

CASS | AUTOMATED CELL ASSEMBLY

Features and Specifications



CASS | AUTOMATED CELL ASSEMBLY

The CASS cell assembly and sealing system automates the assembly of coin cells and small pouch cells used in battery R&D and quality control, helping laboratories to:

- Reduce operator-dependent variation and improve data quality.
- Reduce staff time and dependence on specialist cell assembly skills.
- Generate more reliable experimental data, faster.

The CASS combines precise component handling, controlled electrolyte dispensing and repeatable sealing to standardise key stages of test cell assembly. This helps researchers spend less time building cells and more time analysing materials and electrochemical performance.

From early-stage materials research to industrial R&D and quality control, the CASS provides a repeatable and traceable assembly process that can be transferred between operators, teams and sites.

Its modular design allows laboratories to configure the system around their workflow and expand its capabilities over time. Individual modules are compact enough to pass through the large antechamber of many standard two-glove gloveboxes, and are suitable for operation in laboratory, dry-room and argon environments.



CASS | SEALER XM

The Sealer module crimps coin cells as standard, and can be upgraded to also seal pouch cells



Dimensions	270 x 301 x 185 mm (W x H x D)
Weight	10 kg
Peak Power Draw	240 W
Utility Requirements	Single phase, 100 - 240 VAC, 50/60 Hz, 4.5A Max.
Operational Temperature Range	5 - 40°C
Operating Environment	Laboratory, dry room, or argon atmosphere
System Compatibility	Standalone, Assembler XM, Autoloader-30 XM, Autoloader-100 XM, Protocol Upgrade, Rectangular Pouch Upgrade
Display	128 X 64 graphic OLED display
Buttons and Ports	Power switch Emergency stop Arrow keys XLR port External vacuum port

Coin Cell Tooling



System Compatibility	Sealer XM, Assembler XM, Autoloader-30 XM, Autoloader-100 XM
Crimping Force	Up to 10 kN
Casing Size	CR2032 as standard Other sizes available upon request

Protocell Tooling



System Compatibility	Sealer XM, Assembler XM, Autoloader-30 XM, Autoloader-100 XM
Sealing Temperature	Up to 190°C (top/bottom separately configurable)
Sealing Force	0.5 - 2 kN
Vacuum Level	Internal Pump: 0.1 bar Compatible with external pump
Active Electrode Area	Anode and cathode discs: 10 - 16 mm Reference electrodes also available in ring and nano-wire geometries
Pouch Material	50 mm laminated aluminium disc
Separator Size	Up to 19 mm

CASS | SEALER XM

Tabs	17 mm contact area, 0.2 mm thick with hot-melt tape - no tab welding required
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Rectangular Pouch Tooling



System Compatibility	Sealer XM
Sealing Temperature	Up to 190°C (top/bottom separately configurable)
Sealing Force	0.5 - 2.0 kN
Vacuum Level	Internal Pump: 0.1 bar Compatible with external pump
Active Electrode Area	Up to 50 x 70 mm
Pouch Material	110 x 80 mm laminated aluminium
Tabs	Tabs must be pre-welded using separate equipment

CASS | ASSEMBLER XM

The Assembler module uses machine vision to accurately stack cell components



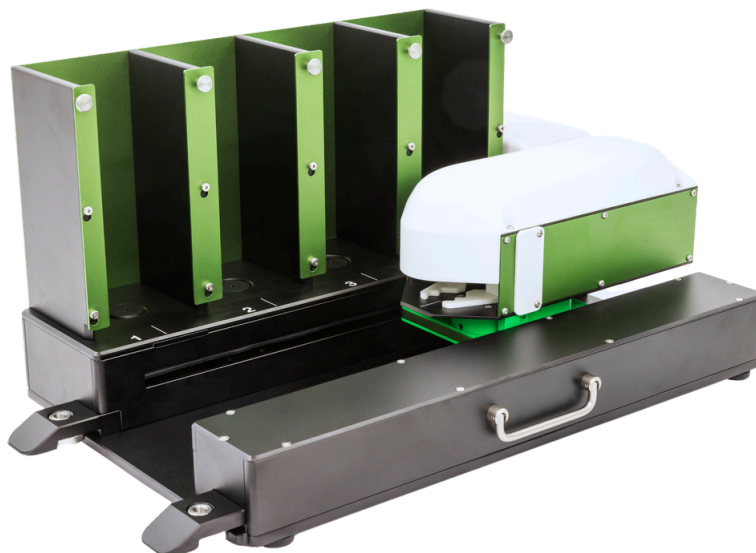
Dimensions	260 x 309 x 273 mm (W x H x D)
Weight	10 kg
Peak Power Draw	60 W
Utility Requirements	Single phase, 100 - 240 VAC, 50/60 Hz, 4.5A Max.
Operational Temperature Range	5 - 40°C
Operating Environment	Laboratory, dry room, or argon atmosphere
System Compatibility	Sealer XM, Autoloader-30 XM, Autoloader-100 XM, Protocol Upgrade
Electrolyte Handling	Automated 5 - 200 μ L micropipette as standard Removable racks can hold up to 4, 10, or 20 vials (each 2 mL) Syringe Pump add-on available for handling volatile electrolytes
Data Access	Python interface for automated retrieval of system data

CASS | ASSEMBLER XM

Display	5.5 inch capacitive touch AMOLED display
Buttons and Ports	Power switch 3 x XLR ports 2 x USB 3.0 ports SD card slot Ethernet port
Network Connectivity	Wi-Fi Ethernet
Cameras	5 MP
Active Alignment	Patented machine-vision used to automatically align cell components and capture images after each component placement. Images and quantitative alignment data are recorded for every cell, providing complete assembly traceability and quality control.

CASS | AUTOLOADER XM

The Autoloader module enables batches of cells to be built unattended

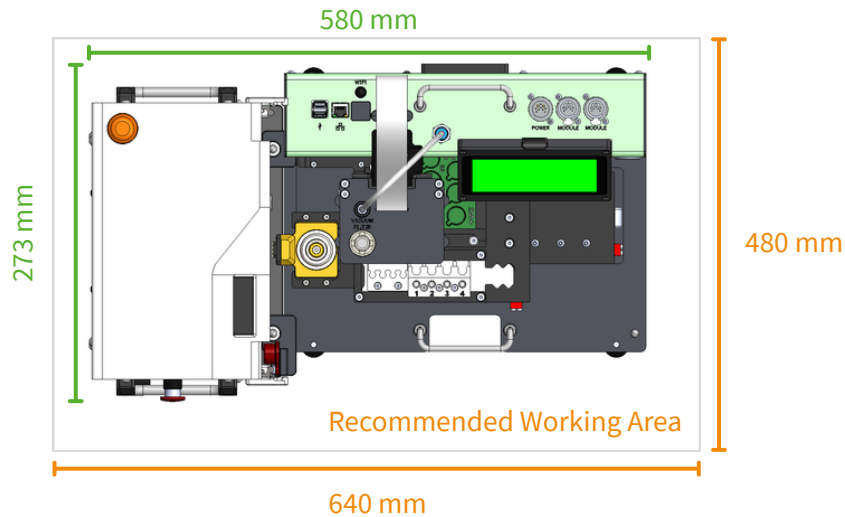


	Autoloader-30 XM	Autoloader-100 XM
Dimensions (W x H x D)	347 x 265 x 304 mm	510 x 250 x 304 mm
Weight	7 kg	10 kg
Peak Power Draw	40 W	40 W
Utility Requirements	Single phase, 100 - 240 VAC, 50/60 Hz, 4.5A Max.	Single phase, 100 - 240 VAC, 50/60 Hz, 4.5A Max.
Operational Temperature Range	5 - 40°C	5 - 40°C
Operating Environment	Laboratory, dry room, or argon atmosphere	Laboratory, dry room, or argon atmosphere
Tray Storage Capacity	33	99
Ports	XLR port	XLR port

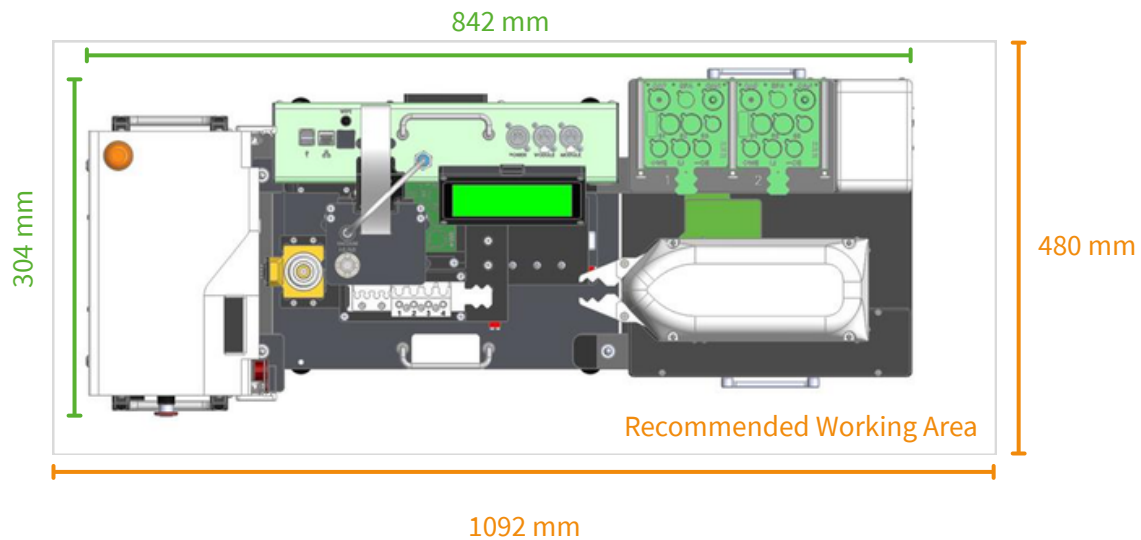
CASS | INSTALLATION REQUIREMENTS

Install the CASS in a clean, dry and level location, away from foot traffic and high vibration zones. Ensure vents and fans are not obstructed.

Sealer XM + Assembler XM Dimensions:



Sealer XM + Assembler XM + Autoloader-30 XM Dimensions:



CASS | INSTALLATION REQUIREMENTS

Sealer XM + Assembler XM + Autoloader-100 XM Dimensions:

