



# Trusted for Over 40 Years

Your Single Source for Advanced OEM Optical Solutions



ISO CERTIFIED  
**QMS**

[www.gentexcorp.com/optics](http://www.gentexcorp.com/optics)

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## PUT OUR EXPERIENCE AND END-TO-END CAPABILITIES TO WORK FOR YOU

For over 40 years, Gentex Corporation has been designing and manufacturing a broad range of high-performance optics for use in its own defense, emergency response, and industrial safety products and for original equipment manufacturers (OEMs) within commercial sunwear, industrial, medical, and other markets. As a trusted supplier, we actively engage our customers throughout the design and manufacturing processes, and are available to assist them with their service and delivery strategies. From our vast experience in serving some of the world's most demanding defense and industrial safety customers, we stand ready to help ensure your customer's total satisfaction. All Gentex optical products are designed and manufactured by Gentex in their U.S. facilities following a strict ISO certified Quality Management System. Contact us today to put our optical experience to work for you.



*For over 40 years, Gentex has been designing and manufacturing a broad range of high-performance optics, including those for use in some of the most demanding military and industrial environments.*



# A TEAM AND QUALITY YOU CAN COUNT ON

When you choose Gentex Corporation as your optics supplier, you get over 40 years experience in the design and manufacture of high performance optics from an equally experienced team in all aspects of optical production and with diverse industry knowledge.



1970

## Precision Polycarbonate Lenses

Gentex began molding polycarbonate protective visors and spectacle lenses as companion products for its military aircrew helmet systems.



1980

## Laser Eye Protection

As the introduction of lasers into combat became a threat for pilots, Gentex began developing unique organic dyes to provide eye protection with the increased functionality required to block specific wavelengths of light.

Advanced OEM Optical Solutions //

## HISTORY OF INNOVATION

Gentex began molding polycarbonate protective visors and spectacle lenses as companion products for its military aircrew helmet systems in the 1970s, then growing its optical capabilities and offering to include solutions for its emergency response and industrial safety customers, as well as numerous OEM applications in the commercial, industrial, medical, and other markets. During this 40-year span, they've created an end-to-end supply chain capability, which means quality assurance as well as products delivered quicker and more cost effectively to our customers.

From defense, emergency response, and industrial safety, to commercial sunwear, medical, augmented reality, and more, you can rely on Gentex Corporation to deliver quality optics to meet your specific application's needs.



2005

## Advanced Helmet Vision System

As a key contractor on virtually every major military Helmet Mounted Display (HMD) program over the prior 20 years, Gentex began providing fully integrated HMD solutions for platforms that include: A-10 Thunderbolt, F-16 Viper, C-130, AT-6, KFIR, and UH-72.



2008

## Advanced Laser Eye Protection

Gentex made a technological leap forward with a unique capability that enables a systems approach to laser eye protection by combining state-of-the-art dyes and reflective coatings packaged in unique lens architectures, creating high-transmission day/night laser eye protection devices.



## EXPERIENCED TEAM

Gentex's optical products team possesses all the essential disciplines needed to design, engineer, manufacture, and test today's complex protective and performance eyewear for an array of applications including defense, emergency response, industrial safety, medical, commercial sunwear, and augmented reality. The team consists of subject matter experts in areas of industrial design, material science, optics, coatings, and manufacturing.

## TECHNICAL COMPETENCIES

During its history of developing optics, Gentex Corporation has developed comprehensive technical competencies to deliver optical products of the highest quality.

- **Mold Design and Fabrication**  
To achieve requisite optical characteristics and mechanical properties
- **Polymer Selection**  
To assure uniform mechanical strength and stability
- **Coating Development**  
For maximum abrasion and fog resistance
- **Optical Filtering (Proprietary Light Absorbing Dye Development)**  
For compounding thermally sensitive materials into polymers with predictable light management properties
- **Compounded Additives and Imbibed Tints**  
For uniform and gradient neutral-density management of light transmission and colors
- **Process Design and Development**  
To achieve large scale production at requisite levels of quality

## NEW STATE-OF-THE-ART U.S. FACILITIES

A global company with six facilities in the U.S. and Europe, Gentex designs, tests, and produces all its high performance optics in the U.S. where the company recently invested in a new optics engineering and manufacturing facility located in Carbondale, Pennsylvania, the company's headquarters.



## VERTICAL INTEGRATION

Being vertically integrated, from design capability and raw material manufacturing through end-product fabrication and assembly, Gentex has complete control over the quality of its products. Controlling the entire value chain also enables Gentex to shorten the design cycle, which means customers can have their optics developed and brought to market more quickly. Gentex truly is a one-stop shop.



## QUALITY ASSURANCE

For the development of all its optical products, Gentex employs an ISO 9001 certified Quality Management System. This system is supplemented with additional quality system requirements that meet the AS9001C standard, a standard that provides strict requirements established for the aviation, space, and defense industries. Both of these standards ensure that our Quality Management System consistently provides products that meet our customer's requirements, enhance their satisfaction, and ensure process measurements to support continuous improvements.



## Military Grade and Leading Industrial Specification Capability

Gentex has decades of experience in achieving MIL-Spec and ANSI optical specifications for some of the world's most demanding military and industrial customers. Gentex's advanced manufacturing processes can produce optics to those current standards, or others for your specific application.



*Gentex Corporation is the manufacturer of near-infrared and visible laser protection eyewear for U.S. Naval and Marine Corps Aviation.*

## Third Party Certification

As part of these certifications, a third-party agency audits our management, engineering, manufacturing, testing, and other support processes to verify that the exacting requirements of the certifications are consistently met. Additionally, the AS9100C standard requires Gentex to supplement its Quality Management System with enhanced risk management, supplier management, continuous improvement, and process effectiveness measurements to name a few. These additional requirements ensure that Gentex is a world-class manufacturer of optics and all its personal protection and situational awareness solutions.



# END-TO-END, IN-HOUSE CAPABILITIES

With our broad range of capabilities, defense and industrial safety optics experience, we are adept at quickly producing precision optical products in all shapes and sizes, large and small. From design, to testing, to production, you can rely on Gentex's optical capabilities and expertise.



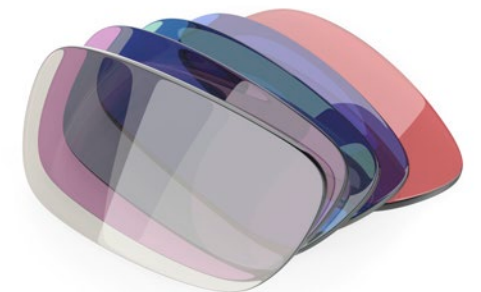
## PRODUCT REALIZATION CAPABILITIES

By combining our advanced technological capabilities and resources with a shared understanding of market requirements, we're able to quickly determine the right optical solution for your specific needs. To do so, we employ some of the latest and most advanced techniques, including:

- SolidWorks® 3D Design/Analysis Capabilities
- Systems Engineering Documentation and Configuration Management
- Composites Design/Soft Goods Design
- Rapid Prototyping, including 3D printing capability

## RAPID PROTOTYPING

Our unique production methods allow us to quickly and cost effectively prototype your custom optics.



## Complex Modeling and Design Software for Light Management

To develop custom solutions compliant with ANSI Z136.7, Gentex uses complex modeling and design software including:

- Geometrical Model for Eye Safety Zone
- Integrated Luminance Transmittance (Photopic, Scotopic, P-43, etc.) for Various Illuminants
- Angular Requirements for Specified Lens Geometries
- Transmittance of LCD primaries, chromaticity analysis and color balancing optimization
- Filter Designs Utilizing Absorptive Layers, Reflective Layers or Combinations (Hybrids)

## Laboratory Scale Compounding and Injection Molding

Gentex uses laboratory scale compounding and injection molding to rapidly develop new material technologies prior to production, which enables us to develop custom solutions quickly and cost effectively.

# MANUFACTURING VERSATILITY

Gentex can produce a wide range of optical formats to meet your specific application needs. Regardless of mold size or type, our automated production environment provides precise cycle time control and a stable thermal environment that results in excellent part-to-part uniformity and high manufacturing yields. A self-contained clean environment is used for application of anti-scratch hard coatings or other specialty coatings to ensure extremely low levels of contamination. Flow coating of individual surfaces is also available for applications that require anti scratch coating on the front surface and anti-fog on the back. For resins containing absorptive dyes, Gentex mixes and compounds these powders and resins in both laboratory scale or full scale production.

## Broad Range of Standard and Custom Optics

Gentex offers an extensive line of precision optics solutions in a variety of standard formats for quick delivery, or custom designed for your unique requirements. We are adept at quickly producing optics in all shapes and sizes, large and small.

## Moldings

With a broad range of molding machines, Gentex can produce a wide range of optical lens formats to suit your particular application.

- **Wide range of molding machines from 50 to 450 tons**
  - **Automated production equipment**
- **Resin solutions for any application including high ballistic, high temp or high flow**
  - **Off the shelf designs**
- **Custom design capability**

## Coating and Materials

Gentex uses its unique combination of coatings and wide array of resin materials to deliver full filtering capability in its optics, such as those needed for anti-reflection. Gentex also has hard coating resins for longevity and durability.

- **A variety of hard coatings for differing levels of anti-scratch/impact performance**
  - **Commercial and military grade anti-fog solutions**
  - **Small coating line for flexibility to do small runs or development work**
  - **Mass production line**
  - **Flow coating cell for products that require different coating on convex vs. concave side**
- **Thin film dielectric coating capability for mirror coatings, anti-reflective or anti-static functionality**
  - **Custom blending and color matching**
  - **Solutions for multiple laser wavelengths**
  - **Custom resins suited for ballistic impact performance, high temperature processing, UV Stable or high flow applications**
  - **Commercially available welding shade resins**

## Specifications Achieved

Gentex is well versed in achieving optical specifications for some of the world's most demanding military and industrial safety applications.

NATIONAL SPECIFICATIONS	MILITARY SPECIFICATIONS	EUROPEAN SPECIFICATIONS
ANSI Z80.1	MIL-V-43511C	EN166
ANSI Z80.3	MIL-DTL-43511D	EN167 & EN168
ANSI Z87.1	MIL-PRF 31013	EN1836
ANSI Z136.7	MIL-PRF-32432 (MCEPS)	

# FABRICATION AND ASSEMBLY

For final product trimming, fabrication, and assembly, Gentex is equipped with machines ranging from small tabletop lens edgers and digital routers, to large 5-axis CNC trimming and laser etching machines. With this wide range of machines in house, Gentex can trim anything from small spectacle lenses to large visors with complex profiles.

# IN HOUSE TESTING

With a state-of-the-art, climate controlled laboratory, Gentex supports a full range of testing capabilities to characterize the optical and mechanical properties of materials, components, and finished optical products.

## Broad Range of Testing Capabilities

Gentex routinely performs a wide range of tests for developmental/production activities to ensure consistent reliability and performance for its customers.

OPTICAL	MECHANICAL	TRANSMITTANCE	ENVIRONMENTAL
Prismatic Deviation	Abrasion Resistance	Photopic	Solar Radiation
Spherical & Cylindrical Power	Taber Abrasion Resistance	Scotopic	Temperature (High, Low, Shock)
Optical Distortion	Bayer Abrasion Resistance	P43 phosphor	Chemical
	Coating Adhesion	Optical Density	Rain
	ANSI Impact Resistance	Erythema Ultraviolet Transmittance	Humidity
	Military Ballistic Performance	Infrared Radiation	
		Live Laser Testing	
		Haze	

## Testing Stations

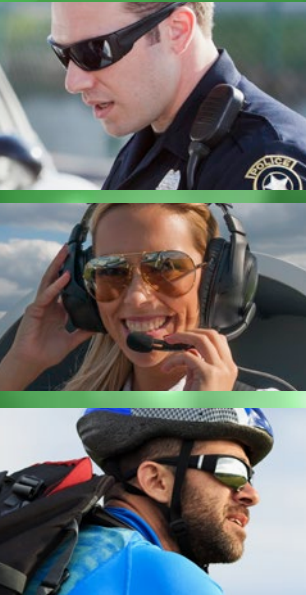
Gentex operates two ballistic ranges capable of testing to NIJ, DOT&E and STANAG requirements; impact testing towers capable of testing helmets and face shields; environmental conditioning chambers that test the ability of our products to withstand real world conditions; an acoustic attenuation chamber (reverberation) for evaluating the acoustic properties of headborne systems; and extensive optical testing capability and metrology for verifying the optical performance of our materials.





# OEM EYEWEAR LENSES

Designed for use in standard and wrap frames and for Ballistic and Sunwear applications, these standard eyewear lenses offer a wide array of color, materials, and coating options to suit your particular needs.



## STANDARD SPECTACLE LENSES

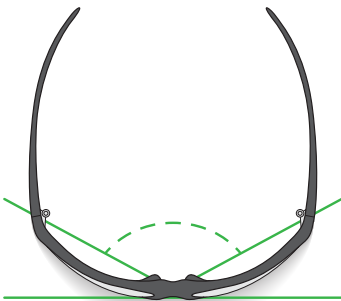
Standard spectacle lenses are available in a range of base curves from 4.0 to 9.0 to accommodate nearly any frame style. Higher wrap lenses (higher base curves) offer decentered optics to deliver the best optical performance in higher wrap frames. All lenses meet ANSI-Z87.1 Optics and Impact requirements at a minimum.

BASE CURVE	DIAMETER	DESCRIPTION	STANDARD THICKNESS	STANDARD MOQ
4.0	76mm	Non-Decentered Plano Lens Blank	2.1mm	250 Pairs
6.0	76mm	Non-Decentered Plano Lens Blank	2.1mm	250 Pairs
8.0	80mm	Decentered Plan Lens Blank	2.1mm	250 Pairs
9.0	80mm	Decentered Plan Lens Blank	2.0mm	250 Pairs



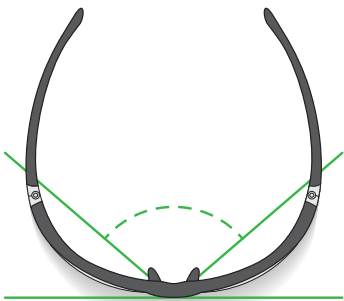
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BASE CURVE



8

BASE CURVE



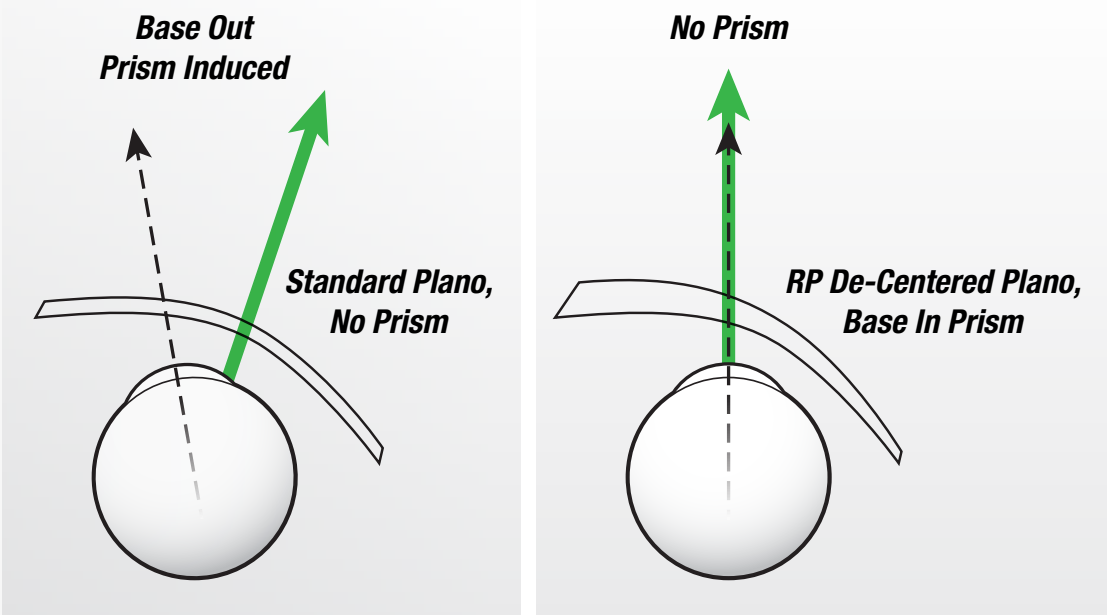
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BASE CURVE

Understanding Base Curves

The base curve is the radius of the sphere measured from the back of the lens. 6 base lenses tend to be more flat relative to your face, while 9 base lenses provide the maximum amount of wrap around your face.

*A wrapped Plano lens creates Base Out Prism causing the eye to turn in (shown left).*  
*Using a Base In Decentered Plano ensures that the wearer experiences no prism in straight-ahead view (shown right).*



Understanding De-Centered Optics

To guarantee binocularity, lenses must be prism compensated. Lenses wrapped or tilted around the vertical axis of the lens create prism. This is not a problem in standard frames where lenses have mild face-form curve. For wrap frames, an average wrap angle of 18 to 20 degrees always creates enough Base Out Prism to make a wearer uncomfortable. When worn, this amount of prism makes the eyes cross (images move towards the prism apex) and requires the wearer to hold their eyes in that position for good binocular vision. The result is fatigue and discomfort. To ensure binocularity, this prism needs to be eliminated for the wearer, which is what de-centered optics do. All Gentex high wrap lenses are prism compensated to ensure maximum comfort for long term wear.

Standard Sunwear Shields

Sunwear shield lens blanks are ideal for blades or low wrap sunwear frames. Sunwear shields are available at two standard thicknesses and two common base curves to accommodate most frame types. All shields meet ANSI-Z87.1 Optics and Impact requirements at a minimum. Shields are available in three common designs to accommodate most frame types:

BASE CURVE	DIMENSIONS	DESCRIPTION	STANDARD THICKNESS	STANDARD MOQ
4.0	160mm W x 75mm H; 23mm Sag	4B Spherical Shield	2.1mm	400 pcs
6.0	152mm W x 73mm H; 38mm Sag	6B Spherical Shield	1.9mm or 2.5mm	400 pcs
6.0 x 4.0	150mm W x 89mm H; 46mm Sag	6x4 Toric Shield	1.7mm or 2.3mm	400 pcs







Ballistic-Rated Shields

Ballistic shields are ideal for military or tactical goggle applications that require improved impact performance over standard sunwear shields. Gentex also offers shields with cap and base systems for applications with multiple dye systems or dielectric coating protection. Our cap and base systems are designed to maintain superior optics when stacked together or used separately.

BASE CURVE	DIMENSIONS	DESCRIPTION	STANDARD THICKNESS	STANDARD MOQ
5.0	195mm W x 93mm H; 57mm Sag	5B Cylindrical Shield	3.2mm center	w/Hard Coat — 400 pcs w/Anti-Fog — 800 pcs
4.5	196mm W x 105mm H; 55mm Sag	4.5 Spherical Shield	2.5mm center	w/Hard Coat — 400 pcs w/Anti-Fog — 800 pcs

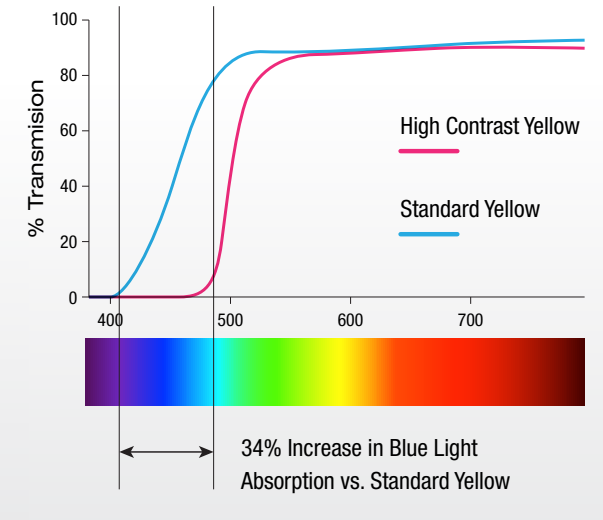


Eyewear Lens Options

LENS COLOR	VISIBLE LIGHT TRANSMISSION	FEATURES	BENEFITS	IDEAL APPLICATIONS
<b>UV400 Clear</b> 	>89%	Clear Polycarbonate that blocks 100% of UVA & UVB	Blocks UV Light without reducing transmission	
<b>Neutral Gray</b> 	12-18%	Transmits a balanced color spectrum. Designed to the stringent color requirements of the US military	Reduces visible transmission with minimal distortion of colors	Tactical or military applications where color recognition is extremely important
<b>Amber</b> 	>83%	Causes a reduction in blue light	Reduces glare and enhances clarity	Cosmetic Fashion Eyewear because of high transmittance
<b>High Contrast Yellow</b> 	>71%	Utilizes specialized filtration technologies to substantially increase visual acuity	Transmits less than 2% of harmful blue and violet (HEV) light	Any activity that requires contrast enhancement in low light, hazy, foggy conditions such as shooting, hunting or skiing
<b>Copper</b> 	8.5-10.5%	Reddish-Brown color blocks more blue light than gray lenses	Makes green colors more vibrant	Sports such as golf or tennis
<b>Smoke</b> 	38-40%	Transmits a balanced color spectrum.	Reduces visible transmission with minimal distortion of colors	Outdoor Sports and Recreation

High Contrast Yellow vs. Standard Yellow

UV and Blue Light reflecting off particulates and moisture cause a majority of haze in the atmosphere, so reducing Blue Light increases visual clarity and reduces glare. Typical yellow lenses absorb some portion of Blue Light, whereas High Contrast Yellow Lenses from Gentex absorb all Blue Light, which increases acuity because the eye is most receptive to the color green making objects stand out more distinctly against blue backgrounds.



Standard Polycarbonate Lenses

Meet or exceed the ANSI Z87.1 Safety Specification for all requirements including:

- Optical clarity – High Definition
- High Mass Impact
- Refractive Power
- High Velocity Impact
- Prism Power
- Astigmatism

Meet or exceed the Global Sunglass Specifications and are acceptable for driving:

- ANSI Z80.3
- EN 1836
- AS/NZS 1067

High Ballistic Lenses

Meet or exceed military impact standards:

- MIL-PRF-31013
- MIL-V-43511C
- MIL-PRF-32432 (MCEPS)

# OEM LENS COATINGS

## Standard Lens Coatings

COATING	TYPE	DESCRIPTION	IDEAL APPLICATIONS
X-Coat	Anti-Scratch	Our most scratch resistant hard coating. Bayer Abrasion value >5	Sunwear and Industrial Safety Products
HC-13	Anti-Scratch	Promotes ballistic performance. Bayer Abrasion value >2.5	Tactical and Military Lenses that with increased ballistic requirements
MGAF	Anti-Fog	Military grade anti-fog with superior performance	Goggle systems or spectacles where fogging is a problem



## Vacuum Coatings

COATING	TYPE	DESCRIPTION	IDEAL APPLICATIONS
GTX Green AR	Anti-Reflection	High Quality, low reflection AR coating with <1% residual Reflection	Opthalmic Lenses, Sunwear Lenses & Shields
GTX Blue AR	Anti-Reflection	Blue color AR coating that pairs well with most sunwear lens colors. <1.5% residual reflection	Sunwear Lenses
Oleophobic	Anti-smudge	Standard Oleophobic/hydrophobic coating that protects the lens from smudges and streaks	All lens types
Super Oleophobic	Anti-smudge	Our best easy-clean coating. Offers superior anti-smudge protection and increased abrasion resistance	All lens types (see features and benefits below)

Gentex brings unparalleled resistance to smudges and water streaks through vacuum applied oleophobic/hydrophobic coatings that help prevent contaminants from adhering to extend product life and facilitate easy cleaning.

FEATURES	BENEFITS	IDEAL APPLICATIONS
Anti-Smudge Technology	Lenses are low maintenance, smudges wipe off easily	Sports activities, everyday wear
Hydrophobic (Water Repellent)	Water beads, no smearing or streaking	Water sports, snow sports, boating
Oleophobic (Skin Oil / Lotion Repellent)	No blurred vision due to oily smears	Beach activities, action sports, running
Abrasion Resistant	Superior scratch resistance and durability, longer product life	Aggressive sports, everyday wear



# INDUSTRIAL OEM OPTICAL COMPONENTS

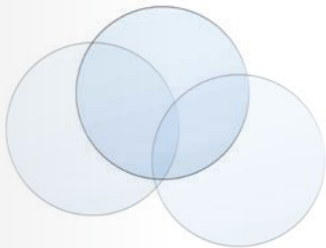
Gentex Corporation offers a wide array of optical components for use in industrial applications and security and laboratory environments.



## STANDARD SAFETY LENSES



Welding magnifiers are manufactured from optical grade polycarbonate resin. They are coated on both sides with an abrasion resistant coating to help reduce scratches and extend the useful life of the lens. The polycarbonate resin contains additives designed to attenuate the transmitted UV radiation through the lenses. Visible transmission of the magnifier lenses is greater than 85%. The magnifiers are available in 2" x 4" (50mm x 100mm) size. They are available in a range of 8 diopters.



DIOPTER	GENTEX PART #
0.75	A14278-1
1.00	A14278-2
1.25	A14278-3
1.50	A14278-4
1.75	A14278-5
2.00	A14278-6
2.25	A14278-7
2.50	A14278-8

## DEMO LENSES

Low cost bulk demo lenses are available in 70mm or 80mm rounds, base 6 or base 8. Clear polycarbonate lens blanks, available in both hard coated or uncoated configurations. These lenses are commonly used by labs for test lenses for vacuum coating machines, setup lenses for edging operations, and Bayer abrasion test samples.

BASE CURVE	DIMENSIONS	CONFIGURATION	GENTEX PART #	STANDARD MOQ
6 Base	70 x 3	Clear Coated	A14266-8	250 pairs
6 Base	70 x 3	Clear Uncoated	A14266-6	250 pairs
6 Base	70 x 3	Clear Coated	B9860-12	250 pairs
6 Base	70 x 3	Clear Uncoated	B9860-14	250 pairs
8 Base	80 x 4	Clear Uncoated	A14287-2	250 pairs

# LIGHT MANAGEMENT PRODUCTS

In addition to Cobalt Blue Lenses, Gentex Corporation's innovative and proven Filtron light management technology is incorporated in the manufacture of specialty polymer materials and high-performance plastic products that need to meet specific performance requirements.

## Cobalt Blue Lenses

Cobalt Blue Lenses are manufactured from optical grade polycarbonate and have an anti-scratch coating applied to both surfaces. The lenses are produced with 4 different transmissions for various applications. Standard lens size is 70mm diameter x 3mm thick. These lenses are commonly used in glass manufacturing to block sodium flare from molten glass. These are specialty lenses and therefore not designed to attenuate the UV per ANSI specification requirement.



CONFIGURATION	GENTEX PART #	ILLUMINATION "A" TRANSMISSION RANGE
Shade 3	A14278-1	0.90% - 1.10% <div></div>
Shade 4	A14278-2	0.70% - 0.85% <div></div>
Shade 6	A14278-3	0.50% - 0.60% <div></div>
Shade 8	A14278-8	0.31% - 0.41% <div></div>

## Filtron 6 x 6 Plates

The 6x6 Filtron plate is available in laser protective filters, edge filters or infrared suspension filters, in thickness ranges from 0.085" to 0.118". Standard MOQ is 100 pcs.

## Filtron Laser Protection Filters

Available as stock or custom sheets, common applications for Filtron Laser protection filters include: Shielding healthcare professionals while operating laser medical treatment devices; Protecting personnel using lasers in manufacturing processes; Protecting researchers who work with laser devices; and Providing light shielding materials for military applications.

### ● Stock Sheets

Filtron absorptive dyes are homogeneously dispersed into acrylic resins and configured into sheets that are available in 24" x 36" and 36" x 48", both in 0.125" and 0.250" thick acrylic format. View and learn more about our stock sheets in the chart on the following page.

### ● Custom Sheets










In addition to our stock sheets, we can design custom Filtron laser protective sheets and resins for you to attenuate any wavelength from 180nm to 1600nm, or customize an absorber solution to attenuate several wavelengths within one Filtron Laser Protective Sheet. Custom solutions for acrylic formats are available upon request, both in standard sheet sizes as well as custom dimensions. Custom thicknesses are available from .080" to .250", depending upon requirements for optical density.

### ● Authorized Partners and Distributors





Gentex partners with a number of laser safety specialist distributors who can integrate our Filtron sheet products into complete safety solutions for your needs. Visit [gentexcorp.com/company/global-distributors](http://gentexcorp.com/company/global-distributors) for more information.



Filtron Stock Sheet Specifications

PRODUCT INFORMATION					CHARACTERISTICS	
COLOR	FILTER NAME	ABSORPTION RANGE (AVG.)	DIMENSIONS (INCHES)	PRODUCT #	OPTICAL DENSITY	PLT
<b>Yellow/Green</b> 	A195 YAG	805nm to 1080nm	24 x 36 x 0.125 36 x 48 x 0.125 24 x 36 x 0.250 36 x 48 x 0.250	B9848-96 B9848-63 B9848-79 B9848-80	OD 4+ @ 860-1070nm OD 6+ @ 1064nm OD 3+ @ 808nm OD 5+ @10600nm OD 3+ @1090nm	60%
<b>Green</b> 	YAG	900nm to 1150nm	24 x 36 x 0.125 36 x 48 x 0.125	B9848-95 B9848-99	OD 4+ @ 860-1070nm OD 6+ @ 1064nm OD 3+ @ 808nm	20%
<b>Orange/Brown</b> 	A195 Broad Band B	190nm to 535nm; 800nm to 1090nm	24 x 36 x 0.125 36 x 48 x 0.125	B9848-59 B9848-75	OD 5+ @ 200-532nm OD 6+ @ 532nm OD 4+ @ 850-879nm OD 5+ @ 880-1070nm	25%
<b>Brown</b> 	Broad Band B	190nm to 532nm; 900nm to 1150nm	24 x 36 x 0.125	B9848-13	OD 4+ @ 200-532nm OD 4+ @ 900-1150nm	6%
<b>Light Orange</b> 	Argon	190nm to 530nm	24 x 36 x 0.125	B9848-2	OD 4+ @ 200-515nm	55%
<b>Faint Yellow</b> 	Excimer	190nm to 400nm	24 x 36 x 0.125	B9848-1	OD 4+ @ 200-400nm	84%
<b>Deep Orange</b> 	YAG Doubled	190nm to 535nm	24 x 36 x 0.125	B9848-4	OD 6+ @ 200-360nm OD 4+ @ 360-535nm OD 6+ @ 532nm	32%
<b>Turquoise</b> 	Ruby	690nm to 715nm	24 x 36 x 0.125	B9848-16	OD 4+ @ 694nm	60%
<b>Clear</b> 	UV/CO2	190nm to 380nm	36 x 48 x 0.125 24 x 36 x 0.125	B9848-65 B9848-66	OD 6+ @ 200-360nm OD 5+ @ 10600nm	90%

Filtron Stock Sheet Specifications (Continued)

PRODUCT INFORMATION					CHARACTERISTICS	
COLOR	FILTER NAME	ABSORPTION RANGE (AVG.)	DIMENSIONS (INCHES)	PRODUCT #	OPTICAL DENSITY	PLT
<b>Jade</b> 	Combination Filter	630nm to 1170nm	24 x 36 x 0.125	B9848-87	OD 6+ @ 200-410nm OD 2+ @ 640-1106nm OD 4+ @ 680-1080nm OD 6+ @ 692-1064nm OD 5+ @10600nm	25%
<b>Green</b> 	Extended YAG	745nm to 1125nm	24 x 36 x 0.125 36 x 48 x 0.125	B9848-94 B9848-92	OD 5+ @ 1080-1090nm OD 8+ @ 1064nm OD 5+ 808nm	>50%
<b>Green</b> 	Extended YAG for Fiber Laser	880nm to 1250nm	24 x 36 x 0.125	B9848-103	OD 4+ @ 1150nm OD 5+ @ 1130nm OD 6+ 1064nm	45%
<b>Pink</b> 	Alexandrite	730nm to 850nm	24 x 36 x 0.125	B9848-89	OD >5 @ 740-845nm OD >7 @ 755-840nm OD >5 @ 10600nm	38%

Filtron Edge or Long Wavelength Pass Filters

Filtron Edge or Long Wavelength Pass Filters block light from the Ultraviolet to 13 different wavelengths from 400nm to 800nm. Our Edge or Long Wavelength Pass Filters, also simply referred to as Filtron E-Series materials, are perfect light management solutions compared to glass, which is typically more expensive, does not machine or mold easily, and sheet size can be restrictive or prohibitive. The Edge Filters are available in resin form for molding, in standard 24" x 36" acrylic sheets, 6" x 6" polycarbonate plates, or custom sizes.

Filtron Edge or Long Wavelength Pass Filters Specifications

PRODUCT INFORMATION				CHARACTERISTICS			
COLOR	FILTER NAME	DIMENSIONS (INCHES)	PRODUCT #	STOP BAND LIMIT @ 5% TRANSMISSION	STOP BAND LIMIT @ 50% TRANSMISSION	STOP BAND LIMIT @ 80% TRANSMISSION	PLT
<b>Water White</b> 	E400	0.125 x 24 x 36	B9836-1	≥ 394nm	398 +/- 6nm	≤ 415nm	87%
<b>Faint Yellow</b> 	E420	0.125 x 24 x 36	B9836-2	≥ 397nm	420 +/- 6nm	≤ 436nm	84%
<b>Yellow</b> 	E465	0.125 x 24 x 36	B9836-3	≥ 454nm	465 +/- 6nm	≤ 496nm	81%
<b>Faint Yellow</b> 	E520	0.125 x 24 x 36	B9836-4	≥ 480nm	520 +/- 6nm	≤ 541nm	61%
<b>Light Orange</b> 	E540	0.125 x 24 x 36	B9836-5	≥ 524nm	540 +/- 6nm	≤ 566nm	55%
<b>Orange</b> 	E560	0.125 x 24 x 36	B9836-6	≥ 534nm	560nm +/- 6nm	≤ 568nm	41%
<b>Deep Orange</b> 	E570	0.125 x 24 x 36	B9836-7	≥ 546nm	570nm +/- 6nm	≤ 611nm	32%
<b>Orange/Red</b> 	E600	0.125 x 24 x 36	B9836-8	≥ 585nm	600nm +/- 6nm	≤ 626nm	18%
<b>Deep Red</b> 	E640	0.125 x 24 x 36	B9836-12	≥ 605nm	640nm +/- 6nm	≤ 673nm	3.80%
<b>Deep Red</b> 	E680	0.125 x 24 x 36	B9836-14	≥ 650nm	680nm +/- 6nm	≤ 712nm	20%
<b>Deep Red</b> 	E730	0.125 x 24 x 36	B9836-15	≥ 701nm	730nm +/- 6nm	≤ 754nm	0.1%
<b>Black</b> 	E770	0.125 x 24 x 36	B9836-16	≥ 747nm	770nm +/- 6nm	≤ 806nm	0.1%
<b>Black</b> 	E800	0.125 x 24 x 36	B9836-17	≥ 771nm	800nm +/- 6nm	≤ 825nm	0.0%



## Filtron Infrared Suppression Filters

In the average absorption range of 800nm to 1200nm, Filtron Infrared Suppression Filters are the ideal solution for secure lighting situations, including vitally necessary infrared suppression. Also simply referred to as Filtron S-Series materials, these filters are used in such applications as security and indicator lights, as well as lighting filters for Night Vision Goggles. Infrared Suppression Filters are available in polycarbonate plate and resin formats, and we customize the Infrared Suppression Filter to your specific light management requirements.

## Filtron Standard Welding Shade Resins

Standard IR Shades are available from 1.7 to 12.0. Custom thickness and protection levels are available upon request. Filtron E-Series shades also available in standard polycarbonate resin format.



# CONTACT US

To learn more about how to put our optical solutions to work for you, contact us:

**Email:** [optics@gentexcorp.com](mailto:optics@gentexcorp.com)

Or visit our website:

[gentexcorp.com/optics](http://gentexcorp.com/optics)



Advanced OEM Optical Solutions //

## HOW DO I KNOW IF GENTEX IS THE RIGHT SOLUTION FOR ME?

- 1.** You have a range of eyewear frame styles designed, but need high-performance lenses with special light management properties. See our range of available base curves on page 16 to begin selecting a lens design that will work for you.
- 2.** You need to control harmful laser radiation in an industrial, security or laboratory setting. See our range of Filtron laser protective sheet products on page 26 to identify a suitable solution for your needs.
- 3.** You want to enhance the optical properties of an existing molded part. Our range of standard resin formulations is shown on page 30 and our knowledge of dye blending and compounding can be put to use to customize unique resins for your existing manufacturing processes.

**GENTEX**  
CORPORATION

CELEBRATING  
**125**  
YEARS  
OF INNOVATION

### 125 Years of Innovation

Leveraging a history that spans over 125 years, Gentex Corporation is a leading provider of innovative solutions that enhance personal protection and situational awareness for global defense forces, emergency responders, and industrial personnel operating in high performance environments. The company's product portfolio includes helmet system platforms and capability upgrades for defense and security forces, sold under the Gentex, Ops-Core, ALPHA, Cromwell, and Argus brands; Aegisound hearing protection and communications products for military and industrial personnel; PureFlo industrial respiratory protection systems; Dual Mirror OEM aluminized fabrics; and Filtron OEM light management technology. Privately held, Gentex is headquartered in Carbondale, Pennsylvania, and supports its global customers through a worldwide distributor network and five other facilities in the U.S. and the U.K. Learn more at [www.gentexcorp.com](http://www.gentexcorp.com).





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