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Agilent Cary Eclipse Fluorescence Spectrophotometer

Typical Specifications



Introduction

The Cary Eclipse Fluorescence Spectrophotometer is an efficient, easy to use and highly capable analytical workhorse that has been designed and engineered with uncompromised robustness and the lowest cost of ownership in mind. Innovative and unique technologies ensure that the Cary Eclipse is a four-instruments-in-one design that's capable of all current and future measurement needs: measure fluorescence, phosphorescence, chemiluminescence and bioluminescence without any hardware changes.

The Agilent Cary Eclipse Fluorescence Spectrophotometer is a robust solution for fast, repeatable results that deliver:

- **Lowest cost of ownership** — The Cary Eclipse comes with a 10 year lamp-life guarantee and a reputation for robustness that could save you thousands of dollars per year in consumable and maintenance costs.
- **Improved workflows** — The Eclipse is the only fluorescence instrument with guaranteed room light immunity. Capitalize on this key advantage and use fiber optic probes to reduce sample preparation time, eliminate the need for expensive cuvettes and deliver accurate results in a fraction of the time.
- **Faster, simpler scans** - With the touch of a button, Agilent's Cary Eclipse collects data every 12.5 ms and measures the entire spectrum in under three seconds.
- **Eliminate photodegredation** – The xenon flash lamp in the Cary Eclipse has been proven to eliminate photodegradation in biological and chemically sensitive samples, ensuring you get the correct answer all the time!

Typical Performance Specifications:

The Agilent Cary Eclipse Fluorescence spectrophotometer is manufactured according to a Quality system certified to ISO 9001. These typical performance specifications are the mean values obtained during customer performance tests that are conducted to ensure our quality standards prior to shipment.

Source	Unique Agilent Xenon flash lamp pulsed at 80 Hz, providing room-light immunity in fluorescence mode and a guaranteed lifetime of 10 years.
Monochromators	
Excitation	Czerny-Turner, f3.6, 0.125 m focal length
Emission	Czerny-Turner, f3.6, 0.125 m focal length
Gratings	
Excitation	30 x 35 mm, 1200 l/mm, blaze at 370 nm
Emission	30 x 35 mm, 1200 l/mm, blaze at 440 nm
Detectors	High performance R928 photomultiplier detectors. Separate R928 PMT for reference signal. Optional R3896 PMT for enhanced sensitivity above 700 nm.
Wavelength range	
Mechanical excitation	190–1100 nm. Zero order selectable.
Mechanical emission	190–1100 nm. Zero order selectable.
Operational excitation	200–900 nm with standard PM tube. Zero order selectable.
Operational emission	200–900 nm with standard PM tube. Zero order selectable.
Wavelength accuracy	Excitation: +/- 0.07 at 541.92 nm +/- 0.5 at 260.54 nm Emission +/- 0.07 at 541.92 nm +/- 0.5 at 260.54 nm
Wavelength reproducibility	+/- 0.1 nm
Sensitivity (Raman band of water)	
> 4000:1 RMS	350 nm excitation, excitation and emission slits 10 nm, 1 s Signal Averaging time.
> 1400:1 RMS	500 nm excitation, excitation and emission slits 10 nm, 1 s Signal Averaging time.
Sample compartment	
Dimensions	198 x 273 x 205 mm (width x depth x height)

Agilent Cary Eclipse Fluorescence Spectrophotometer

Operational

Spectral bandwidth	
Excitation	1.5, 2.5, 5, 10, 20 nm and 10 nm round
Emission	1.5, 2.5, 5, 10, 20 nm and 10 nm round
Filters	
Excitation	Software selectable filters including 2 bandpass filters (250–395 nm, 335–620 nm), 2 cutoff filters (550 nm, 695 nm), a shutter and open beam position.
Emission	Software selectable filters including 1 bandpass filter (250–395 nm), 4 cutoff filters (295, 360, 430 and 550 nm), a 3% attenuator, a shutter and an open beam position.
Signal averaging	
Fluorescence	0.0125 to 999 s
Phosphorescence	1 µs to 10 s (Gate time)
Bio/Chemi-luminescence	40 µs to 10 s (Gate time)
Wavelength scan rate	0.010–24 000 nm/min
Maximum slew rate	24 000 nm/min (400 nm/s)
Maximum scan rate	24 000 nm/min (400 nm/s)
Data interval	
(nm)	0.15–30
cm^{-1}	9.3711–140.0566
Å	1.5–300
eV	0.0012–0.0174
Photometric display	± 1000 arbitrary units (a.u.)
Gain	Selection of Low, Medium and High with manual control from 400 to 1000 V in increments of 1 V. Maximum sensitivity ~5000 times that of Low.
Data collection rate (kinetics studies)	
1 cell	4800 points/min per cell
4 cells	6 points/min per cell
4 cells (0.0125 s SAT, 0.013 s Dwell time)	55 points/min per cell
Repetitive scanning	
Maximum number of cycles	1000
Maximum cycle time	1000 min
Temperature monitors	Using the Temperature Probe accessory. Temperature probe inside cuvette.

Agilent Cary Eclipse Fluorescence Spectrophotometer

Recommended environmental conditions

Instrument storage	5–45 °C at 20–80% relative humidity, non-condensing, altitude < 2133 m
Instrument operation	
Below 853 m altitude	10–35 °C, 8–80% relative humidity, non-condensing
Between 853 and 2133 m altitude	0–25 °C, 8–80% relative humidity, non-condensing
Instrument electrical requirements	
Voltage range	85–264 V AC
Mains frequency	50–60 Hz, ± 1 Hz
VA rating	180 VA

Support policies

Type	Policy
Warranty	12 months, though this may vary according to location. 10 year guarantee on the Agilent Xenon flashlamp in every new Cary Eclipse fluorescence spectrophotometer, though this may vary according to location.
Hardware support period	Seven (7) years from date of last unit manufacture. After this time, parts and supplies will be provided if available.
Software support	Telediagnostic capability is available for some instrument models. Availability of Telediagnostic support may vary according to location. Software upgrades to add additional functionality will attract a fee.

Further details

More information	
	For further information, consult your Agilent office or supplier, or our website at www.agilent.com/chem/cary-eclipse

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