

Demystifying Near Task Specific Lenses for Today's Work Environment



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Disclosures

- The content of this course was developed independently without commercial bias or influence.
- We are the founding partners of SightLine Ophthalmic Consulting, LLC
- We have no financial interests in any of the products that we will be discussing today.
- Our presentation contains images from the Visionix VX40 lens analyzer.







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Learning Objectives




- Technology Timeline
- Trends and Demographics
- Ergonomics
- Lens Analysis and Contour Plots
- Task Specific Lens Solutions
- Understanding Near Task Specific Lens Designs
 - Near Variable Focus (Computer, Occupational)
 - Full Range
 - Intermediate/Near
 - Powerboost
- Product Portfolios
- Case Presentations



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Technology Timeline

1920's + 1930's - Radio
1940's + 1950's - Television
1950's + 1960's - Color TV

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Technology Timeline

1970's Apple Computer, Atari 2600
1980's Personal Computer (PC): IBM PC, Microsoft DOS, McIntosh,
 • Atari, Nintendo NES, Sega
 • Nintendo GameBoy,
 • calculator watch
 1990's Laptops, Cell Phones, Sony PlayStation, Sega Dreamcast....then
 INTERNET ACCESS!









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Technology Timeline

Early 2000's eMail, Microsoft Xbox/360, Sony PlayStation 2/3, Nintendo, Wii
 2003 - 2005 Texting
 2006 - 2007 eBooks, Smartphones, iPhone, Twitter
 2010 Tablets, iPad
 2013 – 2018 Wearable technology - Google Glass, smartwatch





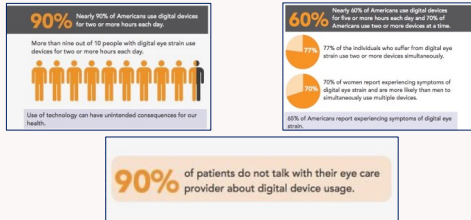







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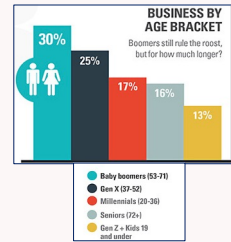
Why and what does it mean?



The Vision Council 2016 Digital Eye Strain Report, EYES OVERPOSED: THE DIGITAL DEVICE DILEMMA

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Who are our Patients?



- Baby Boomers + Gen X = largest segments of most practices
- Purchasing half of premium lenses
- Computer, anti-fatigue, PAL's sales are increasing.

Vision Monday, June 2022, Millennials are the New Emerging Pretyopes

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Technology User Ergonomics



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Digital Eye Strain – Symptoms

- Red, Dry, Irritated, Sore Eyes
- Blurred Vision at Distance and/or Near
- Eye Fatigue
- Neck and Back Pain
- Headaches
- Double Vision



Digital Eye Strain – Areas of Concern

- Refractive Errors
- Accommodative Disorders
- Binocular Vision Dysfunctions
- Presbyopia



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Eyes Overexposed: The Digital Device Dilemma MESSAGE TO YOUR PATIENTS

Discuss with your eyecare provider

- Your digital device habits
- Time you spend in front of a digital screen
- Distance between you and your screen
- Type of work you are doing



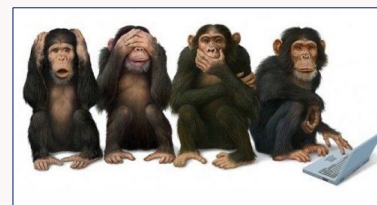
Solutions your provider can offer

- Lenses ideal for sustained computer work
- Lenses that offer good computer and surrounding vision

The Vision Council 2016 Digital Eye Strain Report, EYES OVERPOSED: THE DIGITAL DEVICE DILEMMA

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ARE YOU READY TO HAVE THIS DISCUSSION?



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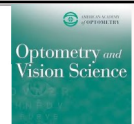
Why Use A Computer Lens?

PAL	Computer Lens
• Narrow corridor	• Wide corridor
• Intermediate positioned low	• Intermediate positioned at straight gaze and/or below
• Small near zone	• Large near zone

<p>Small, narrow Intermediate</p> <p>Classic PAL</p>	<p>Intermediate + Near w/small distance</p> <p>Full Range NVFL</p>	<p>Intermediate + Near No distance</p> <p>Intermediate/Near</p>
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Presbyopic Personal Computer Work: A Comparison of Progressive Addition Lenses for General Purpose and Personal Computer Work

Kolbe, Oliver, MEng¹; Dagle, Stephan, MSc, PhD¹

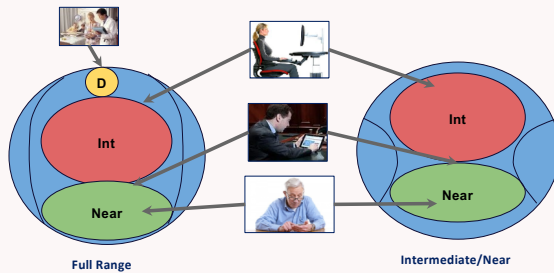
RESULTS Computer vision syndrome was perceived approximately seven times more often with GP-PALs compared with PC-PALs. Eighty-four percent of subjects preferred PC-PALs for their VDU work. Computer-specific progressive addition lenses ratings were statistically and clinically significantly better than GP-PALs.

Only 14.2% of subjects had received information about specific VDU eyewear from their optician or optometrist, whereas 79% expressed the wish to be informed about these products.

SIGNIFICANCE Computer-specific progressive addition lenses (PC-PALs) are shown to reduce computer vision syndrome (CVS) symptoms, increase visual comfort and tolerance, and improve body posture at the personal computer.

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Technology User Visual Ergonomics



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Lens Analyzer for the Office



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What Can We Measure?

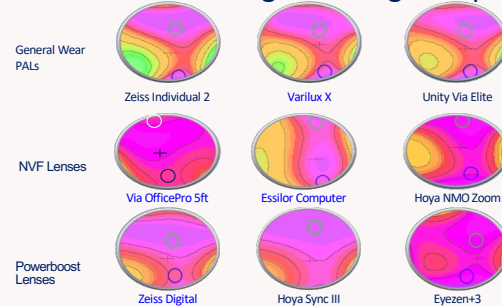


Cylinder Aberration Contour Plot

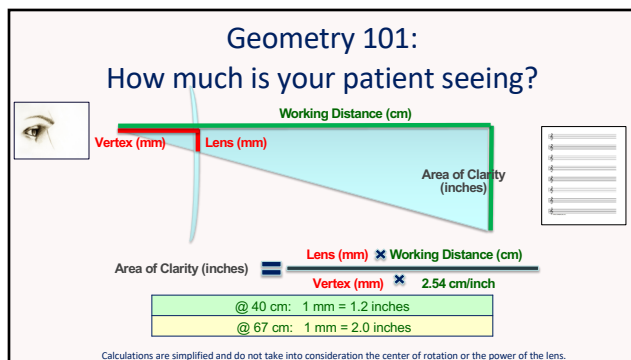
- Perceived clear vision
- Isometric contour lines (unwanted cylinder)

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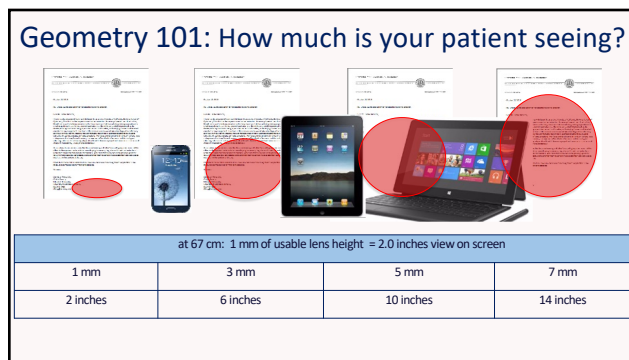
Understanding the Design Shape



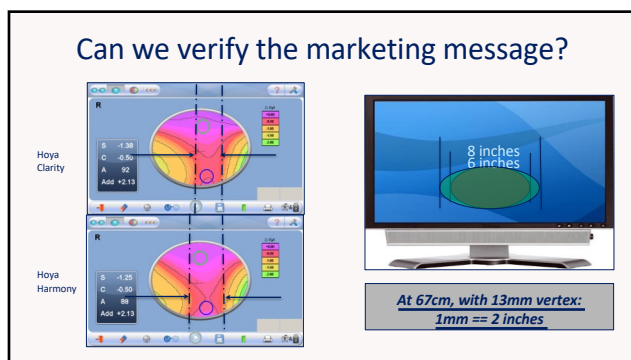
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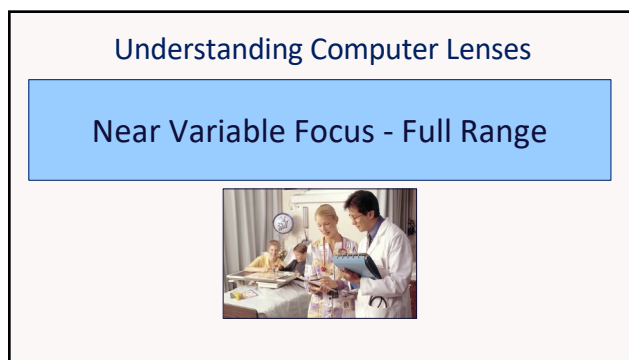
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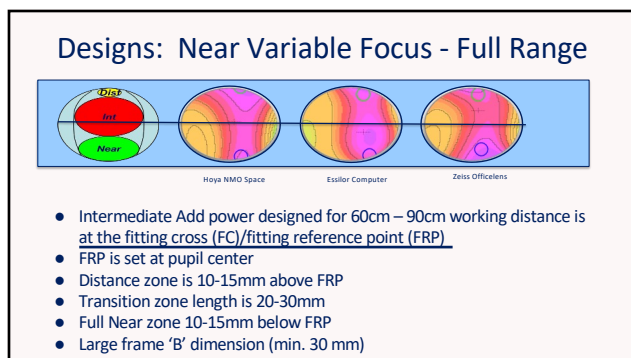
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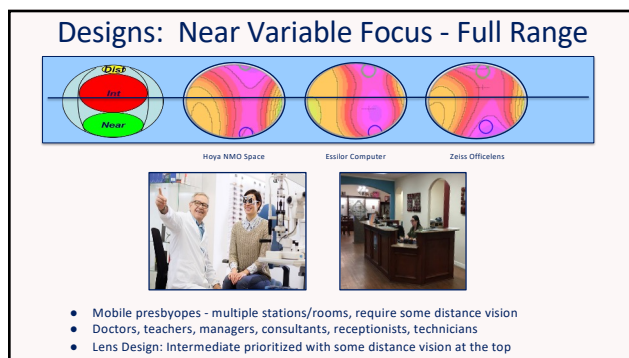
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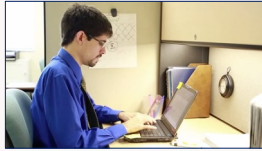
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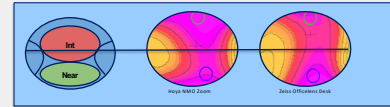
Understanding Computer Lenses

Near Variable Focus for Intermediate/Near



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Design: NVF Int/Near

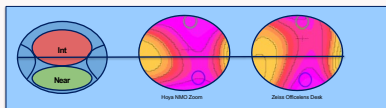


- Add Power for 60cm – 90cm (24-36 inch) working distance is centered around fitting reference point
- +0.50 to +1.00 EA at “distance”
- Full Near zone 10-15mm below FRP
- FRP is set at pupil center
- Large frame ‘B’ dimension (min. 30 mm)



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Designs: NVF - Intermediate/Near

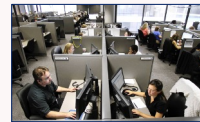


- Stationary Presbyopes – Intermediate to Near with wide FOV
- Multiple computer screens, cubicle workspace, multiple OTC readers

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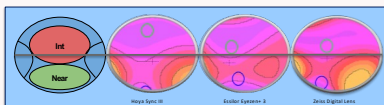
Understanding Computer Lenses

Powerboost as Intermediate/Near



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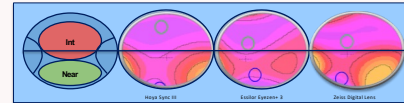
Design: Powerboost as Intermediate/Near



- “Powerboost”: designed and marketed to pre-presbyopes
- Can be designed for intermediate/near use for presbyopes
- Wide, large, stable “top” half of lens: Minimal peripheral aberration, edge-to-edge clarity at FRP
- Transition zone is 3-4 mm below FRP
- Corridor to full near 9-10 mm
- Can use smaller frame ‘B’ dimension (min. 20mm)

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Designs: Powerboost as Intermediate/Near



- Stationary Presbyopes – Intermediate to Near with wide FOV (no distance)
- Multiple computer screens, cubicle workspace, multiple OTC readers

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Product Portfolio Summary NVF Lens Designs

Effective add at Fitting Reference Point (FRP)		Effective add at Top of lens
ZEISS CARL ZEISS VISION OfficeLens: Room, Desk, Book	Room +0.50 Desk +0.75 Book +1.25	Room +0.25 Desk +0.50 Book +1.00
DESEROT COMPUTERLENS	50% of Back off	0.00 to +0.25 (max back off -2.50)
HOYA New Media Optics: Space, Screen, Zoom	Space/Screen: 50% add @2.5mm below FRP Zoom: 50% of Add	Space +0.00 Screen +0.50 Zoom +1.00
SHAMIR Workspace/Computer	Workspace: 50% of Add Computer: 50% of Add plus +0.25D	Workspace +0.25 Computer +0.75
SHAMIR Autograph II Office	50% of Backoff	Add minus Backoff (max -2.25)
UNITY Via OfficePro: 10ft., 5 ft.	range of vision for: 10ft @110cm 5ft @80cm	10ft +0.33 5ft +0.67

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OfficeLens: ROOM, DESK, BOOK

ZEISS

Problem: other lenses create ergonomic issues

Working distance:
Problem: No intermediate vision
Book: Requires eye to move
constant to see clearly, causing
fatigue and strain on neck
and back

**General purpose
progressive lenses**
Problem: Vision constantly
adjusted between far and
near. Requires 10-15mm below
to eye center, causing constant
shift and constant motion

Solution: ZEISS OfficeLens
ZEISS OfficeLens
Solution: Work, representatively
adjusted near and intermediate
vision. Allows constant motion
without the constant shift of
the eye

WORKING DISTANCE MADE EASY!

- Fixed intermediate add at FRP
- Book +1.25D add
- Desk +0.75D add
- Room +0.50D add
- 0.25 reduction 4mm above FRP
- Full add 10-15mm below FRP

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Essilor COMPUTER LENS

ESSILOR

Essilor Computer Lens

Water intermediate area ideal
for viewing a computer screen

ADD Power	Engraving	Back Off
+1.00 to +1.25	10	1.00
+1.50 to +1.75	15	1.50
+2.00 to +2.25	20	2.00
+2.50 to +3.50	25	2.50

- Traditional surfacing
- Poly only
- Full back off 10mm above FRP
- Near 14mm below FRP
- 50% of back off at FRP
- Lab selects back off, max 2.50

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Example: NVF - Full Range

Essilor Computer 2.00 w/50% backoff

- Rx: Plano Add +2.00
- Essilor recommends Computer 2.00 (2.00D Backoff)



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New Media Optics: iD Space, iD Screen, iD Zoom

HOYA

New Media Optics:
iD Space, iD Screen, iD Zoom

- Far point/distance 11-14mm above FRP
- Near 15-18mm below FRP
- Intermediate EA is 50% of patient's full Add

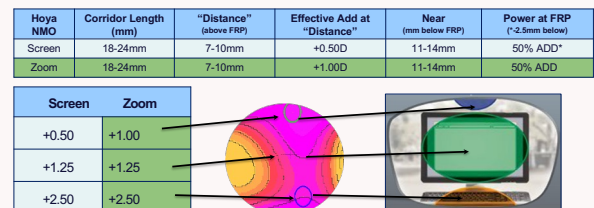
Design	EA @ Far point/Distance	Intermediate EA placement
iD Space	plano	2.5mm below FRP
iD Screen	+0.50 D	2.5mm below FRP
iD Zoom	+1.00 D	at FRP

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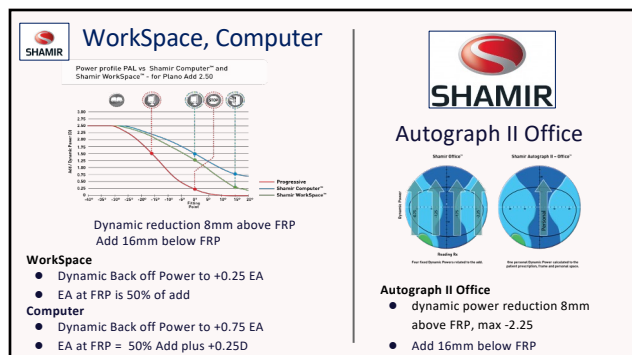
Example: NVF - Int/Near

Hoya NMO Screen and Zoom

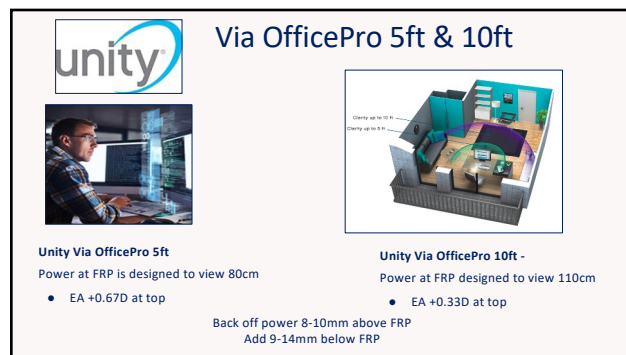
- Rx: Plano DS +2.50 Add
- Desktop Computer at 70 cm (+1.25D); near work at 40cm, no distance visual requirements



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Product Portfolio Summary - Powerboost Lenses

Power Boost Lenses		Boost at the bottom
Eyezen	Essilor Eyezen +1, 2, 3, 4	+0.40, +0.60, +0.85, +1.10
HOYA SYNC III	Hoya Sync 5 Hoya Sync 9 Hoya Sync 13	+0.57, +0.95, +1.32
UNITY	Relieve 50 Relieve 70	+0.50, +0.70
ZEISS CARL ZEISS VISION	Zeiss Digital Lens Digital 500 Digital 750 Digital 1000 Digital 1250	+0.50, +0.75 +1.00, +1.25

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How to Design a Powerboost as Intermediate/Near

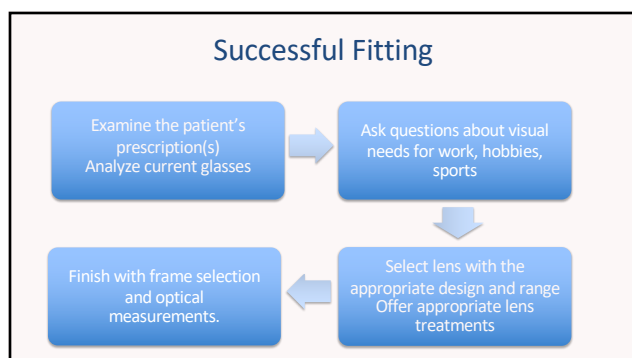
EXAMPLE RX

Plano with +2.25, Intermediate effective ADD is +1.25

- Determine the EA at intermediate distance
- Select the appropriate Powerboost lens design

Powerboost Lens	Boost	Fit	EA Int/Near
Sync5/Sync9/Sync13	0.55 / 0.95 1.32	Pupil	+1.25 / +1.80 +1.25 / +2.57
Zeiss Digital Lens	0.50 / 0.75 1.00 / 1.25	Pupil	+1.25 / +1.75 +1.25 / +2.00
Eyezen+ 1/2/3/4	0.40 / 0.60 / 0.85 / 1.10	Pupil	+1.25 / +1.65 +1.25 / +1.85
Unity Relieve 50, 70	0.50 / 0.70	Pupil	+1.25 / +1.75 +1.27 / +1.95

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Prescribing Multiple Pairs

Prescribe clear comfortable vision for every activity

Sunglasses

Sports

Patients need good optics... but they want fashion

Technology

Special Occasion

Hobbies

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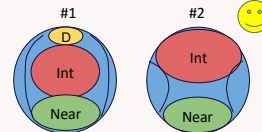
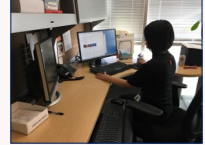
Case Presentations



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Case #1

- 58 YO Female
- MR = -2.25 DS OU Add +2.50
- Int. EA = +1.25
- Administrator, lots of computer and paperwork
- CC: Not using any glasses for reading and computer



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Product Portfolio Summary NVF Lens Designs

Effective add at Fitting Reference Point (FRP)		Effective add at Top of lens
ZEISS CARL ZEISS VISION OfficeLens: Room, Desk, Book	Room +0.50 Desk +0.75 Book +1.25	Room +0.25 Desk +0.50 Book +1.00
	50% of Back off	0.00 to +0.25 (max back off -2.50)
HOYA New Media Optics: Space, Screen, Zoom	Space/Screen: 50% add @2.5mm below FRP Zoom: 50% of Add	Space +0.00 Screen +0.50 Zoom +1.00
	Workspace/Computer	Workspace +0.25 Computer +0.75
SHAMIR Autograph II Office	50% of Backoff	Add minus Backoff (max -2.25)
	range of vision for: 5ft @80cm 10ft @110cm	5ft +0.67 10ft +0.33
UNITY Via OfficePro: 5ft, 10ft		

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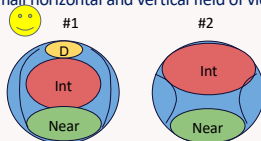
Product Portfolio Summary - Powerboost Lenses

Power Boost Lenses		Boost at the bottom
Eyezen	Essilor Eyezen +1, 2, 3, 4	+0.40, +0.60, +0.85, +1.10
HOYA SYNC III	Hoya Sync 5 Hoya Sync 9 Hoya Sync 13	+0.57, +0.95, +1.32
UNITY	Relieve 50, 70	+0.50, +0.70
ZEISS CARL ZEISS VISION	Zeiss Digital Lens Digital 500 Digital 750 Digital 1000 Digital 1250	+0.50, +0.75 +1.00, +1.25

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Case #2

- 55 YO Male
- MR = +1.00 DS OU Add +2.00
- Intermediate add +1.00
- Receptionist; moderate computer work
- CC: GW PAL is not working
 - Upward head tilt creates neck pain
 - Small horizontal and vertical field of view



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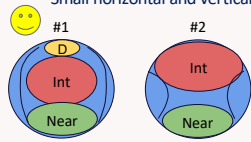
Product Portfolio Summary NVF Lens Designs

Effective add at Fitting Reference Point (FRP)		Effective add at Top of lens
ZEISS CARL ZEISS VISION OfficeLens: Room, Desk, Book	Room +0.50 Desk +0.75 Book +1.25	Room +0.25 Desk +0.50 Book +1.00
	50% of Back off IN THIS CASE BACK OFF IS 2.00	0.00 to +0.25 (max back off -2.50)
HOYA New Media Optics: Space, Screen, Zoom	Space/Screen: 50% add @2.5mm below FRP Zoom: 50% of Add	Space +0.00 Screen +0.50 Zoom +1.00
	Workspace/Computer	Workspace +0.25 Computer +0.75
SHAMIR Autograph II Office	50% of Back off IN THIS CASE BACK OFF IS -2.00	Add minus Backoff (max -2.25)
	range of vision for: 10ft @10cm 5ft @80cm	10ft +0.33 5ft +0.67
UNITY Via OfficePro: 10ft, 5ft		

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Case #2

- 55 YO Male
- MR = +1.00 DS OU Add +2.00
- Intermediate add +1.00
- Receptionist; moderate computer work
- CC: GW PAL is not working
 - Upward head tilt creates neck pain
 - Small horizontal and vertical field of view

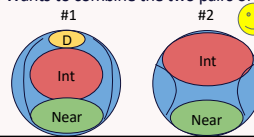
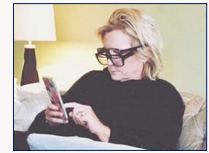


	EA @Distance
Essilor Computer	0.00
Hoya NMO iD Space	0.00
Shamir Autograph II Office	0.00
Shamir Workspace	+0.25
Unity Via OfficePro 10ft	+0.33

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Case #3

- 48 YO Female
- Homemaker
- MR = Plano with +1.75ADD
- Uses +0.75 OTC at computer
- +1.00 OTC at near on top of computer readers
- CC: Wants to combine the two pairs of OTCs into a single pair of glasses



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Product Portfolio Summary NVF Lens Designs

	Effective add at Fitting Reference Point (FRP)	Effective add at Top of lens
ZEISS CARL ZEISS VISION OfficeLens: Room, Desk, Book	Room +0.50 Desk +0.75 Book +1.25	Room +0.25 Desk +0.50 Book +1.00
ESSILOR COMPUTER LENS	50% of Back off	0.00 to +0.25 (max back off -2.50)
HOYA New Media Optics: Space, Screen, Zoom	Space/Screen: 50% add @2.5mm below FRP Zoom: 50% of Add	Space +0.00 Screen +0.50 Zoom +1.00
SHAMIR Workspace/Computer	Workspace: 50% of Add Computer: 50% of Add plus +0.25D	Workspace +0.25 Computer +0.75
SHAMIR Autograph II Office	50% of Backoff	Add minus Backoff (max -2.25)
UNITY Via OfficePro: 10ft, 5ft	range of vision for: 10ft @110cm 5ft @80cm	10ft +0.33 5ft +0.67

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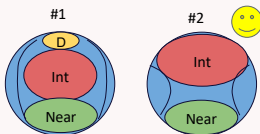
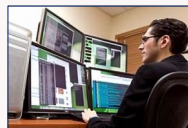
Product Portfolio Summary - Powerboost Lenses

Power Boost Lenses	Boost at the bottom
Eyezen Essilor Eyezen +1, 2, 3, 4	+0.40, +0.60, +0.85, +1.10
HOYA SYNC III Hoya Sync 5 Hoya Sync 9 Hoya Sync 13	+0.57, +0.95 , +1.32
UNITY Relieve 50, 70	+0.50, +0.70
ZEISS CARL ZEISS VISION Digital 500 Digital 750 Digital 1000 Digital 1250	+0.50, +0.75 +1.00 , +1.25

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Case #4

- 52 YO Male
- MR = -6.25 DS OU Add +2.00
- Intermediate add +1.25 - using SVN
- Daytrader – 4 screens at 75cm
- CC: Current -5.00DS OU SVN Rx is not clear for reading/paperwork







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Product Portfolio Summary NVF Lens Designs

	Effective add at Fitting Reference Point (FRP)	Effective add at Top of lens
ZEISS CARL ZEISS VISION OfficeLens: Room, Desk, Book	Room +0.50 Desk +0.75 Book +1.25	Room +0.25 Desk +0.50 Book +1.00
ESSILOR COMPUTER LENS	50% of Back off	0.00 to +0.25 (max back off -2.50)
HOYA New Media Optics: Space, Screen, Zoom	Space/Screen: 50% add @2.5mm below FRP Zoom: 50% of Add	Space +0.00 Screen +0.50 Zoom +1.00
SHAMIR Workspace/Computer	Workspace: 50% of Add Computer: 50% of Add plus +0.25D	Workspace +0.25 Computer +0.75
SHAMIR Autograph II Office	50% of Backoff	Add minus Backoff (max -2.25)
UNITY Via OfficePro: 10ft, 5ft	Range of vision for: 10ft @110cm 5ft @80cm	10ft +0.33 5ft +0.67


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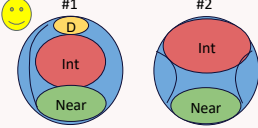
Product Portfolio Summary - Powerboost Lenses		
Power Boost Lenses		Boost at the bottom
 Eyezen	Essilor Eyezen +1, 2, 3, 4	+0.40, +0.60, +0.85 , +1.10
 HOYA SYNC III	Hoya Sync 5 Hoya Sync 9 Hoya Sync 13	+0.57, +0.95, +1.32
 UNITY	Relieve 50 Relieve 70	+0.50, +0.70
 ZEISS CARL ZEISS VISION	Zeiss Digital Lens Digital 500 Digital 750 Digital 1000 Digital 1250	+0.50, +0.75 +1.00, +1.25

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Case #5

- 59 YO Female
- MR = -4.50 DS OU Add +2.50
- Violin player, first chair, SF Symphony
- CC: PAL not ideal to see music
- Needs to see music @ 80 cm (+1.25D) and the conductor






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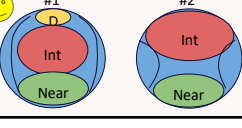
Product Portfolio Summary NVF Lens Designs			
Effective add at Fitting Reference Point (FRP)			Effective add at Top of lens
 CARL ZEISS VISION	Room +0.50 Desk +0.75 Book +1.25		Room +0.25 Desk +0.50 Book +1.00
 OFFICE LENS COMPUTER LENS	50% of Back off IN THIS CASE BACK OFF IS 2.50		0.00 to +0.25 (max back off -2.50)
 HOYA	Space/Screen: 50% add @2.5mm below FRP Zoom: 50% of Add		Space +0.00 Screen +0.50 Zoom +1.00
 SHAMIR	Workspace/Computer	Workspace: 50% of Add Computer: 50% of Add plus +0.25D	Workspace +0.25 Computer +0.75
 SHAMIR	Autograph II Office	50% of Back off IN THIS CASE BACK OFF IS -2.25	Add minus Backoff (max -2.25)
 UNITY	range of vision for: 10ft @110cm 5ft @80cm		10ft +0.33 5ft +0.67
Via OfficePro: 10ft, 5ft			

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Case #5

- 59 YO Female
- MR = -4.50 DS OU Add +2.50
- Violin player, first chair, SF Symphony
- CC: PAL not ideal to see music
- Needs to see music @ 80 cm (+1.25D) and the conductor





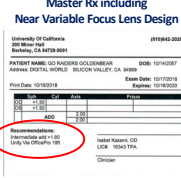
EA @Distance

Essilor Computer	0.00
Hoya NMO ID Space	0.00
Shamir Autograph II Office	+0.25
Shamir Workspace	+0.25

58

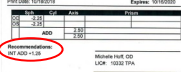
Final Written Rx Examples

Master Rx including Near Variable Focus Lens Design



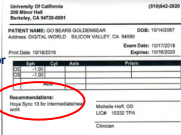
Recommendations:
Intermittent use +1.50
Only via OfficePro 10ft

Master Rx with Int. ADD



Recommendations:
ADD +1.50

Powerboost Rx for Int./ Near use



Recommendations:
Hoya Sync 13 for intermediate use

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THANK YOU!



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