Product Specifications

The Thermo Scientific Accela High Speed PDA Detector uses Thermo Scientific LightPipe technology to ensure fast photo diode array detection with the highest sensitivity.

Thermo Scientific Accela PDA Detector

- **Proprietary LightPipe™ technology for highest sensitivity**
- **Specialized 1 cm path length, 2 µL LightPipe flowcell for U-HPLC separations**
- **5 cm path length, 10 µL LightPipe flow cell provides the highest sensitivity available for HPLC applications**
- **Fiber-optic beam shaper provides maximum peak resolution**
- **Easy maintenance with integrated wavelength validation**
- **Reduced flow cell volume improves chromatographic efficiency**

High Speed Sample Detection

The Thermo Scientific Accela PDA is optimized for the detection of high speed chromatographic separations. The short 1 cm path length, combined with the incredibly minimized cell volume of 2 µL, renders this LightPipe flowcell as the premium choice for fast separations. The extremely low level of dispersion in the LightPipe enables the flowcell to retain excellent peak shape and chromatographic resolution.

The innovative fiber-optic beam shaper converts the circular beam of light exiting the flowcell into a vertical beam, emulating a slit while providing nearly 100% light throughput to the diodes.

The combination of the Thermo Scientific LightPipe technology with the fiber-optic beam shaper provides the high sensitivity and resolution needed for even the shortest chromatographic separations.

Complementary to LC-MS

Compounds that are poorly ionized may be difficult to detect and analyze solely with a mass spectrometer. The Accela™ PDA detector is an ideal LC-MS complement for many applications.

Easy Maintenance

The Accela PDA has an integrated holmium oxide solution-filled cuvette for validating wavelength accuracy. This holmium oxide in perchloric acid solution is immensely advantageous to the solid holmium oxide filters used by most manufacturers, because it provides wavelength verification across the entire spectral range.

Software Control

The Accela PDA can be controlled as a component of the Accela High Speed LC system by the Thermo Scientific ChromQuest Chromatography Data System, the Thermo Scientific Xcalibur Mass Spectrometry Data System, and other multi vendor software solutions. Thermo Scientific software solutions provide computer control of the PDA to ensure automated data handling of the high speed system.

Product Specifications

Thermo Scientific Xcalibur Data System

Xcalibur™ is an extremely versatile, easy-to-use mass spectrometry data system with tools for 21 CFR Part 11 compliance. Whether the user is a lab manager or a technician, our Xcalibur software offers easy navigation through the process of instrument setup, sequence setup, and data acquisition. Data analysis is simplified using any of the three browser environments: Qual Browser, Quan Browser, and Library Browser. Reporting is straightforward and effortless with the intuitive XReport software. Thermo Scientific LCQUAN quantitation software provides a structured and secure workflow. When operating the Accela system as part of an LC-MS solution, use Xcalibur for complete instrument control and mass spectrometer data handling.

Thermo Scientific ChromQuest Chromatography Data System

ChromQuest™ offers maximum flexibility and efficiency in setting up chromatographic methods and optimizing the performance of the Accela LC system. ChromQuest protects your results by ensuring data traceability and integrity with enhanced security features, electronic documentation, and features for 21 CFR Part 11 compliance. Sophisticated analytical tools facilitate high sample throughput and powerful data processing for liquid chromatography.

ChromQuest maximizes laboratory efficiency with project management for information storage and transfer. ChromQuest uses robust integration, flexible calibration routines, and advanced spectral analysis tools to accelerate data analysis and results generation. When operating the Accela LC system as a stand alone LC solution, use ChromQuest for complete instrument control and data handling.

Certification and Qualification Services

Every PDA is tested at the factory prior to shipment to ensure that it meets or exceeds performance specifications. A Declaration of Conformity (DC) accompanies each PDA and documents test results. On-site field testing (optional) qualifies system performance.

Ordering Information

Part Number	Description
60057-60010	Accela Pump
60057-60110	Accela 600 Pump
60057-60020	Accela Autosampler
60057-60140	Accela PDA with 1 cm LightPipe flow cell
60057-60141	Accela PDA with 5 cm LightPipe flow cell
60057-60060	Accela System Kit
60057-60070	Thermo Scientific Hypersil GOLD, 50 × 2.1 mm, 1.9 µm column

Specifications

Wavelength Range
190–800 nm at 1 nm increment

Wavelength Accuracy
±1 nm at 254 nm and 640 nm

Wavelength Calibration
Using Holmium oxide solution

Wavelength Resolution
1.2 nm (512 pixel array)

Absorbance Non-Linearity
< 5% at 2.0 AU at 257 nm

Absorbance Range
-2.0 to +4.0 AU, 20-bit resolution

Drift
< 1 mAU/hr after warm-up at 254 nm at a stable temperature (±1 °C)

Light Source
Pre-aligned Deuterium and Tungsten lamps

Rise Time
User selectable: 0, 0.02, 0.05, 0.1, 0.2, 0.5, 1, 2, 5, or 10 sec

Scan Rate
User selectable: 0.5, 1, 2, 4, 5, 10, 20, 40, or 80 Hz

Discrete Channels
Three wavelength selectable channels

Short-Term Noise (50 mm flow cell)
< 6 µAU/cm at 254 nm at 5 Hz (20 Hz scan rate)
< 1.5 uAU/cm at 254 nm at 5 Hz (40 Hz scan rate); typical
< 0.3 uAU/cm at 254 nm at 5 Hz (80 Hz scan rate); typical

Warm-up Time
90 min required to meet noise and drift specifications

Cell Dimensions
10 mm, 2 µL LightPipe flow cell
50 mm, 10 µL LightPipe flow cell

Cell Pressure Range
0–1000 psi

Analog Outputs
20-bit digital/analog conversion, unattenuated at 10 mV/AU, 100 mV/AU, or 1.0 V/AU

Diodes
512

Diode Spacing
1.2 nm

Remote Controls
Ethernet interface for PC-based software control

Operating Temperature
10–30 °C

Ambient Environment
10–40 °C, 5–95% relative humidity (non-condensing)

Dimensions
18 × 36 × 47 cm (H × W × D)

Weight
19.5 kg

Power Requirements
100/115 or 230 VAC, 50/60 Hz, 225 VA max

Product Certification
EMC
CE
TUV CUS
FCC (EMI)

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