

# Thermo Scientific Vanquish – Fluorescence Detector F

Better separations, more results, easier interaction

Thermo Scientific™ Vanquish™ UHPLC system is designed to offer:

- **Better separations** with the power of the system to unveil more compounds than ever before
- **More results** with throughput, speed and sample capacity to boost workflow productivity
- **Easier interaction** to make the system a joy to work with

The Vanquish UHPLC system is designed as an integrated UHPLC system, with versatile detection options.



## Ultra-Sensitive Fluorescence Detection

The optical design of the Vanquish Fluorescence Detector provides 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. The detector is easy to use and provides you with an unmatched detection experience.

- Acquire data at up to 200 Hz for best support of even fastest UHPLC separations
- Select from two biocompatible flow cells to match the requirements of your application – the 8  $\mu$ L flow cell for best trace detection or the 2  $\mu$ L flow cell for best chromatographic efficiency with narrow-bore HPLC and UHPLC columns
- Optimize your sensitivity by xenon flash lamp frequency and variable emission filter settings
- Benefit from an extended wavelength range up to 900 nm by the optional second photomultiplier (Dual-PMT)
- 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

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## PRODUCT SPECIFICATIONS

Specification	Value															
Optical Design	Two monochromators w/ 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)															
Maximum Data Collection Rate	One channel: 200 Hz (under Thermo Scientific™ Dionex™ Chromeleon™ Chromatography Data System (CDS) software, version 7.2 control or later) Multiple channels: up to 4 Hz															
Spectrum Scanning Modes	Single Spectrum Scans or FL Field Acquisitions: Excitation, emission or synchronous mode (FL Fields under Chromeleon CDS 7.2 or later)															
Number of Signal Channels	Up to 4															
Wavelength Switching Time	<250 ms															
Wavelength Range	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Variant</th> <th>Ex Min</th> <th>Ex Max</th> <th>Em Min</th> <th>Em Max</th> </tr> </thead> <tbody> <tr> <td>VF-D50-A</td> <td>200</td> <td>630</td> <td>220</td> <td>650</td> </tr> <tr> <td>VF-D51-A (Dual-PMT)</td> <td>200</td> <td>880</td> <td>220</td> <td>900</td> </tr> </tbody> </table>	Variant	Ex Min	Ex Max	Em Min	Em Max	VF-D50-A	200	630	220	650	VF-D51-A (Dual-PMT)	200	880	220	900
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VF-D50-A	200	630	220	650												
VF-D51-A (Dual-PMT)	200	880	220	900												
Spectral Bandwidth (FWHM)	Excitation: 20 nm; Emission: 20 nm															
Wavelength Accuracy	±2 nm															
Wavelength Repeatability	±0.2 nm															
Emission Filter	Variable, 5 positions															
Sensitivity	Raman S/N: >550 ASTM over the entire lifetime of the lamp (>2100 using dark signal as noise reference)															
Flow Cell Thermostatting	15 °C above ambient to 50 °C absolute															
Flow Cells	Standard flow cell: 8 µL, biocompatible; 20 bar (290 psi) maximum cell pressure Micro flow cell: 2 µL, biocompatible; 40 bar (290 psi) maximum cell pressure															
GLP	Predictive performance functions: lamp age, leak detection, service monitoring period, grating and filter movements, PMT workload. All system parameters are logged in the Chromeleon CDS Audit Trail.															
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															
Safety Features	Power-up diagnostics of optics, cooling fans, motors and electronics. Leak detection and safe leak handling.															
Wetted Parts	Fused silica, carbon reinforced PTFE, MP35N															
Biocompatible	Yes; pH range 2–12, chloride concentration up to 1 mol/L															
Environmental Conditions	5–35 °C; 20–80% RH (non-condensing)															
Power Requirements	100–240 V AC, 50/60 Hz, max. 150 W/255 VA															
Dimensions (h × w × d)	159 mm × 420 mm × 620 mm (6.3 in. × 16.5 in. × 24.4 in.)															
Weight	21 kg (46.3 lbs)															

## ORDERING INFORMATION

Description	Part Number
Vanquish Fluorescence Detector F	VF-D50-A
Vanquish Fluorescence Detector F with Dual-PMT	VF-D51-A
Accessories	
Standard Flow Cell, 8 µL, biocompatible	6079.4230
Micro Flow Cell, 2 µL, biocompatible	6079.4330
Dual-PMT Option	6078.5360
Flow Cell Syringe Injection Kit	6078.4200

To order in the U.S., call 1-800-346-6390, or contact the Thermo Fisher Scientific office nearest you. Outside the U.S., order through your local Thermo Fisher Scientific office or distributor. Refer to the following part numbers.

[www.thermoscientific.com/chromatography](http://www.thermoscientific.com/chromatography)

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