HPLC & UHPLC

Vanquish Fluorescence Detectors

LC that takes your productivity to new heights

Vanquish platform benefits

- Precision and reproducibility to meet every application demand
- Widest portfolio of detection technologies
- Reduced maintenance, and easier set-up with Thermo Scientific™ Viper™ Fingertight Fittings
- Dedicated solutions for exceptional LC-MS performance

Keywords

Vanquish Horizon, Vanquish Flex, Vanquish Core, Vanquish Duo, sensitivity, HPLC, UHPLC, fluorescence detection, dual PMT

Ultra-sensitive fluorescence detection

The optical design of the Thermo Scientific™ Vanquish™ Fluorescence Detectors provide you with the best detection sensitivity and superior signal-to-noise performance through highly effective stray light suppression. Thermal effects are reduced with temperature-controlled flow cells for increased detection precision.

The sophisticated design enables multiple measurement features for maximum effectiveness. Monitor up to four excitation/emission wavelength pairs simultaneously in multichannel operation mode or scan your chromatogram for the best emission/excitation wavelengths. Improve detection sensitivity and selectivity by ultrafast wavelength switching between peaks. Detectors are easy to use and provide you with an unmatched detection experience.

- Acquire data at up to 200 Hz for best support of even fastest UHPLC separations
- Optimize your sensitivity by xenon flash lamp frequency and variable emission filter settings
- Simplify method development or improve existing methods using single spectrum scans or fluorescence field acquisition in excitation, emission, or synchronous mode
- Improve your costs of ownership by increased lamp lifetime due to the long-life xenon flash lamp and various lamp operation modes

Specifications

Detector	Fluorescence Detector F	Fluorescence Detector F with Dual-PMT	Fluorescence Detector C	Fluorescence Detector C with Dual-PMT
Optical design	Two monochromators with concave holographic gratings and elliptic mirrors for highest efficiency in light transmission			
Light source	Xenon flash lamp			
Lamp pulse frequency	HighPower (~300 Hz), Standard (~100 Hz), LongLife (~20 Hz)			
Excitation wavelength range	200–630 nm	200–880 nm	200–630 nm	200–880 nm
Emission wavelength range	220–650 nm	220–900 nm	265–650 nm	265–900 nm
Spectrum scanning modes	Single Spectrum Scans or FL Field Acquisitions: Excitation, emission or synchronous mode			
Spectral bandwidth (FWHM)	20 nm (excitation and emission)			
Wavelength accuracy	±2 nm			
Wavelength repeatability	±0.2 nm			
Wavelength calibration	Internal calibration, excitation monochromator with emission lines of xenon flash lamp, emission monochromator with Raman shift of water and emission lines of xenon lamp			
Wavelength validation	Internal validation, excitation monochromator with emission lines of xenon flash lamp, emission monochromator with Raman shift of water and emission lines of xenon lamp			
Number of signal channels	Up to 4		1	
Data collection rate (single-channel)	Up to 200 Hz		Up to 100 Hz	
Data collection rate (multi-channel)	Up to 4 Hz		—	
Wavelength switching time	<250 ms		—	
Emission filter	Variable: 5 positions		Fixed: 280 nm	
Sensitivity	Raman S/N: >550 ASTM over the entire lifetime of the lamp (>2100 using dark signal as noise reference)			
Flow cells	2 options, see ordering information for details			
Flow cell pressure limit	Standard flow cell, biocompatible: 2 MPa (20 bar, 290 psi) Micro flow cell, biocompatible: 4 MPa (40 bar, 580 psi)			
Flow cell thermostatting	15 °C above ambient to 50 °C absolute			
Wetted parts	All flow cells: Fused silica, carbon reinforced PTFE, MP35N			
Normal-Phase compatible	Yes, with standard (6079.4230) or micro (6079.4330) flow cell			
Safety features	Power-up diagnostics of optics, cooling fans, motors and electronics. Leak detection and safe leak handling.			
PC connection	USB 2.0; 3-port hub to connect further Vanquish modules			
I/O interfaces	2 × 6 pin Mini-DIN connectors each having functionality: 1 input, 1 relay out			
GLP	Predictive performance functions for scheduling maintenance procedures based on the actual operating and usage conditions of the detector: lamp age, leak detection, service monitoring period, grating and filter movements, PMT workload. All system parameters are logged in the Thermo Scientific™ Chromeleon™ Chromatography Data System (CDS) audit trail.			
Environmental conditions	Operation: 5–35 °C, 20–80% RH (non condensing), max. 2000 m above sea-level Storage: -20–45 °C, max. 60% RH (non condensing)			
Power requirements	100–240 V AC, 50/60 Hz, max. 245 W/255 VA			
Dimensions (h × w × d)	159 × 420 × 620 mm (6.3 × 16.5 × 24.4 in)			
Weight	21 kg (46 lbs)			

Ordering information

Description	Part number
Fluorescence Detector F	VF-D50-A
Fluorescence Detector F with Dual-PMT	VF-D51-A
Fluorescence Detector C	VC-D50-A-01
Fluorescence Detector C with Dual-PMT	VC-D51-A-01
Accessories	
Standard flow cell, biocompatible (8 µL, 2 MPa, fused silica)	6079.4230
Micro flow cell, biocompatible (2 µL, 4 MPa, fused silica)	6079.4330
Dual-PMT option	6078.5360
Flushing and injection kit for flow cells	6078.4200
Overpressure relief valve (4 MPa)	6079.9240
DAC extension board	6083.0900
Normal-Phase (NP) kit VC System	6036.3972

For more information on Vanquish Fluorescence Detectors click **here**

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