

# Flicker-BT Flicker Test Accessory

Benchtop meter for illuminance and flicker analysis



## Why flicker analysis is needed

The health effects of flicker are divided into visible and invisible flicker. In the visible domain, frequencies in the range ~3 to 70 Hz represent a risk of seizure in those with photosensitive epilepsy. In the invisible domain, at higher frequencies, migraines, headaches, eye strain and non-specific malaise may result. Some SSL systems, particularly those paired with dimming controls, demonstrate significant photometric flicker. Now Labsphere makes it easy to measure flicker metrics on its illumia®Plus Systems with Integral® software.

## Fast integration

Flicker-BT is a high-speed illuminance meter designed to measure temporal lighting artifacts. The sensor is integrated with a signal condition module that connects directly to a PC. No external power is required. Data acquisition and analysis is performed with the Flicker-IP software.

## Features and reporting

- Selectable Sampling Rate
- Selectable Scan Duration (Measurement Period)
- Selectable Recording Intervals
- Lamp Light Output Periodic Frequency
- Percent Flicker
- Flicker Index
- Stroboscopic Visibility Measure (SVM)
- Short Term Flicker ( $P_{st}$ )
- ASSIST Flicker Perception Metric ( $M_p$ )
- Digital Exportable of RAW Data\*
- Fraction of Rated Light Output Integrated over Measurement Period
- Percent Amplitude Modulation at Selected Frequencies
- Precision Cosine Receiver
- Robust Carry and Storage Case

\*excluding  $P_{st}$

# Ordering Information

**Model: Flicker-BT    Order Number: AA-01510-000**

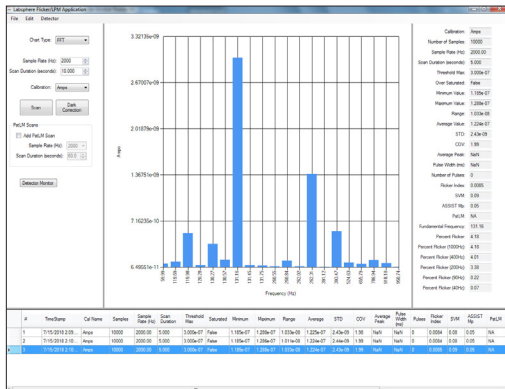
Includes: flicker sensor, condition electronics, mounting accessories, Integral software, sensor head preamp, cabling, storage case, calibration certificate, instructions for hardware and software installation and operators manual

## Options:

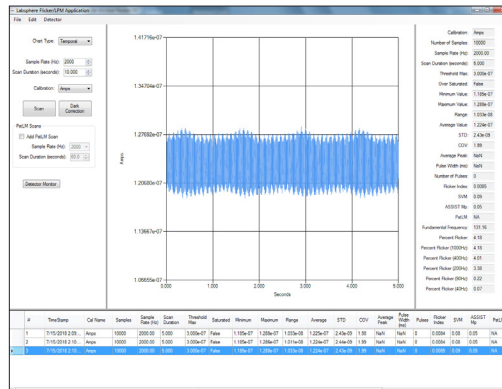
Posts: 1 to 12 inches  
 Post Holders  
 Base Plates: 4 x 4 in<sup>2</sup> to 8 x 8 in<sup>2</sup>

# Specifications

Sensor:	Broadband silicon photodiode diode filtered for $V_{\lambda}$ response
Photometric Range:	380 nm to 780 nm
Input Optic:	Diffuser window
Cosine Response:	< 9%
Sampling Rate Range:	Low: 10 Hz    High: 5000 Hz
Data Recording Rate:	5 kHz with internal sample rate of 20 kHz
Recording Interval:	0.1 to 0.0002 sec
Equipment Measurement Period Range:	12 seconds
Measurement Time Range:	120 ms to 12 s
Percent Flicker Range:	0 -100%
Flicker Index:	Reported
Lamp Light Output Periodic Frequency Range:	0-2500 Hz
Stroboscopic Visibility Measure: (SVM)	Reported
ASSIST Flicker Perception Metric: ( $M_p$ )	Reported
Fraction of Rated Light Output Integrated over Measurement Period Amplitude:	100%, 20% and minimum fraction of light output
Modulation Unfiltered:	At 1000 Hz, 400 Hz, 200 Hz, 90 Hz and 40 Hz cut off frequencies
Software:	Integral
Interface:	USB 2.0
Computer Requirement:	Integral Cube, PC or laptop with Windows 7 or newer
Cable Length: (from sensor to USB)	80 in (20.4 cm) + 2 m extension
Dimensions: (sensor head)	1.5 in diameter x 1.1 in (3.81 x 2.74 cm)
Weight:	0.40 lbs (0.18 g)
Mounting:	Mounts on Labsphere's 0.5 inch integrating sphere port frame 8-32 mounting boss for benchtop use



FFT Plot



Temporal Plot