

Quanta- ϕ

— Not just an integrating sphere -
a complete quantum yield solution!

ELEMENTAL ANALYSIS

FLUORESCENCE

GRATINGS &
DEM SPECTROMETERS

OPTICAL COMPONENTS

FORENSICS

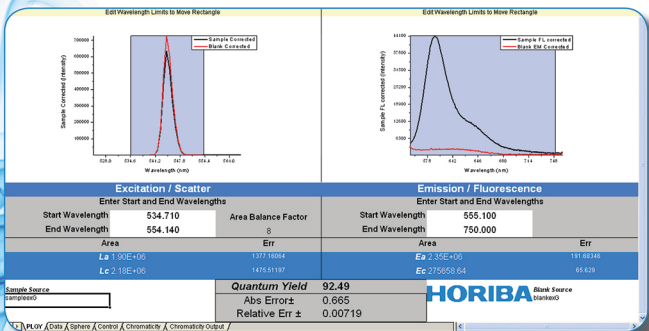
PARTICLE CHARACTERIZATION

RAMAN

SPECTROSCOPIC ELLIPSOMETRY

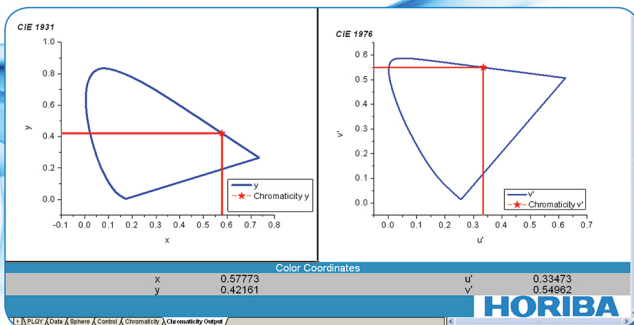
SPR IMAGING





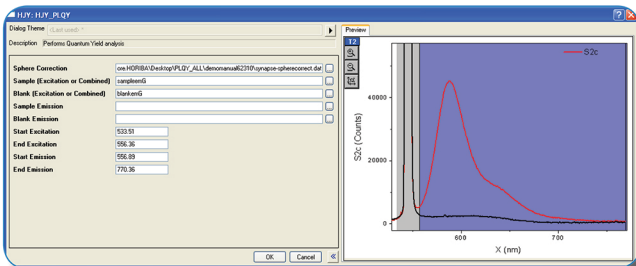
Complete graphical report workbook:

- Graphical and numerical area integration information for the sample and blank
- User-editable fields for integration bounds for further refinement
- Quantum yield (%) values and propagated errors for determining S/N
- User-editable balance factor to account for neutral attenuation and integration time differences between the excitation and emission integration areas
- Graphical depiction and numerical values of CIE 1931 and 1976 indices



Complete, easy-to-use graphical user interface:

- Implementing spectral corrections
- Selecting excitation and/or emission spectral profiles for sample and blank measurements
- Defining numeric integration bounds
- Storable themes save time and effort

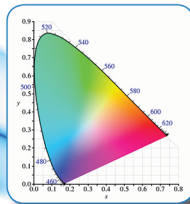
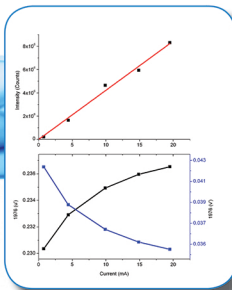


Characterize light-emitting devices

Electroluminescent quantum yield (ELQY) measurements of light-emitting devices, such as LEDs, OLEDs, and other luminescent sources, are fully accommodated by the Quanta- ϕ . Electrical connections to the source are facilitated by a dedicated wiring port in the bottom-loading drawer. Shown below are the CIE values and total luminous intensity plots of a simple LED measured using the Quanta- ϕ .



LED installed in the Quanta- ϕ 's sample drawer, connected via the wiring port, and the resulting data collected.



931 CIE coordinates plotted versus wavelength.



Take your QY measurements faster, further ...

Combine the Quanta- ϕ with a Fluorolog 3 *ultrafast* featuring a CCD detector, and get quantum yields up to 100 times faster, and with significantly greater NIR spectral range, compared to a scanning system with a standard R928 PMT. Add TCSPC and/or phosphorescence to create the ultimate quantum yield system that can give you a complete understanding of all the competing energy-dissipation pathways in your sample.

Item

Powder cups for solid samples

Quartz coverslips

Uncalibrated powder-holder reflector (optional)

Uncalibrated cuvette reflector (optional)

NIST traceable calibrated cuvette reflector (optional)

NIST traceable calibrated powder-holder reflector (optional)

Part number

F-3029-01

F-3029-02

F-3029-03

F-3029-05

F-3029-06

F-3029-04



Quanta- ϕ expands your fluorometer into a complete quantum yield system!

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Quanta- ϕ is a quantum yield and CIE measurement accessory for our Fluorolog and FluoroMax fluorometers. Quanta- ϕ features a large 150 mm (6 inch) integrating sphere, unique bottom-loading solid sample drawer, electrical connection port for EL measurements, all controlled from a simple-to-use dedicated QY/colorimetry software. Combined with our highest sensitivity and flexibility fluorometers, Quanta- ϕ is finally the headache-free PL/EL QY solution you need.

”

Features

- Large 150 mm (6 inch) sphere for higher accuracy and precision QY values
- Bottom-loading drawer for solid/powder samples, eliminating contamination
- Top-loading center-mounted liquid sample holder fits any standard 12 mm cuvette
- Wiring port for light-emitting devices and electroluminescence
- Complete, easy-to-use analysis package for quantum yields and chromaticity indices
- Disposable solid/powder cups with optional reusable quartz coverslips
- Usable with any detector mounted on any port of your fluorometer
- Instructional video tutorials, electronic user's manual and on-line interactive help support

Applications

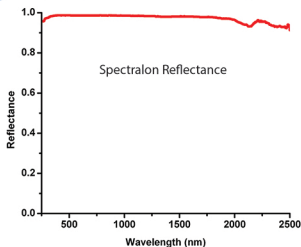
- Nanocrystals and quantum dots
- Organic dyes and fluorescent probes
- Biomarkers and biosensors
- Photovoltaic materials
- OLED and LED materials
- Electroluminescence and light emitting devices
- Thin-film materials
- Display and lighting phosphors and fluors
- Quantum yield standards and reference materials
- Coordination chemistry and rare earth materials research
- Solvent-dependent effects
- Chromaticity color indexing
- Resonance energy transfer (FRET)
- Stern-Volmer quenching



Specifications

Sphere inner diameter	6 inches (150 mm)
Sphere material	Spectralon [†]
Port fraction (liquid mode)	1.043%
Port fraction (solid mode)	2.103%
Weight	9.47 lbs. (4.29 kg) with sample drawer
Powder sample cup	1 cm diameter 3 mm deep with quartz coverslip
Liquid sample holder	For 1 cm path 4 mL cuvettes
Fiber optic bundles	PVC monocoil sheath (1.5 m)
Quanta- ϕ software requirements	FluorEssence version 3.5 or higher
Quanta- ϕ software operations	Quantum yield (%) with absolute and relative error propagation Chromaticity indices (CIE 1931 and 1976)
PL measurement wavelength range:	

	Fluorolog-3 Synapse			
	Fluorolog-3 NIR:	CCD and iHR-320:	FluoroMax-4:	FluoroMax-4 NIR:
Fluorolog-3:				
350-800 nm with standard emission grating(s)	350-1000 nm	300-1000 nm	350-800 nm	300-1000 nm
300-800 with UV-blazed emission grating(s)				



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