Capabilities Brochure

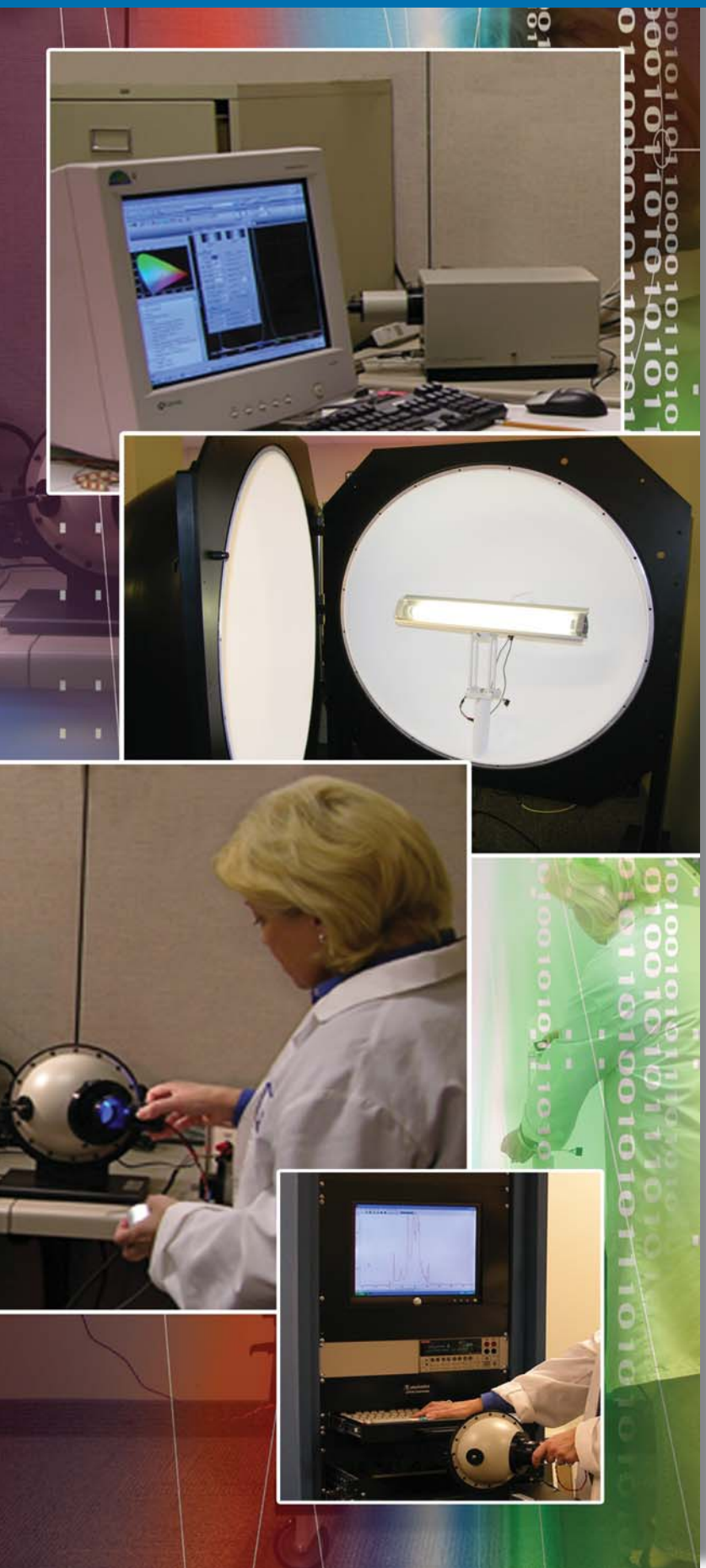
Visible LED Lab

TT electronics

OPTEK Technology

A Part of Everday Technology

OPTEK's Visible LED Lab



If you want to make the switch to solid-state lighting to enjoy the benefits of energy conservation and long-life, we have the lab and engineering expertise to convert your incandescent or fluorescent designs to solid-state. It's more than just swapping light bulbs with LEDs. We know what it takes from the drive circuit to the optical design to heat management.

Equipment

- INTEGRATING SPHERES - 1-meter and 6"
  - Determines color temperature (CCT) and luminosity (TLF)
- INFRARED THERMAL IMAGING CAMERA
  - Provides data for optimizing thermal management designs
- SCANNING ELECTRON MICROSCOPE PRINCETON GAMMA TECH X-RAY ANALYZER
  - Provides data in failure analysis
- LUMINOUS FLUX AND WAVELENGTH TESTER
  - Verifies light ouput and spectral bandwidth
- RADIATION SPECTROMETER SYSTEM
  Goniometer • CIE 127 Publication Condition A&B Tube • 6" Integrating Sphere
  - Measures radiometric and photometric characteristics

Our Lab

Our optical measurement lab sets us apart from other VLED suppliers. It gives us the ability to objectively compare light output between two competitor's products as well as between different technologies. And we use it everyday to help customers make the transition from traditional lighting to solid-state lighting.

It is absolutely necessary to quantify light measurements for the end user's application. Color (even white) is too subjective. But using our lab we can demonstrate that the OPTEK solid-state lighting is equivalent to your current incandescent or fluorescent design. We can also show you with data that our VLED meets or exceeds the light output of the VLED you are currently using.

The integrating sphere, detects the exact color (dominant wavelength or color temperature for white light), the peak wavelength, brightness (total luminous flux), and other parameters at a specified current level (I_F). These results are measured by a spectroradiometer.

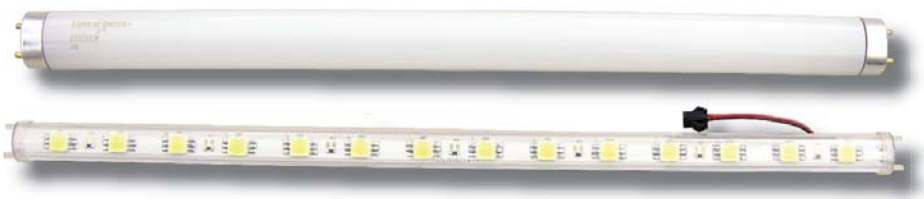
We will place your current product in the 1 meter integrating sphere to determine the color temperature (CCT) and total luminous flux (TLF). Once we prototype a solid state replacement, we will check it using the same optical measurement system to verify its performance to the original characteristics.

Measurements on VLED datasheets rarely mirror real life conditions, and cannot possibly emulate your unique application. Often manufacturers characterize their color and intensity and specifications under the best possible conditions. Our optical measurement equipment can measure these parameters over time and junction temperature (the most critical of parameters).

Our ability to test product and generate objective test results is invaluable to designers transitioning to solid-state lighting. It's even more important in the UV range, where even fewer people measure (and you can't see). Our capabilities include the 200nm (UV-C) germicidal region. Existing UV systems generate many wavelengths and then filter out the ones not wanted. Our products target specific wavelengths and light outputs. Our lab not only measures the UVLEDs but also the filtering efficiency of containers designed to contain the UV to protect living tissues – like human eyes and skin.

OPTEK's digital IR camera is a vital tool in the understanding of the thermal dissipation of a design and it's all important affect on junction temperature.

Our Failure Analysis Lab includes a Scanning Electron Microscope (SEM) with an Energy Dispersive System (EDS) for material analysis. For macro analysis we have cross sectioning and chemical etching capability, ovens and curve tracers, a variety of optical microscopes, cameras, material expansion equipment and X-ray fluorescence tools.



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