

Thermo Scientific Dionex UltiMate 3000 Electrochemical Detector

For sensitive and selective measurement in complex matrices

Thermo Fisher Scientific now offers the benefits of UHPLC to electrochemical detection while maintaining compatibility with HPLC – establishing a new standard for highly sensitive, selective detection. The Thermo Scientific™ Dionex™ UltiMate™ 3000 Electrochemical Detector (ECD) is designed for use with the Thermo Scientific™ UltiMate™ 3000 line of EC-optimized high performance and ultra-high performance liquid chromatography systems.

The UltiMate 3000 Electrochemical detector features the next generation of coulometric and amperometric sensors with SmartChip™ technology for simple, flexible, and maintenance-free operation. All new electronics with advanced digital processing guarantees the lowest possible detection limits from microbore to normal bore; HPLC and UHPLC. The high sensitivity and low noise of the electrochemical detector makes it ideal for the most sensitive and demanding analyses.

- **Plug-and-play electrochemical cells** – eliminate noise and lengthy cable connections
- **SmartChip intelligence** – provides automatic instrument configuration with optimized control of an attached electrochemical sensor
- **Full-scale signal autoranging** – In DC mode protects data integrity by preventing data lost due to peak over ranging
- **Fluidic components and sensors** – exchangeable from the front of the detector without special tools



- **Front-panel display** – for easy monitoring of detector status to maximize uptime
- **Operating Modes** – select direct current (DC) or pulse (PAD) for flexibility
- **Four independent cell bays** – permit optimized fluidic configurations to maximize chromatographic performance, support multi-channel operation with up to 8 independent electrode channels
- **Integrated temperature controlled column compartment** – provides accurate column temperature control for reproducible chromatographic results without the need for a separate column oven

Specifications

Detection Type	Electrochemical	
Operating Mode	Direct current (DC)	Pulse (PAD)
Potential Control	Up to 8 channels (maximum of 4 dual channel DC potentiostat modules supported – Thermo Scientific™ Chromeleon™ CDS Ver. 6.8 or 7.2 required)	Single channel (pulse potentiostat module required)
DC Potential Range	± 3300 mV settable in 1 mV steps (acceptable range determined by sensor type)	± 3.300 mV settable in 1 mV steps (per pulse segment)
Signal Range	10 pA to 100 µA	10 pA to 100 µA
Automatic Gain Ranging	Supported	Not supported
Noise Filtering	Advanced multi-level digital filtering	Settable: None, Low, Medium, High
Typical Noise	< 750 fA (0.75 pA) SimulatorRS	< 2 % of full-scale range
Data Output	200 Hz	
Autozero	Supported	
Column Compartment	Adjustable from ambient +5 °C to 40 °C	
Relay Outputs	Contact closure (3) to external devices	
Inputs	TTL (3): Cells OFF, Autozero and External Start	
Display	Multi-line LCD display indicates active system parameters, three LEDs for status monitoring	
Software Control	Chromeleon CDS (Release 7.2 SR-1 or Release 6.8 SR-13 required). Additional driver connection kits support operation through Waters Empower™ and Agilent OpenLab™ CDS software.	
PC Connection	All detector functions controllable via USB 2.0 through Chromeleon CDS system (cable provided)	
Rear Interface	AC plug, power switch, USB port, Digital I/O (3- TTL Inputs, 3- Relay Outputs)	
Power Requirements	85-260 V, 50/60 Hz, max. 150 W	
Dimensions	19(H) × 42(W) × 51(D) cm (7.6 × 16.5 × 20 in)	
Weight	12.5 kg (27.5 lbs) with 1 dual potentiostat module	
Certifications	UL, CUL, CE and cTUV	



Ordering information

Product	Cat. No.
UltiMate 3000 Electrochemical Detector (ECD-3000RS), potentiostat module(s) are chosen separately.	5070.0010
Options (choose from options list below)	
Dual channel DC potentiostat module (ordered separately)	6070.1400
Single channel Pulse potentiostat module (ordered separately)	6070.1420
Thermo Scientific™ nanoViper™ Fingertight Fittings Capillary Kit, EC System with ECD-3000RS	6041.5105
Thermo Scientific™ Biocompatible Viper™ Capillary Kit (MP35N), for UltiMate 3000 System with ECD-3000RS detector	6041.5107
Electrochemical Cells (choose cell from the list below)	
6011RS ultra Coulometric Analytical Cell for ECD-3000RS detector	6070.2400
6041RS ultra Amperometric Analytical Cell for ECD-3000RS detector	6070.3000
Working Electrodes (choose a working electrode from the list below)	
Glassy carbon, high efficiency, for 6041RS cell	6070.3200
Boron-doped diamond, for 6041RS cell	6070.3100
Gold, for 6041RS cell	6070.3300
Platinum, thin-film kit, for 6041RS cell	6070.3510

Find out more at thermofisher.com/ECdetection

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PS70257-EN 0916S

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