

Technical Specification

Vertical Parylene Coating System

Overview

Our standard Parylene vertical coating system offers users a range of standard feature and options that will meet all needs.

The standard Parylene system provides a practical set up developed from years of experience.

These systems are currently being used in our coating services and have been proven to be highly cost-effective at producing quality Parylene coating.



Machine Parameters

Chamber

Chamber configuration: Standard chamber is electro-polished stainless steel.

Optional Configuration: Aluminum is available upon request

Nominal Chamber Size: 20" dia. x 30" H (51 cm diameter, 76.25 cm H)

Effective/Usable Space: 17.5" dia. x 28.5" H (44.5 cm diameter, 72.4 cm H)

Chamber entry port is tangential.

Other sizes are available upon request.

Note: The chamber is not coated in standard configuration as it is constructed of electro-polished stainless steel.



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A micro-soap is utilized to prevent adhesion of Parylene to the chamber surfaces.

This model is of reduced maintenance design, capable of multiple runs before requiring maintenance service.

Generally the unit is capable of about 8 cycles / loads or approximately 8 mils (206 microns) of deposition based on average product loading before service is required; this number will vary based upon load and thickness desired.

Pyrolysis tube

Quartz material. Size standard 3" x 56" with 550-575 gram Dimer Capacity.

Chiller

Mechanical Refrigerated Cold Trap System (4 liter, -90°C), with swappable 304 / 316 Stainless Steel insert (reduced maintenance configuration).

Vacuum Pump

Vacuum Pump: Standard configuration is a Tuthill / Kinney model KTC21, a two stage rotary piston pump (an equivalent model may be utilized/substituted in lieu of). Optional pumps and motors are available.

Baffles

Polished 304 Stainless Steel, Semi-Arc Full Height Baffles are standard.

Additional options are available. (Options vary with chamber size and configuration, call for model specific options).

Vapor Phase Silane (VPS)

VPS is a standard built-in feature for silane adhesion promotion.

Additionally the VPS system is of quick change out design allowing for fast turn around and online or off-line maintenance flexibility.

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Electrical Parameters

Electrical Controls

The standard configuration is semi-automated operation.

Manual operation assistance is required for Vapor Phase Silane (VPS) and during the initial Parylene deposition stage, though on a very limited basis.

The unit is available in an automated version that is controlled by a PLC in optional configuration.

Electrical Configuration

NOTE: Due to the increased amperage requirements of the system for single-phase design, it is highly recommended that the system be procured in a 3-phase design when and where possible.

The Parylene System is available in the following electrical configurations:

Standard Configuration: 3-Phase 120/208.

Optional Configurations:

- Single phase 200 Vac
- Single phase 208-240 Vac (220)
- 2-phase 100-125/200-240
- 3-phase 200-240/360-415 Vac (220/380)
- 3-phase 200-240/460-480 Vac

Additional Options may be available upon request.

The unit can be offered with a True Online Uninterruptable Power Supply (UPS) or a voltage converting/phase converting UPS system.

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System Parameters

Combined System Foot Print: 31" L x 96" W x 58.5" H (80 cm L, 244 cm W, 149 cm H)

Combined System Weight: 985 lbs. (447.8 kg)

[Note: Weight is dependent upon configuration.]

Minimum and Recommended Clearances:

- Rear Spacing: 12" minimum / 36" recommended
- Left Side Spacing: 0" minimum / 18" recommended
- Right Side Spacing: 0" minimum / 18" recommended
- Front Spacing: 36" minimum / ≥ 36 " recommended

Swappable chambers

Standard configuration allows for chamber exchange.

Other chamber options can be swapped with like size chambers, and some models, including the standard configuration allow for swapping of various/multiple chamber sizes.

Additional Chambers can be ordered with any system. (Please call for model specific options)

Additional chambers

Larger chamber sizes are available upon request up to 30" dia. x 30" H

Some larger chambers require a Base Plate Upgrade.

Smaller chambers are available as options. Standard Configuration supports chamber sizes down to 18" diameter x 18" H.

Other sizes may be available upon request.

Pricing: On request.

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Shipping

Shipping Dimensions (Crated/Palletized): 42" L x 106" W x 66" H (107 cm L, 270 cm W, 168 cm H)

Shipping Weight: ~1230 lbs. (559.1 kg)

Miscellaneous

Standard service kit

Available for O-rings etc., and additional kits or items can be supplied as needed/required.

Chamber extensions & collars

Chamber extensions are available. Extension options vary with configuration/models. Please call for model specific options.

Manuals

Operator manual and maintenance manuals are available.

Training

System operation and process development training modules are available both online and onsite upon request. Trouble-shooting support is available.

Warranty

In general the Warranty covers the system components and workmanship excluding consumable materials and items damaged, misused, neglected, mistreated, altered, etc.

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