



The accuracy of LC-MS/MS technology with the convenience of automation

Cascadion SM Clinical Analyzer
for specialty diagnostics

The Thermo Scientific™ Cascadion™ SM Clinical Analyzer is a fully automated liquid-chromatography–tandem mass spectrometry (LC-MS/MS) analyzer designed for ease of use in the clinical laboratory. LC-MS/MS technology is a very powerful analytical tool, offering high accuracy, precision, sensitivity, and specificity.

The Cascadion analyzer forms a complete system solution driving clinical testing forward:

- Fully automated sample preparation features
- Dedicated assays
- LIS connectivity

No specialized LC-MS/MS knowledge is required to operate the Cascadion system.



Launch your lab into the future

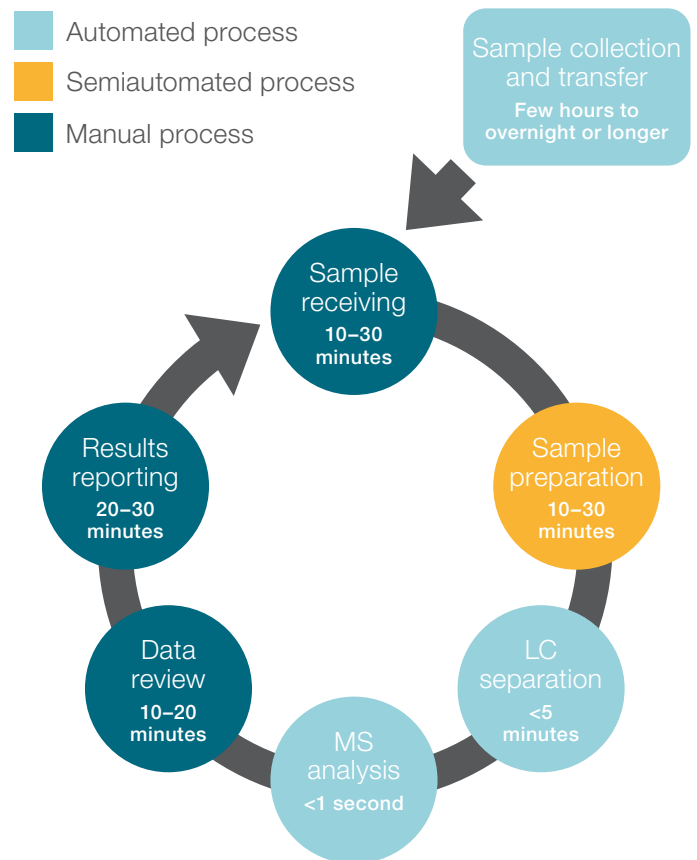
What is LC-MS/MS?

LC-MS/MS is broadly recognized as a gold-standard analytical tool for many areas of clinical chemistry testing. The principle is based on isolating, directly detecting, and quantitating target molecules based on their chemical properties and mass-to-charge ratio. The target molecules are charged through an ionization process that takes place in the ion source within the analyzer.

Why use LC-MS/MS?

LC-MS/MS technology offers a number of benefits over other methods such as immunoassays:

- Accuracy
- Precision
- Analyte specificity



Typical LC-MS/MS system workflow without automated sample preparation and results reporting

LC-MS/MS automation: the road to a better future in health care

Why automate LC-MS/MS?

Conventional LC-MS/MS systems entail developing, validating, and implementing laboratory developed tests (LDTs). This can be a very labor-intensive process, involving complex manual workflows that require a high level of specialized technical knowledge. This is also a very time-intensive process, with the total time from

initial development to clinical availability varying greatly based on the level of LC-MS/MS experience of laboratory professionals. Most commonly, LDTs are also being developed and implemented on a laboratory-specific basis, resulting in a large degree of inter-laboratory variability.*

Cascadion SM analyzer—unlocking the full clinical LC-MS/MS potential

Accuracy

- LC-MS/MS technology offers enhanced accuracy, precision, and specificity, due to direct measurement of analytes
- Fully standardized assays offer consistency and comparability of results over time and between instruments

Ease of use

- Random access workflow and integrated automation easily connected to LIS
- Primary tube loading with single user interface and start button offers ~4 hr convenient walk-away time without need to add consumables
- Multiple tests can be performed simultaneously on a single sample for optimal efficiency and productivity

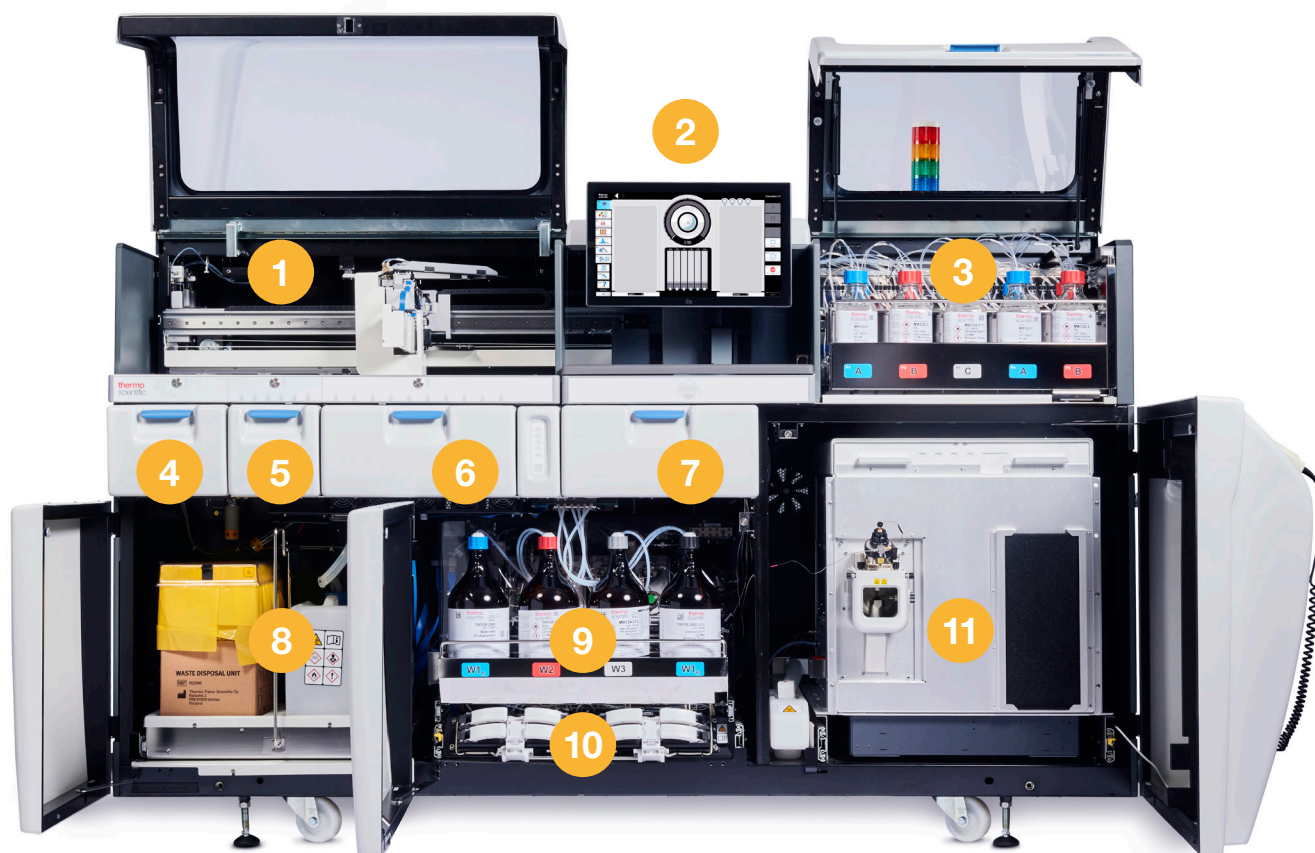
Designed for the clinical lab

- Easily implement new assays without costly and time-consuming development and validation
- Barcoded reagents and consumables as well as logging of user actions enable traceability and compliance

Flexible operation and rapid turnaround time bring LC-MS/MS into routine workflow



Easy access for reagents, consumables, and maintenance



- | | | |
|-----------------------------|---------------------------------|---------------------------------------|
| 1. Sample preparation area | 5. Sample and calibrator loader | 9. Liquid chromatography (LC) cabinet |
| 2. Graphical user interface | 6. Reagent and control loader | 10. Quick-connect cartridges |
| 3. Solvent cabinet | 7. Extraction vessels loader | 11. Mass spectrometry (MS) cabinet |
| 4. Mixing tips loader | 8. Waste cabinet | |

All the assay components needed from a single source



All on-board consumables and disposables are displayed in one status screen

Designed for easy implementation, management, and support

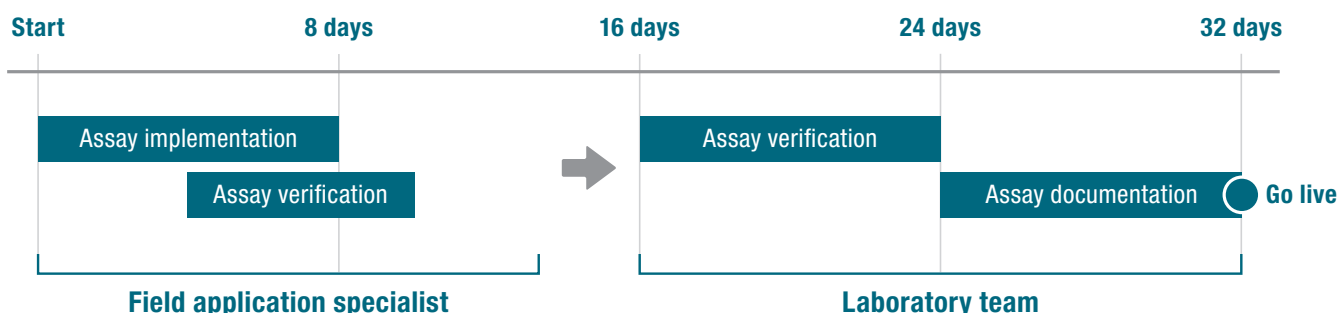
The Cascadion SM Clinical Analyzer for specialty diagnostics offers ready-to-use prevalidated assays

This fully integrated, random access system allows clinical laboratories to take advantage of the unique analytical benefits of LC-MS/MS technology to quickly and easily run assays and generate consistent, reliable results with fast turnaround times. Supporting an expanding test menu, the Cascadion system will allow clinical laboratories to broaden their service offerings to include several LC-MS/MS-based analytes such as a panel of tricyclic antidepressants.

The Cascadion system enables assay implementation and verification to be completed in just a few weeks—remarkable time and resource savings compared to conventional LC-MS/MS platforms.

Turnkey assay implementation on the Cascadion SM Clinical Analyzer with system-specific assay kits

Average cycle time



Minimal maintenance

The Cascadion SM Clinical Analyzer has been designed to require minimal maintenance. User maintenance can be done by any operator after training. Estimated times are:

- Daily maintenance: 10 min
- Weekly maintenance: 20 min

Effective support for your laboratory

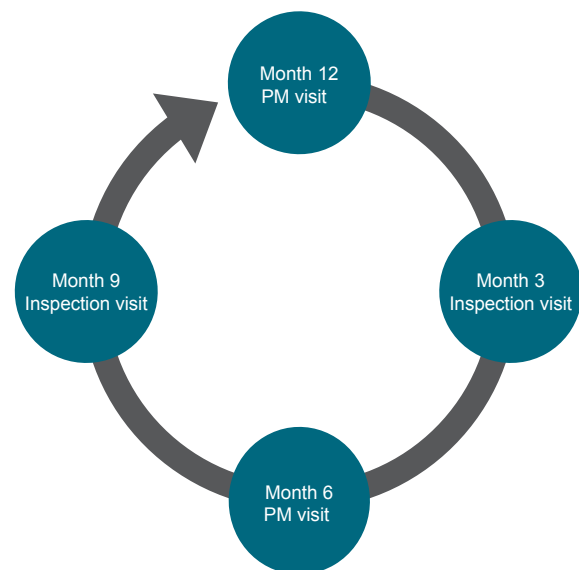
A local help line is ready to take your call regarding any request or question you might have. A Cascadion Care Specialist will make sure your request is resolved. If a site visit is required, we will dispatch a field-based specialist within one business day.

Cascadion Care delivered by a team that understands your priorities

Cascadion Care Specialists are experienced in the operation of analyzers in a clinical setting. This means they fully understand the critical nature of your work and the need to maximize your uptime.

Full service and support contract

To help ensure a continuous and successful experience with the Cascadion system, a full service and support contract is available. This will cover all labor and travel for breakdown emergencies as well as preventative maintenance and all parts necessary to run the Cascadion analyzer for the full year.



With the four yearly planned visits by a Cascadion Care Specialist, we target predictive fault-finding to maximize overall uptime and minimize unplanned downtime.

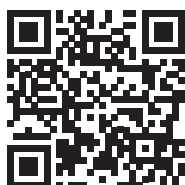
Included in the full service and support contract:

- Next-business-day, on-site response time
- Dedicated, local field service and support team
- Global specialized Cascadion system technical support
- Active remote-access support, enabling predictive support
- All spare parts and preventative maintenance consumables
- All travel and labor costs
- Certified training program for daily users and key operators
- Two scheduled preventative maintenance visits per year
- Two scheduled inspection visits per year
- Data connectivity as part of installation
- Other service options available; please ask your local Cascadion analyzer representative for more information

System summary	
Throughput	Up to 25 samples/hr (serum, plasma) Up to 23 samples/hr (whole blood)
Sample capacity	60 samples—six racks holding ten uncapped primary tubes or sample cups
Sample types	Serum, plasma, and whole blood
Reagent capacity	60 positions for reagents or controls
Barcodes supported	Code 128, Codabar (configurable), Code 39, and Interleaved 2 of 5, with check digit available as standard
Connectivity	RS-232 or TCP/IP according to CLSI LIS01-A2 and CLSI LIS02-A2 standards

By simplifying and accelerating assay implementation alongside a growing test menu, the Cascadion analyzer can make the gold-standard of LC-MS/MS technology available to a wider range of clinical laboratories, ultimately benefiting physicians, patients, and the wider health care system.

- Dedicated Cascadion assays for a complete system solution
- Flexible sample loading with random access processing maximizes clinical lab efficiency
- Usable by any laboratory professional without need for specialized LC-MS/MS expertise



For more information please contact us at cascadion.info@thermofisher.com or visit thermofisher.com/cascadion

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