

Modulated Pulse AeroBar[®] with Feedback Control

MODEL 5645



5645 Bar with Low Profile
Silicon Emitter OpenJet Nozzle



5645 Bar with Titanium
Emitter OpenJet Nozzle

Modulated Pulse (MP) Technology ionization bars are available with Titanium Emitter Nozzles and Low Profile Single-Crystal Silicon Emitter Nozzles. The Low Profile nozzle enhances performance and reduces overall bar height to 2.6" (65.3 mm) for space-constrained installations. The Model 5645 MP bar delivers industry-leading balanced ionization performance for semiconductor back-end advanced packaging and test environments, as well as front-end ultra-clean applications requiring fast discharge times, low swing voltages, and precision balance.

When integrated with a Novx System or Novx Inside monitoring and feedback control, the 5645 maintains balance better than $\pm 5V$. The bar allows easy adjustment of voltage, frequency, and balance to meet environmental and product-sensitivity requirements. Model 5645 MP bars are available in 14 lengths ranging from 350 mm to 2350 mm.

FEATURES

- ✓ $\pm 5V$ with Novx System or Novx Inside version
- ✓ ISO 14644-1 Class 1 and Extended ISO Class 1 with SCSi emitter*
- ✓ Centralize power and control with widely adjustable MP Control software
- ✓ Antenna input, FMS connection, alarms, power, and communications are located on the same end of the bar

BENEFITS

- ✓ Provides active monitoring and 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

* Extended ISO Class 1: An extrapolation of ISO 14644-1 down to 0.01 micro (10 nm) particles, measured with a condensation nucleus counter (CPC). For more information, visit www.simco-ion.com/technology/resources for our technical notes on Extended ISO Class 1.

Model 5645	
Voltage	Input: 24 VDC $\pm 10\%$, 0.7A (max) Output: 13.5 kV peak-to-peak (max)
Discharge	15 sec (typ) with no air-assist measured @ 24" (61.0 cm) below AeroBar center
Balance	$< \pm 5V$, Novx System or Novx Inside; $< \pm 20V$, Standalone
Ion Emission	Modulated Pulse (MP) Technology
Emitter	Point: Single-crystal Silicon (LPOU) or Titanium (QOC30) Voltage: 13.5 kV peak-to-peak (max) Frequency: 0.3-60 Hz Pitch: 50 mm spacing (350/450/600 mm lengths only); 75 mm spacing between nozzles on all other lengths
Cleanroom Class	Single-crystal Silicon: ISO 14644-1 Class 1 & Extended ISO Class 1 Titanium: ISO 14644-1 Class 3
LED Indicator	Green steady NORMAL operation, green flashing STANDBY, red ALARM
Bar Setting	Adjustment made remotely via software controlled with Model 5601 Power Distribution Box; no manual adjustment on the bar
Air Supply	Input: Optional Clean Dry Air (CDA) or Nitrogen Flow: OpenJet 45 psi max gas pressure, 1-3.5 lpm/nozzle thru 8 mm OD one-touch fitting Connection: 8 mm tubing (OD) bulkhead, one-touch fitting; no daisy-chain capability
Ozone	< 0.05 ppm
EMI	Below background level
Operating Env	15-35°C (59-95°F); 30-60% RH, non-condensing
Enclosure	ABS chassis, stainless steel rail on the outside of the bar
Dimension	2.6" (LPOU) or 3.1" (QOC30)H x 1.3"W x 13.8/17.7/23.6/33.5/39.3/45.3/51.2/57.1/63.0/69.0/74.8/80.7/86.6/92.5"L (6.5 x 3.4 x 35/45/60/85/100/115/130/145/160/175/190/205/220/235 cm)
Certification	CE cULus UK CA
Model 5601 Power Distribution Box	
Input Voltage	24 VDC for each bank of 4 bars; 5.6A total (0.7A max/port)
LED Indicator	Green POWER, yellow COMMUNICATION, red ALARM, blue USB
Communication	Ethernet (RJ-45) to/from PC; individual bar standby inputs
Alarm Output	Relay closure to ground, max 24 VDC @ 100 mA, normal OpenCoded
Output	8 RJ-45 ports (1 for each bar)
Dimension	1.27"H x 6.95"L x 3.64"W (3.22 x 17.65 x 9.23 cm) with flange
Weight	0.94 lb (0.43 kg)
Certification	CE UK CA

Power Distribution Box

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



Simple Installation with MP Control Software

Model 5645 AeroBar is quickly installed by simply plugging into a 24 VDC source. The Model 5645 AeroBar provides scalable ionization control through the MP Control Software, which supports up to eight bars. With its intuitive interface, users can fine-tune parameters, ensuring optimized performance in environments where precise ionization control is critical.

$\pm 5V$ 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 antenna 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.

In addition to the standard passive antenna, Novx Inside can be equipped with the optional Rod Antenna Accessory Kit for precise local feedback control. (Does not work with 5645 bars with QOC30 Titanium Emitter OpenJet Nozzle.)



Ordering Information

91-5645-xxx-yy-QOC30-01	Model 5645 Bar, Titanium OpenJet Nozzle, Standalone Version
91-5645A-xxx-yy-QOC30-01	Model 5645 Bar, Titanium OpenJet Nozzle, Novx Inside w/SMA connector
91-5645N-xxx-yy-QOC30-01	Model 5645 Bar, Titanium OpenJet Nozzle, Novx System w/RJ-11 connector
91-5645-xxx-yy-LPOU-01	Model 5645 Bar, Low Profile Silicon OpenJet Nozzle, Standalone Version
91-5645A-xxx-yy-LPOU-01	Model 5645 Bar, Low Profile Silicon OpenJet Nozzle, Novx Inside with SMA connector
91-5645N-xxx-yy-LPOU-01	Model 5645 Bar, Low Profile Silicon OpenJet Nozzle, Novx System with RJ-11 connector
91-5645NA-xxx-yy-LPOU-01	Model 5645 Bar, Low Profile Silicon OpenJet No-Air-Hole Nozzle, Standalone Version
91-5645ANA-xxx-yy-LPOU-01	Model 5645 Bar, Low Profile Silicon OpenJet No-Air-Hole Nozzle, Novx Inside with SMA connector
91-5645NNA-xxx-yy-LPOU-01	Model 5645 Bar, Low Profile Silicon OpenJet No-Air-Hole Nozzle, Novx System with RJ-11 connector
33-5601-03	Model 5601 Power Distribution Box with Ethernet Port for 8 bars max, 24 VDC
14-21241	24 VDC Power Supply for Model 5601 Power Distribution Box (per AeroBar) ¹
92-5635-001	AeroBar MP Remote Serial Adapter Kit (includes RJ-45 splitter, USB to serial adapter, RJ-45 to DB9 adapter)
33-0504	Passive Antenna, 1.75" x 4" Tall with SMA-to-SMA Cable 5 ft/1.5m for Novx Inside
33-0521-xx	Passive Antenna, 1.75" x 0.88" Tall w/SMA-to-SMA Cable (xx = 5, 10, 20 ft lengths) for Novx Inside
33-0545-zzz-01	SMA Rod Antenna Kit for Model 5645, zzz = mm in length, RoHS
33-1620-xx	RJ-11 cable connecting to Novx 3352/3362 (xx = 6, 10, 20 ft lengths) for Novx System
33-25625	24 VDC Power Converter with Power/Signal Junction Box Kit ¹
25-0540-xx	CAT-5 with RJ-45 Ethernet Cable in xx = 6, 10, 15 ft lengths, white (from Model 5645 bar to Model 5601 p/n 33-25625)
91-5635-SW-Vx.x	MP Control Software Version x.x

xxx = 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).

zzz = 350, 450, 600, 850 (for 5645A bar length 850 mm or longer, use 850 mm Rod Antenna).

1. IEC power cord required, contact Sales Services for detail



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