

FlexTRAK™ -WR Plasma System

Uniform Wafer Processing

Features and Benefits

- Superior uniform plasma with high etch rates
- Production-ready wafer handling
- Autonomous machine operation
- Easily service-able components accessible via front pull-out shelves
- High throughput
- Low cost of ownership

Superior Plasma Technology for High Throughput Wafer Processing

The FlexTRAK-WR system is designed for high-throughput processing of semiconductor wafers up to 300mm (12 in.) in diameter. The patented plasma chamber design provides exceptional etch uniformity and process repeatability. Its three-axis symmetrical chamber ensures all areas of the wafer are treated uniformly, while tight control over all process parameters ensures highly repeatable results.

The universal architecture of the FlexTRAK-WR system accommodates a wide range of wafer sizes in the same systems, yielding unmatched production flexibility. Its small chamber volume and proprietary process control system provide short cycle times, with high machine autonomy.

FlexTRAK-WR is also capable of direct, downstream or ion-free plasma processing for a wide range of semiconductor applications. FlexTRAK-WR three-axis symmetrical chamber and proprietary process control provides unmatched process uniformity while minimizing cycle times.



Applications

Wafer processing prior to typical back-end packaging steps - suitable for wafer-level packaging, flip chip, or traditional packaging.

Wafer Cleaning

- Remove contamination prior to wafer bumping
- Remove organic contamination
- Remove Fluorine and other halogen contamination
- Remove metal and metal oxides
- Improve spun-on film adhesion
- Clean Aluminum bond pads

Wafer Etching

- Descum wafer of residual photoresist / BCB
- Pattern dielectric layers for redistribution
- Strip / Etch photoresist
- Enhance adhesion of wafer-applied materials
- Remove excess wafer-applied mold / epoxy
- Enhance adhesion of gold, solder bumps
- Destress wafer to reduce breakage



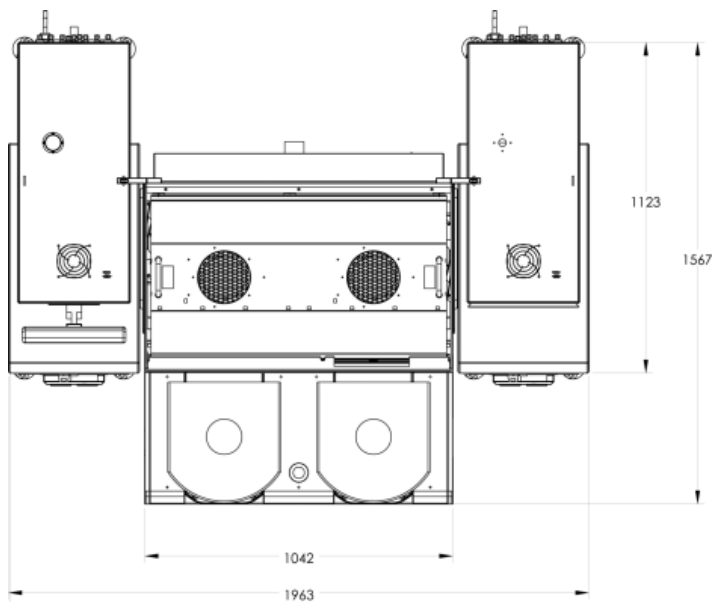
High Throughput Processing

The FlexTRAK-WR system's integrated semiconductor wafer handling system provides rapid material transfer for a wide range of wafer sizes. Processing can be done from most types of wafer cassettes and front opening unified pods (FOUP). The patented chamber design and control architecture enables short plasma cycle times with very low overhead, ensuring that throughput for your application is maximized and cost of ownership is minimized.

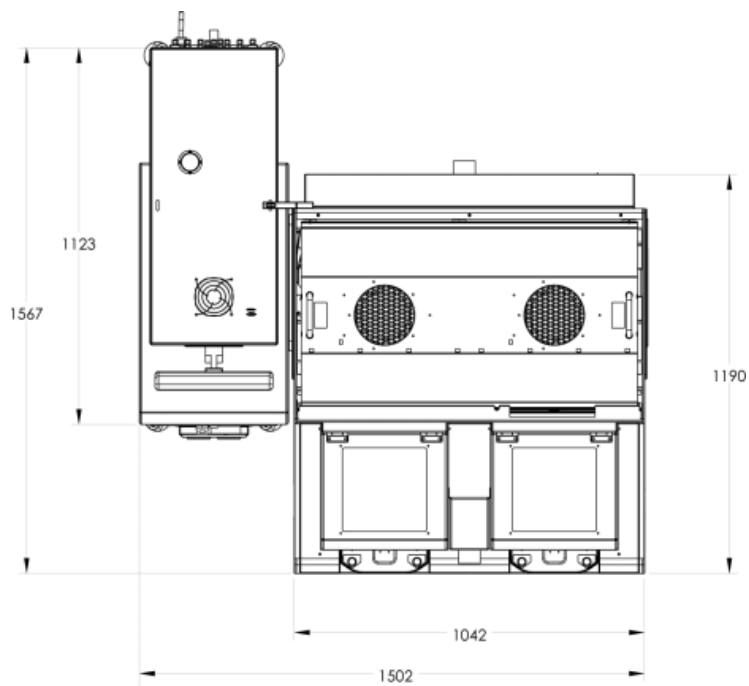
Specifications: FlexTRAK-WR

Enclosure Dimensions	W x D x H – Footprint	One (1) Process Module: 1502 W x 1950 D x 1567 H mm (59 W x 77 D x 62 H in.)
		Two (2) Process Modules: 1963 W x 1950 D x 1567 H mm (77 W x 77 D x 62 H in.)
	Net Weight	295 kg (650 lbs)
	Effective Footprint – Clearances	Right, Left, Back – 153 mm (6 in.), Front – 914 mm (36 in.)
Chamber	Dimensions	330 W x 330 D x 50 H mm (13 W x 13 D x 2 H in.)
	Volume	5.5 liters (338 in ³)
	Variable Electrode Configurations	150 mm, 200 mm and 300 mm Wafer Sizes
Electrodes	Powered Electrode Dimensions - Working Area	305 W x 305 D (mm); 12 W x 12 D (in.)
RF Power	Standard Wattage	600 W
	Frequency	13.56 MHz
Gas Control	Maximum Number of MFCs	4
Control System	PLC Control with PC Based Touch Screen Interface	
Remote Interface	SMEMA; SECS/GEM	Optional
Vacuum Pump	Dry vacuum pump	16 CFM Variable Frequency Drive
Facilities	Power Supply	220VAC, 20A, 50/60Hz, Single Phase, 12 AWG, 3-Wire
	Process Gas Fitting Size & Type	.25-in. OD Swagelok Tube
	Process Gas Purity	Industrial grade or better
	Process Gas Pressure	Regulated from .69 bar (10 psig) min. to 1 bar (15 psig) max.
	Purge Gas Fitting Size & Type	.25-in. OD Swagelok Tube
	Purge Gas Purity	Industrial grade Nitrogen or CDA
	Purge Gas Pressure	Regulated from 2 bar (30 psig) min. to 5.5 bar (80 psig) max.
	Pneumatic Valves Fitting Size & Type	.25-in. OD Swagelok Tube
	Pneumatic Gas Purity	CDA, Oil Free, Dewpoint <=7°C /45°F, Particulate Size <5 micron
	Pneumatic Gas Pressure	Regulated from 3.4 bar (50 psig) min. to 5.5 bar (80 psig) max.
	Exhaust	25.4mm (1 in.) OD Pipe Flange
	Vacuum Source	-80 kPa (-23.3 in. Hg)
Compliance	Certifications	CE Marked, SEMI S2/S8 (EH&S/Ergonomics), Cleanroom, SEMI E-10
Ancillary Equipment	Optional Equipment	Nitrogen generator, Hydrogen generator (Requires Additional Non-Optional Hardware), Scrubber
Shipping	Crate Dimensions	Crates 1&2 - 1397W x 1067L x 2032H mm (55W x 42L x 80H in.) Crate 3 - 1829W x 1829L x 2185H mm (72W x 72L x 86H in.)
	Gross Weight	Crates 1&2 - 445kg (950lbs) Crate 3 – 692kg(1525lbs)

FlexTRAK-WR Plasma System Footprint Diagrams



FlexTRAK-WR 300 system with 2 Process Modules and 2 FOUP load stations



FlexTRAK-WR 200 system with 1 Process Module and 2 Open Cassette load stations

FlexTRAK-WR Wafer Size & Throughput Chart

Wafer Size (width)	Process Modules		Wafers Per Hour (WPH)*	
150 mm	1	2	137	274
200 mm	1	2	80	160
300 mm	1	2	80	160
150/200/300	Handling only		Up to 400	
*Machine capable rates				



FlexTRAK-WR 200 Plasma System

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FlexTRAK-WR Reformatted Rev. A

