



# Modulated Pulse AeroBar® with Feedback Control

## MODEL 5645

Simco-Ion's latest Modulated Pulse (MP) Technology ionization bar is now available with active feedback/control through the Novx monitoring and feedback system. The AeroBar Model 5645 is designed to provide industry-leading balanced ionization performance for semiconductor, semiconductor back-end applications, especially advanced packaging, including the latest 3D technology, where fast discharge time, low swing voltages and precise balance are required. Our patented MP technology enables AeroBar placement to within 150 mm of the wafer, where proximity control is critical for smaller technology nodes.

When installed with the Novx monitoring and feedback system, the 5645 can maintain precise balance better than  $\pm 5V$ . The bar can easily adjust and fine-tune voltage, frequency and balance to meet environmental and product sensitivity requirements. For processes under weak laminar flow, the optional air-assist can help to accelerate ion delivery, providing faster discharge times and performance over longer distances.

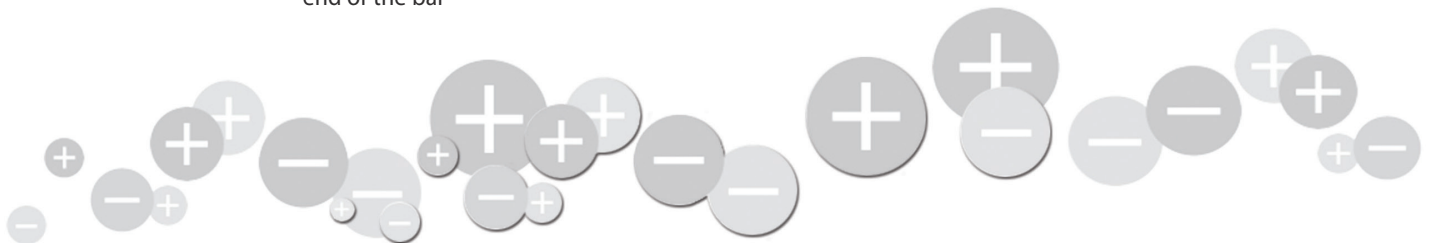
Available in 14 lengths, from 350-2350 mm, the AeroBar 5645 is the ideal in-tool ionizer for today's stringent cleanroom environment manufacturing process.



### Features

- $\pm 5V$  with Novx monitoring and feedback system
- Compatible with ISO 14644-1 Class 3 or better
- Centralize power and control with widely adjustable software
- Sensor input, FMS connection, alarms, power and communications are located on the same end of the bar

### Benefits

- Provides the active feedback/control on ESD protection with precise and stable balance
- Compatible with all device technology nodes
- Eliminating manual adjustment at the installed location
- Designed for overall ease of use and long maintenance cycles



Model 5645 AeroBar	
<b>Input Voltage</b>	24 VDC $\pm 10\%$ , 0.7A (max)
<b>Balance</b>	$< \pm 5V$ , Novx System; $< \pm 5V$ , Novx Inside; $< \pm 20V$ , Standalone
<b>Discharge</b>	15 sec (typ) with no air-assist measured @ 24" below AeroBar center
<b>Ion Emission</b>	Modulated Pulse (MP) technology
<b>Frequency</b>	1-60 Hz
<b>Emitter Voltage</b>	13.5 kV peak-to-peak, max
<b>Emitters</b>	Titanium
<b>Pitch</b>	50 mm spacing (350/450/600 mm lengths only) 75 mm spacing between nozzles on all other lengths
<b>Cleanliness</b>	Compatible with ISO 14644-1 Class 3 or better
<b>Bar Settings</b>	Adjustment made remotely via software controlled; no manual adjustment on the bar
<b>LED Indicators</b>	Green steady NORMAL OPERATION, green flashing STANDBY, red ALARM
<b>Air Connection</b>	8 mm tubing (OD) bulkhead, one-touch fitting; no daisy-chain capability
<b>Airflow</b>	Optional Open Jet 45 psi max gas pressure, 1-3.5 lpm/nozzle thru 8 mm OD one-touch fitting
<b>Air Supply</b>	Optional Clean Dry Air (CDA) or nitrogen (N2)
<b>Ozone</b>	$< 0.05$ ppm
<b>EMI</b>	Below background level
<b>Operating Env.</b>	Temperature 15-35°C (59-95°F); Humidity 30-60% RH, non-condensing
<b>Enclosure</b>	ABS chassis, stainless steel rail on the outside of the bar
<b>Dimensions</b>	3.1"H x 1.3"W x 14/18/24/34/39/45/51/57/63/69/75/81/87/93"L (78 x 34 x 350/450/600/850/1000/1150/1300/1450/1600/1750/1900/2050/2200/2350 mm)
<b>Certifications</b>	pending
Model 5601 Power Distribution Box	
<b>Input Voltage</b>	24 VDC for each bank of 4 bars; 5.6A total (0.7A max/port)
<b>Communication</b>	Ethernet (RJ-45) to/from PC; individual bar standby inputs
<b>Alarm Output</b>	Relay closure to ground
<b>Output</b>	8 RJ-45 ports (1 for each 5635 bar)
<b>LED Indicators</b>	Green PWR, Yellow COM, Red ALM, Blue USB
<b>Weight</b>	0.94 lbs (0.42 kg)
<b>Dimensions</b>	1.2"H x 6.3"L x 3.6"W (31 x 160 x 92 mm)
<b>Certifications</b>	 

## Ordering Information

91-5645-xxxx-yy-Q0C30	Model 5645 bar, Standalone version
91-5645A-xxxx-yy-Q0C30	Model 5645 bar, Novx Inside version with SMA connector
91-5645N-xxxx-yy-Q0C30	Model 5645 bar, Novx System version with RJ-11 connector
33-0504	Passive Sensor, 1.75" x 4" Tall with SMA-to-SMA Cable 5 ft/1.5m for Novx Inside
33-0521-5	Passive Sensor, 1.75" x 1" Tall with SMA-to-SMA Cable 5 ft/1.5m for Novx Inside
33-1620-xx	RJ-11 cable connecting to Novx 3352/3362 (xx = 6, 10, 20 ft length) for Novx System
33-25625	24 VDC Power Converter with Power/Signal Junction Box Kit
92-5635-001	AeroBar MP Remote Serial Adapter Kit (includes RJ-45 splitter, USB to serial adapter, RJ-45 to DB9 adapter)
33-5601-03	Model 5601 Power Distribution Box for max 8 bars, 24 VDC
14-21241	24 VDC Power Supply for Model 5601 Power Distribution Box
25-0540-xx	CAT-5 with RJ-45 Ethernet Cable in xx= 6, 10, 15 ft lengths, white (from 5645 bar to P/N: 33-25625 or Model 5601)
91-5645-SW-V13	MP Control Software for 5635 & 5645 standalone only
91-TBA	MP Control Software for both 5635 & 5645, all versions
32-22210	Horizontal rotatable mounting bracket.

xxxx = bar length (350/450/600/850/1000/1150/1300/1450/1600/1750/1900/2050/2200/2350 mm)

yy = nozzle spacing (50 mm for 350, 450 & 600 mm bar length, all other are 75 mm)

Q0C30 (OpenJet nozzle type)

## $\pm 5V$ Balance Performance

For  $\pm 5V$  balance performance, Model 5645 is available with Novx System or with Novx Inside. Both options operate with the Novx to detect and automatically correct the balance. With the sensor placed at the target area, feedback is sent to the Model 5645 AeroBar internal control system, ensuring that your target maintains a  $\pm 5V$  or better balance at all times.



## Design Features

**Simplified Interface:** 100% remote controlled allows ease of adjustments via centralized software control.

**Enhanced Cable Management:** Locating the power/communication, 24 VDC, and NOVX connection all on the same side allows for better control of the cables and planning.

**Flexibility:** Optional use of CDA with push-to-connect coupling accommodates generic fittings such as quick disconnects, barbed, elbows and much more are all features to facilitate ease of use.

## Simple Installation with MP Control Software

Model 5645 AeroBar is quickly installed by simply plugging into a 24 VDC source. MP Control Software accommodates one bar or multiple bars (8 max). Users can fine-tune the control parameters through the easy-to-use MP Control software for installations where optimized balance, swing voltage and discharge times are desired. An alarm connection in the Signal and Power Junction Box enables a signal output for FMS monitoring.

## Power Distribution Box

The optional Model 5601 Power Distribution Box and MP Control Software can communicate, centralize powers with software control up to eight 5645 AeroBars.



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DS-5645\_x1 - 9/21  
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