

# AP-300 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-300 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-300 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-300 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-300 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.).

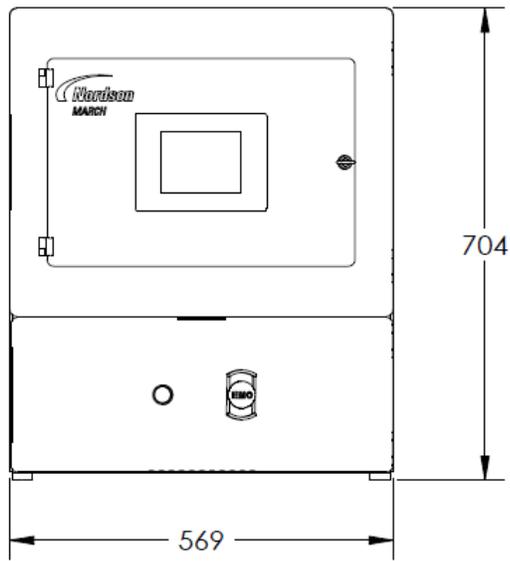
  
Nordson  
MARCH

## Specifications: AP-300 Plasma System

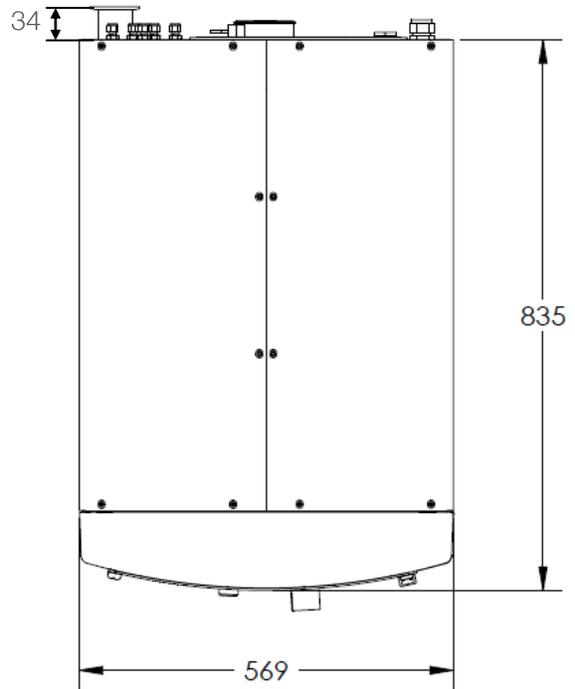
|                             |   |   |
|-----------------------------|---|---|
| <b>Enclosure Dimensions</b> | <b>W x D x H – Footprint</b>                              | 569 W x 869 D x 704 H mm<br>(22.4 W x 34.2 D x 27.7 H in.)      |
|                             | <b>Net Weight</b>   | 221 kg (488 lbs)  |
|                             | <b>Effective Footprint – Clearances</b>                   | Right, Left, Front – 569 mm (23 in.), Back – 254 mm (10 in.)    |
| <b>Chamber</b>              | <b>Dimensions</b>   | 267 W x 465 D x 267 H mm (10.5 W x 18.3 D x 10.5 H in.)         |
|                             | <b>Volume</b>   | 33.1 liters (2017.6 in <sup>3</sup> )                           |
|                             | <b>Variable Electrode Configurations</b>                  | Direct and Downstream   |
|                             | <b>Number of Shelf Positions</b>                          | 7   |
|                             | <b>Shelf Pitch</b>  | 25.4 mm (1 in.)   |
| <b>Electrodes</b>           | <b>Powered Electrode Dimensions - Working Area</b>        | 190 W x 330 D mm (7.5 W x 13 D in.)                             |
|                             | <b>Ground (Perf.) Electrode Dimensions – Working Area</b> | 229 W x 330 D mm (9 W x 13 D in.)                               |
|                             | <b>Floating Shelf Dimensions – Working Area</b>           | 190 W x 330 D mm (7.5 W x 13 D in.)                             |
| <b>RF Power</b>             | <b>Standard Wattage</b>                                   | 300 W   |
|                             | <b>Frequency</b>  | 13.56 MHz   |
| <b>Gas Control</b>          | <b>Maximum Number of MFCs</b>                             | 4   |
| <b>Control System</b>       | <b>PLC Control with Touchscreen Interface</b>             |   |
| <b>Remote Interface</b>     | <b>PlasmaLINK; ProcessLINK;</b>                           | Optional  |
| <b>Vacuum Pump</b>          | <b>Rotary Vane Pump charged for Oxygen Service</b>        | 19.5 CFM at 60 Hz wet pump with oil mist eliminator             |
| <b>Facilities</b>           | <b>Power Supply</b>                                       | 110-240 VAC, 50-60 Hz, 1-phase, 10 A                            |
|                             | <b>Process Gas Fitting Size &amp; Type</b>                | .25-in. OD Swagelok Tube  |
|                             | <b>Purity</b>   | Industrial grade or better                                      |
|                             | <b>Pressure &amp; Flow</b>                                | Regulated from .69bar (10PSI) min. to 1bar (15PSI) max.         |
|                             | <b>Purge Gas Fitting Size &amp; Type</b>                  | .25-in. OD Swagelok Tube  |
|                             | <b>Process Gas Purity</b>                                 | Industrial grade Nitrogen or CDA                                |
|                             | <b>Process Gas Pressure</b>                               | Regulated from 2 bar (30 psig) min. to 5.5 bar (80 psig) max.   |
|                             | <b>Pneumatic Valves Fitting Size &amp; Type</b>           | .25-in. OD Swagelok Tube  |
|                             | <b>Pneumatic Gas Purity</b>                               | CDA, Oil Free, Dewpoint <=7°C /45°F, Particulate Size <5 micron |
|                             | <b>Pneumatic Gas Pressure</b>                             | Regulated from 3.4 bar (50 psig) min. to 5.5 bar (80 psig) max. |
|                             | <b>Exhaust</b>  | 25.4mm (1 in.) OD Pipe Flange                                   |
| <b>Compliance</b>           | <b>SEMI S2/S8 compliant</b>                               | Yes   |
|                             | <b>CE Marked</b>  | Yes   |
|                             | <b>Cleanroom Compatible</b>                               | Yes   |
|                             | <b>SEMI E-10</b>  | Yes   |
| <b>Shipping</b>             | <b>Crate Dimensions</b>                                   | 1397 W x 1067 L x 2032 H mm (55 W x 42 L x 80 H in.)            |
|                             | <b>Gross Weight</b>                                       | 445 kg (950 lbs)  |

|                                       |                       |
|---------------------------------------|-----------------------|
| <b>Optional / Ancillary Equipment</b> | Oil Filtration Unit   |
|                                       | Nitrogen Generator    |
|                                       | Hydrogen Delivery Kit |

## AP-300 Plasma System Footprint Diagrams

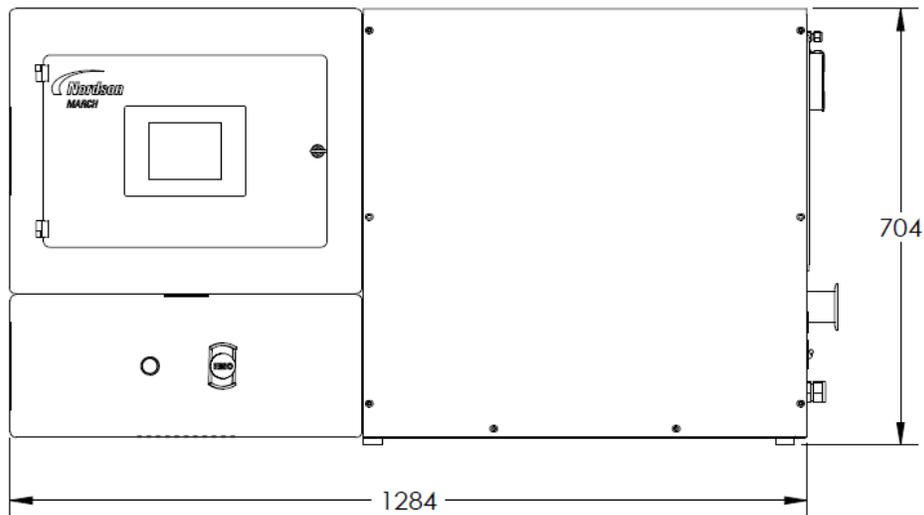


AP-300 – Front View



AP-300 – Top View

All measurements are in millimeters (mm)



AP-300 – Side View with Front Doors Open

## Applications: AP-300 Plasma 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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AP-300 Plasma Treatment System

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AP-300 Reformatted Rev. A (2013- 06)

# 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.).

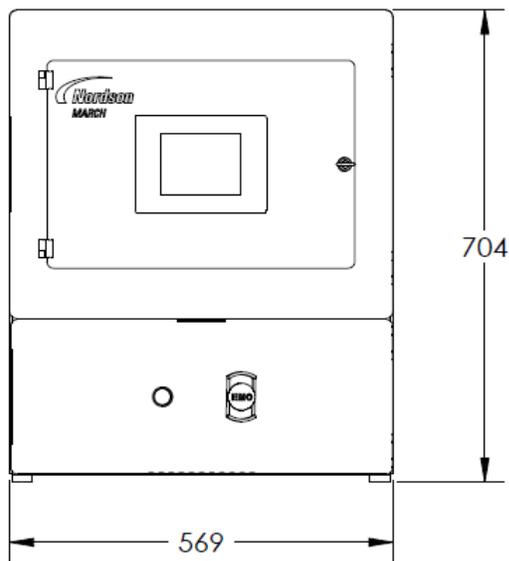
The logo for Nordson MARCH, featuring a blue swoosh above the word "Nordson" in a bold, blue, sans-serif font, with "MARCH" in a smaller, blue, sans-serif font below it.

## Specifications: AP-600 Plasma System

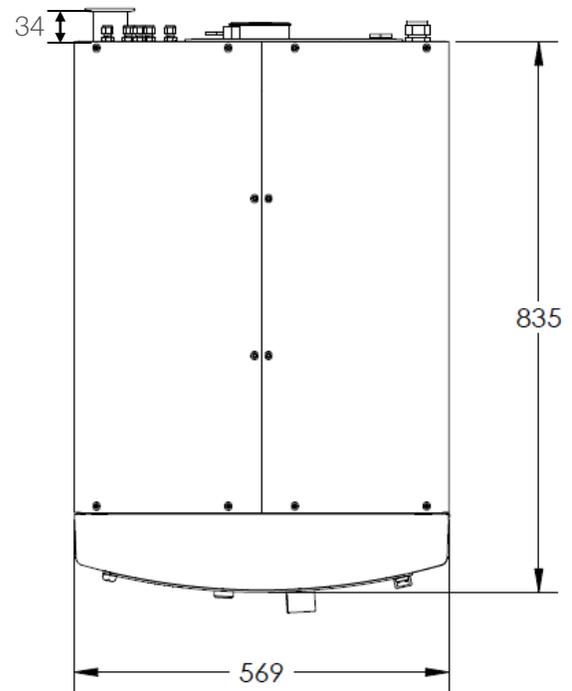
|                             |   |  |
|-----------------------------|---|--|
| <b>Enclosure Dimensions</b> | <b>W x D x H – Footprint</b>                              | 569 W x 869 D x 704 H mm<br>(22.4 W x 32.9 D x 27.7 H in.)   |
|                             | <b>Net Weight</b>   | 221 kg (488 lbs)   |
|                             | <b>Effective Footprint – Clearances</b>                   | Right, Left, Front – 569 mm (23 in.), Back – 254 mm (10 in.)   |
| <b>Chamber</b>              | <b>Dimensions</b>   | 406 W x 465 D x 267 H mm (16 W x 18.3 D x 10.5 H in.)  |
|                             | <b>Volume</b>   | 50 liters (3024 in <sup>3</sup> )  |
|                             | <b>Variable Electrode Configurations</b>                  | Direct and Downstream  |
|                             | <b>Number of Shelf Positions</b>                          | 7  |
|                             | <b>Shelf Pitch</b>  | 25.4 mm (1 in.)  |
| <b>Electrodes</b>           | <b>Powered Electrode Dimensions - Working Area</b>        | 330 W x 330 D (mm); 13 W x 13 D (in.)  |
|                             | <b>Ground (Perf.) Electrode Dimensions – Working Area</b> | 368 W x 330 D (mm); 14.5 W x 13 D (in.)  |
|                             | <b>Floating Shelf Dimensions – Working Area</b>           | 330 W x 330 D (mm); 13 W x 13 D (in.)  |
| <b>RF Power</b>             | <b>Standard Wattage</b>                                   | 600 W  |
|                             | <b>Frequency</b>  | 13.56 MHz  |
| <b>Gas Control</b>          | <b>Maximum Number of MFCs</b>                             | 4  |
| <b>Control System</b>       | <b>PLC Controlled with Touchscreen Interface</b>          |  |
| <b>Remote Interface</b>     | <b>PlasmaLINK; ProcessLINK</b>                            | Optional   |
| <b>Vacuum Pump</b>          | <b>Rotary Vane Pump Charged for Oxygen Service</b>        | 19.5 CFM at 60Hz wet pump with oil mist eliminator   |
| <b>Facilities</b>           | <b>Power Supply</b>                                       | 110VAC, 20A, 50/60Hz, Single Phase, 12AWG, 3-Wire <u>OR</u><br>220VAC, 10A, 50/60Hz, Single Phase, 12AWG, 3-Wire |
|                             | <b>Process Gas Fitting Size &amp; Type</b>                | .25-in. OD Swagelok Tube   |
|                             | <b>Process Gas Purity</b>                                 | Industrial grade or better   |
|                             | <b>Process Gas Pressure</b>                               | Regulated from .69bar (10PSI) min. to 1bar (15PSI) max.  |
|                             | <b>Purge Gas Fitting Size &amp; Type</b>                  | .25-in. OD Swagelok Tube   |
|                             | <b>Purge Gas Purity</b>                                   | Industrial grade Nitrogen or CDA   |
|                             | <b>Purge Gas Pressure</b>                                 | Regulated from 2 bar (30 psig) min. to 5.5 bar (80 psig) max.  |
|                             | <b>Pneumatic Valves Fitting Size &amp; Type</b>           | .25-in. OD Swagelok Tube   |
|                             | <b>Pneumatic Gas Purity</b>                               | CDA, Oil Free, Dewpoint <=7°C /45°F, Particulate Size <5 micron  |
|                             | <b>Pneumatic Gas Pressure</b>                             | Regulated from 3.4 bar (50 psig) min. to 5.5 bar (80 psig) max.  |
|                             | <b>Exhaust</b>  | 38 mm (1.5 in.) OD Pipe Flange   |
| <b>Compliance</b>           | <b>SEMI S2/S8 compliant</b>                               | Yes  |
|                             | <b>CE marked</b>  | Yes  |
|                             | <b>Cleanroom compatible</b>                               | Yes  |
|                             | <b>SEMI E-10</b>  | Yes  |
| <b>Shipping</b>             | <b>Crate Dimensions</b>                                   | 1575 W x 1143 L x 1143 H mm (62 W x 45 L x 45 H in.)   |
|                             | <b>Gross Weight</b>                                       | 339 kg (750 lbs)   |

|                                       |                       |
|---------------------------------------|-----------------------|
| <b>Optional / Ancillary Equipment</b> | Oil Filtration Unit   |
|                                       | Nitrogen Generator    |
|                                       | Hydrogen Delivery Kit |

## AP-600 Plasma System Footprint Diagrams

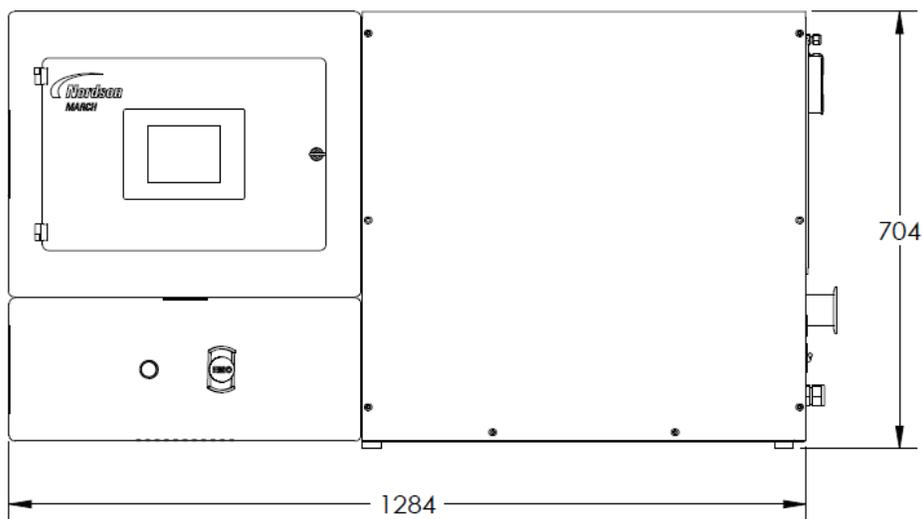


AP-600 – Front View



AP-600 – Top View

All measurements are in millimeters (mm)



AP-600 – Side View with Doors Open

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- Pre-die attach for enhanced die adhesion
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