

**Thermo Scientific Dimension4™
Modular Automation Platform**



**Perform your most important
applications on one fast,
flexible system.**



Unique distributed motion robotic technologies give the Dimension4 automation platform its exceptional throughput and flexibility. (Clockwise, l to r) Thermo Scientific Vertical Array Loader, Thermo Scientific Flip Movers, Thermo Scientific Linear Plate Transport.



**Thermo Scientific Dimension4
Modular Automation Platform**

Innovative Robotic Technologies

The Thermo Scientific Dimension4 automation platform integrates multiple robotic technologies in unique and productive ways for unlimited horizontal/vertical storage and travel. This innovative concept eliminates the bottlenecks caused by single-robot systems. It rapidly distributes plates among multiple components for the highest possible throughput across a highly flexible range of research applications. By incorporating simpler, smaller movement technologies, the platform increases reliability and accuracy while reducing maintenance and downtime.

Thermo Scientific Vertical Array Loader (VAL)

The VAL is a vertical robot that services multiple stacked or horizontal arrayed instruments. A compact design allows the robot's arm to be tucked in, giving it access to more instruments in a tighter working space. This enables the full use of vertical space, significantly decreasing floor space requirements.

Thermo Scientific Linear Plate Transport (LPT)

The LPT is the ultra-high-speed conveyor belt that shuttles plates among the platform's robotic movers. The conveyor's bidirectional capability permits exceptional flexibility of system and application configuration. A modular design allows integrators to easily change belt lengths. The highly reliable technology provides increased position accuracy and uptime.

Thermo Scientific Flip Mover

The Flip Mover is an ultra-high-speed, nest-to-neighbor mover that transports plates from the platform's conveyor-belt LPT to instruments and storage devices. Its extremely simple design enhances reliability and increases uptime. An integrated plate sensor ensures reliable gripping and error handling, and the rotating gripper adapts to different instrument types. The Flip Mover handles a range of plate types from deep-well to 1536-well plates — lidded or unlidded.



Systems can be reconfigured or upgraded easily. Expand from simple applications and low storage to multiple applications running simultaneously and greater storage above and below the tables.

Easy System Expansion

No other offering lets you reconfigure your system as quickly and easily as a Thermo Scientific Dimension4 automation platform. Changing your applications simply means adding or removing tables with new or existing robotic and instrument components. This modularity enables exceptional creativity in designing the system layout for a specific application. Choose Dimension4 robotic components to optimize the platform for throughput, instrument type, or footprint. These technologies, coupled with our integration expertise, enable the Dimension4 automation

system to provide:

- Fastest project startup and smoothest implementation
- Easiest integration of instruments, storage, and equipment
- Most reliable walk-away operation
- Easiest retasking and upgrades, delivering best value for your investment

Optimized Laboratory Space

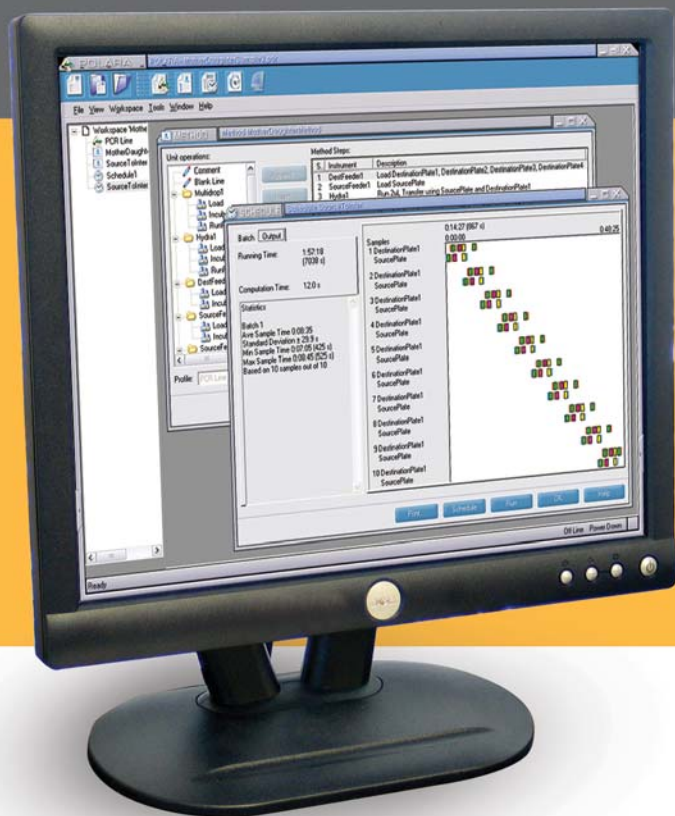
The system's unique movement capability optimizes tabletop, under-table, floor, and vertical space, permitting extremely high instrument and storage densities. Only the Dimension4 automation platform gives

you so much application flexibility in so little laboratory space.

Expert Integration

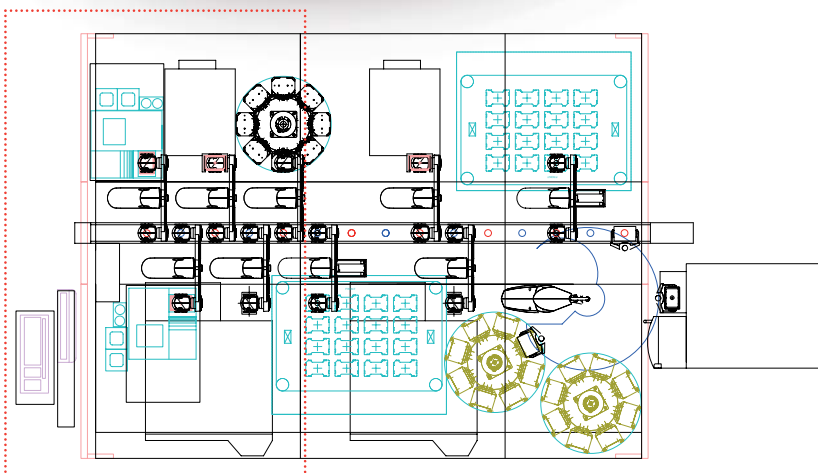
With over two decades of robotic system integration expertise, we can incorporate any third-party vendor's instrument into our Dimension4 automation platform for best-in-class performance and maximum use of existing assets. With our in-house mechanical, software, and applications experts, we can design custom components for your most demanding applications.

The Dimension4 transforms your ideas into highly efficient research solutions. It's ideal when high throughput is required across a wide range of applications.



Thermo Scientific POLARA® Software

Our proven POLARA scheduling software controls all system components and instruments to handle a broad range of applications — from small benchtop automation to complete turnkey solutions. A single POLARA package automates multiple applications and schedules them simultaneously for high-throughput processing. The software supports overlapping operations to maximize component usage and minimize wait times. In addition, POLARA software features robust error handling, run recovery, and batch extension that allow users to continuously run the system.



Initial Two-Cube System

Six-Cube Expansion

CASE STUDY

A global pharmaceutical research facility was running two applications on its two-cube Dimension4 automation platform. The company wanted to quickly expand the system to perform 10 applications with the capability for overnight unattended operation. Working within highly restrictive floor space requirements, we upgraded the platform by adding six cubes and additional under-table storage capacity. Within 1 week, the system was handling 200 plates over a 16-hour period (80,000 samples per day).



The Flexible Way to Automate Drug Discovery

It's critical that you automate your laboratory to bring drugs to market faster than ever. Our revolutionary Dimension4 automation platform delivers the speed you need — up to 2 million data points in 12 hours. It's intelligently designed with proven robotics expertise to handle your most complex applications. The system efficiently utilizes all of the space within the three-dimensional reach of its robots. Only the Dimension4 automation platform combines blazing throughput across a variety of applications with integration expertise and proven control software.

Automate Virtually Any Application

The highly flexible system enables researchers to automate virtually any assay, method, or protocol. Seamlessly integrate instruments you already own, or have our integration experts assemble a turnkey solution with best-in-class technologies to handle your most critical applications — including, but not limited to:

- Genomics
 - DNA purification
 - Gene expression
 - Sequencing reaction setup
- Proteomics
 - Protein purification
 - Protein crystallography
 - Protein digestion/MALDI sample preparation
- High-content/cell-based screening
- Primary and secondary high-throughput screening
- ADME/Tox

Thermo Scientific Services

We are committed to helping your laboratory achieve success. Our solutions ensure that your automation systems are optimized for accuracy, productivity, and performance. We offer flexible solutions:

- **Service agreements**
- **Preventative maintenance plans**
- **Software upgrades**
- **Software application support**
- **Technical support**
- **Integration services**
- **Relocation services**
- **Training**

Contact a Thermo Fisher Scientific representative to tailor the service solution that best meets your needs.

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