Newport’s Oriel® brand is proud to introduce the first in a series of innovative solar simulator designs utilizing LED light sources. The system is made up of the LSS-7120 Controller and the revolutionary LSH-7520 LED Source Head. The system provides a variable output from 0.1 sun to 1.0 sun over a 2 inch x 2 inch (51 mm x 51 mm) illumination area.

The LSH-7520 is certified AAA rated to IEC 60904-9, JIS-C8912, and ASTM-E927-10 for Spectral Match, Non-Uniformity of Irradiance, and Temporal Stability. Oriel puts each LED based system through rigorous testing for all aspects of the standards to ensure compliance and provides a certificate of calibration.

This innovative design independently drives multiple LEDs at 19 individual wavelengths spaced over the spectrum from 400 nm to 1100 nm to ensure a spectral match meeting Class A certification. The independent control of each LED allows the user to tune the output to the specific requirements of the test. This adjustment can be done at the front panel for the entire spectrum or individual band adjustment. The user can adjust individual LED output through the USB port. These spectral matches can be saved as a preset value in the control instrument.

The typical lifetime of LEDs of over 10,000 hours removes the need to change expensive and hazardous bulbs. Additionally, the LEDs come up to a stable operating power within 100 msec. This allows the unit to be shut off between tests without having to wait for the lamp to stabilize or sacrificing the integrity of the test results. This results in an effective lamp usage time several times over a conventional lamp and eliminates the need for shutters on the output.

The use of solid state LEDs and robust optical mounting hardware makes it possible to orient the head in any position to fit your application needs. To aid in positioning the light source, a variable height adjustment mount is included along with a laser pointer indicator to ensure your test cell is always at the correct placement under the head. The flexibility of the VeraSol™ Solar Simulator allows the user to tailor the simulator to the test and not the test to the solar simulator.

Solar simulation has entered a new era. We believe you will continue to find features and benefits of the VeraSol™ that will improve your testing capabilities.
**Oriel® VeraSol™ Solar Simulator**

**LSH-7520 Light Source Specifications**

- **Illumination Area**: 2 inches x 2 inches (51 mm x 51 mm)
- **Total Power Output**: 100 mW/cm² (1.0 sun)
- **Uniformity Classification**: A - IEC 60904-9 2007, JIS C8912, ASTM E927-10
- **Temporal Stability**: A - IEC 60904-9 2007, JIS C8912, ASTM E927-10
- **Spectral Match**: A - IEC 60904-9 2007, JIS C8912, ASTM E927-10
- **Source Orientation**: 0°, 90° (with adapter), 180°
- **Weight (head only)**: 17.2 kg (38.0 lbs)
- **Working Plane Distance**: 8.0” (203 mm)
- **Height Adjustment**: 8.9” - 14.1” (226 mm - 358 mm)

**LSS-7120 LED Solar Simulator Specifications**

- **Independent Band Control**: 6 Bands (400 - 500 nm, 500 - 600 nm, 600 - 700 nm, 700 - 800 nm, 800 - 900 nm, 900 - 1100 nm)
- **Variable Output Control**: 0.1 to 1.0 sun
- **Auxiliary Functions**: 10 user settable presets, User settable output calibration, LED fault detection
- **I/O Connectors**: USB 2.0 (B-type), DB-60, LSH interconnect port
- **Power Requirements**: 100-240 VAC, 50-60 Hz, 300W
- **Size**: 4.0” x 8.5” x 14.0” (102 mm x 216 mm x 356 mm)
- **Weight**: 4.9 kg (10.8 lbs)
- **Operating Temp Range**: 20°C to 30°C
- **Storage Temp Range**: -40°C to 70°C
- **Humidity**: <85%, relative, non-condensing
- **Compliance**: CE

**VeraSol Spectral Match**

Typical Results