

BPI AR Photometer™

For use only by qualified personnel
in a laboratory environment.

FOR MAXIMUM PROTECTION AGAINST UVA
ENERGY, WEAR UV SAFETY GLASSES & AVOID
LOOKING DIRECTLY AT UV LIGHT SOURCE.

Be sure to always use the ground wire on the
cord for safe operation; never bypass it.

Specifications

The BPI AR Photometer™ (BPI#119509) is an invaluable aid for quality control of lenses that have received UV light absorption treatment. The instrument will also measure visible light transmission as well as enlarging the upper part of the visible transmittance range to check AR quality on clear lenses. The visible portion of the instrument may be used for fashion tint control and for critical density adjustments on therapeutic tints such as BPI Filter Vision™ 540 and BPI Filter Vision™ 500.

The BPI AR Photometer™ features a microprocessor controller that at a push of a button calibrates the meter for a 100 percent transmission. No matter what happens to the intensity of the UV light, auto calibration is guaranteed because of the meter's new circuitry that contains an automatic gain controller stage that accommodates itself to any possible variations in the AC line voltage, as well as to any gradual decay of the intensity of the UV light bulb over long periods of time. Components are UL and CSA recognized.

Variations in density and hardness of CR-39™ lenses typically affect their ability to accept dye. Two lenses that have been in the same dye tank the same amount of time may not come out with equal UV protection.

IT IS THE LENS PROCESSOR'S RESPONSIBILITY TO VERIFY UV PROTECTION, and a meter such as the BPI AR Photometer™ offers a quantitative means of verifying this.

The meter's digital display indicates the percentage of UVA (320 to 400 nm) and the percentage of visible light (400 to 710nm) passing through a lens. It is a quick and accurate way to check the transmission characteristics of lenses.

HEIGHT	WIDTH	LENGTH	VOLTAGE	WEIGHT	FUSE	AMPERAGE
5 in.	6.25 in.	6.75 in.	115 v. or 220 v.	6 lbs	1 amp/250v.	1 amp
12.7 mm	15.87 mm	17.14 mm		2.72 kg		
LENS CLEARANCE		TEST RANGE		SET-UP KIT		
0.75 in.		350nm to 400nm (UVA)		Calibration lens		
19.05 mm		400nm to 700nm (Visible)		Instruction manual		
				Patient brochures		
				Patient brochure stand		

The BPI AR Photometer™ also includes a second display function consisting of three different colored light emitting diodes (LED's). This function makes the instrument a valuable tool for the waiting room or just for instant verification of UV protection.

Unpacking

When unpacking your instrument, please check to ensure that no concealed damage occurred in transit. If such is noted, save the shipping carton and immediately notify the shipping company's damage control inspector in your area so a claim may be processed. Failure to do this may void any future claim and replacement. Also, call BPI Customer Service so arrangements for a replacement may be made.

Setting Up

To set up your BPI AR Photometer™, just connect the power cord to a standard electrical outlet convenient to your work area but away from the immediate vicinity of the lens coloring operation since excessive heat and humidity may adversely affect your instrument. Your BPI AR Photometer™ arrived with a lens treated with BPI UV Diamond Dye™ 400 taped on the back panel. This lens is included for demonstration purposes as well as for testing your unit. A reading of 3% or less for UVA transmission should be obtained when using this lens.

Operation

The BPI AR Photometer™ has an ON/OFF switch (located in the back of the unit), and two push buttons labeled CALIBRATE and READ.

STEP 1: Turn the unit on (ON/OFF switch is located on the back of the unit).

STEP 2: Wait until the UV bulb is properly lit (approx. 5 seconds) and make sure that no lens is in the optical path of the UV light source.

STEP 3: Momentarily push the Calibration button. A reading of 100 will appear on the LCD for both the UV and the Visible. The unit is now calibrated. If either channel is unable to calibrate itself, a reading of E1 will appear on that channel if the light is too bright. (E2 if the light is too dim or off). On initial turn-on, the unit may read too dim on the UV channel due to an attempt to calibrate before the UV lamp comes on. Simply push the Calibrate button after the UV lamp is on.

STEP 4: Place the lens to be tested on the rubber mat and slide it under the sensor housing and into the optical path of the UV light. Push the READ button. The transmission readings will appear on the LCD and one of the three LED's will be on. Also, when the AR quality mark appears on the display near the AR quality label, the AR quality of a clear lens is tested. Lenses with no AR read '0', while those with transmittances approaching 100% read '100'.



One minute after calibration the unit will shut itself off (display dashes); push the Calibrate button to reset. The display will show the UV, AR quality and visible readings until the READ or CAL buttons are pressed or until the maximum calibration period elapses.

IMPORTANT: Remove lens from optical path before re-calibrating. Lenses with moderate to high power may cause cross-talk between the UV and visible channels. This can be minimized by making sure that the optical center of the lens is directly over the light source opening in the black rubber pad.

Should the unit ever fail to function properly, press "Calibrate" to verify calibration. If the unit continues to malfunction, turn the unit off, wait a few seconds, then turn the unit back on.

LED Display

The LED Display on the BPI AR Photometer™ has been calibrated as follows:

DANGER (Red light) indicates 12% or more of UVA transmission.

CAUTION (Yellow light) indicates between 4% and 11% UVA transmission

SAFE (Green light) indicates 3% or less of UVA transmission.

UVA Emanation

The UVA energy (320 to 400nm) that is emitted by this unit is also emitted by sun and sky light and is, therefore, a natural component of our environment. However, over exposure to UVA energy may produce eye irritations and permanent eye injury.

FOR MAXIMUM PROTECTION AGAINST UVA ENERGY, WEAR UV SAFETY GLASSES & AVOID LOOKING DIRECTLY AT UV LIGHT SOURCE.

Warning!

LIVE PARTS INSIDE. ALWAYS UNPLUG THE UNIT WHEN SERVICING. TO AVOID RISK OF ELECTRIC SHOCK, DISCONNECT EQUIPMENT POWER BEFORE REMOVING ANY CABINET COVER.

UV Light Bulb Replacement

Using a Phillips screwdriver remove the two front feet off the bottom panel. Remove the two middle screws on the back panel (screws are located about two and a half inches up from the bottom end of the back panel).

Slide the front panel towards you about four inches.

Flip the front panel over and let it rest on a soft surface so it will not get damaged. Make sure not to break any connections between this panel and the rest of the unit.

Twist and pull the UV light bulb until it snaps out of the lamp holder. Be careful not to break the lamp holder.

Align the pins on the new UV light bulb with the aperture on the lamp holder. Push and twist the light bulb until it locks into position.

Plug the unit into a standard electrical outlet.

The UV light bulb should be replaced at least once a year since its spectral energy distribution curve may shift out of the UVA band after a year of use.

Replacing The Starter

Follow the same procedure described in the previous section for replacing the UV light bulb to open the unit. Then, follow the following instructions:

Locate the starter (silver cylinder located toward the left hand side of the unit). Push and turn at the same time counter-clockwise until the starter pops out of its socket.

Then, pull it out completely. Align the pins on the new starter with the holes on the socket. Push and turn the starter clockwise until it locks into position.

Replacement Parts

UV Light Bulb ... (BPI#60303)

1 AMP/250v. Fuse ... (BPI#59905)

Starter ... (BPI#60927)

Questions?

If you have any questions about the use of your gradient system or any other BPI product, or would like to order supplies, please give us a toll-free call using the number for your area.

© 2000 BPI. All specific product names mentioned herein are trademarks of Brain Power Incorporated, Miami, Florida, USA. (Unless otherwise stated). BPI is a registered trademark with the US Patent Office and with similar offices in other countries. MANUAL FILE# M2011