Applications

The Orenco® UV Disinfection Unit is designed for use in residential applications after advanced secondary treatment (10 mg/L cBOD5 and TSS) when disinfection is required before dispersal. It requires installation inside a pump or gravity discharge basin or in a separate tank following an advanced secondary treatment system.

General

Treated effluent flows by gravity through the contact chamber and around the UV lamp where it is disinfected in a 360-degree contact zone. The unit uses no chemicals and has no moving parts. It requires annual cleaning and lamp replacement.

In side-by-side NSF® testing, the Orenco UV Disinfection Unit reduced bacteria by 99.999% (5 logs), meeting or exceeding the performance of other residential UV disinfection units.

The Orenco UV Disinfection Unit comes with a power ballast and a lamp current sensor, housed in an Orenco control panel to protect the UV unit’s electronic components. The control panel is installed externally, outside of the wet well.

Features/Specifications

- UL-recognized for US and Canada
- Bacteria reduced by 99.999% (5 logs)
- Flow path designed for maximum contact time between effluent and lamp
- Components designed to work together — no piecemeal disinfection assemblies and wiring
- Teflon sleeve to protect lamp and minimize buildup and service intervals
- Quick-disconnect fitting for easy inspection and unit cleaning
- Power ballast and lamp current sensor housed in a control panel (not in a wet well) to minimize corrosion and failure due to environmental exposure

Standard Models

UV-125/31-UVIB, UV-125/31-UVIBSUB

Product Code Diagram

- UV - 125/31 - [ ] [ ]

- Power cord length:
  - Blank = 25 ft (7.62 m)
  - 50 = 50 ft (15.2 m)

- Control panel options:
  - UVIB = panel with audible and visible alarms
  - UVIBSUB = sub-panel for use with separate control panel

- Lamp length:
  - 31 = 31 in. (787 mm)

- Lamp output at 1 meter:
  - 125 = 125 µW/cm²

- Orenco UV disinfection unit
Materials of Construction

<table>
<thead>
<tr>
<th>Material</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Panel enclosure</td>
<td>UV-resistant fiberglass, UL Type 4X rated</td>
</tr>
<tr>
<td>Hinges and latches</td>
<td>Stainless steel</td>
</tr>
<tr>
<td>Cord grip</td>
<td>Nylon</td>
</tr>
<tr>
<td>Contact chamber</td>
<td>3-in. (80-mm) diameter Sch 40 black ABS</td>
</tr>
<tr>
<td>Inlet tee</td>
<td>3-in. (80-mm) Sch 40 black ABS</td>
</tr>
<tr>
<td>Other fittings</td>
<td>Black ABS</td>
</tr>
<tr>
<td>Quick-disconnect coupling</td>
<td>Black ABS</td>
</tr>
<tr>
<td>1½-in. IPS outlet</td>
<td>Black ABS</td>
</tr>
<tr>
<td>Lamp assembly seal</td>
<td>EPDM rubber</td>
</tr>
<tr>
<td>Lamp sleeve</td>
<td>Teflon®</td>
</tr>
</tbody>
</table>

Specifications

**Panel Dimensions, in. (mm)**

- Height: 11.5 (290)
- Width: 9.5 (240)
- Depth: 5.4 (135)

**UV Unit Dimensions, in. (mm)**

- A: 5.63 (143)
- B: 10.06 (256)
- C: 1.50 IPS (40 DN)
- D: 42.25 (1073)
- E: 38.56 (979)
- F: 34.50 (876)
- Inlet-to-outlet fall: 0.50 (13)

**UV Unit Performance**

- Typical contact chamber: 276,000 μW·s/cm² at 1 gpm (0.06 L/sec)
- UV dose (65% transmittance, 20% lamp degradation): 55,000 μW·s/cm² at 5 gpm (0.32 L/sec)
- 28,000 μW·s/cm² at 10 gpm (0.63 L/sec)

- Minimum target dose: 30,000-38,000 μW·s/cm²

- Lamp: 31 inches (787 mm), 92 VAC, 50 or 60 Hz, 425 mA, 38 W; 254 nm UVC intensity at 1m is 125 μW/cm²

- Power cord: 600V, 18/2 UL Type TC

- Cord plug: UL listed four-pin connector, lampholder, electric discharge, 1000 V or less

- Ballast: 120V, AC, 50 or 60 Hz, located in UL listed Orenco® control panel

- Audible alarm*: 95 dB at 24 in. (610 mm), warble-tone sound

- Visual alarm**: 1/8-in. (22-mm) diameter red lens, “Push-to-silence.” UL Type 4X rated, 1 W LED light, 120 V

- Circuit breaker: 10 A, OFF/ON switch, Single-pole 120 V*. DIN rail mounting with thermal magnetic tripping characteristics

* UVIB control panels only