



ABO Practical Exam Review

Thomas Neff MA, LDO, ABO-AC, NCLE-ACJ
2024

Presented By:



United Opticians
ASSOCIATION
Representing Contact Lens and Specialty Opticians since 1925



Scan the QR code to learn about complimentary UOA membership, made possible through an investment by ABO & NCLE to:

- state associations,
- state licensees &
- ABO-NCLE certificants.

www.Opticians.org

1

Conflict of interest

The speaker, Thomas Neff MA LDO, ABO-AC, NCLE-AC, has no conflicts of interest to disclose.

2

Congrats on taking an additional step in your training and certification!!!

3

ABO Practical Exams

- The one hour practical virtual
- Created by groups of Certified Opticians and Certified Contact Lens Fitters/Technicians
- Created by independent testing service.

4

ABO Practical Exams

- The purpose:
- apply the knowledge previously demonstrated by the candidates to skills and abilities associated with the performance of tasks required for the professional practice
- ABO = of Opticianry
- NCLE = Contact Lens Technology.

5

ABO Practical Exams

Each exam has thirty questions.

6

ABO Practical Exams

Question Criteria Exam questions fall into four general categories:

1. require immediate recognition of the correct response through correct identification of instrumentality and basic problem solving
2. require understanding and/or utilization of basic instrumentality
3. comprehension of patient interaction and demonstrate appropriate problem-solving based upon information presented by video vignettes of patient interactions
4. recognition of basic fundamental knowledge in the field of Opticianry and/or Contact Lens Technology.

7

ABO Practical Exams

ABO & NCLE provides a fully-interactive ABO & NCLE Tutorial and Practice Exam Question Area.

You can learn about the types of virtual reality questions available on the ABO-NCLE Practical Examinations and how to utilize the Lens Meter, Slit Lamp, and many other on-line virtual instruments utilized on the ABO & NCLE Practical Examinations.

8

ABO Practical Exams

ABO & NCLE provides a Practical Slideshow to allow candidates to understand the functionality and type of questions for each item within the ABO and NCLE Practical Examinations.

<https://www.slideshare.net/JamesMorris153/abo-ncle-practical-exam-slideshow-tutorial>

9

ABO Practical

Hot Spot questions where you need to click on the condition or tool.

Choose the Apple

In this example, if the candidate clicks anywhere inside of the area represented by the red square, the answer is correct. Anywhere outside of the area of the apple would be an incorrect answer.

10

ABO Practical

Images of tools or instruments.

Videos of patient interactions.

Instrumentality

Candidates should be familiar with instrumentality, and which instruments are utilized for certain opticianry-related functions. For example purposes only, if the candidate were presented with the image below, the candidate would be expected to recognize, and identify, the proper instrument utilized for adjusting the endpiece:

If the candidate selects anywhere near the correct answer, inside of the area represented by the red box, they will get the question correct. If the candidate selects an area outside of the highlighted area, the candidate will get the question wrong.

11

Exam Costs

Current cost:

ABO & NCLE Practical Exams is \$75.00 per exam

(total of \$150.00)

12

ABO Practical: Virtual Instruments

LENS METER		SLIT LAMP	
			
Mastering Lens Meter Simulations	Lens Meter Practice Questions	Mastering Slit Lamp Simulations	Slit Lamp Practice Questions
KERATOMETRY		OPTICAL MEASUREMENT	
			
Mastering Keratometry Simulations	Keratometry Practice Questions	Mastering Optical Measurement Simulations	Optical Measurement Practice Questions

13

ABO Practical: Virtual Pupilometer



Measuring Pupillary Distance

For this order measure two binocular PDs, distance and near. The customer has requested flat-top bifocal lenses.

- Pre-set the pupilometer.
- Position the pupilometer.
- Measure.

14

ABO Practical: Virtual Pupilometer



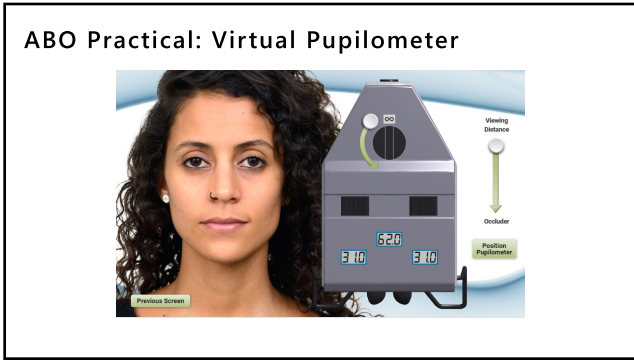
Viewing Distance

Occluder

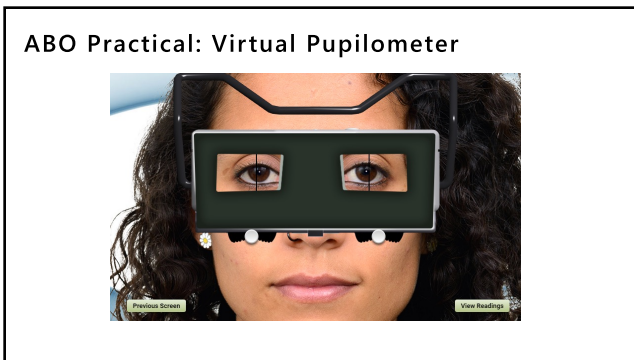
Position Pupilometer

Previous Screen

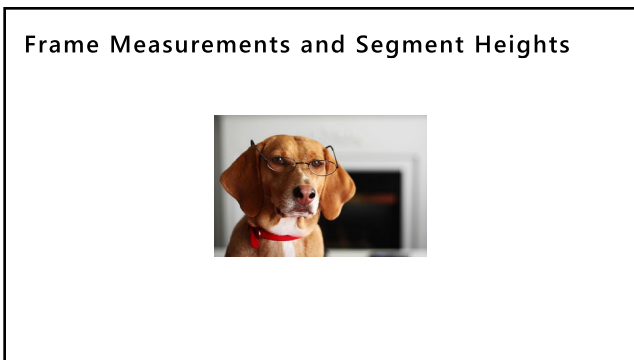
15



16



17



18

Pro Tips

Progressive: Center of pupil.

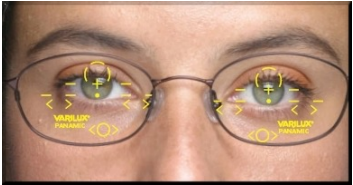
Bifocal: Lower limbus!!!!!!
Not lower lid!!!

Trifocal: Lower edge of pupil.
Do Not subtract 1mm

19

Fitting Height

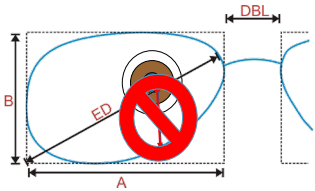
Fitting Heights should be taken monocularly



20

Fitting Height

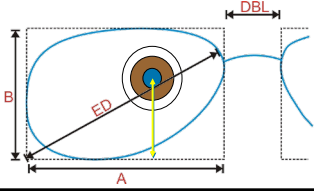
Fitting Height is the distance between center pupil & the lowest edge of the lens



21

Fitting Height

Fitting Height is the distance between center pupil & the lowest edge of the lens



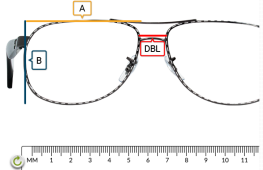
The diagram shows a top-down view of an eye with a lens. A dashed blue rectangle represents the lens. The width of the lens is labeled 'A', and the height is labeled 'B'. The distance between the centers of the two lenses is labeled 'DBL'. A red line from the center of the pupil to the bottom edge of the lens is labeled 'ED'.

22

ABO Practical: Frame Measurements

Box Measurements

Frame measurements: A, B and DBL



The screenshot shows a pair of glasses with measurement lines. 'A' is the width of the lens, 'B' is the height of the lens, and 'DBL' is the distance between the lenses. A ruler below shows measurements in millimeters.


23

ABO Practical: Fitting Heights

Marking and Measuring Lenses

Step 1. Mark the lens.
Hints on Marking and the-Marking

Step 2. Measure the lens.
Hints on Vertical Measurements



The screenshot shows a close-up of a person's eye wearing glasses. A red marker is being used to mark the bottom edge of the lens. A ruler is positioned vertically to measure the distance from the center of the pupil to the marked point.

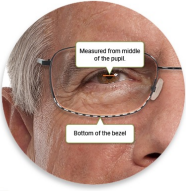
24

ABO Practical: Fitting Heights

Vertical Measurements

Step 1. Mark the lens.
Hints on Marking and Re-Marking

Step 2. Measure the lens.
Hints on Vertical Measurements



Measured from middle of the pupil

Bottom of the bezel

Previous Screen Marker Erase MM Rule

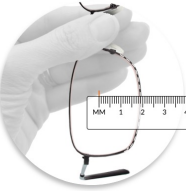
25

ABO Practical: Fitting Heights

Vertical Measurements

Step 1. Mark the lens.
Hints on Marking and Re-Marking

Step 2. Measure the lens.
Hints on Vertical Measurements



26

ABO Practical: Neutralization



AMERICAN BOARD OF OPTICIANRY

27


ABO Practical: Neutralization

- Look and Feel of the Lens Meter Simulation
- Verification: Comparing Prescribed Power and Axis to Lens Meter Readings
- Neutralizing Lenses
- Meeting Optical Standards: Tolerances for Power, Axis, Prism and Imbalance
- Reading Prism in the Marco 101 Lens Meter
- Horizontal Imbalance
- Segment Height
- Bifocal Lenses
- Layout of Progressive Lenses

28

ABO Practical: Neutralization

Simulation Functions



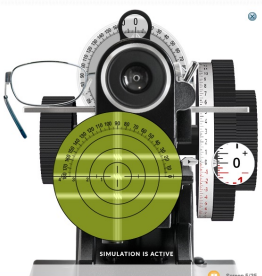
29

ABO Practical: Neutralization

Dragging Simulation Controls

Drag the power drum and axis to get a feel for how the simulation operates.

PK	SPH	CYL	AXIS	ADD	FAR PD	NEAR PD	OC HT	SEG HT
00	+1.00	-0.50	90°					
05	+1.75	-0.75	90°					



30

ABO Practical: Neutralization

Verification

Rx	SPH	CYL	AXIS	ADD	FAR	NEAR	DC	SEI
	SPH	CYL	AXIS	ADD	PRE	PRE	HT	HT
OD	+1.75	-0.50	90°		30.5		16.0	
OS	+3.00	-1.00	180°		32.0		16.0	

31

ABO Practical: Neutralization

Neutralizing – Try It

Check My Answer

32

ABO Practical: Verification

Appearance of Standards

Using the lens meter simulation, determine the sphere power, cylinder power and axis of the left lens. Then compare the measured values to the prescribed values, and determine whether each value meets optical standards.

ANSI STANDARD	POWER RANGE	TOLERANCE
Sphere Power	+0.50 D to +6.50 D	±0.12 D
	+6.50 D	±0%
Cylinder Power	+0.00 D to +2.00 D	±0.12 D
	+2.00 D to +4.00 D	±0.10 D
	4.00 D	±0%
Cylinder Axis	+0.00 D to 0.00 D	±4°
	+0.25 D to 0.50 D	±7°
	+0.50 D to 1.75 D	±7°
	+1.75 D to 1.50 D	±7°
	> 1.50 D	±7°

Rx	SPH	CYL	AXIS	ADD	FAR	NEAR	DC	SEI
	SPH	CYL	AXIS	ADD	PRE	PRE	HT	HT
OD	+1.50	-2.00	70°					
OS	+3.25	-0.75	150°					

33

ABO Practical: Prism

Prism

If you haven't learned to interpret prism in a lens meter, you will need that knowledge during this pre-test workout and in the test itself.

34

ABO Practical: Prism

Try It: Measuring in a Simulation

Use the simulation of eyewear and the draggable millimeter ruler to measure the Horizontal Position of the optical centers for both lenses. Then compare your measured values to prescribed values. Finally, decide whether any differences between the measured values and prescribed values meet optical standards, using the tolerances provided on this screen.

These spectacles are seen from the front.

SPH	CYL	AXIS	ADD	FAR PD	NEAR PD	OC	SEG	HT
OD	+2.75	-1.75	00°	31.5	31.0	13.0	12	115
OS	+2.75	-1.75	00°	32.5	32.0	13.0	12	115

ANSI STANDARDS	
Power Range	Tolerance
± 0.00 D, ± 0.25 D	0.33 Δ Per Lens
± 0.25 D	0.67 Δ Total
	0.5 mm Total

35

ABO Practical: Segment Height Verification

Vertical Measurement

Use the simulation of eyewear and the draggable millimeter ruler to measure the Segment Height of both lenses. Then compare your measured values to prescribed values. Finally, decide whether any differences between the measured values and prescribed values meet optical standards, using the tolerances provided on this screen.

SPH	CYL	AXIS	ADD	FAR PD	NEAR PD	OC	SEG	HT
OD	+2.25	-1.25	00°	31.50	29	27.5	13.0	12
OS	+2.75	-1.25	00°	31.50	29	27.5	13.0	12

ANSI STANDARDS	
Power Range	Tolerance
± 0.00 D, ± 0.37 D	± 0.33 Δ Total
± 0.37 D	± 0.6 mm Difference

36

ABO Practical: Add Power

Finding Add Power

Using the lens meter simulation, determine the Add Power of the right lens of this pair of bifocals.

The right lens of this pair of flat top bifocals is positioned at the center of the optical center, with the back side of the lens facing you. You can also see the same lens as it would appear when positioned at the bifocal segment. To see one view or the other, use the control arrow. You can determine the optical power in either view.

ANSI STANDARDS

ADD POWER	
Power Range	Reference
> +4.00 D	±0.25 D
> +4.00 D	±0.18 D

Rx	SPHERE	CYL	AXIS	ADD	PD	FS	DC	DD?
OD	+2.00	-1.50	90°	2.00	30.0	16.0		16.5
OS	+2.00	-1.50	90°	2.00	30.0	16.0		16.5



37

ABO Practical: Progressives

Progressive Reference Points

Near Reference Point (NRP)



38

This is not just a knowledge test, rather a clinical application test..

Still need the knowledge to apply to clinical/practical situations.

39

Still need to know basic optical skills to problem solve:

- Transposition
- Prism
 - how it bends light
 - how it appears to displace image
 - effect of imbalance, or too much prism
- fitting and problem solving lenses
 - SV
 - ST
 - PAL

40

Questions?

Let's take remaining time and play with the Tutorial!!

Thomasneffido@gmail.com

41