

On behalf of Vision Expo, we sincerely thank you for being with us 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.



Financial Disclosure


Minerva Maldonado has no financial interests to disclose





MINERVA MALDONADO

- ASSOCIATE OF SCIENCE
- ASSOCIATE OF ARTS
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- ABOC
- NCLEC
- OAA STUDENT TO LEADER AWARD
- OPTICAL'S NEXT TOP SPEAKER
- OPTICIAN OF THE YEAR
- VISION OF HOPE
- OPTICIANS ASSOCIATION OF AMERICA(OAA)
- VISION COUNCIL



THE FOCUS
EMBRACING FASHION
AND TECHNOLOGY TO
ASSIST OUR PATIENTS

01
FASHION
Celebrity & Pop Culture Influence
Frames and Lens Designs


02
LENS TECHNOLOGY
Celebrity & Pop Culture Influence

03
VISION



THE FOCUS

This presentation will focus on how fashion and optics play a vital role in the final product of creating a pair of eyeglasses that provide the best vision for a patient. The course incorporates current fashion influences and styles. In addition, it covers case studies and optical solutions pertaining to different frame measurements.



**IN THIS PRESENTATION
YOU WILL LEARN TO:**

- 01 Identify how fashion influences current frame trends
- 02 Match different patient prescriptions and lifestyles to appropriate lens designs
- 03 Apply communication skills to build connections with patients
- 04 Cite optical parameters, including but not limited to:
 - Minimum blank size
 - Decentration
 - Lens thickness
 - Optical crosses
 - Oblique aberrations
 - Marginal astigmatism
- 05 Match the best lens design options in accordance with the parameters listed above

**KEEP THE GLASSES-BUYING
EXPERIENCE**

WELL-INFORMED | RELATABLE | EDGY



FASHION

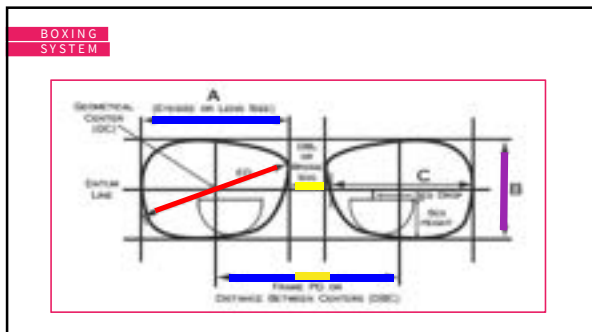
- **Fashion-forward** styles and patterns for frames & lenses
- **Vintage designs** with a modern twist
- **Frame to Fashion**
- **Compromise style & function** with patients based on RX





TERMINOLOGY AND BENEFITS

- How do we **simplify optical terms** to patients/lay people?
- How do we **incorporate real life comparisons** to lenses that are relatable?
- How do we **break barriers between patients**?



FACTORS THAT AFFECT LENS THICKNESS

- 01 Conventional vs Digital
- 02 Center Thickness
- 03 Material Index
- 04 Decentration



MINIMUM BLANK SIZE (MBS)

We are trying to determine the smallest lens that can be used that can fit into the frame that was selected. This is important because many lens designs may not have a size available that fit the patient's frame choice.

$$MBS = (Frame\ PD - Patient\ PD) + ED$$

Lens Material	Index of Refraction
CR-39 Plastic	1.499
Trivex	1.530
MR-8 Index Plastic	1.523-1.562
Polycarbonate	1.586
1.60 Index Plastic	1.586-1.600
1.67 Index Plastic	1.660-1.670
1.70 Index Plastic	1.701
1.74 Index Plastic	1.74
Crown Glass	1.523
1.6 Index Glass	1.601
1.7 Index Glass	1.701
1.8 Index Glass	1.801

**MY PERSONAL
RX**

**Single Vision Rx New
PD 32.0/32.5**
 OD -5.75 -0.75 x090
 OS -6.00 -0.50 x085

Single Vision Rx Old
 OD -7.75 -0.75 x090
 OS -7.25 -1.00 x090

**MINERVA'S
OPTICAL SOLUTION...**

<p>OD TP -7.75@090 and -8.50@180</p> <p>OS TP -7.25@090 and -8.25@180</p>	<p>OD TP -5.75@090 and -6.50@180</p> <p>OS TP -6.00@085 and -6.50@175</p>	<p>OD TP -5.75@090 and -6.50@180</p> <p>OS TP -6.00@085 and -6.50@175</p>
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**MODERATE
MYOPE**

Female
 Late 20s
 Influencer
 Hair and
 makeup stylist

OD -5.00-4.50x035
OS -5.50-4.25x130

OPTICAL CROSS
COMPOUND MYOPIC ASTIGMATISM

OD: -9.50@125, -5.00@035
OS: -5.50@130, -9.75@040

COMBINING OPTICS
WITH FASHION

HEART

FRAME SHAPES

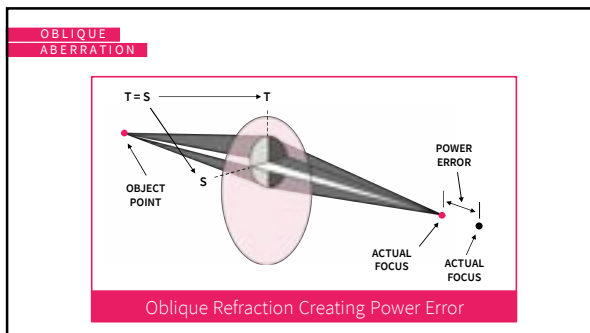
- Patient PD = 68mm
- 54 A" ● 14 DBL" = 68 FPD
- B = 34mm
- ED = 58mm
- Decentration = 0

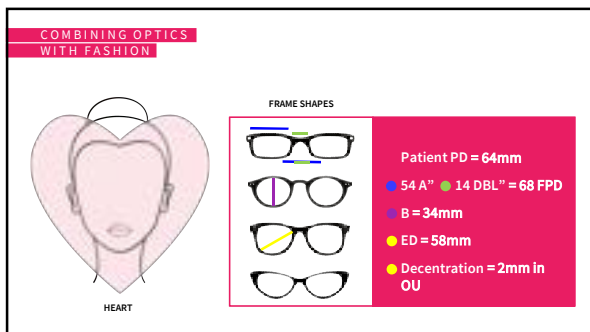
COMBINING OPTICS
WITH FASHION

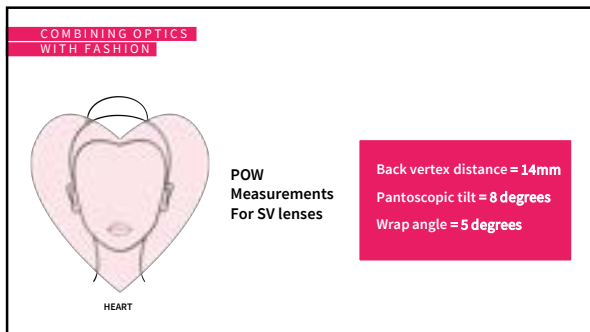
HEART

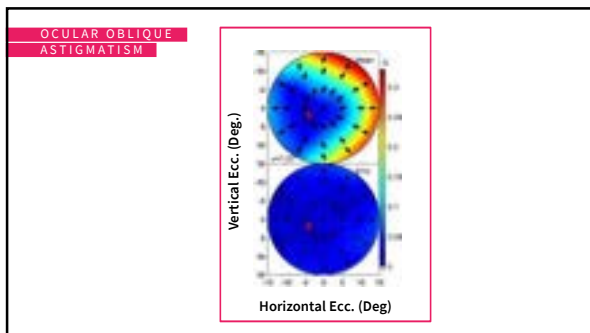
POW Measurements For SV lenses

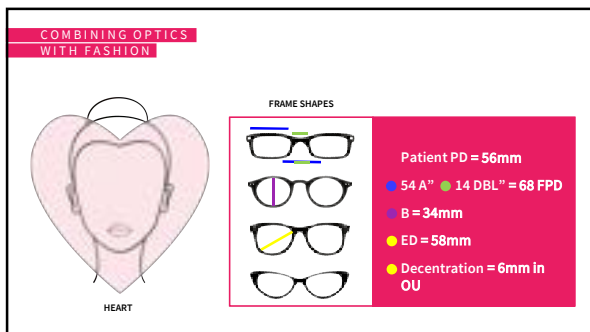
- Back vertex distance = 14mm
- Pantoscopic tilt = 8 degrees
- Wrap angle = 5 degrees

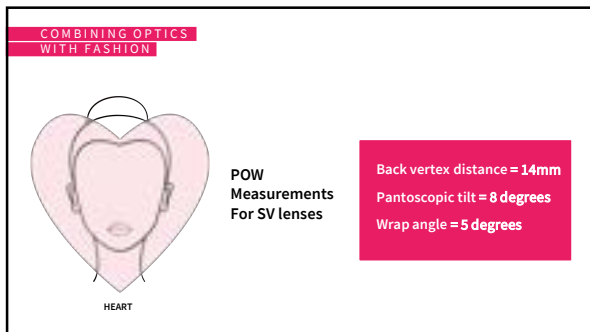


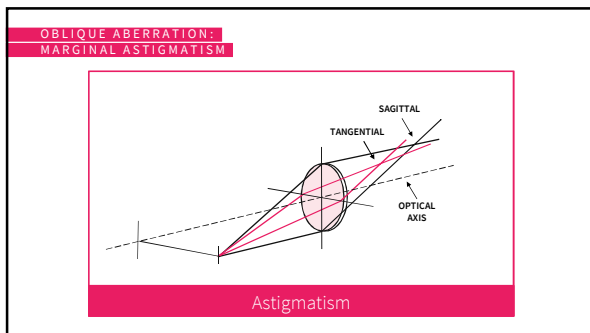












**MODERATE
HYPEROPE**

Male
Mid 30s
Accountant
Golfs
Netflix binges


OD +5.50-0.75x010
OS +5.25-0.25x180

The image shows a man in a white polo shirt and a light-colored cap, captured in the middle of a golf swing. A vision chart is overlaid on the image, showing various letters and numbers. The man's eyes are looking towards the camera.

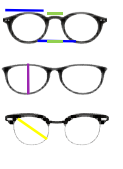
**OPTICAL CROSS
COMPOUND HYPEROPIC ASTIGMATISM**

The diagram shows two optical crosses representing prescriptions for the right (OD) and left (OS) eyes. The OD cross has a vertical axis with +4.75@100 and a horizontal axis with +5.50@010. The OS cross has a vertical axis with +5.25@180 and a horizontal axis with +5.00@090.

COMBINING OPTICS WITH FASHION




FRAME SHAPES



Patient PD = 70mm
56 A" 14 DBL" = 70 FPD
B = 34mm
ED = 59mm
Decentration = 0

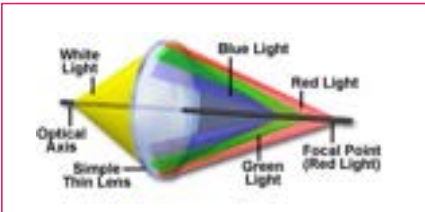
COMBINING OPTICS WITH FASHION



POW Measurements For SV lenses

Back vertex distance = 14mm
Pantoscopic tilt = 8 degrees
Wrap angle = 5 degrees


AXIAL CHROMATIC ABERRATION



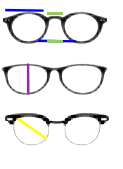
White Light
Blue Light
Red Light
Optical Axis
Simple Thin Lens
Green Light
Focal Point (Red Light)

Axial Chromatic Aberration

COMBINING OPTICS WITH FASHION




FRAME SHAPES



Patient PD = 66mm
56 A" 14 DBL" = 70 FPD
B = 34mm
ED = 59mm
Decentration = 2mm In OU

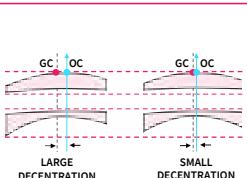
COMBINING OPTICS WITH FASHION



POW Measurements For SV lenses

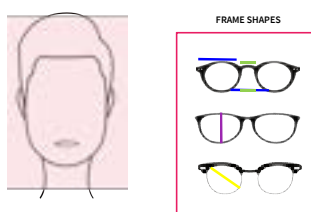
Back vertex distance = 14mm
Pantoscopic tilt = 8 degrees
Wrap angle = 5 degrees

DECENTRATION AND THICKNESS



Effects of Decentration on Thickness

COMBINING OPTICS WITH FASHION




FRAME SHAPES

- Patient PD = 58mm
- 56 A" ● 14 DBL" = 70 FPD
- B = 34mm
- ED = 59mm
- Decentration = 6mm In OU

SQUARE

COMBINING OPTICS WITH FASHION

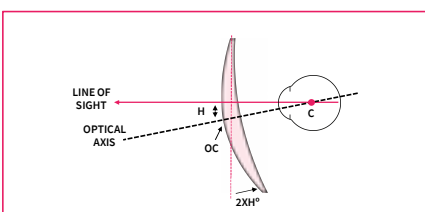


POW Measurements For SV lenses

- Back vertex distance = 14mm
- Pantoscopic tilt = 8 degrees
- Wrap angle = 5 degrees

SQUARE

OBLIQUE ABERRATIONS

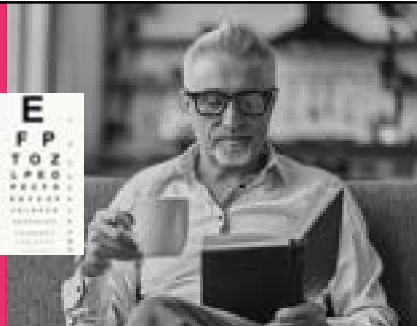


Minimizing Astigmatism Due to Lens Tilt

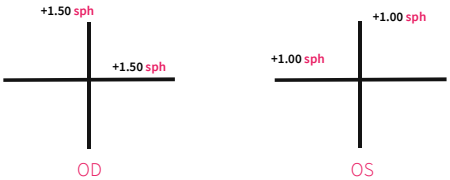
PRESBYOPIA

Male
Early 60s
Retired
Travels

OD +1.50 sph
OS +1.00 sph
ADD +2.75

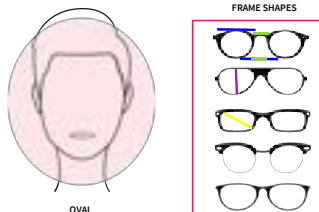


**OPTICAL CROSS
HYPEROPIA**



OD OS

**COMBINING OPTICS
WITH FASHION**




FRAME SHAPES

Patient PD = 74mm
● 58 A" ● 16 DBL" = 74 FPD
● B = 34mm
● ED = 61mm
● Decentration = 0

OVAL

COMBINING OPTICS WITH FASHION

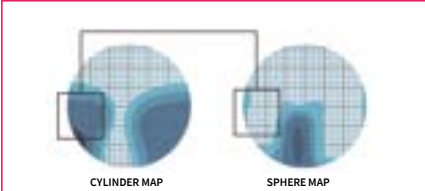


POW Measurements For PAL lenses

Back vertex distance = 14mm
Pantoscopic tilt = 12 degrees
Wrap angle = 5 degrees

OVAl


CONTOUR PLOTS




CYLINDER MAP SPHERE MAP

Significant reduction of the peripheral distortion

COMBINING OPTICS WITH FASHION




FRAME SHAPES



Patient PD = 70mm
58 A" 16 DBL" = 74 FPD
B = 34mm
ED = 61mm
Decentration = 2mm in OU

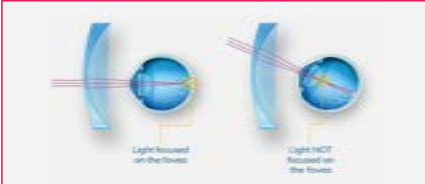
COMBINING OPTICS WITH FASHION



POW Measurements For PAL lenses


Back vertex distance = 14mm
 Pantoscopic tilt = 12 degrees
 Wrap angle = 5 degrees

OBLIQUE ABERRATIONS




Ray-trace technologies reduce oblique aberrations to provide better visual quality

COMBINING OPTICS WITH FASHION




FRAME SHAPES



Patient PD = 62mm
 58 A" 16 DBL" = 74 FPD
 B = 34mm
 ED = 61mm
 Decentration = 6mm in OU

COMBINING OPTICS WITH FASHION

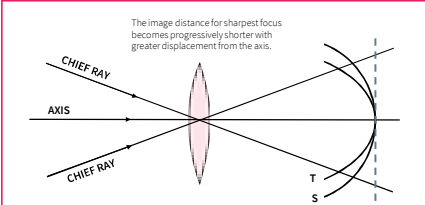


POW Measurements For PAL lenses

Back vertex distance = 14mm
Pantoscopic tilt = 12 degrees
Wrap angle = 5 degrees

OVAL

OBLIQUE ABERRATIONS




The image distance for sharpest focus becomes progressively shorter with greater displacement from the axis.

Positive oblique astigmatism

YOUTH

Young female
Kindergarten
Active and likes to color



OD +3.00-0.50x090
OS +2.50 sphere
OD 2 Prism Diopters BI
Convergence Insufficiency (CI)

OPTICAL CROSS
HYPEROPIC ASTIGMAT

OD: $+3.00@090$ and $+2.50@180$

OS: $+2.50\text{ sph}$ and $+2.50\text{ sph}$

COMBINING OPTICS
WITH FASHION

ROUND

FRAME SHAPES

- Patient PD = 52mm
- 42 A" 12 DBL" = 54 FPD
- B = 22mm
- ED = 45mm
- Decentration = 2mm in OU

COMBINING OPTICS
WITH FASHION

ROUND

POW Measurements For SV lenses

- Back vertex distance = 12mm
- Pantoscopic tilt = 6 degrees
- Wrap angle = 5 degrees

LENS MATERIAL:
TRIVEX

TRIVEX PROPERTIES

- Impact resistancy:
ANSI Z87.1: Passes high velocity impact test
- Specific gravity 1.11
- Abbe value 43-45






Lens Material	Index of Refraction
CR-39 Plastic	1.498
Trivex	1.530
Mid-index Plastic	1.555-1.560
Polycarbonate	1.586
1.60 Index Plastic	1.584-1.600
1.67 Index Plastic	1.660-1.670
1.70 Index Plastic	1.700
1.74 Index Plastic	1.74
Crown Glass	1.523
1.6 Index Glass	1.600
1.7 Index Glass	1.700
1.8 Index Glass	1.800

LENS MATERIAL:
TRIVEX

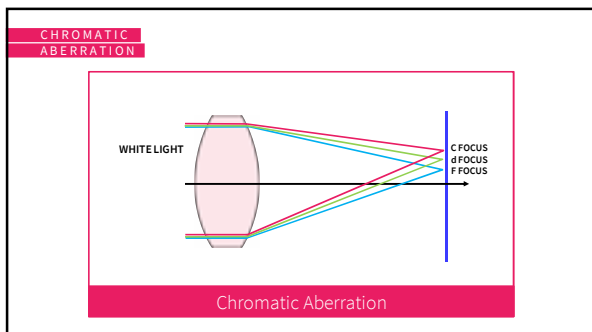
- Impact resistancy
- Drop Ball test



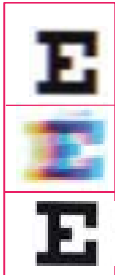
CHROMATIC ABERRATION

Chromatic Aberration is when dispersed rays of light form separate foci points. It will manifest itself to a wearer as a blur in the off axis viewing area of the lens. As index of refraction increases, so does dispersive nature of lens.





CHROMATIC ABERRATION

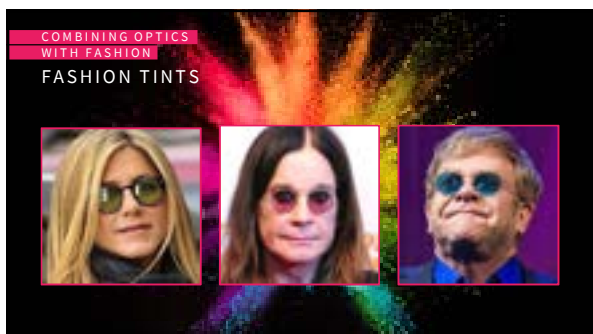


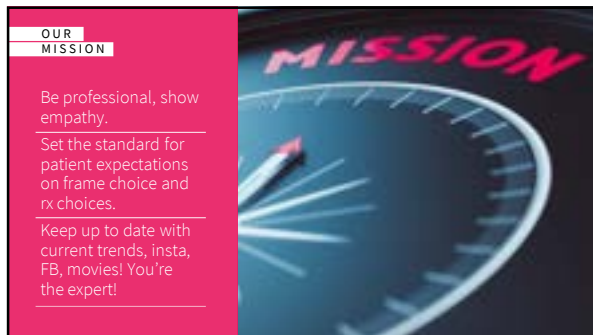
20/200 E (on a 20-foot chart) photographed at 3 feet through a 6 prism diopter, plano prism with an Abbé of 32, camera magnification 5x.

20/200 E (on a 20-foot chart) photographed at 80 feet through a 6 prism diopter, plano prism, 5x camera magnification. This is the same E that was photographed at 8 feet, but here the color fringes are wider (horizontally) than the vertical contours of the E.

This is the E photographed without the prism at 80 feet, 5x camera magnification.













QUESTIONS

Does anyone have questions?

IoT
See the difference contact@iotamerica.com

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