

# PD-1000 Plasma Deposition System

## Features and Benefits

- 13.56 MHz RF generator has automatic impedance matching for high quality films
- Pulsed RF to enhance the properties of plasma polymerized films
- Gas vapor, or heated liquid monomer vapor delivery system to deposit coatings
- Flexible shelf architecture allows processing of a wide variety of parts
- Proprietary software control system generates process and production data for statistical process control
- PLC controller with touch screen provides an intuitive graphical interface and real-time process representation
- Optional intraluminal deposition capability



## Uniform plasma polymerization for the most demanding production deposition requirements

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

The PD-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. The vapor delivery system is expertly integrated into the base system for ease of access, maintenance and control. 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 parts.

## Enhanced productivity for high-volume capacity requirements

The PD-1000 system combines the reliability and process quality of the AP-1000 system and proven benefits of Nordson MARCH's industry leading design. The PD-1000 system optimizes use of the reactive ions found in RF plasma, increasing deposition uniformity while decreasing process time.

The PD-1000 system allows selection from a range of process gases such as Argon, Hydrogen and Helium. It comes standard equipped with two mass flow controllers for optimal gas control. Additionally, various liquid agents can be heated, vaporized and deposited.

## Specifications: PD-1000 Plasma Deposition System

<b>Enclosure Dimensions</b>	<b>W x D x H – Footprint</b>	1136W x 1186D x 1890H mm (44.7W x 46.7D x 74.4H in.)
	<b>Net Weight</b>	485 kg (1069 lbs)
<b>Chamber</b>	<b>Maximum Volume</b>	127 liters (7774 in <sup>3</sup> )
	<b>Variable Electrode Configurations</b>	Power-Ground, Ground-Power, Power-Power
	<b>Number of Electrode Positions</b>	14
	<b>Electrode Pitch</b>	25.4 mm (1 in.) for 600 W 50.8 mm (2 in.) for 1000 W
<b>Electrodes</b>	<b>Powered Working Area</b>	349W x 425D mm (13.74W x 16.73D in.)
	<b>Ground/Perforated Working Area</b>	384W x 425D mm (15.12W x 16.73D in.)
	<b>Floating Working Area</b>	349W x 425D mm (13.74W x 16.73D in.)
<b>RF Power</b>	<b>Standard Wattage</b>	600 W
	<b>Optional Wattage</b>	1000 W
	<b>Frequency</b>	13.56 MHz
<b>Gas Control</b>	<b>Available Flow Volumes</b>	10, 25, 50, 100, 250, 500, 1000, 2000 or 5000 sccm
	<b>Maximum Number of MFCs</b>	4
<b>Control &amp; Interface</b>	<b>Software Control</b>	PLC Control with Touch Screen Interface
	<b>Remote Interface</b>	PlasmaLINK, ProcessLINK, SECS/GEM
<b>Vacuum Pump</b>	<b>Standard Purged Dry Pump</b>	63 cfm
<b>Facilities</b>	<b>Power Supply</b>	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
	<b>Process Gas Fitting Size &amp; Type</b>	6.35 mm (0.25 in.) OD Swagelok Tube
	<b>Process Gas Purity</b>	Industrial Grade or better
	<b>Process Gas Pressure</b>	0.69 bar (10 psig) min. to 1.7 bar (25 psig) max., regulated
	<b>Purge Gas Fitting Size &amp; Type</b>	6.35 mm (0.25 in.) OD Swagelok Tube
	<b>Purge Gas Purity</b>	97% N <sub>2</sub>
	<b>Purge Gas Pressure</b>	2 bar (30 psig) min. to 6.9 bar (100 psig) max., regulated
	<b>Pneumatic Valves Fitting Size &amp; Type</b>	6.35 mm (0.25 in.) OD Swagelok Tube
	<b>Pneumatic Gas Purity</b>	CDA, ISO 8573-1:2010[4:3:2]
	<b>Pneumatic Gas Pressure</b>	3.45 bar (50 psig) min. to 6.89 bar (100 psig) max., regulated
	<b>Exhaust</b>	NW 40 connection Negative Draw, -1.5in/-38.1mm WC Draw, 63SFCM/1780SLM Maximum flow rate
	<b>System Coolant</b>	5.52 bar (80 psig) max static 2.76 bar (40 psig) min. differential between machine inlet and outlet: 3.8 Lpm (1.0 gpm) min. Inlet temp: 15-35 °C (60-95 °F), 5 °C min above dew point. Distilled Water; Inlet Fitting: 12.7mm (0.5 in.) OD hose barb, Outlet Fitting: 12.7mm (0.5 in.) OD hose barb
	<b>Compliance</b>	<b>SEMI</b>
<b>International</b>		CE Marked
<b>Ancillary Equipment</b>	<b>Gas Generators</b>	Nitrogen, Hydrogen (Requires Additional Non-Optional Hardware)
	<b>Facilities</b>	Chiller, Scrubber

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

**North America**  
Headquarters  
Concord, CA  
+1.925.827.1240

**China**  
Shanghai  
+86.21.3866.9166

**EMEA**  
Maastricht,  
Netherlands  
+31.65.155.4996

**S.E. Asia**  
Singapore  
+65.6796.9518

**Korea**  
Seoul  
+82.31.739.6374

**Taiwan**  
New Taipei City  
+886.2.2902.1860

**India**  
Chennai  
+91.44.4353.9024

[www.nordsonmarch.com](http://www.nordsonmarch.com)

[info@nordsonmarch.com](mailto:info@nordsonmarch.com)

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