Deconstructing Advanced Progressive Lens Designs: A Stepwise Approach

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- Mindful Eyes Foundation | Founder and Executive Director
- SightLine Ophthalmic Consulting | Co-founder and CEO
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- Master in Ophthalmic Optics (ABOM)
- Registered Spectacle Lens Dispenser (CA-SLD
- Licensed Optometrist (CA-DCA)

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Disclosures

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

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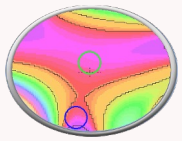
Learning Objectives

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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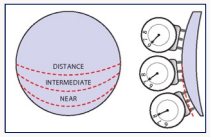
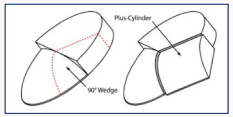
Basic Progressive Lens Design



Increased curvature = increased Plus power



Oblique Plus cyl is blended in the periphery creates seamless transition for distance to near

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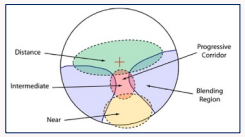
Four Structural Features to Manipulate



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

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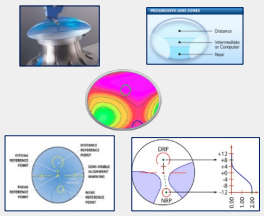
PAL DNA: 5 Concepts



1. Surfacing
2. Design
3. Aberration
4. Drop
5. Power Change

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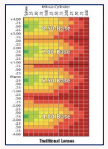
Surfacing

TRADITIONAL PAL SURFACING



Optimally designed for ONE prescription per base curve

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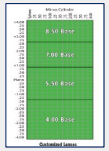
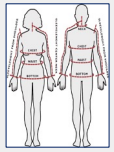
Surfacing

FREEFORM PAL SURFACING

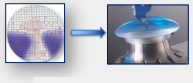




ALL prescriptions can be Optimized

Software Program

Digital Surfacer
moves in 3D, like a record player



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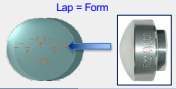
Surfacing Equipment: Traditional surfacing vs Freeform digital surfacing

Lap = Form

Software program

Digital surfacer



Traditional lap surfacing machine or Freeform digital surfacing machine

Freeform digital surfacing machine = driven by software program

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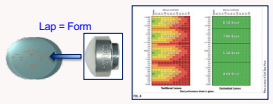
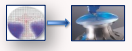
Surfacing: Traditional surfacing vs Freeform digital surfacing

Lap = Form



Software program

Digital surface



Traditional lap surfacing	Freeform digital surfacing
• Sphere/Cyl only • Accuracy to 1/16 D (0.06 D) • PAL design on front • Back surface Rx only	• 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

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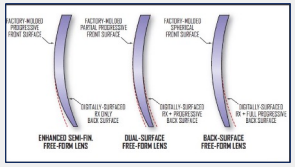
Design: Free Form Progressive Lens Configurations

Enhanced Semi-finished/Front Surface - FS



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

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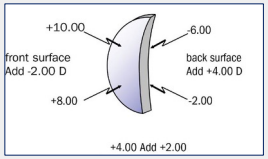
DUAL SURFACE DESIGN- DS



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

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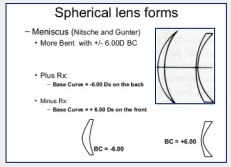
ALL BACK SURFACE DESIGN - ABS



- 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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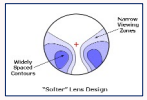
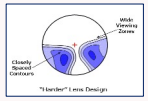
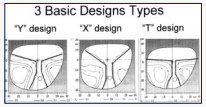
Off Axis Aberrations



SOFT Distribution
Spread out more
Dual surfacing
Hyperopes (generally)



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



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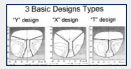
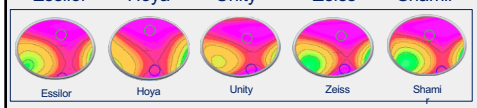
Off Axis Aberration Softest to Hardest



Soft → Hard

Essilor | Hoya | Unity | Zeiss | Shamir



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

Contour plots were made using the Visionix VX40 Lens Analyzer

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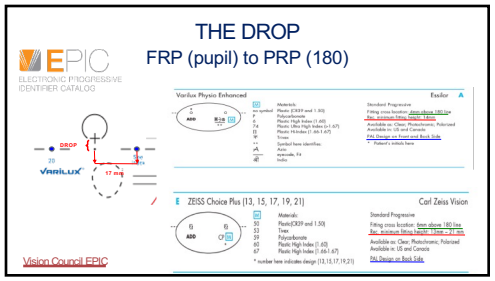
THE DROP
FRP (pupil) to PRP (180)
EPIC
ELECTRONIC PROGRESSIVE IDENTIFIER CATALOG
DROP
17 mm
VARILUX
Varilux Physio Enhanced
Essilor
ZEISS Choice Plus (13, 15, 17, 19, 21)
Carl Zeiss Vision
Vision Council EPIC

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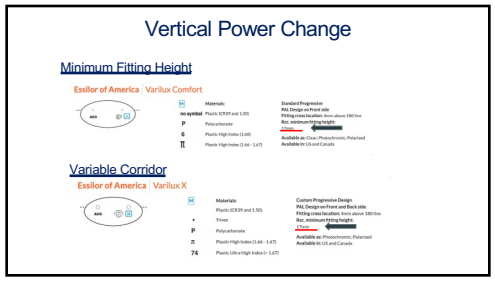
Vertical Power Change
Minimum Fitting Height
Essilor of America | Varilux Comfort
Variable Corridor
Essilor of America | Varilux X

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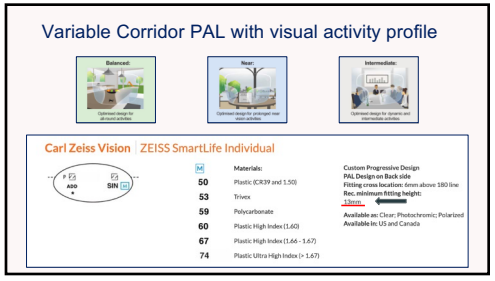
Variable Corridor PAL with visual activity profile
Balanced:
Near:
Intermediate:
Carl Zeiss Vision | ZEISS SmartLife Individual
Materials:
50 Plastic (CR39 and 1.50)
53 Trivex
59 Polycarbonate
60 Plastic High Index (1.60)
67 Plastic High Index (1.66 - 1.67)
74 Plastic Ultra High Index (> 1.67)
Custom Progressive Design
PAL Design on Back side
Fitting cross location: 6mm above 180 line
Rec. minimum fitting height:
13mm
Available as: Clear; Photochromic; Polarized
Available in: US and Canada

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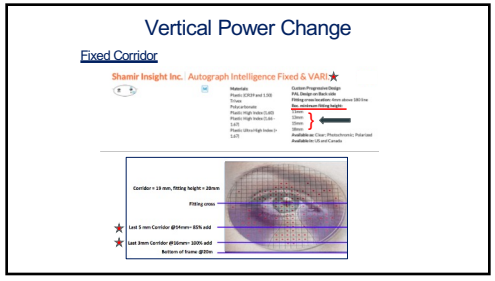
Vertical Power Change
Fixed Corridor
Shamir Insight Inc. | Autograph Intelligence Fixed & VARI
Corridor = 19 mm, fitting height = 20mm
Fitting cross
Last 5 mm Corridor @14mm= 85% add
Last 3mm Corridor @16mm= 100% add
Bottom of frame @20m

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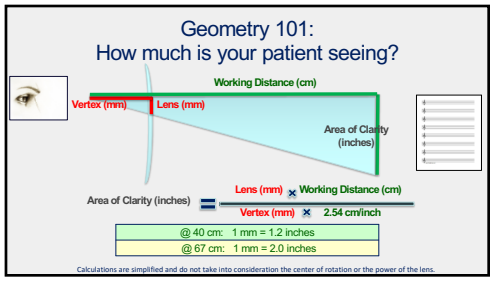
Geometry 101:
How much is your patient seeing?
Working Distance (cm)
Vertex (mm)
Lens (mm)
Area of Clarity (inches)
Area of Clarity (inches) = Lens (mm) × Working Distance (cm) / Vertex (mm) × 2.54 cm/inch
@ 40 cm: 1 mm = 1.2 inches
@ 67 cm: 1 mm = 2.0 inches
Calculations are simplified and do not take into consideration the center of rotation or the power of the lens.

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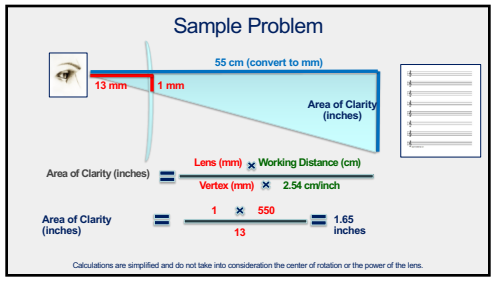
Sample Problem
55 cm (convert to mm)
13 mm
1 mm
Area of Clarity (inches)
Area of Clarity (inches) = Lens (mm) × Working Distance (cm) / Vertex (mm) × 2.54 cm/inch
Area of Clarity (inches) = 1 × 550 / 13 = 1.65 inches
Calculations are simplified and do not take into consideration the center of rotation or the power of the lens.

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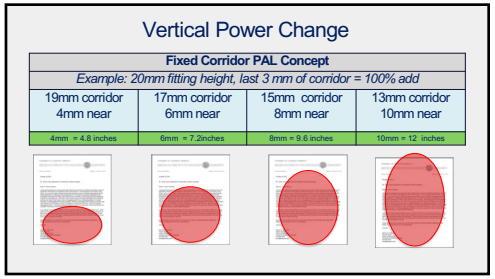
Vertical Power Change
Fixed Corridor PAL Concept
Example: 20mm fitting height, last 3 mm of corridor = 100% add
19mm corridor 4mm near
17mm corridor 6mm near
15mm corridor 8mm near
13mm corridor 10mm near
4mm = 4.8 inches
6mm = 7.2inches
8mm = 9.6 inches
10mm = 12 inches

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PRODUCT INNOVATION AND EVOLUTION

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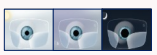
What's the Difference?



- 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

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Manufacturer Lens Product Portfolios

HOYA

unity

ZEISS

SHAMIR

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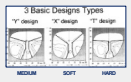
Essilor Portfolio

Free Form PAL 2 Cat. N	Free From PAL 1 Cat. O	Premium PAL 2 Cat. F	Premium PAL 1 Cat. J
Varilux XR Design Technology 14/4(DS) Varilux X Design Technology Fit 14/4(DS)	Comfort Max Fit 14/4/DS Varilux X Design Technology 14/4(DS)	Comfort Max 14/4/DS Comfort 2 Drx/Short 17/14/4(ABS)	Comfort 2 17/4(FS) Comfort 2 Short 14/4(FS)

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



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Essilor Technology Comparison

VARILUX® LENS TECHNOLOGIES

TECHNOLOGY	WEARER BENEFIT
All Varilux® lens designs	Comfortable reading area
Digital Surfacing	Better positions near zone for large reading area
Harmful Blue Light® Protection (Essential Blue Series™)	Up to 3x more protection from Harmful Blue Light than a standard clear lens**
W.A.V.E. Technology™	Sharp vision at all distances
W.A.V.E. Technology 2™	Sharp vision at all distances even in dim lighting
Binocular Booster (Varilux® Physio® W3+) SynchronEyes™ (Varilux® X Series™)	Allows wearer to easily transition between near & far
Nanoptix™ Technology	Helps eliminate "off-balance" feeling
Xtend™ Technology	Reduces head movement within arm's reach
Personalized Measurements***	Provide maximum lens performance despite differences in frame size & shape

▲ = Optional

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Essilor Technology Comparison

PERSONALIZED MEASUREMENTS

Required: ● Optional, Default Measurements Accepted: ■

	PD and Fitting Height	Pantoscopic Tilt	Wrap Angle	Vertex Distance	Near Vision Behavior	Eye Rotation Center Distance	Natural Head Posture	Looking Downward Eye	Eye Rotation	Stability Coefficient
Varilux® XR Track	●	●	●	●	●					
Varilux® XR Design	●	■	■	■						
Varilux® X 4D with H/E†	●	●	●		●	●	●	●	●	
Varilux® X 4DT	●	●	●		●	●	●			
Varilux® X Fit	●	■	■	■						
Varilux® Physio® W3+ Eyecode™†	●	●	●		●	●				
Varilux® Physio® W3+ Fit	●	■	■	■						
Varilux® Comfort Max Fit	●	■	■	■						

† Varilux X 4D lenses, Varilux Physio W3+ Eyecode lenses are exclusive to the Visioffice® System.

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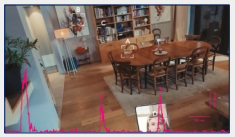
Varilux XR Essilor Technology Review

XR-motion™



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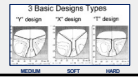
Hoya Portfolio

Free Form PAL 2 Cat. N CM optional)	Free From PAL 1 Cat. O	Premium PAL2 Cat. F	Prem PAL 1 Cat. J
iD MyStyle2 14/4(DS) Modern, Adventure, Detail, Stable	Array 2/ Wrap 11,13,15,17,VL/4(ABS /CM	Array 11,13,15,17,V/4(ABS)	Hoyalux GP Wide 18/4(FS)
iD LifeStyle3 11,12,13,14,VL(DS) Urban, Indoor, Outdoor		Summit ecp iQ 18/4(FS) Summit cd iQ 14/4(FS)	

Aberration
Soft X = DS
Medium Soft Y = ABS



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Hoya Technology Comparison

HOYA Upgrade	Min Fit	BHT	POW	Design Options	Description
iD MyStyle 2	14	YES	YES	Custom	Advanced Technology for patients that demand the best - Integrated Dual Surface Design Personalized for every patient - unlimited variations
iD MyStyle 2 (4 Convenience Options)	14	YES	YES	Modern	Prefers one pair for convenience - balanced
				Adventure	Outdoor sports, activities - more distance
				Detail	Close work focus - more intermediate & near
				Stable	Experienced wearer (former FT) - distance & near
					Dual side design & binocularly balanced providing wider fields of view
iD LifeStyle 3	14	YES	YES	Urban	On the go and enjoy reading books and using digital devices
11,12,13,14 combiins or VL #1 = Lab chooses				Indoor	Spend most of time indoors using digital devices & reading
				Outdoor	New aerdynapes, active, spends majority of time outside, driving

iD LifeStyle 3

iD MyStyle 2

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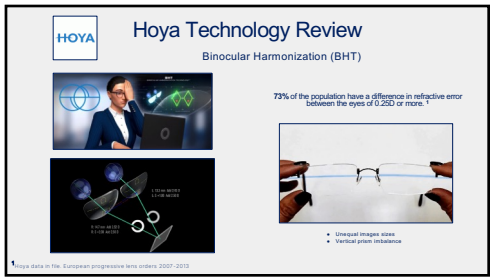
HOYA
Hoya Technology Review
Binocular Harmonization (BHT)
73% of the population have a difference in refractive error between the eyes of 0.25D or more. 1
Unequal images sizes
Vertical prism imbalance
1 Hoya data in file. European progressive lens orders 2007-2013

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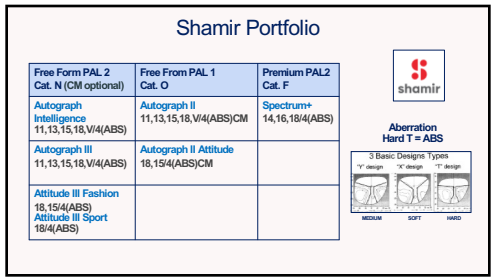
Shamir Portfolio
Free Form PAL 2 Cat. N (CM optional)
Free From PAL 1 Cat. O
Premium PAL2 Cat. F
Autograph Intelligence 11,13,15,18,V/4(ABS)
Autograph II 11,13,15,18,V/4(ABS)CM
Spectrum+ 14,16,18/4(ABS)
Autograph III 11,13,15,18,V/4(ABS)
Autograph II Attitude 18,15/4(ABS)CM
Attitude III Fashion 18,15/4(ABS)
Attitude III Sport 18/4(ABS)
shamir
Aberration
Hard T = ABS
3 Basic Designs Types
"Y" design
"X" design
"T" design
MEDIUM
SOFT
HARD

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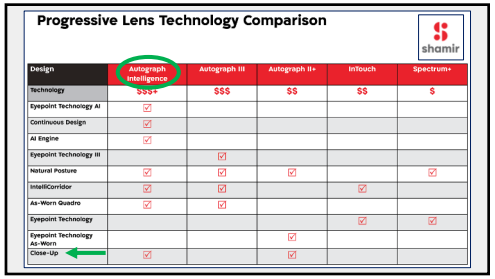
Progressive Lens Technology Comparison
shamir
Design
Autograph Intelligence
Autograph III
Autograph II+
InTouch
Spectrum+
Technology
$$$+
$$$
$$
$$
$
Eyepoint Technology AI
Continuous Design
AI Engine
Eyepoint Technology III
Natural Posture
IntelliCorridor
As-Worn Quadro
Eyepoint Technology
Eyepoint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

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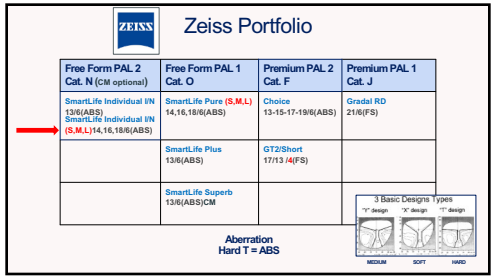
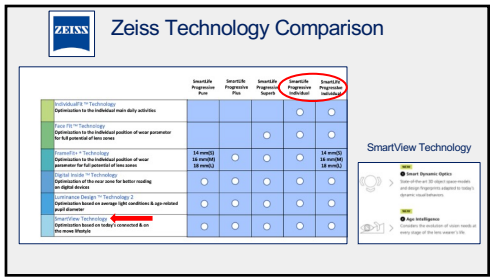
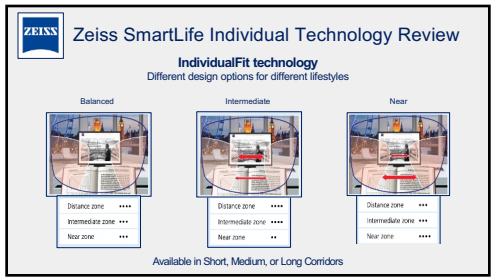

ZEISS
Zeiss Portfolio
Free Form PAL 2 Cat. N (CM optional)
Free Form PAL 1 Cat. O
Premium PAL 2 Cat. F
Premium PAL 1 Cat. J
SmartLife Individual I/N 13/6(ABS)
SmartLife Individual I/N (S,M,L)14,16,18/6(ABS)
SmartLife Pure (S,M,L) 14,16,18/6(ABS)
Choice 13-15-17-19/6(ABS)
Gradal RD 21/6(FS)
SmartLife Plus 13/6(ABS)
GT2/Short 17/13 /4(FS)
SmartLife Superb 13/6(ABS)CM
Aberration
Hard T = ABS
3 Basic Designs Types
"Y" design
"X" design
"T" design
MEDIUM
SOFT
HARD

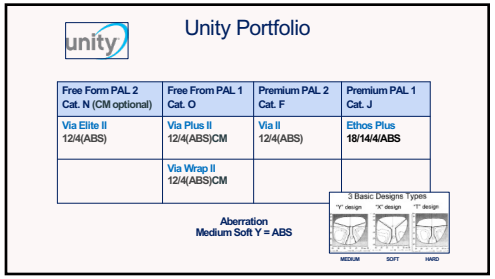
36


Zeiss Technology Comparison
SmartView Technology

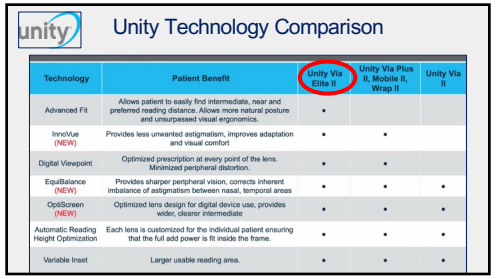
37


Zeiss SmartLife Individual Technology Review
IndividualFit technology
Different design options for different lifestyles
Balanced
Intermediate
Near
Distance zone
Intermediate zone
Near zone
Available in Short, Medium, or Long Corridors

38


Unity Portfolio
Free Form PAL 2 Cat. N (CM optional)
Free From PAL 1 Cat. O
Premium PAL 2 Cat. F
Premium PAL 1 Cat. J
Via Elite II 12/4(ABS)
Via Plus II 12/4(ABS)CM
Via II 12/4(ABS)
Ethos Plus 18/14/4/ABS
Via Wrap II 12/4(ABS)CM
Aberration
Medium Soft Y = ABS
3 Basic Designs Types
"Y" design
"X" design
"T" design
MEDIUM
SOFT
HARD

39


Unity Technology Comparison
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)
Provides less unwanted astigmatism, improves adaptation and visual comfort
Digital Viewpoint
Optimized prescription at every point of the lens. Minimized peripheral distortion.
EquiBalance (NEW)
Provides sharper peripheral vision, corrects inherent imbalance of astigmatism between nasal, temporal areas
OptiScreen (NEW)
Optimized lens design for digital device use, provides wider, clearer intermediate
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

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	

3 Basic Designs Types

"Y" design "X" design "I" design

MEDIUM SOFT HARD

IOT = Indizen Optical Technologies

Minimum Fitting Heights can fit manually or automatic

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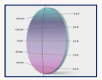
IOT Technology


Camber lens blank


Steady Methodology


Digital Ray-Path 2


Personalized Parameters


Steady Plus Methodology

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IOT Technology Comparison

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

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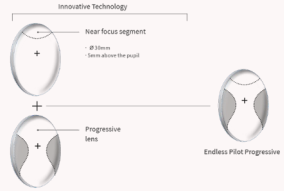
IOT Endless Pilot Progressive



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

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Patient Communication

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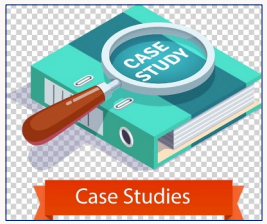

46

What are you going to prescribe for Ted?

Ted is a 53 y.o M. 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 would 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

Freeform PAL 2 (N)	Freeform PAL 1 (O)	Premium PAL 1 (F)
ESSILOR	ESSILOR	ESSILOR
Varilux XR 14 ←	Varilux X Design 14 ←	Varilux Comfort Max 14
		Varilux Physio DRx/Short 17/14
ZEISS		
SmartLife Individual, Individual I, Individual N 13 ←		
SmartLife Individual, Individual I, Individual N S 14, M 16, L 18		
HOYA	HOYA	
ID Lifestyle3 Outdoor/Indoo/Urban 11,12,13,14,VL ←	Array 2 11, 13, 15, 17, VL	
ID MyStyle2 Modern/Adventure/Detail/Stable 14 ←		
SHAMIR	SHAMIR	
Autograph Intelligence 11,13,15,18,V ←	Autograph II 11,13,15,18,V	
Attitude III Fashion 18,15	Autograph II Attitude 18,15	
Attitude III Sport 18		
UNITY	UNITY	UNITY
Via Elite II 12	Unity Via Plus/Wrap II 12	Unity Via II 12

OD -3.25 -1.25 x 085
OD -3.50 -1.50 x 085
Add +2.25
Fitting Ht. = 22mm

48

What are you going to prescribe for Debbie?

Debbie 48 y.o. F
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

Freeform PAL 2 (N)	*Freeform PAL 1 (O)*	*Premium PAL 1 (F)*
ESSILOR	*ESSILOR*	*ESSILOR*
Varilux XR 14	Varilux X Design 14	Varilux Comfort Max 14 Varilux Physio DRx/Short 17/14
ZEISS		
SmartLife Individual, Individual I, Individual N 13 SmartLife Individual, Individual I, Individual N S 14, M 16, L 18		
HOYA	*HOYA*	
ID Lifestyle3 Outdoor/Indoo/Urban 11,12,13,14,VL ID MyStyle2 Modern/Adventure/Detail/Stable 14	Array 2 11, 13, 15, 17, VL	
SHAMIR	*SHAMIR*	
Autograph Intelligence 11,13,15,18,V Attitude III Fashion 18,15 Attitude III Sport 18	Autograph II 11,13,15,18,V Autograph II Attitude 18,15	
UNITY	*UNITY*	*UNITY*
Via Elite II 12	Unity Via Plus/Wrap II 12	Unity Via II 12

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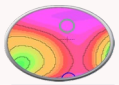
Troubleshooting: Rx check for Debbie

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

What are the steps do you take to troubleshoot this CC?



Varilux X
- Freeform
- Dual Surface
- Soft Pattern
- Variable Corridor

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

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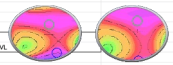
Lens Portfolio

Freeform PAL 2 (N)	*Freeform PAL 1 (O)*	*Premium PAL 1 (F)*
ESSILOR	*ESSILOR*	*ESSILOR*
Varilux X Fit 14	Varilux X Design 14	Varilux Comfort Max 14 Varilux Physio DRx/Short 17/14
ZEISS		
SmartLife Individual, Individual I, Individual N 13 SmartLife Individual, Individual I, Individual N S 14, M 16, L 18		
HOYA	*HOYA*	
ID Lifestyle3 Outdoor/Indoor/Urban 11,12,13,14,VL ID MyStyle2 Modern/Adventure/Detail/Stable 14	Array 2 11, 13, 15, 17, VL	
SHAMIR	*SHAMIR*	
Autograph Intelligence 11,13,15,18,V Attitude III Fashion 18,15 Attitude III Sport 18	Autograph II 11,13,15,18,V Autograph II Attitude 18,15	
UNITY	*UNITY*	*UNITY*
Via Elite II 12	Unity Via Plus/Wrap II 12	Unity Via II 12



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

52

What are you going to prescribe for Walter?

Walter is a 50 y.o. M 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

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Lens Portfolio

Freeform PAL 2 (N)	Freeform PAL 1 (O)	Premium PAL 1 (F)
ESSILOR	ESSILOR	ESSILOR
Varilux XR 14	Varilux X Design 14	Varilux Comfort Max 14
		Varilux Physio DRx/Short 17/14
ZEISS		
SmartLife Individual, Individual I, Individual N 13		
SmartLife Individual, Individual I, Individual N S 14, M 16, L 18		
HOYA	HOYA	
iD Lifestyle3 Outdoor/Indoo/Urban 11,12,13,14,VL	Amsy 2 11, 13, 15, 17, VL	
iD MyStyle2 Modern/Adventure/Detail/Stable 14		
SHAMIR	SHAMIR	
Autograph Intelligence 11,13,15,18,V	Autograph II 11,13,15,18,V	
Attitude III Fashion 18,15	Autograph II Attitude 18,15	
Attitude III Sport 18		
UNITY	UNITY	UNITY
Via Elite II 12	Unity Via Plus/Wrap II 12	Unity Via II 12

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What are you going to prescribe for Danny?

59 y.o.
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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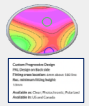
Lens Portfolio

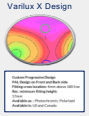
Freeform PAL 2 (N)
ESSILOR
Varilux XR 14
ZEISS
SmartLife Individual, Individual I, Individual N 13
SmartLife Individual, Individual I, Individual N S 14, M 16, L 18
HOYA
iD Lifestyle3 Outdoor/Indoo/Urban 11,12,13,14,VL
iD MyStyle2 Modern/Adventure/Detail/Stable 14
SHAMIR
Autograph Intelligence 11,13,15,18,V
Attitude III Fashion 18,15
Attitude III Sport 18

Zeiss SmartLife Individual



- Freeform
- ABS
- Hard Pattern
- Fixed or Variable

Varilux X Design

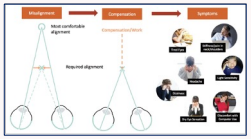


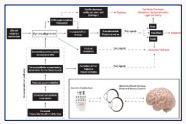
- Freeform
- Dual Surface
- Soft Pattern
- Variable Corridor

56

Contoured Prism Lens

Digital Eye Strain: a form of Trigeminal (CN5) Dysphoria





Hypothesized pathophysiological pathway

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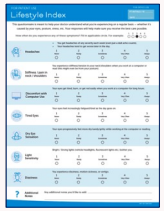
Diagnostic Tools



DISTANCE MEASUREMENT		NEAR MEASUREMENT	
PUPILLARY DISTANCE	66.60mm	PUPILLARY DISTANCE	64.95mm
MQI	1.00	MQI	1.00
HORIZONTAL	2.41Δ EXO	HORIZONTAL	8.35Δ EXO
VERTICAL	0.12Δ L-HYPER	VERTICAL	0.62Δ L-HYPER
VERTICAL MQI	HIGH	VERTICAL MQI	HIGH
AC/A RATIO	3.24 A/D		

NEUROLENS VALUE

PRESCRIBE	OD	OS
1.7 BI	0.9 BI	0.9 BI

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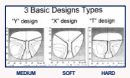
NeuroLens Portfolio

NeuroLens PAL	NeuroLens Office
Free Form 18/2(ABS) Medium	Free Form 18/2(ABS) Near Task Specific



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At the End of the Day

- Did I address the chief concern with appropriate recommendations?
- Is what I am prescribing an improvement over what the patient has or is used to?

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THANK YOU!

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mhoff@sightlineoc.com

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