



Vanquish Variable Wavelength Detectors

The collective power of chromatography

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, linearity, sensitivity, HPLC, UHPLC, UV-Vis, variable wavelength detection

High-performance UV-Vis detection

Thermo Scientific™ Vanquish™ Variable Wavelength Detectors are designed to achieve both robust and high-performance UV-Vis absorption detection. Vanquish VWDs offer excellent linearity and noise performance to support a wide operating range and trace detection. With up to 250 Hz, the detectors keep pace with any current and future HPLC and UHPLC detection challenges. Select from a wide flow cell portfolio to match your application related requirements. The elaborated design, automated performance and wellness monitoring, and a wide range of usability features give you full confidence in your analytical results.

- Detect trace analytes next to main compounds with the large linearity range of up to 2.5 AU and a wide wavelength range
- Simplify method development with up to four absorption channels and spectral scans
- Minimize baseline drift and noise with active temperature control of optics to detect even the smallest quantities of trace compounds
- Maximize the data collection rate up to 250 Hz for today's and tomorrow's fastest UHPLC applications

Product specification		
Detector	Vanquish Variable Wavelength Detector F	Vanquish Variable Wavelength Detector C
Optical design	UV/VIS/NIR photometer (tunable Czerny-Turner monochromator) with additional internal reference beam	
Light source	Deuterium lamp Tungsten lamp	Deuterium lamp Tungsten lamp (optional)
Wavelength range	190–900 nm (with deuterium and tungsten lamp)	190–750 nm (with deuterium and tungsten lamp)
Spectral bandwidth	6 nm at 254 nm	
Wavelength accuracy	±1 nm	
Wavelength repeatability	±0.1 nm	
Wavelength calibration	Internal calibration with D-alpha line of the deuterium lamp	
Wavelength validation	Internal validation with holmium-oxide glass filter	
Number of signal channels	Up to 4	Up to 2
Data collection rate (single-channel)	Up to 250 Hz	Up to 125 Hz
Data collection rate (multi-channel)	Up to 5 Hz	
Noise (single-channel)	<±2.5 µAU at 254 nm	
Noise (multi-channel)	<±10 µAU (typical <±7 µAU) at 254 nm and 280 nm	
Drift	<0.1 mAU/h at 254 nm	
Linearity	<5% at 2.5 AU (typical <3% at 2.5 AU)	
Flow cells	5 options, see ordering information for details	
Flow cell pressure limit	Standard biocompatible and semi-micro biocompatible flow cell: 5 MPa (50 bar, 720 psi) Semi-preparative biocompatible flow cell: 10 MPa (100 bar, 1450 psi) Standard and semi-micro flow cell: 12 MPa (120 bar, 1740 psi)	
Wetted parts	Standard and semi-micro flow cell: Fused Silica, PEEK, PTFE, SST Standard biocompatible, semi-micro biocompatible and semi-preparative biocompatible Fused Silica, PEEK	
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 and ignitions, lamp intensity degradation, leak detection, service monitoring period. All system parameters logged in the Chromeleon 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 mm × 420 mm × 620 mm (6.3 in × 16.5 in × 24.4 in)	
Weight	16 kg (36 lbs)	

Ordering information

Description	Part number
Vanquish Variable Wavelength Detector F	VF-D40-A
Vanquish Variable Wavelength Detector C	VC-D40-A-01
Accessories	
Standard flow cell (11 μ L, 10 mm, 12 MPa, SST)	6077.0250
Standard flow cell, biocompatible (11 μ L, 10 mm, 5 MPa, PEEK)	6077.0200
Semi-micro flow cell (2.5 μ L, 7 mm, 12 MPa, SST)	6077.0360
Semi-micro flow cell, biocompatible (2.5 μ L, 7 mm, 5 MPa, PEEK)	6077.0300
Semi-preparative flow cell, biocompatible (0.7 μ L, 0.4 mm, 10 MPa, PEEK)	6074.0320
Nano flow cell (3 nL, UZ-view, 20 MPa, fused silica, Teflon tubing connection)	6074.0270
Capillary flow cell (45 nL, UZ-view, 20 MPa, fused silica, Teflon tubing connection)	6074.0280
UV-Monitor flow cell (45 nL, UZ-view, 30 MPa, fused silica, nanoViper)	6074.0285
Diagnostic cell	6077.0190
High sensitivity deuterium lamp (UV)	6077.1111
Standard deuterium lamp (UV)	6077.1110
Tungsten lamp (VIS)	6074.2000
Flushing and injection kit for flow cells	6078.4200
DAC extension board	6083.0900

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