

Environmental Monitor Type 7650



- Replaces 2 separate instruments
- Ultra Violet (UV)
- Visible light (Lux or Foot-candles)
- Solid metal construction
- Easy one handed operation
- Large, easy to read display
- Optional data logging (type 7650C)

This single instrument enables measurement of 2 parameters that cause damage to buildings, valuable objects, documents etc: ultra-violet and visible radiation.

Ultraviolet (UV)

For many years it has been recognised that one of the major causes of damage to museum objects and other sensitive objects, soft furnishings etc is the fading and rotting effect of light on the object. The most damaging part of the illumination is its ultraviolet content. Since 1976 Littlemore Scientific (ELSEC) has been providing instruments that enable the conservator to measure the UV content of light and thereby protect valuable exhibits. Using the 7650, measurements can be taken of the proportion of UV present ($\mu\text{W}/\text{lumen}$), the total amount of UV (mW/M^2)

Visible Light

The amount of visible light is important, not only to check illumination in work areas, galleries etc but also to control damage to light sensitive objects that is also caused by normal light. Measurements can be displayed as Lux or Foot-candles.

Data Logging

The optional data-logging function (type 7650C) enables over 73,000 readings of both parameters to be automatically taken at selectable intervals (every 10 seconds to 1 hour). The saved

data can then be transferred to a computer by a standard USB interface. Logged information is stored on an internal USB Flash disc and can be downloaded onto a PC without any special software. The data is in a standard CSV format that can be opened in any spreadsheet (excel etc). Software is also provided to display the measurements as graphs or text. When logging data, the 7650 can be turned off to save power and the built in clock will turn the unit on whenever a reading needs to be taken, this enables a 7650 to be left taking readings for months at a time.

Easy to use

Much trouble has been taken to make the 7650 as easy to use as possible. Anyone can take measurements straight out of the box with little, if any, reference to the instruction manual. The appropriate button is pushed depending on the measurement required and the reading is taken. The unit automatically turns off 20 seconds after the last reading unless a button is held down for over 3 seconds, this causes continuous measurements to be taken until another button is pressed. The large OLED display enables an easy to use menu system to select the more advanced functions, change units etc.

Units of measurement for UV

Traditionally UV has been measured in museums as the *proportion* of ultraviolet present. This result is useful for checking a particular lamp or window because the proportion of UV does not change with the distance from the light source. Using a simple rule, the amount of UV on an object can be limited (it is usual to arrange that the proportion of UV should not exceed 75µW/lumen in museums). The damage is done by

the total amount of UV falling on the object, so it is useful to be able to measure this directly, especially if non standard amounts of illumination are required. The amount of UV should be as little as possible but in general should not exceed 20mW/M².

SPECIFICATIONS

Visible wavelength range	400-700nm (CIE response). No correction required for different light sources.
Visible power range	0.1 - 200,000 Lux (0.1 – 20,000 Foot-candles)
UV wavelength range	300 - 400 nm
UV power range	2 - 10,000 mW/M ²
UV proportion range	0 - 10,000 µW/Lumen
Display resolution	Lux: 0.1 up to 100 then 1 Foot-candles: 0.1 up to 100 then 1 UV: 0.1 up to 100 then 1 Proportion of UV: 1 µW/Lumen
Accuracy	Visible: 5% ±1 displayed digit UV: 15% ±1 displayed digit
Angular response (Light & UV)	Cosine
Readout	128x64 OLED Display with automatic brightness control
Date functions	Display as day-month-year or month-day-year.
Batteries	4 off NiMH AAA type.
Battery Life	Approx 25 Hours continuous use or 3,000 readings taking 30 seconds each.
Charger	Input: 100-240V 50-60Hz Output: 5V (USB connector)
Operating Temperature	0-50°C 0-99%RH, non condensing
Dimensions	135 x 60 x 15mm 5.3 x 2.4 x 0.6
Weight including batteries	240g (8.5oz)

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