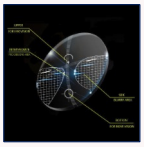
Deconstructing Advanced Progressive Lens Designs: A Stepwise Approach



vision expo

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- SightLine Ophthalmic Consulting | Co-founder and CEO
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- Master in Ophthalmic Optics (ABOM)
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- Licensed Optometrist (CA-DCA)

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Disclosures

- The content of this course was developed independently without commercial bias or influence
- Consulting History
  - SightLine Ophthalmic Consulting
  - Visionix
  - Essilor Instruments, USA
  - Topcon Healthcare

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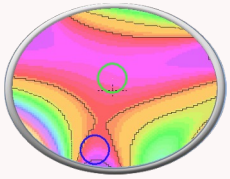
Learning Journey Objectives

Progressive Lens DNA
-Surfacing
- Traditional vs Digital Design Features:
- Enhanced

-Design
- Dual
- All Back Surface

-Aberration
- Hard vs Soft

-The Drop
-Vertical Power Change



Review of manufacturers latest technology and product portfolios
Patient Case Review

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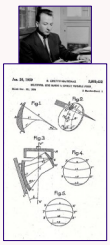
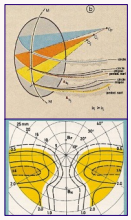
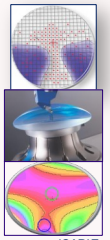
Origins of the Modern PAL



Bernard Maitenaz
Patents 1953-1959



Design Improvements
1960-1970's



Computer Aided Design (CAD)Freeform,
Computer Numeric Control (CNC) Machines
1980-2020's

The Competition for Leadership when the Market for Progressive Lenses became global

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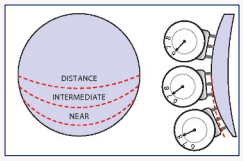
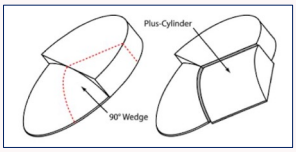
Basic Progressive Lens Design:
Simple Yet Complex





PAL
- A type of multifocal lens
- Increasing curvature = increased Plus power
- Variable focus intermediate zone

- Ledges and lines are blended
- Oblique Plus cyl is blended in the periphery = Surface Astigmatism
- No image jump

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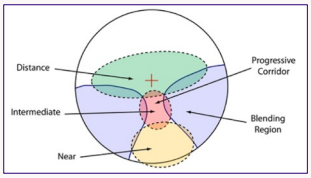
Four Structural Features to Manipulate



- Distance = stable area for distance Rx
- Near = stable area for near Rx
- Corridor = zone of increasing, plus power, provides mid-range vision
- Blending Region = contains varying amounts of Surface Astigmatism

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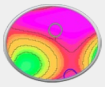
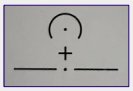
5 Key PAL Concepts

1. Surfacing: Traditional vs Freeform
How is the lens made?

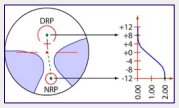
2. Design: Front, Dual, All Back
Where is the prescription placed?



3. Aberration Pattern
What is the Surface Astigmatism distribution?



4. The Drop: FRP to PRP
What does it mean?



5. Vertical Power Change:
How can we control it?

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Key Concept #1
Surfacing

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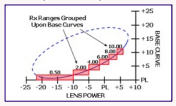
Surfacing

TRADITIONAL PAL SURFACING

Tscherning's Ellipse

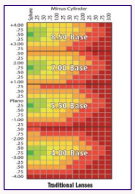
individual powers need separate base curves.



Optical compromise:

- Range of Rx grouped into one base curve
- reduces the number and cost of many molds

I need a 7.5
Store only stocks 7 or 8



Green = best vision
Yellow, orange, red = increasingly poor peripheral vision

Optical Lens Design by Darryl Meister

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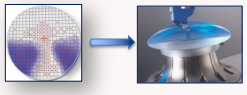
Surfacing

FREEFORM PAL SURFACING

NO MORE FORMS

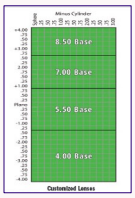
Software Program

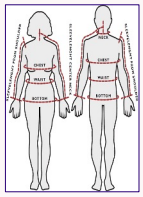
Digital Surfacer
moves in 3D, like a record player



Point by point surface profile

- RX
- Aberrations
- Position of wear





ALL prescriptions can be Optimized
Like a custom made dress or suit

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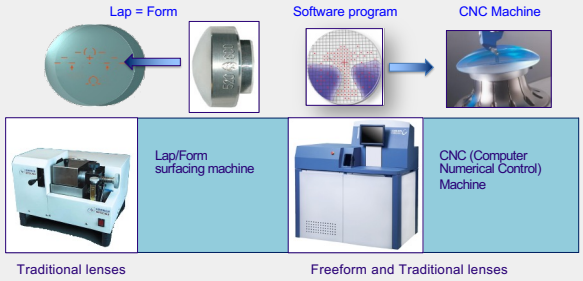
Surfacing Equipment: Lap vs CNC surfacing



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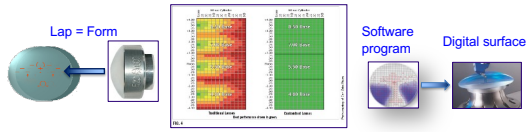
Surfacing: Traditional surfacing vs Freeform digital surfacing



Traditional lap surfacing

- Back surface Rx only
- Sphere/Cyl only
- Accuracy to 1/16 D (0.06 D)
- PAL design on front

Freeform digital surfacing

- Free-form surface
- Accuracy to 1/100 D (0.01 D)
- PAL design on Front &/or Back
- Back surface Rx and aberration control
- Limitation - prism amount. Use a specialty lab (eg. Quest Vision Care Specialty Lab)

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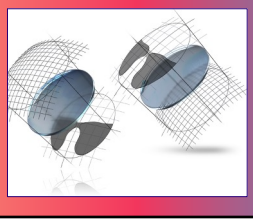
Key Concept #2
Design



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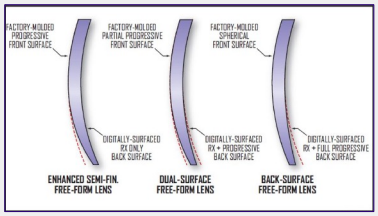
Design: Free Form Configurations

Enhanced Semi-finished/Front Surface - FS



The Optics of Free-Form Progressive Lenses by Darryl Meister, October 2008

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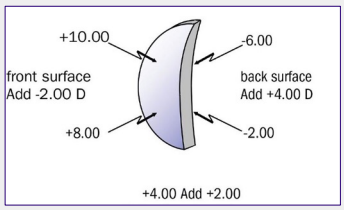
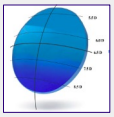
DUAL SURFACE DESIGN- DS





- Aspheric front surface
- ~3.00D range
- Increased magnification at near
- Soft lens design
- Better cosmesis in high plus RX
- Preferred by hyperopes

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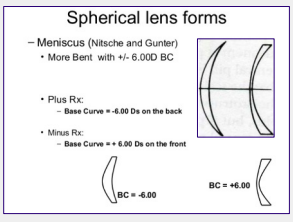
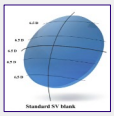
ALL BACK SURFACE DESIGN - ABS





- Spherical front surface
- Rx on back of lens
- More types of lens options
- Not ideal cosmetics in high plus lenses
- Hard design
- Preferred by myopes

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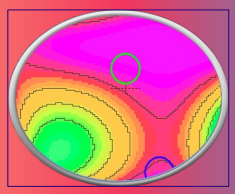
Key Concept #3 Aberrations



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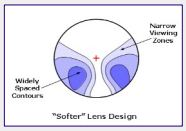
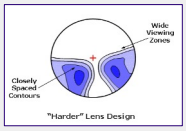
Off Axis Aberrations

All variable power lenses have off axis aberrations

- Contour lines = 0.50-0.75 DC
- Closer together = faster change
- Darker the blue = higher amount





2 Categories

SOFT Distribution
- Spread out more
- Dual surfacing
- Hyperopes (generally)

HARD Distribution
- Concentrated below 180
- All back surfacing
- Myopes (generally)

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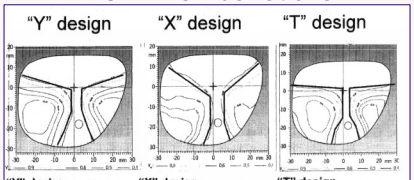
Off Axis Aberrations



"Y" design	"X" design	"T" design
•slight distance distortion	•distortion in the distance	•distortion free distance
• moderate intermediate	•wide intermediate area	•narrow intermediate
•wide near	•narrow reading area	•wide near
•soft design MEDIUM	•very soft design SOFT	•hard in design HARD

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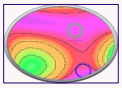
Lens Geek at Work

Manual method



Wavefront analysis

My home office

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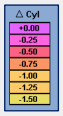
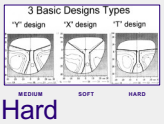
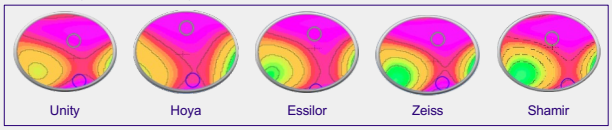
Off Axis Aberration Softest to Hardest





Soft → Hard

Unity Hoya Essilor Zeiss Shamir



All of these lenses have -3.00 -0.50 x 015 in the distance with +2.25 ADD power

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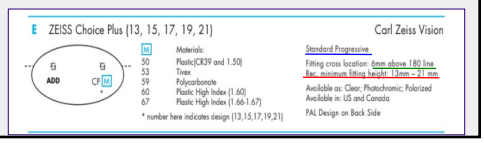
A good resource for DNA information

Vision Council EPIC
ELECTRONIC PROGRESSIVE IDENTIFIER CATALOG



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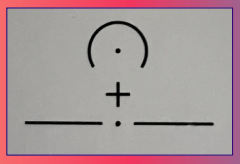
Key Concept #4
The Drop



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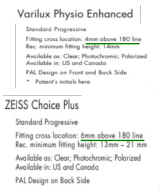
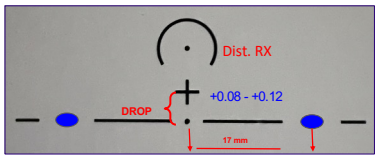
THE DROP: FRP (pupil) to PRP (180 line)





- Drop doesn't always indicate the beginning of the power change
- Older designs used to compensate for Martin's Rule of Tilt
  - Drop OC 1mm for every 2° panto angle
- Shortcut for marking up lenses or verifying fitting heights w/o a layout chart

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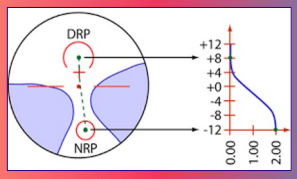
Key Concept #5
Vertical Power Change



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Vertical Power Change

Definition of a Corridor

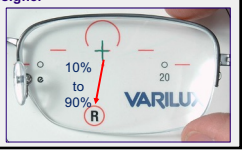
- There is no industry accepted definition of a corridor
- Common definition "Area where the power transitions from Dist to Near"

Lens designers

- Don't use the term "corridor"
- Prefer "Progression Length"
  - Area of the lens that contains 10% to 90% of the ADD power

Power Length (PL) is at the discretion of the lens designer

- Position
  - Bottom of DRC
  - Fitting Cross
  - Prism Ref. Point
- Length
  - Long or short
- Inset depends on reading habits or NPD



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Vertical Power Change

3 Corridor Design Concepts: MFH, Variable, Fixed

Minimum Fitting Height: All PALs have a MFH. This is a key factor

★ Older Std PALs design concept

- 85% of ADD is at the top of the NRC
- To ensure 100% = MFH + 2mm

We don't measure corridor/progression lengths,
We measure Fitting Heights

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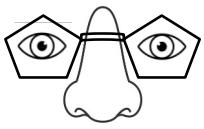
SIDE BAR: Factors Affecting MFH

- Frame Shape
  - Pilot
  - Angular
- Bridge placement
  - Wide/thin nose
- Pupillary Distance
  - Narrow/Wide



All of these can benefit or take away from the MFH

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Variable Corridor Design

- ★ Used in FreeForm designs (ABS & DS)
  - Software chooses the longer corridor based on VFH
  - Limits to how long
- Longer power change for longer VFH, Shorter for shorter
- Use MFH + 2mm for your fitting height

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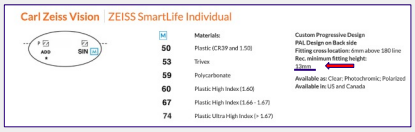
Variable Corridor PAL with task specific priorities



- Prioritized designs available w/ Freeform software
- Allows some control of variable corridor
- Variable corridor may be the reason for non-Adapt?
  - change in B dimension, short to long
  - solution = refit with similar corridor length

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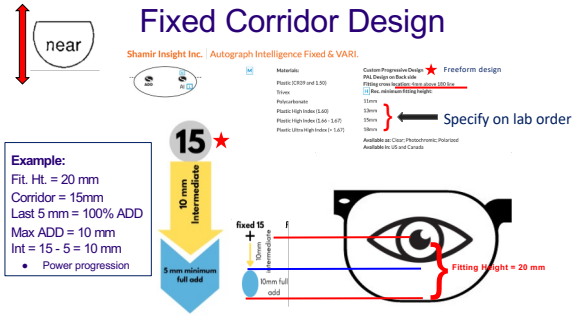
Fixed Corridor Design



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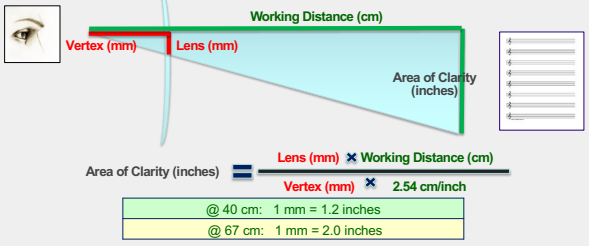
Geometry 101: How much is your patient seeing?



$$\text{Area of Clarity (inches)} = \frac{\text{Lens (mm)} \times \text{Working Distance (cm)}}{\text{Vertex (mm)} \times 2.54\ \text{cm/inch}}$$

@ 40 cm: 1 mm = 1.2 inches
@ 67 cm: 1 mm = 2.0 inches

Calculations are simplified and do not take into consideration the center of rotation or the power of the lens.

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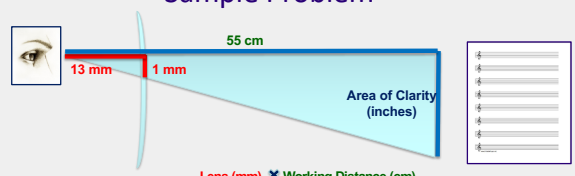
Sample Problem



$$\text{Area of Clarity (inches)} = \frac{\text{Lens (mm)} \times \text{Working Distance (cm)}}{\text{Vertex (mm)} \times 2.54\ \text{cm/inch}}$$

$$\text{Area of Clarity (inches)} = \frac{1 \times 55}{13 \times 2.54} = \frac{55}{33.02} = 1.67 \text{ inches}$$

Calculations are simplified and do not take into consideration the center of rotation or the power of the lens.

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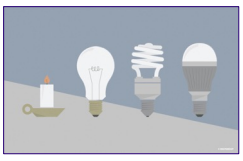
PRODUCT INNOVATION AND EVOLUTION



Rapid development

Best exercise equipment

Every industry strives to provide the most advanced products to today's consumer

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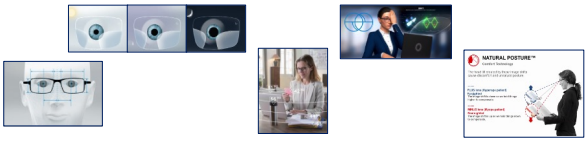
Free Form Design Evolution

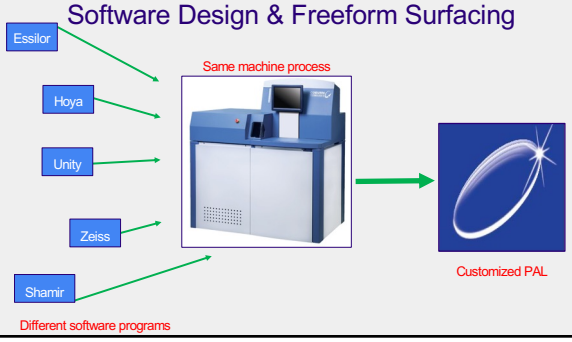
Through R&D, computerization, and advanced machinery lens designers have:

- Decrease higher order aberrations resulting in wider sharper fields of view for all lighting conditions
- Optimize binocularity to provide similar images to each eye in all directions of gaze
- Compensate Rx for position of wear, as well as refractive error, age, amount of add, pupil size
- Decrease off axis aberrations to widen the intermediate and near zones



37

Software Design & Freeform Surfacing



38

PRODUCT PORTFOLIO REVIEW of Free Form Progressive Lenses

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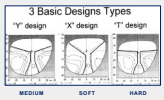
Essilor Portfolio

Free Form PAL 2 Cat. N	Free From PAL 1 Cat. O
Varilux XR 14/4(DS)	Comfort Max Fit 14/4/DS
Varilux X Fit 14/4(DS)	Varilux X 14/4(DS)



Aberration
Soft, X = DS
Medium Soft, Y = ABS

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Essilor Technology Review

TECHNOLOGY
All Varilux® lens designs
Digital Surfacing
Harmful Blue Light* Protection (Essential Blue Series™)
W.A.V.E. Technology™
W.A.V.E. Technology 2™
Binocular Booster (Varilux® Physio® W3+) SynchronEyes™ (Varilux® X Series™)
Nanoptix™ Technology
Xtend™ Technology
Personalized Measurements***

New ingredients added to the recipe

Freeform technology becomes more sophisticated with newer designs to offset the limitations of the PAL design

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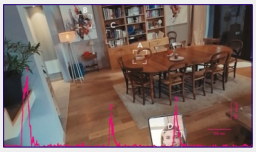
Improved Varilux XR Essilor Technology

Xtend Technology
- Optimizes intermediate zone for digital devices
- Wider FOV along power progression
- Decreased head movements for within arm's length viewing

XR-motion Technology
- Replaced SynchronEyes
- Software calculates R/L Rx as matched pair
- Provides similar images to each eye
- Applied to all fields of gaze
- Improves binocular function



Illustrates zones of interest and eye movement patterns between points of interest

Caution: may be contraindicated with poor BV.

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Essilor Technology Comparison

Eye-Ruler 2
- Position of wear measurements
- Measures reading eye movements
- Position of down gaze

PERSONALIZED MEASUREMENTS

Required: ● Optional, Default Measurements Accepted: ■

XR Track requires EyeRuler 2 measurements

	PD and Fitting Height	Pantoscopic Tilt	Wrap Angle	Vertex Distance	Near Vision Behavior
Varilux® XR Track	●	●	●	●	●
Varilux® XR Design	●	■	■	■	
Varilux® X Fit Varilux® Comfort Max Fit	● ●	■ ■	■ ■	■ ■	

Software program optimizes near zone to match pt. near vision behavior

Consult Manufacturer for complete product portfolio information

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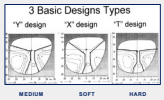
Hoya Portfolio

Free Form PAL 2 Cat. N CM (optional)	Free From PAL 1 Cat. O
iD MyStyle 3 14/4(DS) Tyro, Modern, Adventure, Detail, Stable	Array 2/ Wrap 11,13,15,17,VL/4(ABS)CM
iD LifeStyle 4 11,12,13,14,15,16VL(DS) Urban, Indoor, Outdoor	



Aberration
Soft X = DS
Medium Soft Y = ABS

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Hoya Design Update

iD LifeStyle 4

3 Prioritization Options	Description
Urban	Balanced for all visual distances
Indoor	Int/Near prioritized lens
Outdoor	Distance centric design

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Hoya Design Update

iD MyStyle 3

5 Prioritization Options	Description
Tyro ★ New	New PAL wearer, smooth periph, indoor lifestyle
Expert ★ New	(similar to MyStyle 2 Stable design) Experienced PAL wearer, wide Dist/Near, belted Int zone
Detail	Wider Int/Near zones
Modern	Balanced for all viewing distances
Adventure	Distance centric

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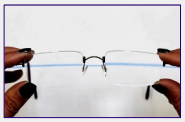
Hoya Technology Review

73% of the population have a difference in refractive error between the eyes of 0.25D or more. [1]



- Unequal images sizes
- Vertical prism imbalance

NEW — AdaptEase™ Technology

NEW — 3D Binocular Vision

- AdaptEase decreases unwanted astigmatism in the periphery
- 3D Binocular Vision reduces prismatic effect adjacent to the corridor

Binocular Harmonization Technology™

- Algorithm analysis both R/L Rxs
- Optimizes curvature and corridor length
- Reduces mag & prism imbalance
- Improve binocularity, similar to *XR-Motion*

[1] Hoya data in file. European progressive lens orders 2007-2013

Caution: may be contraindicated with poor BV.

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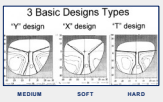
Shamir Portfolio

Free Form PAL 2 Cat. N (CM optional)	Free From PAL 1 Cat. O
Autograph Intelligence 11,13,15,18,V/4(ABS)	Autograph II 11,13,15,18,V/4(ABS)CM
Autograph III 11,13,15,18,V/4(ABS)	Autograph II Attitude 18,15/4(ABS)CM
Attitude III Fashion 18,15/4(ABS) Attitude III Sport 18/4(ABS)	

Aberration
Hard T = ABS



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SHAMIR

- Optimize near inset,
- Provide Near Mono PDs

Design	Autograph Intelligence	Autograph III	Autograph II+	InTouch	Spectrum+
Technology	$$$+	$$$	$$	$$	$
Eyepoint Technology AI	☑				
Continuous Design	☑				
AI Engine	☑				
Eyepoint Technology III		☑			
Natural Posture	☑	☑	☑		☑
IntelliCorridor	☑	☑		☑	
As-Worn Quadro	☑	☑			
Eyepoint Technology				☑	☑
Eyepoint Technology As-Worn			☑		
Close-Up	☑		☑		

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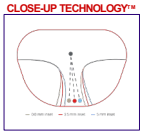
Shamir Technology Review

EYE-POINT TECHNOLOGY AI™

- Age matched database of head & eye movements across visual distance range
- Combined w/ AI = customize design for dynamic eye movements

CLOSE-UP TECHNOLOGY™



Benefits:

- Unequal near convergence
- Working dist. ≠ 40 cm
- Provide Dist and Near mono PDs

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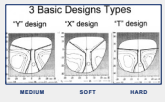
Zeiss Portfolio

Aberration
Hard T = ABS

3 Basic Designs Types



Free Form PAL 2 Cat. N (CM optional)	Free Form PAL 1 Cat. O
SmartLife Individual (variable) 13/6(ABS)	SmartLife Pure (S,M,L) 14,16,18/6(ABS)
SmartLife Individual (S,M,L)14,16,18/6(ABS)	SmartLife Plus 13/6(ABS)
	SmartLife Superb 13/6(ABS)CM

SmartLife Intermediate and Near have been replaced

Previous Design	New Design
Individual	Individual 3
Individual Near	Individual 3 M
Individual Intermediate	Individual 3 L

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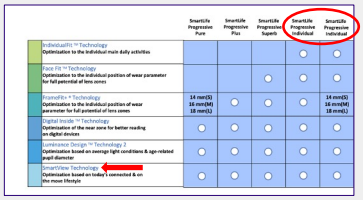
Zeiss Technology Review



SmartView Technology

NEW
1 Smart Dynamic Optics
Addresses binocular eye movements and Rx imbalances

NEW
2 Age Intelligence
Factors in ADD power, pupil size for a given age.

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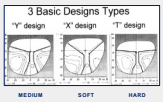
Unity Portfolio

Free Form PAL 2 Cat. N (CM optional)	Free From PAL 1 Cat. O
Via Elite II (variable) 12/4(ABS)	Via Plus II 12/4(ABS)CM
Via Elite II 12, 14, 16, 18/4(ABS)	Via Wrap II 12/4(ABS)CM

Aberration
Medium Soft Y = ABS



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Unity Technology Review

Technology	Patient Benefit	Unity Via Elite II	Unity Via Plus II, Mobile II, Wrap II	Unity Via II
Advanced Fit	Allows patient to easily find intermediate, near and preferred reading distance. Allows more natural posture and unsurpassed visual ergonomics.	•		
InnoVue (NEW)	Optimize Off axis Abber./Wider FOV	•	•	
Digital Viewpoint	Optimized prescription at every point of the lens. Minimized peripheral distortion.	•	•	
EquiBalance (NEW)	Optimize R/L Rx/ Mag. & Prims Imbal.	•	•	•
OptiScreen (NEW)	Optimize Int zone, Like Xtend / Age Intel	•	•	•
Automatic Reading Height Optimization	Each lens is customized for the individual patient ensuring that the full add power is fit inside the frame.	•	•	•
Variable Inset	Larger usable reading area.	•	•	•

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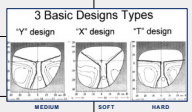
IOT Portfolio

Private label lenses thru Independent Labs

Free Form PAL 3	Free Form PAL 2	Free Form PAL1	Specialty FF PAL
Camber Steady Plus Balanced 14-18/4(DS) Medium	Endless Steady Balanced 14-18/4(ABS) Medium	Essential Steady Balanced 14-18/4(ABS) Medium	Endless Pilot 14,16,18/4(ABS) Medium
Camber Steady Plus Distance 14-18/4(DS) Medium	Endless Steady Distance 14-18/4(ABS) Medium	Essential Steady Distance 14-18/4(ABS) Medium	
Camber Steady Plus Intermediate 14-18/4(DS) Soft	Endless Steady Intermediate 14-18/4(ABS) Soft	Essential Steady Intermediate 14-18/4(ABS) Soft	
Camber Steady Plus Near 14-18/4(DS) Medium	Endless Steady Near 14-18/4(ABS) Medium	Essential Steady Near 14-18/4(ABS) Medium	



IOT = Indizen Optical Technologies Corridor length can be specified 14-18 mm in 1 mm increments or software driven

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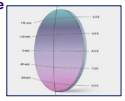
IOT Technology

Goal of lens design: use both surfaces to minimize
- mathematical limitations
- unwanted spherocylinder distortions along periph of power progression
  - most lens designs only address cylinder component

Front Surface

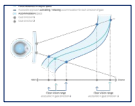


Camber lens blank

Back surface

Steady Methodology
decrease periph swim

Steady Plus Methodology
address spherical component



Digital Ray-Path 2
decrease oblique aberrations
over the accommodative space

Personalized Parameters

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IOT Technology Comparison

Technology	Essential Steady Good	Endless Steady Better	Camber Steady Plus Best
Camber			●
Steady Plus Methodology			●
Steady Methodology	●	●	
IOT Digital Ray-Path 2		●	●

The Optical Journal Independent Optical Laboratories In The United States

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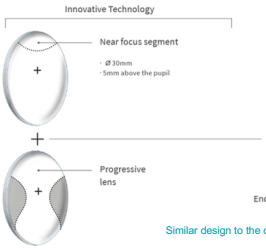
IOT Endless Pilot Progressive



- Free Form Design
- All Back Surface
- 14,16,18mm MFH
- 4mm Drop
- Medium Aberration Pattern

Similar design to the discontinued Varilux Overview lens

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Communicating your knowledge to the patient

Advances in lens design technology provide sharper images with wider field of view at all distances in changing lighting conditions.

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What are you going to prescribe for Ted?

Ted is a 53 y.o M. Entertainment Attorney/Musician

LEE: 2 yrs.
CC: decreased Dist & Int vision
Pt wears 2 pair of glasses (SVD and SVN)
~~Interested in all purpose glasses~~

Lensometry
Dist. Rx
OD -2.75 -1.25 x 085 20/25
OS -3.00 -1.50 x 085 20/25
Near Rx (Effective ADD = +1.50)
OD -1.25 -1.25 x 085 .6M
OS -1.50 -1.50 x 085 .6M

Manifest Refraction
OD -3.25 -1.25 x 085 20/15
OD -3.50 -1.50 x 085 20/15
~~Add +2.25~~
Ted will like a frame that is similar to the one he wears.
Fitting Height = 22 mm

Spectacle Recommendations
- near task specific lenses = computer use
- general wear progressive = indoor
- GW PAL sunglasses.
- task specific musician glasses

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Lens Portfolio

Varilux XR Design Technology 14/4(DS) **Varilux X Design Technology Fit** 14/4(DS)	Variable corridor
iD MyStyle 3 14/4(DS) **Tyro, Modern, Adventure, Detail, Stable** **iD LifeStyle 4** 11,12,13,14,VL(DS) **Urban, Indoor, Outdoor**	Variable corridor DS/Soft design/ease of adaptation
SmartLife Individual 13/6(ABS) or **(S,M,L)**14,16,18	ABS/Myopes, Hard design/periph noise
Autograph Intelligence 11,13,15,18,V/4(ABS)	ABS/Myopes, Hard design/periph noise
Via Elite II 12,14,16, 18/4(ABS)	ABS/Medium Soft, less periph noise

Moderate Myope
> +2.00 Add
1st PAL
Used to SV, wide FOV
OD -3.25 -1.25 x 085
OD -3.50 -1.50 x 085
Add +2.25
Fitting Ht. = 22mm

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First Time Progressive for Debbie

Debbie 48 y.o. F / Supervisor
First eye exam

CC: She doesn't like taking her glasses on and off and relies on them all day long.

Lensometry
+2.50 OTC for reading and computer
Work well for Int/Near, Takes off for Dist.

Unaided acuities
20/25- OD
20/25- OS

Manifest Refraction
OD +1.00 DS 20/20
OS +1.00 DS 20/20

BV, OH, SH: WNL/unremarkable.

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Lens Portfolio

Varilux XR Design Technology ← 14/4(DS) **Varilux X Design Technology Fit** 14/4(DS)	DS/Soft design Variable Corridor
iD MyStyle 3 14/4(DS) **Tyro, Modern, Adventure, Detail, Stable** **iD LifeStyle 4** 11,12,13,14,VL(DS) **Urban, Indoor, Outdoor**	
SmartLife Individual 13/6(ABS) or **(S,M,L)**14,16,18	
Autograph Intelligence 11,13,15,18,V/4(ABS)	
Via Elite II 12, 14, 16, 18/4(ABS)	

Rx
OD +1.00 DS
OD +1.00 DS
Add +1.50
Fitting Ht. = 28

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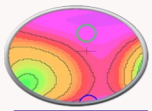
Troubleshooting: Rx check for Debbie

CC
"My distance vision is great, but I have to tilt my chin up to see my computer clearly and to read."

How did we troubleshoot the case?

Custom Progressive Design
PAL Design on Front and Back side
Fitting cross location: 4mm above 180 line
Rec. minimum fitting height: 17mm
Available as: ; Photochromic; Polarized
Available in: US and Canada



Varilux XR
- Freeform ✓
- Dual Surface ✓
- Soft Pattern ✓
- Variable Corridor

- Verified Rx, PDs, fitting heights
- Adjusted frame
- Analyzed PAL design
  - Dist VA - good
  - Adaptation - good
- Used to OTC readers for Int/Near

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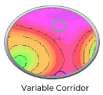
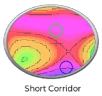
Lens Portfolio

Varilux XR Design Technology 14/4(DS) **Varilux X Design Technology Fit** 14/4(DS)	
iD MyStyle 3 14/4(DS) **Tyro, Modern, Adventure, Detail, Stable** **iD LifeStyle 4** ← 11,12,13,14,VL(DS) **Urban, Indoor, Outdoor**	Control the position of the near zone DS, Soft design ease of adaptation
SmartLife Individual 13/6(ABS) or **(S,M,L)**14,16,18	
Autograph Intelligence 11,13,15,18,V/4(ABS)	
Via Elite II 12, 14, 16, 18/4(ABS)	


Variable Corridor


Short Corridor

Rx
OD +1.00 DS
OD +1.00 DS
Add +1.50
Fitting Ht. = 28

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What are you going to prescribe for Walter?

Walter is a 50 y.o. M / High School Principal
LEE: 2 yrs

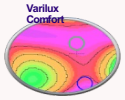
CC "I am here to update my prescription, I have no problems with distance vision using my glasses, but I am having trouble reading with them".

Lensometry
OD +1.00 DS
OS +1.00 DS
ADD +1.50

Manifest Refraction
OD +1.00DS 20/15
OS +1.00DS 20/15
ADD +2.00

BV, OH, SH: WNL/unremarkable

Varilux Comfort



Standard Progressive
PAL Design on Front side
Fitting cross location: 4mm above 180 line
Rec. minimum fitting height: 17mm
Available as: Clear; Photochromic; Polarized
Available in: US and Canada

- Happy with distance vision
- Happy with current PAL
  - older design
- Add increased to +2.00

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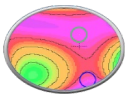
If it's not broken, don't fix it?

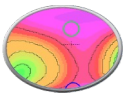
Varilux XR ← 14/4(DS) Customizable with POW **Varilux X Fit** ← 14/4(DS)	**Varilux X** ← 14/4(DS)	DS/Soft design Less periph noise Ease of adapt to higher ADD power
iD MyStyle 3 14/4(DS) **Tyro, Modern, Adventure, Detail, Stable** **iD LifeStyle 4** 11,12,13,14,VL(DS) **Urban, Indoor, Outdoor**		

Comparing +2.00 ADD

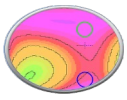
Comfort



Varilux X



Varilux XR



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What are you going to prescribe for Danny?

59 y.o. Grade School Teacher
Full time glasses wear, takes his glasses off to read

CC "Ever since I started using PAL's, my distance is not as sharp as before I needed PAL's. Is there something new that I can try?"

-2.50 DS OU 20/20 OD/OS, add +2.50

BV, OH, SH: WNL/unremarkable

PAL history:
1st time PAL = Varilux Comfort
Followed by:
Varilux Comfort Enhanced
Varilux Physio Enhanced

Should we prescribe Varilux XR Design?

Varilux XR Design

Custom Progressive Design
PAL Design on Front and Back side
Fitting cross location: 4mm above 180 line
Rec. minimum fitting height: 17mm
Available as: ; Photochromic; Polarized
Available in: US and Canada

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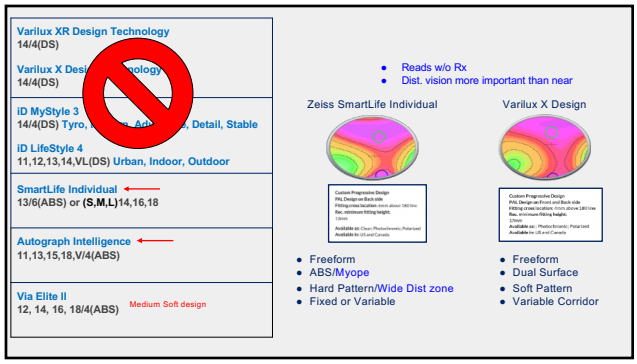

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Key Takeaways

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- Apply the DNA concepts when recommending and troubleshooting PALs
- Be able to discuss the benefits and limitations of the different lens designs
- Match the design characteristics to the visual needs
- Make changes based on analysis

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At the End of the Day

- Did I address the chief concern with the appropriate recommendations?
- Is it an improvement over what they are used to?
- Continue to develop your skills in the art and science of vision care
- Practice with compassion

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On behalf of Vision Expo, I sincerely thank you for being here this year.

Vision Expo Has Gone Green!

We have eliminated all paper session evaluation forms.
Please be sure to complete your electronic session evaluations online when you login to request your CE Letter for each course you attended!
Your feedback is important to us as our Education Planning Committee considers content and speakers for future meetings to provide you with the best education possible.

Michelle J. Hoff, OD, FAAO, ABOM, FNAO
Associate Clinical Professor
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Experience EXPO With Us!

- Main Stage – *Exhibit Hall – Booth P1586*
  - OptiCon General Session: Presented by United Opticians Associations (UOA) - A Conversation with Scott Shapiro, Thursday, 12:30pm – 1:30pm
  - UOA College Bowl, Friday, 12:30pm – 1:30pm
- OptiCon Hub – *Exhibit Hall – Booth P1271*

  The OptiCon Hub is brought to you by the United Opticians Association (UOA). The UOA is the international member-based organization that represents Opticians, Contact Lens Technicians and Ophthalmic Allied Professionals.
- Exhibit Hall Hours

Thursday, Feb 20	9:30am – 6:00pm
Friday, Feb 21	9:30am – 6:00pm
Saturday, Feb 22	9:30am – 3:00pm

Socials @ Poolside - Rosen Centre

Conferee Happy Hour	Wed, Feb 19 6:00-7:00 pm
Conferee Happy Hour	Thur, Feb 20 6:00-7:00 pm
Tropical Cocktail Reception	Fri, Feb 21 6:00-7:30

vision expo

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