

# Thermo Scientific Vanquish – Diode Array Detector HL

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, where the detector measures the analytes with more sensitivity.

Vanquish Diode Array Detector



## Taking Detection to a New Level

The LightPipe™ technology of the Vanquish Diode Array Detector (DAD) provides you with an unmatched detection experience. This DAD achieves the best signal-to-noise performance through the combination of lowest baseline noise, a very long light path, and minimum peak dispersion. The ultra-wide dynamic range of the detector is ideal for simultaneous detection of highly concentrated main compounds and impurities down to trace levels. Interfering refractive index and thermal effects are reduced to a minimum for less baseline drift and therefore more reliable peak integration. A thoughtful design and a wide range of usability features optimize the interaction with the detector for maximum effectiveness and ease-of-use.

- Acquire data at up to 200 Hz using up to 10 absorption channels and one 3D field for best support of ultrafast separations
- Benefit from outstanding sensitivity with low-dispersion 10 mm and 60 mm flow cells and a wide linearity range to comply with most demanding applications
- Optimize sensitivity, linearity, and spectral resolution of your application with four programmable optical slit widths from 1 nm to 8 nm
- Lowest baseline drift gives you best quantitation reproducibility – achieved through optimized fused-silica LightPipe flow cells and an effective thermal control
- Enjoy intuitive user interaction, convenient flow cell and lamp usage tracking, and the integrated wavelength validation through holmium oxide filter

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## PRODUCT SPECIFICATIONS

| Specification                | Value  |
|------------------------------|--|
| Optical Design               | Single-beam, reverse-optics design with concave holographic grating. High Numerical Aperture (NA) achromatic optics. 1024 element photodiode array.  |
| Maximum Data Collection Rate | 200 Hz (including 3D acquisition) (under Thermo Scientific™ Dionex™ Chromeleon™ Chromatography Data System 7.2 SR1 control or higher)  |
| Wavelength Range             | 190–680 nm   |
| Noise                        | <±3 µAU at 230 nm (standard flow cell, bandwidth: 4 nm, slit width: 4 nm; time constant: 2 s)  |
| Drift                        | <0.5 mAU/hour at 230 nm  |
| Linearity                    | <5% at 2.0 AU (typically <5% at 2.5 AU)  |
| Slit Width                   | Settable: 1 nm, 2 nm, 4 nm, 8 nm   |
| Spectral Bandwidth           | Pixel resolution: 0.5 nm (average); Optical resolution: 1 nm (FWHM with 1 nm slit width)   |
| Light Source                 | Deuterium lamp   |
| Number of Signal Channels    | 10 + 3D field  |
| Flow Cell Volumes            | Standard flow cell: 2 µL (illuminated), 0.8 µL (dispersion)<br>High sensitivity flow cell: 13 µL (illuminated), 4.0 µL (dispersion)  |
| Flow Cell Pressure Limit     | 6 MPa (60 bar, 870 psi)  |
| 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 filter  |
| Biocompatible                | Yes, pH range 2–12, buffer and/or chloride concentration up to 1 mol/L   |
| PC Connection                | USB 2.0; 3-port-HUB to connect further Vanquish modules  |
| Safety Features              | Power-up diagnostics of optics, cooling fans, motors and electronics.<br>Leak detection and safe leak handling.  |
| GLP                          | Predictive Performance functions: lamp age and ignitions, lamp intensity degradation, leak detection, service monitoring period.<br>All system parameters logged in the Chromeleon Chromatography Data System Audit Trail. |
| 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)       | 160 mm × 420 mm × 620 mm (6.3 × 16.5 × 24.4 in.)   |
| Weight                       | 17 kg (37.5 lbs)   |

## ORDERING INFORMATION

| Description                                  | Part Number |
|--|-------------|
| Vanquish Diode Array Detector HL             | VH-D10-A    |
| Accessories                                  |             |
| LightPipe flow cell, 10 mm, standard         | 6083.0100   |
| LightPipe flow cell, 60 mm, high sensitivity | 6083.0200   |
| LightPipe diagnostic cell                    | 6083.0300   |
| Deuterium lamp for Vanquish DAD HL           | 6083.1110   |

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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