

Activation | Cleaning | Coating | Etching

Nebula

Advanced Plasma Surface Treatment Systems

NEBULA plasma surface treatment systems feature large format vacuum chambers along with many advanced features, all with the reliability of recipe driven PLC control.

They are configurable tools that are both robust enough for reliable, repeatable industrial processing and at the same time flexible enough for the research into, and development of, leading-edge plasma processes.

The NEBULA range has been designed around our core technologies in plasma surface treatment and plasma process development. With chamber volumes ranging from 50L to 150L, each instrument may be configured with multiple parts tray/electrodes for either horizontal or vertical mounting arrangements. Additionally, a high capacity rotary drum mechanism can be chosen for the treatment of large numbers of small parts for example.

NEBULA plasma systems are used for cleaning, adhesion improvement and enhanced wetting of surfaces via plasma surface activation. Treatments can be performed equally on metals, polymers, composites, glass and ceramics.

A unique feature of each NEBULA system is the addition of an optional monomer dosing inlet. This is a fully automated device for the introduction of a wide range of liquid monomers to produce permanently functionalised surfaces via plasma polymerisation, greatly extending the range of plasma surface treatment possibilities in a single machine.

Features

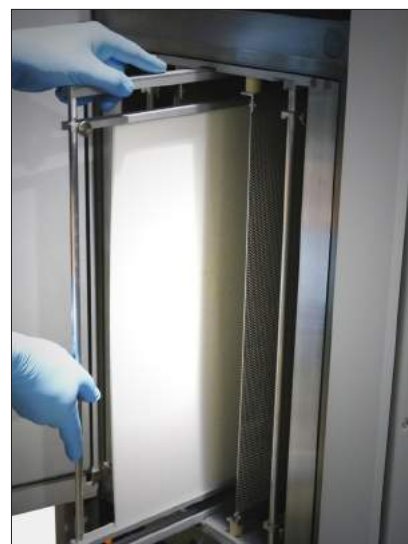
- 50L – 150L chamber volumes
- Horizontal, vertical and rotary drum parts tray options
- Plasma polymerisation inlet
- PLC control
- Fully automated, recipe driven processes



Touch-screen software



Rotating Drum option



Shelving options

Nebula Specifications

Technical Specifications

BASE MODEL OPTIONS

ENCLOSURE

Dimensions W 612mm x H 1875mm x L 852mm (+200mm on side for cables)

Weight ~100-120kg depending on model

CHAMBER

Material Stainless Steel

Form Rectangular

Dimensions 30L (300x300x365mm), 50L (300x300x560mm), 100L (400x400x625mm),
150L (400x600x625mm)

REMOVABLE PARTS CARRIER

Material Aluminium/Stainless Steel

Form Flat horizontal trays, vertical carriers, rotary drum

PLASMA POWER SUPPLY

Power 0-1000W, continuously variable output

Frequency 40kHz

PROCESS CONTROL

Interface 15" Colour TFT, Windows10, PLC control Unlimited steps/recipes with user access privileges

Gas channels 1 - 3 Digital Mass Flow Controllers vapour dosing inlet

Vent inlet x1 soft ventilation option

Purge inlet x1

Connections 6mm compression 1/4" compression

Pressure gauge Pirani sensor

Vacuum pump 2-stage rotary* others to suit application, e.g. dry pump

*Suitable for use with air, oxygen and other non-corrosive gases

SERVICES

Electrical 380-400 VAC/3~N/PE, max. current 16A/phase, 50Hz

Power cord Suited to region

Compliance CE - ROHS - WEEE

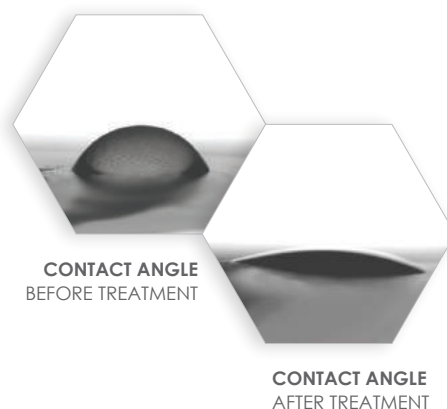
Henniker strive for continuous improvement and specifications are subject to change without notice

Benefits

- compact stand alone unit
- user friendly recipe driven interface
- unlimited recipes and steps per recipe
- fast treatment time
- precise & repeatable
- no hazardous emissions
- liquid dosing inlet option

Typical Process Results

Gas	air
Process pressure	0.2mbar
Power	250W
Total cycle time	120sec



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