AP-600 Plasma System

Bench-Top Plasma Treatment

Features and Benefits

- **Touch screen control and graphical user interface give real-time process information**
- **Flexible shelf architecture allows processing of a wide variety of piece parts, components or carriers**
- **13.56 MHz RF generator with automatic matching network delivers excellent process repeatability**
- **Convenient facility hook-ups for periodic calibration requirements used in validation processes**

State-of-the-art plasma treatment in a compact, bench-top configuration

The AP-600 plasma system from Nordson MARCH is designed to deliver exceptionally uniform plasma cleaning and treatment with unmatched ease of operation, reliability and low cost.

The AP-600 plasma system is completely self-contained, requiring minimal bench space. The system chassis houses the plasma chamber, control electronics, 13.56 MHz RF generator, and the automatic matching network (only the vacuum pump is external to the system). Maintenance access is provided through an interlocked door or removable panels.

The plasma chamber is constructed of high-quality aluminum with aluminum fixtures for superior durability. The plasma chamber supports up to 7 removable and adjustable powered or grounded shelves to accommodate a wide range of piece-parts, components, and part carriers including magazines, trays, and boats.

Plasma cleaning, surface activation and adhesion improvement

The AP-600 plasma system is suitable for a wide variety of plasma cleaning, surface activation and adhesion improvement applications. These capabilities are used for semiconductor manufacturing, microelectronic packaging and assembly, and by manufacturers of medical and life science devices.

The AP-600 plasma system can accommodate a wide range of process gases including argon, oxygen, hydrogen, helium, and fluorinated gases. The system comes standard with two electronic mass flow controllers for optimal gas control, with another two available optionally (four total max.).

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Specifications: AP-600 Plasma System

Enclosure Dimensions	**W x D x H – Footprint**	569 W x 869 D x 704 H mm (22.4 W x 32.9 D x 27.7 H in.)
	Net Weight	221 kg (488 lbs)
	Effective Footprint – Clearances	Right, Left, Front – 569 mm (23 in.), Back – 254 mm (10 in.)
Chamber	**Dimensions**	406 W x 465 D x 267 H mm (16 W x 18.3 D x 10.5 H in.)
	Volume	50 liters (3024 in^3)
	Variable Electrode Configurations	Direct and Downstream
	Number of Shelf Positions	7
	Shelf Pitch	25.4 mm (1 in.)
Electrodes	**Powered Electrode Dimensions - Working Area**	330 W x 330 D (mm); 13 W x 13 D (in.)
	Ground (Perf.) Electrode Dimensions – Working Area	368 W x 330 D (mm); 14.5 W x 13 D (in.)
	Floating Shelf Dimensions – Working Area	330 W x 330 D (mm); 13 W x 13 D (in.)
RF Power	**Standard Wattage**	600 W
	Frequency	13.56 MHz
Gas Control	**Maximum Number of MFCs**	4
Control System	**PLC Controlled with Touchscreen Interface**	
Remote Interface	**PlasmaLINK; ProcessLINK**	Optional
Vacuum Pump	**Rotary Vane Pump Charged for Oxygen Service**	19.5 CFM at 60Hz wet pump with oil mist eliminator
Facilities	**Power Supply**	110VAC, 20A, 50/60Hz, Single Phase, 12AWG, 3-Wire OR 220VAC, 10A, 50/60Hz, Single Phase, 12AWG, 3-Wire
	Process Gas Fitting Size & Type	.25-in. OD Swagelok Tube
	Process Gas Purity	Industrial grade or better
	Process Gas Pressure	Regulated from .69bar (10PSI) min. to 1bar (15PSI) 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	38 mm (1.5 in.) OD Pipe Flange
Compliance	**SEMI S2/S8 compliant**	Yes
	CE marked	Yes
	Cleanroom compatible	Yes
	SEMI E-10	Yes
Shipping	**Crate Dimensions**	1575 W x 1143 L x 1143 H mm (62 W x 45 L x 45 H in.)
	Gross Weight	339 kg (750 lbs)

Optional / Ancillary Equipment	Oil Filtration Unit
	Nitrogen Generator
	Hydrogen Delivery Kit

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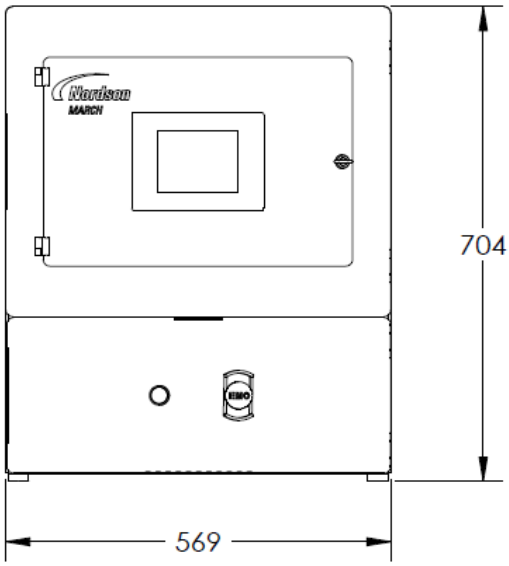
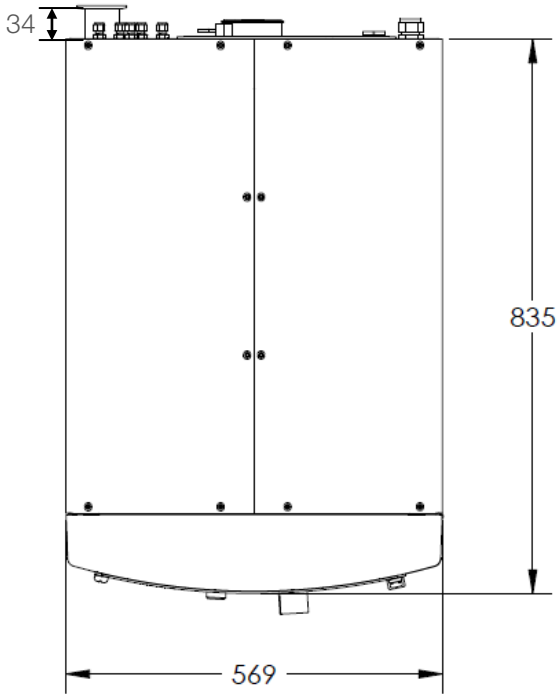
AP-600 Plasma System Footprint Diagrams

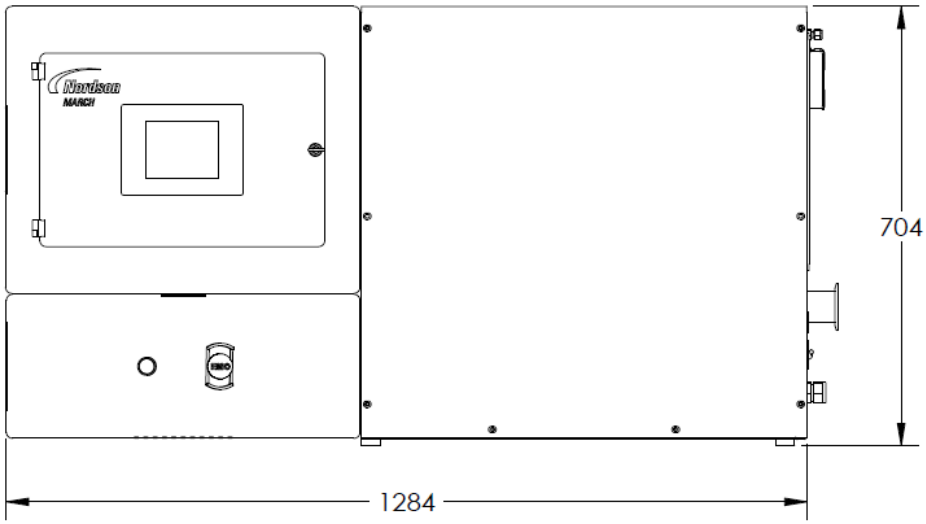


AP-600 – Front View



AP-600 – Top View

All measurements are in millimeters (mm)



AP-600 – Side View with Doors Open

Applications: AP-600 Plasma System

AP-600 Plasma Treatment System

Semiconductor and Microelectronic Applications

- Pre-die attach for enhanced die adhesion
- Pre-wire bonding for improved wire bonds
- Pre-mold & encapsulation for reduced delamination
- Pre-flip chip underfill (FCUF) for faster, void-free fluid flow, improved filet height and uniformity, and better adhesion of the underfill material

Medical and Life Science Applications

- Stent & catheter cleaning and bonding
- Enabling adhesion of non-compatible materials
- Tack reduction of silicone molded parts
- Increasing lubricity

For more information, speak with your local representative or contact your regional office.

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