

1 Installing the Fluorescence Detector

Physical Specifications

Table 1 Physical Specifications

Type	Specification	Comments
Weight	11.5 kg (26 lbs)	
Dimensions (width × depth × height)	345 × 435 × 140 mm (13.5 × 17 × 5.5 inches)	
Line voltage	100 – 120 or 220 – 240 VAC, ± 10 %	Wide-ranging capability
Line frequency	50 or 60 Hz ± 5 %	
Power consumption	180 VA / 70 W / 239 BTU	Maximum
Ambient operating temperature	0 – 40 °C (32 – 104 °F)	
Ambient non-operating temperature	-40 – 70 °C (-4 – 158 °F)	
Humidity	< 95%, at 25 – 40 °C (77 – 104 °F)	Non-condensing
Operating altitude	Up to 2000 m (6500 ft)	
Non-operating altitude	Up to 4600 m (14950 ft)	For storing the detector
Safety standards: IEC, CSA, UL, EN	Installation category II, pollution degree 2	

No accessible hardware fuse is needed because the main power supply is safe against any short circuits or overload conditions on the output lines. When overload conditions occur, the power supply turns off all output voltages. Turning the line power off and on again resets the power supply to normal operation if the cause of the overload condition has been removed.

An over-temperature sensor in the main power supply is used to turn off output voltages if the temperature exceeds the acceptable limit (for example, if the cooling fan of the instrument fails). To reset the main power supply to normal operating conditions, turn the instrument off, wait until it is approximately at ambient temperature and turn the instrument on again.

The following table gives the specifications of the main power supply.

Table 57 Main Power Supply Specifications

Maximum power	130 W	Continuous output
Line Input	100 – 120 or 220 – 240 volts AC ± 10 %, line frequency of 50/60 Hz	Wide ranging
Output 1	+ 24 V / 4.5 A (maximum)	total power consumption of + 24 V and + 36 V must not exceed 107 W.
Output 2	+ 36 V / 2.5 A (maximum)	
Output 3	+ 5 V / 3 A	
Output 4	+ 15 V / 0.3 A	
Output 5	- 15 V / 0.3 A	

Performance Specifications

Table 59 Performance Specifications Agilent 1100 Series Fluorescence Detector

Type	Specification	Comments
Detection type	Multi-signal fluorescence detector with rapid on-line scanning capabilities and spectral data analysis	
Performance Specifications	10 fg Anthracene, Ex=250 nm, Em=400 nm* RAMAN (H ₂ O) > 200 (FLF rev A) RAMAN (H ₂ O) > 400 (FLF rev >A) Ex=350 nm, Em=397 nm, dark value 450 nm, standard flow cell time constant=4 seconds (8 seconds responsetime)	see note below this table see "Raman ASTM Signal-to-Noise Test" on page 123
Light source	Xenon Flash Lamp, normal mode 20 W, economy mode 5 W	
Pulse frequency	296 Hz for single signal mode 74 Hz for spectral mode	
Excitation Monochromator	Range: 200 nm - 700 nm and zero-order Bandwidth: 20 nm (fixed) Monochromator:concave holographic grating, F/1.6, blaze: 300 nm	
Emission Monochromator	Range: 280 nm - 900 nm and zero-order Bandwidth: 20 nm (fixed) Monochromator:concave holographic grating, F/1.6, blaze: 400 nm	
Reference System:	in-line excitation measurement	
Timetable programing:	up to 4 signal wavelengths, response time, PMT Gain, baseline behavior (append, free, zero), spectral parameters	

Table 59 Performance Specifications Agilent 1100 Series Fluorescence Detector,

Type	Specification	Comments
Spectrum acquisition:	Excitation or Emission spectra Scan speed: 28 ms per datapoint (e.g. 0.6 s/spectrum 200-400 nm, 10 nm step) Step size: 1-20 nm Spectra storage: All	
Wavelength characteristic	Repeatability+/- 0.2 nm Accuracy+/- 3 nm setting	
Flow cells	Standard: 8 µl volume and 20 bar (2 MPa) pressure maximum, quartz Optional: Fluorescence cuvette for offline spectroscopic measurements with 1 ml syringe, 8 µl volume, quartz	
Control and data evaluation	Agilent ChemStation for LC, Agilent 1100 Control Module with limited spectral data analysis and printing of spectra	
Analog outputs	Recorder/integrator: 100 mV or 1 V, output range $>10^2$ luminescence units, two outputs	
Communications	Controller-area network (CAN), GPIB, RS-232C, LAN, APG Remote: ready, start, stop and shut-down signals	
Safety and maintenance	Extensive diagnostics, error detection and display (through control module and ChemStation), leak detection, safe leak handling, leak output signal for shutdown of pumping system. Low voltages in major maintenance areas.	

10 Specifications

Table 59 Performance Specifications Agilent 1100 Series Fluorescence Detector,

Type	Specification	Comments
GLP features	Early maintenance feedback (EMF) for continuous tracking of instrument usage in terms of lamp burn time with user-settable limits and feedback messages. Electronic records of maintenance and errors. Verification of wavelength accuracy, using the Raman band of water.	
Housing	All materials recyclable.	
Environment:	0 to 40 °C constant temperature at <95% humidity (non-condensing)	
Dimensions:	140 mm x 345 mm x 435 mm (5.5 x 13.5 x 17 inches) (height x width x depth)	
Weight:	11.5 kg (25.5 lbs)	

NOTE

Reference conditions: standard cell 8 µl, response time 4 s, flow 0.4 ml/min LC-grade Methanol, 2.1 x 100 mm ODS column.