

IFI (INSTRUMENTS FOR INDUSTRY)

UltiMate 3000

The Thermo Scientific Dionex UltiMate 3000 is a modular, high-performance liquid chromatography (HPLC and UHPLC) platform. Designed for versatility, compatibility, and precision, the series covers standard analytical HPLC, biocompatible systems, and ultra-high-pressure rapid separation LC (RSLC). Note: While prompt metadata lists Instruments For Industry (IFI), the UltiMate 3000 is exclusively manufactured by Thermo Scientific (formerly Dionex).

SPECIFICATIONS

General

Interfaces	USB 2.0 (high speed, module-interconnection via integrated hubs)
Display	Multi-line LCD status screens on individual modules

Physical

Power Supply	100-120 V / 200-240 V AC (auto-sensing), 50/60 Hz
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System Performance & Architecture

System Configurations	Basic, Standard (SD), Rapid Separation (RS), and Biocompatible Analytical
Maximum Operating Pressure (SD System)	620 bar (62 MPa, 9000 psi)

Solvent Delivery (Pump Module)

Pump Configurations	Isocratic, Binary (HPG), Quaternary (LPG), or Dual-Gradient (DGP)
Flow Rate Range (Analytical Pumps)	0.001 to 10.0 mL/min
Flow Rate Accuracy	±0.1% (at 1 mL/min)
Flow Rate Precision	<0.05% RSD or <0.01 min SD (whichever is greater)
Active Rear-Seal Wash	Standard, fully automated continuous wash

Autosampler (Injection Module)

Injection Method	Split-loop (in-needle) or Pulled-loop design
Sample Capacity	Up to 3x 96-well plates or 120x 2 mL vials (or up to 384-well plates)
Sample Compartment Thermostating Range	4 °C to 45 °C (minimum 22 °C below ambient)

Column Compartment (Oven Module)

Column Capacity	Up to 12 columns (depending on column length and switching valves)
Maximum Column Length	300 mm
Heating/Cooling Method	Thermoelectric (Peltier) elements with forced air convection
Temperature Range (RS Module)	5 °C to 110 °C (minimum 18 °C below ambient)
Temperature Range (SD Module)	5 °C to 80 °C (minimum 15 °C below ambient)
Temperature Stability	±0.1 °C
Temperature Accuracy	±0.5 °C
Column Switching Valve Options	Up to 2 valves (options include 2-port/6-position, 2-port/10-position, or 6-port/7-position)

Detection Capabilities

Supported Detector Types	Diode Array (DAD), Multiple Wavelength (MWD), Variable Wavelength (VWD), Fluorescence (FLD), Charged Aerosol (CAD), Electrochemical (ECD), Refractive Index (RID)
Wavelength Range (DAD-3000)	190 to 800 nm (expandable to 900 nm)
Wavelength Accuracy	±1.0 nm
Light Sources (DAD/MWD)	Deuterium (D2) lamp and Tungsten (W) lamp
Data Acquisition Rate (RS Detectors)	Up to 200 Hz
Diode Array Resolution (DAD-3000)	1024 diodes

Pump Specifications

Pump Operating Principle	Serial dual-piston
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Detector Specifications

Standard Flow Cell Volume	13 µL (10 mm path length, standard DAD)
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Detectors

VWD-3400RS Wavelength Range	190-900 nm
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TECHNOLOGY

High-Performance Liquid Chromatography (HPLC / UHPLC)

APPLICATIONS

Liquid chromatography separation, chemical analysis, pharmaceutical QC, and academic research

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