

# ILT710

# Flicker and Illuminance Meter Operation Manual



**InternationalLight**  
TECHNOLOGIES

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## 1. INTRODUCTION

The ILT710 is a hand held light meter designed to measure both Illuminance (lux & fc) and Flicker Data. Its hand held ergonomic design with remote sensor allows user to view the display while sensor is moved to numerous measurement planes including hard to reach places.

The ILT710 sensor provides a CIE photopic "human eye response" photo-diode sitting behind a durable domed poly-carbonate cosine correcting diffuser to provide accurate collection of light from all angles. The meter has proprietary analog and digital signal processing to provide over-sampling at a rate of 50KHz with true 12 bit resolution over light levels down to 1 lux, maintaining resolution through all LED dimming levels including high PWM frequencies. The system includes ILT's NIST traceable and ISO17025 accredited lux calibration allowing the meter to serve the dual purpose of light-level compliance auditing and flicker measurement in office spaces, hospitals, schools, sports and entertainment arenas, and manufacturing environments, among others.

### Full flicker analysis

- Lux
- Percent flicker: 0-100% scale, modulation depth for average, peak-to-peak amplitude
- SVM: SVM value of 1 means for the waveform, standard observers will be able to see a stroboscopic effect 50% of the time. < 1 is less than 50%; >1 is more than 50%
- Flicker Index: A ratio of the amount of light energy above the average light level over the total light energy
- Flicker frequency: Expressed in Hz, frequency with which the signal is dominantly superimposed
- Intensity Over Time Graph: Quickly depicts modulation shape and depth

## 2. BUTTON FEATURES

The ILT710 has a membrane panel with four buttons that allows numerous processes.



### 1 POWER / UNITS

Press and Hold: Turn device on or off

Press: Alternate between Lux and Footcandle units of illuminance.



### 2 ZERO / HOLD

Press and Hold: ZERO: Takes a reading and subtracts that value from all future readings.

2A. Dark ZERO: Cover sensor, wait 2-3 seconds, press zero. This is used to apply a proper zero for the electronics in the working environment.

2B. Ambient ZERO: Place the sensor in the measurement location with the test source off. Wait 2-3 seconds for the system to take a measurement of the ambient light levels. Apply a zero to subtract the ambient from future readings. Turn the lamp on and measure only the light supplied from the test lamp.

NOTE: A power cycle can be used to cancel any previously set Zero values.

Press: Freezes/Holds the readings on the display.

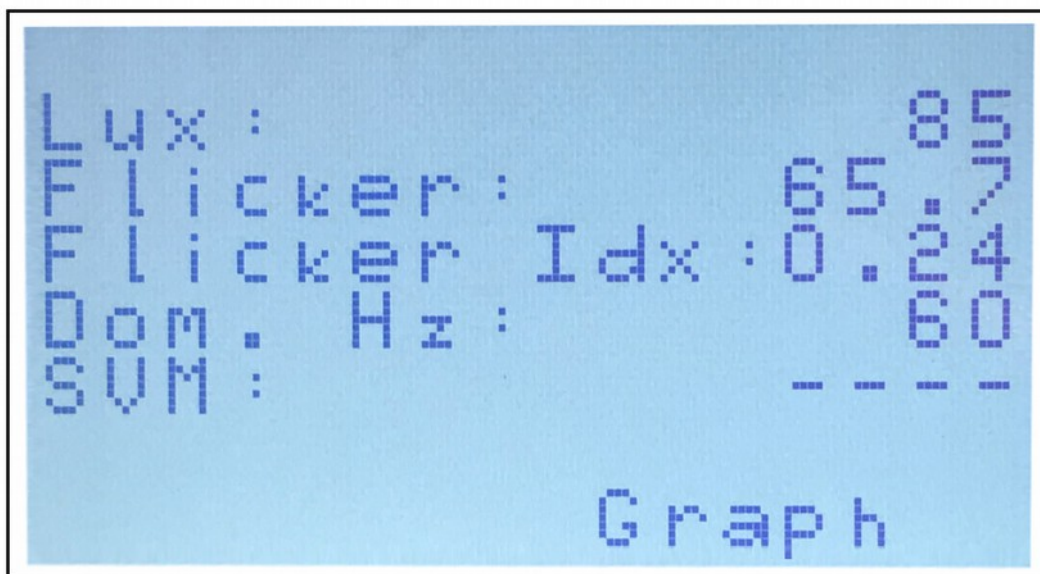
**3 SAVE** Stores the results in the internal flash memory. Saved readings can be downloaded to a PC using ILT's complimentary light meter software.

**4 GRAPH** The Graph button provides a visual representation of the rapid changes in light intensity that are often invisible to the human eye.

### 3. TAKING A MEASUREMENT

The A208 sensor is calibrated with the entire surface of the PD diffuser over filled with light. The calibration reference plane is the groove where the PD is connected to the A208. When taking an illuminance measurement, the same conditions should be applied. The light to be measured must fully cover the PD to accurately measure the lux.

The ILT710 offers simple operation. If all of your settings are correct, simply turn on the lamp, press and hold button 1 to turn on the meter, place the sensor in the measurement location and view the results on the display. Press hold to freeze the display, and press save to store the readings.



NOTE: Flicker, Flicker Idx and Dom. Hz measurements are only available when the illuminance is greater than 5 lux. SVM measure measurements are only available when the dominant frequency (Dom. Hz) is greater than 80Hz and the illuminance is greater than 100 lux.

### 3A FIRST TIME USERS:

First attach the sensor to the top of the meter by aligning the BNC connector and twisting to lock in place.

Press and Hold button 1 until the meter turns on.

Change the units as needed by pressing button 1 (lux or fc)

If a dark zero is required, cover the sensor with an opaque object and press and hold button 2.

If an ambient zero is required place the sensor in the measurement location with the test light **off or blocked from view**, then press and hold button 2.

Warm up the lamp as needed.

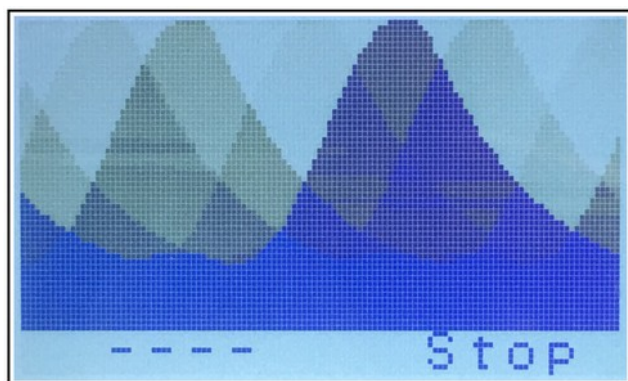
Place the sensor in the desired measurement location

The meter will automatically begin to sense any changes to the light level and will provide a readout on the display, updating continuously 2-4 times per second.

Press and hold button 1 to shut off your device, or wait 5 minutes and the meter will shut off automatically to conserve battery life.

## 4. GRAPHING

The graph mode allows the user to view the Intensity over time and quickly depicts modulation shape and depth.



## 5. BATTERY

The battery on the ILT710 meter is a 1200 mA hour rechargeable lithium battery that will run for up to six hours of continuous use. The Battery is rated to last for 300-500 charge cycles.

To conserve battery life, the meter will automatically shut off after 5 minutes unless plugged into a power source or while conducting a graph measurement.

To recharge the battery, plug the mini USB cable into the slot on the top of the meter. Plug the USB A end of the cable into a PC, USB wall plug, USB power bank or any standard mobile phone USB A charging device. The ILT710 will always turn on when power is supplied via the mini USB. It will take approximately 4 hours to charge when the battery is drained. The meter can be used while charging the battery.

Battery replacement cannot be done in the field as it requires soldering to the board which can cause damage by untrained personnel. Please contact ILT for battery replacement.

## **6. SENSOR**

The Meter and sensor have been paired and calibrated to create a NIST traceable calibrated light measurement system. Swapping sensors between meters can cause inaccurate results.

To attach the sensor, locate the female BNC connector on the top side of the meter. Align the connectors, press down and twist to lock the sensor in place. The meter is designed so that the sensor can be detached when not in use, or left attached at all times.

The sensor is not waterproof and should not be submerged. Liquids should be used very sparingly when cleaning the sensor to prevent possible leakage.

Sensor replacements are available, however, replacing a sensor requires a new lux/fc calibration. Consult ILT before swapping or replacing sensors.

## **7. USB PORT**

On the top right side of the meter is the Mini USB port. The USB port is used for both charging the device and for downloading stored data to the PC. ILT recommends use with the supplied USB cable or any good quality mini USB cable.

## **8. CALIBRATION**

ILT typically recommends an annual calibration for all equipment, however, the end user may, through their own QC process, create their own calibration cycle.

Service: Before returning any equipment to ILT for service, please use the ILT website to obtain your Return Material Authorization number (RMA):

Website: <https://www.intl-lighttech.com/form/rma-form>

Email: [ilservice@intl-lighttech.com](mailto:ilservice@intl-lighttech.com)

Phone: 978 818 6180 x 118

## **9. WARRANTY**

The equipment you have purchased has been expertly designed and was carefully tested and inspected before being shipped. If properly operated in accordance with the instructions furnished, it will provide you with excellent service. The equipment is warranted for a period of twelve (12) months from date of purchase to be free of defects in material or workmanship. This warranty does not apply to damage resulting from improper set up, accident, abuse, loss of parts, or unauthorized alteration / repair. The equipment will be repaired or replaced, at our option, without charge to the owner for parts or labor incurred in such repair. This warranty shall not apply unless the equipment is returned for our examination with all transportation charges prepaid. International Light Technologies has no other obligation or liability in connection with said equipment.

## **10. SOFTWARE**

The ILT710 software package allows the user to apply firmware updates, and to download the data saved in the device

Data Download: The internal flash memory chip can save hundreds of readings. Using the PC software users can download the saved data to a PC for analysis, reporting and system verification.

Click on the Get Data to open the window. Click on Download to Table to open the file in the PC software window.

The data is formatted in .csv and can be open by most spreadsheet programs such as excel.

Save table to CSV will open up a dialog box that will allow you to save the file. Type in your file name and preferred location and press save.

Erase data from meter will erase all stored results in the meter.