- For M ratings of LB6 and LB7 in the corresponding wavelength ranges, the glasses were tested at pulses between 12 ps and 170 fs.

Part Number	Description	Price	Availability
LG12	**Laser Safety Glasses, Amber Lenses, 11% Visible Light Transmission, Universal Style**	**$366.51**	**Today**
LG12A	**Laser Safety Glasses, Amber Lenses, 11% Visible Light Transmission, Comfort Style**	**$366.51**	**Today**
LG12B	**Laser Safety Glasses, Amber Lenses, 11% Visible Light Transmission, Sport Style**	**$366.51**	**Today**
LG12C	**Laser Safety Goggles, Amber Lenses, 11% Visible Light Transmission, Modern Goggle Style**	**$366.51**	**Today**

Laser Safety Glasses: 39% Visible Light Transmission



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Plotted Values are Nominal; Refer to Printed Specifications

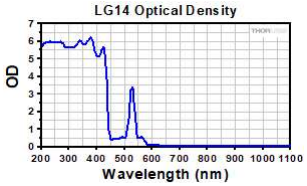
Item #	LG13	LG13A	LG13B	LG13C
OD (ANSI Z136)[a]				
	190 to 380 nm: 5+			
	630 to 700 nm: 1.5+			
LB Rating (EN 207)[a]				
	180 to 315 nm: D LB6 + R LB4			
	>315 to 395 nm: DR LB4	>315 to 395 nm: D LB4		
Alignment Rating (EN 208)[a]				
0.01 W, 2 x 10^{-6} J	605 to 642 nm: RB1	605 to 675 nm: RB1		
0.1 W, 2 x 10^{-5} J	648 to 695 nm: RB2 S	>675 to 695 nm: RB2		

- The OD and LB-Rating Specifications are determined by the filters in the glasses, NoIR model # DIA. Refer to the *Specs Tutorial* tab above for explanations of the terms in these tables.

Part Number	Description	Price	Availability
LG13	**Laser Safety Glasses, Blue Lenses, 39% Visible Light Transmission, Universal Style**	**$178.12**	**Today**
LG13A	**Laser Safety Glasses, Blue Lenses, 39% Visible Light Transmission, Comfort Style**	**$178.12**	**Today**
LG13B	**Laser Safety Glasses, Blue Lenses, 39% Visible Light Transmission, Sport Style**	**$178.12**	**Today**
LG13C	**Laser Safety Goggles, Blue Lenses, 39% Visible Light Transmission, Modern Goggle Style**	**$178.12**	**Today**

Laser Safety Glasses: 47% Visible Light Transmission

Alignment Rating Specs (EN 208)[a]
0.1 W, 2 x 10^{-5} J 518 - 523 nm (RB2)
1 W, 2 x 10^{-4} J 524 - 532 nm (RB3)
0.1 W, 2 x 10^{-5} J 533 - 536 nm (RB2)



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Plotted Values are Nominal; Refer to Printed Specifications

OD Specs (ANSI Z136)[a]
190 to 400 nm, OD = 5+
518 to 523 nm, OD = 2+
524 to 532 nm, OD = 3+
533 to 536 nm, OD 2+

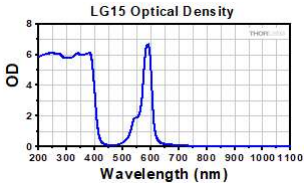
- The OD and LB-Rating Specifications are determined by the filters in the glasses, NoIR model # AG3. Refer to the *Specs Tutorial* tab above for explanations of the terms in these tables.

Part Number	Description	Price	Availability
LG14	**Laser Safety Glasses, Topaz Lenses, 47% Visible Light Transmission, Universal Style**	**$240.92**	**Today**
LG14A	**Laser Safety Glasses, Topaz Lenses, 47% Visible Light Transmission, Comfort Style**	**$240.92**	**Today**
LG14B	**Laser Safety Glasses, Topaz Lenses, 47% Visible Light Transmission, Sport Style**	**$240.92**	**Today**
LG14C	**Laser Safety Goggles, Topaz Lenses, 47% Visible Light Transmission, Modern Goggle Style**	**$240.92**	**Today**

Laser Safety Glasses: 15% Visible Light Transmission

OD Specs (ANSI Z136)[a]
190 to 400 nm, OD = 5+
576 to 600 nm, OD = 5+
582 to 598 nm, OD = 6+
585 to 595 nm, OD = 7+

LB-Rating Specs (EN 207)[a]
180 to 315 nm (D LB6 + R LB4)
>315 to 395 nm (DR LB4)
>575 to 600 nm (DI LB4)
582 to 598 nm (I LB6)
585 to 595 nm (I LB7)



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Plotted Values are Nominal; Refer to Printed Specifications

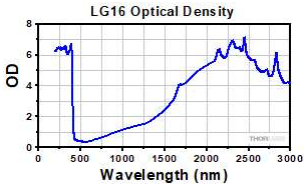
- The OD and LB-Rating Specifications are determined by the filters in the glasses, NoIR model # DYE. Refer to the *Specs Tutorial* tab above for explanations of the terms in these tables.

Part Number	Description	Price	Availability
LG15	**Laser Safety Glasses, Purple Lenses, 15% Visible Light Transmission, Universal Style**	**$192.96**	**Today**
LG15A	**Laser Safety Glasses, Purple Lenses, 15% Visible Light Transmission, Comfort Style**	**$192.96**	**Today**
LG15B	**Laser Safety Glasses, Purple Lenses, 15% Visible Light Transmission, Sport Style**	**$192.96**	**Today**
LG15C	**Laser Safety Goggles, Purple Lenses, 15% Visible Light Transmission, Modern Goggle Style**	**$192.96**	**Today**

Laser Safety Glasses: 41% Visible Light Transmission

OD Specs[a]
190 to 400 nm, OD = 5+
1450 to 1650 nm, OD = 2+
>1650 to 1775 nm, OD = 3+
>1775 to 3000 nm, OD = 4+
1980 to 2550 nm, OD = 5+
5200 to 11000 nm, OD = 5+
9000 to 10600 nm, OD = 6+

LB-Rating Specs (EN 207)[a]
1400 to 1450 nm (DI LB1)
>1450 to 1650 nm (DI LB2)
>1650 to 1800 nm (DI LB3)
>1800 to 3000 nm (DI LB4)
5200 to 11000 nm (DI LB4)



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Plotted Values are Nominal; Refer to Printed Specifications

- The OD and LB-Rating Specifications are determined by the filters in the glasses, NoIR model # HOY. Refer to the *Specs Tutorial* tab above for explanations of the terms in these tables.

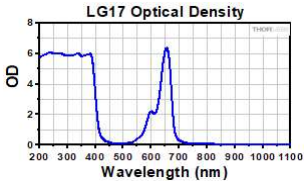
Part Number	Description	Price	Availability
LG16	**Laser Safety Glasses, Gray Lenses, 41% Visible Light Transmission, Universal Style**	**$198.68**	**Today**
LG16A	**Laser Safety Glasses, Gray Lenses, 41% Visible Light Transmission, Comfort Style**	**$198.68**	**Today**
LG16B	**Laser Safety Glasses, Gray Lenses, 41% Visible Light Transmission, Sport Style**	**$198.68**	**Today**
LG16C	**Laser Safety Goggles, Gray Lenses, 41% Visible Light Transmission, Modern Goggle Style**	**$198.68**	**Today**

Laser Safety Glasses: 36% Visible Light Transmission

LB-Rating Specs (EN 207)[a]
645 to 670 nm (DIR LB5)
650 to 665 nm (D LB5 + IR LB6 S)

OD Specs (ANSI Z136)[a]
190 to 400 nm, OD = 5+
645 to 670 nm, OD = 5+
650 to 665 nm, OD = 6+

- The OD and LB-Rating Specifications are determined by the filters in the glasses, NoIR model # DY3. Refer to the *Specs Tutorial* tab above for explanations of the terms in these tables.



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Plotted Values are Nominal; Refer to Printed Specifications

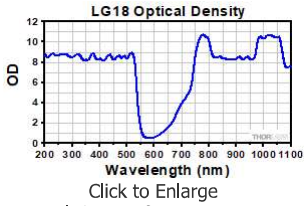
Part Number	Description	Price	Availability
LG17	Laser Safety Glasses, Aqua Lenses, 36% Visible Light Transmission, Universal Style	$185.00	Today
LG17A	Laser Safety Glasses, Aqua Lenses, 36% Visible Light Transmission, Comfort Style	$185.00	Today
LG17B	Laser Safety Glasses, Aqua Lenses, 36% Visible Light Transmission, Sport Style	$185.00	Today
LG17C	Laser Safety Glasses, Aqua Lenses, 36% Visible Light Transmission, Modern Goggle Style	$185.00	Today

Laser Safety Glasses: 13% Visible Light Transmission

LB-Rating Specs (EN 207)[a]
315 to 532 nm (D LB6 + IR LB8 + M LB7Y)
533 to 535 nm + 730 to 744 nm (DIRM LB5)
745 to 750 nm (DIRM LB6)
751 to 754 nm (DIRM LB7)
755 to 1100 nm (D LB7 + I LB9 + R LB8 + M LB8Y S)

OD Specs (ANSI Z136)[a]
190 to 532 nm, OD = 8+
730 to 1110 nm, OD = 5+
745 to 1100 nm, OD = 7+
753 to 765 nm, OD = 9+
>765 to 800 nm, OD = 10+
>800 to 980 nm, OD = 8+
>980 to 1065 nm, OD = 10+

- The OD and LB-Rating Specifications are determined by the filters in the glasses, NoIR model # PWV. Refer to the *Specs Tutorial* tab above for explanations of the terms in these tables.



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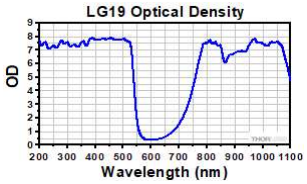
Plotted Values are Nominal; Refer to Printed Specifications

Part Number	Description	Price	Availability
LG18	Laser Safety Glasses, Amber Lenses, 13% Visible Light Transmission, Universal Style	$290.00	Today
LG18A	Laser Safety Glasses, Amber Lenses, 13% Visible Light Transmission, Comfort Style	$290.00	Today
LG18B	Laser Safety Glasses, Amber Lenses, 13% Visible Light Transmission, Sport Style	$290.00	Today
LG18C	Laser Safety Glasses, Amber Lenses, 13% Visible Light Transmission, Modern Goggle Style	$290.00	Today

Laser Safety Glasses: 22% Visible Light Transmission

LB-Rating Specs (EN 207)[a]
190 to 315 nm (D LB7 + IR LB3)
>315 to 532 nm (D LB5 + IRM LB7)
760 to <770 nm + >1075 to 1085 nm (DIR LB5)
770 to <800 nm + >820 to 960 nm (DIRM LB6)
800 to 820 nm + >960 to 1064 nm (D LB6 + IRM LB7 S)
>1064 to 1075 nm (DIRM LB6)



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Plotted Values are Nominal; Refer to Printed Specifications

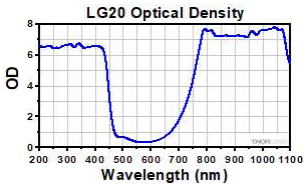
OD Specs (ANSI Z136)[a]
190 to 534 nm, OD = 7+
760 to 1090 nm, OD = 5+
790 to 850 nm, OD = 7+
>850 to 960 nm, OD = 6+
>960 to 1070 nm, OD = 7+

- The OD and LB-Rating Specifications are determined by the filters in the glasses, NoIR model # DBD. Refer to the *Specs Tutorial* tab above for explanations of the terms in these tables.

Part Number	Description	Price	Availability
LG19	**Laser Safety Glasses, Amber Lenses, 22% Visible Light Transmission, Universal Style**	**$250.00**	**Today**
LG19A	**Laser Safety Glasses, Amber Lenses, 22% Visible Light Transmission, Comfort Style**	**$250.00**	**Today**
LG19B	**Laser Safety Glasses, Amber Lenses, 22% Visible Light Transmission, Sport Style**	**$250.00**	**Today**
LG19C	**Laser Safety Glasses, Amber Lenses, 22% Visible Light Transmission, Modern Goggle Style**	**$250.00**	**Today**

Laser Safety Glasses: 45% Visible Light Transmission

LB-Rating Specs (EN 207)[a]
190 to 315 nm (D LB8 + IR LB4)
>315 to 420 nm (DIR LB5)
>420 to 445 nm (DIR LB4)
765 to 1100 nm (DIRM LB5)
775 to 1085 nm (D LB5 + IRM LB6)
790 to 1080 nm (D LB6 + IR LB7 + M LB7Y)
950 to 1085 nm (DIRM LB6 S)



Click to Enlarge
Click Here for Raw Data
Plotted Values are Nominal; Refer to Printed Specifications

OD Specs (ANSI Z136)[a]
190 to 420 nm, OD = 5+
765 to 1100 nm, OD = 5+
775 to 1085 nm, OD = 6+
790 to 1080 nm, OD = 7+

- The OD and LB-Rating Specifications are determined by the filters in the glasses, NoIR model # ML1. Refer to the *Specs Tutorial* tab above for explanations of the terms in these tables.

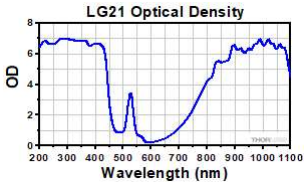
Part Number	Description	Price	Availability
LG20	**Laser Safety Glasses, Green Lenses, 45% Visible Light Transmission, Universal Style**	**$200.00**	**Today**
LG20A	**Laser Safety Glasses, Green Lenses, 45% Visible Light Transmission, Comfort Style**	**$200.00**	**Today**
LG20B	**Laser Safety Glasses, Green Lenses, 45% Visible Light Transmission, Sport Style**	**$200.00**	**Today**
LG20C	**Laser Safety Glasses, Green Lenses, 45% Visible Light Transmission, Modern Goggle Style**	**$200.00**	**Today**

Laser Safety Glasses: 33% Visible Light Transmission

OD Specs (ANSI Z136)[a]
190 to 400 nm, OD = 5+
532 nm, OD = 3+
808 to 850 nm, OD = 4+
>850 to 1075 nm, OD = 5+
910 to 980 nm, OD = 6+
>980 to 1070 nm, OD = 7+

LB-Rating Specs (EN 207)[a]
180 to 315 nm (D LB7 + IR LB4)
>315 to 390 nm (DIRM LB5)
808 to 850 nm (DIR LB4)
>850 to 1075 nm (DIR LB5)
910 to 1070 nm (DIR LB6 + M LB6Y)

Alignment Rating (EN 208)[a]
1 W, 2 x 10^{-4} J, 532 nm (RB3 S)



Click to Enlarge
Click Here for Raw Data
Plotted Values are Nominal; Refer to Printed Specifications

- The OD and LB-Rating Specifications are determined by the filters in the glasses, NoIR model # YGN. Refer to the *Specs Tutorial* tab above for explanations of the terms in these tables.

Part Number	Description	Price	Availability
LG21	**Laser Safety Glasses, Amber Lenses, 33% Visible Light Transmission, Universal Style**	**$225.00**	**Today**
LG21A	**Laser Safety Glasses, Amber Lenses, 33% Visible Light Transmission, Comfort Style**	**$225.00**	**Today**
LG21B	**Laser Safety Glasses, Amber Lenses, 33% Visible Light Transmission, Sport Style**	**$225.00**	**Today**
LG21C	**Laser Safety Glasses, Amber Lenses, 33% Visible Light Transmission, Modern Goggle Style**	**$225.00**	**Today**

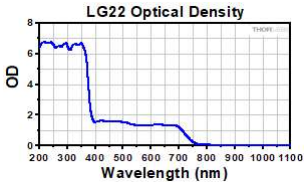
Laser Safety Glasses: 4% Visible Light Transmission

LB-Rating Specs (EN 207)[a]
180 to 315 nm (D LB7 + IR LB3)
>315 to 370 nm (DIR LB5)

Alignment Rating (EN 208)[a]
0.01 W, 2 x 10^{-6} J 400 - 700 nm (RB1 S)

OD Specs (ANSI Z136)[a]
190 to 370 nm, OD = 5+
400 to 700 nm, OD = 1+

- The OD and LB-Rating Specifications are determined by the filters in the glasses, NoIR model # VA1. Refer to the *Specs Tutorial* tab above for explanations of the terms in these tables.



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Click Here for Raw Data
Plotted Values are Nominal; Refer to Printed Specifications

Part Number	Description	Price	Availability
LG22	**Laser Safety Glasses, Grey-Green Lenses, 4% Visible Light Transmission, Universal Style**	**$125.00**	**Today**
LG22A	**Laser Safety Glasses, Grey-Green Lenses, 4% Visible Light Transmission, Comfort Style**	**$125.00**	**Today**
LG22B	**Laser Safety Glasses, Grey-Green Lenses, 4% Visible Light Transmission, Sport Style**	**$125.00**	**Today**
LG22C	**Laser Safety Glasses, Grey-Green Lenses, 4% Visible Light Transmission, Modern Goggle Style**	**$125.00**	**Today**

Visit the *Certified Laser Safety Glasses* page for pricing and availability information:
https://www.thorlabs.com/newgrouppage9.cfm?objectgroup_id=762