

#1

IN SPECTACLE LENSES
WORLDWIDE*

Crizal® Sapphire™ HR

TRANSPARENCY THAT STANDS THE TEST OF LIFE



essilor

Crizal®

*Essilor, #1 in spectacle lenses worldwide - EuroMonitor, Eyewear 2021, Euromonitor, Essilor International company, worldwide retail value sales at DSP.

Life is challenging...

Every day, your patients' eyes witness what life is about through their daily routines.

...and spectacle wearers' vision clarity and comfort can be impacted.

The ever-changing environment and spectacle wearer behaviour can push their lenses to the limit.



80%
of wearers experience
reflections when indoors
or outdoors⁽¹⁾

47%
of wearers renewed
their damaged lenses due
to scratches and wear⁽²⁾





On average, wearers
wipe their lenses
20,000 times
before renewing them⁽¹⁾

On average, **37%**
of wearers are exposed to
wind combined with dust or
sand at least once a week⁽²⁾



The eyes are
exposed to UV rays
365 days
a year, even on
cloudy days⁽³⁾

“ Whatever the situation,
indoors or outdoors, during the day
or at night, spectacle wearers are
concerned about annoying reflections,
irreversible scratches, smudges that make
the lenses hard to clean, dust, water and UV rays. ”

(1) Essilor Estimations - France, USA, India - based on the following: average number of times cleaned/week, number of times wiped, «wipe» corresponding to a one-way cleaning motion, and spectacle replacement rate.
(2) Ipsos - Risky behaviours of spectacle wearers - online consumer quantitative research 2019 - declarative results - France, USA, n= 1600 eyeglasses wearers from 18-65yo
(3) The Eye and Solar Ultraviolet Radiation / New understandings of the hazards, costs and prevention of morbidity. Report of a Roundtable June 18, 2011, Salt Lake City, UT, USA Karl Citek, MS, OD, PhD

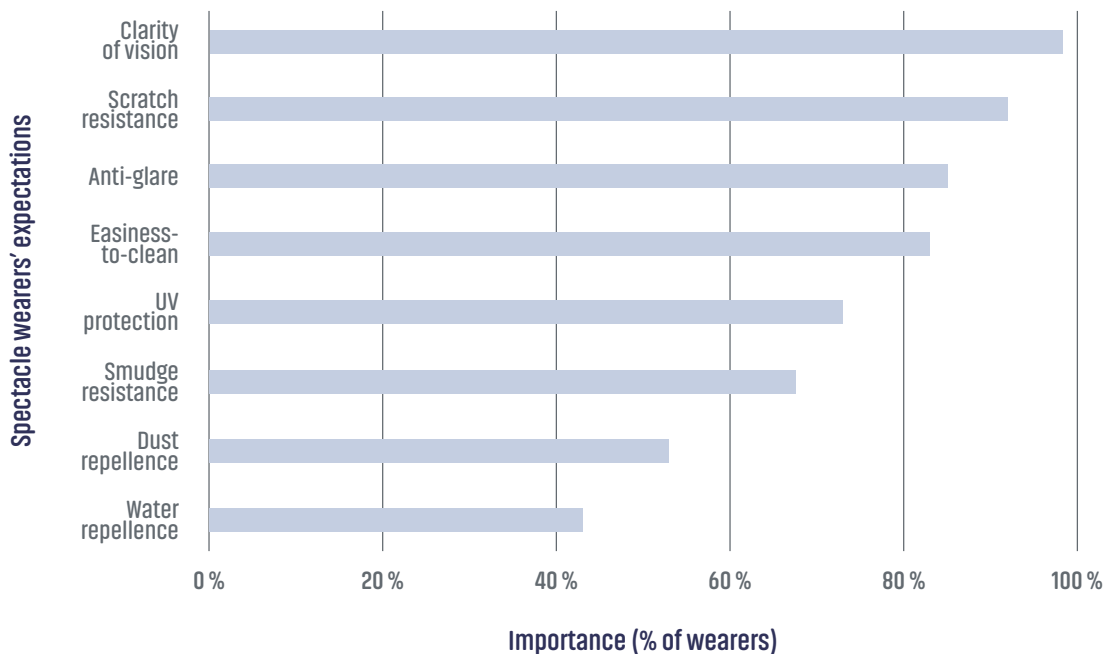
ESSILOR® INTRODUCES
AN INVISIBLE AND
POWERFUL ARMOUR.

Crizal®
Sapphire™ HR



The best
anti-reflective
coating overall⁽¹⁾

Crizal® Sapphire™ HR performance covers all spectacle wearers' needs without compromising on any of their concerns.



Source: ©Ipsos – Risky behaviours of spectacle wearers - online consumer quantitative research 2019
- declarative results - France, USA, n= 1600 spectacle wearers from 18-65yo

(1) External laboratory tests and internal technical tests - 2020. Compared to the competitor most known lens-brands by consumers (2019 external brand tracking in 11 countries). The word 'overall' refers to anti-reflective coatings important criteria, ranked through an external quantitative consumer study - 2019.



A LEAP FORWARD IN THE ANTI-REFLECTIVE COATING INDUSTRY.

- Redefining the standard of anti-reflective technologies for wearers
- Up to 10 patents for Crizal® coating range⁽²⁾
- Execution of a rigorous Crizal® Lifeproof multi-test
- Highest performance a Crizal® coating can offer



FOR SPECTACLE WEARERS, CRIZAL® SAPPHIRE™ HR PROVIDES:

- Transparency for both the wearer and the observer
- Durability and ease of care
- Everyday protection against UV rays



(2) Up to 10 inventions led to patent filings (which allowance/in-force status varies over time and country. May vary per Crizal® coating product.)

WHEN POWERFUL TECHNOLOGIES JOIN FORCES.

Essilor® R&D researchers are constantly focusing their attention on consumers' evolving needs and surroundings. They spend countless hours exploring new possibilities, always striving to offer better results without compromising on the level of performance of a Crizal® coating.

With Crizal Sapphire HR, they have successfully brought out the best performance of the finest Crizal® technologies.

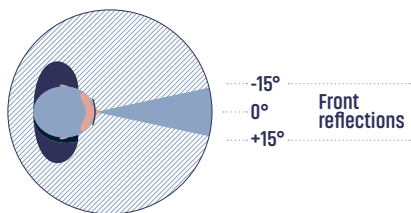


360° Multi-angular Technology™

An embedded nanolayer

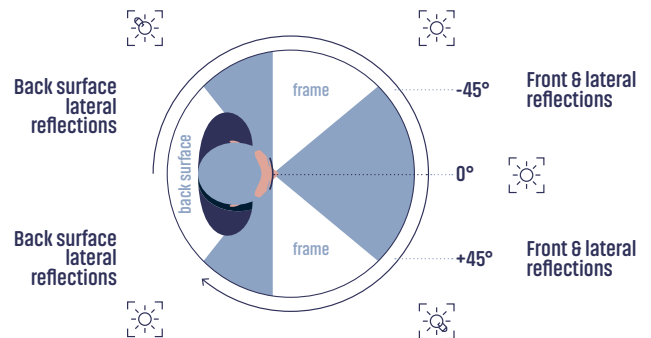
A multi-angular (α) criterion that quantifies the overall anti-reflective efficiency (0° - 45°) to reduce reflections whatever the light direction (front and back surfaces of the lens).

Current anti-reflective coating



Only effective following the normal incidence direction ($\pm 15^\circ$), as required by international ophthalmic standards to be considered as anti-reflective (ISO 8980-4 norm).

Crizal® Sapphire™ HR



High-Resistance Technology™

An innovative recipe

A combination of four specific oxides known for their resistance against dust, scratches and temperature (one of the oxides is used in the aerospace industry for its high thermal resistance).



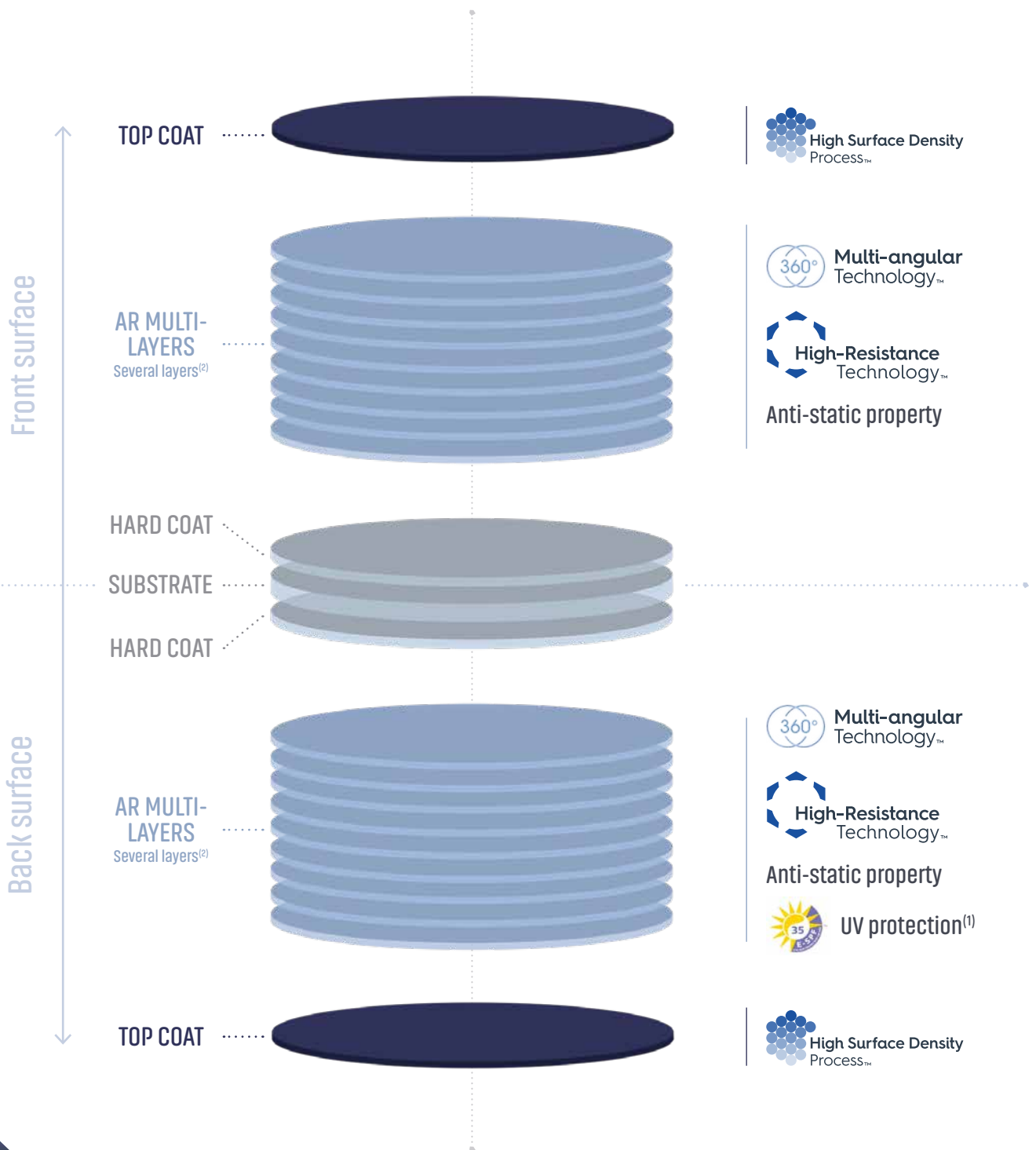
High Surface Density Process™

An extra layer

For smudge resistance and a superior ability to repel dirt and water.

CRIZAL[®] SAPPHIRE[™] HR A MASTERPIECE OF NANOLAYERS.

Crizal[®] coating are made of nanoscopic layers which are up to **50 times thinner** than a strand of hair.



(1) UV protection is provided in the front and back surfaces of the lens
(2) Number of layers for illustration purpose

PERFORMANCE IS TECHNICALLY PROVEN AND CERTIFIED BY CONSUMERS.

ANTI-REFLECTIVE EFFICIENCY

MULTI-ANGULAR REFLECTION TEST

A spectrometer to measure the lens' reflection in different incidence angles of light.

SENSORY ANALYSIS

To assess the perception of the lens transparency in a controlled environment by a panel of expert consumers.

SCRATCH RESISTANCE

ABRASION RESISTANCE TEST

300 shakes cycle with abrasive materials to evaluate the optical impact.

DURABILITY WEARER TEST

18 months real-life usage monitored.

THERMAL RESISTANCE

OVEN TEST

Gradual heating to evaluate the thermal resistance of the lens.





EASINESS-TO-CLEAN

→ SLIDING ANGLE TEST

Place a drop of water on the lens and tilt the lens to evaluate the angle from which the drop starts to slide.

SMUDGE RESISTANCE

→ STAIN RELEASE TEST

20,000 wipes on ink stamped lens to restore lens' life cycle.

DUST REPELLENCY

→ ANTI-STATIC TEST

Electrostatic discharge measurements to determine the efficiency of dust repellency.

WATER REPELLENCY

→ CONTACT ANGLE TEST

Place a drop of water on the lens to measure its hydrophobicity.

UV PROTECTION

→ UV BACK SURFACE REFLECTION TEST

A spectrophotometer to measure the lens' back surface reflection in UV range.

WITH CRIZAL® SAPPHIRE™ HR, THE LENSES STAY CLEAR AND CLEAN FOR LONGER.⁽¹⁾

ANTI-REFLECTIVE EFFICIENCY

*Similar anti-reflective efficiency
as previous generation⁽³⁾.*

Best-in-class transparency⁽²⁾.

SCRATCH RESISTANCE

*Up to 70% more scratch-resistant
vs previous generation⁽³⁾.*

*After 12 months of wear,
Crizal® Sapphire™ HR performs
significantly better in terms
of scratch resistance
than previous generation⁽⁴⁾.*

THERMAL RESISTANCE

*Up to 20%
thermal resistance improvement⁽³⁾.*



(1) External laboratory test – stain release test – 2020. (2) Perceived transparency based on in-lab trained consumers study – 2021 – third independent party – FR – (n=15 trained consumers) – compared to the competitor most known lens-brands by consumers (2019 external brand tracking in 11 countries). (3) Internal R&D measurement – 2020 – compared to Crizal® Sapphire™ UV. (4) Essilor® R&D wear test - 2020 - n=35 spectacle wearers - abrasion level on a 7-point scale (from 0 to 6), significant difference between Crizal® Sapphire™ HR and previous generation of Crizal® with statistical student test. (5) Internal R&D measurements - 2020 - Except clear 1.5 index: E-SPF10™.



EASINESS-TO-CLEAN

SMUDGE RESISTANCE

DUST REPELLENCY

WATER REPELLENCY

UV PROTECTION

→ Back surface UV protection with ***E-SPF35™***.

E-SPF® INDEX

Crizal® coatings offer the most comprehensive daily protection against the invisible and often irreversible dangers of UV reflection.

E-SPF® is an index rating the overall UV protection of a lens, developed by Essilor International and endorsed by third-party experts. Crizal® Sapphire™ HR comes with E-SPF35™, the highest level of E-SPF® Crizal® coating can provide in a clear lens⁽¹⁾.



(1) Except clear 1.5 index: E-SPF10™. E-SPF35™ can only be reached when combining Crizal® with Eye Protect System™.

ecp.essilor.co.uk

*Crizal[®], an invisible shield
to protect the eyes and the lenses.*



SEE MORE.
DO MORE.

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