



Installation, Operation and Maintenance Guide

Bioclimatic ActiveOx™ R Model

OUR MISSION

To design and build quality engineered air cleaning systems to provide indoor comfort, protect occupants, and ensure the reliability of critical systems and processes.

IMPORTANT

Save this Document for Future Reference & Warranty Information



Bioclimatic.com
005-APR-2023

!IMPORTANT!

READ THIS BEFORE STARTING INSTALLATION.
DO NOT THROW AWAY THIS GUIDE.

For installation you **MUST**:

- Always disconnect power to the unit before handling any of the components.
 - DO NOT connect to the power before the installation is complete and personnel are aware of the imminent operation.
 - Carefully read this instruction booklet before beginning the installation.
 - Follow each installation or repair step exactly as shown and explained in this guide.
 - Observe all local, state, national and international electrical codes.
 - Pay close attention to all warnings and caution notices given in this guide.
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How to Contact Us: If you need help, please contact a Bioclimatic Air Systems Representative for technical assistance.

!CAUTION!

Do not touch while in operation shut off electricity before servicing!

This equipment should be inspected frequently and collected dirt removed from it regularly to prevent excessive accumulation that may result in flashover or risk of fire.

!MISE EN GARDE!

Ne touchez pas pendant le fonctionnement couper l'électricité avant l'entretien

Cet équipement doit être inspecté fréquemment et la saleté collectée doit être retirée régulièrement pour éviter toute accumulation excessive pouvant entraîner un court-circuit ou un risque d'incendie.



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01 INTRODUCTION

1.1 Disclaimer

These instructions are submitted with the implicit understanding that:

1. This manual is to guide the user of Bioclimatic Air Systems (B.A.S.) equipment in the proper installation, operation, and maintenance procedures to insure maximum equipment life with efficient operation.
2. The customer has assigned competent maintenance and operating personnel to the system described herein and will assume operational and maintenance responsibility upon start-up of the system.
3. The customer will read and thoroughly examine the foregoing instructions and will notify the seller of any points not fully understood, points of conflict or error.
4. The customer, in lieu of any notification to the contrary, has read and fully understands the operation of the system and is aware of the hazards of corrosion, abrasion and fire or explosion and shall take the necessary steps in the operation of equipment to control such hazards to the maximum extent possible.
5. Start-up assistance or field engineering service provided by B.A.S. shall in no way relieve the customer of responsibility for the proper operation of the system.



IMPORTANT: Any modifications to the unit by unauthorized personnel will void factory warranty. The unit must be installed in accordance with the manufacturer's instructions to preserve warranty.

1.2 Receiving

Products leaving the B.A.S. factory are inspected and in satisfactory operating condition. All equipment should be thoroughly inspected when received. Although all units are properly packaged, rough handling in transit can cause breakage. Any shortage or damage should be reported at once to the transportation company. Note the damage on the bill of lading before signing for the shipment. **No equipment may be returned to Bioclimatic without written authorization. Returned equipment sent without authorization will be refused and returned to sender.**

All products are shipped F.O.B. (Ex Works, FCA) Bioclimatic warehouse. Responsibility for all equipment passes to the buyer at the time equipment is loaded onto the carrier's truck.

1.3 Storage

If the generator unit(s) are not installed upon delivery, it should be stored in a cool, dry, weather protected location. Do not stack any other equipment on top of the unit.

Continue on Next page

1.4 Warranty

THE SELLER WARRANTS BI-POLAR IONIZATION PRODUCT (EQUIPMENT) AGAINST DEFECTIVE WORKMANSHIP AND MATERIAL FOR **2 YEARS** FROM DATE OF FACTORY SHIPMENT. THE SOLE OBLIGATION OF SELLER SHALL BE TO REPAIR OR REPLACE, AT ITS OPTION, F.O.B. ITS FACTORY, ANY PART OR PARTS WHICH ARE RETURNED F.O.B. ITS FACTORY, SHIPPING CHARGES PREPAID, AND WHICH AFTER INSPECTION BY SELLER ARE FOUND TO BE DEFECTIVE. BUYER SHALL NOTIFY SELLER OF DEFECT IN WRITING, PROMPTLY UPON DISCOVERY AND WITHIN THE WARRANTY PERIOD. THIS WARRANTY DOES NOT COVER DEFECTS CAUSED BY CORROSION OR NORMAL DETERIORATION; IT DOES NOT EXTEND TO CONSEQUENTIAL DAMAGE, LOSS OR DELAY ASSOCIATED WITH A WARRANTY DEFECT; AND IT DOES NOT COVER ANY COST OF LABOR, TRAVEL, OR OTHER EXPENSE ASSOCIATED WITH THE REPAIR OR REPLACEMENT OF DEFECTIVE PARTS. SELLER ASSUMES NO LIABILITY FOR PRODUCT LOSS OR OTHER CLAIMS WHATSOEVER ARISING OUT OF THE USE OR APPLICATION OF THE EQUIPMENT IN ANY OPERATIONS, WHETHER THE EQUIPMENT IS USED ALONE OR IN CONJOINT USE WITH OTHER EQUIPMENT OR PROCESSES. NOTWITHSTANDING THE FOREGOING, SELLER'S WARRANTY OBLIGATIONS WITH RESPECT TO ANY ITEMS NOT MANUFACTURED BY SELLER SHALL NOT EXCEED THE OBLIGATIONS UNDERTAKEN BY THE MANUFACTURER THEREOF UNDER EXPRESS WARRANTY TO THE SELLER.

THIS EXPRESS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES OF FITNESS OF THE MACHINE FOR ANY PARTICULAR PURPOSE. THERE ARE NO OTHER REPRESENTATIONS, WARRANTY OF CONDITION IN ANY RESPECT EITHER EXPRESS OR IMPLIED, STATUTORY OR OTHERWISE IN CONTRACT OR TORT, OTHER THAN WHAT IS STATED ABOVE.

THE SELLER SHALL NOT BE HELD LIABLE IN ANY WAY FOR CONSEQUENTIAL DAMAGES, HOWEVER CAUSED.

THIS WARRANTY WILL NOT APPLY IF THE SELLER'S EQUIPMENT HAS BEEN DAMAGED DUE TO IMPROPER INSTALLATION, ALTERATION, ABUSE OR MISUSE, ACCIDENT, FIRE, FLOOD OR ACT OF GOD. FURTHER, THIS WARRANTY WILL NOT APPLY IF REPAIRS, REPLACEMENTS, OR ALTERATIONS ARE MADE BY OTHERS WITHOUT THE SELLER'S PRIOR WRITTEN AUTHORIZATION.

IN THE EVENT THE STATE IN WHICH THE EQUIPMENT IS INSTALLED DOES NOT PERMIT THE LIMITATION OR EXCLUSION OF IMPLIED WARRANTIES OR CONDITIONS UNDER GIVEN CIRCUMSTANCES, THE PROVISIONS OF THIS WRITTEN WARRANTY ARE IN ADDITION TO AND NOT A MODIFICATION OF THE STATUTORY WARRANTIES AND OTHER RIGHTS AND REMEDIES PROVIDED BY SUCH LAWS.

NOTES: "ANY MODIFICATION OR UNAUTHORIZED REPAIR TO ORIGINAL EQUIPMENT BY ANY COMPANY OR PERSON OTHER THAN THE MANUFACTURER WILL SERVE TO VOID THE SELLER'S LIABILITY UNDER THE MANUFACTURER'S WARRANTY. ION GENERATOR, MODULES AND CONTROL ENCLOSURES CONTAINING ELECTRONIC COMPONENTS ARE SEALED TO PREVENT UNAUTHORIZED TAMPERING OR ADJUSTMENTS. ONLY AUTHORIZED SERVICE PROVIDERS MAY BREAK SEALS TO COMPLETE CALIBRATION OR REPAIRS. UNAUTHORIZED TAMPERING OR BREAKING SEALS WILL RELEASE THE SELLER FROM ANY AND ALL LIABILITY UNDER THIS WARRANTY."

Disclaimer: The air purification technologies provided by Clean Air Group are intended to improve indoor air quality. They are not intended as a replacement for reasonable precautions aimed at preventing the transmission of contaminants, airborne or otherwise. All persons having access to the serviced premises should comply with applicable public health laws and guidelines issued by federal, state and local governments and health authorities such as the Centers for Disease Control and Prevention (CDC). Clean Air Group does not maintain that its products will protect people from all modes of transmission of bacteria, viruses or other contaminants, and excludes liability for loss or damage arising from any such claims or the consequences arising out of the application, use or misuse of its products.

02 PHYSICAL DESCRIPTION & THEORY OF OPERATION

2.1 Principle of Operation

The Bioclimatic ActiveOx™ ionization generator rail is designed specifically for plenum mounting. Generator rails are normally installed in the supply air side of an air handling unit following the final filter. Alternatively, they can be installed in return plenum.

2.1.1 Bioclimatic ActiveOx™ Bi-Polar Ionization Unit

The Bioclimatic ActiveOx™ generator rail is a Bi-Polar ionization device. The generator produces synchronized bipolar ionization of an air stream whose flow is perpendicular to the axis of the emitter pair. Depending upon the volume of air, chemical and biological content, ionization is factory pre-set to CFM airflow rating by means of local control to affect density sufficient to produce the desired volumetric air purification. Externally, the generator rail includes ionization modules, indicator light fuse, toggle switch, junction box power umbilical, wiring, and mounting chassis.

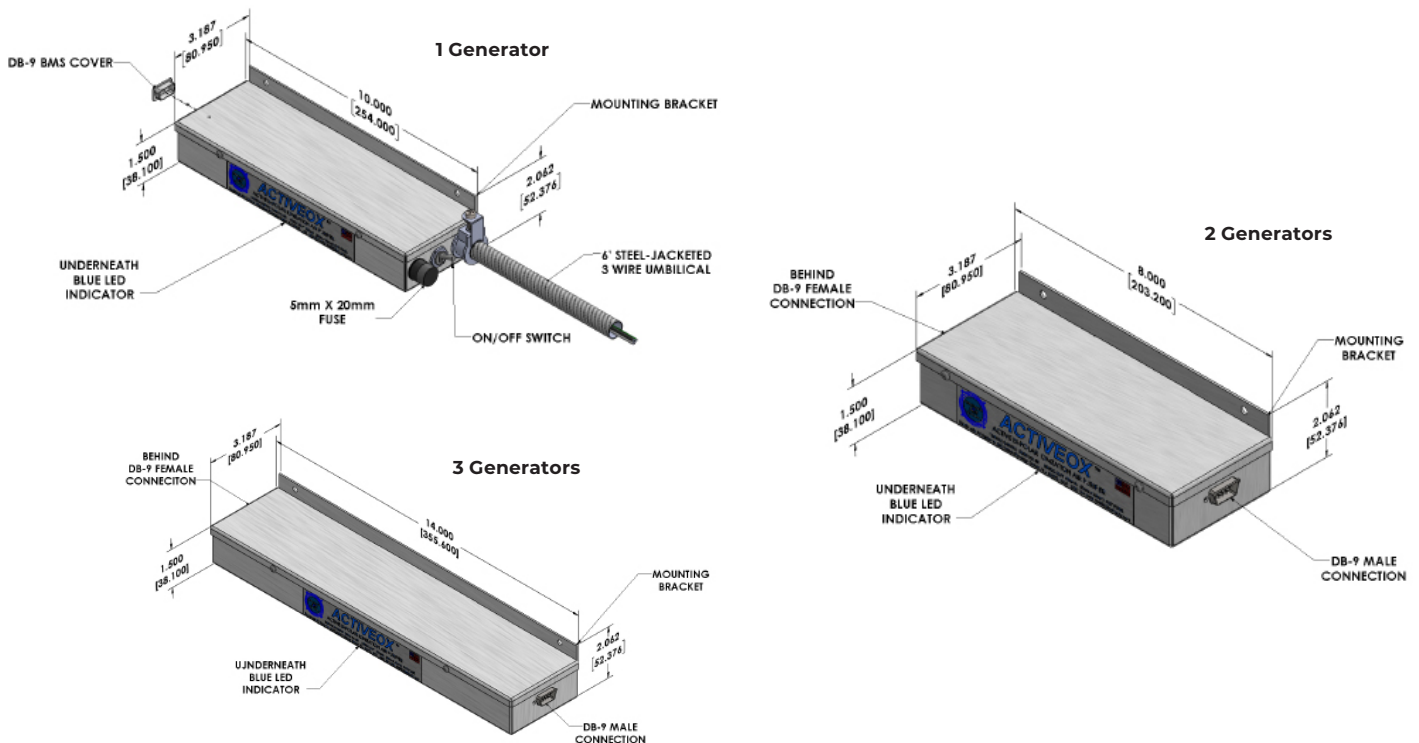
2.1.2 System Regulation

Power input to ionization generators is not adjustable.

2.1.3 Building Management System Control (BMSC)

The Bioclimatic ActiveOx™ generator rail has the option for a control box for building management system (BMS) or building automation system (BAS) interface.

The BMS (BAS) dry contact may be wired in series with multiple control boxes.



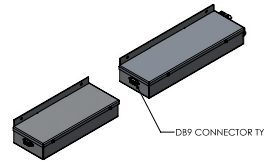
03 INSTALLATION

3.1 Installation

Install the rail assembly in accordance with the following guidelines.

3.1.1 Ionizers must be accessible for future service.

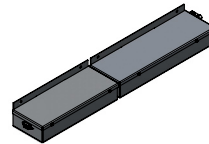
3.1.2 The rail must be installed such that the air blows across the face of the ionizer modules perpendicular to the emitter electrodes and to an imaginary line that bisects both emitters as indicated by the arrows below.



ATTACH THE RAILS AS NEEDED USING THE MALE AND FEMALE DB9 CONNECTORS



• NO ADDITIONAL CABLE REQUIRED TO POWER ADDITIONAL RAILS



Note: Up to 16 generators can be daisy-chained together on the same power supply. Rail sizes vary upon generator quantity.



CAUTION: Do not attempt to connect the generator unit(s) across multi-phase 3 or 4 wire circuits or across any electrical service in which pole to pole voltage exceeds 240 Volts. RMS.

3.2 Initial Setup

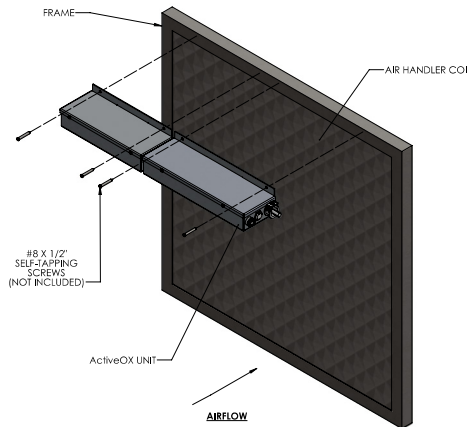
Generator rails are normally installed in the supply air side of an air handling unit following an air filter either at the top of a cooling coil (air entering side) or in the supply area. Alternatively, they can be installed in the return plenum. A minimum MERV 8 pre-filter is required.

Minimum clearances between filter and generator rails and cooling surfaces shall be four inches (101 mm).

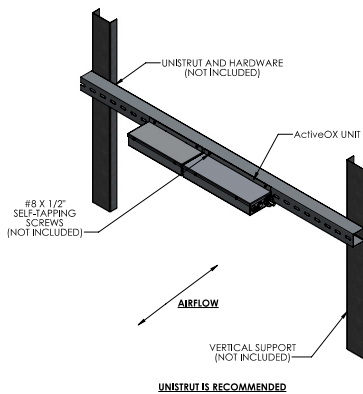
Rail assemblies require a minimum of four inches in the direction of airflow.

3.3 Wiring

Connect wiring to the Bioclimatic ActiveOx™ generator rail(s) following the specific wiring diagram for the application.



ATTACHED CENTERED ON COIL AT THE TOP OF THE FRAME



RAIL ATTACHED CENTERED ON COIL AT THE TOP OF THE FRAME



UNISTRUT IS RECOMMENDED

04 OPERATION

To start the generator rail(s), it is necessary to provide the appropriate supply voltage. The blue LEDs on the individual generator modules will illuminate when energized. To turn off the system – turn the power switch to the “Off” position.

05 MAINTENANCE

Frequent and extensive maintenance is typically not required. However, for best performance B.A.S. recommends semi-annual inspections to be sure the modules are free of debris. As a best practice, the modules can be cleaned using a compressed gas duster (as used to clean electronic equipment) or a cotton swab or small stiff brush (similar to an artist brush). Units must be de-energized for cleaning and maintenance. **Caution should be taken not to damage or bend the emitters.**



WARNING: DO NOT ATTEMPT TO REPLACE ANYTHING WHILE POWER TO THE SYSTEM IS ON. DISCONNECT ALL POWER SOURCES BEFORE SERVICING ANY UNIT.

06 TROUBLESHOOTING GUIDE

Always refer to the specific wiring diagram for the specific job being serviced.

6.1 The Bioclimatic ActiveOx™ Generators Will Not Energize

Possible Cause:	Possible Solution:
Facility circuit breaker is tripped or turned off.	Check the circuit breaker and reset it if necessary.
There is a faulty wiring connection between the circuit breaker and the generator.	Ensure all wiring connections between the circuit breaker and generator are secure and correct.
Check the fuse located next to the power switch.	Replace with an identical T 630mA Glass 5mm x 20mm (FST) fuse.

07 SPECIFICATIONS

7.1 Electrical

Power Requirement: 24 VAC or 100/240 VAC

Power Consumption: 0.5 Watts

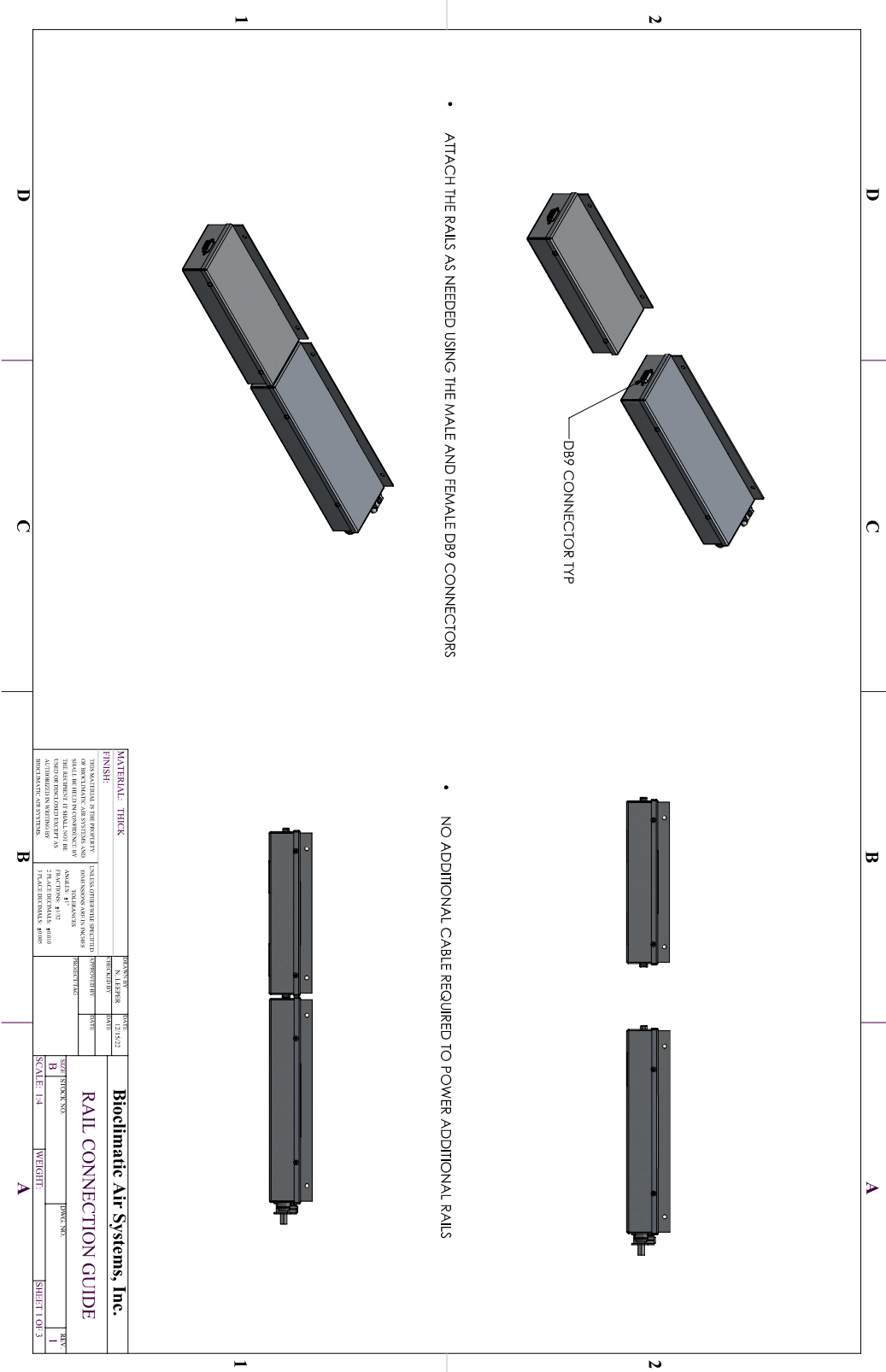
Max Operating Temperature: + 70° C

Humidity Range: 0 - 93% non-condensing

7.2 Mechanical

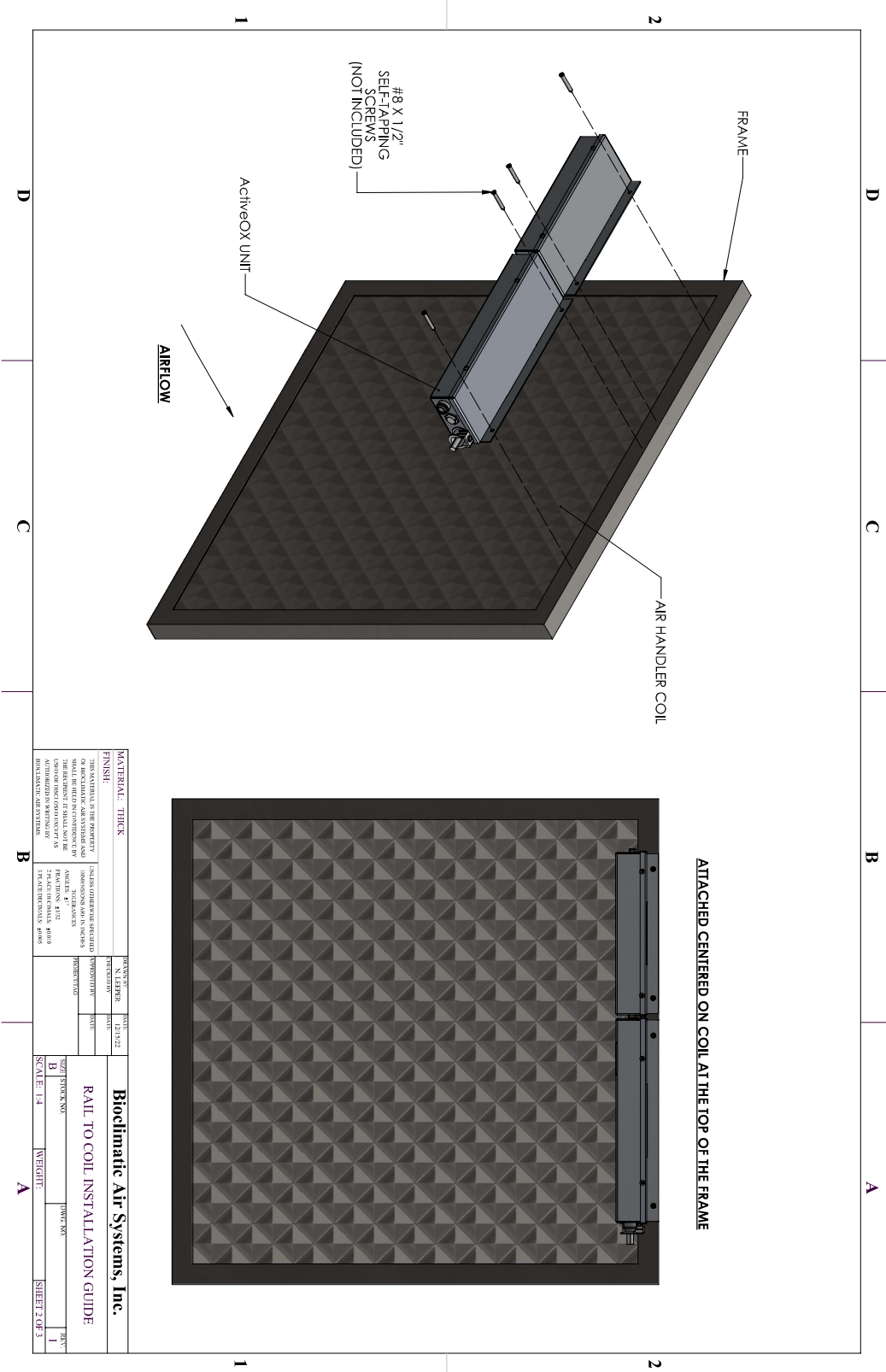
Environment: Indoor only

08 APPENDICES

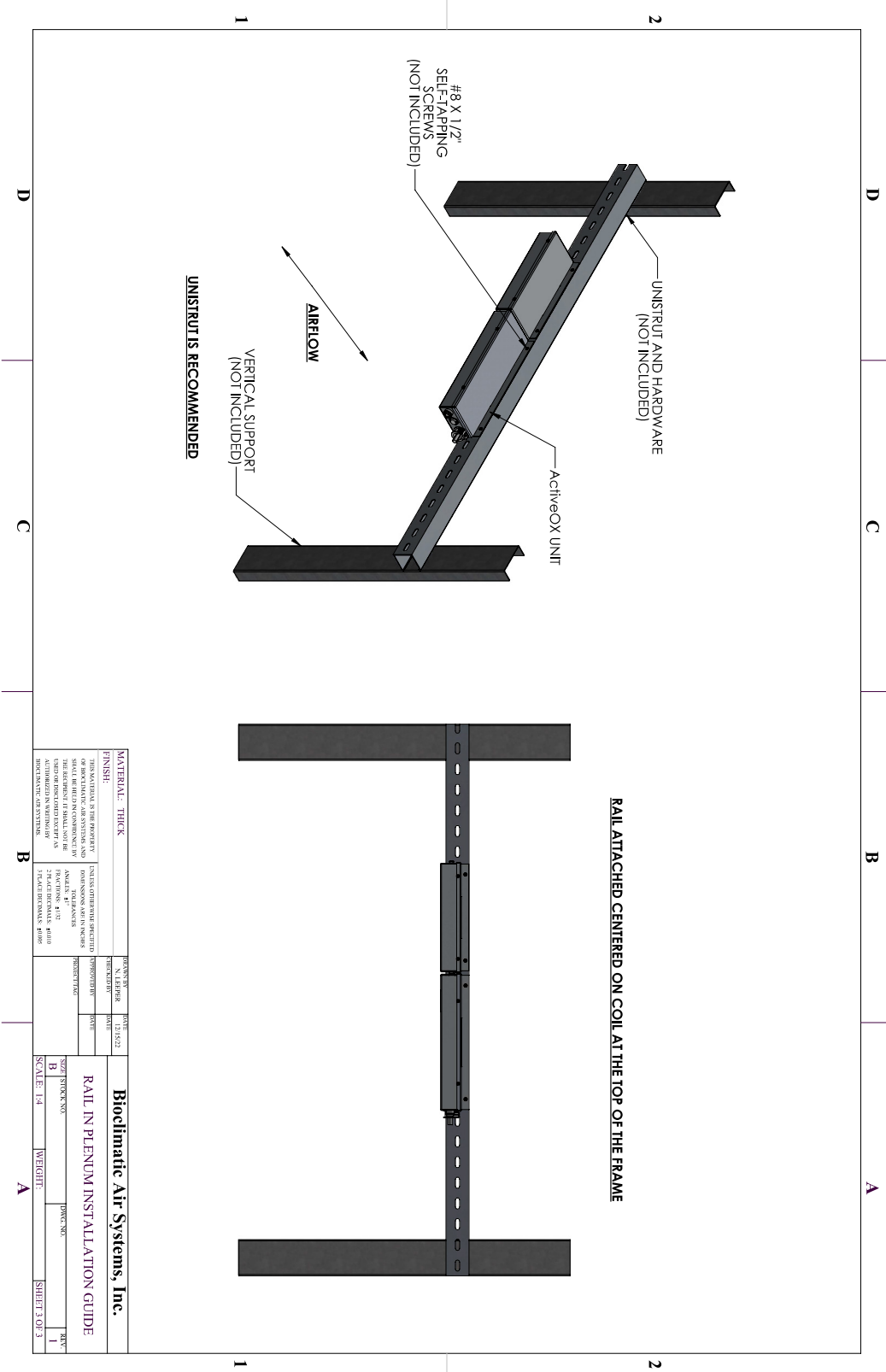


MATERIAL: THICK ENISE		REVISION: 12/2022	DATE: 12/2022	
THIS DOCUMENT IS THE PROPERTY OF BIOCLIMATIC AIR SYSTEMS AND SHALL BE RETURNED TO THE COMPANY UPON REQUEST. CUSTOMER INFORMATION IS NOT TO BE RELEASED TO ANY OTHER PARTY.		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES	PROPOSED BY:	DATE:
APPROVED BY: [Signature]		DATE: 12/2022	PROJECT NO.:	DATE:
SCALE: 1:4		WEIGHT:	SHEET 1 OF 3	

Bioclimatic Air Systems, Inc.
RAIL CONNECTION GUIDE



MATERIAL: THICK ENISE		FINISH: POLYURETHANE		REVISION: 02		DATE: 12-1-22	
THIS UNIT IS THE PROPERTY OF BIOLIMATIC AIR SYSTEMS AND SHALL BE RETURNED TO THE ORIGINAL PURCHASER BY THE CUSTOMER. BIOLIMATIC AIR SYSTEMS SHALL BE RESPONSIBLE FOR THE RETURN OF THIS UNIT TO THE ORIGINAL PURCHASER.		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES		PREFERRED		TYP	
SCALE: 1/4" = 1'-0"		WEIGHT:		SHEET 2 OF 3		DATE:	
Bioclimatic Air Systems, Inc.				RAIL TO COIL INSTALLATION GUIDE			
PART NO.:		REV. NO.:		DATE:		DRAWN BY:	



MATERIAL: THICK		PART NUMBER: 12-1522	
FINISH:		FINISH:	
DESCRIPTION: UNTESTED, GREENHOUSE-BUILT, OR BIODYNAMIC AIR SYSTEMS (AND SHALL BE BUILT IN COMPLIANCE WITH ASHRAE 62.1-2010) CAPTION BROWNDUPLICATIONS: APPROVED BY: UNTESTED, GREENHOUSE-BUILT, OR BIODYNAMIC AIR SYSTEMS		DESCRIPTION: UNTESTED, GREENHOUSE-BUILT, OR BIODYNAMIC AIR SYSTEMS (AND SHALL BE BUILT IN COMPLIANCE WITH ASHRAE 62.1-2010) CAPTION BROWNDUPLICATIONS: APPROVED BY: UNTESTED, GREENHOUSE-BUILT, OR BIODYNAMIC AIR SYSTEMS	
SCALE: 1/4"		WEIGHT:	

Bioclimatic Air Systems, Inc.
RAIL IN PLENUM INSTALLATION GUIDE

09 PRODUCT NUMBERS*

Stock Numbers	AOXR03-24 AOXR03-MV	AOXR04-24 AOXR04-MV	AOXR05-24 AOXR05-MV	AOXR06-24 AOXR06-MV	AOXR07-24 AOXR07-MV	AOXR08-24 AOXR08-MV	AOXR09-24 AOXR09-MV
Capacity (cfm)	3,750	5,000	6,250	7,500	8,750	10,000	11,250
Overall Length	18"	24"	26"	32"	38"	40"	46"
Module Quantities Used							
AOXR1PS-24 AOXR1PS-MV	1	1	1	1	1	1	1
AOXR2	1	0	2	1	0	2	1
AOXR3	0	1	0	1	2	1	2
Total Ion Gens	3	4	5	6	7	8	9
Power							
FLA @ 24VAC	0.082	0.105	0.127	0.149	0.170	0.194	0.210
FLA @ 120VAC	0.035	0.042	0.050	0.058	0.065	0.071	0.078
FLA @ 208VAC	0.027	0.032	0.037	0.043	0.047	0.052	0.056
Ambient Temp.	150° F / 66° C						

Stock Numbers	AOXR10-24 AOXR10-MV	AOXR11-24 AOXR11-MV	AOXR12-24 AOXR12-MV	AOXR13-24 AOXR13-MV	AOXR14-24 AOXR14-MV	AOXR15-24 AOXR15-MV	AOXR16-24 AOXR16-MV
Capacity (cfm)	12,500	13,750	15,000	16,250	17,500	18,750	20,000
Overall Length	52"	54"	60"	66"	68"	74"	80"
Module Quantities Used							
AOXR1PS-24 AOXR1PS-MV	1	1	1	1	1	1	1
AOXR2	0	2	1	0	2	1	0
AOXR3	3	2	3	4	3	4	5
Total Ion Gens	10	11	12	13	14	15	16
Power							
FLA @ 24VAC	0.230	0.255	0.280	0.305	0.330	0.355	0.380
FLA @ 120VAC	0.084	0.092	0.100	0.106	0.111	0.116	0.122
FLA @ 208VAC	0.061	0.066	0.071	0.076	0.079	0.083	0.087
Ambient Temp.	150° F / 66° C						

Stock Numbers	AOXR17-24 AOXR17-MV	AOXR18-24 AOXR18-MV	AOXR19-24 AOXR19-MV	AOXR20-24 AOXR20-MV	AOXR21-24 AOXR21-MV	AOXR22-24 AOXR22-MV	AOXR23-24 AOXR23-MV	AOXR24-24 AOXR24-MV	AOXR25-24 AOXR25-MV	AOXR26-24 AOXR26-MV
Capacity (cfm)	21,250	22,500	23,750	25,000	26,250	27,500	28,750	30,000	31,250	32,500
Overall Length	82"	88"	94"	96"	102"	108"	110"	116"	122"	124"
Module Quantities Used										
AOXR1PS-24 AOXR1PS-MV	1	1	1	1	1	1	1	1	1	1
AOXR2	2	1	0	2	1	0	2	1	0	2
AOXR3	4	5	6	5	6	7	6	7	8	7
Total Ion Gens	17	18	19	20	21	22	23	24	25	26
Power										
FLA @ 24VAC	0.404	0.428	0.452	0.476	0.500	0.524	0.548	0.572	0.596	0.620
FLA @ 120VAC	0.130	0.138	0.146	0.154	0.162	0.170	0.178	0.186	0.194	0.202
FLA @ 208VAC	0.092	0.097	0.102	0.107	0.112	0.117	0.122	0.127	0.132	0.137
Ambient Temp.	150° F / 66° C									

*If your specific model is not listed please contact the factory at:

1-800-394-3458 for operating instructions, safety information and replacement parts or service.