

Lenovo Eye Health Display Solutions for Work and Home

Smarter
technology
for all

Lenovo

ThinkVision

eyesafe[®]
CERTIFIED



Lenovo
Monitors

LEGION

Lenovo

2023 Lenovo Internal. All rights reserved.

Screen Time Hits All-time Highs

As digital technology further integrates into our professional and personal lives, the time we spend interacting with our devices, aka screen time, continues to skyrocket.

The pandemic not only escalated daily screen time use, but also normalized digital alternatives to many elements of daily life – from work and communication to entertainment. Our world is now, more than ever, ruled by our screens.

Quick facts about screen time



Up to **13+ hours** of screen time per day since the COVID-19 pandemic¹



Global average: **6 hours 58 minutes** per day²



Gen Z averages around **9 hours** of screen time per day⁴



On average, people spend **44%** of their waking hours looking at a screen³



Remote workers spend about **2 hours more** on total screen time than in-office employees⁵



Children 8-18 y.o. spend **7.5 hours** a day in front of screens for entertainment alone⁶

¹ Eyesafe

^{2, 3, 4} Explodingtopics

⁵ All About Vision

⁶ Slicktext

The far-reaching impacts of screen time

Health risks of increased blue light exposure

Increased exposure to blue light has been cited as a contributor to a number of health risks including digital eye strain. As our screens are steadily increasing in luminance, creating intense bright light from very small sources, the dangers of over exposure grow more and more prominent.



94% of eye doctors are concerned about rising screen time¹



41% of employees admit to finding screen time management challenging²



We blink **66% less** while using computers, which can lead to computer vision syndrome³

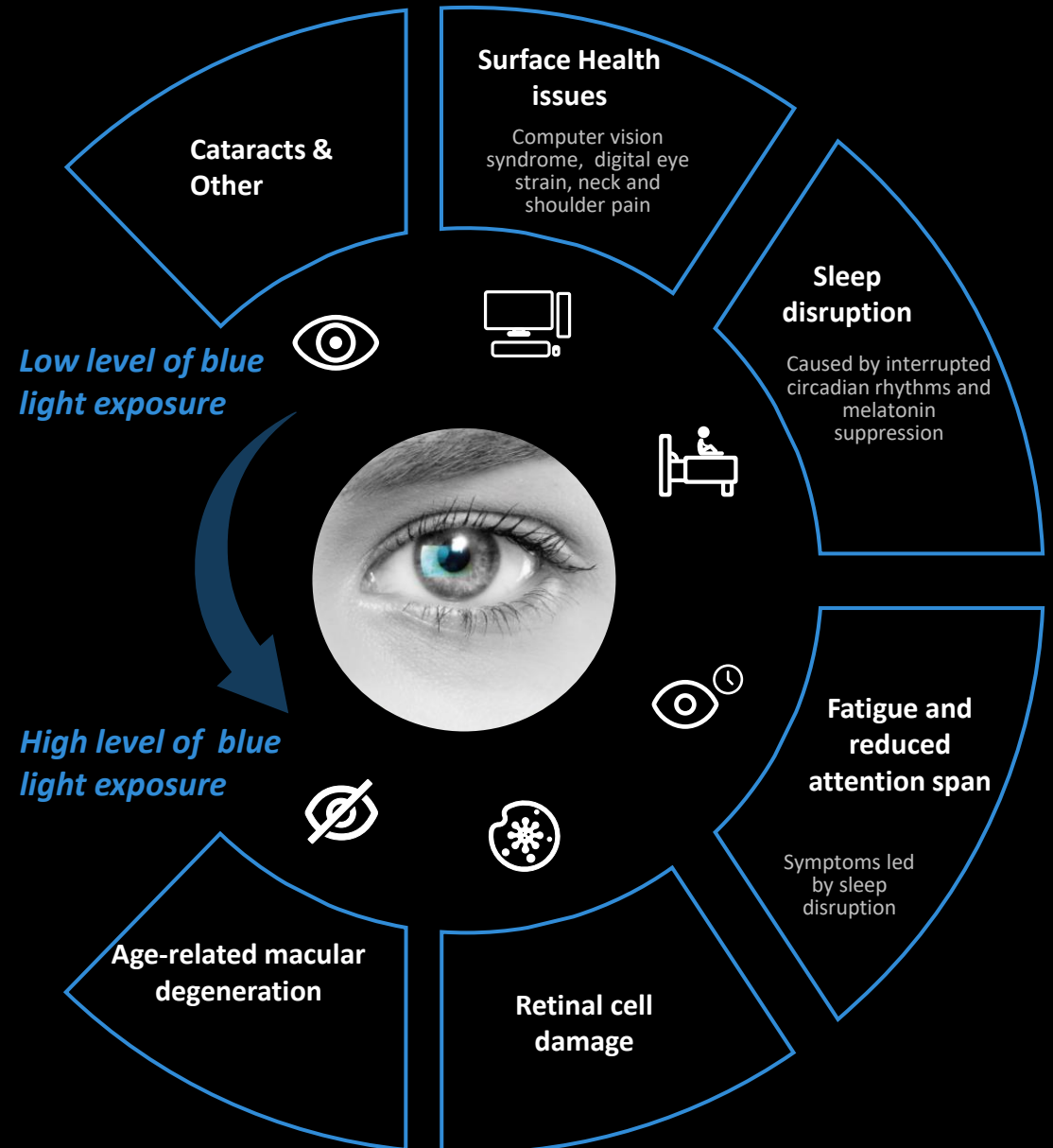


Increased screen time gives rise to more **negative emotions** like anxiety, depression, and irritability⁴

Health risks of blue light exposure

Recent studies have identified growing concerns over long-term eye and health impacts from digital screen usage and cumulative blue light exposure.

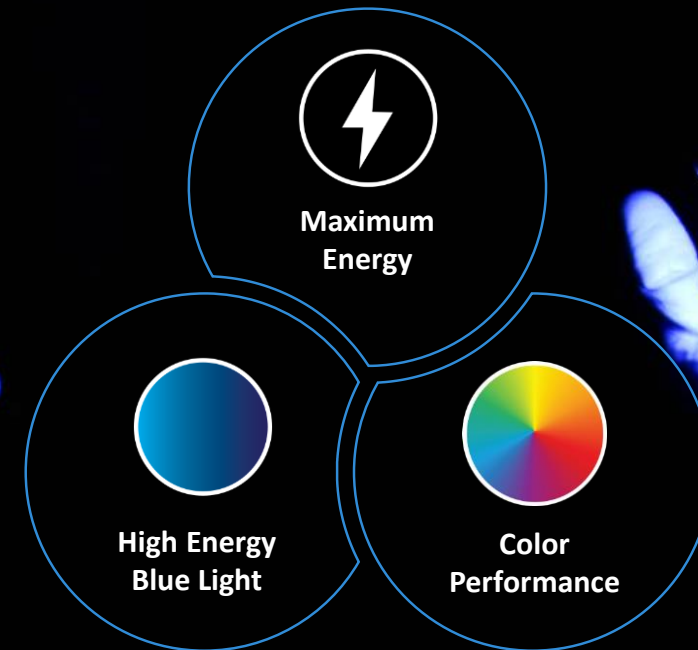
65% of people have reported visual discomfort due to screen habits and exposure to blue light. Recent research also found that filtering out blue light from LED screens produces significant positive health benefits by curbing LED-induced melatonin suppression.



Lenovo's display solutions are designed for human health

To address the health risks of blue light exposure without compromising performance or visual experience, Lenovo has teamed up with two key partners: TÜV Rheinland Group, the world leader in independent third-party testing and certification; and Eyesafe, the world leader in screen time safety display solutions.

Lenovo's Eyesafe® Certified Displays feature Natural Low Blue Light to address 3 key components:



Main Benefits



Minimized eye-strain from harmful blue light for working, learning, and entertainment



Innovative breakthrough on display panel technology avoids color distortion and maintains image quality

EYESAFE® CERTIFIED STANDARDS ARE DEVELOPED WITH DOCTORS

The Eyesafe Vision Health Advisory Board is made up of leading eye care professionals who are innovators in the fields of ophthalmology and optometry.

These distinguished eye doctors consult with Eyesafe to provide valuable insights that help drive research regarding the effects of blue light on the eyes and brain. They also help guide the development of Eyesafe® technology and industry standards to limit high-energy blue light emitted by digital displays.



RALPH CHU, MD



H. BURKHARD DICK, MD, PHD



CHAD DOCKTER, OD



DAVID FRIESS, OD



MITCHELL JACKSON, MD



PAUL KARPECKI, OD



RICHARD LINDSTROM, MD



MOLLY MCDONALD, OD



STEVEN MOE, DC



SHERI ROWEN, MD



VANCE THOMPSON, MD



WILLIAM TRATTLER, MD



ROBERT WEINSTOCK, MD



WILLIAM F. WILEY, MD



DAGNY ZHU, MD



Eyesafe® Certified Displays help to reduce high-energy blue light at the source

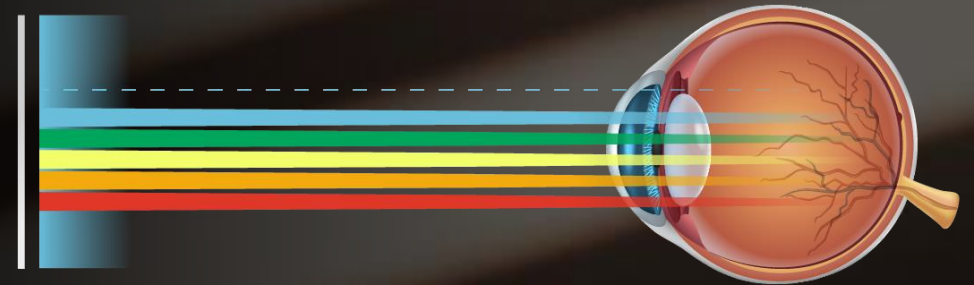
Lenovo Eyesafe® Certified Displays: Lower High-Energy Harmful Blue Light

Reduced impact to the retina = less risk of digital eye strain

Built right into the display, with no need to adjust settings or worry about a compromised color experience, Eyesafe® Displays provide beautiful color with eye protection from harmful blue light.

How Lenovo Eyesafe® Certified Displays Work

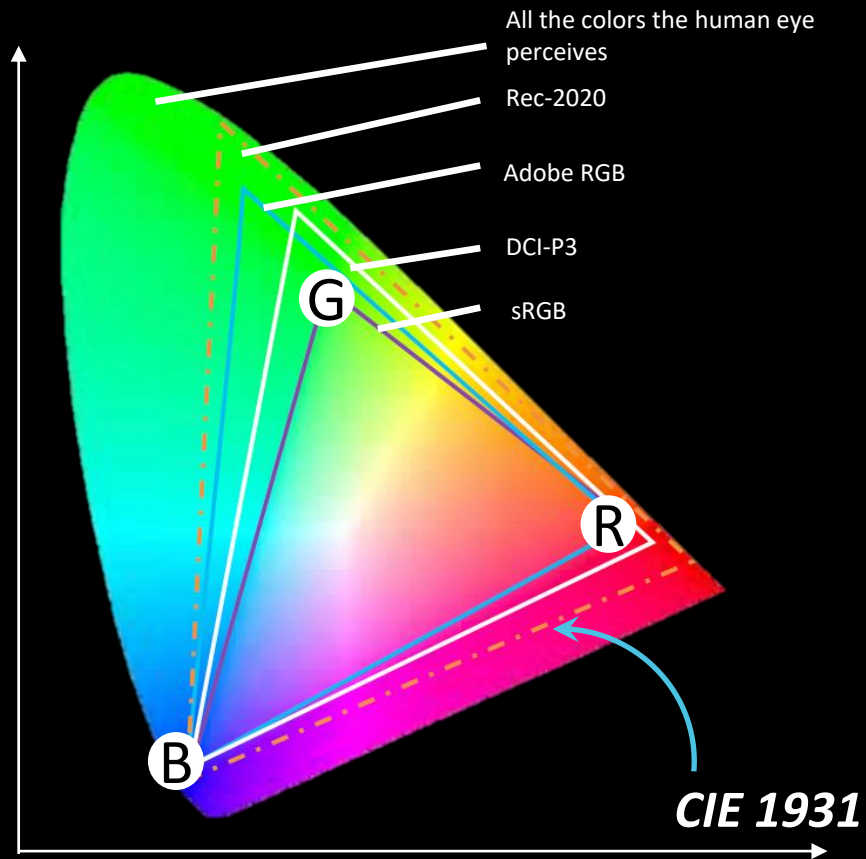
Lenovo Eyesafe® Certified Displays intelligently manage light energy at the source – selectively reducing blue light and dispersing it across the light spectrum.



Eyesafe® Certified Display

Reduced Blue Light
impact to retina

Eyesafe Display Color Requirements



A color gamut defines all the colors the display can produce.

The bigger the gamut, the bigger the palette of colors of the display.

sRGB international standard – “standard Red Green Blue,” introduced in 1996 - is widely used in the digital industry.

NTSC – The NTSC color gamut was developed with television, in 1953, now mainly used for comparison, rating monitors as a percentage of the NTSC color gamut. Most displays are 70-75% of the NTSC, 72% of NTSC is roughly equivalent to 100% of the sRGB color gamut.

Adobe RGB – Enhanced color gamut, advantageous for color printing, facilitating more vivid printed colors. Adobe RGB, however, requires software supporting this standard as well as an adapted digital display.

DCI-P3 – Introduced by Digital Cinema Initiatives (DCI) to fit the range of colors used in cinema. Since more and more movies are displayed on digital displays, manufacturers have started to align their color arrays to DCI-P3.

Rec 2020 – As technology evolves, new standards emerge, such as Rec 2020 for UHD TV (Ultra High Definition 4K and 8K). At this point, no display has yet fully covered the Rec 2020 color gamut.

Eyesafe® 2.0 – Advanced Blue Light Protection without Color Compromise

The **Eyesafe® Certified 2.0 standard** is the world's most advance set of certification requirements and a significant milestone for the entire display industry for measuring blue light emissions and color accuracy for the global display industry.

Lenovo is the first to provide Eyesafe® Certified 2.0 Displays that meet the industry-leading requirements for blue light emission and color integrity.



*Lenovo G32qc-30 Curved
Gaming Monitor*

*Lenovo ThinkVision
T27p-30 Wide UHD Monitor*

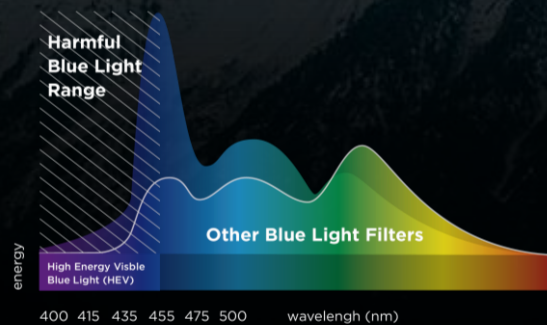
*Lenovo G34w-30 Ultra-Wide
Curved Gaming Monitor*

No more compromise on vivid color & eye comfort

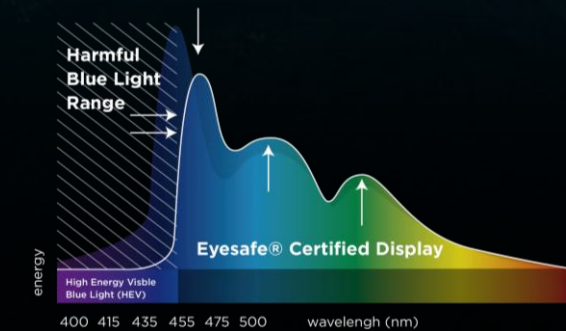
By reducing the high-energy visible blue light emission peak, Eyesafe® Certified Displays provide a more natural color experience compared with software-only solutions, which significantly affect color performance. The result is an industry-leading low blue light display with exceptionally accurate color.

Eye protection features are always on, offering reduced high-energy visible blue light while maintaining high quality color performance.

Other low blue light software or hardware solutions will distort image quality and color with yellowish hues. Screen flicker can also be damaging to eyes.



Lenovo Eyesafe® Certified Natural Low Blue Light technology helps protect you from blue light and maintains vivid color.



Eyesafe® Certified 2.0 Requirements

Blue Light Toxicity Factor (BLTF)

BLTF is the primary metric to quantify blue light emissions from displays as a measurement that includes the most harmful portion of high-energy blue light based on the blue light hazard.

Blue Light Hazard is recognized by international standards including ANSI and IEC.

EYESAFE® CERTIFIED DISPLAY REQUIREMENTS 2.0

Importance of Blue Light Toxicity Factor (BLTF)

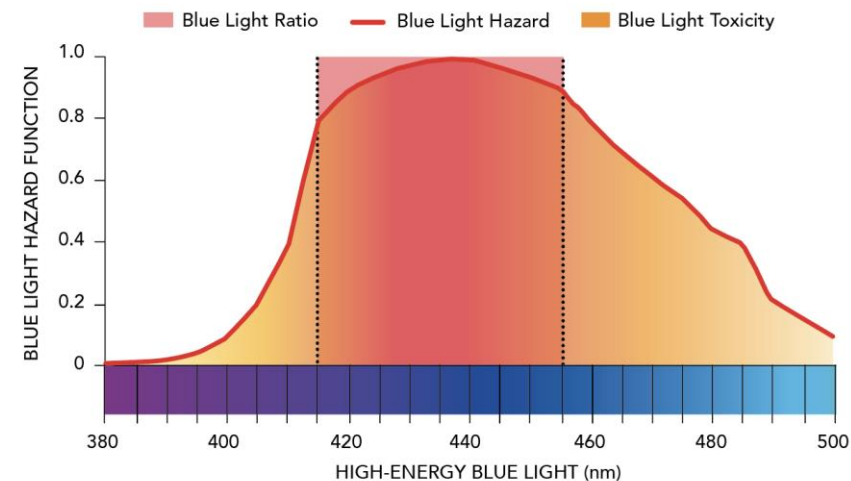
Blue Light Toxicity Factor (BLTF) will be the primary metric to quantify the blue light emissions from displays because it is a comprehensive, health-based measurement that includes the most harmful portion of high-energy blue light based on the blue light hazard. Clinical studies and evidence support prioritization of BLTF as key metric of blue light risk.

Importance of Blue Light Hazard

Blue Light Hazard is recognized by international standards bodies, including ANSI and IEC (unlike Blue Light Ratio).

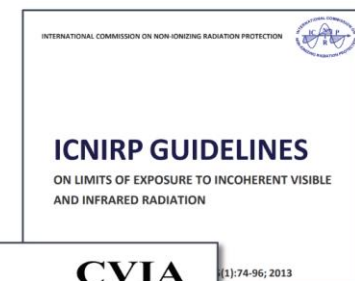
Blue Light Hazard function is utilized by both Eyesafe and CVIA.

BLH is published scientific research (ICNIRP).



>44% calculation error in toxicity scaling when using BLR

Toxicity Factor is more relevant metric to measure total impact of blue light









*for more details, refer to the Eyesafe® Display Requirements 2.0 document



Lenovo's eyecare certifications

Lenovo's displays achieve a wide range of industry-standard certifications to ensure reliable and trusted quality. Depending on the product, each monitor includes its own certification, from basic to advanced.

TÜV Rheinland Certifications

| | | |
|---|------------------------------------|---|
|  | Low Blue Light Content | Basic offering Contains less hazardous blue content in the blue range |
|  | Low Blue Light (Hardware solution) | Basic offering Hardware solution to reduce blue light content |
|  | Low Blue Light (Software solution) | Basic offering Software solution to reduce blue light content |
|  | Flicker Free | Basic offering No visible and invisible flicker to minimize eye fatigue |
|  | Eyesafe Display | Advanced blue light management Reduces long term accumulated hazardous blue light by limiting exposure energy and blue light toxicity factor while maintaining color performance |
|  | Eye Comfort (most premium) | Premium offering Achieves premium optimization of image quality and ambient light condition compatibility while offering eye care design to reduce eye fatigue |

Eyesafe & TÜV Certifications

| | | |
|---|--|--|
|  | Natural Low Blue Light 1.0 | Natural low blue light ensures color performance while maintaining optimum eye care design, certified by Eyesafe and TÜV Rheinland |
|  | Natural Low Blue Light 2.0 (Eyesafe Certified 2.0 standard) | The world's most advance set of certification requirements for measuring blue light emissions and color accuracy for the global display industry, certified by Eyesafe and TÜV Rheinland |

ThinkVision

eyesafe[®]
CERTIFIED

Lenovo

2023 Lenovo Internal. All rights reserved.



ThinkVision Eyesafe Display Line-up

P Series



T Series



Tiny-in-One



Mobile Monitor



Interactive Large Format Display



Click to see the [full list](#) of Eyesafe® Certified Displays
And login [here](#) to find more details on Lenovo Eyesafe® Certified Low Blue Light Monitors

Lenovo
Monitors

eyesafe[®]
CERTIFIED



Lenovo

2023 Lenovo Internal. All rights reserved.

Lenovo Monitors Eyesafe Display Line-up

Lenovo Q27h-20



Lenovo L24m-40



Lenovo L27i-40



Click to see the [full list](#) of Eyesafe® Certified Displays
And login [here](#) to find more details on Lenovo Eyesafe® Certified Low Blue Light Monitors

LEGION

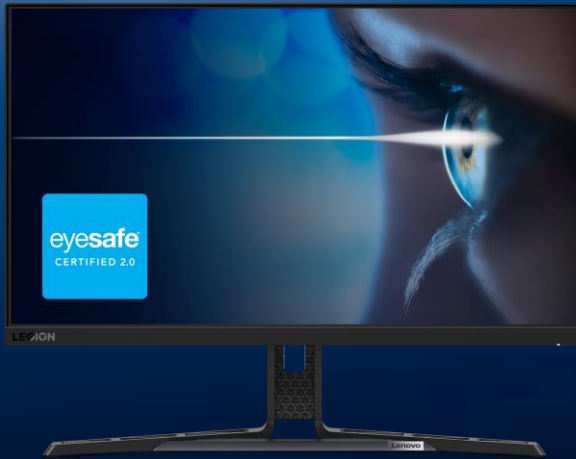
eyesafe[®]
CERTIFIED

Lenovo

2023 Lenovo Internal. All rights reserved.

Gaming Monitors Eyesafe Display Line-up

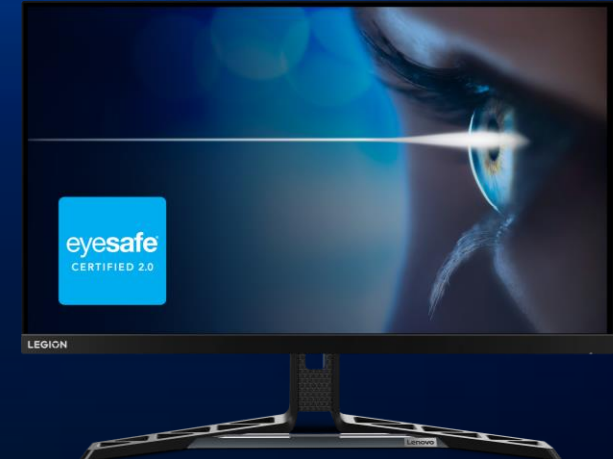
Legion Y25-30



Legion Y32p-30



Legion Y27qf-30



Click to see the [full list](#) of Eyesafe® Certified Displays
And login [here](#) to find more details on Lenovo Eyesafe® Certified Low Blue Light Monitors

Commonly Asked Questions

1. How do I know if my monitor is Eyesafe® certified?

Check for the sticker on the product (chin sticker, palm rest sticker, or logo on product packaging)

2. Is every Lenovo and ThinkVision monitor Eyesafe® certified?

Eyecare certifications for Lenovo and ThinkVision monitors vary in range. Not every monitor is Eyesafe® 2.0 Certified. Check the datasheet or battlecard for individual product eyecare certifications.

3. Do eyecare features guarantee better eye health?

Lenovo's eyecare solutions significantly reduce the harmful effects of blue light exposure, but do not guarantee eye health due to other potentially unknown factors of the users' habits or personal health.

4. I have other questions about Lenovo's eyecare features and products.

Contact Lenovo Visuals for more information

For more information on Lenovo monitor solutions for eye care, contact: Maggie at zengzhen3@lenovo.com

Smarter
technology
for all

Lenovo

thanks.