

AP-1000 Plasma System

Features and Benefits

- PLC controller with touch screen provides an intuitive graphical interface and real time process representation
- Flexible shelf architecture allows processing of a wide variety of part carriers in either direct or downstream plasma mode
- 13.56 MHz RF generator has automatic impedance matching for unparalleled process reproducibility
- Proprietary software control system generates process and production data for statistical process control



Uniform plasma treatment for the most demanding production environments

The Nordson MARCH AP-1000 system is designed to meet the rigorous demands of 24-hour operation in high performance manufacturing environments. The system delivers uniform plasma treatment with unmatched reliability, safety and ease of operation.

The AP-1000 system is completely self-contained, requiring minimal floor space. The pump, chamber, control electronics, and 13.56 MHz RF generator are housed in a single enclosure. Full front access allows for convenient access to all interior components. The pump is positioned on rollers for easy removal.

The plasma chamber is constructed of 11-gauge stainless steel with aluminum fixtures for superior durability. The chamber has multiple removable and adjustable shelves to accommodate a range of part carriers, including magazines, trays, wafer and Auer® boats.

Enhanced productivity for high-volume capacity requirements

The AP-1000 system with optional HTP (high throughput) shelves combines the reliability and process quality of the AP-1000 system with the proven benefits of Nordson MARCH's unique shelf design. The AP-1000 HTP system optimizes use of the reactive ions found in RF plasma, increasing treatment uniformity while decreasing process time.

The AP-1000 HTP system allows selection from a range of process gases such as Argon, Hydrogen and Helium. It comes standard equipped with four mass flow controllers for optimal gas control. Slotted magazines are placed vertically inside the chamber.

Additionally, slotted magazines can be placed vertically inside the chamber. Typically, each magazine holds a minimum of 20 lead frames. The AP-1000 plasma chamber can hold up to 12 magazines, depending on magazine size.

Specifications: AP-1000 Plasma System

Enclosure Dimensions	W x D x H – Footprint	680W x 1127D x 1890H (26.77W x 62.3D x 74.4H in.)
	Net Weight	485 kg (1069 lbs)
	Equipment Clearances	Right, Left – 153 mm (6 in.), Front – 680 mm (27 in.) Back – 483 mm (19 in.) min.
Chamber	Maximum Volume	127 liters (7774 in ³)
	Variable Electrode Configurations	Power-Ground, Ground-Power, Power-Power
	Number of Electrode Positions	14
	Electrode Pitch	25.4 mm (1 in.) for 600 W 50.8 mm (2 in.) for 1000 W
Electrodes	Powered Working Area	349W x 425D mm (13.74W x 16.73D in.)
	Ground/Perforated Working Area	384W x 425D mm (15.12W x 16.73D in.)
	Floating Working Area	349W x 425D mm (13.74W x 16.73D in.)
RF Power	Standard Wattage	600 W
	Optional Wattage	1000 W
	Frequency	13.56 MHz
Gas Control	Available Flow Volumes	10, 25, 50, 100, 250, 500, 1000, 2000 or 5000 sccm
	Maximum Number of MFCs	4
Control & Interface	Software Control	PLC Control with Touch Screen Interface
	Remote Interface	PlasmaLINK, ProcessLINK, SECS/GEM
Vacuum Pump	Standard Wet Pump	53 cfm with Oxygen Oil Mist Eliminator
	Optional Wet Pump	53 cfm with Corrosive Oil Mist Eliminator
	Optional Purged Dry Pump	63 cfm
	N2 Purged Pump Flow	14 slm
	Cooling Water Purged Pump Flow	5 slm
Facilities	Power Supply	220 V, 25 A, 50/60 Hz, 3-Phase, 8 AWG, 4-Wire 380 V, 25 A, 50/60 Hz, 3-Phase, 8 AWG, 5-Wire
	Process Gas Fitting Size & Type	6.35 mm (0.25 in.) OD Swagelok Tube
	Process Gas Purity	Lab or Electronic Grade
	Process Gas Pressure	0.69 bar (10 psig) min. to 1.03 bar (15 psig) max., regulated
	Purge Gas Fitting Size & Type	6.35 mm (0.25 in.) OD Swagelok Tube
	Purge Gas Purity	Lab or Electronic Grade N2/CDA
	Purge Gas Pressure	2 bar (30 psig) min. to 6.9 bar (100 psig) max., regulated
	Pneumatic Valves Fitting Size & Type	6.35 mm (0.25 in.) OD Swagelok Tube
	Pneumatic Gas Purity	CDA, Oil Free, Dewpoint $\leq 7^{\circ}\text{C}$ (45°F), Particulate Size <5 μm
	Pneumatic Gas Pressure	3.45 bar (50 psig) min. to 6.89 bar (100 psig) max., regulated
Compliance	Exhaust	38 mm (1.5 in.) OD Pipe Flange
	SEMI	S2/S8 (EH&S/Ergonomics)
Ancillary Equipment	International	CE Marked
	Gas Generators	Nitrogen, Hydrogen (Requires Additional Non-Optional Hardware)
	Facilities	Chiller, Scrubber

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