



Ionization Systems
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Critical Environment Overhead Ionizer

MODEL 5810

The ION Systems Critical Environment Overhead Ionizer Model 5810i is designed to provide industry-leading balanced ionization performance in cleanroom environments. The Model 5810i is certified for use in ISO Class 4 cleanrooms (Fed. Std. 209(e) Class 10). The ionizer can operate with external sensors to maintain precise balance (better than $\pm 1V$) by altering ion output and adapting to environment changes. With the reliability of steady-state DC, the established method for eliminating the effects of ESD and ESD-induced electromagnetic interference (EMI) in high-tech facilities, the Model 5810i delivers maximum ion output where and when you need it.

Complete compatibility with the operating conditions in today's cleanrooms is ensured with silicone-free air bearing fans. Each fan is engineered for cleanliness, and sealed off from the rest of the chassis to meet critical cleanroom requirements. Ionizers that don't match these quality standards risk contaminating manufacturing processes and possibly reducing product yields.

Features and Benefits

- $\pm 3V$ or better balance ($\pm 1V$ with the optional external feedback system)
- Aluminum or stainless steel chassis
- Options for sensor input, FMS connection, alarms, and management control
- Auto-Clean System option
- Provides the best corona-based ESD protection for maximizing yields
- Different chassis materials are better suited to match specific workplace environments
- Increased control with immediate notification of alarms and the prevention of unauthorized adjustment to power or fan speed
- Patented¹ device reduces emitter point cleanings, keeping points cleaner longer

1. U.S. Patent No. 5,768,087



Specifications

Input Voltage	100-240 VAC ($\pm 10\%$), 50/60 Hz
Output Voltage	100-240 VAC, 50-60 Hz unfused, 5A max
Chassis	Aluminum chassis with epoxy-polyester powder coat, or stainless steel
Indicators	Green power-on LED; red alarm LED; optional audible alarm
Ion Emission	Steady-state DC
Emitter Points	ISO 14644 Class 4 (Fed. Std. 209e) Class 10 titanium, 8 per fan
Airflow	144 cfm per fan, typical
Discharge	$\pm 1000V$ to $100V$ @ <3 sec., taken 18 in. away (45.7 cm) from the blower at high fan speed
Balance	$\pm 3V$ or better balance ($\pm 1V$ with the optional external feedback system)
Audible Noise	High fan speed 62 dB, typical; low fan speed 51 dB (typ); measurements taken 12 in. (30.5 cm) below fan
Mounting	Eye-bolts and S-hooks provided; U-shape and L-shape brackets available
Operating Environment	Temperature 50-90°F (10-32°C); humidity 30-70% RH, non-condensing
Controls	Balance adjust trimpot (one per fan), three-position fan control switch (high/low/off) or fixed speed, sensor gain trimpot (optional; one per fan), slide switch for sensor type or no sensor
Dimensions	3.8H x 6.1D x 32L in. (9.6H x 15.5D x 81.3L cm); 3.8H x 6.1D x 40L in. (9.6H x 15.5D x 101.6L cm); 3.8H x 6.1D x 44L in. (9.6H x 15.5D x 111.8L cm)
Weight	Aluminum 44" unit 10.3 lb (4.6 kg); stainless steel 44" unit: 15.3 lb (6.9 kg)
Daisy-chain Compatibility	Maximum of 10 units; power cord (18 AWG) between units should not exceed 12 in. (304 mm) in length
Options	External sensor inputs; FMS 4-20 mA RJ-11 output (available with sensor option only); audible alarm; cord lock; stainless steel chassis; Auto-Clean System
Warranty	Two year limited warranty
Certifications	RoHS Compliant   EN 61010-1:2001

Ordering Information

91-5810i-8C-xx	Powder coated white aluminum blower in -32, -40, -44 inch bar lengths
91-5810iS-8C-44	Stainless steel blower in -44 inch bar length only)
-PHR	Fan speed fixed high; $\pm 3V$ balance
-PXR	Off/low/high fan speed control; $\pm 3V$ balance
-PH-FMS/SSR	Fan speed fixed high; $\pm 1V$ balance
-PX-FMS/SSR	Off/low/high fan speed control; $\pm 1V$ balance
99-5810i-AALARM	Audible alarm
99-8500i-PNFFAN	Optional auto-clean system (requires 1 per fan)
25-20660	IEC power cable, US plug, 8.2 ft (2.5m)
25-0670	IEC power cable, US plug, 10 ft (3m)
25-0680	IEC power cable, US plug, 15 ft (4.6m)
25-0700	IEC power cable, no plug, 10 ft (3m)
25-20710	IEC power cable, UK plug, 8.2 ft (2.5m)
25-20735	IEC power cable, German-Schuko plug, 8.2 ft (2.5m)
25-20750	IEC power cable (China Plug), 8.2 ft (2.5m)
25-0720	Daisy-chain power cable

Fan Speed Choices

The 5810i was designed specifically for use in cleanrooms up to and including ISO 14644 Class 4 (Fed. Std. 209(e) Class 10) in cleanliness. To minimize disruption of laminar airflow, the unit has a 3-position fan setting that optimizes static discharge performance with the smallest volume and velocity of airflow.

Factory Monitoring System

The blower includes an LED alarm light that indicates a range of possible conditions, including absence of ionization at the emitter points, or a stopped fan. An optional Audible Alarm is available. An optional Facility Monitoring System (FMS) provides an industry-standard 4-20 mA signal to your work cell controller for error detection.

Auto-clean System

The optional, patented Auto-clean System is an automated feature that provides reduced operation costs due to lower maintenance.

The Auto-clean System features a brush mechanism that sweeps the emitter points when the blower is turned off and on, allowing the Model 5810i to continually perform at optimum ion output and balance.



$\pm 1V$ Operation

The Model 5810i ionizer's optional external feedback sensor operates with the Novx Process Monitor Series 7000, Novx Single-fan Ionizer Controller Series 3150, Novx Passive Detection System Series 3350, Novx Active Detection System Series 3360, or other industry standard ionization feedback systems to detect and automatically correct the balance. With the antenna placed at the target area, feedback is sent to the Model 5810i blower's internal control system. This ensures that your target maintains a $\pm 1V$ or better balance at all times.



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