Hygeaire®
ULTRAVIOLET INDIRECT AIR DISINFECTION

Model LIND30-EVO

Model LIND24-EVO-2PM

Model LIND24-EVO

SINCE 1963
ATLANTIC ULTRAVIOLET CORPORATION®
ABOUT US

Since 1963, Atlantic Ultraviolet Corporation® has pioneered the discovery and development of beneficial uses of ultraviolet energy. Over the years these efforts have led to the development of valuable, cost effective and environmentally sound techniques and products now known and respected throughout the world.

The UV application specialists at Atlantic Ultraviolet Corporation® assist customers in the selection of germicidal lamps and equipment. Their specialized knowledge is a valuable resource in formulating effective and cost-conscious ultraviolet solutions. Extensive inventories and a dedicated staff enable Atlantic Ultraviolet to fulfill its commitment to provide fast deliveries and responsive customer service.

GERMICIDAL ULTRAVIOLET

Ultraviolet is a unique and rapid method of disinfection utilizing germicidal ultraviolet lamps that produce short-wave radiation at 254 nanometers (nm) that is lethal to bacteria, virus and other microorganisms.

An ever growing range of industries and consumer applications have found ultraviolet to be the ideal solution for their air treatment needs.

Atlantic Ultraviolet equipment and systems are manufactured in the USA.
ADVANTAGES

**Economical**
System requires very little power to operate.

**Safe**
Low risk of over-exposure.

**Fast**
Disinfects air in seconds, reducing the risk of cross infection and exposure of occupants to infectious airborne microbes.

**Automatic**
Continuous disinfection without special attention.

**Durable**
Polished Stainless Steel and Aluminum construction.

**Versatile**
Three styles available (pendent mount and wall mount) to handle different room configurations.

**Low Maintenance**
Annual lamp replacement and periodic cleaning is all that is required.

PRINCIPLE OF OPERATION

The Hygeaire® design has been carefully conceived to direct germicidal ultraviolet rays to purify the upper room air of occupied spaces in order to reduce the risk of cross infection and exposure of occupants to infectious airborne microbes.

The operation of the Hygeaire® is as follows:

1. Ultraviolet rays project across the upper room air.
2. Bacteria and viruses that are carried into the ultraviolet field by convection currents or air circulation are destroyed.
3. The air in the room is continuously being purified.
**SPECIAL FEATURES**

**Hygeaire® LIND24-EVO & LIND30-EVO Wall Mount Indirect Fixture**

**Surelite™ Electronic Ballast**
State-of-the-art electronic ballasts are designed to operate ultraviolet lamps. The Hygeaire® Ultraviolet Indirect Disinfection System includes three unique electronic variable output versions (EVO) of the Surelite™ with an adjustable feature mounted to base of the fixture.

**Surelite™ Electronic Ballasts offers these advantages over conventional ballasts:**
- deliver high uv lamp output
- lightweight
- operate cool for longer life
- versatile—each operates a wide range of lamps
- save energy through high efficiency
- provide silent operation

**Interlock Safety Switch**
Switch protects field technicians from exposure to ultraviolet radiation by automatically disconnecting power to the lamp when fixture is opened.

**Stainless Steel Construction**
The fixture is manufactured in Type 304 stainless steel for unparalleled strength, durability and an attractive finish.

**Polished Reflector**
Interior surface includes a special polished reflector which provides a highly reflective surface to maximize ultraviolet intensity.

**STER-L-RAY® Germicidal Lamp**
Lamp is instant starting and provides the utmost in quality, sustained output and longevity. (see page 8 for information)

**Steadfast™ Lampholder**
Set includes a stationary and a spring-loaded, telescopic holder that holds a single pin lamp securely. The spring-loaded feature on one end facilitates convenient, quick and easy lamp changes.

**Louvers**
Unique construction directs ultraviolet rays to the upper portion of the room.

*Model LIND24-EVO*
Wall Mount, Single Lamp
*(see page 8 for Optional Accessories)*
**SPECIFICATIONS—Hygeaire® LIND24-EVO & LIND30-EVO**

Wall Mount Indirect Fixture

<table>
<thead>
<tr>
<th>Model</th>
<th>Lamp</th>
<th>Power Consumption</th>
<th>Total Ultraviolet Output</th>
<th>Exterior Housing Dimensions</th>
<th>Rated Average Lamp Life</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>05-1348-R (1)</td>
<td>31 Watts</td>
<td>8.5 Watts</td>
<td>24&quot; 5-11/32&quot; 7-7/8&quot;</td>
<td>10,000 Hours</td>
</tr>
<tr>
<td>LIND24-EVO</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>05-1352-R (1)</td>
<td>37 Watts</td>
<td>11 Watts</td>
<td>30&quot; 5-3/8&quot; 8-5/16&quot;</td>
<td>10,000 Hours</td>
</tr>
<tr>
<td>LIND30-EVO</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1. Wattage is Lamp Watts including ballast loss (approximate).
2. Output at 254 nanometers at 100 hours and 80 degrees F (approximate).

- 120 Volts 50/60 Hz and 220-230 Volts 50/60 Hz fixtures are available—specify when ordering.
- Consult factory with other specific power requirements.
- Bottom of fixture must be installed at a minimum height of 7 feet above the floor, see page 11 for more information.

Figure 1 – Shows the back side of Hygeaire® Model LIND24-EVO or Model LIND30-EVO; note the four mounting holes in the back of the fixture. The fixture is to be mounted on a plumb and vertical surface, at a minimum height of 7 feet from the bottom of the fixture to the floor, in a location that must be able to safely support 16 pounds.
SPECIAL FEATURES

**Hygeaire® LIND24-EVO-2PM Pendent Mount Indirect Fixture**

**Surelite™ Electronic Ballasts**
State-of-the-art electronic ballasts are designed to operate ultraviolet lamps. The Hygeaire® Ultraviolet Indirect Disinfection System includes three unique electronic variable output versions (EVO) of the Surelite™ with an adjustable feature mounted to base of the fixture.

Surelite™ Electronic Ballasts offers these advantages over conventional ballasts:

- deliver high uv lamp output
- lightweight
- operate cool for longer life
- versatile—each operates a wide range of lamps
- save energy through high efficiency
- provide silent operation

**Interlock Safety Switch**
Switch protects field technicians from exposure to ultraviolet radiation by automatically disconnecting power to the lamp when fixture is opened.

**Stainless Steel Construction**
The fixture is manufactured in Type 304 stainless steel for unparalleled strength, durability and an attractive finish.

**Polished Reflector**
Interior surface includes a special polished reflector which provides a highly reflective surface to maximize ultraviolet intensity.

**Model LIND24-EVO-2PM**
Pendent Mount, Double Lamp
(see page 8 for Optional Accessories)

**STER-L-RAY® Germicidal Lamp**
Lamp is instant starting and provides the utmost in quality, sustained output and longevity. (see page 8 for information)

**Steadfast™ Lampholder**
Set includes a stationary and a spring-loaded, telescopic holder that holds a single pin lamp securely. The spring-loaded feature on one end facilitates convenient, quick and easy lamp changes.

**Louvers**
Unique construction directs ultraviolet rays to the upper portion of the room.

**Pendent Mount Canopy Set**
Secures Hygeaire® LIND24-EVO-2PM to surface (not shown, see photo on page 7, Figure 3).
**SPECIFICATIONS—**

**Hygeaire® LIND24-EVO-2PM Pendent Mount Indirect Fixture**

<table>
<thead>
<tr>
<th>Model</th>
<th>Lamp</th>
<th>Power Consumption</th>
<th>Total Ultraviolet Output</th>
<th>Exterior Housing Dimensions</th>
<th>Rated Average Lamp Life</th>
</tr>
</thead>
<tbody>
<tr>
<td>LIND24-EVO-2PM</td>
<td>05-1348-R (2)</td>
<td>61.4 Watts</td>
<td>17 Watts</td>
<td>Length 24&quot; Width 10-17/32&quot; Depth 7-7/8&quot;</td>
<td>10,000 Hours</td>
</tr>
</tbody>
</table>

1. Wattage is Lamp Watts including ballast loss (approximate).
2. Output at 254 nanometers at 100 hours and 80 degrees F (approximate).

- 120 Volts 50/60 Hz and 220-240 Volts 50/60 Hz fixtures are available—specify when ordering.
- Consult factory with other specific power requirements.
- Bottom of fixture must be installed at a minimum height of 7 feet above the floor, see page 11 for more information.

**INSTALLATION**

Figure 2 – Shows the top of Hygeaire® Model LIND24-EVO-2PM (above). Note the two mounting holes on the top of this fixture (these are for the Pendent Mount Canopy Set attachment). The fixture is to be mounted at a minimum height of 7 feet from the bottom of the fixture to the floor, in a location that must be able to safely support 32 pounds.

Figure 3 – Shows Hygeaire® Model LIND24-EVO-2PM complete with Pendent Mount Canopy Set (left).
Optional Accessories

Zenith™ Ultraviolet Meter
A sensitive, hand-held, ultraviolet meter that can be used to:
- Survey 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.

ArmorLite™ Safety Shield
Protective coating applied to STER-L-RAY® Germicidal Lamps ensures protection for employees, products and work environments by eliminating the dangers associated with fragments of broken lamps.
(Lamp on right has ArmorLite™ coating. Available with lamps used in all Hygeaire® fixtures at the time of purchase. The coating is installed at the factory.)

CAUTION: Exposure to direct or reflected germicidal ultraviolet rays will cause painful eye irritation and reddening of the skin. Personnel subject to such exposure must wear suitable faceshield, gloves and protective clothing.

Hg - LAMP CONTAINS MERCURY, manage in accord with disposal laws, see: LampRecycle.org.

Promate™ Warning Signs
To be affixed to entry door(s) to warn that an ultraviolet disinfection treatment is in progress and area should NOT be entered.

Promate™ Safety Glasses
Safety eyewear should be used as general-purpose safety protection and for additional shielding from germicidal ultraviolet rays.

Promate™ Face Shield
Lightweight visor with adjustable headgear provides eye and face protection from germicidal ultraviolet rays.

Genuine STER-L-RAY® Germicidal Lamps
STER-L-RAY® Germicidal Lamps are shortwave, low pressure tubes that produce ultraviolet wavelengths lethal to microorganisms.

Approximately 95% of the ultraviolet energy emitted from STER-L-RAY® germicidal lamps is at 254 nanometers, the region of germicidal effectiveness most destructive to bacteria, mold and virus.

STER-L-RAY®, the STER-L-RAY® logo, ArmorLite™, and the ArmorLite™ logo are trademarks of Atlantic Ultraviolet Corporation.

CAUTION: Exposure to direct or reflected germicidal ultraviolet rays will cause painful eye irritation and reddening of the skin. Personnel subject to such exposure must wear suitable faceshield, gloves and protective clothing.
ULTRAVIOLET DOSAGE

Germicidal lamps provide effective protection against microorganisms. A small cross-section is shown below.

<table>
<thead>
<tr>
<th>ORGANISM</th>
<th>ALTERNATE NAME</th>
<th>TYPE</th>
<th>DISEASE</th>
<th>DOSE*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corynebacterium diphtheriae</td>
<td>C. diphtheriae</td>
<td>Bacteria</td>
<td>Diphtheria</td>
<td>6,500</td>
</tr>
<tr>
<td>Legionella pneumophila</td>
<td>L. pneumophila</td>
<td>Bacteria</td>
<td>Legionnaire’s Disease</td>
<td>12,300</td>
</tr>
<tr>
<td>Mycobacterium tuberculosis</td>
<td>M. tuberculosis</td>
<td>Bacteria</td>
<td>Tuberculosis (TB)</td>
<td>10,000</td>
</tr>
<tr>
<td>Pseudomonas aeruginosa</td>
<td>P. aeruginosa</td>
<td>Bacteria</td>
<td></td>
<td>3,900</td>
</tr>
<tr>
<td>Serratia Marcescens</td>
<td>S. marcescens</td>
<td>Bacteria</td>
<td></td>
<td>6,160</td>
</tr>
<tr>
<td>Staphylococcus aureus</td>
<td>S. aureus</td>
<td>Bacteria</td>
<td></td>
<td>6,600</td>
</tr>
<tr>
<td>Staphylococcus epidermidis</td>
<td>S. epidermidis</td>
<td>Bacteria</td>
<td></td>
<td>5,800</td>
</tr>
<tr>
<td>Adeno Virus Type III</td>
<td></td>
<td>Virus</td>
<td></td>
<td>4,500</td>
</tr>
<tr>
<td>Coxsackie A2</td>
<td></td>
<td>Virus</td>
<td></td>
<td>6,300</td>
</tr>
<tr>
<td>Influenza</td>
<td></td>
<td>Virus</td>
<td>Flu</td>
<td>6,600</td>
</tr>
</tbody>
</table>

*Nominal Ultraviolet dosage (µWSec/cm²) necessary to inactivate better than 99% of specific microorganism. Consult factory for more complete listing.
APPLICATIONS

The principal application of Hygeaire® germicidal ultraviolet is to purify the upper room air in occupied spaces in order to reduce the risk of cross infection and exposure of occupants to infectious airborne microbes. These fixtures are designed to project the ultraviolet rays across the upper room air thereby destroying bacteria and viruses that are carried into the ultraviolet field by convection currents or air circulation.

It is an important requirement when applying indirect germicidal ultraviolet irradiation to upper air to keep the radiation in the occupied level (below 6-1/2 feet) within acceptable limits. Therefore, mounting in the appropriate position is essential for safe use.

Our Ultraviolet Application Specialists are here to help you determine the best location for the installation of the Hygeaire®.

As with all indirect ultraviolet fixtures, occasional ultraviolet measurements are required to ensure that ultraviolet intensities within the occupied area remain at the maximum treatment levels without exceeding the safety limits.
The Hygeaire® fixture includes a variable output ballast, providing an adjustment to comply with the safety standard.

Our Zenith™ Ultraviolet Meter is an optional accessory (described on page 8). However we feel that it is a necessary tool to ensure that the ultraviolet radiation levels are optimized for treatment and safety purposes.
APPLICATIONS

Figure 4
Distribution of UV radiation from *Hygeaire*® Model LIND24-EVO wall mounted fixture.

Figure 5
Example of the coverage area of the *Hygeaire*® Model LIND24-EVO wall mounted fixture.
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.