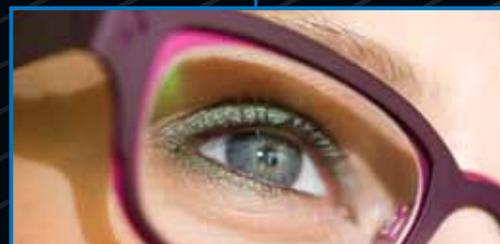




TECHNOLOGY REFERENCE GUIDE





iD Lens Series

Progressive lenses were first patented in 1907 and later refined in 1959 into the basic progressive lens design still widely used today. This conventional approach places the progressive lens on only the front surface of a semi-finished blank, thus allowing for better optical results through only a narrow “window of opportunity.”

The iD category utilizes the full potential of HOYA Free-Form technology where the finished product allows users to gain increased optical performance via our patented Integrated Double Surface (iDs) Technology™ for a revolutionary better progressive design. On the front, we have integrated the vertical component, which affects magnification and distance. On the back, we have integrated the horizontal component, which impacts power changes from side to side.

The result is a progressive lens solution that puts the best vision correction capabilities in your hands.



iQ Lens Series

iQ represents the foundation of HOYA’s Free-Form science. It relies on the creation of aspheric and atoric optical geometrics designed by intelligent software and applied with the diamond point HOYA Free-Form surfacing process onto a variety of lens designs. This technique heightens the optical performance of even the most simplistic lens styles like single vision and segmented multifocals. The iQ progressive lens utilizes the trusted, award winning Summit design.

HOYALUX iD MyStyle®

The HOYALUX iD MyStyle® represents the pinnacle of design personalization among all HOYA Free-Form progressive lenses. Utilizing objective and subjective data collected through a detailed patient consultation, the end result provides the perfect blend of the patients’ personal visual needs and wants.

PATIENT BENEFITS

- Natural, effortless vision at all distances and all directions
- Stable image perception in all circumstances
- Wide, deformation-free field of vision
- Smooth and natural interaction

HOYALUX Summit ecp iQ™ HOYALUX Summit cd iQ™

Using aspheric and atoric curves on the back side enhances the optical performance and maintains the fidelity of the Summit progressive design across the entire prescription range and improves the overall optical performance of a proven, conventional progressive lens.

PATIENT BENEFITS

- Provides the wearer with enhanced vision
- Enhanced visual acuity
- Reduced distortion
- Wider fields of vision
- Improved distance vision

HOYALUX iD InStyle™

The HOYALUX iD InStyle™ customizes the lens with design elements distributed over both the front and back surfaces for a finely tuned vision correction. When both elements are integrated on to the lens surfaces using HOYA Free-Form surfacing, the result is a more optimized and customized progressive lens.

PATIENT BENEFITS

- Virtually eliminates the “swimming” and “swaying” sensations so common with conventional progressive lenses
- Perfect transition between far and near vision
- Wide intermediate corridor

HOYALUX iD LifeStyle®

The HOYALUX iD LifeStyle® utilizes Integrated Double Surface Technology™ (iDs) that partially customizes the lens configuration using a standardized front surface component and a customized back surface component. HOYA’s Free-Form fabrication shapes the back of each lens with a diamond point cutting tool for semi-personalized progressive vision correction.

PATIENT BENEFITS

- Separates the performance of the front and back surfaces with vertical progression on the front and customized horizontal progression on the back
- Eliminates swimming sensations

iD SingleVision™

iD SingleVision™ is a bi-aspheric single vision lens design made possible through HOYA Free-Form Design Technology that provides Expanded Periphery (EP) viewing, especially in higher prescriptions.

PATIENT BENEFITS

- Bi-aspheric design technology provides clear vision from edge to edge
- Visual optimization for all powers
- Calculated visual acuity at every point on the lens
- Wider, clearer visual field in all directions of sight
- The ideal combination of cosmetics and performance

SingleVision iQ

SingleVision iQ combines a spherical front surface single vision lens with HOYA Free-Form custom back surface for enhanced optical performance and superior, expanded periphery viewing. SingleVision iQ lenses provide a better single vision solution, especially for wearers with higher prescriptions and/or astigmatisms. Wearers benefit from:

PATIENT BENEFITS

- Lens optimized for all prescription powers to enhance visual acuity
- Provides clear vision from edge to edge a wider, clearer visual field in all directions of sight
- Noticeably reduced distortion, especially in peripheral viewing areas

StraightTop 28 iQ

Using aspheric and atoric curves on the back side enhances the optical performance and maintains the fidelity of the Summit progressive design across the entire prescription range and improves the overall optical performance of a proven, conventional progressive lens.

PATIENT BENEFITS

- Provides the wearer with enhanced vision
- Enhanced visual acuity
- Reduced distortion
- Wider fields of vision
- Improved distance vision

CONVENTIONAL PROGRESSIVE LENSES

HOYA® has driven progressive lens design innovation with a passion for finding the best vision solutions that deliver clear results for our eye care partners and patients alike. HOYA offers premium conventional lens designs that meet the needs of your patients.



MATERIALS

Eyeglass wearers expect lighter, more comfortable lenses and HOYA's premium lens materials deliver just that.

HOYALUX Summit ecp HOYALUX Summit cd

Extended Corrective Performance (ecp) brings exceptional freedom and unparalleled vision to all zones. Complemented by a Compressed Design (cd) for smaller frames.

PATIENT BENEFITS

Utilizes Integrated Transmittance Control (itc) technology for optimal performance:

- In-Wear customization to optimize refraction parameters with wearing position
- 120 inset variations for perfect placement of reading area
- Design Symmetry for balanced viewing
- Available in two designs:
 - Summit ecp: 18mm minimum fitting height
 - Summit cd: 14mm minimum fitting height

HOYA PHOENIX™

Phoenix offers the perfect combination of benefits for almost any patient with any lifestyle.

PATIENT BENEFITS

- The lightest lens material available today
- Twice as scratch resistant as polycarbonate
- 60 times more impact resistant than standard plastic
- Abbe value of 43 vs. 30 for poly

HOYALUX GP WIDE

A General Purpose progressive design providing natural, all around vision with a wide near zone.

PATIENT BENEFITS

- Incorporates transmission based design to accommodate for natural convergence of the eyes and optical effects of the lens power
- 23% wider than traditional progressive lenses
- 18mm minimum fitting height

HOYALUX TACT

Designed for computer users and patients who perform visually-intense work or hobbies.

PATIENT BENEFITS

- Relieve eyestrain and health problems related to Computer Vision Syndrome (CVS)
- Provides extended focus lens design for near and intermediate viewing zones
- Delivers exceptionally wide intermediate and near viewing zones with optimized periphery
- Offers flexible progressive design with a minimum distance field of view
- 18mm minimum fitting height

Available in two fitting positions:

- EP 40 – provides the patient with 40% of the near Rx at the fitting point
- EP 60 – provides the patient with 60% of the near Rx at the fitting point

Polycarbonate

Polycarbonate lenses are thinner and lighter than regular plastic lenses.

PATIENT BENEFITS

- Impact Resistant
- Light
- UV Protection

EYRY® 1.70

An ultra high-index material with unprecedented optical performance.

PATIENT BENEFITS

- Extremely thin and lightweight
- 1.0 center thickness (minus lenses)
- 36 Abbe value for optical sharpness

EYONA® 1.67

Improved monomer structure provides an exceptionally thin and light design with unequaled strength and optical clarity.

PATIENT BENEFITS

- 15% thinner than 1.60 or polycarbonate
- 25% flatter than 1.60 or polycarbonate
- 35% stronger than polycarbonate

EYAS® 1.60

Premium-performing high-index lens material.

PATIENT BENEFITS

- Very thin and lightweight
- Extremely strong and flexible
- 41 Abbe value for outstanding performance

ANTI-REFLECTIVE TECHNOLOGIES

Hoya offers a broad range of anti-reflective lenses to meet every performance need and budget.



Vision without anti-reflection technology



Vision with SUPER HiVision™

HOYA SUPER HiVision EX3™

Using Super Premium Anti-Reflective (AR) technologies, HOYA has created the most extreme AR product available on the market.

PATIENT BENEFITS

- Extreme scratch resistance
- Extreme anti-reflection for maximum visual clarity
- Automatically includes HOYA ViewProtect super-slippy hydrophobic topcoat
- HOYA's Substrate Matching Properties (SMP) delivers superior optical Performance

HOYA SUPER HiVision™

Superior scratch resistant AR coating.

PATIENT BENEFITS

- HOYA's Substrate Matching Properties (SMP) delivers superior optical performance
- Automatically includes HOYA ViewProtect super-slippy hydrophobic topcoat

HOYA HiVision™

Durable, high-performing, anti-reflective coating.

PATIENT BENEFITS

- Includes HOYA's Substrate Matching Properties for unsurpassed clarity
- <1% light reflectance
- Compatible with ViewProtect for an "easy-to-clean" AR option

HOYA Premium AR

Anti-reflective coating with 2-sided scratch resistance and a broad lens material compatibility.

PATIENT BENEFITS

- Standard 2-sided scratch coating
- Broad lens material and design compatibility
- Compatible with ViewProtect for an "easy-to-clean" AR option

HOYA ViewProtect™

A super-cleanable AR topcoat for HOYA's HiVision and Premium AR coatings.

PATIENT BENEFITS

- Repels dirt, fingerprints and smudges so the lens stays cleaner, longer
- Less cleaning reduces scratching
- Offers enhanced cleanability for a wider choice of AR coatings

HOYALUX iD AND iQ LENS AND DESIGN MATRIX

HOYA TECHNOLOGIES	iD MyStyle	iD InStyle	iD LifeStyle	iD LifeStyle (cd)	iD Single Vision	Summit ecp iQ	Summit cd iQ	iQ Single Vision	ST28 iQ
HOYA Free-Form™	●	●	●	●	●	●	●	●	●
iDea iD w/Enhanced Extensive Analysis	●								
iDs Integrated Double Surface Design	●	●	●	●	●				
bvc Balanced View Control	●	●	●	●					
itc Integrated Transmittance Control						●	●		
ECP -Extended Corrective Performance						●			
EP - Expanded Periphery					●				
FITTING HEIGHT									
14mm minimum	Personalized to frame	Customized to frame		●	N/A		●	N/A	N/A
18mm minimum			●		N/A	●		N/A	N/A

HOYA the company

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 alike.

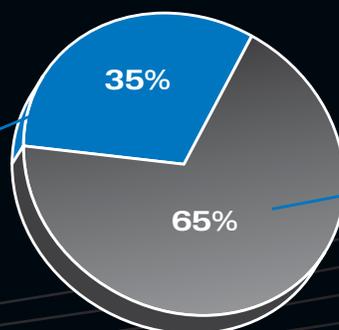
We are The HOYA Free-Form Company™. As the innovator of this technology, our custom surfacing is only the beginning for HOYALUX

progressive lenses, and the innovations that lie ahead will surely continue to raise the bar and write history for unsurpassed visual 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.

Eye Care:

- Eyeglass lenses
- Contact lenses
- IOL's (artificial intraocular lenses)



Information Technologies, Cameras, and Medical Equipment:

- Digital cameras and lens units
- Glass disks for hard disk drives
- Industrial and medical lasers
- LCD photomasks
- Medical endoscopes
- Microlenses
- Semiconductor photomasks

2011 HOYA LENS AVAILABILITY CHART

March 2011

Free-Form Technologies	iD MyStyle®	iD InStyle™	iD LifeStyle**	iD LifeStyle® (cd)**	iD Single Vision™	Summit ecp iQ™	Summit cd iQ™	Single Vision iQ	ST28 iQ
Fitting Height	Personalized To Frame	Customized To Frame	18mm min.	14mm min.	N/A	18mm min.	14mm min.	N/A	N/A
Materials									
Plastic CR-39 1.50	-8.00 to +6.00 (+0.75 to +3.50)		-8.00 to +6.00 (+0.75 to +3.50)	-8.00 to +6.00 (+0.75 to +3.50)		-10.00 to +6.00 (+0.75 to +4.00)	-10.00 to +6.00 (+0.75 to +3.50)	-13.00 to +6.50	-10.00 to +4.00 (+0.75 to +3.50)
Plastic CR-39 1.50 Polarized						-6.00 to +3.00 (+1.00 to +3.00) (Gray, Brown)			
Plastic CR-39 1.50 Transitions	-8.00 to +6.00 (+0.75 to +3.50) (Suntech Gray, Brown)		-8.00 to +6.00 (+0.75 to +3.50) (Gray, Brown)	-8.00 to +6.00 (+0.75 to +3.50) (Gray, Brown)		-10.00 to +6.00 (+1.00 to +3.50) (Gray)	-10.00 to +6.00 (+1.00 to +3.50) (Gray, Brown)	-6.00 to +4.00 (Gray)	-6.00 to +4.00 (+1.00 to +3.00) (Gray)
Plastic CR-39 1.50 Transitions XTRActive			-8.00 to +6.00 (+1.00 to +3.00) April 2011	-8.00 to +6.00 (+1.00 to +3.00) April 2011		-10.00 to +6.00 (+1.00 to +3.00)	-10.00 to +6.00 (+1.00 to +3.00) April 2011	-10.00 to +6.00	-10.00 to +6.00 (+1.00 to +3.00)
Phoenix Trivex 1.53	-8.00 to +6.00 (+0.75 to +3.50)	-8.00 to +6.00 (+0.75 to +3.50)	-8.00 to +6.00 (+0.75 to +3.50)	-8.00 to +6.00 (+0.75 to +3.50)		-10.00 to +6.00 (+0.75 to +4.00)	-10.00 to +6.00 (+0.75 to +3.50)	-13.00 to +11.00	-10.00 to +8.00 (+0.75 to +3.50)
Phoenix Trivex 1.53 Polarized									
Phoenix Trivex 1.53 Transitions		-8.00 to +6.00 (+0.75 to +3.50) (Suntech Gray, Brown)	-8.00 to +6.00 (+0.75 to +3.50) (Gray, Brown)	-8.00 to +6.00 (+0.75 to +3.50) (Gray, Brown)		-10.00 to +6.00 (+1.00 to +3.00) (Gray, Brown)	-10.00 to +6.00 (+1.00 to +3.00) (Gray, Brown)	-10.00 to +4.00 (Gray)	-10.00 to +6.00 (+1.00 to +3.00) (Gray, Brown)
Phoenix Trivex 1.53 Transitions XTRActive			-8.00 to +6.00 (+0.75 to +3.50)	-8.00 to +6.00 (+0.75 to +3.50)		-10.00 to +6.00 (+1.00 to +3.00)	-10.00 to +6.00 (+1.00 to +3.00)		
Polycarbonate 1.59			-6.00 to +6.00 (+1.00 to +3.00)	-6.00 to +6.00 (+1.00 to +3.00)		-6.00 to +6.00 (+1.00 to +3.00)	-10.00 to +6.00 (+1.00 to +3.00)	-10.00 to +6.00	
Polycarbonate 1.59 Polarized			-6.00 to +6.00 (+1.00 to +3.00)	-6.00 to +6.00 (+1.00 to +3.00)		-6.00 to +6.00 (+1.00 to +3.00) (Gray, Brown)			
Polycarbonate 1.59 Transitions			-6.00 to +6.00 (+1.00 to +3.00) (Gray)	-6.00 to +6.00 (+1.00 to +3.00)		-6.00 to +6.00 (+1.00 to +3.00) (Gray, Brown)			
EYAS Hi-Index 1.60	-10.00 to +8.00 (+0.75 to +3.50)	-10.00 to +6.00 (+0.75 to +3.50)	-10.00 to +6.00 (+0.75 to +3.50)	-10.00 to +6.00 (+0.75 to +3.50)	-10.00 to +8.00	-10.00 to +6.00 (+0.75 to +4.00)	-10.00 to +6.00 (+0.75 to +3.50)		
EYAS Hi-Index 1.60 Transitions	-10.00 to +8.00 (+0.75 to +3.50) (Suntech Gray, Brown)	-10.00 to +6.00 (+0.75 to +3.50) (Suntech Gray, Brown)	-10.00 to +6.00 (+0.75 to +3.50) (Gray, Brown)	-10.00 to +6.00 (+0.75 to +3.50) (Gray, Brown)	-10.00 to +8.00 (Suntech Gray, Brown)	-10.00 to +6.00 (+0.75 to +4.00) (Gray, Brown)	-10.00 to +6.00 (+0.75 to +3.50) (Gray, Brown)		
EYNOA Ultra Hi-Index 1.67	-10.00 to +8.00 (+0.75 to +3.50)	-10.00 to +6.00 (+0.75 to +3.50)	-10.00 to +6.00 (+0.75 to +3.50)	-10.00 to +6.00 (+0.75 to +3.50)	-15.00 to +10.00	-13.00 to +8.00 (+0.50 to +4.00)	-13.00 to +6.00 (+1.00 to +3.50)		
EYNOA Ultra Hi-Index 1.67 Transitions	-10.00 to +8.00 (+0.75 to +3.50) (Suntech Gray, Brown)	-10.00 to +6.00 (+0.75 to +3.50) (Suntech Gray, Brown)	-10.00 to +6.00 (+1.00 to +3.00) (Gray, Brown)	-10.00 to +6.00 (+1.00 to +3.00) (Gray, Brown)	-15.00 to +10.00 (Suntech Gray, Brown)	-13.00 to +8.00 (+0.75 to +4.00) (Gray, Brown)	-13.00 to +6.00 (+0.75 to +3.50) (Gray, Brown)		
EYRY Ultra Hi-Index 1.70		-10.00 to +6.00 (+0.75 to +3.50)			-15.00 to +10.00				

* HOYALUX iD LifeStyle has two photochromic options: Transitions and Suntech. All lens availability is for total powers. All Suntech requires HOYA AR coating.

Conventional Technologies	HOYALUX SUMMIT™ ecp	HOYALUX SUMMIT™ cd	HOYALUX GP WIDE™	HOYALUX GP™	HOYALUX TACT™	SINGLE VISION	ASPHERIC SINGLE VISION	FLAT TOP BIFOCAL 28
Fitting Height	18mm min.	14mm min.	18mm min.	18mm min.	18mm min.	N/A		N/A
Materials								
Plastic CR-39 1.50	-10.00 to +6.00 (+0.75 to +4.00)	-10.00 to +6.00 (+0.75 to +3.50)	-10.00 to +6.00 (+0.75 to +3.50)	-8.00 to +6.00 (+1.00 to +3.00)	-8.00 to +6.00 (+1.00 to +3.00)	-13.00 to +6.50	-8.50 to +6.50	-10.00 to +4.00 (+0.75 to +3.50)
Plastic CR-39 1.50 Polarized	-6.00 to +3.00* (+1.00 to +3.00)		-6.00 to +5.00 (+1.00 to +3.00) HV or SHV not available			-6.00 to +4.00		-6.00 to +4.00 (+1.00 to +3.00)
Plastic CR-39 1.50 Transitions	-10.00 to +6.00 (+1.00 to +3.50) (Gray, Brown)	-10.00 to +6.00 (+1.00 to +3.50) (Gray, Brown)	-10.00 to +6.00 (+1.00 to +3.50) (Gray, Brown)			-10.00 to +6.00 (Gray, Brown)		-10.00 to +6.00 (+1.00 to +3.00) (Gray, Brown)
Plastic CR-39 1.50 Transitions XTRActive	-10.00 to +6.00 (+1.00 to +3.00) April 2011	-10.00 to +6.00 (+1.00 to +3.00) April 2011					-10.00 to +6.00	-10.00 to +6.00 (+1.00 to +3.00)
Phoenix Trivex 1.53	-10.00 to +6.00 (+0.75 to +4.00)	-10.00 to +6.00 (+0.75 to +3.50)	-10.00 to +6.00 (+0.75 to +3.50)			-13.00 to +11.00	-10.00 to +8.00	-10.00 to +8.00 (+0.75 to +3.50)
Phoenix Trivex 1.53 Polarized						-10.00 to +6.00 (Gray, Brown)		
Phoenix Trivex 1.53 Transitions	-10.00 to +6.00 (+1.00 to +3.00) (Gray, Brown)	-10.00 to +6.00 (+1.00 to +3.00) (Gray, Brown)	-10.00 to +6.00 (+1.00 to +3.50) (Gray, Brown)			-10.00 to +6.00 (Gray, Brown)		-10.00 to +6.00 (+1.00 to +3.00) (Gray, Brown)
Phoenix Trivex 1.53 Transitions XTRActive	-10.00 to +6.00 (+1.00 to +3.00)	-10.00 to +6.00 (+1.00 to +3.00)				-10.00 to +6.00		
Polycarbonate 1.59	-6.00 to +6.00 (+1.00 to +3.00)	-10.00 to +6.00 (+1.00 to +3.00)						
Polycarbonate 1.59 Polarized	-6.00 to +6.00 (+1.00 to +3.00) (Gray, Brown)							
Polycarbonate 1.59 Transitions	-6.00 to +6.00 (+1.00 to +3.00) (Gray, Brown)							
EYAS Hi-Index 1.60	-10.00 to +6.00 (+0.75 to +4.00)	-10.00 to +6.00 (+0.75 to +3.50)	-10.00 to +6.00 (+0.75 to +3.50)		-8.00 to +6.00 (+1.00 to +3.00)	-12.50 to +8.00	-10.00 to +8.00	
EYAS Hi-Index 1.60 Transitions	-10.00 to +6.00 (+0.75 to +4.00) (Gray, Brown)	-10.00 to +6.00 (+0.75 to +3.50) (Gray, Brown)	-10.00 to +6.00 (+0.75 to +3.50) (Gray, Brown)			-10.00 to +6.00 (Gray, Brown)	-10.00 to +6.00 (Gray, Brown)	
EYNOA Ultra Hi-Index 1.67	-13.00 to +8.00 (+0.50 to +4.00)	-13.00 to +6.00 (+1.00 to +3.50)					-15.00 to +10.00	
EYNOA Ultra Hi-Index 1.67 Transitions	-13.00 to +8.00 (+0.75 to +4.00) (Gray, Brown)	-10.00 to +6.00 (+1.00 to +3.50)					-10.00 to +10.00 (Gray, Brown)	
EYRY Ultra Hi-Index 1.70	-13.00 to +7.50 (+0.75 to +4.00)	-13.00 to +6.00 (+0.75 to +3.50)	-13.00 to +8.00 (+0.75 to +3.50)				-15.00 to +10.00	

* HOYALUX SUMMIT ecp Polarized is sold with a systematic Clarity Shield 2 scratch coating. HV or SHV is available as options