



Made in America

Loren 16™ Room Ionization System Operation and Maintenance



Figure 1. SPI Westek 94500 Loren 16™ Room Ionization System

Features

- Digitally controlled and monitored by remote computer.
- Simple 2-wire telephone type wiring interface between computer and smart power supplies.
- Up to 16 power supplies can be attached to single 2-wire control bus and individually controlled.
- Continuous monitoring of both communication interface and internal processor, with shutdown and alarm on detected failure.
- Single high-reliability, high voltage power supply for up to 400 emitters may be located for ease of access and service.
- Only passive components need be ceiling mounted (emitters and low current wiring).

Benefits

- Reliable, balanced 24/7 operation.
- Independent set-up for each zone delivers targeted specifications as needed, over large areas.
- Up to 75% lower maintenance time required than comparable systems.
- No oppositely charged emitter to interact and create wear or contaminants.
- Hangers and ion bars snap together without any special tools.
- Optimizes ionization efficiency over large ranges of airflow.

Absolute protection for your critical processes

The SPI Westek 94500 Loren 16™ Room Ionization System creates a static-safe environment for your sensitive devices by reducing static charges on surfaces and particles. Controlling the potential difference in voltage controls the attraction or discharge that could result. Without mutual attraction, a particle will remain suspended in the airflow, moving harmlessly by the process and exiting through the air handler. Keeping the surface charges controlled as part of the product handling procedure an optimal environment for eliminating device ESD damage.

Potential ESD damage is controlled within process specifications of the end user. Photo mask and other product protection demand controlled peak-to-peak voltages to maintain the proper level of safety. These are basic set up criteria that can be determined based on your needs and the discharge rate required.

You can be confident a process sensitive to static charge is in an optimal environment to operate smoothly providing the maximum uptime and process efficiency.

The modular installation of the Loren™ system allows future expansions to be added as needed. The system is simple to maintain with periodic cleaning and built-in software calibration.

Loren 16™ Ionization System Benefits Single Emitter Point Delivery System

This is a patented system that provides one of the great features of the Loren 16 system. Because there is no opposite residual charge at a second emitter point in close proximity, there is almost no interaction between ions of opposite charge and the emitter point. This produces a very minimal instance of the charged ion striking the electrode surface during the ionization process and attracting trace molecules that build up on the electrode surface and compromise the performance. This benefit causes the emitter to last much longer than on other types of ionization and maintenance is dramatically reduced.

Alarm Feedback System

The Loren 16 system incorporates an external feedback system to control the auto-balance feature and alarm circuit. Many other ionization systems rely on an internal voltage monitor to set alarm windows. The result of an internal alarm is that the system alarm has no real environment data to use in the alarm set up, only suggested data that could be present. The benefit of tying the system feedback to real environment data is that any environment change can be alerted to the system software for reporting. This could include changes in airflow or disconnected ion bars.

Adjustable Delay between Pulses

This feature is a necessity in room systems to allow the added adjustment to set up for all types of laminar airflow and still control the maximum peak to peak voltage. This benefit places a layer of neutral air between the production of positive and negative ions, allowing each to expand and fill the voids more evenly without adding constantly higher concentrations of ions. This also provides an air insulator between the pulses of the Single Emitter Point Delivery System of the Loren 16.

Ease of Installation and Re-Configuration

The Loren 16 system uses components that can be easily snapped together for set-up or un-clipped to make simple changes. We use a minimum of permanent adhesives or fasteners to install the system so that the customer has the ability to make future moves or additions with as little problems as possible. The benefit to the customer is greater control over their own facility and less dependence on outside contractors.

System Reports to a Central Monitor

The Loren 16 keeps a searchable log of all actions made by the system. This log is an invaluable tool for troubleshooting and maintaining the system.

Example: Search the report log for System Adjust. Using the time saved with each entry it is found that the system has been auto correcting in the past three weeks and had only one auto adjust in the previous two months.

Meaning: The system needs to be cleaned and the software recalibrated to the current environment. The benefit of this feature is that maintenance can be planned based on system needs and the underlying cause can be determined for any given system alarm.

Required Maintenance Time

This feature has been a key feature for companies that maintain their own systems. Our customers estimate that the maintenance time they spend has been cut by 60-75% in the areas they have installed the Loren 16™ System. This benefit gives maintenance cost savings that can be anticipated for years to come.

System Expandability

The Loren 16™ System can control up to 400 emitter points approximately 12,000 sf. This is 4 or 5 times the size of most ionization systems. The benefit of this system size potential is that almost every application allows for additions to be made within the framework of the system capabilities. This means reduced cost per

System Description

General: The Loren 16™ system is capable of providing free positive and negative ions through switching high voltage to groups of emitters located throughout the area of coverage needed. Ion concentration in controlled areas is balanced by controlling the "On" times for the high voltage emitters. The total number of free ions generated is controlled by increasing or decreasing the high voltage levels.

Computer and Software: Computer consists of a desktop PC meeting the minimum Loren 16 system requirements. Complete with Loren 16 software license. Software is capable of logging all significant events to a database so the owner may analyze system operations and assure compliance with ISO-9000 requirements.

Power Supplies: Loren 16 SPS (Smart Power Supply). Power supplies will network through communication interface to provided computer for all control command functions.

System Performance: System will conform to EOS/ESD - Standard 3.1 - 2000. Decay rate measured by charge plate monitor 300 seconds or less, 1000v to 100v measured in open area of area covered.

Installation: Ionization system consists of conduit bars, attached to the ceiling of the room utilizing stainless steel brackets. These brackets will attach to standard 2"x4" drop ceiling, with or without HEPA filters. The brackets and hangers will be mounted to allow changing lights and filters with a minimum of interference.

Specifications

Input Voltage 120/240VAC +/- 10%, 47 to 63Hz, 75 W

Optional Input Voltage 24VDC +/-10%, 1.5A

Open Circuit Output Voltage 0KVDC to 20KVDC +/-5%

Short Circuit Output Current 0.2mA MAX

Safety Output current limited by 100 Meg ohm Series resistor

Capacity 400 emitters

Timing Control 0-99.9 seconds ionization ON cycles for each polarity with selectable OFF time between pulses

User Interface Software setup through connected computer

Indicators Power ON, alarm, positive and negative output and neutral delay

Sensor Antenna Inputs Independent inputs are cylinder 6"x 6" conductive plates

Dimensions 8.17" W x 19.5" H x 6" D (20.75cm W x 49.5cm H x 15.24cm D)

Weight 30 lbs (11.2 kg)

Warranty 1 year limited warranty

Ripple 0.1% peak to peak

Communications Port Proprietary Opto-Isolated by-directional 2-wire bus

EMI/RFI Less than background

Resolution 0.1KV

Alarms Visual and audible indicates system failure, report at computer indicates cause

Alarm Reset Switch on front panel and software on/off button for each zone

Ozone <.002ppm

Calibration Semi-Annual calibration recommended

Computer System (Minimum Operating Specs)

Operating System Windows9x, WinNT or 2000

Monitor SVGA Color

Hard Disk 30 GIG

Processor Speed 500MHZ

Ram 128 Meg

Limited Warranty

SPI Westek expressly warrants that for a period of one (1) year from the date of purchase, SPI Westek Auto-Ion™ Self-Balancing Ionizers will be free of defects in material (parts) and workmanship (labor). Within the warranty period, the product will be tested, repaired, or replaced at our option, free of charge. Call our Customer Service Department at 909-664-9986 for a Return Material Authorization (RMA) and proper shipping instructions and address. Include a copy of your original packing slip, invoice, or other proof of purchase date. Any unit under warranty should be shipped prepaid to the SPI Westek factory. Warranty repairs will take approximately two weeks.

If your unit is out of warranty, call Customer Service at 909-664-9986 for a Return Material Authorization (RMA) and proper shipping instructions and address. SPI Westek will quote repair charges necessary to bring your unit up to factory standards.

Warranty Exclusions

THE FOREGOING EXPRESS WARRANTY IS MADE IN LIEU OF ALL OTHER PRODUCT WARRANTIES, EXPRESSED AND IMPLIED, INCLUDING MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE WHICH ARE SPECIFICALLY DISCLAIMED. The express warranty will not apply to defects or damage due to accidents, neglect, misuse, alterations, operator error, or failure to properly maintain, clean or repair products.

Limit of Liability

In no event will SPI Westek or any seller be responsible or liable for any injury, loss or damage, direct or consequential, arising out of the use of or the inability to use the product. Before using, users shall determine the suitability of the product for their intended use, and users assume all risk and liability whatsoever in connection therewith.