



## Thermo Scientific Dionex Inuvion Core ion chromatography system

### Keywords

Ion chromatography, Inuvion, reliable, advanced, consistency, stability, high-performance, configurable and upgradeable, improved reproducibility, function-driven, space-saving design

### Introduction

The Thermo Scientific™ Dionex™ Inuvion™ Core ion chromatography system provides the benefits of continuous chemical suppression and higher-pressure operation to deliver consistently excellent results. The robust and reliable design is easily configurable and upgradeable to full-featured capabilities as budget allows.

### Ultra reliable day-to-day performance

- Advanced high-performance pump technology and electronics
- Inert, non-metallic PEEK components throughout the system ensure compatibility with corrosive eluents and provide metal-contamination-free chromatography
- Electronically actuated six-port Rheodyne™ PEEK injection valve for precise sampling
- Built-in diagnostics that automatically detect any hardware and consumables issues
- A thermostatted, high-performance conductivity detector that minimizes lab temperature-related variability, enabling highly reproducible conductivity measurements
- With an extended digital operating range up to 18,000  $\mu\text{S}$  and intelligent autoranging, the detector captures major and trace constituents simultaneously, delivering confident results across a wide concentration range in one injection—single-range analog signal output is also included
- Thermo Scientific™ Chromeleon™ Chromatography Data System (CDS) control includes automated configuration and setup wizards along with an electronic logbook to monitor nearly unlimited user selectable operational parameters
- Optional column heater provides day-to-day consistency, ensuring reproducibility and stability—eluent preheating prior to the column maintains the column temperature set by the analyst

## Simple, intuitive user experience

- Space-saving design preserves valuable bench space
- Smart, function-driven design allows quick access to everything on the instrument
- When paired with an autosampler, automated sample preparation capabilities enable techniques such as online filtration, concentration, and matrix elimination
- An optional automatic eluent monitor helps operators ensure there is sufficient eluent for the analyses scheduled to be run, optimizing system uptime and throughput
- Smart startup, standby, and shutdown routines ensure the system is quickly ready for the day's work without user intervention

- Streamlined e-panel quickly shows status during runs
- Clear, descriptive error codes enable faster problem resolution and first-time fixes
- Built-in how-to videos reduce training time and simplify setup and operation

## Easily configurable and upgradeable

- Versatile, adaptable platform allows you to configure the system with a range of user-installable accessories to meet both current and future needs
- Upgrading to Thermo Scientific™ Reagent-free Ion Chromatography (RFIC™) eluent generation expands IC capabilities, enabling easy and cost-effective adaptation to changing sample types and workflow requirements

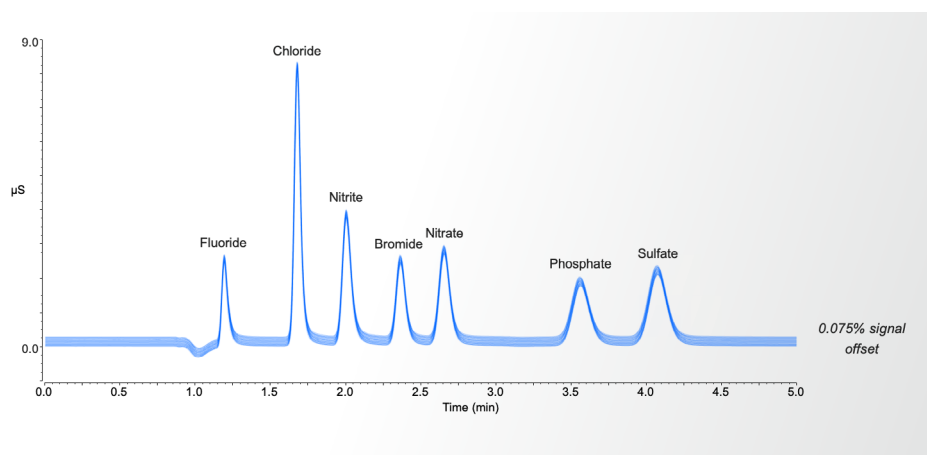


Figure 1. Overlay of chromatograms from 40 injections of an anions standard that demonstrates the high reproducibility that is achieved.

## Dionex Inuvion Core IC system specifications

Specification	Performance and features
<b>Analytical pump and fluidics</b>	
Type	Serial dual-reciprocating pistons, microprocessor-controlled constant stroke, variable speed
Construction	Chemically inert, metal-free PEEK pump heads and flow paths compatible with aqueous eluents of pH 0–14 and reversed-phase solvents
Pump operating pressure	0–35 MPa (0–5000 psi)
Flow rate range	0.00–5.00 mL/min in 0.01 mL/min increments
Flow precision	<0.1%, typically
Flow accuracy	<0.1%, typically, at 13.8 MPa (2000 psi) and 1.0 mL/min
Pressure ripple	<1%
Eluent on-off valve	Standard
Leak sensor	Optical, standard
Piston seal wash (optional)	Pump head wash can be operated in continuous or intermittent mode when connected to rinse solution supply
Pressure alarm limits	Upper and lower limit pressure alarms can be set
Eluent bottles	2 L polypropylene bottle provided; optional 4 L polypropylene bottle available
Eluent monitoring	Optional eluent monitor for 2 L and 4 L bottles
Eluent bottle pressure regulator (optional)	Digitally controlled regulator with display; pressure range 0–15 psi, maximum inlet pressure 100 psi
Injection valve	6-port, 2-position Rheodyne valve, electronically activated
Supported column types	2, 3, 4, and 5 mm ID; maximum length 250 mm analytical column with 50 mm guard column

## Dionex Inuvion Core IC system specifications *(continued)*

Specification	Performance and features
<b>Column heater (optional)</b>	
Operating temperature range	10 to 60 °C (50 to 140 °F); settable within the software; minimum working range is 5 °C above ambient temperature
Temperature accuracy	±0.5 °C at sensor, at calibration points (35, 45 °C)
<b>Suppressors and control</b>	
Non-suppressed chromatography	Yes, supported
Chemical suppression	2 mm and 4 mm anion and cation suppressor types
Chemical suppression capacity	Anions: <ul style="list-style-type: none"> <li>• Thermo Scientific™ Dionex™ ACRS 500 (2 mm): 75 µeq/min</li> <li>• Thermo Scientific™ Dionex™ ACRS 500 (4 mm): 150 µeq/min</li> </ul> Cations: <ul style="list-style-type: none"> <li>• Thermo Scientific™ Dionex™ CCRS 500 (2 mm): 37.5 µeq/min</li> <li>• Thermo Scientific™ Dionex™ CCRS 500 (4 mm): 75 µeq/min</li> </ul>
Chemical suppressor void volumes	<ul style="list-style-type: none"> <li>• &lt;15 µL for 2 mm Thermo Scientific™ Dionex™ CRS 500 suppressors</li> <li>• &lt;50 µL for 4 mm Dionex CRS 500 suppressors</li> </ul>
Suppressor wear parts	<ul style="list-style-type: none"> <li>• Chemical suppression: Regenerant pump tubing</li> </ul>
Carbonic acid removal for anions	<ul style="list-style-type: none"> <li>• Thermo Scientific™ Dionex™ CRD 200 Carbonate Removal Device for use with hydroxide eluents</li> <li>• Thermo Scientific™ Dionex™ CRD 300 Carbonate Removal Device for use with carbonate eluents</li> </ul>
Note: Electrolytic suppressors require a hardware upgrade in order to be used with Inuvion Core.	
Note: Please refer to the <a href="#">Thermo Scientific™ Dionex™ eluent suppressors product specifications sheet</a> for the latest information.	
<b>Conductivity detector electronics and flow cell</b>	
Type	Microprocessor-controlled digital signal processor
Cell drive	128 kHz square wave
Linearity	$r^2 \geq 0.999\%$
Resolution	0.002 nS/cm
Full-scale output ranges	Digital signal range 0–18,000 µS/cm, with auto-ranging; analog signal range 0–18,000 µS/cm
Noise, wet	≤ 0.2 nS at 23 µS/cm background ≤ 0.1 nS at 1 µS/cm background
Temperature compensation	Variable, default set at 1.7%/°C at cell temperature
Temperature range	Ambient +7 °C, 15 to 60 °C
Cell electrodes	Passivated 316 stainless steel; compatible with methanesulfonic acid
Cell body	Chemically inert polymeric material
Cell volume	<1 µL
Heat exchanger	Inert, tortuous path for low axial dispersion
Maximum cell operating pressure	10 MPa (1,500 psi)
Data filter	Rise times from 0 to 10 s, Data Collection Rate 1 to 100 Hz, user selectable

## Dionex Inuvion Core IC system specifications *(continued)*

Specification	Performance and features
<b>Autosampler</b>	
Automation using autosampler	Thermo Scientific™ Dionex™ AS-DV, AS-AP, AS-HV, or third-party autosamplers
Sequential/simultaneous injection	Yes, depending on autosampler capabilities
Automated dilution	Yes, available with Dionex AS-AP autosampler
Dilution factor, Dionex AS-AP autosampler	1:1 to 1:1000
Dilution time, Dionex AS-AP autosampler	15 s with sample overlap
Inline sample degassing	Yes, optional with Dionex CRD 200 or 300 carbonate removal device
Inline filtration	Yes, Dionex AS-DV autosampler or inline filter
High automation flexibility	Conditionals using Chromeleon CDS and post-run features
<b>Software</b>	
<p>Chromeleon CDS is supported on the following operating systems:</p> <ul style="list-style-type: none"> <li>Windows™ 10 Enterprise and Pro</li> <li>Windows™ 11 Enterprise and Pro</li> </ul>	<ul style="list-style-type: none"> <li>Autoconfiguration</li> <li>Automated procedure wizards</li> <li>System wellness and predictive performance</li> <li>Data trending plots (numerical device parameters)</li> <li>Virtual column simulator (evaluation mode standard, isocratic and gradient optional)</li> <li>Multi-vendor automation support of proprietary and 3rd party instruments (fully controls over 550 modules from more than 25 manufacturers, including GC, CE, HPLC, and MS)</li> <li>Customizable system control panels</li> <li>System status virtual channels</li> <li>System trigger commands and conditionals</li> <li>Data audit trail, system audit trail and instrument audit trail</li> <li>Multiple network control and network failure protection (optional)</li> <li>System calibration storage (factory, present, and previous; completely user selectable)</li> <li>Customized reporting (unlimited report workbooks)</li> <li>Automated system qualification (detailed, comprehensive qualification reports)</li> <li>Dual sequence view in the studio</li> </ul>
<b>Physical specifications</b>	
Power requirements	100–240 V AC, 50–60 Hz autoranging
Operating temperature	4–40 °C (40–104 °F)
Operating humidity range	20–80% Relative, noncondensing
Control modes	Full control through Chromeleon CDS software; alternative control through TTL or relay closures; one relay output, two TTL outputs, two assignable TTL inputs
USB communication protocol	One USB input; three USB outputs
Product dimensions (h × w × d)	66.1 X 29.2 X 43.2 cm (26.0 X 11.5 X 17.0 in.)
Weight	15.3 kg (33.7 lb)

## Ordering information

Description	Part No.
Thermo Scientific™ Dionex™ Inuvion™ Core IC System	22185-60100 or 22185-60116, depending on location of order
<b>Optional integrated accessories</b>	
Column heater	22185-62400
Integrated regenerant pump	22185-62702
Digital gas pressure regulator	22185-62706
6-port auxiliary valve	22185-62704
10-port auxiliary valve	22185-62703
Seal wash pump	22185-62701
Thermo Scientific™ Dionex™ IC PEEK Viper™ fitting kit	B51000232
3-port low pressure valve	B51001290
Thermo Scientific™ Dionex™ Eluent Monitor	2 L: 22185-62707 4 L: 22185-62708

 Learn more at [thermofisher.com/inuvion](https://thermofisher.com/inuvion)

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