



Chiguard®

Blue Light Absorbers

chitec
www.chitec.com

Chitec's Comprehensive Blue Light Absorption Solutions

Precision, Customization, Protection

Visible light spans a wavelength range of approximately 380–780 nm, with harmful blue light between 380–460 nm having the most significant impact on the retina.

Chitec offers a one-stop blue light absorption solution. Backed by strong R&D capabilities, we precisely match blue light wavelengths for plastic and coating applications, delivering customized protection tailored to your needs.

Plastics

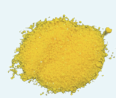
Chiguard®
GA403



Chiguard®
9528



Chiguard®
9546

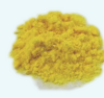


Coatings

Chiguard®
KB403



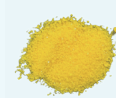
Chiguard®
9901



Chiguard®
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9546



Plastic Applications

Chiguard® GA403

Suitable for a wide range of plastic materials, offering stable blue light absorption to meet diverse application needs.



Optical Coating Upgrades

Chiguard® KB403

Chiguard® 9901



Display Eye Care Solutions

Chiguard® 9546

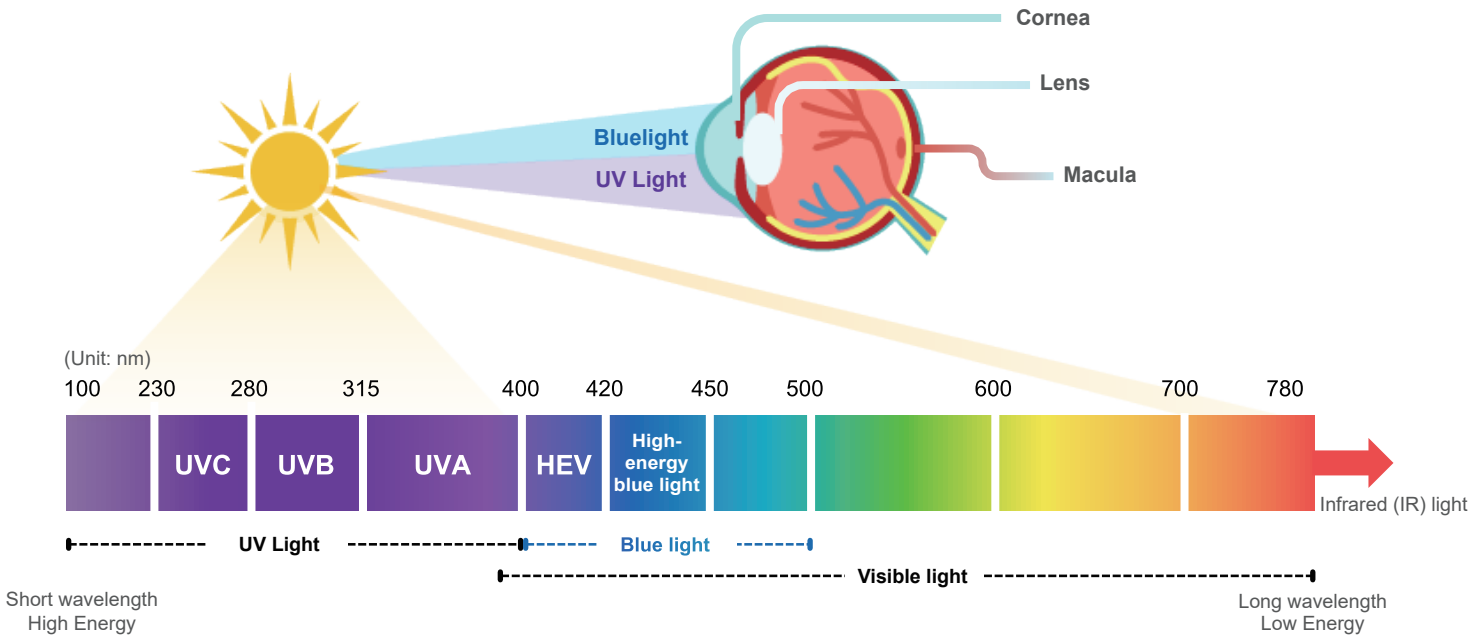
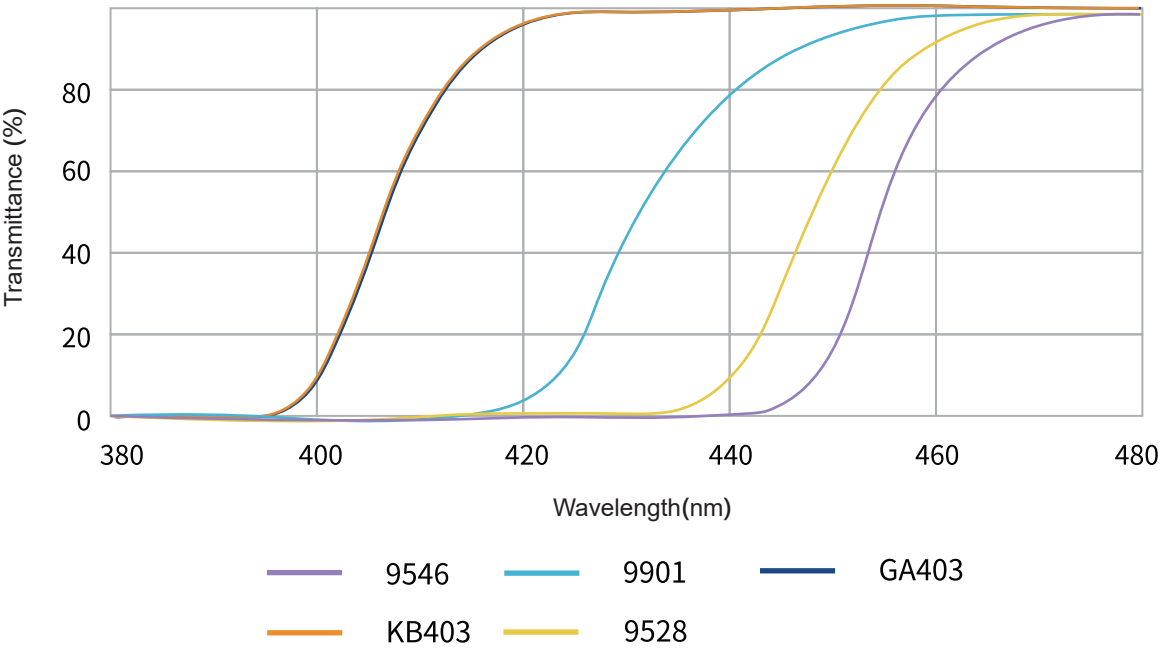
Chiguard® 9528

Specifically designed for consumer electronic displays, it effectively absorbs blue light at the 420 nm wavelength, protecting visual health without compromising display quality.



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BLR 2024

New TÜV Rheinland Blue Light Reduction Certification Standard



BLR (Blue Light Reduction) is an indicator used to evaluate a product’s ability to filter harmful blue light. It is primarily assessed by measuring the percentage of blue light that a device can effectively block.

The BLR value typically ranges from 20% (basic level) to 80% (advanced level), reflecting a product’s effectiveness in blocking high-energy blue light, especially in the 435–440 nm wavelength range.

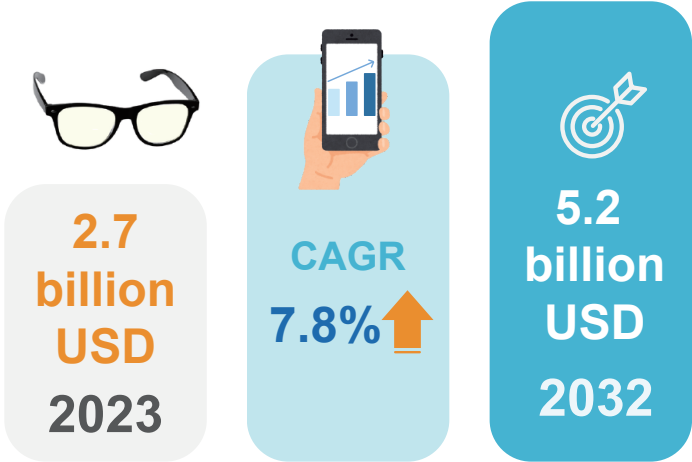
BLR Level	435-440nm (High-Energy Blue Light Filter Rate)	Color temperature difference	Transmittance
BLR60	≥60%	≤500K	≥80%
BLR70	≥70%	≤500K	≥80%
BLR80	≥80%	≤500K	≥70%

Global Blue Light Glasses

Market Growth Trends

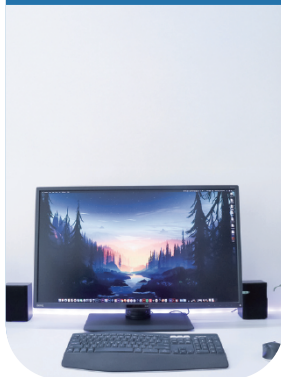
Market Size Forecast from 2023 to 2032

The global blue light glasses market reached \$2.7 billion in 2023 and is expected to grow to \$5.2 billion by 2032, maintaining a 7.8% compound annual growth rate (CAGR) from 2024 to 2032.



Application

Display Technology Monitors



Engineering plastics PC、PA、PP、PE



Blue Light Blocking Lenses Protective glasses, blue light blocking lenses



Automotive Industry Car windows, automotive head-up display (HUD)



Food-grade PET Plastic packaging



Key Product Features and Market Advantages

High-Efficiency Blue Light Absorption

Effectively absorbs blue light in the 380–450nm wavelength range, reducing visual fatigue and retina damage.

High Transparency

Maintains high transmittance in optical applications, ensuring excellent visual performance.

Low Migration

Ensures long-term use without affecting material performance.

Environmental Safety

Compliant with RoHS and REACH regulations.



Excellent Absorption Range

We tailor suitable blue light absorbers based on customers' desired blue light wavelength range to ensure optimal protection.



Broad Applicability

Applicable to various materials including plastics, coatings, and optical films, and compatible with a wide range of solvents and resin bases.



Compliance with International Standards

Certified by multiple international regulations and safety tests, suitable for global market requirements.

Blue Light Absorber Product Comparison Table

Product Name	Absorption Range (nm)	Thermal Stability (TGA 10% loss)	Applicable Materials	Key Features	Market Advantages
Chiguard® KB403	300nm-420nm	246 °C	Coatings	High-efficiency blue light absorption, Low migration	High transparency, Suitable for various coating applications
Chiguard® GA403	300nm-420nm	350 °C	PET 、PC 、PA 、Plastics	High thermal resistance, Compatible with various plastics	Suitable for food packaging, FDA certified
Chiguard® 9901	300nm-434nm	242.7 °C	Coatings, Optical films	High absorption rate, Low color shift	Ideal for optical applications, Maintains transparency
Chiguard® 9528	300nm-450nm	294 °C	Coatings, Plastics	Stable performance, Suitable for high-temperature environments	Compatible with multipleresin bases, Good weather resistance
Chiguard® 9546	300nm-455nm	284 °C	Coatings, Optical films, Plastics	Low haze, High optical quality	Suitable for blue light blocking lenses and optical films

※ Solvent:THF 、 Concentration:10 ppm

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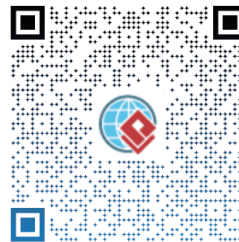
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