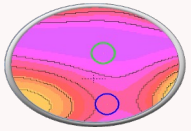
Powerboost Lenses: Understanding the Benefits and Limitations



1

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- University of California Berkeley | Associate Professor of Health Science
- Mindful Eyes Foundation | Founder and Executive Director
- Golden State Optician's Association | Vice President
- SightLine Ophthalmic Consulting | Co-founder and CEO
- Doctor of Optometry (OD)
- Master in Ophthalmic Optics (ABOM)
- Registered Spectacle Lens Dispenser (CA-SLD
- Licensed Optometrist (CA-DCA)

2

Financial Disclosures

- The content of this course was developed independently without commercial bias or influence
- Consulting
  - Essilor Instruments, USA
  - Visionix USA
  - Topcon Healthcare
  - Quest Vision Care Specialty Lab

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Powerboost

An energy drink can give you a quick pick me up.
What can we do to help with eye fatigue?

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Our Learning Journey:

- Brief Historical Background
- Marketing Message/Fitting Recommendations
- A Shallow Dive into the Characteristics and Performance
- Overview of Several Product Portfolios
- Case Presentations to Illustrate benefits and contraindications

Please use this presentation for staff training and review

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What is a Powerboost Lens?

Type of Near Task Specific Lens

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Technology Timeline:

Over a century ago

1920's - 1930's - Radio
1940's - 1950's - B&W TV
1950's - 1990's - Color TV
1990 - present- HD TV

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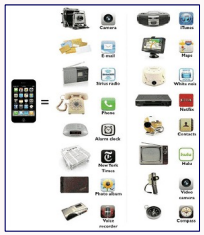
The Digital Revolution:

Shift from Mechanical to Electronic

One small, handheld device



Lots of large individual things

50 years: Radio to Computer
20 years: digital devices major part of life

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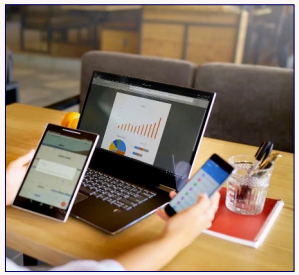
The Physical and Visual Response

1990's: Computers are the major source of information



Breakdown of DES* Symptoms
(6 out of 10 adults report)

- 35% Neck/shoulder pain
- 27% Dry eyes
- 28% Headaches
- 32% Eye strain
- 28% Blurred vision

* DES = Digital Eye Strain, formerly Computer Vision Syndrome (CVS)

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Some Perspective on DES

The Vision Council Digital Eye Strain Report

of Americans said they did not know about the benefits of computer eyewear.

#1 reason for not wearing computer eyewear:
"My eye care provider never recommended them"

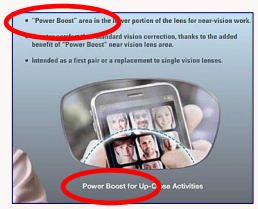
10

Lens Manufacturers Respond to DES

2009: Essilor launches Anti-Fatigue Lens

"... Essilor Anti-Fatigue lenses feature a special "Power Boost" area in the lower portion of the lens, to give the wearer's eyes greater clarity and comfort when focusing up-close for extended periods...

Compensate for:
- DES
- Closer working distance



POWERBOOST term created by Dr. Dennis Fong

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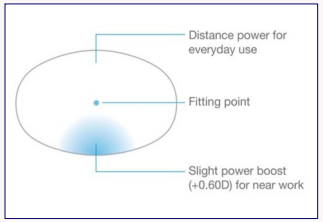
Design Idea



Design:
- 0.60D "power boost" in the lower lens
- Performs like a Single Vision lens; minimal swim and magnification
- Reduces Digital Eye Strain symptoms

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Marketing Messages

Marketing Messages	Alternate Names
• Target Pt: Pre & emerging presbyopes • Treat DES • Excessive Digital Device Usage • Compensate closer WD (33 cm) • Boost ≠ ADD	• Anti-Fatigue Lens • Single Vision with a power boost • Starter Progressive

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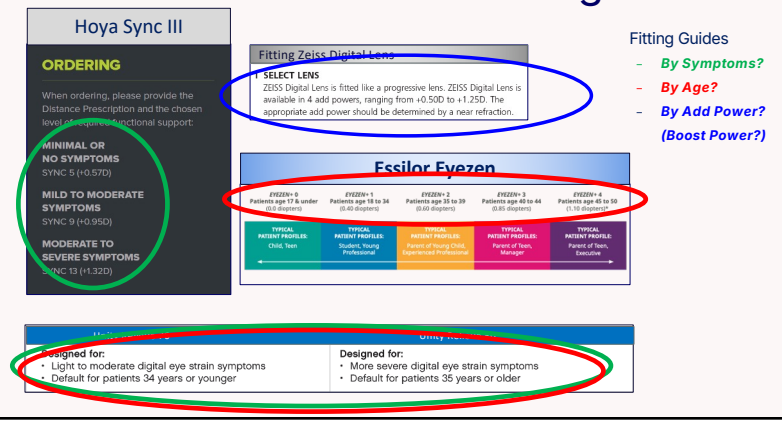
Powerboost Lenses – Fitting Guides



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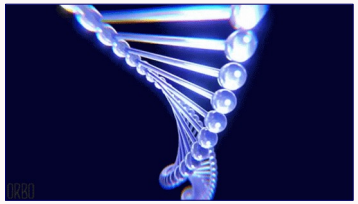
Deconstructing a Powerboost Lens

- Optical Properties
- Performance Comparison
  - Single Vision
  - Bifocal
  - Computer Lens
  - PAL
- Boost = ADD?



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How can we better understand variable power lens designs?



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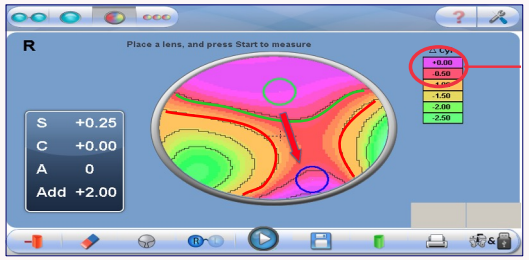
What Can We Measure?



Area of perceived clear vision

Cylinder Aberration Contour Plot
- Perceived clear vision
- Isometric contour lines (unwanted cylinder)

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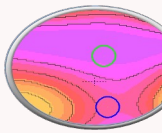
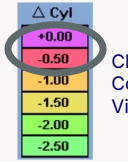
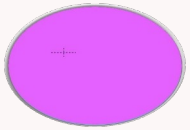
Is a Powerboost = Single Vision?



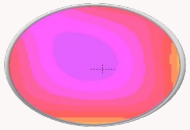
Zeiss Digital 1000



Clear Comfortable Vision



SV +0.50 DS Spherical



SV -4.50 DS Aspheric

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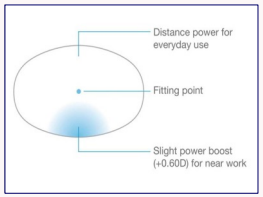
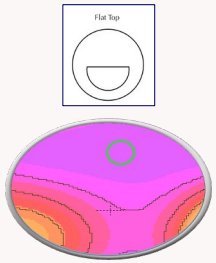
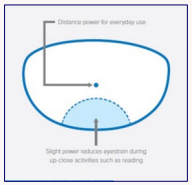
Is a Powerboost = Bifocal?







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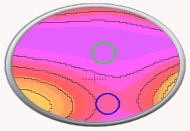
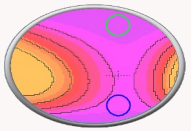
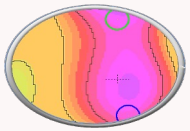
Is a Powerboost Lens = Computer Lens?



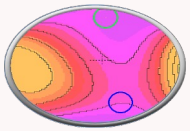
Digital Lens 1000



Sola Access 125



Essilor Computer



Hoya NMO Zoom

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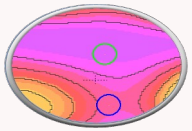
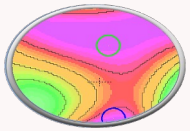
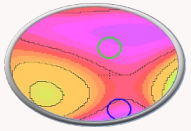
Is a Powerboost = Progressive lens?



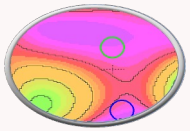
Digital Lens 1000



Zeiss Individual 2



Unity Via Elite



Varilux X

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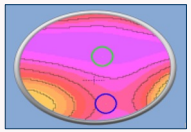
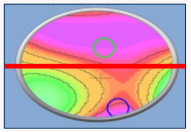
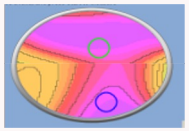
Powerboost Lens Design Characteristics

Powerboost

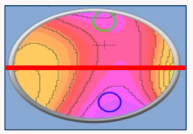




Progressive



Hybrid



Near Variable Focus

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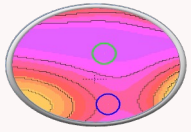
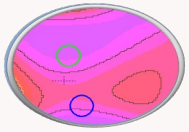
A Better Description



Progressive like design



Dual Centric design

Specialized progressive-like or dual centric lens
- reduces digital eye strain signs and symptoms
- compensates for a closer working distance

Prescribing and Fitting
- severity of the symptoms
- patient's age
- exam data

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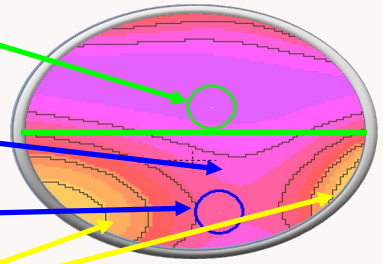
Powerboost Marketing Material

- Wide clear distance
- Wide short power progression
- Fast access to near power
- Large wide near area
- Low Add Power +0.40 to +1.32
- Very low aberration



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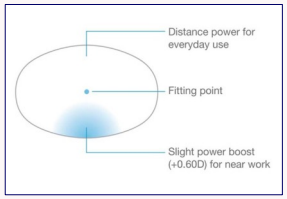
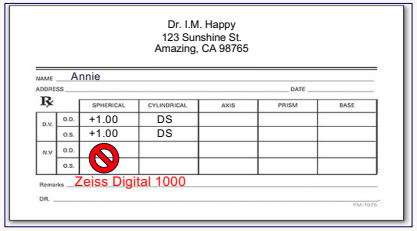
Fitting & Ordering Guidelines

Dist. Mono PD
OD = 29
OS = 28

Fitting Ht. = Pupil Center





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Powerboost Lenses Product Portfolio	Power Boost Lenses	Boost at the Bottom
Zeiss Digital Lens	Digital 500 Digital 750 Digital 1000 Digital 1250	+0.50 +0.75 +1.00 +1.25
Eyezen	Eyezen +1 Eyezen +2 Eyezen +3 Eyezen +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	Relieve 50 Relieve 70	+0.50 +0.70
Shamir Relax	Relax 50 Relax 65 Relax 80	+0.50 +0.65 +0.80

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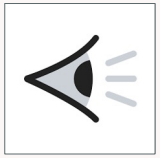
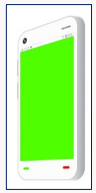
Why the odd numbers?

Acc. Demand + Lag 2.97D





0.40D

2.57D

0 — 33.7 cm

40 cm

Viewing distance and character size in the use of smartphones across the lifespan

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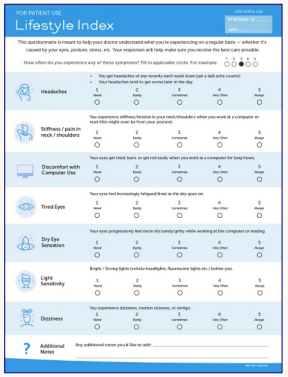
Symptoms Related to DES

Digital Eye Strain – Symptoms

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

Digital Eye Strain – Areas of Concern

- Refractive Errors
- Accommodative Disorders
- Binocular Vision Dysfunctions
- Dry, Sore Eyes
- Presbyopia



Neurolens Life Index

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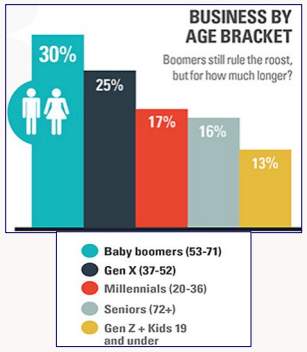
Who's Sitting in Your Chair?



- Baby Boomers + Gen X = fill most appointments
- Spectacles $ = 62% of total revenue
  - Half from premium lenses
- Sales are increasing for
  - Computer
  - Anti-fatigue
  - PAL's

Eyecare Business January 2018 and 2020 Mega Market Trends

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How to prescribe and recommend a PBL?

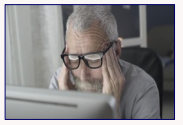
Latent Hyperopes

BV Disorders

Young People

Myopes w/ Eff ADD

Int/Near Presbyope



Digital Device User

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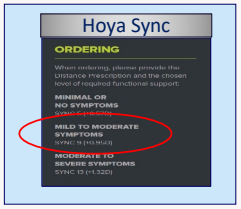
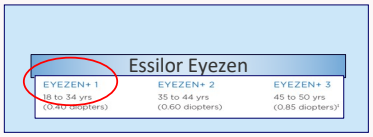
Fitting only by Manufacture's Guidelines

Symptom Severity: Mild
Rx: Hoya Sync 9 (+0.95D)

Age: 32
Rx: Eyezen +1 (+0.40D)



Convergence Insufficiency



Caution

Effective Add = +4.00 without glasses

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Powerboost for the Emerging Presbyope

Power Boost Lenses		Boost at the Bottom
Zeiss Digital Lens	Digital 500	+0.50
	Digital 750	+0.75
	Digital 1000	+1.00
	Digital 1250	+1.25
Eyezen	Eyezen +1	+0.40
	Eyezen +2	+0.60
	Eyezen +3	+0.85
	Eyezen +4	+1.10
Unity Relieve	Relieve 50	+0.50
	Relieve 70	+0.70
Shamir Relax	Relax 50	+0.50
	Relax 65	+0.65
	Relax 80	+0.80

Lisa 43 yo
Rx: +0.25 -0.75 x 180
+0.25 -0.50 x 005 Add +0.75

BV, OH, GH = WNL, unremarkable

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Accommodative Disorders

Condition	NPA	Flippers	Treatment
Insufficiency	Reduced		(+) Lenses @ Near
Infacility		Reduced	VT (+) Lenses @ Near
Spasm		(+) difficult	VT (+) Lenses @ Near
Ill-Sustained	Reduced on Repeat	(-) difficult	(+) Lenses @ Near

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Binocular Vision Conditions

Condition	Treatment
Exophoria	Prism, VT
Esophoria	(+) Lenses, Prism
Gross Convergence Insufficiency	Prism, VT
Convergence Excess	(+) Lenses, Prism
Vertical Phoria	Prism

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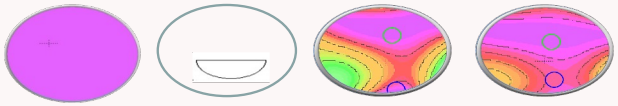
Lens Designs for Rxing Near Plus



Lenses	Benefits	Limitations
Single Vision Near	Wide Field of View	Distance Blur
Bifocal	Wide Field of View	Cosmesis Image Jump
PAL	Cosmesis	Small Reading Area Narrow Corridor Cost
SV Distance with Near Power Boost	Wide Field of View Cosmesis Lower Cost	(Practically None)

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Powerboost for Accommodative Esophoria

Power Boost Lenses		Boost at the Bottom
Zeiss Digital Lens	Digital 500	+0.50
	Digital 750	+0.75
	Digital 1000	+1.00
	Digital 1250	+1.25
Eyezen	Eyezen +1	+0.40
	Eyezen +2	+0.60
	Eyezen +3	+0.85
	Eyezen +4	+1.10
Hoya Sync III	Hoya Sync 5	+0.57
	Hoya Sync 9	+0.95
	Hoya Sync 13	+1.32

Annie: 11yo
CC: Ped MD referral for H/As, onset @ beginning of school year

Dry/Wet Ret. and Refraction:
Dist. Rx: +1.00 DS ADD +1.00

Dist CT : ortho Near CT: 5 Esophoria
AC/A = 8/1

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Dr. I. M. Happy
123 Sunshine St.
Amazing, CA 98765

Lab order
- Recommended Powerboost lens
- monocular distance PD
- fitting height (at pupil center)

NAME Annie
ADDRESS _____ DATE _____

Rx		SPHERICAL	CYLINDRICAL	AXIS	PRISM	BASE
D.V.	O.D.	+1.00	DS			
	O.S.	+1.00	DS			
N.V	O.D.					
	O.S.					

Remarks Zeiss Digital 1000

DR. _____ FM-1075

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Powerboost for Students

Power Boost Lenses		Boost at the Bottom
Zeiss Digital Lens	Digital 500	+0.50
	Digital 750	+0.75
	Digital 1000	+1.00
	Digital 1250	+1.25
Eyezen	Eyezen +1	+0.40
	Eyezen +2	+0.60
	Eyezen +3	+0.85
	Eyezen +4	+1.10
Unity Relieve	Relieve 50	+0.50
	Relieve 70	+0.70
Shamir Relax	Relax 50	+0.50
	Relax 65	+0.65
	Relax 80	+0.80

Sophie: 20 yo College student

CC: Eye strain and blurry vision in class

Rx: -0.75 DS
-1.00 DS add +0.75
Acc. Insuff.

BV, OH, GH = WNL, unremarkable

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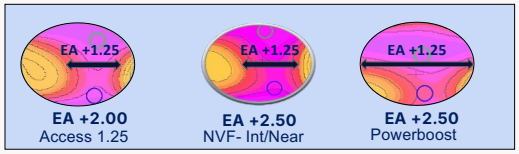
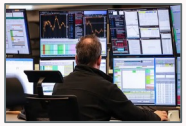
Powerboost for Intermediate/Near Use



EA +2.00 Access 1.25 | **EA +2.50** NVF- Int/Near | **EA +2.50** Powerboost



Power Boost Lenses		Boost at the Bottom
Zeiss Digital Lens	Digital 500	+0.50
	Digital 750	+0.75
	Digital 1000	+1.00
	Digital 1250	+1.25
Hoya Sync III	Hoya Sync 5	+0.57
	Hoya Sync 9	+0.95
	Hoya Sync 13	+1.32

Fred: 61yo w/multiple screens

CC: Trouble seeing at near w/ Access 75

Rx: Plano OU, Int. +1.25, Near +2.50

BV, OH, GH = WNL, unremarkable

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Master Rx

Dr. I. M. Happy
123 Sunshine St.
Amazing, CA 98765

NAME Fred
ADDRESS _____ DATE _____

Rx		SPHERICAL	CYLINDRICAL	AXIS	PRISM	BASE
D.V.	O.D.	Plano	DS			
	O.S.	Plano	DS			
N.V	O.D.	+2.50				
	O.S.	+2.50				

Remarks Intermediate = +1.25

DR. _____ FM-1075

Powerboost Rx
Int = +1.25
Near = +2.57

Dr. I. M. Happy
123 Sunshine St.
Amazing, CA 98765

NAME Fred
ADDRESS _____ DATE _____

Rx		SPHERICAL	CYLINDRICAL	AXIS	PRISM	BASE
D.V.	O.D.	+1.25	DS			
	O.S.	+1.25	DS			
N.V	O.D.					
	O.S.					

Remarks Hoya Sync 13 for Intermediate/Near

DR. _____ FM-1075

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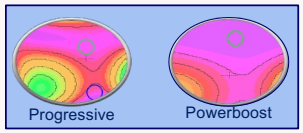
Powerboost for Progressing Presbyope



Power Boost Lenses		Boost at the Bottom
Zeiss Digital Lens	Digital 500	+0.50
	Digital 750	+0.75
	Digital 1000	+1.00
	Digital 1250	+1.25
Eyezen	Eyezen +1	+0.40
	Eyezen +2	+0.60
	Eyezen +3	+0.85
	Eyezen +4	+1.10
Hoya Sync III	Hoya Sync 5	+0.57
	Hoya Sync 9	+0.95
	Hoya Sync 13	+1.32

Walter: 57yo IT Support

CC: Trouble seeing at near current PAL

Current PAL: +1.00 DS OU add +1.50

RX: +1.00 DS OU Int: +1.25 Near +2.25

BV, OH, GH = WNL, unremarkable

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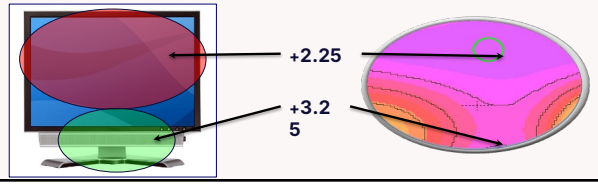
Example: Powerboost as Intermediate/Near

Rx +1.00D, add +1.25 intermediate, add +2.25 near

Zeiss Digital 1000 (+1.00 boost)

Powerboost Lens	Power at FRP	Distance (above FRP)	Near (below FRP)	Power at near
Zeiss Digital 1000	Intermediate add	No distance	14mm	Boost power



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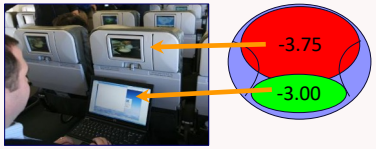
Powerboost for the Traveling Presbyope

Power Boost Lense		Boost at the Bottom
Zeiss Digital Lens	Digital 500	+0.50
	Digital 750	+0.75
	Digital 1000	+1.00
	Digital 1250	+1.25
Eyezen	Eyezen +1	+0.40
	Eyezen +2	+0.60
	Eyezen +3	+0.85
	Eyezen +4	+1.10
Unity Relieve	Relieve 50	+0.50
	Relieve 70	+0.70
Shamir Relax	Relax 50	+0.50
	Relax 65	+0.65
	Relax 80	+0.80



Evan: 56 YO retired Silicon Valley tech,
traveling the world

CC: PAL not ideal for viewing seat-back screens in flight

Rx: -5.00 DS OU Add +2.00
Seatback screen EA +1.25

BV, OH, GH = WNL, unremarkable

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Clinical Pearls

- Developed to relieve DES, closer WD
- Cat = SV, but more like hybrid variable power lens
- Prescribe using visual assessment data
- Not just for Pre-presbyopes/Digital Eye Strain
  - Accommodative Disorders
  - Binocular Dysfunction
  - 1st time PAL
  - Task Specific/Advanced Presbyope

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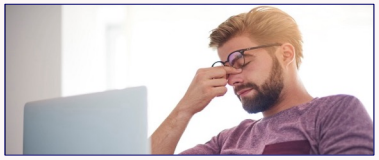
Contraindications

- Convergence insufficiency
- Moderate exophoria at near



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At the End of the Day

Sunset over UC Berkeley

- 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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vision expo

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.

Your feedback is important to the Education Planning Committee in planning the content and speakers for future meetings to provide you with the best education possible.

Michelle J. Hoff, OD, FAAO, ABOM, FNAO
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