

Eigenlite™ RS-5H High Power Spectrally Programmable Light Source

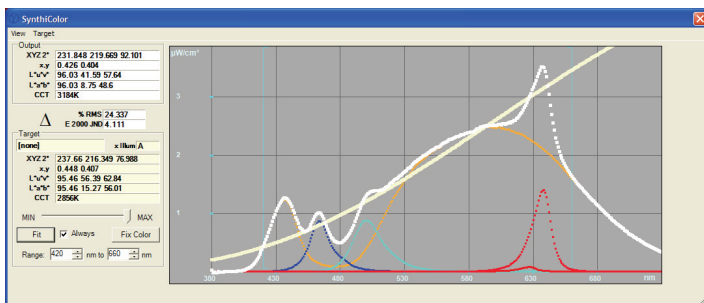
PRODUCT SUMMARY

The Gamma Scientific RS-5H high power spectrally programmable digital light source provides a versatile way to characterize the linearity and sensitivity of CCD and CMOS cameras, components and sensors. The system delivers near perfect linearity and uniformity, giving the camera or sensor manufacturer, image systems or light-source designer, an unparalleled foundation with which to verify the quality and consistency of the products they purchase or design in-house.

The RS-5H is equipped with manual and computer interface control. Computer control is through simple ASCII commands over USB, RS-232, or RS-485 interfaces. Eight channels of LEDs cover the visible wavelength range of light and can be combined in any combination and proportion to affect an infinite variety of spectrums and color temperatures, all optically stabilized to provide precise and repeatable absolute radiometric or photometric units. The optional *SynthiColor™* software package adds complete spectral and colorimetric programming and analysis capabilities to the RS-5H.

The RS-5H can illuminate a 100 mm diameter area in practically any color or color temperature with thousands of lux to better than 3% uniformity and 0.5% repeatability, with the advantage of an all solid-state design that provides operational speed and reliability unequalled by tungsten-based illuminators.

Behind the system's absolute measurements stands the precision calibration and measurement expertise at Gamma Scientific. In fact, Gamma's laboratory calibration standards fall within one percent uncertainty relative to international standards — reinforcing the company's preminent position in producing and maintaining the most accurate light measurement equipment available today.



SynthiColor™ Spectral Design & Analysis Software



FEATURES

- Multiple channels of LEDs cover the visible range of light. Can be combined in any combination and proportion.
- Quickly set exactly the color, intensity or spectral profile required for almost any measurement.
- Computer controllable with simple commands that can easily integrate into existing testers or new test systems.
- Adjustable light-level setting to 1 part in 65,535 in absolute, NIST-traceable, radiometric and photometric units.
- Near-perfect linearity and uniformity.
- Change to a new spectrum and output power level in less than 50 milliseconds.
- 100x longer light-source lifetime compared to tungsten sources.
- Designed for continuous operation with real-time fault monitoring.
- Enables a single operator with a single instrument to perform a series of highly accurate measurements in minutes.

APPLICATIONS

- Photometric, radiometric and colorimetric calibration and testing of sensors and imaging systems.
- Design of illumination sources.
- CCD, CMOS and other sensor performance measurements: charge capacity, electronic gain, responsivity, saturation, noise equivalent power, quantum efficiency, non-linearity, equivalent ASA speed.



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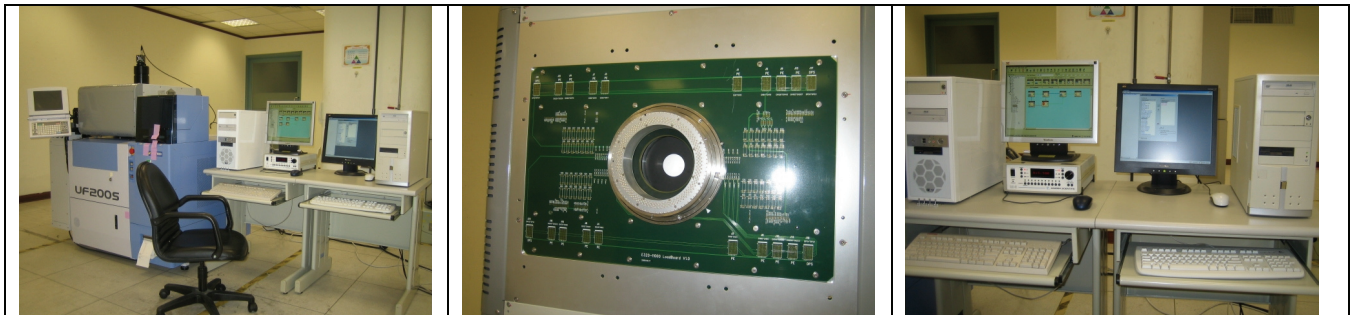
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SPECIFICATIONS

Source Geometry	100 mm diameter extended source
Output Power	> 1500 lux broadband spectrums, > 4000 lux total (as pictured, dependent on output geometry)
Output Spectral Range	Visible light region from 420 nm to 940 nm across eight independent spectral channels, including broadband white
Output Nonuniformity	< 3% over 100 mm, < 1.5% over 75 mm
Linear Brightness Adjustment	
Resolution	16 bits
Dynamic Adjustment Range	Depends on Spectrum (12 bits typical)
Non-linearity	
Radiometric	< 1.0% RMS of full scale
Photometric	< 1.0% RMS of full scale
Brightness Stability	
Settling time	< 50 ms with complete change of spectrum and output power level
Short-term repeatability	> 99.9%
Long Term Drift	< 0.5% of full scale
Absolute NIST-traceable accuracy	± 3% of dial setting at full scale (± 1% by request)
Computer Interface	USB, RS-232, or RS-485
Power Requirements	110/220V, 50/60 Hz, 800W maximum
Dimensions	
Light Head	388 mm square x 280 mm tall, not including output tube
Controller	285 mm wide x 107 mm tall x 306 mm deep (Light head can be located up to 5 m from controller)



Typical RS-5H Installation in a Tester



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