

# The *Smart* way to test LEDs

With the expanding use of LEDs in electronics, a quick and effective solution to test LEDs has become more and more vital. Today, the intelligent choice is the Smart FINN™

The Smart FINN™ is the simplest method for measuring the color of an LED on the market. Smart FINN™ delivers full color and brightness readings with speed and ease.

The Smart FINN™ is placed in front of the LED under test with no critical spacing or fiber-optic cables to install or maintain. The output frequency is directly related to the wavelength of the LED. **Color measurements are provided as frequency readings measured in kHz.**

## The Smart FINN™

- May be used with any assembly that has LEDs
- Is suitable for any test environment including ICT or functional—and on any test platform
- Will accommodate the full spectrum of visible LEDs
- Is an excellent solution whether you are testing one color LED or multi-colored LEDs
- Has been widely effective in a variety of industries including automotive, networking, communications, medical, and defense

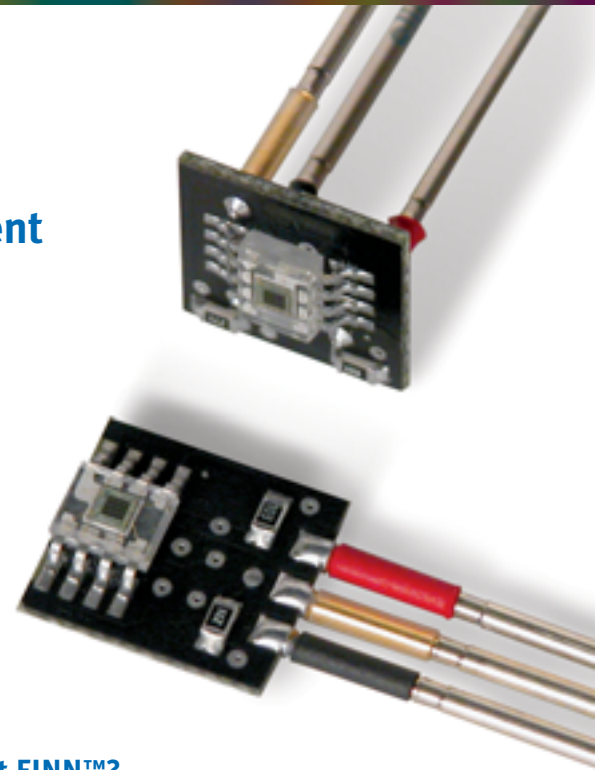
## Why the Smart FINN™?

Proven performance is everything. Smart FINN™ delivers highly accurate color and strength readings. Smart FINN™ has won multiple benchmarks conducted by international networking companies and contract manufacturers.

Compact, durable and adaptable, the Smart FINN™ is easily installed on new or existing fixtures.

The Smart FINN™ is extremely easy to incorporate for production line testing. No serial interface or digital channel addressing is required. So simple to use—no calibration is needed.

Excellent for use with bi-color and tri-color LEDs and whenever a specific color requirement is necessary.



**Make the *Smart* choice. Choose the Smart FINN™**

## Smart FINN™

### PRINCIPLE OF OPERATION

The Smart FINN™ boasts an all-color sensor—four sensors combined into one. Each sensor is designed to detect a certain range of color—blue, red, green or clear. By comparing readings, the wavelength of the light hitting the sensor can be accurately measured. The key to the design is simplicity. Other than a power and ground connection, the only connection to the sensor is the output. This output indicates both the color and the strength of the LED under test.

### METHOD OF OPERATION

The **output frequency in kHz** is directly related to the wavelength (color) of the light. Taking a DC measurement of the signal provides a measurement of the light intensity. The signal is pulse-width modulated to indicate the intensity of the light. The brighter the light, the longer the pulse width. The frequency does not change with the LED brightness.

### FEATURES

- Full color detection from ultraviolet to infrared
- Wide operating voltage (3.0 Vdc–5.5 Vdc)
- Low current; can be powered directly from a digital output
- Color identification determined by a **frequency** output
- Brightness reading supplied by a voltage output
- Totally automated; no operator action required
- Recommended distance from LED to sensor is .1 inch–.25 or more
- Easy to mount and connect
- USB tool available



### APPLICATIONS

- Any test environment where a specific LED color verification is required
- Quality control for most in-line manufacturing environments

### PROPERTIES

- **Dimensions**—.486" x .485" x .176" (not including spring probes)
- **Power Source**—Unlike the original FINN™, the Smart FINN™ requires a minimal power voltage source, which may vary from 3.0 volts to 5.5 volts. Current is typically 8mA@5V. Power is marked with a + (plus) sign on the PCB and red heat-shrink on the lead. Ground is marked with a – (minus) sign on the PCB and black heat-shrink on the lead.

### ORDERING INFORMATION

Part Number	Description
TC03SF-R	Right Angle Smart FINN™
TC03SF-V	Vertical Smart FINN™
TC03SF-L	L-shaped Connector Style
TC03SF-C	3-Pin Header Connector Style
TCUSB	USB Tool

### READINGS FOR POPULAR COLORS\*

TYPICAL MEASUREMENTS @Vdd = 5.0

Color	nm Wavelength	kHz Color Reading
Red	635	11.7
Amber	608	10.6
Yellow	585	9.1
Green	565	8.5
Blue	430	7.0

\*Provides a range of 256 different color readings.

Please consult our web site for further documentation.

U.S. Patent No. 6,490,037; other U.S. and international patents pending

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