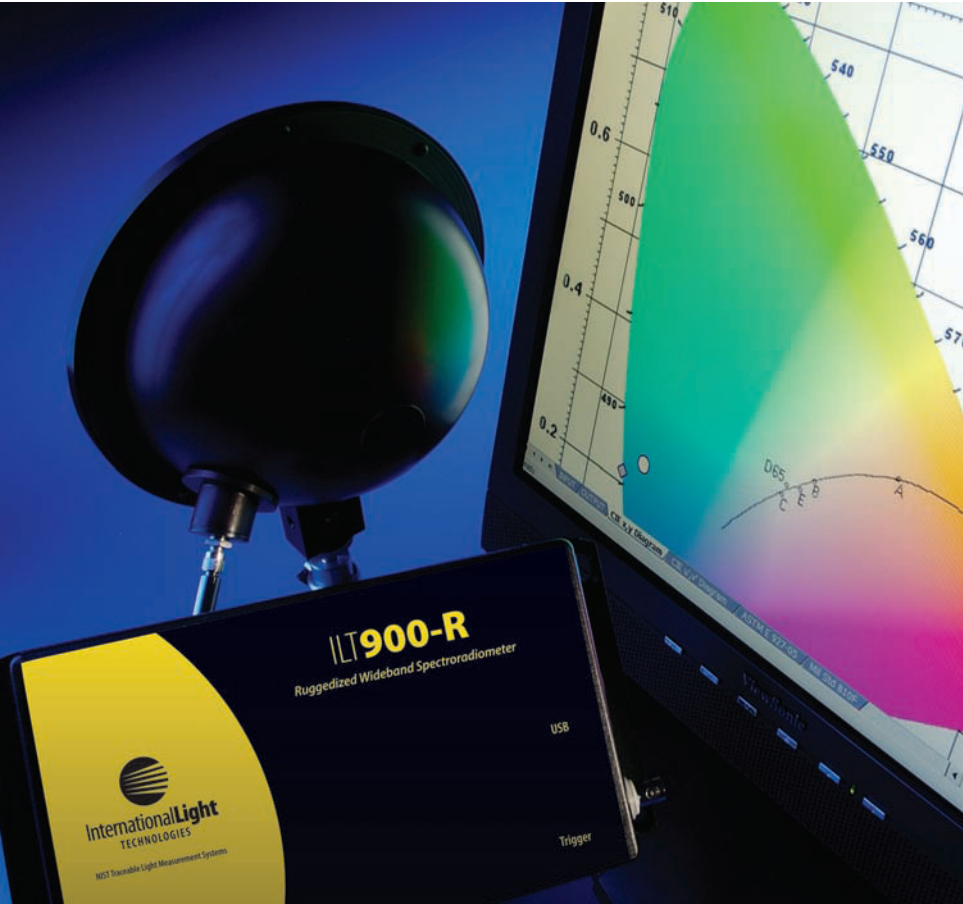


ILT900-LED

*LED Spectroradiometer
Measurement System*

*The most cost effective system
for measuring discrete LEDs and
LED modules in R&D, prototype
and production environments.*

Based on the proven ILT900 CCD-based spectroradiometer, the ILT900-LED is a growing family of instruments and accessories tailored to characterize LEDs and LED illumination systems. Designed to function equally well in research, industrial or field environments, systems can be configured to measure discrete devices, modules, illuminators or large-scale displays.



SYSTEM FEATURES & BENEFITS

NIST-Traceable Spectroradiometer from 200 to 1100 nm at 1 nm resolution. (250 to 950 nm standard calibration range).

Spectral sensitivity better than:

Visible: 5 nanoWatt/cm²/nm

UV/NIR: 0.1 microWatt/cm²/nm

Stray light rejection: better than 5×10^{-4} of total integrated power per nm

Intrinsic Repeatability: 0.5%

Spectral accuracy: 0.5 nm

Radiometric accuracy: $\pm 3\%$ VIS, $\pm 5\%$ UV/NIR

Cosine Receptor accuracy: $\pm 3\%$ from 0 - 90°, all wavelengths

Rugged, shock-mounted construction in dustproof die cast aluminum housing

Temperature range: 15 - 40°C

Standard stainless steel armored 2m coupling fiber

2048 element CCD with proprietary order-sorting filtration

16-bit conversion resolves low-level spectra on large backgrounds

Exposure time adjustable from 1 mS to 5 S

Data collection is software controlled or externally triggered

USB 2.0 interface, powered by USB connection

Requires: Windows 98, 2000, XP, Pentium II 300 MHz or better

Available in three options

SYSTEM COMPONENTS

ILT900

This solid state 2048-element spectro-radiometer couples to all accessories via its 2m fiber cable and USB 2.0 data line.



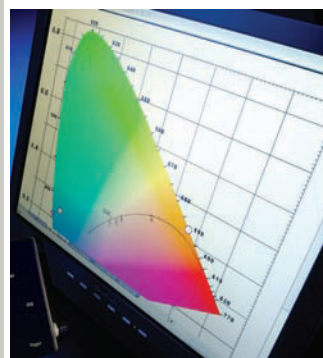
Input Optics

Choose the Super WideEye for Irradiance, a 2° FOV optic for Radiance, or either of two spheres for power.

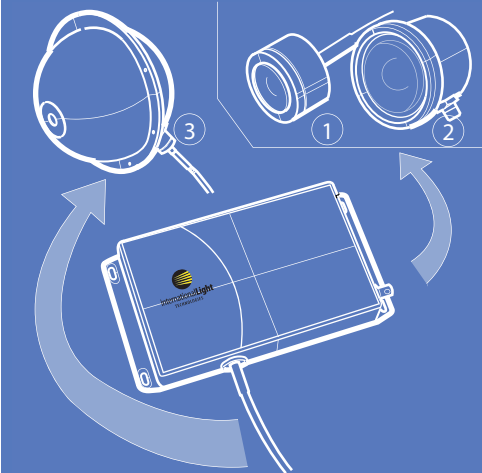


Software

The included SpectrILight and SpectrILight Tools™ paks collect data and analyze for photometry, chromaticity, CCT, CRI, and more.



SYSTEM DIAGRAM



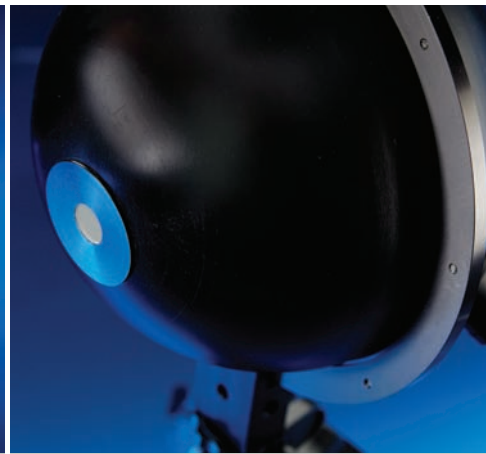
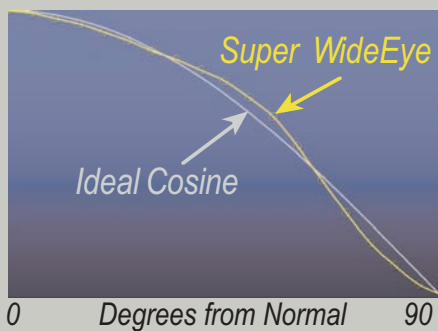
Choosing the right input options.

The ILT900 family has a broad and expanding array of input optics carefully designed for each target application. The Super WideEye cosine receptor provides near-ideal irradiance measurement over the full UV to NIR spectral range. The INS150 integrating sphere strikes a graceful balance between optical efficiency and integration accuracy to measure total power from single LED's and small lamps, as well as beam candela according to the procedures in CIE 127. The INS250 can handle higher-power devices and modules, has multiple, mutually isolated ports, and a built-in calibration lamp. The R2 radiance head provides radiance or luminance capability for characterizing arrays and displays, and is supported by a convenient laser targeting illuminator for precise alignment. Specialty components allow submersible use with small (5 mm diameter) apertures, or full-size Super WideEye receptors rated for underwater operation to 80 psi. Bandpass filters and custom calibrations can be done to optimize performance in specific spectral regions, and long fibers can be ordered for remote data acquisition.



SUPER WIDE EYE

The all-quartz Super WideEye has the best broadband accuracy of any cosine receptor currently offered. As seen below, its response is within 3% of ideal for all incidence angles from 0 - 90°. The PTFE diffusers offered by others are fairly good in the blue and UV, but have large off-axis errors in the red and NIR. The Super WideEye retains its accuracy over the full 200 - 1100 nm range.



INS 150

The INS150 is a brand-new integrating sphere optimized for fibre coupling and high optical efficiency. With a simple 1/4-20 thread bracket, it mounts easily on the included tripod or can be built directly into the user's system. It is equipped with a precision 1 cm² area input aperture, facilitating measurements of flux, irradiance, or beam candela according to CIE procedure 127. It includes a magnetic blanchard for quick connection of the different available LED and lamp test fixtures.



INS 250

The INS250, long a mainstay in the ILT product line, has been improved with a new baffling system which mutually isolates all three of its apertures. Its 37.5 mm (1.5") diameter ports can accommodate high power LED modules, as well as the full suite of ILT detectors and spectroradiometers. It includes a built-in miniature incandescent source which can be used as an on-line calibration check and CCT reference.

Spectrilight™ Control Software

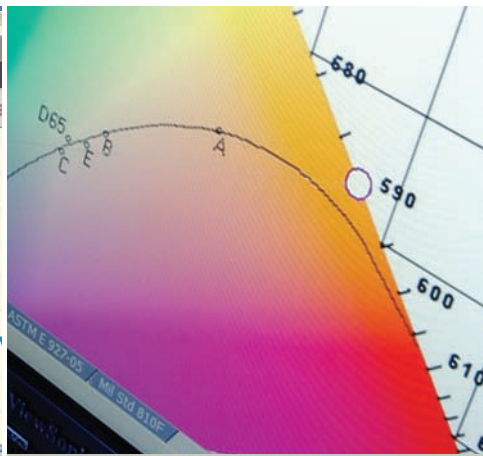
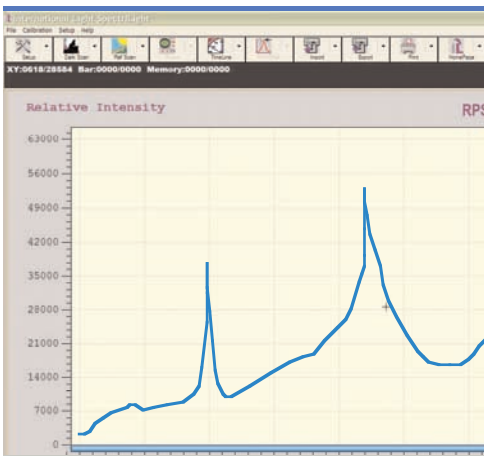
The SpectriLight software package puts complete control of data taking in the user's hands. Wavelength range and resolution, exposure time, scan averaging and smoothing, batch and pre-scheduled data collection are all handled. The % Transmission/Reflectance and Irradiance displays can be exported to ASCII text, Excel®, BMP or SPC formats, complemented by a suite of built-in report generating functions. On-line reflectance color analysis is also provided, including Chromaticity and Color Difference.

Spectrilight Tools™ Analysis Pak

In addition to the on-line analysis available in SpectriLight, SpectriLight Tools is a powerful Excel® app that accepts 1 nm resolution input files and calculates all standard spectral parameters such as lux, scotopic intensity, UVA,B,C,VIS, PAR including Einsteins, Chromaticity, Dominant and Complementary wavelength, Color Purity, CCT, CRI, Solar Simulator and more. User-selectable bands can be defined interactively, and user-defined weighting functions can also be installed.

Precision LED Driver

The new ILT705 Precision LED driver has been designed for precise current control and Repeatability at driver levels up to 400 mA. It sets easily to 0.5% accuracy and has up to 24 VDC voltage compliance to accommodate the latest LED illumination modules. It is equipped with the ILT proprietary ProtectPro™ surge protection circuitry. This unique system allows the unit to be switched on and off at preset drive levels with the LED under test connected, and prevents damaging start-up or shut-down currents from being applied to the test device.



CONTROL SOFTWARE

Screen display: Raw data, T/R%, Absorbance, Irradiance with zoom control and display formatting

Integration time control: 1 mS to 10 S

Scan Average: 1 to 999

Pixel binning: 0 to 6

FFT Smoothing: 0 to 100%

External Trigger

Data collection modes: Real-time, pre-programmed, manual select with memory playback

Peak finder

Color mode for reflectance/transmittance with Chromaticity, Lab, color difference, color spaces, RGB render, and more

Export to Bit Map, Text, Excel®, SPC formats

Print output with pre-formatted reports

TOOLS ANALYSIS PAK

Excel® App accepts 1 nm resolution data between 200 and 1100 nm

Power analysis: Total, Visible, UVC, UVB (US, Europe, DIN), UVA, UVV, Photopic, Scotopic, interactive user-set limits, user-defined weighting function

Chromatic analysis: x, y, coordinates and display, u', v', coordinates and display, Dominant Wavelength and Purity, Complementary Wavelength and Purity, General Color Rendering Index (CRI) 14 Special Color Rendering Indices, Correlated Color Temperature (CCT)

Biological analysis: PAR (microEinsteins), Red/Far Red ratio, ISO17166 Effective Erythral

Solar Simulator: ASTM E 927-05 evaluation and reference comparison, Mil Std 810F evaluation

LED DRIVER

Current Output: 0 - 400 mA with 0.1 mA resolution with display

Voltage compliance: up to 24 VDC

ProtectPro™ control circuitry: Prevents current surges at turn-on and turn-off as well as hot-connect, allows safe hot-swap of LED's during testing

Continuity indicator

Second 24 VDC convenience pwr supply at up to 500 mA

Test leads

85 - 240 VAC, 50 - 60 Hz input power

Extruded aluminum housing

About us.

International Light Technologies was formed in January, 2006, through the merger of two leaders in electro-optics: Gilway Technical Lamp, a full-service supplier of filament lamps, LEDs, and custom illumination systems, and International Light, the premier manufacturer of precision NIST-Traceable light measurement instruments.

Both companies have been filling unique roles in their respective markets since the mid-60's. Gilway has been a pioneer in bringing advanced optical source technology to manufacturers of analytical instruments and gas monitors, lighting and display designers, machine vision illumination and many other applications from esoteric, small quantity devices to high-volume OEMs. As an authorized distributor and tech support facility for Osram/Sylvania modular systems, Gilway offers the technical depth to enable new customer designs as well as the strength to deliver competitive pricing in full production.

International Light has been the most respected name in precision light measurement for 40 years and knowledgeably supplies instrumentation to universities, industrial research labs, pharmaceutical companies, semiconductor and PC board manufacturers, the automotive and aerospace industries, and is a leader in UV measurement for curing coatings of all kinds as well as for germicidal treatment of air and water.

The combination of these two firms in a new facility in Peabody, MA brings their customers unparalleled resources in optical calibration, quality and product uniformity, as well as the depth of experience needed to bring the technology of light to contemporary products.



Three different models.

The basic ILT900 is offered in three primary configurations to best serve its many potential uses.

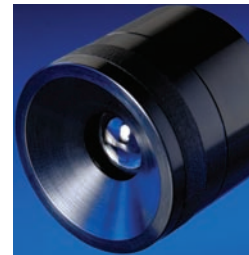
For portability and convenience there is the ILT900-C, which features an integrated Super WideEye receptor and light weight extruded aluminum housing which can be directly tripod mounted.

For flexibility and durability there is the ILT900-R, which includes shock mounting for its optics inside a dust-proof, die cast aluminum housing and 2 m stainless-steel armored fiber cable which connects to any of the many accessory optical input components.

For the ultimate in field deployment in demanding environments, there is the ILT900-W, which combines shock mounting with a NEMA-4 rated enclosure and connectors rated to IP67.



Many accessories to choose.



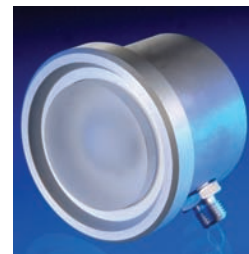
Radiance

A wideband, 2° FOV radiance optic for display measurement.



Alignment

A battery-operated laser illuminator for precision radiance alignment.



High Power

A high-temp receptor for monitoring UV curing levels in module assembly and coating.



InternationalLight
TECHNOLOGIES

NIST Traceable Light Measurement Systems

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