

POM 150 DL & POM 200 DL

Product Introduction

The POM 150 and POM 200 are Table Top Stand-alone 200 mm SMIF pod opener. Opens the SMIF pod to allow the cassette or wafers to be manually loaded or unloaded. Ideal for use with tools within a SMIF fab that require the cassettes to be loaded by manual operations if the OEM tool cannot be automated with SMIF load ports. The SMIF pod is placed on the loadport by the operator. A press of the run button will unlock the pod door and lift the pod lid clear to allow the cassette to be removed or the wafers to be removed.

Features and Benefits

- Support SEMI E19.4 compliant 200mm wafer and reticle SMIF pods
- All electrical system with field programmable application software
- Pod Clamp prevents shell from being removed for carrier logistic integrity
- Optional SMIF pod ID readers -RFID, IR (Smart) tag available.
- Optional SECS communication board available to connect to the FAB MES system
- Wafer protrusion sensors protect reticles/wafers during pod closing operation
- Optional wafer mapper
- ISO Class 1 cleanliness
- Easy installation and operations
- Four programmable Interlock signals



Specifications

SMIF Pod	SEMI E19.4
Weight	23 Kg
Load Capacity	12 Kg
Size	370mm W x 467mm D x 700mm H
MTBF	50,000 cycles
MTTR	Less than 1 hour
Power	100 -240 VAC 1 amp Max 50/60 Hz
Communication	TSerial,Optional SECS I/II
SMIF Pod ID	RFID
Options	IR (Smart Tag)-8200 or 8400 series Hermos RFID

PLS 200

Product Introduction

The PLS 200 is a Table Top Stand-alone 200 mm SMIF pod opener. Opens the SMIF pod to allow the SMIF pod lid to be removed by the operator to access the cassette or wafers for manual loading or unloading. Ideal for use with tools within a SMIF fab that require the cassettes to be loaded by manual operations if the OEM tool cannot be automated with SMIF load ports.

Features

- Ultra small footprint saves valuable FAB floor space
- Support SEMI E19.4 compliant 200mm wafer and reticle SMIF pods
- All electrical system
- ISO Class 1 cleanliness
- Optional IR or RF ID read/write
- LED Status Indicator



Specifications

SMIF Pod	SEMI E19.4
Weight	6.5 Kg
Load Capacity	12 Kg
Size	340mm W x 430mm D x 119mm H
MTBF	50,000 Cycles
MTTR	Less than 1 hour
Power	100-240 VAC 1 amp Max 50/60 HZ
Communication	Serial
Options	SECS I/II
SMIF Pod ID	RFID
Options	IR (Smart Tag)- 8200 or 8400 series Hermos RFID ntellion Reader

Integrated SMIF Load ports PLM 200W SMIF Pod Opener

Product Introduction

Fortrend PLM-200W is a simple, reliable pod opener designed to open 200mm SMIF pods by lifting the pod lid. Wafers remain in a sealed micro-environment where they can be accessed by a process tool's robot. Active airflow keeps the sealed micro-environment in better than ISO class-1 cleanliness. Designed for quick installation and removal, the PLM interfaces easily with most semiconductor tools. An integrated wafer protrusion sensor and provisions for tool interlock signals further prevent the pod cover from closing on protruding wafers. Active pod present sensor and pod base/cover sticktion detection algorithm detect the presence of the SMIF pod and faulty SMIF pods prevent mistaken pod operations, assuring optimal performance of the tools. Optional E84 COMM Board for E84 Handshake is OEM tool does not have the capabilities.

Features and Benefits

- Class 1 cleanliness with active self-clean airflow design
- All electrical system with field programmable application software
- Substrate protrusion sensors protect reticles/wafers during operation
- Four programmable Interlock signals
- Static dissipative transparent panels
- Wafer/Reticle protrusion sensor
- Support SEMI compliant 200mm wafer and reticle SMIF pods
- Easy installation to all existing tools
- Optional SEMI E63 Bolt-M Interface Mount
- OHT/AGV Ready
- SEMI S2,S8, CE Certified



Specifications

Weight	23 Kg
Size	431.2mm W x 421.2mm D x 770.2mm H
Cycle Time	<10 Seconds to Open or Close SMIF Pod
MTBF	50,000 cycles
MTTR	Less than 1 hour
Power	24VDC 1amp or 100-240 VAC 50/60Hz 1amp.
Communication	TCPIP- Fortrend HEX Serial-Fortrend HEX
Options	Serial-Fortrend HEX Serial-Versaport ASCII Serial-SECS I/II

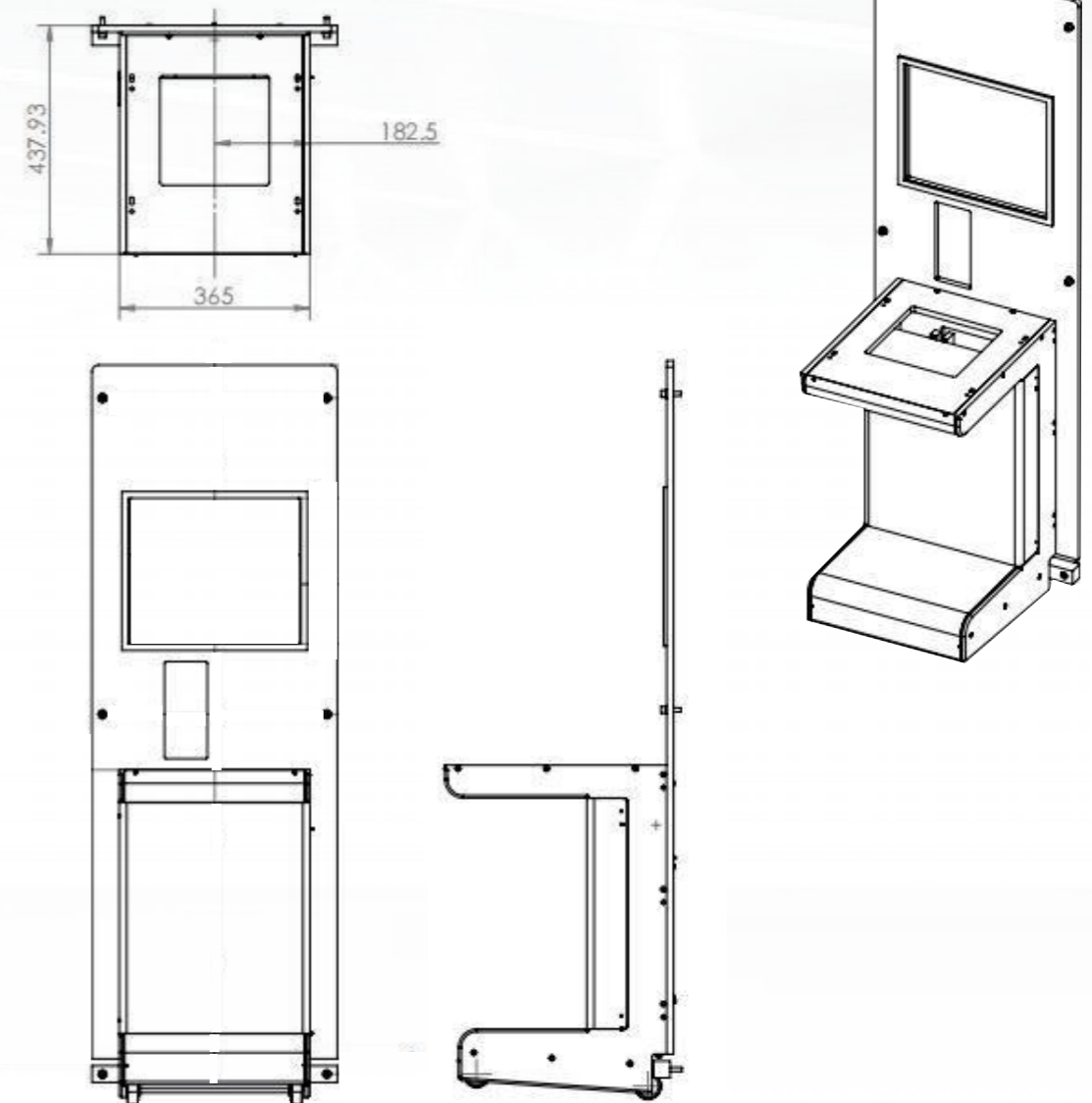


2x PLM 200W on Bolts interface mounts

PLM LOAD PORT

Product specification

PLM LOAD PORT is the installation bracket of the PLM series machine. Its design meets the SEMI standard. The bracket and machine split modular design subsequent demolition and maintenance upgrade is simple and convenient.



PLM 200UL

Product Introduction

Fortrend PLM-200UL is an Ultra Low Pod 200mm SMIF Opener designed to be integrated into OEVtools front end to make the tool SMIF compatible. The SMIF pods are manually loaded to the load port. The PLM 200UL will automatically unlock the SMIF pod and lift the pod lid clear of the cassette. The cassette can be programmed to move towards the OEM robot to reduce the distance to the wafers. Active airflow keeps the sealed micro-environment in better than ISO class-2 cleanliness. An integrated wafer protrusion sensor and provisions for tool interlock signals further prevent the pod cover from closing on protruding wafers. Active pod present sensor and pod base cover stick detection algorithm detect the presence of the SMIF pod and faulty SMIF pods prevent mistaken pod operations, ensuring optimal performance of the tools.

Features

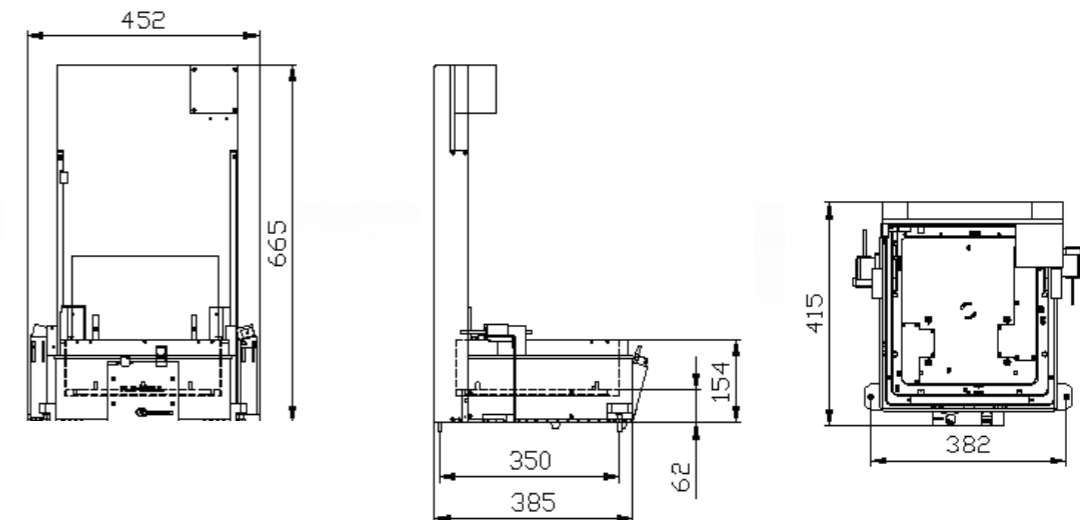
- Small footprint low height ideal for upgrading Open stage tooling to SMIF compatible tooling.
- SO Class 2 or better cleanliness with active self-clean airflow design.
- Lifts the Pod shell leaving the Wafer cassette in a sealed mini-environment
- Pod base moves forward to present wafers closer to robot pick up and drop off.
- All electrical system with field programmable application software
- Four programmable Interlock signals
- Pod present and wafer protrusion sensors
- SEMI S2 and S8 standards and CE certified
- Mounts directly into a process Tool or to a manual load port adaptor to convert open station to a SMIF compatible station.
- Optional Wafer Mapper Sensor



PLM 200UL Specifications

Wafer size	200 mm (8 inch)
Dimension	351W x 414D x 524H mm
Elevator Stroke	240 mm
Load capacity	5.4kg
Pod Types	SEMI 200mm Cassette
Pod interface	SEMI E19.4 with pod guide exceptions
Power requirement	110V/220V 3A/1.4A 50/60Hz
Weight	18kg without Pod
Open Pod	< 12 seconds
Close Pod	< 10 seconds
MCBF	50,000 cycles
MTTR	< 1 hour
Pod PIP sensor	1 set
Wafer Protrusion sensor	1 set
Cassette Present sensor	1 set
Communication	Parallel and/or Serial
Communication (Optional)	EIA-RS232C(SECS I)
ID device (Optional)	RF ID module or IR Link
Operation	Local operation or Host comm

Layout Drawing



PLM-150W-OHT & PLM-200W-OHT (Standard)

Product Introduction

PLM is a relatively mature box. It is equipped with a sensor compatible with 6 -inch and 8 -inch wafer box to detect it. It can accurately detect the round state of the POD box. PLM can be connected with a variety of devices, and the rich feature options provide more solutions for the client's production line upgrade.

Features and Benefits

- The standard PLM-200W-OHT device is fully in line with SEMI standards and has high-throughputability and compatibility
- The original factory is equipped with a MAPPING system, compatible with 150/200mm wafers, can detect problems such as stacks, oblique films, and eliminate risk of collision
- A variety of customized components that are available to meet different working conditions on the scene, such as whether to connect the cars.



Specifications

Pod/WAFER size	150/200 mm(SMIF)
Size	491mm W x 364mm D x 815mm H
Weight	35 Kg(Depends on configuration)
Rated voltage	DC 24V
Rated power	60W
The main material	Aluminum alloy, stainless steel (SUS 304)
Noise level	< 60 dBA
Communication	Serial EIA-RS232C , Parallel I/O
Communication protocol	HEX、SECSA
Cleanliness	Class 1@0.1µm
Cleanliness	ISO 2
Options	The ID read and write device is equipped with an RFID module or Irlink

PLM-150W-OHT&PLM-200W-OHT(widened)

Product Introduction

The PLM-200W-OHT is the latest model of the trolley docking station under R&D upgrade. Compared with the original machine, it provides more safety space for trolley docking. Its transformation meets the safety requirements for trolley docking both domestically and internationally.

Features and Benefits

- The standardized PLM-200W-OHT equipment fully complies with SEMI standards and is highly versatile and compatible.
- The original factory is equipped with a Mapping system, which is compatible with 150/200mm wafers and can detect issues such as stacked or tilted wafers, eliminating the risk of wafer collision.
- A variety of optional customized components are available to meet different on - site working conditions, for example, whether it is necessary to interface with overhead cranes or not.



Specifications

Pod/WAFER size	150/200 mm(SMIF)
Size	491mm W x 468mm D x 815mm H
Weight	40 Kg(Depends on configuration)
Rated voltage	DC 24V
Rated power	120W
The main material	Aluminum alloy, stainless steel (SUS 304)
Noise level	< 60 dBA
Communication	Serial EIA-RS232C , Parallel I/O
Communication protocol	HEX、SECSA
Cleanliness	Class 1@0.1µm
Cleanliness	ISO 2
Options	The ID read and write device is equipped with an RFID module or Irlink

SMIF OHT Load Port Manual Station

Product Introduction

The 200mm OHT load port station is designed to integrate with the FAB OHT system to allow SMIF pods to be loaded and removed from the OHT system. This standalone system is located below the OHT track system for SMIF pods to be dropped off or picked up. Fully integrated with a E84 handshake and SECS I/II communication to the FAB MES system.

Features and Benefits

- Dual SEMI E19.4 200mm SMIF Pod load Ports
- Pod Present and Lid Sensors
- Pod RFID Tag Read/Writer
- Manual OHT load/Unload switch
- Load port Status indicator light strip
- OHT Compatible
- GUI for setting up and configuration of station Hand held tablet
- Meets SEMI E84 and E110 requirements
- SEMI S2,S8 and CE certified.



Smart Load Port Station

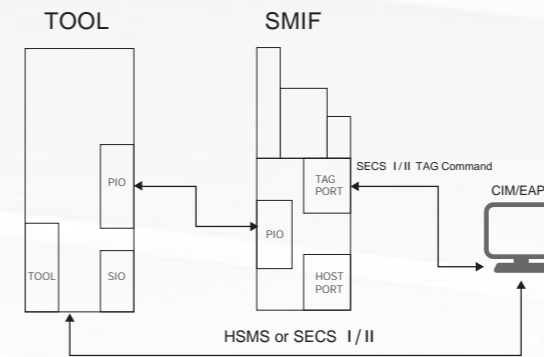
Specifications

Pod size	200mm SMIF Pod
Number of Ports	2
Dimension	864mm W x 457mm D x 1586mm H
Pod interface	SEMI E19.4
Power requirement	110V -240V 1A/1.4A 50/60Hz
SEMI E84	Parallel
Communication Host	EIA-RS232C(SECS I/II)Ethernet (Optional)
ID device	RF ID module IR (Smart) Tag reader optional
Operation	Host comm

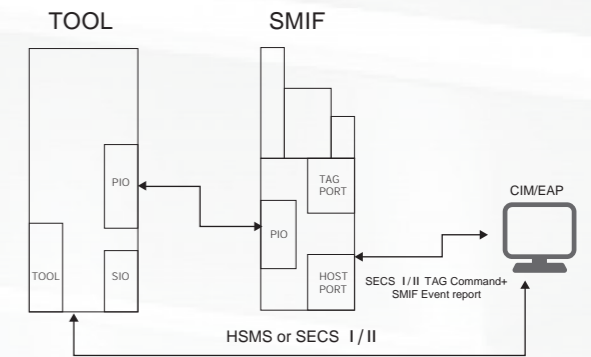


SMIF Tool Communication Scenario

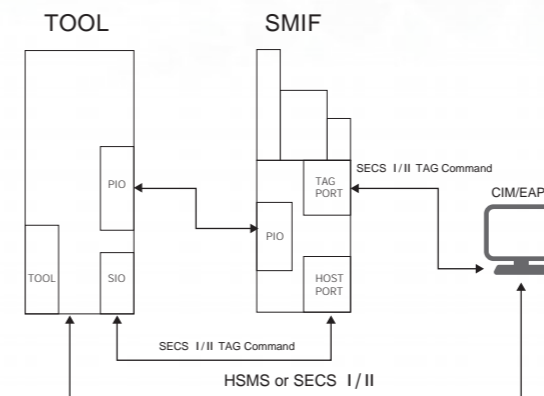
Communication Options #1
Tool control SMIF using PIO



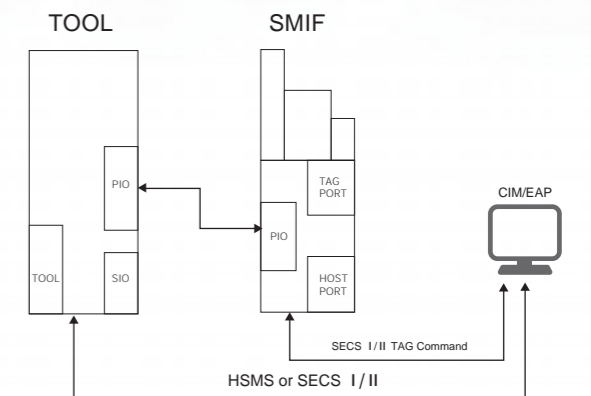
Communication Options #2
Tool control SMIF using PIO



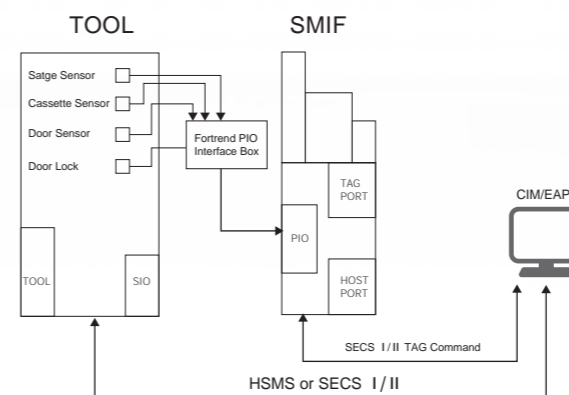
Communication Options #3
Tool control SMIF using ASCII or SECSB



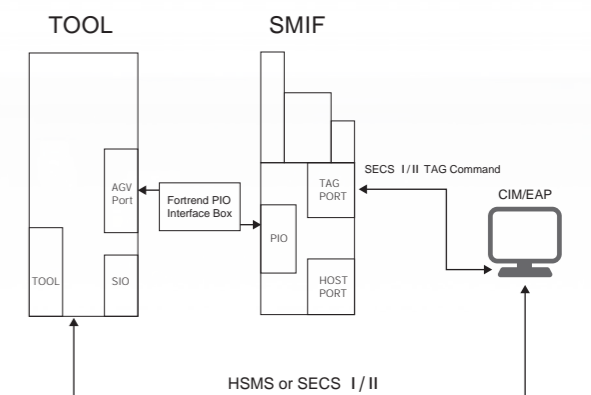
Communication Options #4
CIM control SMIF using SECS



Communication Options #5
CIM control SMIF using SECS



Communication Options #6
Tool control SMIF using AGV Ports



300mm LoadPort

Fortrend 300mm LoadPort is an equipment interface designed for automated wafer transfer. It enables efficient and clean automated wafer transfer between FOUP (Front Opening Unified Pod) containers and equipment, suitable for various semiconductor equipment such as EFEM (Equipment Front End Module), Sorter, cleaning equipment, inspection equipment, etc.



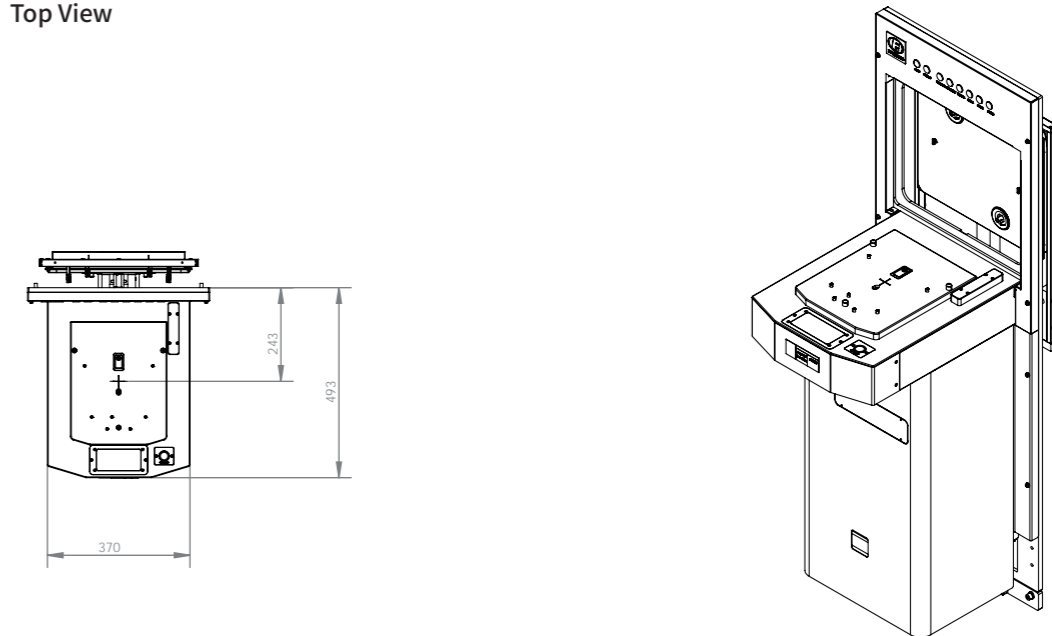
The key structures and designs of the 300mm LoadPort are all independently patented by Fortrend, and both the design and production are carried out within Fortrend's own production base. Integration of hardware and software ensures the standardization and consistency of the equipment

Compliant with SEMI standards, utilizing the RS-232 HEX communication protocol for communication with interfacing equipment, and also capable of expanding to various communication and interfacing methods

The original Wafer Mapping system utilizes proprietary advanced control algorithms to enable detection of wafer presence, absence, stacking, and tilting. Optional functions such as the E84 communication protocol and N2 purge can meet various on-site requirements

PRODUCT VIEW

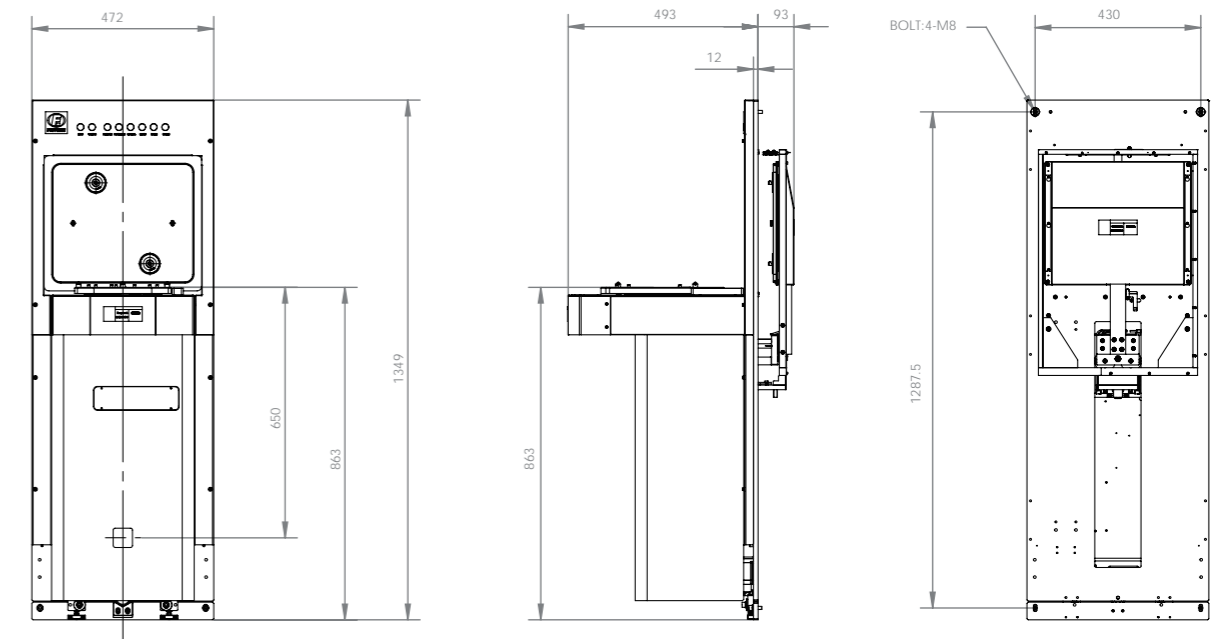
Top View



Top View

Side View

Rear View



Specification parameter

Machine Dimensions	H 1349 mm * W 472 mm * L 586 mm	
Prepared Mass	66 kg ± 0.5 kg (varies depending on configuration)	
Rated Voltage	DC 24 V	
Rated Current	6 A	
Rated Power	144W	
Communication Method	Serial communication RS-232C, parallel communication I/O	
Communication Protocol	HEX, ASCII	
Carrier Size	Complies with SEMI standards 300 mm / 200 mm (optional) FOUP	
Load Height	900 mm ± 10 mm	
Cycle Time	FOUP Open	11 sec (with mapping)
	FOUP Close	8 sec (without mapping)
Facility Requirements	Positive Pressure	0.5 ~ 0.6 MPa (Ø 6 air tube)
	Negative Pressure	< - 80 kPa (Ø 6 air tube)
	Nitrogen (optional)	0.1 ~ 0.2 MPa (Ø 8 air tube)
Optional Accessories	Nitrogen Purge Function	
	Automated Material Handling System Communication Interface (E84)	
	8-inch Cassette Adapter	
	Mechanical/Electronic	
Cables (PIO cable, 485 debug cable, RS232 debug cable)		

Frame LoadPort

Fortrend Frame LoadPort is an interface for automated wafer transfer designed for equipment. It efficiently and cleanly facilitates automated wafer transfer between FOUP (Front Opening Unified Pod) boxes and equipment, suitable for various semiconductor devices like EFEM (Equipment Front End Module), Sorter, etc., and can accommodate Frame FOUPs from manufacturers such as Zhongqin and Shuoding.



The key structures and designs of the Frame mm LoadPort are all independently patented by Fortrend, and both the design and production are carried out within Fortrend's own production base. Integration of hardware and software ensures the standardization and consistency of the equipment

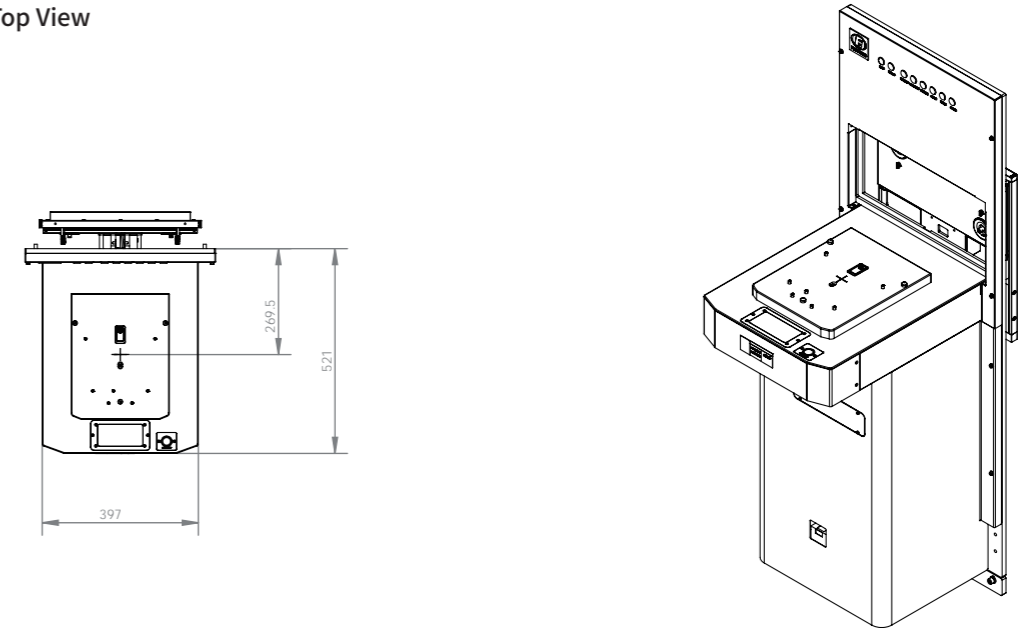
Compliant with SEMI standards, utilizing the RS-232 HEX communication protocol for communication with interfacing equipment, and also capable of expanding to various communication and interfacing methods

The original Wafer Mapping system utilizes proprietary advanced control algorithms to enable detection of wafer presence, absence, stacking, and tilting. The optional E84 communication protocol can be applied to AMHS/AGV automated transportation

Specifications parameter		
Machine Dimensions	H 1349 mm * W 485 mm * L 594 mm	
Prepared Mass	70 kg ± 0.5 kg (varies depending on configuration)	
Rated Voltage	DC 24 V	
Rated Current	6 A	
Rated Power	144W	
Communication Method	Serial communication RS-232C, parallel communication I/O	
Communication Protocol	HEX, ASCII	
Carrier Size	Frame FOUP	
Load Height	900 mm ± 10 mm	
Cycle Time	Open FOUP	11 sec (with mapping)
	Close FOUP	8 sec (without mapping)
Facility Requirements	Positive Pressure	0.5 ~ 0.6 MPa (Ø 6 air tube)
	Negative Pressure	< - 80 kPa (Ø 6 air tube)
Optional Accessories	Automated Material Handling System Communication Interface (E84)	
	Mechanical/Electronic Info Pad (default standard with electronic type)	
	Cables (PIO cable, 485 debug cable, RS232 debug cable)	

PRODUCT VIEW

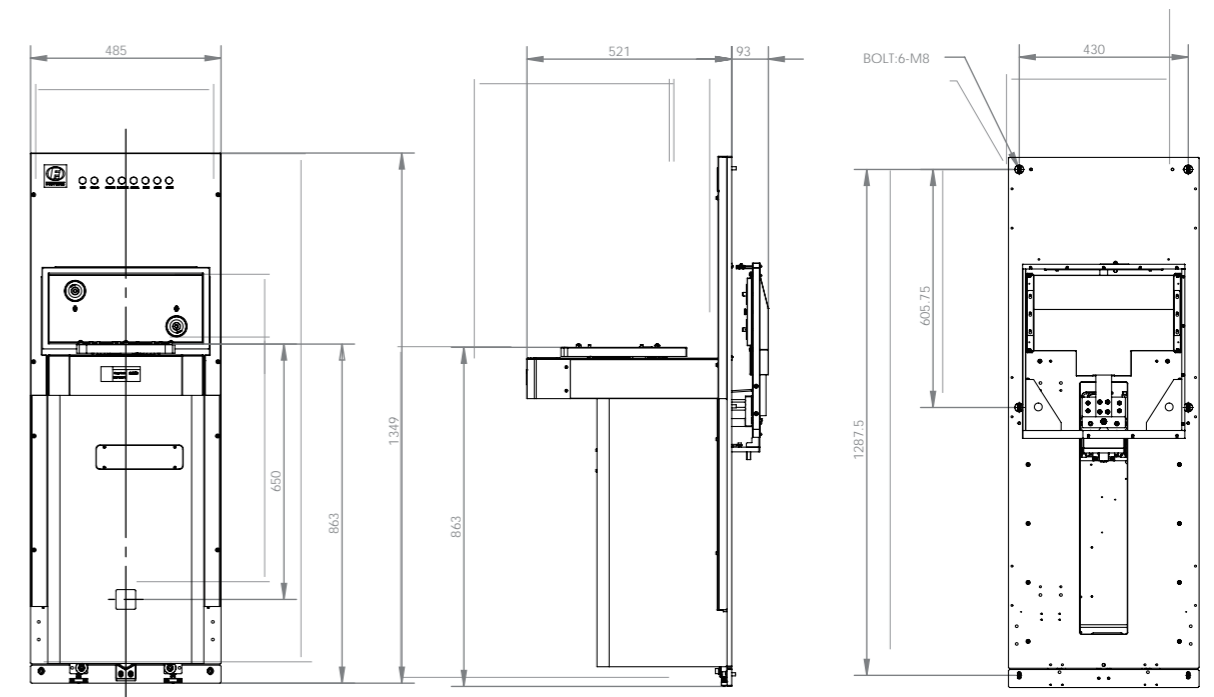
Top View



Top View

Side View

Rear View



Panel LoadPort

Fortrend Panel LoadPort is an efficient equipment interface specifically designed for FO-PLP (Fan-Out Panel Level Package) packaging processes. It enables clean, high-precision transfer of glass substrates and seamless integration with packaging equipment, ensuring automation and high yield in the production process.



Full machine production is self-reliant, with core components and patents owned independently

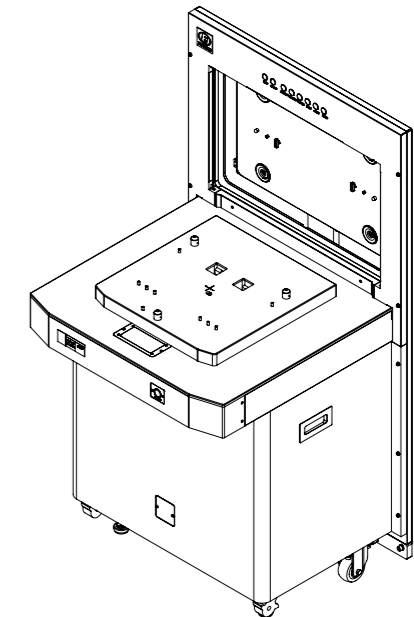
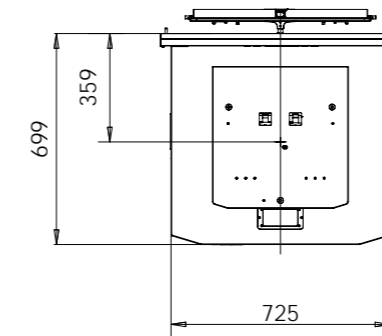
The software and hardware design complies with SEMI standards and general specifications

Diverse functional configuration options are available to meet a wide range of working conditions

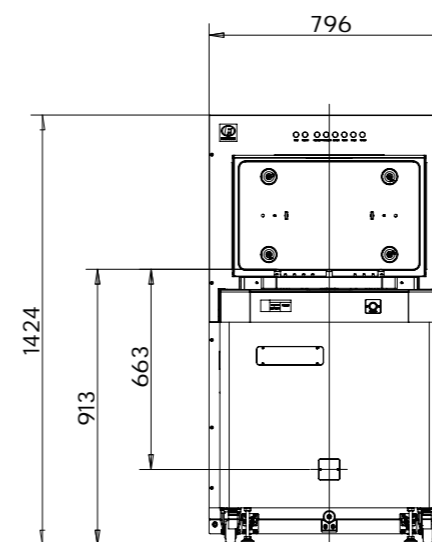
Specification parameter		
Machine Dimensions	H 1424 mm * W 796 mm * L 732 mm	
Prepared Weight	100 kg ± 1 kg (varies depending on configuration)	
Rated Voltage	DC 24 V	
Rated Current	8 A	
Rated Power	192 W	
Communication Method	Serial communication RS-232C, parallel communication I/O	
Communication Protocol	HEX, ASCII	
Carrier Size	SEMI standard Panel FOUP compliant	
Load Height	913 mm ± 10 mm	
Facility Requirements	Positive Pressure	0.5 ~ 0.6 MPa (Ø 6 air tube)
	Negative Pressure	< - 80 kPa (Ø 6 air tube)
Optional Components	Automated Material Handling System Communication Interface (E84)	
	Mechanical/Electronic (Electronic is standard by default)	
	Cables (PIO cable, 485 debug cable, RS232 debug cable)	

PRODUCT VIEW

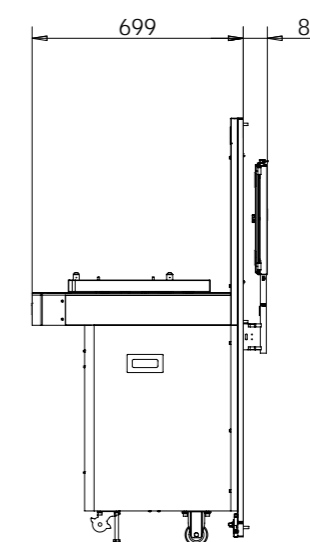
Top View



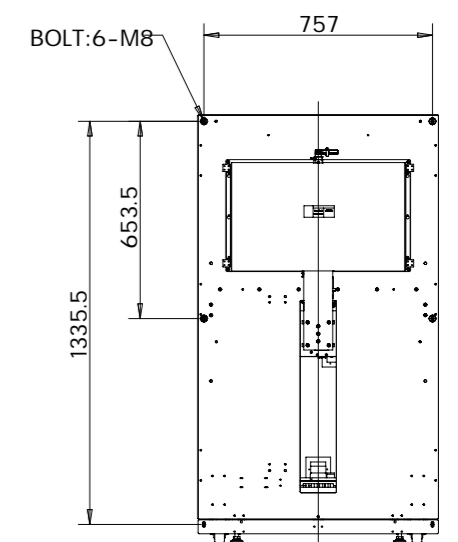
Top View



Side View



Rear View



Wafer Open Cassette Stage

Fortrend Wafer OCS (Open Cassette Stage) can accommodate wafer cassettes of various sizes, supports both open and semi-open designs, and is equipped with a protective cover to reduce the risk of particle contamination. It ensures cleanliness and stability during wafer transfer and is widely applicable to semiconductor equipment such as EFEM (Equipment Front End Module) and Sorter.



Wafer OCS with Enclosure Bracket

Wafer OCS

Wafer OCS with Enclosure

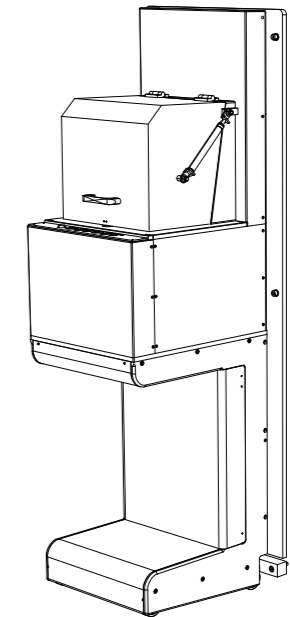
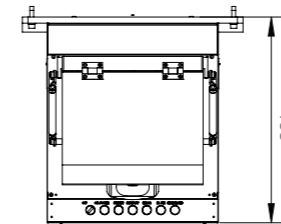
A variety of customizable accessories are available to flexibly meet the needs of different working conditions.

Specifically designed for Wafer Open Cassette.

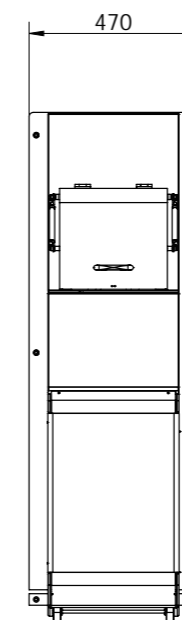
It can be equipped with the original factory Mapping system, capable of detecting overlapping and tilted wafers, effectively preventing wafer collisions during transfer.

PRODUCT VIEW

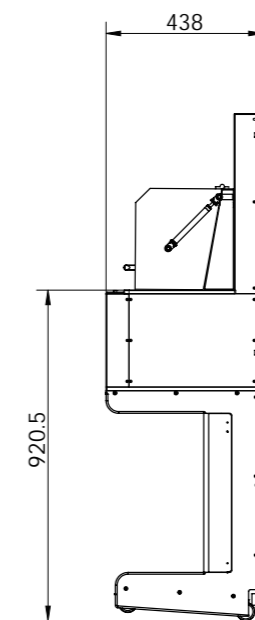
Top View



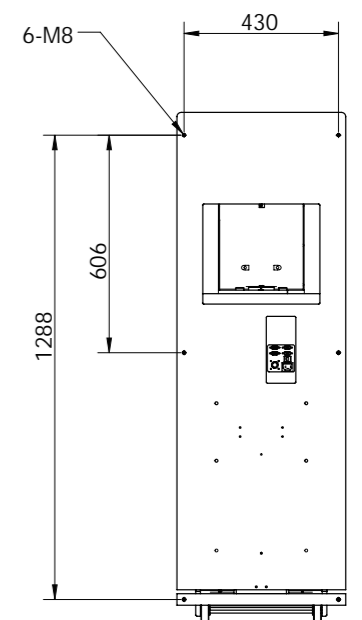
Top View



Side View



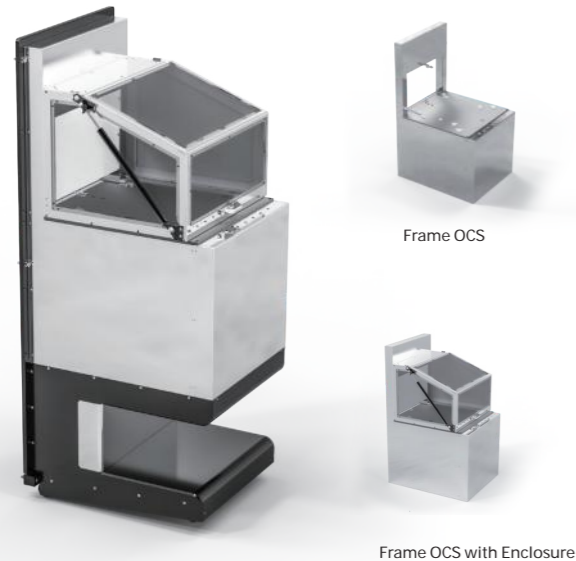
Rear View



Specification parameter	
Machine Dimensions	425mm*365mm*772mm (varies depending on configuration)
Prepared Mass	35~100±0.5kg (varies depending on configuration)
Rated Voltage	DC 24 V
Rated Current	6 A
Rated Power	144W
Communication Method	RS232
Communication Protocol	HEX, ASCII
Carrier Size	SEMI standard Open Cassette compliant
Optional Components	RFID
	Mapping (left-right sweep, front-back sweep)
	Enclosure (metal enclosure, plastic enclosure)
	Port Bracket

Frame Open Cassette Stage

Fortrend Wafer OCS (Open Cassette Stage) can accommodate wafer cassettes of various sizes, supports both open and semi-open designs, and is equipped with a protective cover to reduce the risk of particle contamination. It ensures cleanliness and stability during wafer transfer and is widely applicable to semiconductor equipment such as EFEM (Equipment Front End Module) and Sorter.



A variety of customizable accessories are available to flexibly meet the needs of different working conditions

Specifically designed for Frame Open Cassette

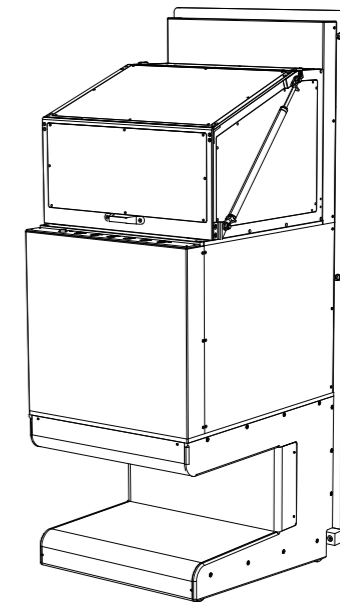
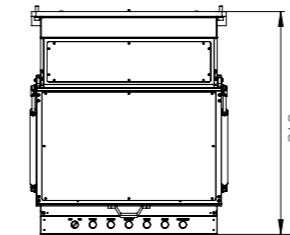
It can be equipped with the original factory Mapping system, capable of detecting overlapping and tilted wafers, effectively preventing wafer collisions during transfer

Frame OCS with Enclosure Bracket

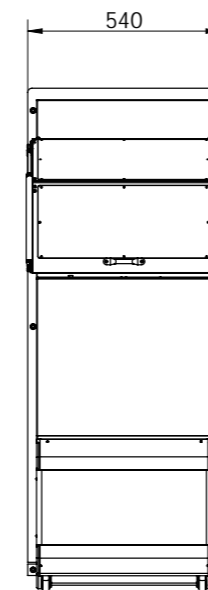
Specification parameter	
Machine Dimensions	425mm*365mm*772mm (varies with configuration)
Prepared Mass	60~130±1kg (varies with configuration)
Rated Voltage	DC 24 V
Rated Current	6 A
Rated Power	144W
Communication Method	RS232
Communication Protocol	HEX, ASCII
Carrier Size	SEMI standard compliant Open Cassette
Optional Components	RFID
	Mapping (left-right sweep, front-back sweep)
	Enclosure (metal enclosure, plastic enclosure)
	Port Bracket

PRODUCT VIEW

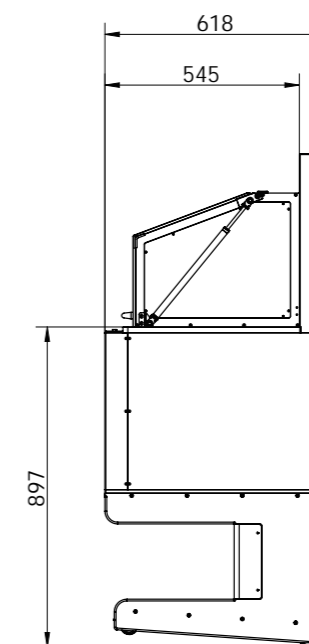
Top View



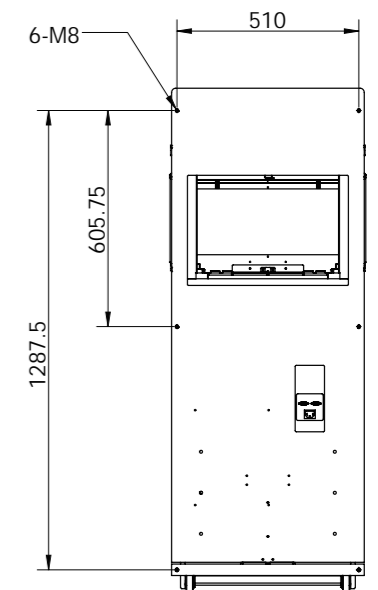
Top View



Side View



Rear View



SMIF Load port Solutions Images



AMAT Endura Wide Body 2x PLUS 500S



AMAT Verity 2x PLUS 500S with Mini-Environment



AMAT Endura Wide Body 2x PLUS 500S



Centrothermc.Activator 200 2x PLUS 500S



AMAT Centura Wide Body 2x PUS 500S



AMAT Centura Narrow Body 2x PLUS 500R



AMAT Producer 2x PLUS 500R



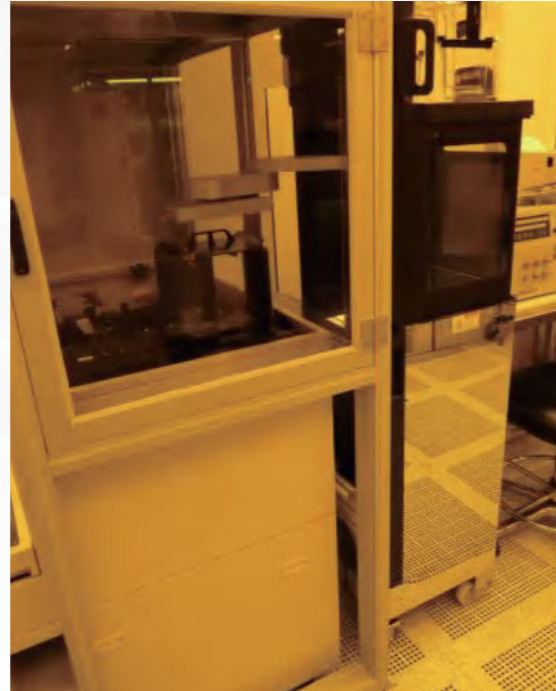
EBARA-FREX 200 4x PLUS 500S

SMIF Load port Solutions Images

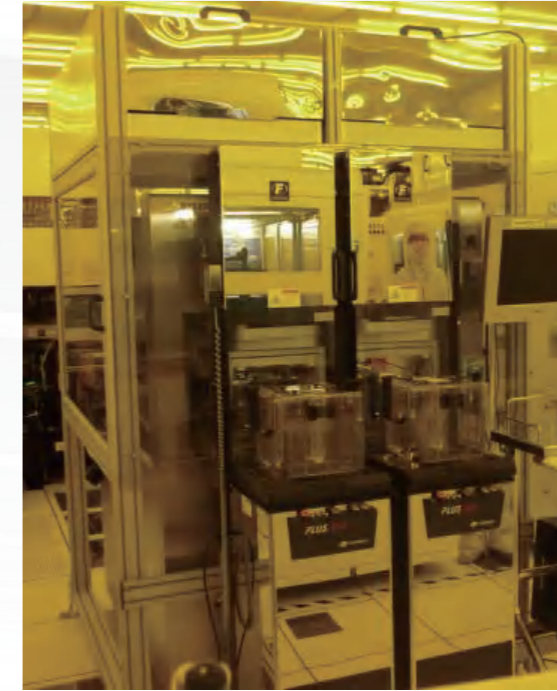
SMIF Load port Solutions Images



Screen Z12000
2x PLUS 500R



Nikon Opti Station PLUS 500R
with Mini-Environment



Lam Rainbow 4520 with 2x
PLUS 500S with Mini-Environment



LAM TCP9608PTX
2x PLUS 500R



Hitachi S-9200S
3x PLUS 500S



Kokusai KE-DD-853 Furnace
2x PLUS 500CX



LAM-TCP-9408SE PLUS
500SL-&PLUS 500S-R



MattsOn ASPEN 2x
PLUS 500Sx

SMIF Load port Solutions Images



Novellus-CONCEPTONE
2x PLUS 500S & Minienvironment



Novellus-CONCEPT 2 2x
PLUS 500S and Mini-Environment



Axcelis GSD 200E PLUS 500S



Eaton NV-MC3 3x PLUS 500S



NovelluS-PEPIRIDIA 2 PLUS 500S



AMAT P5000 PLUS 500R



TEL UWO200Z 2x PLUS 500S



TEI Mark 8 Track 2x PUS 500S

SMIF Load port Solutions Images

**SMIF Load port
Solutions Images**



Ushio UV1250 PLUS 500S



Varian EHP220
2x PLUS 500S+ Mini-Environment



TEL ACT 8 3x PLM 200UL



TEL ACT 8 PLUS 500SL-L
PLUS 500SR-R PLUS 500S-R



SPTS fxP Platform 2x PLUS 500R



SUSS MA200 Aligner 2x PLUS 500SD



Akרון GAMA Wet Bench 2x PLUS 500S



ONTO Imperia 2x PLUS 500S
+ Mini-Environment

SMIF Load port Solutions Images

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ONTO Vertex 2x PLUS 500S + Mini-Environment



Mechatronics Wafer Sorter 4x PLM 200W on Boltinterface



ASM A400 DUO PLUS 500F



Evatec Clusterline 200 2x PLUS 500R



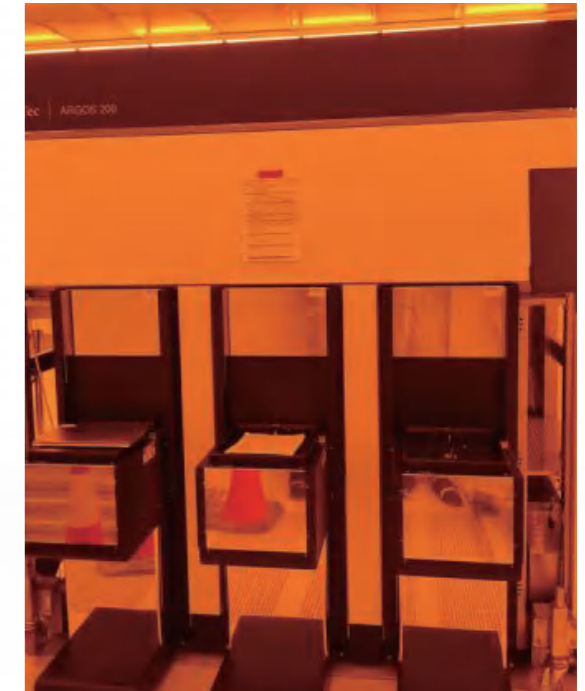
Picosun Morpher 2x PLUS 500R



MPI PLUS 500S

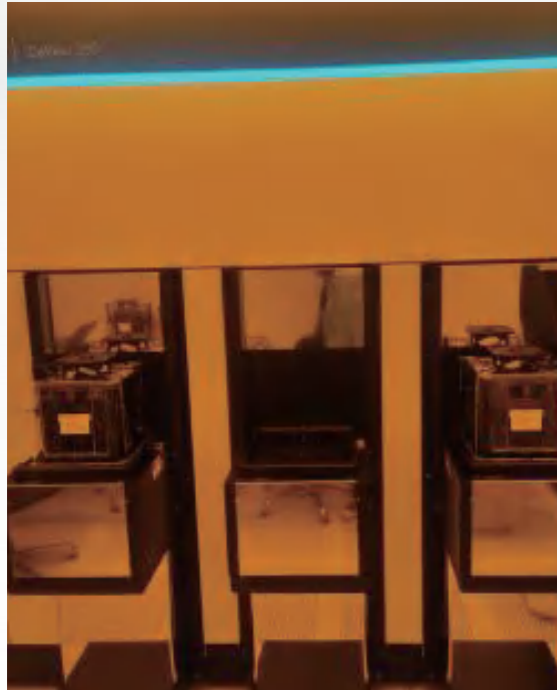


Rigaku TXRF 3760 PLUS 500S



MueTec Argos 200 3x PLM 200W on Bolt interface

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MueTec DaVinci 200 3x PLM 200W on BoltInterface



Micro Control 2x PLM 200W on BoltInterface



RENA Wet Bench 4XPLM 500LM



Veeco Wafer Storm 2x PLM 200W on Bolt interface



EVG 850 TB 4x PM 200W on BoltInterface



DISCO DFD6363 PLUS 500SDH(Heavy LiftArm)



AIXTRON 2x PLUS 500R



CANON STEPPER 2x PLUS 500UX

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