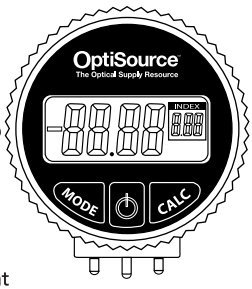
DIGITAL LENS CLOCK INSTRUCTIONS

CONTROL BUTTONS:



MODE - Toggles between refractive indices (1.49, 1.53, 1.56, 1.59, 1.61, 1.67, 1.71, 1.74). Holding down the mode button for 2-3 seconds will toggle resolution between 0.05D and 0.25D. (Ensuring the display is reading -20.00 when toggling the resolution). Default resolution is 0.25D

POWER - Turns clock on or off. Depressing the central pin will also automatically turn the clock on, and the clock will automatically turn off after about one minute of inactivity.

CALC - Click to take measurement of surface curvature.
Place the device's probes against the back lens surface and ensure that all three pins are making contact with the lens. If the display does not appear, press the CALC button for 1-2 seconds and release.

INSTRUCTIONS FOR MEASURING SURFACE CURVATURE:

1. Press power button (⏻) to turn on the clock (display will read "-20.00").
2. Press the MODE button to select the index of the lens being measured. Each press of the button will increase the index of refraction through 1.49, 1.53, 1.56, 1.59, 1.61, 1.67, 1.71, 1.74 – the index value then returns to 1.49 and the cycle repeats.
3. Once the desired refractive index is set, place the pins of the clock against the surface to be measured, ensuring the clock is being held perpendicular to the surface (tilting the clock will cause an inaccurate reading).
4. Once the measurement has been noted, press and hold the CALC button again for two seconds to recalibrate the clock (the display will temporarily read "----" and then reset to "-20.00"). If the clock is not recalibrated before being turned off with the button, the clock will display the last reading when it is turned on again.
5. If recalibration is required, hold the probes level against a flat surface.

INSTRUCTIONS FOR MEASURING LENS POWER:

1. Press the power button (⏻) to turn on the clock (display will read "-20.00").
2. Press the MODE button to select the index of the lens being measured. Each press of the button will increase the index of refraction through 1.49, 1.53, 1.56, 1.59, 1.61, 1.67, 1.71, 1.74 – the index value then returns to 1.49 and the cycle repeats.
3. Once the desired refractive index is set, place the pins of the clock against the surface to be measured, ensuring the clock is being held perpendicular to the surface (tilting the clock will cause an inaccurate reading).
4. Press the CALC button for 1-2 seconds and release to take a measurement of the surface curvature.
5. On the right hand side of the display, notice the blinking icon. If the front surface has been measured, the icon will represent the back surface of a lens (indicating this is the next surface to be measured). Conversely, if the back surface has been measured, the icon will represent the front surface of a lens.
6. Place the pins of the clock against the opposite side of the lens, taking care to orient the pins in the same approximate axis and location as used on the first side measured.
7. Press the CALC button for 1-2 seconds and release to take a measurement of the surface curvature.

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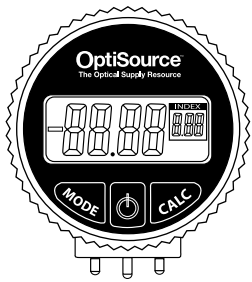
8. The clock will display the power of the lens, and the icon on the right side of the display will show either a minus or a plus lens (whichever has been measured).

9. Pressing the CALC button again will recalibrate the clock (the display will temporarily read "----" and then reset "-20.00").



KEY FEATURES OF THE DIGITAL LENS CLOCK:

- Easy to recalibrate for maximum accuracy
- Accurate at powers above +/- 10
- Easy to read digital values
- Can be used to determine refractive index of an unknown material (read below)

TO DETERMINE THE REFRACTIVE INDEX OF A LENS:

In this example, you have read the power of a lens from a lensometer. It reads: -5.00D, but you are not sure what the material is. No problem, we've got you covered.

Without knowing the material, the refractive index could be a range from 1.49 to 1.74 (assuming we have already determined the material is NOT poly with a quick drop and listen test). You'll need to do some quick tests to get your answer:

1. For best results with the digital lens clock, start with 1.49 index and cycle up (after the following instructions), resulting in progressively closer results to the true power reading from the lensometer. In this example we know the true power of the lens is -5.00D.

2. Start with 1.49. You read the front power and get +0.25, then you read the back power and you get -3.50. The two powers added together [(0.25) + (-3.50)] = -3.25.

3. Given that the true lens power is -5.00 as read from lensometer, we can conclude that 1.49 IS NOT the index of this lens.

4. Based on how far off we are with 1.49 index we can cycle up past 1.53 and 1.56 and try 1.59 instead.

5. Using 1.59 setting on the digital lens clock, we now read (+0.50 D) on the front and (-5.25) on the back curve. Adding these two values together, we get [(0.50)+(-5.25)] = -4.75

6. This is quite close. The index MAY be 1.59. But just to be sure, you can now cycle up one more step to 1.61.

7. At 1.61, the front and back curves now read +0.50 and -5.50. Adding these two values, we now have a result of -5.00 which matches the power read from the lensometer. Based on this result, there is a high probability that the lens has a refractive index of 1.61.

Battery: 3.0V (LR44/SR44 1.5V Two button cells)
Operating Temperature: -10 - 50°C

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