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EQUIPMENT MANUAL

LUMACHECK

DUAL UV & WHITE LIGHT METER

Document number BR1012: Issue 3

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1 Introduction

1.1 General

The LumaCheck Dual UV and White Light Meter has been designed to offer the user the most accurate results and versatile calibration options available on the market.

The LumaCheck is a unique system design, since it is the Sensor that stores the calibration details, not the Instrument itself, meaning that only the Sensor needs to be sent for calibration subject to the standards that your facility operate in accordance with.

This allows the unit of the LumaCheck to be “hot-swapped” with another sensor and remain in continuous use.

1.2 Features

- Excellent Results Accuracy.
- Dual Sensor.
- Interchangeable Sensor allows the LumaCheck to operate continuously.
- Lightweight and Compact.
- Battery Operated (in excess of ten hours continuous use which equates to several weeks in normal use).
- Ergonomically Designed with Protective Rubber Boot.
- Full Colour Programmable Display.
- Separate Probe and Separate Cable for convenience and lower replacement costs.

1.3 Precautions

Please be sure to read and adhere to all the guidelines set out in this user manual. The precautions are in place for your own safety, the safety of others and to guarantee that you get the most out of your equipment.

As the LumaCheck is designed to read the UV Light levels of a designated area, it is important that you are suitably careful and prepared to work with any surrounding UV light. We would recommend that ultraviolet protective eyewear and face-wear is worn.

Please do not leave the LumaCheck Sensor Head exposed to the UV light source for any longer than is necessary to take a reading. If the Sensor Head is left for prolonged periods to exposure, the end result maybe premature ageing of the Sensor Head. It also could result in the instrument needing to be recalibrated more frequently to ensure accurate results.

2 Standard Package and Accessories

2.1 Standard Package

The LumaCheck comes with the following as standard:

- LumaCheck Unit
- Sensor Head
- Sensor Cable
- Blue Rubber Boot
- 2 x AA Batteries (non-rechargeable)
- Carry Case
- Quick Reference Guide
- LumaCheck Manual

2.2 Recommended Accessories

Two Sensor Heads: The LumaCheck has the option of being purchased with two Sensor Heads, which potentially allows one Sensor Head to be “hot-swapped” with the other when the first Sensor Head is sent for calibration. Having a second Sensor Head available eliminates any chance of “down time” for the LumaCheck if the first Sensor Head fails. You can simply switch to the second Sensor Head and continue as normal.

Extra Sensor Head Cable: Baugh & Weedon recommend that you have a spare

Sensor Head Cable. As the cable is detachable at both the Sensor Head end and the LumaCheck Unit end of the cable, it means that if the cable fails, you can easily switch it with another.

Spare Batteries: Some spare 2 x 1.5 V AA NiMH Batteries are always advisable.

2.3 Optional Accessories

We would recommend the following as optional accessories, but not essential:

- Spare Carry Bag
- Spare Rubber Boot

3 Operation of the LumaCheck

3.1 SENSOR: Connecting the Sensor

When you receive the LumaCheck, you will receive the LumaCheck Unit, Cable and Sensor Head as separate items. To connect the Cable to the Sensor Head:

1. Line the red dot on the Cable and the red dot on the Sensor Head up with each other and push the two together.
2. Repeat this process with the red dot on the other end of the Cable with the red dot on the Cable Connection Port on the LumaCheck Unit. Line the two up and push the connections together.

3.1.1 Valid Calibration Sticker

The Sensor Head will come with a sticker on it that should tell you when it was last calibrated and / or when it is due for its next calibration. **Be sure that the Sensor Head is within a valid calibration time frame at the time of operation.**

3.2 Appearance

3.2.1 Sensor Head

(Figure 1 – Sensor Head)

3.2.2 LumaCheck Unit

Figure 2 – LumaCheck Unit

3.2.3 Keys

"Up Arrow" – moves up through menu options.

"Down Arrow" – moves down through menu options.

"Left Arrow" – moves between screens and modification options.

"Right Arrow" – moves between screens and modification options.

"Power Button" – turns the equipment on and off.

"Back Button" – Use to go back from one menu level to the next and from the menu screens to the "Reading" and "Home" screens.

"OK Button" – Used as an Enter button to move from one menu to another and one screen to another. Works as the opposite to the "Back" button.
The OK button also acts as a Hold/Freeze key when on the reading screen.

3.3 Charging and Batteries

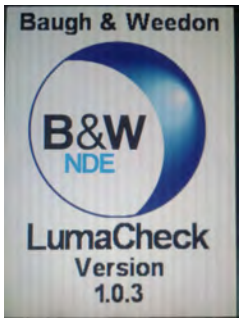
The LumaCheck uses AA Batteries. These will not be automatically charged in the LumaCheck as there is protection circuitry to prevent this.

Therefore if you would like to use rechargeable AA Batteries, please only use an external charging unit for them.

You cannot charge the LumaCheck through the mains.

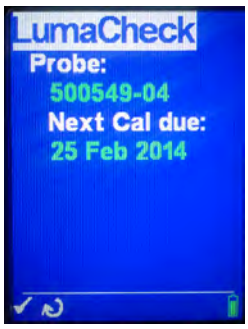
4 Menu Screens

4.1 Menu Screens Explained



Splash Screen
Press Power Key for two seconds and that Splash Screen will appear. The screen will automatically redirect to the home screen after two further seconds.

NB: you can note the software version you are using at the bottom of this screen.



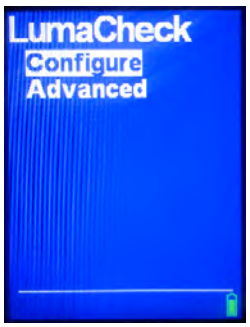
Home Screen
Probe: Check the number here matches the number on the Sensor Head sticker.
Next Cal Date: When the LumaCheck is due for its next calibration.
Operation: Back Key – Go to Reading Screen.
Down Arrow Key – Go to Top Level Menu Screen

Reading Screen
The Reading Screen is split into two halves, the top displays the White Light reading and the bottom displays the UV Light reading simultaneously.
Operation: Back Key – toggle between Reading and Home Screen.
OK Key – Toggle between "Hold" and Reading Screen.

"HOLD" Screen

Allows the user to freeze the reading screen so that the latest reading remains on the screen.

Operation: While in the Reading Screen press the "OK" key to hold the screen.
HOLD will appear in the top left hand corner.
Press the OK key again to release the freeze function.



First Level Menus Screen

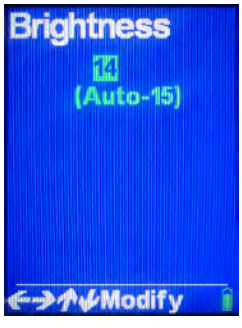
The menu system on the LumaCheck is designed along the lines of the folder / file layout present on many modern computers. This screen is the first screen in a series of sub menus.

Operation: Up & down Arrows Key – Use to move between menu items.
OK Key – Use to select a menu item.
Back or Left Arrow Key – Press to go back to home screen

Configure Menu Screen

This screen shows the sub menus for the "Configure" menu.

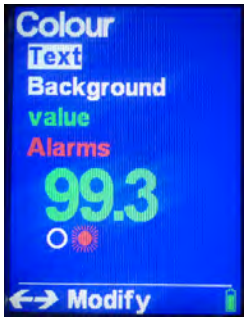
Operation: Up & down Arrow Keys – Use to move between menu items.
OK Key – Use to select a menu item.
Back or Left Arrow Keys – Press to go back to First Level Menus screen



Brightness Screen

Change the brightness of the LumaCheck screen.

Operation: All Arrow Keys – Press Left and Down Arrow to reduce the brightness and Right and Up Arrow to increase brightness.
OK Key – Press to set the your brightness preference level.
Back Key – Return to Configure Menu Screen.

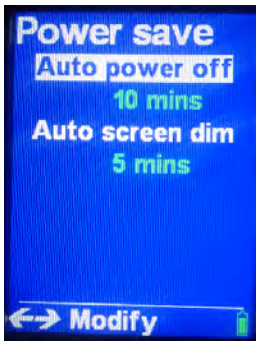


Colour Menu Screen

Configure the colour of text, background, value and alarms to suit your preferences.

Operation: Up & Down Key – Press to move between changeable options (text, background, value, alarms)
Left & Right Arrow Keys – Press to move through the colour options for each changeable option.
OK Key – Press to confirm setting of choice.
Back Key – Return to Configure Menu Screen.

NB: You must press the OK Key to set the setting of choice for it to be set correctly.



Power Save Menu Screen

Use this screen to set the Auto Power Off and Auto Screen Dim timings when the LumaCheck is idle.

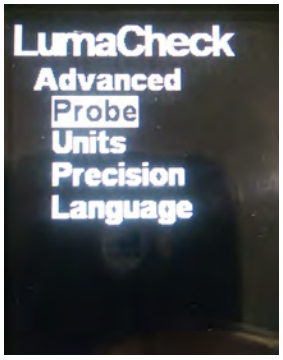
Operation: Up & Down Key – Press to move between changeable options (Auto Power Off and Auto Screen Dim).
Left & Right Arrow Keys – Press to move through the time options.
OK Key – Press to confirm setting of choice.
Back Key – Return to Configure Menu Screen.

NB: You must press the OK Key to set the setting of choice for it to be set correctly.

Time & Date Menu Screen

Use this screen to set the correct Time and Date.

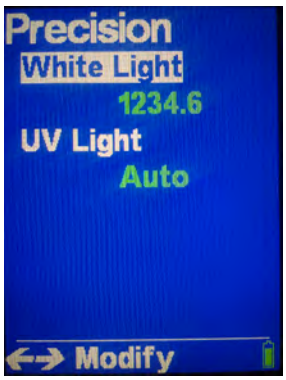
Operation: Left & Right Arrows – Move between different changeable options on the screen (E.g. month, year etc).
Up & Down Arrows – Use to change the date, month, year and time figures on each changeable option.
OK Key – Press to confirm your settings.
Back Key – Press to Return to Configure Menu Screen.



Advanced Menu Screen
This screen displays the sub menus for the "Advanced" Menu.
Operation: Up & down Arrow Keys – Use to move between menu items.
OK Key – Use to select a menu item.
Back or Left Arrow Keys – Press to go back to First Level Menus screen

Probe Menu Screen
This screen displays your Sensor Head (Probe) serial number and whether the Sensor Head attached has the White Light and UV Light Sensors working correctly.
Be sure to check that the serial number on this screen matches the number on the Sensor Head.

Units Menu Screen
Use this screen to set the measurement units of choice for White Light.
Operation: Up & Down Arrows – Use to change between White Light and UV Light.
Left & Right Arrows – Move between different measurement options for White Light.
OK Key – Press to confirm your settings.
Back Key – Press to Return to Advanced Menu Screen.
NB: UV Light has no other options than the one automatically displayed.



Precision Menu Screen
This screen allows you to set the precision of both the White Light and UV Readings.
Operation: Up & Down Arrows – Use to change between White Light and UV Light.
Left & Right Arrows – Move between different precision options on each light source.
OK Key – Press to confirm your settings.
Back Key – Press to Return to Advanced Menu Screen.

Language Menu Screen
Use this screen to change thelanguage used on the LumaCheck.
Operation: Left & Right Arrows – Move between different language options.
OK Key – Press to confirm your settings.
Back Key – Press to Return to Advanced Menu Screen.

4.2 Reading Screen Layout

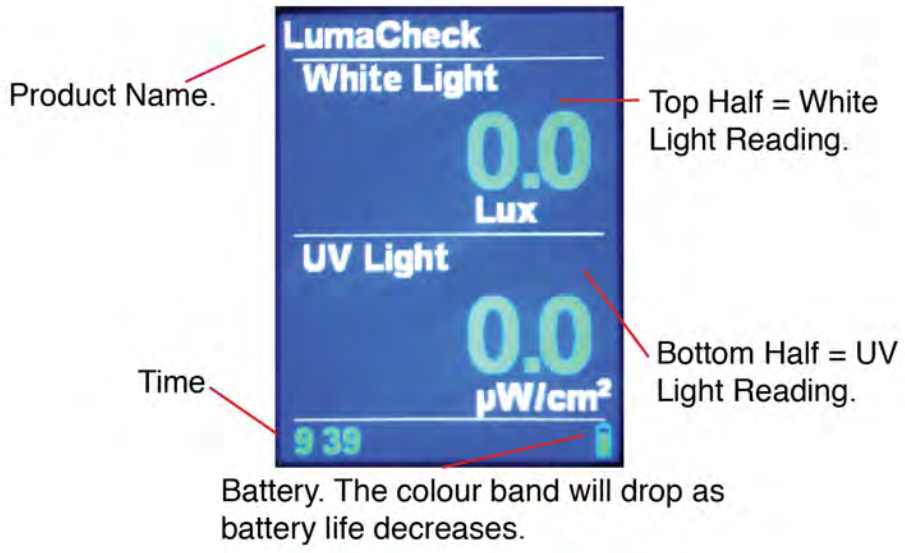


Figure 3 Reading Screen Layout

4.3 Reading Screen "Hold" Feature

When taking readings with the LumaCheck you will be using the Reading Screen. The Reading Screen has the ability to be "held" when taking light measurements. To do this:

1. Press the "OK" Key at any point during a reading and the screen will be held.
2. You should notice the word "HOLD" appear on screen.
3. Press it a second time and the "hold" will be released.

5 Specification

5.1 Full Specification

GENERAL

Measuring Range: White Light:	0 lux to 10,000 lux
UV Light:	0 to 10,000 uW/cm²
Resolution: White Light:	0.1 lux below 10 lux.
UV Light:	0.15 to 10 μW/cm^2 (micro watts per square centimetre).
Units: White Light:	Foot Candles (ft-c or fc or lm/ft) or Lux.
UV Light:	μW/cm^2 (micro watts per square centimetre).
Accuracy:	Better than +/- 5% as per the following standards: BS 667 2005 and BS EN ISO 3059:2012

UNIT

Display:	2.8" (70mm) 320 x 240 pixels colour display. LCD with selectable backlight.
Screen:	2 readings per second.
Conversion Rate:	100ms
Resolution:	Up to 0.1 Lux & 0.1uW/cm2 (configurable)
Dimensions:	163mm Long x 80mm Wide x 25mm Deep. With rubber boot on = 168mm Long x 85mm Wide x 30mm Deep.
Weight:	350g (0.77 pounds) including batteries.
Power:	2 x 1.5 V AA Alkaline Batteries.
PC Connectivity:	Via USB port
IP Standard:	IP54

SENSOR HEAD

Resolution	Settable in menu system
Overall Accuracy	+/- 3% measured against primary standard
Temperature Coefficient	less than +/- 0.01%/C (0 to 50C)
Irradiance range	UV-A - 0 - 10000 uW/cm2 Visible - 0 - 10000 lux
Spectral range	UV-A - 320-400nm Visible - 460-680nm

Please note: The specification for the LumaCheck can change without notice at any time.

5.2 Optical Accuracy

The LumaCheck accuracy is better than +/- 5% as per the following standards:
BS 667 2005 - Illuminance meters requirements and test methods
BS EN ISO 3059:2012 NDT penetrant testing and magnetic particle testing viewing conditions.

6 Environmental Specification

The LumaCheck dual UV and White light meter is designed to be safe under the following conditions:

- Altitude up to: 2,000m
- Temperature: 0°C to 40°C
- Maximum relative humidity: 5% to 95%

7 Calibration

The LumaCheck Home Screen will give you the date that the next calibration of the equipment is due. It is recommended the LumaCheck be recalibrated either every six months or twelve months in accordance to the calibration standards your facility operates to.

You can either send your LumaCheck directly to Baugh & Weedon or your calibration house of choice. If you are unsure please contact your local distributor for the LumaCheck and they will be able to assist you.

NB: The LumaCheck Sensor Head can be recalibrated on its own, but check with your own standards to check if this is possible first.

8 Warranty, Maintenance and Battery Replacement

8.1 Warranty

The LumaCheck is provided with a one year warranty at the time of purchase. At Baugh & Weedon your customer satisfaction is our priority so we will always do our upmost to assist you with any technical issues regarding the LumaCheck.

8.2 Preventive Maintenance

8.2.1 Sensor Head

- Use something soft like a cotton bud to clean the White Light and UV Sensor Heads.
- Do not use any solvents on any part of the Sensor Head at all.
- Only use very mild detergent to clean the sensor head and be sure to make sure that all areas of the Sensor Head are totally dry after cleaning.

8.2.2 LumaCheck Unit

- Use soft clean cloth moistened with a soap or mild detergent to clean the case, buttons and display window.
- Do not use an abrasive cleaning agent of any kind, as this will damage the instrument.
- Do not use solvents to clean the instrument, as they will cause irreparable damage to case and contents.

8.3 Battery Replacement

1. Disconnect the Sensor Head from the LumaCheck Unit.
2. Remove the rubber boot from the LumaCheck unit.
3. Reveal the batteries by sliding the battery cover down.
4. Remove the used batteries and replace with new 2 x AA Alkaline batteries.
5. Be careful to check that the batteries are placed in the battery compartments the correct way round.
6. Slide the battery cover back until fully in position.
7. Replace the rubber boot onto the LumaCheck unit and reconnect the Sensor Head.