

Hands-on Workshop - Lensometry: Advanced Concepts

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Course Length: 2 Hours

Intended Audience: Opticians, Optometrists, Technicians

Description:

In this course we will dive deeper and using a manual lensometer, while also understanding how to read prism and decipher and see standards in terms of utilizing the manual lensometer.

Learning Objectives:

- Demonstrate use of reading prism off the Lensometer
- Understand canceling and compounding prism
- Recognize unwanted horizontal and vertical prism in the lensometer
- Measure the amount of unwanted horizontal and vertical prism in the lensometer
- Apply ANSI standards to various aspects of eyewear
- Identify yoked prism in progressives and apply ANSI

Outline and Timeline:

I. Introduction and the why we are here: **5 minutes**

- a. Talking about experience in using the lensometer
- b. understanding prism in general

II. Parts of the Lensometer: **15 Minutes**

- a. **Eyepiece** - Used to view the mires inside of the reticles when neutralizing the RX on a pair of eyeglasses or contacts.
- b. **Reticle Adjustment Knob** - Used to rotate the prism reticles to align prism read by the mires.
- c. **Prism Compensator** - Used to assist in read the amount of prism in the lens. Sub use is to move mires into a better viewing spot
- d. when near the outer limits due to RX or prism thinning in a progressive
- e. **Lens Marker** – Device used for placing ink marks on the lens indicating specific placement of reading on the lens.
- f. **Gimbal (Lens Holder)** - Used to hold the lens in place and against the lens stop.
- g. **Lens Stop** - Is the calibrated spot where the back vertex is at the appropriate distance to be read. Also used in conjunction with the gimbal
- h. **Spectacle or Frame Table** - Used to help level the frame when reading a pair of glasses ensuring it is level on the horizontal meridian. Also a specified flat surface to calibrate the Lens Clock.

- i. **Magnifier** – Lens at the end of the lensometer to magnify the axis scale
- j. **Axis Adjustment Knob** - Used to align a sphere-cylindrical lens along the appropriate axial meridian for that specific lens. Scale of 0-180 degrees.
- k. **Filter Control** – Controller lever for switching between no filter and a high contrast filter.
- l. **Inclination Control** - Used to lock the Len Meter in place to the height of the user.
- m. **Power Drum** – Used to move the lenses inside the lens meter to neutralize the power of the pair of eyeglasses or contacts. Gives a positive or negative power for that meridian in 1/8th diopters.

III. Reading power on the Lensometer recap – **10 minutes**

IV. Prism Understanding: **20 minutes**

- a. Showing examples and have the participants demonstrate in their own lensometer.
 - i. Base Up – prism will appear above the 180 meridian
 - ii. Base Down – prism will appear below the 180 meridian
 - iii. Base In or Out – depending on the right or left lens, the prism will appear to the right or left of the 90th meridian
 - iv. OD Base In will appear to the right of the 90th meridian
 - v. OD Base Out will appear to the left of the 90th meridian
 - vi. OS Base In will appear to the left of the 90th meridian
 - vii. OS Base Out will appear to the right of the 90th meridian
 - viii. Canceling – BU-BU; BD-BD; BI-BO
 - ix. Compounding– BU-BD; BI-BI; BO-BO

V. Prism Examples: **25 Minutes**

- a. Demonstrating various views of prism and how to identify between lenses.
 - i. Pair 1 – Example 3-5 minutes
 - ii. Pair 2 – Example 3-5 minutes
 - iii. Pair 3 – Example 3-5 minutes If more understanding is needed
- b. Reading prism on the script to decipher resolving and resultant prism.
 - i. Example 1 – showing resolving prism to have participants convert to resultant prism.
 - ii. Example 2 - showing resultant prism to have participants convert to resolving prism.
 - iii. Additional ad hoc examples presented if needed.
- c. Recap of prentice rule.

VI. Practical experience: **25 Minutes**

- a. Several examples of prism and reading

VII. How to apply ANSI to all eyewear especially prism: **10 Minutes**

- a. Using ANSI standards to verify what is in and out of tolerance.
 - i. Example 1 – Scenario on eyewear
 - ii. Example 2 – Scenario on eyewear
 - iii. Example 2 – Scenario on eyewear

VIII. Conclusion: **10 minutes**

Total estimated time: 120 minutes.