

# Ultraviolet Disinfection Wastewater up to 1 MGD

(some of these and other systems designed to treat higher flows)

## Quick Option Overview

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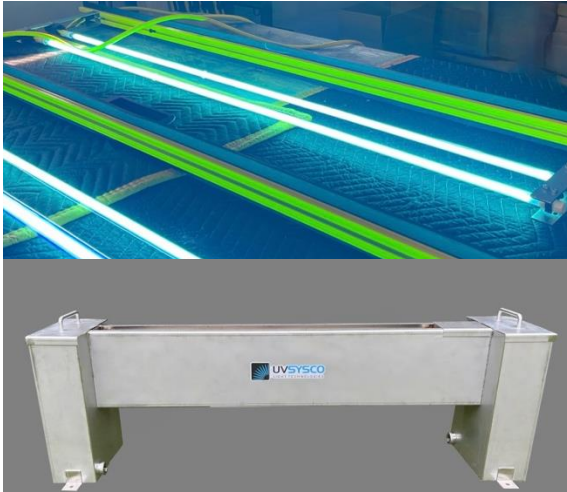
**UVSYSCO**  
LIGHT TECHNOLOGIES

# UV System Types for up to 1 MGD

Contact (open channel)

Contact Reactor

Non-Contact Reactor



Horizontal Channel



Vertical Channel



Chamber "in-vessel"  
Vertical



Fluoropolymer Tube

# Orientations – Selection < 1MGD

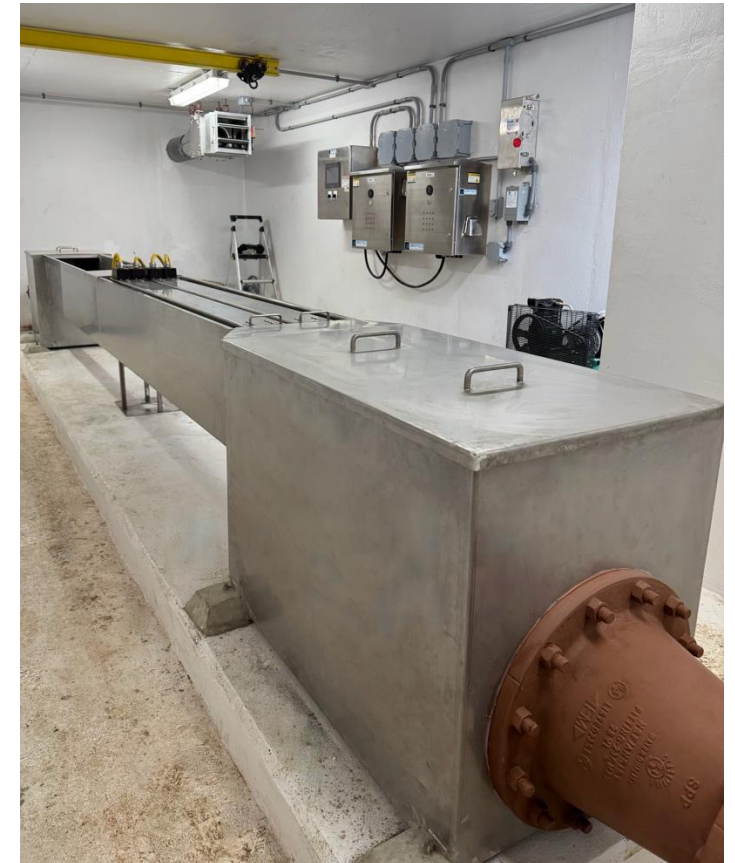
|                 | <u>100,000</u> | <u>250,000</u> | <u>500,000</u> | <u>1 MGD</u> | <u>Gallons Per Day</u>                                 |
|-----------------|----------------|----------------|----------------|--------------|--|
| Horizontal 30"  | X              |                |                |              | Packaged plants. Above 100,000 goes to 60" lamp        |
| Horizontal 60"  | X              | X              | X              | X            | Typical 1-2 MGD<br>(above goes to amalgam style lamps) |
| Vertical HO 30" |                |                | X              | X            | After 1 MGD goes to taller or amalgam lamp system      |
| Vertical HO 60" |                |                | X              | X            | Limitless. Once above 10 MGD, amalgam style lamps      |
| No-Contact Tube | X              | X              | X              | X            | No-Contact Tube systems can go up to 5 MGD             |
| Chambered       | X              | X              | X              | X            | Chambered systems can be design up to 5 MGD            |

# HORIZONTAL UV

1. Stainless steel channel with inlet and outlet boxes and built in level control
2. Redundancy: “In-Series”, “Parallel” or “U-Turn”
3. Ballast Control Center
4. High Output UV Lamps (30” – 80 W or 60” 155 W)
5. UV Monitoring –0-100%

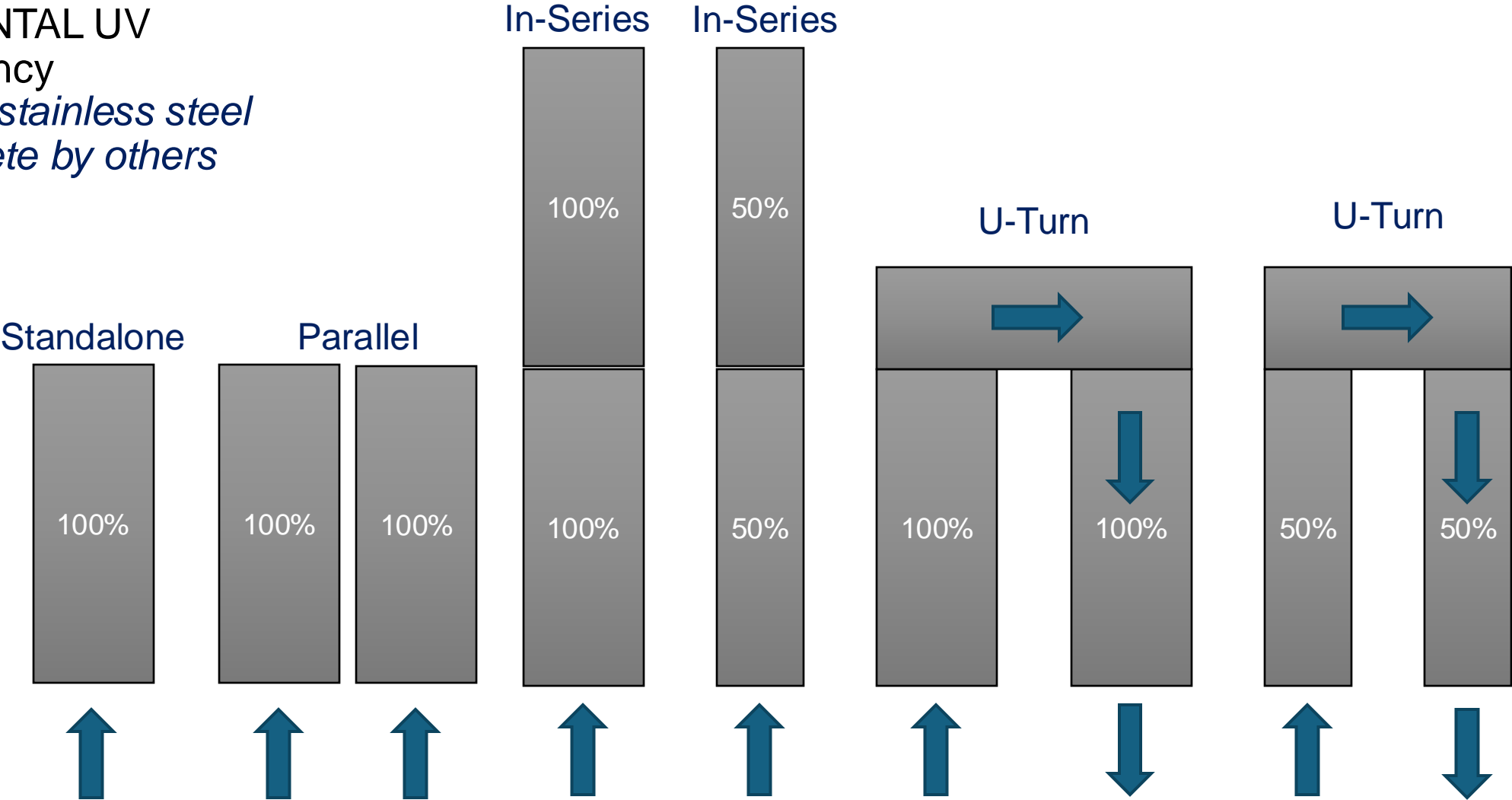


25,000 GPD



1 MGD + 1 MGD

HORIZONTAL UV  
Redundancy  
*Package stainless steel  
or Concrete by others*



Top view of horizontal channel.



# VERTICAL UV

1. Vertical UV Modules
2. Power Distribution and System Control
3. High Output UV Lamps (30" – 80 W or 60" 155 W)
4. UV Monitoring –0-100%
5. Automatic Quartz Sleeve Cleaning
6. Level Control Weir
7. Hoist



# Vertical UV – High Output Lamp Modules

40 Lamps = 1 MGD

20 lamps = 500,000 GPD

20 lamps = 500,000 GPD



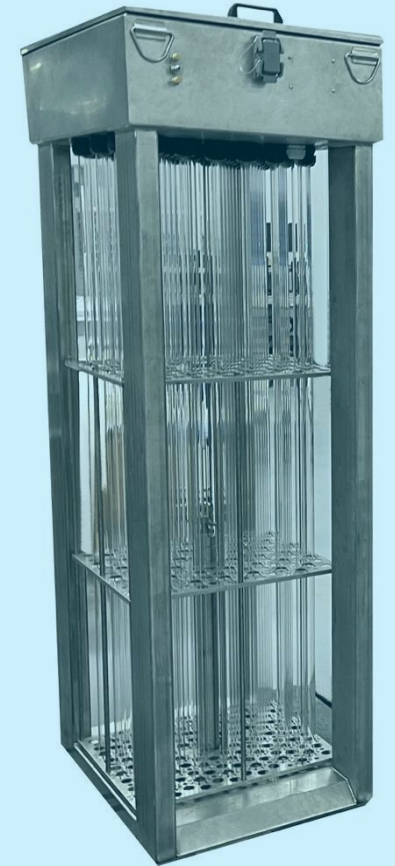
**30" Water**

40 Lamps = 2 MGD

20 lamps = 1 MGD

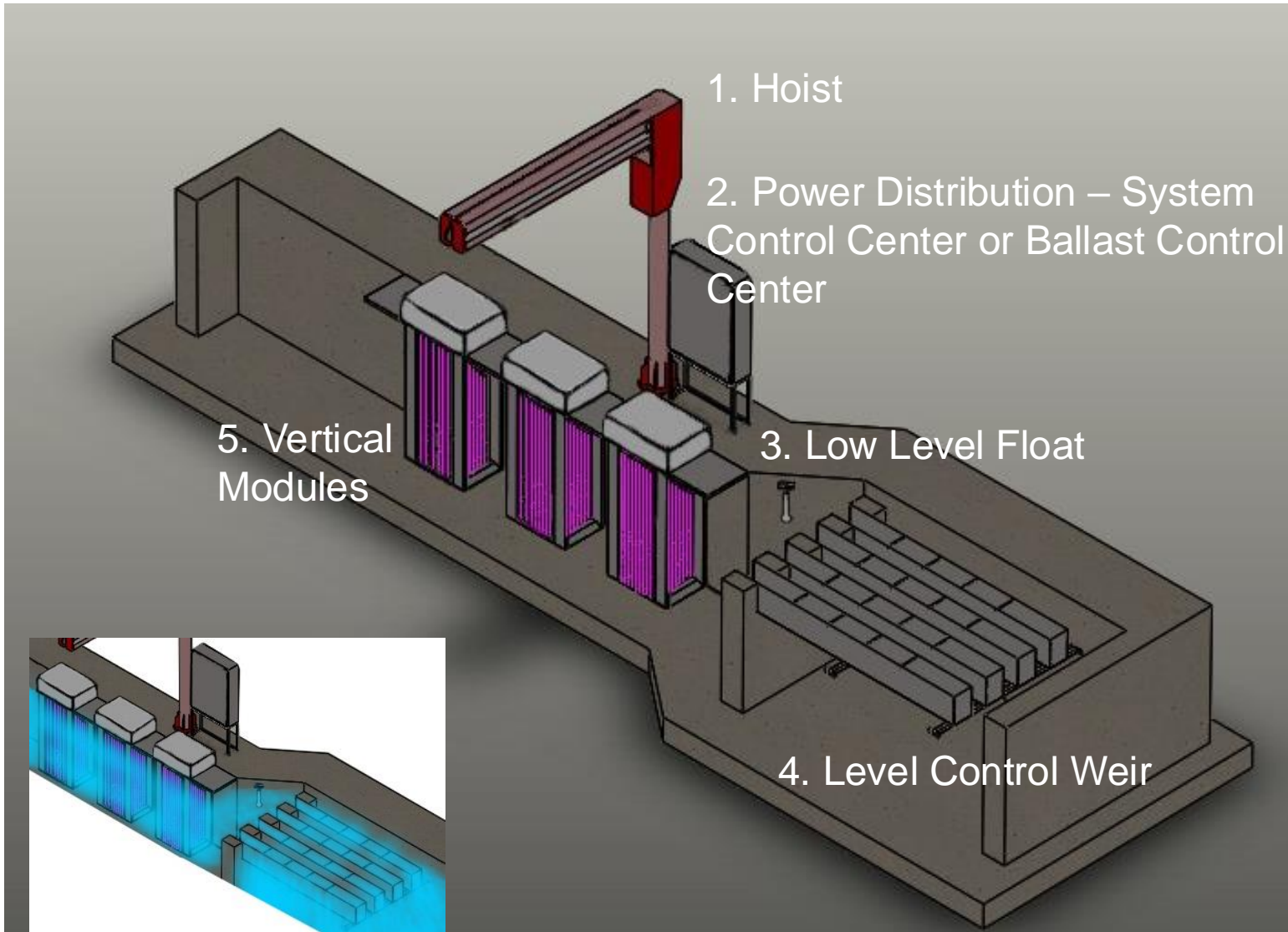
20 lamps = 1 MGD

redundancy



**60" Water**

# Vertical Plant Overview



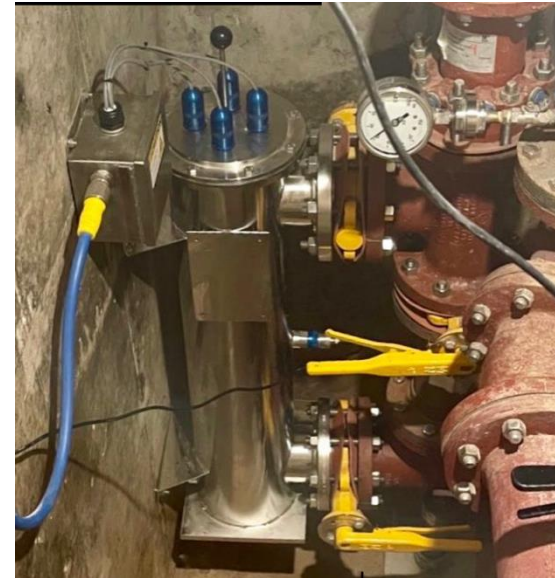
1. Lifting device
2. Power Distribution Center
3. Low Level Float – not powered
4. Stainless steel level weir keeps lamps submerged. From 0 to peak. Protects lamps from burning in air or water passing without being exposed to UV
5. Modules with auto-clean



# CHAMBERED UV

1. Electropolished Stainless Steel vessel (piped – gravity or pumped) horizontal or vertically oriented
2. Ballast Control Center remote power
3. UV Lamps in Quartz Sleeves
4. UV Monitoring –0-100%
5. Manual Plunger or Automatic Quartz Sleeve Cleaning

See presentation on Chambered UV Wastewater



# NON-CONTACT

1. Tube Reactor (piped – gravity)
2. Fluoropolymer tubes carry water while lamps in air
3. Ballast Control Center
4. High Output UV Lamps (60" 155 W)
5. UV Monitoring –0-100%

