



ROOM AIR SANITIZER

Model RSCS280



Installation, Operation & Maintenance

ATLANTIC  ULTRAVIOLET
CORPORATION

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Owner's Manual

TABLE OF CONTENTS

SAFETY WARNINGS	3
SAFETY INSTRUCTIONS	3
PRODUCT APPLICATION	4
CONSTRUCTION	4
PRINCIPLE OF OPERATION	5
LIMITATIONS	5
UNPACKING	6
INSTALLATION	7
FIXTURE PLACEMENT	7
SET-UP INSTRUCTIONS	7
OPERATION AND MONITORING CONTROLS	7
MAINTENANCE	8
LAMP INSTALLATION, REPLACEMENT OR CLEANING	8
INTAKE FILTER	9
CLEANING OF ELECTROSTATIC FILTER	9
BREAKAGE	9
DISPOSAL OF MERCURY ADDED LAMPS	9
OPTIONAL ACCESSORIES	10
TROUBLESHOOTING	10
TECHNICAL SPECIFICATIONS	11
REPLACEMENT PARTS	11
USER ASSISTANCE	12
WARRANTY	12
PATENT NOTICE	12

These instructions generally describe the installation, operation and maintenance of the **Sanitaire®** Room Air Sanitizer Model RSCS280. Questions that are not specifically answered by these instructions should be directed to the Factory.

Atlantic Ultraviolet Corporation takes all possible precautions when packaging equipment to prevent damage. Carefully inspect and report all damages immediately. Do not install damaged equipment. Follow all instructions on any labels or tags. Carefully inspect all packing materials before discarding to prevent the loss of accessories, mounting hardware, spare parts or instructions.

The information and recommendations contained in this publication are based upon data collected by the Atlantic Ultraviolet Corporation® and are believed to be correct. However, no guarantee or warranty of any kind, expressed or implied, is made with respect to the information contained herein. Specifications and information are subject to change without notice.



SAFETY WARNINGS

- All personnel should be alerted to the potential hazards indicated by the product safety labeling on this fixture.
- The following conventions are used to indicate and classify precautions in this manual and on product safety labeling. Failure to observe precautions could result in injury to people or damage to property.



This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.



This symbol/pictorial is used to identify an **ELECTRICAL SHOCK** or **ELECTROCUTION** hazard.

DANGER

Danger indicates an **IMMINENTLY** hazardous situation, which, if not avoided, **WILL** result in death or serious injury.



This symbol/pictorial is used to identify an **ULTRAVIOLET LIGHT** hazard.

WARNING

Warning indicates a **POTENTIALLY** hazardous situation, which, if not avoided, **COULD** result in death or serious injury.



This symbol/pictorial is used to identify the need to wear approved ultraviolet resistant face shield.

CAUTION

Caution indicates a **POTENTIALLY** hazardous situation, which, if not avoided, **MAY** result in minor or moderate injury.



This symbol/pictorial is used to identify the need to wear protective gloves.

CAUTION

Caution used without the safety alert symbol indicates a potentially hazardous situation, which, if not avoided, may result in property damage.

- Product safety labels should be periodically inspected and cleaned, as necessary, to maintain good legibility. Always replace illegible safety labels. Contact factory to obtain replacement safety labels.



SAFETY INSTRUCTIONS

WARNING: To guard against injury, basic safety precautions should be observed, including the following:

1. Read and follow **ALL** safety instructions.



WARNING: Avoid exposure to direct or strongly reflected germicidal ultraviolet rays. Germicidal ultraviolet rays are harmful to the eyes and skin.

2. Intended for indoor use only.
3. Do not alter the construction or design.
4. Do not use this fixture for other than its intended purpose, as described in this manual.
5. Do not override safety interlock.
6. Do not remove any labels or devices.
7. Do not mount under any source of moisture or condensation.
8.  **CAUTION:** Do not operate without proper electrical ground.
9. Do not operate the fixture if there is visible or suspected damage to the fixture or, if applicable, there is damage to power cord and/or plug.
10. Keep inlet and outlet, of the blowers, clean and clear of debris.
11. Do not operate without access cover secured.
12. Stay clear of blowers, or other moving parts that can cause injuries.
13. Utility power supplied, to the fixture, **MUST** match power requirements listed on the fixture label.
14.  **WARNING:** Always disconnect power to the fixture before performing any service or maintenance.
15. Read and follow all notices and warnings on the fixture.
16. **SAVE THESE INSTRUCTIONS.**

PRODUCT APPLICATION

CONSTRUCTION

The **Sanitaire**[®] Room Air Sanitizer Model RSCS280 consists of:

- Germicidal ultraviolet lamps, which deliver germicidal ultraviolet energy in the specific wavelength of 254 nanometers (**nm**), which is highly effective against airborne microbes including: virus, bacteria, and mold spores.
- Electronic ballasts.
- A polished reflector, whose design and specular aluminum construction, maximizes ultraviolet intensity within the exposure chamber.
- NEMA 5-15, three-prong plug that operates on 120VAC 60Hz single-phase standard household current is standard in most units. The **Sanitaire**[®] is also available for operation on 230VAC 50Hz.
- Permanent, washable, electrostatic intake filter, capable of removing airborne particles as small as 5 microns.
- A louvered exhaust, which restricts ultraviolet radiation from passing into the room, protecting the room's occupants from ultraviolet exposure.
- An enclosure and access cover constructed of stainless steel, type 304. Stainless steel construction provides strength, durability and lasting value.
- An interlock safety switch. The interlock switch interrupts power to the sanitizer, when the access cover is removed from the lamp/exposure chamber.

PRINCIPLE OF OPERATION

The **Sanitaire**[®] Room Air Sanitizer is categorized as a germicidal ultraviolet fixture that utilizes germicidal ultraviolet lamps that are completely enclosed within a stainless steel exposure chamber and is safe for use in a clean, dry environment. The **Sanitaire**[®] effectively destroys airborne microbes including: bacteria, mold and virus in enclosed spaces.

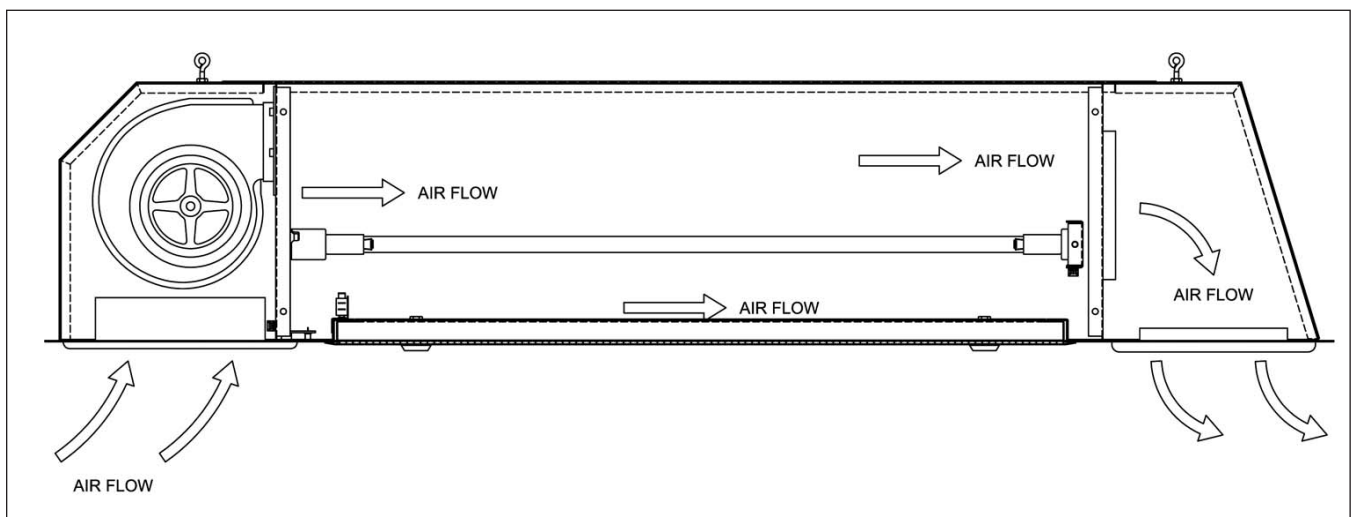
The **Sanitaire**[®] design has been carefully conceived to provide germicidal ultraviolet exposure for air disinfection. The dosage, as it applies to ultraviolet disinfection, is a function of time, and the intensity, of ultraviolet radiation, to which the air is exposed. The exposure time, in seconds, is the total time it takes the air to move through the ultraviolet field, produced by the germicidal lamps. Exposure time is related to the airflow rate; the higher the airflow, the lower the exposure time or the lower the airflow, the higher the exposure time.

All components are mounted in a stainless steel frame. Access to the lamp/exposure chamber is gained through the interlocked, access door. Fixture operation can be monitored from the base panel.

The operation of the **Sanitaire**[®] Room Air Sanitizer Model RSCS280 is as follows:

1. Air is drawn into the fixture through the the louvered filter panel.
2. LED indicator lights provide positive indication of operation of germicidal ultraviolet lamps.
3. The air is forced into the exposure chamber, where it is irradiated by the germicidal ultraviolet lamps.
4. The purified air exits the fixture, through the louvered exhaust panel, located at the opposite end of the fixture.

Figure 1 - Sanitaire[®] Room Air Sanitizer Model RSCS280 Operation



LIMITATIONS

- Overexposure to germicidal ultraviolet rays will result in the irritation of the eyes and reddening of the skin. For that reason, it is of the utmost importance that your ultraviolet application be carefully planned and implemented so as to avoid exposure, of personnel, to direct or reflected ultraviolet rays.
- The American Conference of Governmental Industrial Hygienists (**ACGIH**) has established that the ultraviolet radiant exposure incident for unprotected eyes or skin should not exceed 0.2 microwatts per square centimeter ($\mu\text{W}/\text{cm}^2$) at 254 nanometers (**nm**) for an eight (8) hour period. ("2004 TLVs[®] and BEIs[®]")

UNPACKING

- Remove the **Sanitaire**® Room Air Sanitizer Model RSCS280 from its shipping carton.
- Atlantic Ultraviolet Corporation takes all possible precautions when packaging this fixture to prevent damage. Carefully inspect the sanitizer, power cord and plug, if applicable, for damage, report all damage immediately. Do not assemble or operate if there is any damage, visible or suspected.
- Germicidal lamps are packed separately, to ensure maximum protection for the lamps. Keep the lamps aside until ready for installation.
- Carefully inspect all packing materials to prevent the loss of accessories, mounting hardware, spare parts or instructions.
- Do not discard packing materials until fixture is assembled and check out is complete.

The **Sanitaire**® Model RSCS280 Room Air Sanitizer includes:

- 1 - Louvered intake panel with filter
- 1 - Louvered exhaust panel
- 4 - 120v 60Hz, 230v 50Hz Electronic Ballasts
- 4 - Germicidal ultraviolet lamps
- 2 - Blowers producing 280 CFM (in free air)

INSTALLATION

FIXTURE PLACEMENT

The **Sanitaire**® Model RSCS280 fixture is recommended for use in rooms with suspended "T-Bar" ceilings. Access to the room does not need to be controlled while the fixture is operating. The exposure chamber, of the **Sanitaire**® fixture, protects the room's occupants from ultraviolet exposure by restricting ultraviolet radiation from passing into the room.

To ensure safe and proper use;

- The **Sanitaire**® Model RSCS280 Room Air Sanitizer should be installed by qualified professionals so that local and national building and electrical codes are fully complied with.

▲ WARNING: Failure to adequately support this equipment could result in serious injury or even death.

- The **Sanitaire**® Model RSCS280 has 4 suspension points. The suspension method chosen should be structurally adequate to support the weight of the unit independently from any one of these suspension points (unit weight can be found in the equipment specification).
- Avoid using a single cable or chain or other structural element to support more than one suspension point.
- Never attempt to support or suspend this unit on the ceiling tile track system.
- Remember it is the equipment user's responsibility to insure an adequate and safe installation of this equipment and the safety of room occupants.
- It is recommended that the **Sanitaire**® Model RSCS28 be wired to a wall switch to control on and off operation.

OPERATION AND MONITORING CONTROLS

The **Sanitaire**® is designed to operate with minimal operator supervision. Fixture operation is monitored from the Base Panel.

Lamp Operation Indicators: Provide positive indication, when lit, of each germicidal lamp operation. Lamp Operation LEDs, which are not lit, indicate faulty germicidal lamps or ballasts. Lamp Operation LED position, in the LED array, is relative to the germicidal lamp position in the exposure chamber, aiding in the location of the faulty lamps or ballast(s).

MAINTENANCE

- The **Sanitaire**® Model RSCS280 is designed to operate with a minimal amount of maintenance.
- A regular cleaning cycle of the germicidal lamps, interior, and intake filter should be established, and carefully maintained, based on inspection and experience. The frequency of cleaning will vary with the conditions surrounding each installation. It is recommended that the ultraviolet lamps be cleaned at least once every three (3) months.
- The germicidal ultraviolet lamps used in the **Sanitaire**® have a manufacturer's rated average effective life of 10,000 hours. Lamps may operate longer than their rated effective life, but the reduction in ultraviolet output will make it impractical to use past the manufacturer's rated life. For maximum efficiency lamp replacement is recommended every 10,000 hours of operation or about one (1) year of continuous use.
- Unless lamp replacement is due to failure or breakage, it is recommended that all lamps be replaced at the same time.
- The **Sanitaire**® Model RSCS280 is equipped with a safety interlock switch, which will shut down the germicidal lamps when the Access Door is opened.

▲ CAUTION: Do not override the safety interlock switch. Operation of the fixture with the interlock switch overridden and the Access Door open will expose personnel to direct or strongly reflected germicidal ultraviolet rays. Germicidal ultraviolet rays are harmful to the eyes and skin.

▲ WARNING: Always disconnect power to the fixture before performing any service or maintenance.

LAMP INSTALLATION, REPLACEMENT OR CLEANING

▲ WARNING: Always disconnect power to the fixture before performing any service or maintenance.

▲ CAUTION: Ultraviolet lamps are easily damaged and may cause injury if broken. Exercise care when handling lamps.

1. Disconnect power to the fixture.
2. Open access door, by unlocking the two (2) latches.
3. Remove lamps, carefully press lamp against the spring-loaded lamp holder, when upper lamp pin clears the stationary lamp holder pull lamp out, and away from fixture .
4. Moisten a clean, lint-free cloth with denatured alcohol and clean lamps.
5. When lamps have been removed, cleaned and safely set aside, remove any loose dust or dirt from the interior of the fixture with a soft dry cloth, or vacuum.
6. To remove any dust, dirt, fingerprints, smears, etc, from the outer surfaces of the conditioner, moisten a clean, lint-free cloth with denatured alcohol and wipe down the conditioner. Buff out any streaks, left from the cleaning, using a soft dry cloth.
7. Install lamps, insert lamp pin into spring-loaded lamp holder. Carefully press lamp against the spring-loaded lamp holder. Align upper lamp pin with stationary lamp holder. Slowly ease the pressure until lamp is fully seated in lamp holders.
8. Verify that lamps are properly seated.
9. Repeat until all lamps have been properly reinstalled.
10. Close and lock access door.
11. Restore power to the fixture.



▲ WARNING: Avoid exposure to direct or strongly reflected germicidal ultraviolet rays. Germicidal ultraviolet rays are harmful to the eyes and skin.

12. Verify operation by viewing Lamp Operation Indicators (LEDs). If the sanitizer is not operating properly, go to “**Troubleshooting**” section on page 10.

INTAKE FILTER

- The **Sanitaire®** Room Air Sanitizers Model RSCS280 are fitted with a permanent, washable, electrostatic air filter. **DO NOT** apply oil, or adhesive sprays to the filter.
- In most applications, regular vacuuming will maintain peak performance of electrostatic filter; periodically flushing electrostatic filter with clean water is recommended whenever vacuuming fails to restore a clean appearance.
- The electrostatic filter may be cleaned repeatedly without loss of efficiency. The frequency of cleaning will vary with the conditions surrounding each installation.

CLEANING OF ELECTROSTATIC FILTER

▲ WARNING: Always disconnect power to the fixture before performing any service or maintenance.

1. Disconnect power to the fixture.
2. Unlatch and remove access cover.
3. Remove filter from the housing.
4. Vacuum the upstream side first, and repeat on the discharge side. (Skip to step 7 unless washing filter.)

▲ CAUTION: Do not use a high velocity water stream to clean the filter. A high velocity stream may destroy the filter's internal fibers.

5. To wash filter, flush thoroughly with clean water, either by immersing or with a fine spray in the direction opposite to the airflow. If the filter is contaminated with heavy grease concentrations, wash filter with a detergent solution. **NOTE:** Follow all manufacturer's instructions and precautions for handling detergents. The filter should be rinsed thoroughly with clean water.
6. Shake off any excess water from filter and let dry.
7. Replace filter into the housing, with airflow direction label pointing into the electrical enclosure.
8. Close and re-latch access louver.
9. Restore power to the fixture.
10. Verify operation by viewing Lamp Operation Indicators (LEDs). If the sanitizer is not operating properly, go to “**Troubleshooting**” section on page 10.

BREAKAGE

▲ CAUTION: Broken Quartz is SHARP.



Wear protective gloves when handling broken ultraviolet lamps.

In the event of breakage, **DO NOT** use a household vacuum cleaner to pick up fragments of the lamp. Sweep up debris into a plastic bag and dispose of properly.

DISPOSAL OF MERCURY ADDED LAMPS

Germicidal ultraviolet lamps, like standard fluorescent lamps contain small amounts of mercury. Mercury added lamps should not be placed in the trash. Dispose of properly.

For further information regarding the disposal and recycling of lamps containing mercury, along with Federal and State requirements visit <http://www.lamprecycle.org>. Product Data Sheets for germicidal ultraviolet lamps can be found in the “PDF Library for **Ster-L-Ray®** Germicidal Ultraviolet Lamps” section of <http://www.ultraviolet.com>.

OPTIONAL ACCESSORIES

1. **ArmorLite™ Safety Shield**

Protective coating applied to **Ster-L-Ray® Lamps**

Insures protection by eliminating the dangers associated with fragments of broken quartz and mercury contamination.

2. The **Zenith™ Ultraviolet Meter** is a sensitive, hand-held, ultraviolet meter that can be used to:

- Survey ultraviolet room air sanitizer installations to ensure that the germicidal ultraviolet radiant exposure, of personnel within the treated area, is within acceptable limits. The **Zenith™ Ultraviolet Meter** provides accurate and easy-to-read levels of intensity that may be interpreted by anyone - not just engineers.
- Check the intensity of aging ultraviolet lamps.

The **Zenith™** Part No. 30-0081-R is the recommended meter for this application.

For more information and purchasing contact our offices, weekdays between 8:30 am and 5:00 pm Eastern time, at: Atlantic Ultraviolet Corporation, 375 Marcus Boulevard, Hauppauge, New York, 11788
Tel: 631.273.0500 • Fax: 631.273.0771 • E-mail: info@ultraviolet.com • Website: www.ultraviolet.com

TROUBLESHOOTING

⚠ WARNING: Always disconnect power to the fixture before performing any service or maintenance.

- **IMPORTANT:** This fixture is to be serviced **ONLY** by qualified, and appropriately licensed, personnel.

Table 1 - Troubleshooting

Problem	Possible Cause	Corrective Action
System not operating.	No electrical power...	Verify that the fixture is connected to a live power source.
	Power connections, loose or disconnected...	Verify power connections are fully engaged.
Internal blower(s) not functioning.	Loose power connection...	Confirm connection to blowers; connections are tight and making full contact.
	Faulty blower motor...	Replace blower motor.
Individual Lamp Operation Indicator not lighting.	Ballast	Swap lamp, with known good lamp. If good lamp still does not operate, replace ballast.
	Germicidal lamp not operating...	Swap suspect lamp, with known good lamp. If suspect lamp still does not operate, replace lamp.
	Germicidal lamp not properly seated...	Confirm contact of lamp and lamp socket, contacts are tight and lamp socket is making full contact with lamp.
	Ballast not functioning...	Locate corresponding ballast and replace.
All germicidal lamps not operating:	Lamps not installed...	Install lamps.
	Interlock switch open...	Confirm access cover is on and latched.
	Interlock switch faulty...	Replace interlock switch.

TECHNICAL SPECIFICATIONS

Table 2 - Technical Specifications

Blower Capacity: (Cubic Feet per Minute)		280	
Nominal Fixture Capacity ^① : (Cubic Feet per Minute)		210	
Max Treatment Capacity: (Cubic Feet per Hour)		12,600	
Max Room Size @ 3 Air Changes/Hour: (Cubic Feet)		4,200	
Max Room Size @ 4 Air Changes/Hour: (Cubic Feet)		3,150	
Max Room Size @ 5 Air Changes/Hour: (Cubic Feet)		2,520	
Max Room Size @ 6 Air Changes/Hour: (Cubic Feet)		2,100	
Dimensions:	Length: (Inches)	46-5/8	
	Width: (Inches)	22-1/8	
	Height: (Inches)	9-7/16	
Electrical:	Volts: (Volts)	120	220-240
	Amps: (Amps)	4.4	2.32
	Line Frequency: (Hertz)	60	50
Lamp Data:	Power Consumption ^② : (Watts/Lamp)	32	
	Ultraviolet Output ^③ : (Watts/Lamp)	11.2	

① Fixture capacity incorporates an estimated allowance for airflow friction loss across filter and fixture.

② Wattage is lamp watts only and does not include ballast loss.

③ Ultraviolet output at 254nm at 100 hours and 80°F (approximate).

All specifications, dimensional data, etc. are approximate and subject to change without notice.

REPLACEMENT PARTS

Table 3 - Replacement Parts for Model RSCS280

NO.	DESCRIPTION	QTY	PART NO.
1	Germicidal Ultraviolet Lamp	4	05-1352-R
2	Electronic Ballast, 120v 50/60Hz	4	10-0137
	Electronic Ballast, 230v 50/60Hz	4	10-0136
3	Lamp Holder Set	4	05-1320A
4	Interlock Switch, SPDT	1	40-4040A
5	Air Filter, Electrostatic, Washable, 6"x20"x1"	1	40-0062A
6	Blower, 140CFM, 120v 50/60Hz	2	40-1079B
	Blower, 140CFM, 220v 50/60Hz	2	40-0031A
7	Eyebolt, 8-32 x 1" Long with Hex Nut	4	50-0157
8	Lead Cord, 120v	1	35-1100
	Lead Cord, 220v - 240v	1	35-1452

Other replacement parts are available. Consult the Factory for specific requirements.

USER ASSISTANCE

Atlantic Ultraviolet Corporation makes every effort to ensure that the **Sanitaire®** Room Air Sanitizers are products of superior quality and workmanship. This manual describes the installation, operation and maintenance of the **Sanitaire®** Room Air Sanitizers.

Please read and become familiar with the contents of this manual before installing or using this fixture. If after reading the manual you still have questions, or concerns, regarding the installation or use of this fixture, contact our offices, weekdays between 8:30 am and 5:00 pm Eastern time, at:

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Please REGISTER your product immediately - you can do this in a number of ways. Go online to Ultraviolet.com and on the bottom left of each page either click on "Fill out Warranty Reg. Form on-line!" complete and hit submit or click on "Download a PDF of the Warranty Reg. card" which you can print, fill out and mail in. If you prefer to register over the telephone please call 631-273-0500.

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For your convenience, record the following information below. The model and serial number can be found on a label located on the **Sanitaire®** Room Air Sanitizer. Keep this manual, along with proof of purchase, handy when contacting our offices.

Purchased From:	Date:
Model:	Serial No.:

WARRANTY

We warrant that this product will be free from defects in material and workmanship for a period of one year from the date of shipment thereof or the product's total rated life, whichever first occurs. Within the warranty period we shall repair or replace such products, which are returned to us with shipping charges prepaid, and which are determined by us to be defective. This warranty will not apply to any product, which has been subjected to misuse, negligence, or accident; or misapplied; or modified; or repaired by unauthorized persons; or improperly installed.

The Buyer shall inspect the product promptly after receipt and shall notify us at our main office in writing of claims, including claims of breach of warranty, within thirty (30) days after the Buyer discovers or should have discovered the facts upon which the claim is based. Failure of the Buyer to give written notice of a claim within the time period shall be deemed to be a waiver of such claim.

The provisions of the above warranty are our sole obligation and exclude all other remedies or warranties, expressed or implied, including warranties of merchantability and fitness for a particular purpose, whether or not purposes or specifications are described herein. We further disclaim any responsibility whatsoever to the customer, or to any person, for injury to person, damage to, or loss of property or value caused by any product which has been subjected to misuse, negligence, accident; or modified or repaired by unauthorized persons; or improperly installed.

Under no circumstances shall the Company be liable for any incidental, consequential or special damages, losses or expenses arising from the contract for this product, or in connection with the use of, or inability to use, our product for any purpose whatsoever.

PATENT NOTICE

No attempt has been made to determine the patent status of applications illustrated or described in this publication. Inclusion in this publication of any design or method of use, which may be patented, is not to be construed as promoting or sanctioning unauthorized use.