

Thermo Scientific Catalyst Express & Matrix Automated Liquid Handling

Adding the Thermo Scientific Catalyst Express five-axis, 360° base rotating robotic arm to Thermo Scientific Matrix liquid handlers increases the efficiency and throughput of many laboratory procedures. Used as a plug-and-play accessory option, the Catalyst Express moves labware to and from Matrix liquid handling systems, as well as replaces Thermo Scientific Matrix D.A.R.T.s (Disposable Automation Research Tips) on Thermo Scientific Matrix PlateMate instrument platforms. When used with Matrix liquid handling, the Catalyst Express is programmable via ControlMate® software, creating an easy-to-use entry to integrate liquid handling systems.



The Catalyst Express robotic arm is the first industrial robotic arm to be used for automating laboratory processes. The robust design ensures error-free, repeatable positioning onto Thermo Scientific Matrix liquid handling platforms. The Catalyst Express's gripper is capable of handling a wide variety of microplates and can accommodate labware in landscape or portrait formats. Safety features include remote emergency stop control and optional protective guarding.



One Software Interface. Catalyst Express controls are integrated in the intuitive ControlMate software, making programming simple and convenient. All ControlMate interfaces and add-in modules are license-free and can be downloaded from our website. Labs adding a Catalyst Express onto existing Matrix liquid handlers are able to use this familiar interface for both liquid handling and plate/tip shuttling procedures.

Upgradeable Solution. Integrating additional equipment with the Catalyst Express and a Matrix liquid handling system is straightforward with the addition of the POLARA scheduling software. Both the Catalyst Express and line of Matrix liquid handlers have a wide range of accessories and options available to upgrade to fit changing application needs.

Broad Application Possibilities. Adding a Catalyst Express to Matrix liquid handling platforms can increase productivity and throughput of applications such as genomics, proteomics, primary and secondary compound

screening, cell-based assays, ADME, sample preparation and ELISA. The Catalyst Express 5-axis robotic arm with 360° range of motion at its base is able to load Matrix D.A.R.T.s and labware on and off Matrix liquid handling platforms as well as access other Thermo Scientific products such as the ALPS 3000 plate sealer, Matrix WellMate and Matrix VisionMate systems.

Automate Tip Changing on the Thermo Scientific Matrix PlateMate 2x3. Using the Catalyst Express robotic arm to change microplates and D.A.R.T.s automation tips on the Matrix PlateMate 2x3 allows for hands-free approach to medium- to high-throughput applications. This integrated system comes standard with a customer configurable combination of random access microplate hotels (15 microplate capacity each) and D.A.R.T.s hotels (7 standard length D.A.R.T.s positions available) to suit a variety of application needs. Additional microplate and D.A.R.T.s hotels are available separately for systems requiring larger capacity.

Thermo Scientific Catalyst Express Specifications

Dimensions (L x D x H)	19.7"/500mm x 32.5"/825mm x 31.5"/800mm
Weight	167lbs/76kg
Power	50/60Hz, 110V/240V AC
Maximum Power Consumption	350 VA
Operating Conditions	10-40°C/50-104°F
Nominal Payload	1.0kg/2.21lbs
Repeatability	± 0.05mm/0.002"
Mean Time Between Failures (MTBF)	50,000 hours
Hotel Capacity (Standard)	45 (3 random access hotels with 15 plate capacity each)

Thermo Scientific Matrix Automated Liquid Handling Specifications

	Matrix PlateMate 2x3 96/384 Channel	Matrix PlateMate Plus 96/384 Channel	Matrix WellMate Bulk Reagent Dispenser
Plate Positions	6	4	1
Volume Range	See Pipetting Heads	See Pipetting Heads	1.0 µl-2000 µl
Dimensions (W x D)	25"/635mm x 29.5"/749mm	52"/1324 mm x 16"/411mm	14.5"/368mm x 12.0"/305mm
Dimensions (H)	23"/584mm	25 Plate Stackers 29"/721mm 50 Plate Stackers 41"/1041mm	85"/216mm
Weight	120 lbs/54.4kg	180lbs/80kg	24lb/11kg
Power	50/60Hz 100-240 V AC		
Maximum Power Consumption	<150W		
Operating Conditions	+15°C- 40°C ; <85% RH at +30°C		
Interface	RS232c		

Pipetting Heads Volume Ranges for Matrix PlateMate 2x3 and Matrix PlateMate Plus

Air Displacement Heads		Positive Displacement Heads	
96 format	384 format	96 format	384 format
0.5 µl-30 µl	0.5 µl-30 µl	0.1 µl -50 µl	0.1 µl -50 µl
5.0 µl-300 µl	1.0 µl-100 µl	0.3 µl-50 µl	0.3 µl-50 µl

Thermo Scientific ALPS 3000 Plate Sealer Specifications

Dimensions (L x D x H)	7.3"/185mm x 16.3"/414mm x 13.8"/350mm
Weight	26.5lb/12kg
Power	50/60Hz, 115V AC-240V AC
Interface	RS232
Air Requirement	50 liters per minute
Air Input Pressure	5.5 bar (80 PSI) to 5.7 bar (87 PSI)
Sealing Temperature Range	Ambient to 200°C
Operating Temperature Range	15°C-40°C

Accessory Options

Vacuum Extraction Manifold Kit
Sealed Storage Tube Piercing Kit
Standard and Tall Height Tip Wash Stations
Barcode Reader
Serial Dilution/Single Row or Column Access D.A.R.T.s Magazines
Thermal Control Options
Extended Warranty and Preventive Maintenance Packages