

# Zenith™

GERMICIDAL ULTRAVIOLET DETECTOR



# Owner's Manual

**ATLANTIC**  **ULTRAVIOLET**  
CORPORATION®

SINCE 1963

*Manufacturers / Engineers / Sales / Service*  
Germicidal Ultraviolet – Equipment & Lamps

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Extensive Product Information Available at:

**Ultraviolet.com**  
**BuyUltraviolet.com**



## Installation, Operation & Maintenance

**Read and Follow All  
Safety Instructions.  
Save These Instructions.**

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These instructions generally describe the operation and maintenance of the **Zenith™** Germicidal Ultraviolet Detector. Questions that are not specifically answerable 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. 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 unit.
- 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.

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

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

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

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

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

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

 This symbol/pictorial is used to identify the need to wear approved ultraviolet blocking eyewear.

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

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

 This symbol/pictorial is used to identify components which must not be disposed of in trash

# SAFETY INSTRUCTIONS

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

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

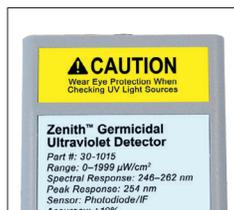
    **When using this device to check a UV-C source, avoid exposure to direct or reflected germicidal ultraviolet rays. Germicidal ultraviolet rays are harmful to the eyes and skin. Wear face, hand, and eye protection and cover any skin that may be exposed to direct or reflected germicidal ultraviolet rays.**

2. Intended for indoor use only.
3. Do not alter design or construction.
4. Do not use this device for other than its intended purpose, as described in this manual.
5.  **When using this device to check a UV-C source, be aware that the germicidal ultraviolet rays produced by the lamp may break down plastic, rubber, or other non-metallic materials with inadequate resistance to ultraviolet.**
6. Do not remove any labels.
7. Read and follow all notices and warnings on the device.
8. Do not subject the device to extreme temperatures, humidity, shock, dust, or water.
9. Keep the UV-C photodiode detector clean, free of dirt, oil etc. and avoid scratching or damaging the detectors face.
10. **SAVE THESE INSTRUCTIONS.**

# SAFETY LABELS



Caution Label: Wear Eye Protection When Checking UV Light Sources



Location of Caution Label

# CAUTION

It is the user's responsibility to determine and validate the suitability of this equipment for use in the user's system or process.

No warranty or representation is made by the manufacturer with respect to suitability or performance of this equipment or to the results that may be expected from its use.

The user should periodically inspect, clean as necessary and confirm the presence and good legibility of the product safety labels. Contact the factory for replacement labels in the event that any of the labels are missing or illegible.

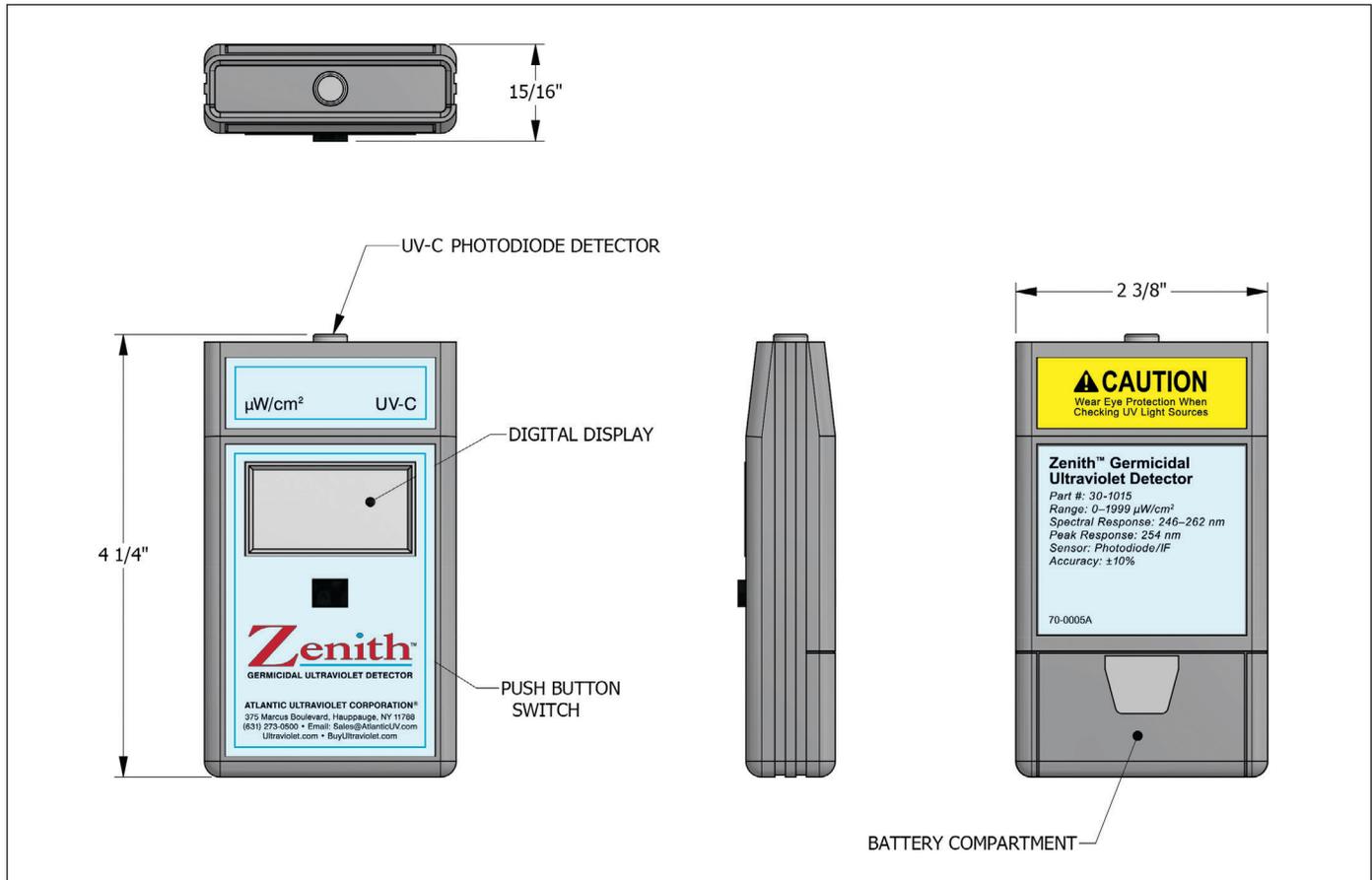
# PRODUCT APPLICATION

The **Zenith™** Germicidal Ultraviolet Detector is a sensitive hand-held, self-contained battery operated ultraviolet meter that can be used for:

- Monitoring UV-C Germicidal Lamp Intensity & Aging
- Measuring UV-C Germicidal Fixture Leakage

# CONSTRUCTION

Figure 1 – Zenith™ Germicidal Ultraviolet Detector Dimensions



Shown in **Figure 1**, the **Zenith™** Germicidal Ultraviolet Detector consists of the following:

- Self-contained UV-C Photodiode Detector which has a response range between 246–262 nanometers UV-C.
- Digital Display which indicates the value in  $\mu\text{W}/\text{cm}^2$  (Micro watts per square centimeter)
- Press and hold push-button operation switch
- Battery compartment which contains a single 9 volt battery
- An enclosure constructed of a durable plastic, which protects the device from normal physical abuse that may be encountered by a portable meter.

# UNPACKING

The **Zenith™** Germicidal Ultraviolet Detector packaging includes:

- 1 - **Zenith™** Germicidal Ultraviolet Detector
- 1 - Carrying Case
- 1 - 9v Battery (inside battery compartment)
- 1 - Calibration Certificate
- 1 - Owner's Manual

# PRINCIPLE OF OPERATION

## CAUTION

When using this device to check a UV-C source, avoid exposure to direct or reflected germicidal ultraviolet rays. Germicidal ultraviolet rays are harmful to the eyes and skin. Wear face, hand, and eye protection and cover any skin that may be exposed to direct or reflected germicidal ultraviolet rays.



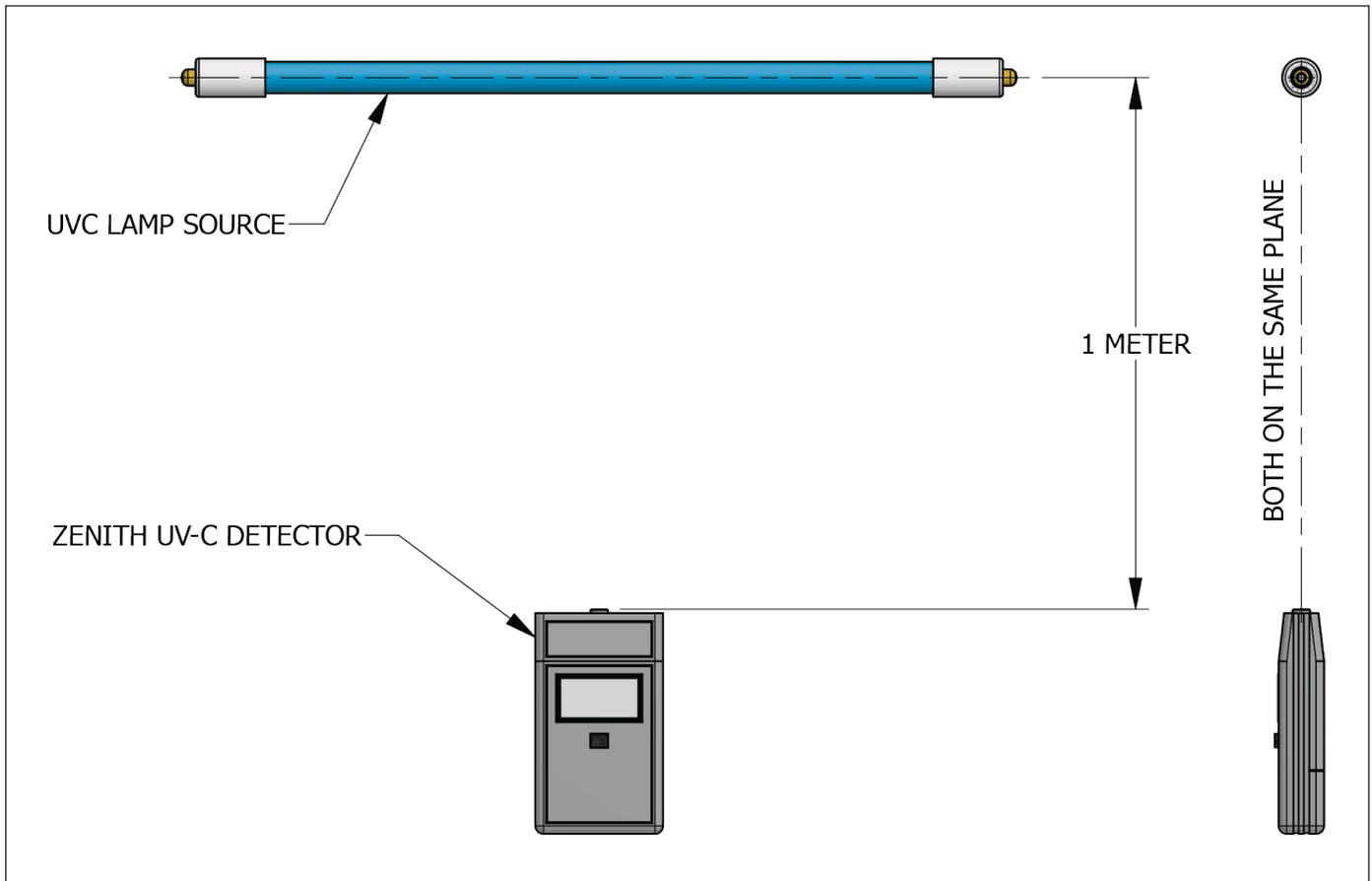
## GENERAL OPERATION

To operate the **Zenith™** Germicidal Ultraviolet Detector, aim the UV-C Photodiode detector on the top panel of the unit at a UV-C source and press and hold the push-button switch. To ensure repeatable test results, record both the distance from the UV-C source and the reading taken.

## MONITORING UV-C GERMICIDAL LAMP INTENSITY & AGING

A lamp being tested should be allowed a period of time to warm up before taking readings. Warm-up time should be at least 5 minutes, however these times may vary depending upon lamp type. Consult one of our UV Application Specialists at (631) 273-0500, Monday–Friday 8:30am to 5:00pm EST for further information regarding proper lamp warm-up times.

Figure 2 – Zenith™ Distance From Lamp Source



Use **Figure 2** as a guide. Check the UV-C Germicidal Lamp's intensity at its approximate center, at a measured distance of 1 meter from the end of the **Zenith™** UV-C Photodiode Detector to the center line of the lamp. Note that in addition to the 1 meter distance, the UV-C source and the **Zenith™** Germicidal Ultraviolet Detector should be located on the same plane as shown.

## PRINCIPLE OF OPERATION (CONT.)

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Best practices when checking a lamp should include the following data:

- Lamp Description or Part Number
- Displayed value indicated on the **Zenith™** Germicidal Ultraviolet Detector's digital display
- Distance at which measurement was taken (Ref: 1 meter)
- Lamp warm-up time used before lamp was tested

*\*Note: Your lamp values may vary from lamp manufacturer's data since Lamp Manufacturer's output data is based on measurements performed under laboratory conditions in air at ambient room temperatures, utilizing matched electronic ballast and represent average values.*

### **⚠ WARNING**

Equipment is required to be powered on and in use when testing for UV-C Germicidal Leakage. It is the user's responsibility to ensure inspection in and around these fixtures is safe to perform.

### **⚠ CAUTION**

When using this device to check a UV-C source, avoid exposure to direct or reflected germicidal ultraviolet rays. Germicidal ultraviolet rays are harmful to the eyes and skin. Wear face, hand, and eye protection and cover any skin that may be exposed to direct or reflected germicidal ultraviolet rays.



## MEASURING UV-C GERMICIDAL FIXTURE LEAKAGE

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Fixtures are often inspected to ensure the UV-C light doesn't exit from within framework of the device, where it could harm occupants or damage other susceptible material located in the vicinity. This type of test differs from the testing of an individual UV-C Germicidal lamp in that the distance and angle from the source plays a much smaller role.

Using the **Zenith™** Germicidal Ultraviolet Detector, test along the fixture's seams, covers, duct work, light traps, or any area which appears that light can be escaping. Ideally, the **Zenith™** Germicidal Ultraviolet Detector should display "0" in all cases and at all distances. Some fixture designs may inherently not allow for complete blockage of UV-C light, such as those found over conveyor systems or tunnels. For these types of fixtures, it may be suitable to develop a safe zone boundary around the fixture. Contact one of our Atlantic Ultraviolet UV Application Specialists at (631) 273-0500, Monday–Friday 8:30am to 5pm EST for further information on this topic.

# MAINTENANCE

## GENERAL CARE OF ZENITH™ GERMICIDAL ULTRAVIOLET DETECTOR

- Keep the Zenith™ Germicidal Ultraviolet Detector clean and free of dust and humidity. Use a dry, soft cloth to clean unit before and after use, and be sure to keep the UV-C Photodiode Detector clean and oil-free at all times.
- The Zenith™ Germicidal Ultraviolet Detector should be stored in its originally supplied container in a clean, dry place when not in use.

## BATTERY REPLACEMENT

- To obtain access to the Battery Compartment, turn the Zenith™ Germicidal Ultraviolet Detector over (See **Figure 1**).
- Using your thumb, press down on the raised ridges and slide the Battery Compartment cover off.
- Gently navigate the 9 volt battery from its compartment and replace with a known good 9 volt battery, making sure that the battery's polarity position is correct.
- Re-Install the Battery and Compartment cover.



Safely dispose of batteries responsibly. Never dispose of batteries in household waster. As consumers, users are legally required to take used batteries to appropriate collection sites or retail stores where they were purchased or wherever batteries are sold.

# TECHNICAL SPECIFICATIONS

Table 1 – Technical Specifications

Model		Zenith™ Germicidal Ultraviolet Detector	
Part Number		30-1015	
Irradiation Range		0-1999 $\mu\text{W}/\text{cm}^2$	
Response		246-262 nm UV-C	
Resolution		1 $\mu\text{W}/\text{cm}^2$	
Conversion Rate		3 Readings/Second	
Display		3.5 Digit LCD	
Digit Size		.4"/10.2 mm	
Operational Temperature		32°F to 100°F	
Operational Humidity		5% to 90% RH	
Accuracy		+/- 10%	
Meter Dimensions	Length	4.2"	106.7mm
	Width	2.4"	61mm
	Depth	0.9"	22.9mm
Weight		4.5 oz / 28 g Includes Battery	
Power Source		9 v DC Battery	
Lens		UV Glass	
Detector		SIC Photodiode w/IF	

# USER ASSISTANCE

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Atlantic Ultraviolet Corporation® makes every effort to ensure that the **Zenith™** Germicidal Ultraviolet Detector is a product of superior quality and workmanship. This manual describes the installation, operation and maintenance of the **Zenith™** Germicidal Ultraviolet Detector.

Please read and become familiar with the contents of this manual before installing or using this unit. If after reading the manual you still have questions, or concerns, regarding the installation or use of this unit, 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  
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Fax: (631) 273-0771  
Email: [Sales@AtlanticUV.com](mailto:Sales@AtlanticUV.com)  
Website: [Ultraviolet.com](http://Ultraviolet.com)  
[BuyUltraviolet.com](http://BuyUltraviolet.com)

## PATENT NOTICE

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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.

# WARRANTY & PRODUCT REGISTRATION

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**We warrant this product to the original owner to be free from defects in material and workmanship when installed in accordance with Atlantic Ultraviolet Corporation® specifications for a period of time as follows:**

**UV Water Purifier Chambers** – Type 316 stainless steel chambers will have a Twelve (12) year Limited Warranty on the stainless steel chamber, from the date of original purchase while the Type 304 stainless steel chambers will have a Six (6) year Limited Warranty on the stainless steel chamber.

**UV Air Disinfection Housing** – Three (3) year Limited Warranty on the metal housing, from the date of original purchase.

**Ballasts** – Three (3) year Limited Warranty, from the date of original purchase.

**UV Lamps, Monitoring Devices, Optional Accessories, and Other Parts** – One (1) year Limited Warranty from the date of original purchase.

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 person; or improperly installed. Warranty will be null and void if any of the product's original labels are removed. This Limited warranty excludes the cost of labor.

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.

Be sure to register your product and validate purchase within 30 days –registration is simple and will take less than 2 minutes to do.

**NOTE – failure to register your purchase may jeopardize warranty.**

Go to [Ultraviolet.com](http://Ultraviolet.com) and scroll down to the bottom of the page, under “Trust” click the “Warranty Registration Form”, complete and click “Submit”. Or click on “Warranty Registration PDF” to download the warranty registration card as a PDF, complete and mail to us at 375 Marcus Boulevard, Hauppauge, NY 11788, or simply fax to (631) 273-0771. If you prefer to register by phone, please call (631) 273-0500 and our customer service staff will be glad to assist you.

For your convenience, record the following information below. The model and serial number can be found on a label located on the **Zenith™** Germicidal Ultraviolet Detector. Keep this manual, along with proof of purchase, handy when contacting our offices.

Purchased From:	Date:
Model:	Serial No.: