

# 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 with Flicker-BT 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-BT 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 Name:** Flicker-BT    **Order Number:** AA-01510-100

Includes: flicker sensor, condition electronics, mounting post and base, Flicker-BT software, and Illuminance calibration and storage sleeve.

**Options:**

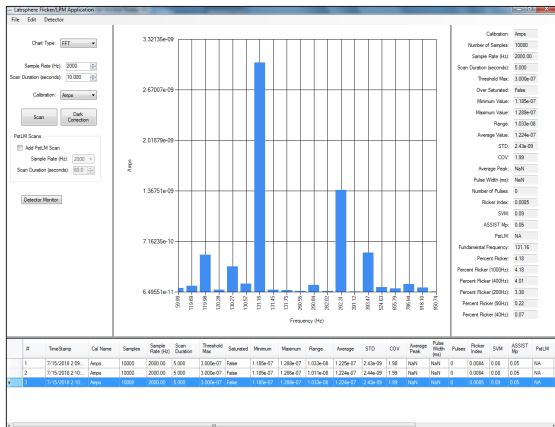
Posts: 1 to 12 inches

Post Holders

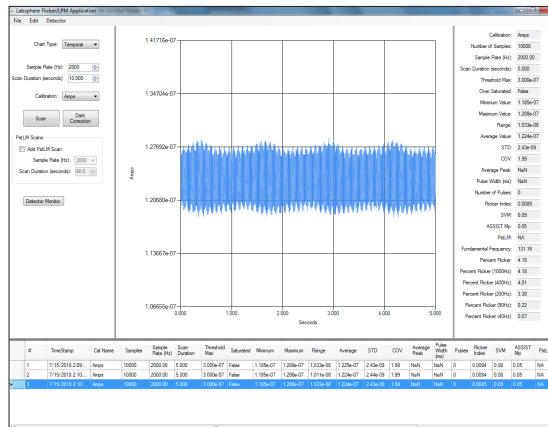
Base Plates: 4 x 4 in<sup>2</sup> to 8 x 8 in<sup>2</sup>

# 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:  | Flicker-BT  |
| Interface:   | USB 2.0   |
| Computer Requirement:  | 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<br>8-32 mounting boss for benchtop use |



FFT Plot



Temporal Plot