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# HOYA technology reference guide

Redefining every aspect of vision correction

**HOYA**  
FOR THE VISIONARIES

# Global technology leader

HOYA is a global medical technology company that employs about 37,000 people in over 30 countries worldwide. Since 1941, HOYA has driven optical technology innovation with a passion for finding the best vision solutions. As we tirelessly pursue better ways to manipulate light, we know that the sharp focus of our research and design of optic lenses will lead to higher quality lens solutions that deliver clear results for our eye care partners and their patients.

As a technology innovator, our custom surfacing is only the beginning for HOYA lenses, and the innovations that lie ahead will surely continue to raise the bar and write history for unsurpassed achievements in optics. We challenge ourselves to strive for perfection. We are here to push limits and set standards. We are HOYA.



**HOYA is not only the technological leader of optical lens designs, materials and treatments—100% of our global business relates to the manipulation of light.**

**50%**  
Health Care



## Health care

- Eyeglass lenses
- Contact lenses

**26%**  
Electronics



## Electronics

- Mask blanks, photomasks for LSI
- Photomasks for LCD panels
- Glass disks for HDD

**16%**  
Medical



## Medical

- Medical endoscopes
- Intraocular lenses
- Prosthetic fillers and orthopedic implants

**7%**  
Imaging



## Imaging

- Optical glass/lenses
- Laser equipment

# Hoyalux iD® progressive lenses

## Experience



## Visual



## Harmony



## Hoyalux iD MyStyle® 2 is the most personalized and technologically advanced design available today

HOYA understands that everyone sees differently. It is essential to not only take into account the prescription and required correction, but also the individual characteristics of the wearer. iD MyStyle 2 takes into account all the variables that are specific for each wearer.

Our patented Integrated Dual Surface™ (iD) design shapes lenses exclusively for the way your patients see. It's the first to shape a lens design on both the front and back surface. This results in more comfortable transitions between near and far distances, wider viewing zones, and a dramatic reduction in blurring in peripheral vision.

With Binocular Harmonization Technology™ (BHT), iD MyStyle 2 takes into account the differences between right and left prescriptions to balance the design performance. Thus, perfect and effortless focus, constant stability and excellent depth of vision are provided.



Binocular  
Harmonization  
Technology



Position of wear



iD design



Stable view



Infinite optics



4 convenience  
options

## 4 convenience options

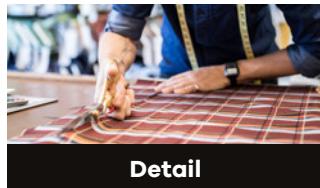
Customizing iD MyStyle 2 lens design just got easier – Choose from 4 convenient profiles to get you on your way to customizing the perfect lens for your patient.



Modern



Adventure



Detail



Stable

### Indoors/outdoors

- Anyone who prefers only one pair of lenses for convenience
- No clear preference for specific distance

### Outdoors

- Outdoor sports and activities
- Teacher/driver
- Walks dog daily
- Clear edge to edge distance

### Indoors

- IT worker/mechanic/accountant
- Close work focus
- Puzzles, crafts, scrap booking, hobbyist

### Indoors

- Experienced wearer
- Senior/sedentary/less active
- Eye gazer
- ST28 to PAL



**Simply outstanding progressive lenses**

## Hoyalux iD LifeStyle® 3

### Easy to explain, to prescribe and to adapt

Things couldn't get any clearer than with iD LifeStyle 3—HOYA's new and improved progressive design that comes with new variations matching your patient's lifestyle. iD LifeStyle 3 is the newest generation of the iD Integrated Dual Side™ (iD) progressive product family. The foundation is our patented Integrated Dual Side Design technology and we added the Binocular Eye Model and Binocular Harmonization Technology. The combination of the three will provide a significant improvement in patient comfort and adaptation.



**Binocular Harmonization Technology**



**Position of wear**



**iD design**



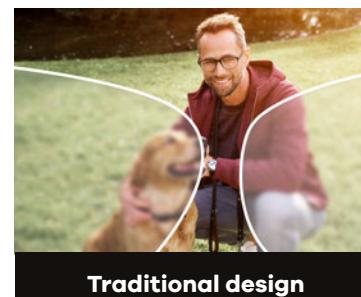
**Stable view**



**3 design variations**



**Expanded corridor length options**



**Traditional design**



**iD LifeStyle 3**

#### Design benefits

- Optimized visual acuity and a crisper image perception
- Noticeably more relaxed vision thanks to precise and effortless focusing
- More accurate correction

#### Available designs

- iD LifeStyle 3 Indoor: Designed for presbyopes who spend a lot of their time indoors, looking at digital devices or reading
- iD LifeStyle 3 Urban: Designed for presbyopes who are active, always on the go, and also enjoy reading books and using their digital devices
- iD LifeStyle 3 Outdoor: Designed for presbyopes who primarily wear their correction for distance use, and still require clear vision to see their phone and other near materials

Now available in polarized options in gray, brown and green

New

# A new array of possibilities



## Hoyalux Array® 2

### A leap forward in the advancement of progressive lens technology

HOYA's best-in-class technologies and quality continue to advance progressive lenses. Array 2 applies HOYA free form backside surfacing technology to virtually any semi-finished single vision lens, in any material, allowing your practice to offer a greater selection of lens options. Array 2 expanded availability makes dispensing multiple pairs of glasses easy.



Binocular  
Harmonization  
Technology



Position of wear



Free form  
backside  
surfacing



Provides wider,  
more stable  
viewing areas



Larger cut outs  
to fit larger  
modern frames



Traditional design



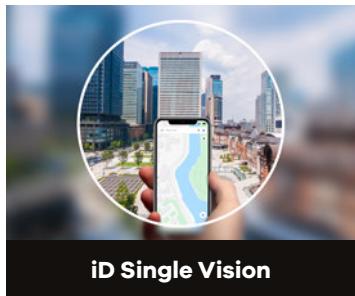
Array 2

#### Available designs

- Hoyalux Array 2 VL, 11, 13, 15, 17
- Hoyalux Array 2 Wrap VL, 11, 13, 15, 17

# Premium single vision

HOYA has driven single vision lens design innovation with a passion for finding the best vision solutions that deliver clear results. For practices that offer free form progressives, you should also consider offering free form single vision lenses to your patients and further differentiate your brand.



**iD Single Vision**



**Standard design**

## **iD Single Vision®** Single vision perfected by HOYA

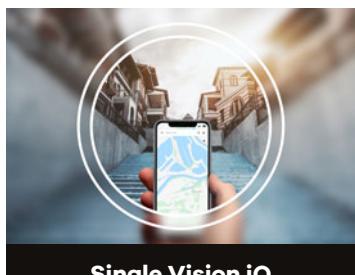
**SINGLE VISION**

**iD**

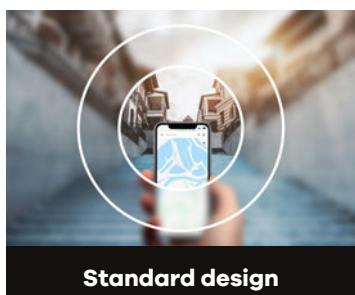
iD Single Vision is a bi-aspheric single vision lens made possible through HOYA's Integrated Dual Side free form technology that provides expanded peripheral viewing, especially in higher prescriptions.

### **Design benefits**

- Optimized visual acuity and a crisper image perception
- Noticeably more relaxed vision thanks to precise and effortless focusing
- More accurate correction
- Providing OC and monocular PD measurements yields exceptional results



**Single Vision iQ**



**Standard design**

## **Single Vision iQ™** Single vision lenses

**SINGLE VISION**

**iQ**

Single Vision iQ combines a spherical front surface single vision lens with HOYA's free form design. Provides custom back surfacing for enhanced optical performance.

### **Design benefits**

- Lens optimized for all prescription powers to enhance visual acuity
- Noticeably reduced distortion, especially in peripheral viewing areas
- Providing OC and monocular PD measurements yields exceptional results



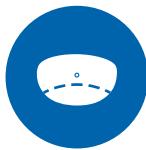
Sync III design



Standard design

## Our eyes weren't made for screens Sync III™ lenses are

Most people spend an average of 8-10 hours a day looking at digital screens, with peaks up to 15 hours a day.\* Digital eye strain symptoms can present themselves in as few as 2 hours of digital screen viewing.<sup>†</sup> Sync III lenses have a slight power boost design that will support and relax your eye muscles, relieving eye strain to let you focus more easily. Sync III lenses work with any standard prescription.

Power boost  
design variationsFree form  
backside surfacingPosition of wear and  
frame measurements

### Three boost levels:

- Sync III 5 (+0.57D): Mild support for younger adults, including students
- Sync III 9 (+0.95D): Extra support for heavy screen use and moderate symptoms of digital eye strain
- Sync III 13 (+1.32D): Heavy screen use and significant symptoms of digital eye strain

\* HOYA Consumer Digital Behavior Study, October 2017.

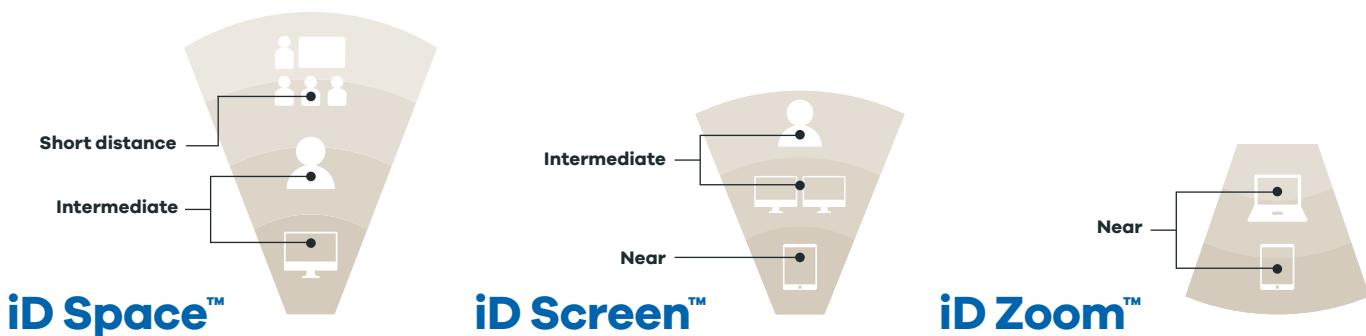
<sup>†</sup>Ang C, Dinevski D, Vlasak N, Kok A. Taking the strain. *Optician*. 05/2017, vol. 253, no. 6600, p.25-28.



# New media optics

65% of Americans report experiencing symptoms of digital eye strain. 27% of Americans do not know computer eyewear can protect against digital eye strain (DES).\*

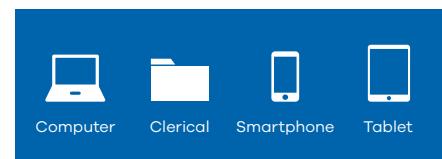
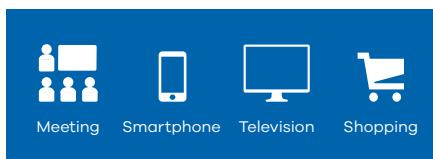
HOYA builds the bridge between technology and experience with our latest iD lenses designed for your digital lifestyle. The iD Space, Screen and Zoom are shaped on both the front and back surface for unparalleled workspace comfort.



The ideal lens for performing activities where the focus is beyond the distance of a computer screen. This design allows for sharp far vision and provides clear vision at a close range.

Best choice for professions requiring maximum clarity at an intermediate distance like those working in stores and offices. This design is ideal for anyone working on dual monitors.

Perfect for laptop and hobbies requiring high levels of concentration and sharp vision at close range. Providing the widest possible near area and offering clarity at a shortened distance.



\*The Vision Council, Digital Eye Strain Report 2016.

## Tact BKS™

Progressive lenses designed for computer users and patients who engage in visually-intense work or hobbies.

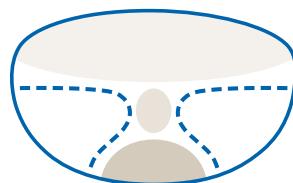
### Design benefits

- Full backside design
- Relieves symptoms related to digital eye strain
- Delivers exceptionally wide intermediate and near viewing zones with a minimum distance field of view

### Available designs

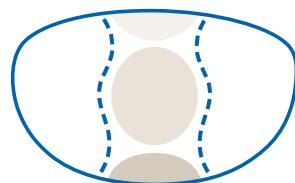
- Tact 40 BKS: provides 40% of the near Rx at the fitting point
- Tact 60 BKS: provides 60% of the near Rx at the fitting point

### Everyday progressive Example: BKS progressive



Intermediate area not designed for long-term computer usage

### Occupational/office lens Tact BKS



Larger intermediate area provides a more relaxed and comfortable visual experience

**Viewing Areas:**  Distance  Intermediate  Reading

# Materials



## HOYA Phoenix®

### The perfect combination of features & benefits

Phoenix is a very strong and reliable material, the ideal choice for your customers and their children when it comes to protecting their eyes. Patients want light-weight lenses along with crisp, clear vision. Only Phoenix delivers that, plus the ultimate combination of toughness and scratch resistance.

#### **Lens features**

- The lightest lens material available
- UV protection
- Superior tensile strength: withstands up to 180 lbs. of pulling force
- Abbe value of 43

- 60x more impact resistant than standard plastic, exceeding FDA impact guidelines
- Up to 20% thinner than standard plastic
- Chemical resistant
- Perfect for kids of all ages

## 1.59

Thinner and lighter than regular plastic lenses.

#### **Lens features**

- Impact resistant
- Light
- UV protection

## 1.60

Premium-performing high-index lens material.

#### **Lens features**

- Very thin and lightweight
- Extremely strong and flexible
- UV protection

## 1.67

Exceptionally thin, strong and light design with superior optical clarity.

#### **Lens features**

- Exceptionally thin
- 25% flatter than 1.60 or poly
- UV protection

## 1.70

Ultra-high index material and unprecedented optical performance.

#### **Lens features**

- Extremely thin and lightweight
- 1.0 center thickness (minus lenses)
- 100% UV blocking up to 400nm

## 1.74

The thinnest and flattest ultra high index lens material on the market.

#### **Lens features**

- Nearly 50% thinner than plastic
- Nearly 5% thinner than 1.67
- UV protection

## Clear Blue Filter

High energy visible light protection in a clear, everyday polycarbonate lens.

#### **Lens features**

- 100% UV blocking up to 400nm
- Filters the most damaging, highest energy blue light
- Uncompromisingly clear lenses

#### **Plastic 1.50**

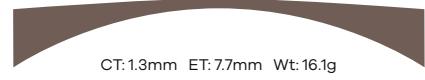
**-6.00**



CT: 2.0mm ET: 11.1mm Wt: 31.5g

#### **Phoenix 1.53**

**-6.00**



CT: 1.3mm ET: 7.7mm Wt: 16.1g

#### **High-Index 1.60**

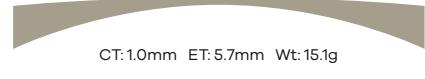
**-6.00**



CT: 1.0mm ET: 6.3mm Wt: 15.9g

#### **High-Index 1.67**

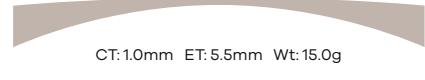
**-6.00**



CT: 1.0mm ET: 5.7mm Wt: 15.1g

#### **High-Index 1.70**

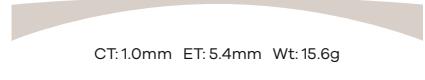
**-6.00**



CT: 1.0mm ET: 5.5mm Wt: 15.0g

#### **High-Index 1.74**

**-6.00**



CT: 1.0mm ET: 5.4mm Wt: 15.6g

All data quoted for minus powers is for 65mm diameter lenses, and all data quoted for plus powers is for 60mm diameter lenses. The chart is for comparison purposes only. Actual lens results will differ based on individual prescription, personal measurements and frame selected.

# Treatments



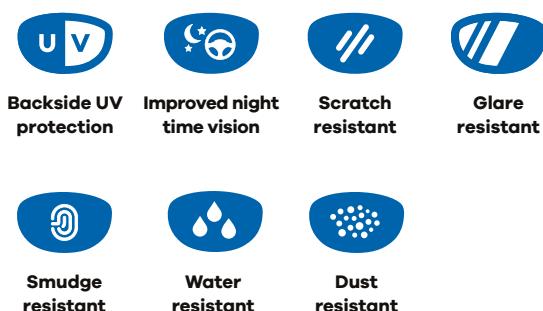
## Now available Super HiVision® EX3+™

SUPER HiVISION

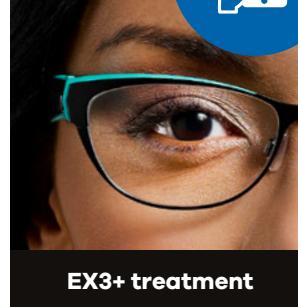
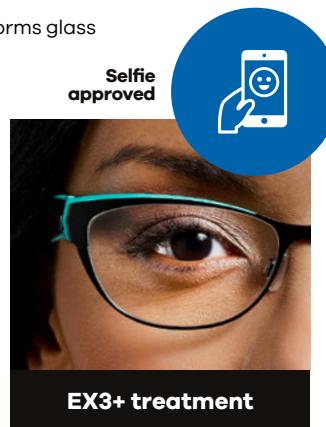
EX3+

Using Super Premium Anti-Reflective (AR) technologies, HOYA has made EX3 better with the addition of backside UV protection.

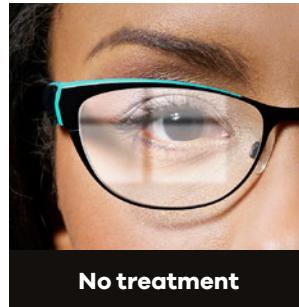
- Extreme scratch resistance, the only lens treatment that outperforms glass
- Extreme clean vision—oil, water and dirt resistant
- Extreme anti-reflection for maximum visual clarity



Selfie  
approved



EX3+ treatment



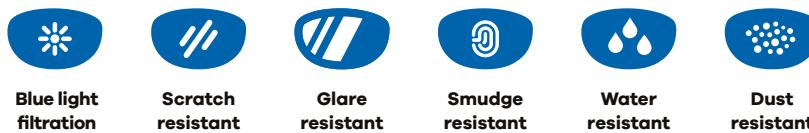
No treatment

## Recharge®

RECHARGE

Recharge filters blue light transmitted from the back-lit screens of digital devices. Perfect for patients who suffer from digital eye strain (DES).

- Filters blue light through a combination of absorption and reflection
- May help alleviate eye strain, fatigue, headaches, loss of focus and blurred vision (DES)
- Keeps eyes comfortable and refreshed
- Re-energizes focus



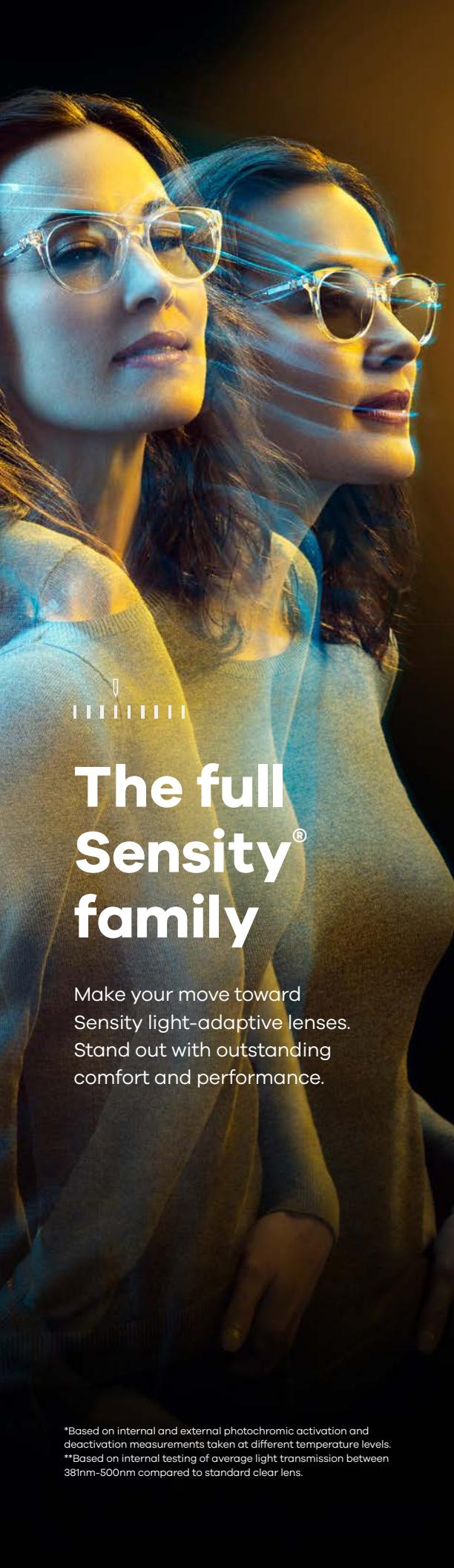
## Super HiVision®

Super HiVision offers your patients superior lens protection—reducing glare and light reflectance.

- Superior scratch resistant AR treatment



SUPER  
HiVISION



## The full Sensity® family

Make your move toward Sensity light-adaptive lenses. Stand out with outstanding comfort and performance.

### All Sensity® light-adaptive lenses feature the following benefits:

- Consistent performance in different climates and light conditions, thanks to Stabilight Technology\*
- Outstanding contrast and glare reduction with Sensity's deep, natural colors
- Reduced glare when activated
- 100% protection against UV rays
- Blue light protection indoors and outdoors\*\*

### Stand out with quality and comfort

Sensity® 2 provides all day comfort for light sensitive eyes, no matter the climate, season, or lifestyle.

New

SENSITY

2

#### Patient benefits:

- Best balance of fadeback speed and darkness for most patients
- Darkens to a dark category 3 sun tint
- Extremely clear indoors



Silver Gray



Bronze Brown



Emerald Green

### Stand out with faster speed

Sensity® Fast is our fastest light adaptive lenses, rapidly fading back from dark to clear.

SENSITY

FAST

#### Patient benefits:

- Ideal for patients who prefer the fastest fadeback
- Darkens to a lighter category 2 sun tint
- Extremely clear indoors



Silver Gray



Bronze Brown

### Stand out with extra performance

Sensity® Dark lenses are engineered for outdoors activities and driving - ideal for an active lifestyle.

SENSITY

DARK

#### Patient benefits:

- Best for the most light-sensitive patients
- Our darkest Sensity lenses outdoors
- Lenses darken behind most car windshields
- Slight tint indoors for those sensitive to indoor light



Silver Gray



Bronze Brown



Emerald Green

### Stand out with extra style

Sensity® Shine combines comfort, convenience, and fashion with a mirror coating on a photochromic lens.

SENSITY

SHINE

#### Patient benefits:

- For wearers who want a fashionable mirror lens
- Fades back quickly to an attractive mirror shine indoors
- Lenses darken behind most car windshields



Shine Silver Gray



Shine Bronze Brown



Shine Emerald Green

\*Based on internal and external photochromic activation and deactivation measurements taken at different temperature levels.

\*\*Based on internal testing of average light transmission between 381nm-500nm compared to standard clear lens.



## Coppertone® the brand patients know and trust

Coppertone is a powerful brand with 94% awareness. Overcome commoditization with Coppertone polarized lenses in three fashion colors.

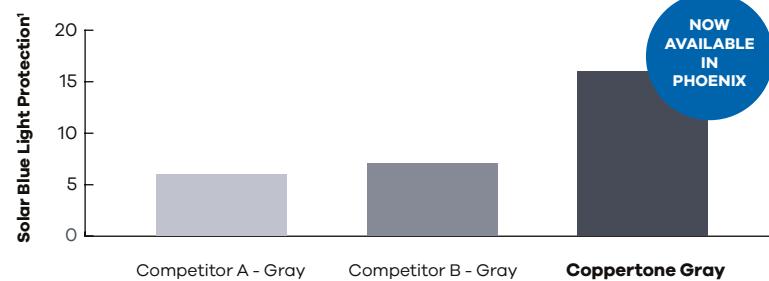


### The ultimate protection under the sun for your patients

Coppertone polarized lenses offer a level of health protection that competing brands simply can't match.

- The highest level of Solar Blue Light protection<sup>1</sup>
- The highest level of UV protection
- Protects skin surrounding the eye from the sun's harmful effects<sup>2</sup>

### 2x solar blue light protection<sup>1\*</sup>



### Coppertone: the #1 sun protection brand

Coppertone® polarized lenses stand up to the active lifestyles of today's health-conscious patients.



Recommended as an effective UV filter for the eyes  
and surrounding skin.

<sup>\*</sup>Compares Coppertone gray and green to competitor gray and green.

<sup>1</sup>Blue Light Protection Value, VISION EASE 2015.

<sup>2</sup>Skin Cancer Foundation.

Coppertone® is a registered trademark of Bayer. ©VISION EASE. All rights reserved.

# Product comparison chart

Lens designs

HOYA lens designs	HOYA concept and benefits	Vision plan competitive comparisons	
ID	<b>iD MyStyle® 2</b>	<ul style="list-style-type: none"> <li>The pinnacle of personalization with unlimited design variations</li> <li>Utilizes an interactive consultation program to gather patient information, lifestyle requirements and wearing preferences to create a lens that is uniquely personalized</li> <li>Incorporates Integrated Dual Surface (iD) design technology and Binocular Harmonization Technology™ to accomplish ideal binocular vision for a truly personalized design</li> <li>Every pair is designed using HOYA's patented Binocular Eye Model™ and 3D Visual Acuity Simulation™</li> <li>Available in four convenience options: Modern, Detail, Adventure, Stable</li> </ul>	<ul style="list-style-type: none"> <li>Shamir Autograph® Intelligence™</li> <li>Varilux® X 4D</li> </ul>
ID	<b>iD LifeStyle® 3</b>	<ul style="list-style-type: none"> <li>Binocular Harmonization Technology takes into account the differences between right and left prescription to balance the design performance</li> <li>Integrated Dual Side design with standardized front vertical power distribution and customized back horizontal progression—reduces eye rotation between distance and near zones and provides wider fields of view</li> <li>Fully integrates both surfaces using View Xpansion Technology™ to minimize aberration</li> <li>Three designs: Indoor, Urban, Outdoor</li> <li>Option for position of wear measurements</li> </ul>	<ul style="list-style-type: none"> <li>Unity® PLXpression</li> <li>Shamir Autograph® III</li> <li>Varilux® X Fit</li> <li>Zeiss® Progressive Individual® 2</li> </ul>
ID	<b>iD Space™, iD Screen™, iD Zoom™</b>	<ul style="list-style-type: none"> <li>Relieves symptoms related to digital eye strain (DES)</li> <li><b>iD Space:</b> The ideal lens for performing activities where the focus is beyond the distance of a computer screen</li> <li><b>iD Screen:</b> The best choice for professions requiring maximum clarity at an intermediate distance like those working in stores and offices</li> <li><b>iD Zoom:</b> Perfect for laptop and hobbies that require high levels of concentration and sharp vision at close range</li> <li>Best binocular vision with HOYA's Binocular Harmonization Technology</li> </ul>	<ul style="list-style-type: none"> <li>Essilor® Computer</li> <li>Shamir Workspace™</li> <li>Zeiss® Officelens Book, Desk, Room</li> </ul>
BKS	<b>Array® 2</b> <b>Array® 2 Wrap</b>	<ul style="list-style-type: none"> <li>Binocular Harmonization Technology takes into account the differences between right and left prescription to balance the design performance</li> <li>Applies HOYA free form surfacing technology to the back side of any semi-finished single vision lens, in any material</li> <li>Variable corridor length offers customization for ergonomic considerations</li> <li>Array 2 Wrap provides compensated design for wrap frames</li> </ul>	<ul style="list-style-type: none"> <li>Kodak DS II™</li> <li>Shamir Autograph® II+</li> <li>Shamir Autograph® II Attitude™</li> <li>Varilux® Physio® W3+ / Stylistic Wrap</li> <li>Zeiss® Precision (Superb, Plus, Pure)</li> </ul>
BKS	<b>Summit® ecp BKS</b> <b>Summit® cd BKS</b>	<ul style="list-style-type: none"> <li>Design symmetry of nasal and temporal zones for: increased viewing comfort, better binocular vision, and reduction of uncomfortable feelings while in motion</li> <li>Effortless transition between zones to allow for more natural head and eye movement</li> <li>Summit cd BKS for smaller frames</li> </ul>	<ul style="list-style-type: none"> <li>Varilux® Physio® DRX</li> <li>Zeiss® Choice</li> <li>Shamir Spectrum+™</li> <li>Unity® PLXtra</li> </ul>
BKS	<b>Amplitude® BKS™</b> <b>Amplitude® Mini BKS™</b>	<ul style="list-style-type: none"> <li>Economical lenses to suit any budget</li> <li>Comfortable design to suit most lifestyle needs</li> <li>Wide fields of view with free form technology</li> </ul>	<ul style="list-style-type: none"> <li>Kodak Precise®/PB/Short</li> <li>Shamir Element™</li> <li>synchrony® Easy Adapt</li> <li>Varilux® Comfort® 2</li> </ul>

# Product comparison chart

Designs and lens treatment

Lens designs		Hoya concept and benefits	Vision plan competitive comparisons
iD	<b>iD Single Vision®</b>	<ul style="list-style-type: none"> <li>HOYA's Integrated Dual Side free form technology</li> <li>Expanded peripheral viewing, especially in higher prescriptions</li> <li>Visual optimization for all powers</li> <li>Ideal combination of performance and cosmetics</li> <li>Higher visual performance</li> </ul>	<ul style="list-style-type: none"> <li>Essilor® Eyezen™ +0</li> <li>Shamir Autograph® II SV</li> </ul>
	<b>Single Vision® iQ</b>	<ul style="list-style-type: none"> <li>Backside design technology</li> <li>Visual optimization for all powers</li> <li>Calculated visual acuity at every point on the lens</li> <li>Wider, clearer visual field in all directions of sight</li> </ul>	<ul style="list-style-type: none"> <li>Zeiss® Individual® SV</li> <li>Essilor® Eyezen™ +0</li> <li>Shamir Autograph® II SV</li> </ul>
	<b>Sync III™</b>	<ul style="list-style-type: none"> <li>Sync lenses have the distance power for everyday use and a 'boost zone' in the lower portion of the lens</li> <li>The boost zone is an area with an increased amount of relaxing power, reducing eye strain during prolonged up close activities such as looking at digital screens, reading or any 'near task' activities</li> <li>Three support levels: Sync III 5 (+0.57D), Sync III 9 (+0.95D) and Sync III 13 (+1.32D)</li> </ul>	<ul style="list-style-type: none"> <li>Shamir Relax™</li> <li>Eyezen™ +1, 2, 3, 4</li> <li>Zeiss® Digital Lens</li> <li>Zeiss® EnergizeMe® SV</li> </ul>
	<b>Tact® 40/60 BKS</b>	<ul style="list-style-type: none"> <li>Relieves symptoms related to digital eye strain (DES)</li> <li>Provides extended focus lens design for near and intermediate viewing zones</li> <li>Delivers exceptionally wide intermediate and near viewing zones with optimized periphery</li> </ul>	<ul style="list-style-type: none"> <li>Shamir Autograph® II - Office™</li> <li>Zeiss® synchrony® Access</li> </ul>
Lens treatments		Hoya concept and benefits	Vision plan competitive comparisons
BKS	<b>Recharge®</b>	<ul style="list-style-type: none"> <li>Reduces the amount of blue light that reaches the eyes emitted by most LED screens</li> <li>Greater comfort for prolonged amounts of time in front of back lit displays</li> <li>Includes the same scratch and smudge resistance benefits as EX3+</li> <li>Substrate Matching Technology</li> </ul>	<ul style="list-style-type: none"> <li>Crizal® Prevencia™</li> <li>Zeiss® Duravision® BlueProtect</li> </ul>
	<b>Super HiVision EX3® Family</b> (EX3+, EX3)	<ul style="list-style-type: none"> <li><b>Super HiVision EX3+:</b> UV protection from backside reflections for eyes and surrounding skin</li> <li><b>Super HiVision EX3 and EX3+ include:</b> <ul style="list-style-type: none"> <li>Extreme scratch resistance, the only lens treatment that outperforms glass</li> <li>Smudge resistant, eliminates glare and helps reduce eye fatigue</li> <li>Includes View Protect® &amp; Substrate Matching Technology</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Crizal® Sapphire™ UV</li> <li>Zeiss® DuraVision® Platinum</li> </ul>
	<b>Super HiVision®</b>	<ul style="list-style-type: none"> <li>Superior scratch resistance</li> <li>Exceptional smudge resistance</li> <li>Includes View Protect &amp; Substrate Matching Technology</li> </ul>	<ul style="list-style-type: none"> <li>Crizal® Avance™ UV</li> <li>Zeiss® DuraVision® Silver</li> </ul>
	<b>HiVision® View Protect®</b>	<ul style="list-style-type: none"> <li>Front and back scratch resistance</li> <li>Smudge resistant treatment</li> <li>View Protect "easy to clean" treatment</li> </ul>	<ul style="list-style-type: none"> <li>Crizal® Alize™ UV</li> <li>Zeiss® DuraVision® Silver</li> </ul>
	<b>Sensity® Family</b> (Sensity 2, Sensity Shine, Sensity Dark)	<ul style="list-style-type: none"> <li>Stabilight Technology™ ensures consistent performance in different climates and seasons</li> <li>Excellent contrast and glare reduction with Sensity's three deep, natural colors</li> <li>Exceptional optical quality and durability due to photochromic precision technology</li> <li>Darkens in the car (Sensity Dark only)</li> </ul>	<ul style="list-style-type: none"> <li>Transitions® GEN 8™</li> <li>Transitions® XTRActive®</li> <li>Zeiss® PhotoFusion®</li> </ul>
	<b>Sensity® Fast</b>	<ul style="list-style-type: none"> <li>The fastest HOYA light adaptive lens technology available</li> <li>Cutting-edge speed when fading back from dark to clear</li> <li>Better indoor clarity than Sensity family</li> </ul>	<ul style="list-style-type: none"> <li>Unity® SunSync® Elite</li> </ul>

# Lens availability charts

Free Form Progressives	Hoyalux iD MyStyle® 2	Hoyalux iD LifeStyle® 3	Hoyalux iD LifeStyle® 2 Clarity & Harmony/cd	Hoyalux Array® 2	Hoyalux Array® 2 Wrap
Minimum Fitting Height	Personalized to frame 14mm	18mm/14mm	18mm/14mm	21mm/19mm/17mm/14mm	21mm/19mm/17mm/14mm
<b>Plastic 1.50</b>	-8.00 to +6.00 Cyl. to -6.00 (+0.75 to +3.50)	<b>8.00 to +6.00</b> Cyl. to -6.00 (+0.75 to +3.50)	-8.00 to +6.00 Cyl. to -6.00 (+0.75 to +3.50)	-10.00 to +6.00 Cyl. to -6.00 (+0.75 to +3.50)	-5.00 to +4.00 Cyl. to -4.00 (+0.75 to +3.50)
<b>Plastic 1.50 Polarized</b>		<b>-10.00 to +3.75</b> Cyl. to -4.00 (+0.75 to +3.00) ●●●		-10.00 to +3.75 Cyl. to -6.00 (+0.75 to +3.50) ●●●	-5.00 to +4.00 Cyl. to -4.00 (+0.75 to +3.50) ●●●
<b>Plastic 1.50 Sensity® 2</b>	-8.00 to +6.00 Cyl. to -6.00 (+0.75 to +3.50) ●●●/SD	<b>8.00 to +6.00</b> Cyl. to -6.00 (+0.75 to +3.50) ●●●/SD	-8.00 to +6.00 Cyl. to -6.00 (+0.75 to +3.50) ●●●/SD	-8.00 to +6.00 Cyl. to -6.00 (+0.75 to +3.50) ●●●/SF/SD/SS	-5.00 to +4.00 Cyl. to -4.00 (+0.75 to +3.50) ●●●/SF/SD/SS
<b>Plastic 1.50 Transitions®</b>		<b>-8.00 to +6.00</b> Cyl. to -6.00 (+0.75 to +3.50) ●●●/X	-8.00 to +6.00 Cyl. to -6.00 (+0.75 to +3.50) ●●●/X	-10.00 to +3.75 Cyl. to -6.00 (+0.75 to +3.50) ●●●/X/XPG	-5.00 to +4.00 Cyl. to -4.00 (+0.75 to +3.50) ●●●/X/XPG
<b>Phoenix® 1.53</b>	-8.00 to +6.00 Cyl. to -6.00 (+0.75 to +3.50)	<b>-8.00 to +6.00</b> Cyl. to -6.00 (+0.75 to +3.50)	-8.00 to +6.00 Cyl. to -6.00 (+0.75 to +3.50)	-10.00 to +6.00 Cyl. to -6.00 (+0.75 to +3.50)	-5.00 to +4.00 Cyl. to -4.00 (+0.75 to +3.50)
<b>Phoenix® 1.53 Coppertone®</b>				-10.00 to +6.00 Cyl. to -6.00 (+0.75 to +3.50) ●●●	-5.00 to +4.00 Cyl. to -4.00 (+0.75 to +3.50) ●●●
<b>Phoenix® 1.53 Polarized</b>		<b>-10.00 to +4.50</b> Cyl. to -4.00 (+0.75 to +3.00) ●●●		-10.00 to +4.50 Cyl. to -6.00 (+0.75 to +3.50) ●●●	-5.00 to +4.00 Cyl. to -4.00 (+0.75 to +3.50) ●●●
<b>Phoenix® 1.53 Sensity® 2</b>	-8.00 to +6.00 Cyl. to -6.00 (+0.75 to +3.50) ●●●/SD	<b>8.00 to +6.00</b> Cyl. to -6.00 (+0.75 to +3.50) ●●●/SD	-8.00 to +6.00 Cyl. to -6.00 (+0.75 to +3.50) ●●●/SD	-10.00 to +6.00 Cyl. to -6.00 (+0.75 to +3.50) ●●●/SF/SD/SS	-5.00 to +4.00 Cyl. to -4.00 (+0.75 to +3.50) ●●●/SF/SD/SS
<b>Phoenix® 1.53 Transitions®</b>		<b>-8.00 to +6.00</b> Cyl. to -6.00 (+0.75 to +3.50) ●●●/X	-8.00 to +6.00 Cyl. to -6.00 (+0.75 to +3.50) ●●●/X	-10.00 to +6.00 Cyl. to -6.00 (+0.75 to +3.50) ●●●/X	-5.00 to +4.00 Cyl. to -4.00 (+0.75 to +3.50) ●●●/X
<b>BluTech 1.56 (Indoor/Outdoor)</b>				-10.00 to +6.00 Cyl. to -6.00 (+0.75 to +3.50)	-5.00 to +4.00 Cyl. to -4.00 (+0.75 to +3.50)
<b>Poly 1.59</b>	-6.00 to +6.00 Cyl. to -4.00 (+1.00 to +3.00)	<b>-6.00 to +6.00</b> Cyl. to -4.00 (+1.00 to +3.00)	-6.00 to +6.00 Cyl. to -4.00 (+1.00 to +3.00)	-13.00 to +6.00 Cyl. to -6.00 (+0.75 to +3.50)	-6.00 to +4.00 Cyl. to -4.00 (+0.75 to +3.50)
<b>Clear Blue Filter 1.59</b>				-13.00 to +6.00 Cyl. to -6.00 (+0.75 to +3.50)	-6.00 to +4.00 Cyl. to -4.00 (+0.75 to +3.50)
<b>Poly 1.59 Polarized</b>		<b>-13.00 to +5.25</b> Cyl. to -4.00 (+0.75 to +3.50) ●●●	-6.00 to +6.00 Cyl. to -4.00 (+1.00 to +3.00) ●	-13.00 to +5.25 Cyl. to -6.00 (+0.75 to +3.50) ●●●	-6.00 to +4.00 Cyl. to -4.00 (+0.75 to +3.50) ●●●
<b>Poly 1.59 Coppertone®</b>				-10.00 to +6.00 Cyl. to -6.00 (+0.75 to +3.50) ●●●	-6.00 to +4.00 Cyl. to -4.00 (+0.75 to +3.50) ●●●
<b>Poly 1.59 Sensity® 2</b>	-6.00 to +6.00 Cyl. to -4.00 (+1.00 to +3.00) ●●●/SD	<b>-6.00 to +6.00</b> Cyl. to -4.00 (+1.00 to +3.00) ●●●/SD	-6.00 to +6.00 Cyl. to -4.00 (+1.00 to +3.00) ●●●/SD	-10.00 to +6.00 Cyl. to -6.00 (+0.75 to +3.50) ●●●/SF/SD/SS	-6.00 to +4.00 Cyl. to -4.00 (+0.75 to +3.50) ●●●/SF/SD/SS
<b>Poly 1.59 Transitions®</b>		<b>-6.00 to +6.00</b> Cyl. to -4.00 (+1.00 to +3.00) ●●●	-6.00 to +6.00 Cyl. to -4.00 (+1.00 to +3.00) ●●●	-13.00 to +5.25 Cyl. to -6.00 (+0.75 to +3.50) ●●●/X/XPG	-6.00 to +4.00 Cyl. to -4.00 (+0.75 to +3.50) ●●●/X/XPG
<b>Hi-Index 1.60</b>	-11.00 to +8.00 Cyl. to -6.00 (+0.75 to +3.50)	<b>-11.00 to +8.00</b> Cyl. to -6.00 (+0.75 to +3.50)	-11.00 to +8.00 Cyl. to -6.00 (+0.75 to +3.50)	-10.00 to +6.00 Cyl. to -6.00 (+0.75 to +3.50)	-6.00 to +4.00 Cyl. to -4.00 (+0.75 to +3.50)
<b>Hi-Index 1.60 Sensity® 2</b>	-11.00 to +8.00 Cyl. to -6.00 (+0.75 to +3.50) ●●●/SD	<b>-11.00 to +8.00</b> Cyl. to -6.00 (+0.75 to +3.50) ●●●/SD	-11.00 to +8.00 Cyl. to -6.00 (+0.75 to +3.50) ●●●/SD	-10.00 to +6.00 Cyl. to -6.00 (+0.75 to +3.50) ●●●/SD/SS	-6.00 to +4.00 Cyl. to -4.00 (+0.75 to +3.50)
<b>Hi-Index 1.60 Transitions®</b>				-10.00 to +6.00 Cyl. to -6.00 (+0.75 to +3.50) ●●●	-6.00 to +4.00 Cyl. to -4.00 (+0.75 to +3.50) ●●●
<b>Hi-Index 1.67</b>	-13.00 to +8.00 Cyl. to -6.00 (+0.75 to +3.50)	<b>-13.00 to +8.00</b> Cyl. to -6.00 (+0.75 to +3.50)	-13.00 to +8.00 Cyl. to -6.00 (+0.75 to +3.50)	-13.00 to +7.50 Cyl. to -6.00 (+0.75 to +3.50)	-6.00 to +4.00 Cyl. to -4.00 (+0.75 to +3.50)
<b>Hi-Index 1.67 Polarized</b>		<b>-10.00 to +6.00</b> Cyl. to -4.00 (+0.75 to +3.00) ●●●		-13.00 to +6.00 Cyl. to -6.00 (+0.75 to +3.50) ●●●	-6.00 to +4.00 Cyl. to -4.00 (+0.75 to +3.50) ●●●
<b>Hi-Index 1.67 Sensity® 2</b>	-13.00 to +8.00 Cyl. to -6.00 (+0.75 to +3.50) ●●●/SD	<b>-13.00 to +8.00</b> Cyl. to -6.00 (+0.75 to +3.50) ●●●/SD	-13.00 to +8.00 Cyl. to -6.00 (+0.75 to +3.50) ●●●/SD	-13.00 to +7.50 Cyl. to -6.00 (+0.75 to +3.50) ●●●/SF/SD/SS	-6.00 to +4.00 Cyl. to -4.00 (+0.75 to +3.50) ●●●/SF/SD/SS
<b>Hi-Index 1.67 Transitions®</b>		<b>-13.00 to +8.00</b> Cyl. to -6.00 (+0.75 to +3.50) ●●●	-13.00 to +8.00 Cyl. to -6.00 (+0.75 to +3.50) ●●●	-13.00 to +7.50 Cyl. to -6.00 (+0.75 to +3.50) ●●●/X/XPG	-6.00 to +4.00 Cyl. to -4.00 (+0.75 to +3.50) ●●●/X/XPG
<b>Hi-Index 1.74</b>	-13.00 to +8.00 Cyl. to -6.00 (+0.75 to +3.50)	<b>-13.00 to +8.00</b> Cyl. to -6.00 (+0.75 to +3.50)	-13.00 to +8.00 Cyl. to -6.00 (+0.75 to +3.50)	-13.00 to +8.00 Cyl. to -6.00 (+0.75 to +3.50)	-6.00 to +4.00 Cyl. to -4.00 (+0.75 to +3.50)

X = Transitions® XTRActive® XPG = Transitions® XTRActive® Polarized™ Gray SF = Sensity® Fast Gray & Brown SD = Sensity® Dark SS = Sensity® Shine

## Lens availability charts

**X** = Transitions® XTRActive®    **XPG** = Transitions® XTRActive® Polarized™ Gray    **SF** = Sensity® Fast Gray & Brown    **SD** = Sensity® Dark    **SS** = Sensity® Shine

# Lens availability charts

Premium SV, Bifocal & New Media Optics	iD Single Vision®	Single Vision iQ™/SV	ST28 iQ™/ST28	iD Space™, iD Screen™, iD Zoom™	Tact® 40/60 BKS	Sync III™
Minimum Fitting Height				Personalized to frame 18mm	18mm	
<b>Plastic 1.50</b>		-10.00 to +10.00 Cyl. to -6.00	-10.00 to +6.00 Cyl. to -4.00 (+0.75 to +3.50)	-8.00 to +5.00 Cyl. to -6.00 (+1.00 to +3.50)	-10.00 to +6.00 Cyl. to -6.00 (+0.75 to +3.50)	-10.00 to +6.00 Cyl. to -6.00
<b>Plastic 1.50 Polarized</b>		-10.00 to +4.00 Cyl. to -4.00 ●●●				-10.00 to +6.00 Cyl. to -6.00 ●●●
<b>Plastic 1.50 Sensity® 2</b>		-10.00 to +4.00 Cyl. to -6.00 ●●●/SF/SD/SS			-8.00 to +6.00 Cyl. to -6.00 (+0.75 to +3.50) ●●●/SF/SD/SS	-8.00 to +6.00 Cyl. to -6.00 ●●●/SF/SD/SS
<b>Plastic 1.50 Transitions®</b>		-8.00 to +9.00 Cyl. to -4.00 ●●●/X/XP	-8.00 to +6.00 Cyl. to -4.00 (+1.00 to +3.00) ●●●/X		-10.00 to +3.75 Cyl. to -6.00 (+0.75 to +3.50) ●●●/X/XP	-10.00 to +6.00 Cyl. to -6.00 ●●●/X/XP
<b>Phoenix® 1.53</b>		-13.00 to +9.00 Cyl. to -6.00	-8.00 to +6.00 Cyl. to -4.00 (+1.00 to +3.00) ●●●/X	-8.00 to +5.00 Cyl. to -6.00 (+1.00 to +3.50)	-10.00 to +6.00 Cyl. to -6.00 (+0.75 to +3.50)	-10.00 to +6.00 Cyl. to -6.00
<b>Phoenix® 1.53 Coppertone®</b>		-13.00 to +9.00 Cyl. to -6.00 ●●●				-10.00 to +6.00 Cyl. to -6.00 ●●●
<b>Phoenix® 1.53 Polarized</b>		-12.00 to +6.00 Cyl. to -4.00 ●●●				-10.00 to +4.50 Cyl. to -4.00 ●●●
<b>Phoenix® 1.53 Sensity® 2</b>		-13.00 to +9.00 Cyl. to -6.00 ●●●/SF/SD/SS		-8.00 to +5.00 Cyl. to -6.00 (+1.00 to +3.50) ●●●/SD/SS	-10.00 to +6.00 Cyl. to -6.00 (+0.75 to +3.50) ●●●/SF/SD/SS	-10.00 to +6.00 Cyl. to -6.00 ●●●/SF/SD/SS
<b>Phoenix® 1.53 Transitions®</b>		-13.00 to +9.00 Cyl. to -4.00 ●●●/X	-9.00 to +7.00 Cyl. to -4.00 (+1.00 to +3.50) ●●●		-10.00 to +6.00 Cyl. to -6.00 (+0.75 to +3.50) ●●●	-10.00 to +6.00 Cyl. to -6.00 ●●●/X
<b>BluTech 1.56 (Indoor/Outdoor)</b>		-8.00 to +7.00 Cyl. to -4.00			-10.00 to +6.00 Cyl. to -6.00 (+0.75 to +3.50)	-10.00 to +6.00 Cyl. to -6.00
<b>Poly 1.59</b>		-10.00 to +6.00 Cyl. to -4.00	-8.00 to +6.00 Cyl. to -4.00 (+1.00 to +3.00)		-13.00 to +6.00 Cyl. to -6.00 (+0.75 to +3.50)	-13.00 to +6.00 Cyl. to -6.00
<b>Clear Blue Filter 1.59</b>		-10.00 to +6.00 Cyl. to -4.00			-13.00 to +6.00 Cyl. to -6.00 (+0.75 to +3.50)	-13.00 to +6.00 Cyl. to -6.00
<b>Poly 1.59 Polarized</b>		-9.00 to +6.00 Cyl. to -4.00 ●●●				-13.00 to +6.00 Cyl. to -6.00 ●●●
<b>Poly 1.59 Coppertone®</b>		-9.00 to +6.00 Cyl. to -4.00 ●●●				-13.00 to +6.00 Cyl. to -6.00 ●●●
<b>Poly 1.59 Sensity® 2</b>		-9.00 to +6.00 Cyl. to -4.00 ●●●/SF/SD/SS			-10.00 to +6.00 Cyl. to -6.00 (+0.75 to +3.50) ●●●/SF/SD/SS	-13.00 to +6.00 Cyl. to -6.00 ●●●/SF/SD/SS
<b>Poly 1.59 Transitions®</b>		-6.00 to +6.00 Cyl. to -4.00 ●●●/X/XP			-13.00 to +5.25 Cyl. to -6.00 (+0.75 to +3.50) ●●●/X/XP	-13.00 to +5.25 Cyl. to -4.00 ●●●/X/XP
<b>Hi-Index 1.60</b>	-10.00 to +8.00 Cyl. to -4.00	-13.00 to +8.00 Cyl. to -4.00		-11.00 to +7.00 Cyl. to -6.00 (+1.00 to +3.50)	-10.00 to +6.00 Cyl. to -6.00 (+0.75 to +3.50)	-10.00 to +6.00 Cyl. to -6.00
<b>Hi-Index 1.60 Sensity® 2</b>	-10.00 to +8.00 Cyl. to -4.00 ●●●/SD/SS	-13.00 to +6.50 Cyl. to -4.00 ●●●/SD/SS			-10.00 to +6.00 Cyl. to -6.00 (+0.75 to +3.50) ●●●/SD/SS	-10.00 to +6.00 Cyl. to -6.00 ●●●/SD/SS
<b>Hi-Index 1.60 Transitions®</b>		-10.00 to +8.00 Cyl. to -4.00 ●●●			-10.00 to +6.00 Cyl. to -6.00 (+0.75 to +3.50) ●●●	-10.00 to +6.00 Cyl. to -6.00 ●●●
<b>Hi-Index 1.67</b>	-15.00 to +10.00 Cyl. to -4.00	-15.00 to +8.00 Cyl. to -4.00		-13.00 to +7.00 Cyl. to -6.00 (+1.00 to +3.50)	-13.00 to +7.50 Cyl. to -6.00 (+0.75 to +3.50)	-13.00 to +7.50 Cyl. to -6.00
<b>Hi-Index 1.67 Polarized</b>		-15.00 to +10.00 Cyl. to -4.00 ●●●				-13.00 to +6.00 Cyl. to -6.00 ●●●
<b>Hi-Index 1.67 Sensity® 2</b>	-15.00 to +10.00 Cyl. to -4.00 ●●●/SD/SS	-15.00 to +8.00 Cyl. to -4.00 ●●●/SD/SS			-13.00 to +7.50 Cyl. to -6.00 (+0.75 to +3.50) ●●●/SF/SD/SS	-13.00 to +7.50 Cyl. to -6.00 ●●●/SF/SD/SS
<b>Hi-Index 1.67 Transitions®</b>		-10.00 to +8.00 Cyl. to -4.00 ●●●/X/XP			-13.00 to +7.50 Cyl. to -6.00 (+0.75 to +3.50) ●●●/X/XP	-13.00 to +7.50 Cyl. to -6.00 ●●●/X/XP
<b>Hi-Index 1.74</b>	-15.00 to +10.00 Cyl. to -4.00 (1.70)	-15.00 to +10.00 Cyl. to -4.00 (1.70)				-13.00 to +8.00 Cyl. to -6.00 (1.74)

X = Transitions® XTRActive® XPG = Transitions® XTRActive® Polarized™ Gray SF = Sensity® Fast Gray & Brown SD = Sensity® Dark SS = Sensity® Shine

# AR technology reference guide

Key	EX3+ & EX3				Recharge*				Super HiVision				HiVision w/VP								
Warranty	2 Years/unlimited				2 Years/unlimited				2 Years/unlimited				2 Years/2 times								
Designs	Plastic	Plastic Sensity® 2	Plastic Transitions®	Plastic Polarized	Phoenix®	Phoenix® Sensity® 2	Phoenix® Transitions®	Phoenix® Polarized	Poly	Poly Sensity® 2	Poly Transitions®	Poly Polarized	Hi Index	Hi Index Sensity® 2	Hi Index Transitions®	Hi Index	Hi Index Sensity® 2	Hi Index Transitions®	Hi Index		
Refractive index	1.50	1.50	1.50	1.50	1.53	1.53	1.53	1.53	1.59	1.59	1.59	1.59	1.60	1.60	1.60	1.67	1.67	1.67	1.74		
Hoyalux iD MyStyle® 2	■■	■■			■■	■■			■■	■■			■■	■■		■■	■■		■■		
Hoyalux iD LifeStyle® 3	■■	■■	■■		■■	■■	■■		■■	■■	■■	■■	■■	■■	■■	■■	■■	■■	■■		
Hoyalux Array® 2/W**	■■	■■	■■	■■	■■	■■	■■	■■	■■	■■	■■	■■	■■	■■	■■	■■	■■	■■	■■		
iD Space™ iD Screen™ iD Zoom™	■■				■■	■■							■■			■■					
Tact® 40/60 BKS	■■	■■	■■		■■	■■	■■		■■	■■	■■	■■	■■	■■	■■	■■	■■	■■	■■		
Sync III™	■■	■■	■■	■■	■■	■■	■■	■■	■■	■■	■■	■■	■■	■■	■■	■■	■■	■■	■■		
iD Single Vision™													■■	■■	■■	■■	■■	■■	■■	■■	
Single Vision iQ™	■■	■■	■■	■■	■■	■■	■■	■■	■■	■■	■■	■■	■■	■■	■■	■■	■■	■■	■■		
ST28 iQ™	■■		■■		■■		■■					■■									
Refractive index	1.50	1.50	1.50	1.50	1.53	1.53	1.53	1.53	1.59	1.59	1.59	1.59	1.60	1.60	1.60	1.66 1.67	1.66 1.67	1.66 1.67	1.70		
SV	■■	■■	■■	■■	■■	■■	■■	■■	■■	■■	■■	■■	■■	■■	■■	■■	■■	■■	■■		
Aspheric-SV	■■		■■		■■	■■	■■		■■	■■	■■	■■	■■	■■	■■	■■	■■	■■	■■		
ST28	■■		■■	■■	■■		■■		■■												
ST35	■■			■■					■■												
RD22	■■																				
RD24	■■		■■																		
STT7X28	■■		■■	■■					■■												
STT8X35	■■		■■	■■						■■											

\*Recharge, Super HiVision EX3+ and Super HiVision automatically include the ViewProtect Performance.

\*\*Array 2 Wrap 1.74 only available in PAV or PAR.



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