

## Water-Based Paint Spray Line

### Technical Data Sheet

MUSI Technology - Spray Coating Specialist

Document Reference: MUSI-TDS-WBP-001

Issue Date: 2026

<b>Manufacturer</b>	Changzhou MUSI Environmental Technology Co., Ltd.
<b>Phone</b>	+86 181 5173 1332
<b>Email</b>	lin@coating-spray.com
<b>WhatsApp</b>	+86 181 5173 1332
<b>Address</b>	Wujin Industrial Park, Changzhou City, Jiangsu, China
<b>Website</b>	<a href="https://coating-spray.com">https://coating-spray.com</a>

## Product Description

Water-Based Paint Spray Line is a complete coating line for water-borne paint applications with controlled temperature, humidity, and low-VOC compliance. Designed for automotive parts, appliances, and furniture industries transitioning to environmentally friendly waterborne paints.

### Operating Principle

Workpieces enter controlled-climate spray booth (22-26 deg C, 60-75% RH) where water-based paint is applied by HVLP, conventional, or electrostatic guns. Booth airflow (down-draft, 0.4-0.6 m/s) carries overspray to water-curtain or dry filter. Coated parts pass through flash-off zone allowing surface water to evaporate before entering IR or convection curing oven (80-160 deg C). VOC emissions typically below 5 g/m<sup>2</sup>.

# Technical Specifications

All values are typical for standard configuration. Custom specifications available on request.

Parameter	Value / Range
Conveyor speed	1 - 8 m/min variable
Number of spray stations	2 - 8 configurable
Booth temperature	22 - 26 deg C +/- 1 deg C
Booth humidity	60 - 75% RH +/- 5%
VOC emission	less than 5 g/m <sup>2</sup>
Spray gun options	HVLP / conventional / electrostatic
Transfer efficiency	>=70% (>=80% with electrostatic)
Booth airflow	0.4 - 0.6 m/s face velocity (down-draft)
Flash-off zone length	3 - 8 m at 30-40 deg C
Drying method	IR pre-cure + convection oven
Drying temperature	80 - 160 deg C
Total line length	40 - 150 m custom
Throughput	100 - 10,000 pcs/shift
Compatible paints	Water-based 1K and 2K, latex, water-borne PU

## Dimensions and Layout Requirements

Dimension	Value
Booth interior	4x3x3 to 12x6x4 m
Flash-off zone	3-8 m length
Drying oven	8-25 m length
Ceiling height	Min 5 m
Required clear footprint	40-150 m x 8-12 m
Foundation	Standard concrete, climate AHU enclosure required

## Options and Accessories

### Climate AHU

Dedicated air handling unit with cooling, heating, humidification, dehumidification.

### Electrostatic Liquid Gun

Bell or disc rotary atomizer for  $\geq 80\%$  transfer efficiency.

### Water Curtain Booth

Wet capture of overspray, simpler maintenance.

### Dry Filter Booth

Paint-stop filters for easy disposal.

### Pre-cleaning Section

5-stage pretreatment if not handled upstream.

### 2K Mixing System

For two-component water-based paints.

### Heat Recovery on Oven

Exhaust-to-supply heat exchanger.

## Control System

### PLC

Siemens S7-1500 with climate control loops

### HMI

Multiple stations for booth, oven, and AHU

### Climate control

PID loops for temperature, humidity, airflow

### Recipe management

Paint code linked to recipe

### VOC monitoring

Optional FID for exhaust VOC measurement

### MES interface

Production data export for traceability

# Installation Requirements

## Foundation

Concrete floor with paint sludge drain to pit

## Power

3-phase 380/415V at 100-300 kVA (AHU dominant)

## Compressed Air

Dry oil-free 0.6 MPa, 3-15 m<sup>3</sup>/min

## Water Supply

Soft water for booth water curtain and AHU humidification

## Drainage

Paint sludge drain to onsite or external treatment

## Building Ventilation

Make-up air sized to booth exhaust + 10%

## Installation Time

5-8 weeks including climate AHU commissioning

## Service and Maintenance

### Daily

Visual check, climate parameter logging, water curtain level check

### Weekly

Booth filter inspection, gun cleaning, AHU filter check

### Monthly

Booth cleaning, climate calibration, water treatment

### Quarterly

AHU cooling coil cleaning, oven thermometer calibration

### Annual

AHU compressor overhaul, paint pump rebuild

### Warranty

12 months MUSI standard

## Typical Applications

- Automotive body parts, bumpers, plastic interior trim
- Home appliances meeting low-VOC eco-label requirements
- Wooden furniture with water-based finishes
- Metal cabinetry and office furniture
- Children toys and food-contact equipment
- Architectural metal in environmentally sensitive locations

## Standards and Compliance

Standard	Compliance
ISO 9001:2015	Quality Management - certified
ISO 14001:2015	Environmental Management - certified
ISO 45001:2018	Occupational Health and Safety - certified
CE Marking	EU compliance (LVD, EMC, MD)
ATEX	Zone 1/2 explosion-proof (where applicable)
China GB	Domestic safety and environmental compliance

# Contact MUSI Technology

For inquiries, technical questions, or to request a custom quotation, please contact our sales engineering team:

Channel	Details
Sales Email	lin@coating-spray.com
Phone (Sales)	+86 181 5173 1332
WhatsApp	+86 181 5173 1332
Website	https://coating-spray.com
Headquarters	Wujin Industrial Park, Changzhou City, Jiangsu Province, China
Business Hours	Monday-Saturday 08:30-18:00 (GMT+8)
Response Time	Sales inquiries within 24 hours, technical proposals within 5-7 business days

## How We Engage

### Step 1 - Discovery

Share workpiece specifications, target throughput, color count, facility layout, and budget. Engineers respond with technical questions within 24 hours.

### Step 2 - Process Simulation

We model your line in 3D, simulate cycle time and energy consumption, and provide a baseline ROI analysis.

### Step 3 - Proposal and Quotation

Detailed technical proposal with layout drawings, equipment list, payment terms, and delivery schedule.

### Step 4 - Manufacturing

Custom fabrication in our 28,000 sqm facility under ISO 9001 QMS. Progress photos shared via customer portal.

### Step 5 - Factory Acceptance Test

You witness or remotely observe pre-shipment testing.

### Step 6 - Site Installation

MUSI engineers travel to your site for installation, commissioning, and operator training.

### Step 7 - Aftersales Support

Warranty support, remote diagnostics, preventive maintenance, and spare parts supply via our global network.