Technical Data Sheet

Modular Venturi-Effect Paint Mist Collector (SC-03-001) Engineered for High-Volume Industrial Coating Operations

FEATURES

I. Structural Integrity & Housing

Engineered Durability: The module housing is constructed from **high-tensile reinforced structural cardboard**, specifically engineered to maintain structural integrity under rigorous industrial handling and high-pressure operational loads (up to 1500Pa).

II. Aerodynamic Capture Mechanism

- Inertial Impingement: The module integrates multiple rows of **aerodynamic collection cells**, specifically engineered for the high-efficiency inertial impingement of paint overspray.
- Optimized Geometry: Each capture cell features a **rhombic geometry**, precision-engineered to maximize surface area exposure and optimize aerodynamic flow for high-velocity paint mist interception.

III. Material Science

- Reinforced Composite: The collection cells are synthesized from **high-density engineering fiber**, reinforced by an **integrated polymer lattice** to ensure exceptional structural rigidity and prevent media collapse even under maximum paint saturation.

IV. The Venturi Effect Alignment

- Velocity Optimization: Strategically engineered gaps are maintained between adjacent units, with **long diagonals precisely aligned** to facilitate the **Venturi effect** and optimize airflow velocity through the filter core.
- Staggered Matrix: The front and rear rows are engineered in a **staggered orientation**, inducing a robust Venturi effect that accelerates airflow, significantly enhancing entrapment efficiency for heavy paint mist.

PRODUCT SPECIFICATION

NO	ITEM	TECHNICAL DATA	REMARKS
1	Model	SC-03-001	Dry Paint Booth Filter Box
2	Dimensions	485×485×485mm	± 3mm (Tolerance)
3	Air Volume	≤ 1600m³/h	Rated 1200m³/h
4	Air Velocity	≤ 2m/s	NA
5	Filtration Efficiency	≤ 98%	NA
6	Over-Spray Paint Capacity	15 – 30kg	Depends on paint type
7	Pressure Drop	≤1500Pa	Max Resistance of cardboard (customized)
8	Pressure Resistance	1500Pa	NA
9	No. of Collection Units	21-44/unit	Varies with paint type
10	Layer per Unit	6-8 Layer	Varies with paint type

PERFORMANCE OVERVIEW

This system represents a paradigm shift in dry filtration technology, transcending the physical limitations of conventional media. By integrating an **innovative Venturi-channel matrix** with a **reinforced lattice structure**, it achieves industry leading separation performance and an exceptional **paint-holding capacity of up to 30 kg per module**. The aerodynamically optimized architecture ensures **minimal pressure drop** while maximizing particulate capture, providing a high-efficiency, low-maintenance solution for **heavy-load industrial coating operations**.

APPLICATION

Optimized for **high-demanding environments**, including dry spray booths, automated industrial coating lines, and precision surface finishing workshops. This system delivers a robust, eco-friendly filtration architecture. By drastically **extending filter replacement cycles and maintaining stable airflow for superior coating consistency**, it empowers operators to minimize environmental emissions while achieving significant reductions in **Total Cost of Ownership (TCO)**.

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