



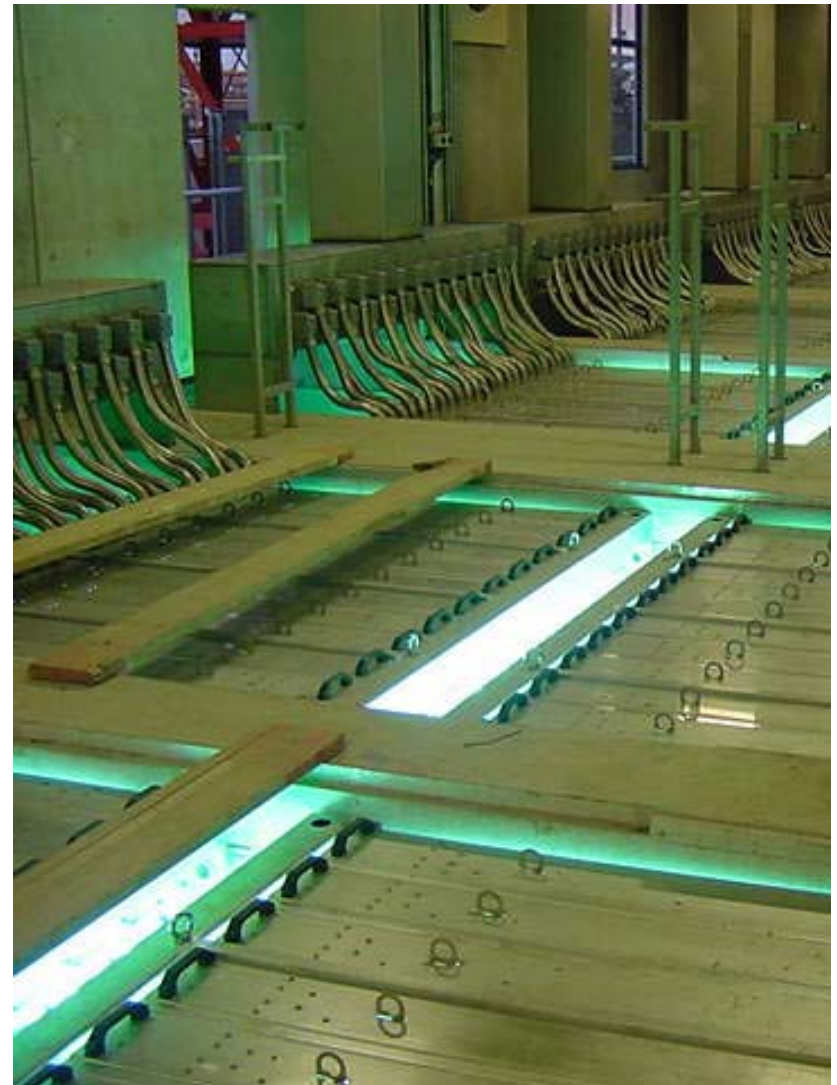
# Duron: Open Channel, Gravity Flow, Wastewater UV Disinfection

Brian Topp, P.Eng., WEDECO Disinfection & Oxidation

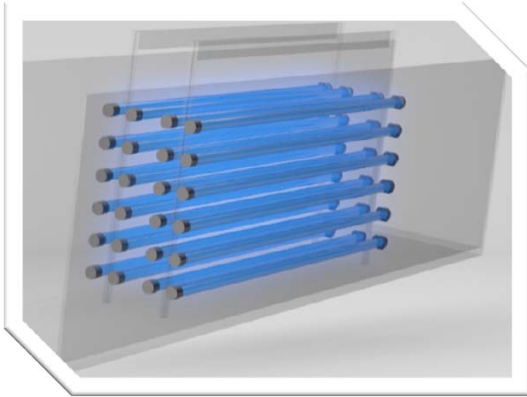
Capital Regional District  
Core Area Liquid Waste Management Plan

# WEDECO

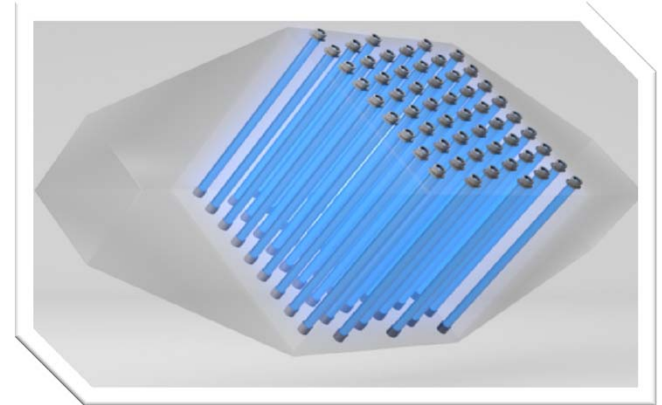
- Market Presence > 40 years
- Thousands of Installations Worldwide
- Largest Company Worldwide  
Dedicated to Ozone and UV Products  
and Applications
- Completely scalable UV system – can  
size from a few thousand gallons per  
day to over 320 million gallons per day.
- Valued Partner for Long-Term  
Operation
- Nationwide Service Network
- Driving the Market with Continuous  
Technology Innovation



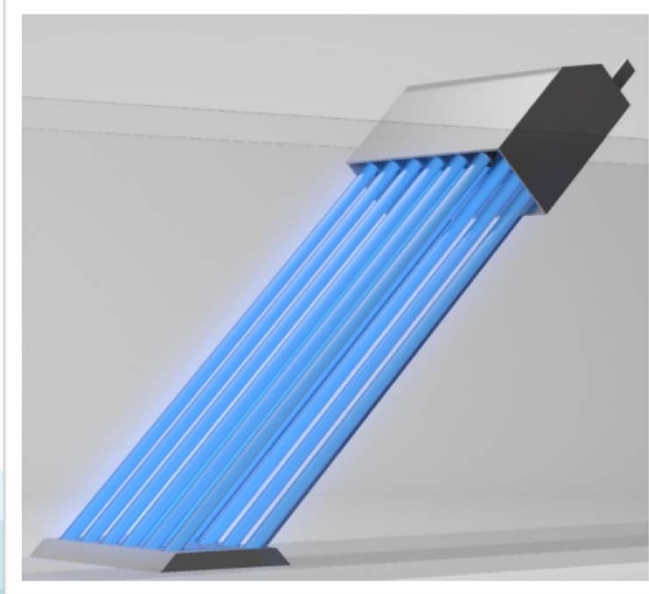
# Our Industry Experience Combined the Best of Both Worlds for Improved UV Disinfection



>35 Years of WW Experience



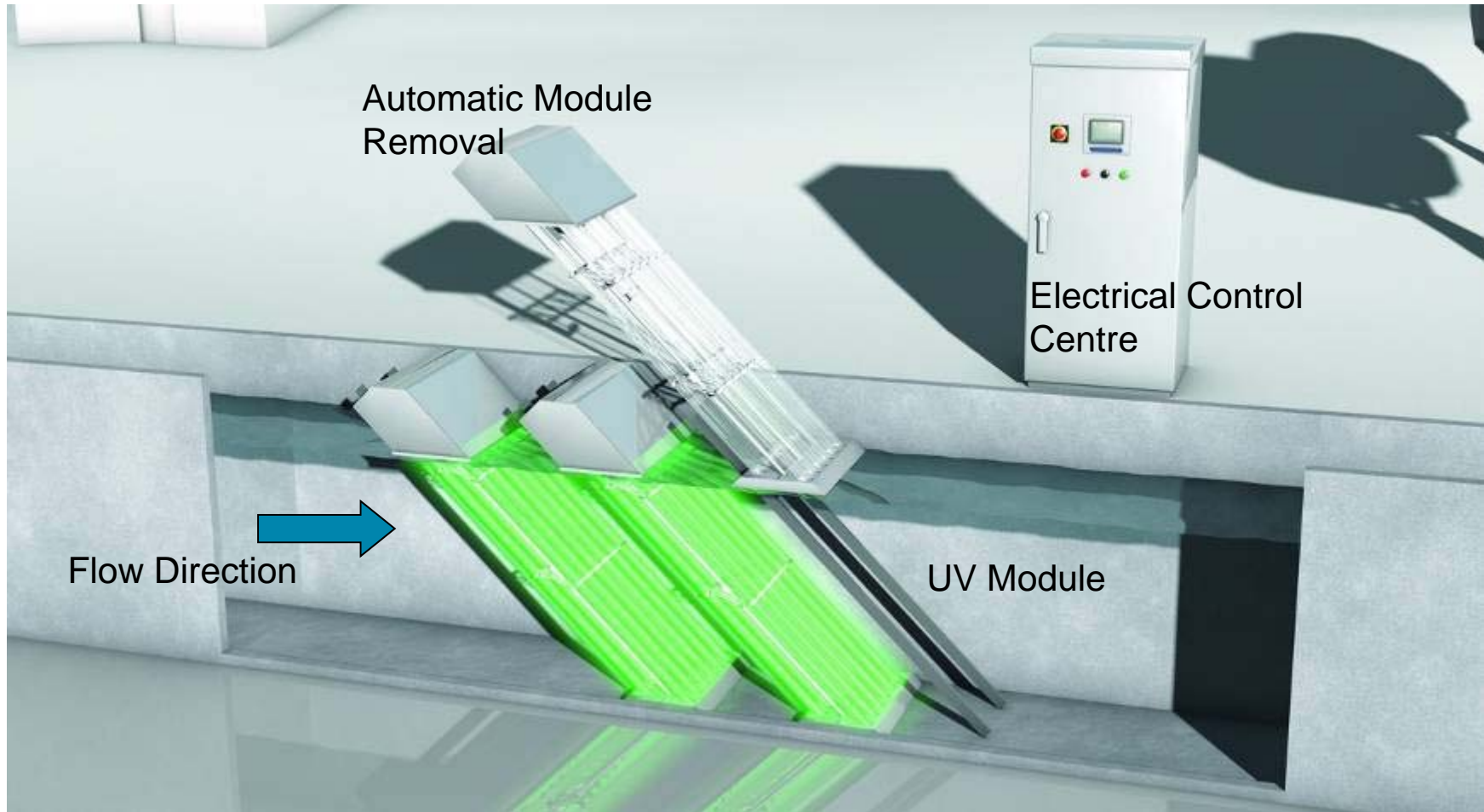
>20 years of DW Experience



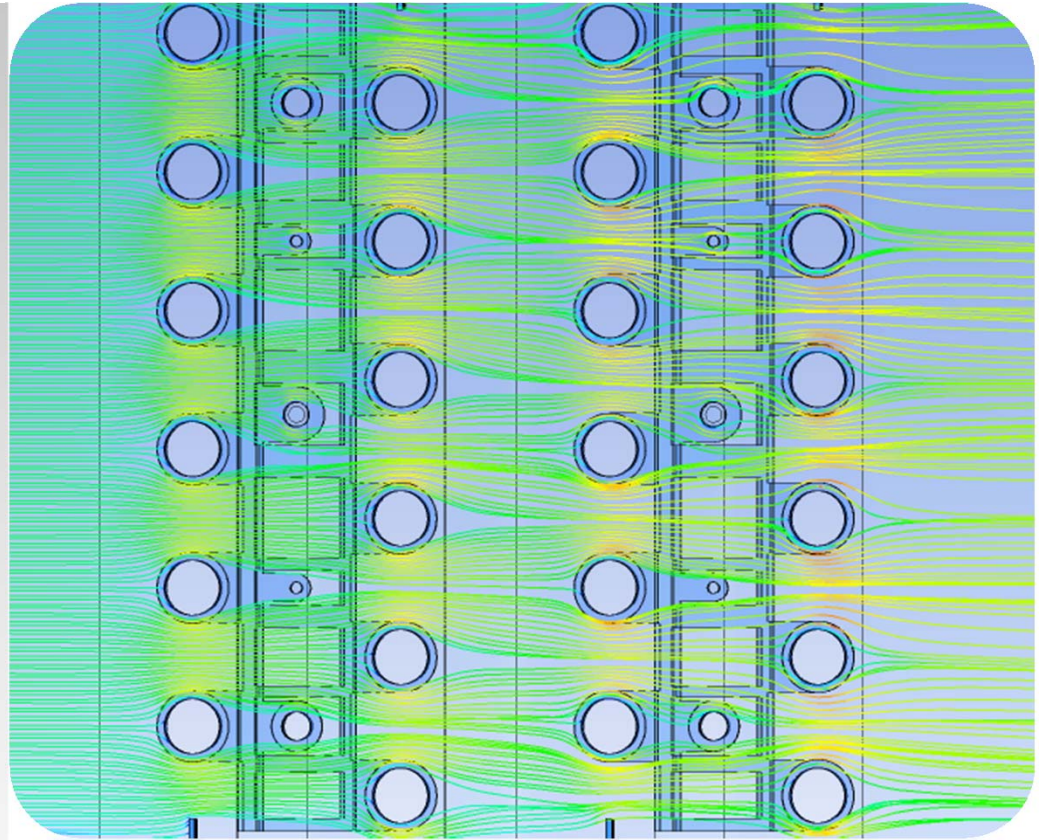
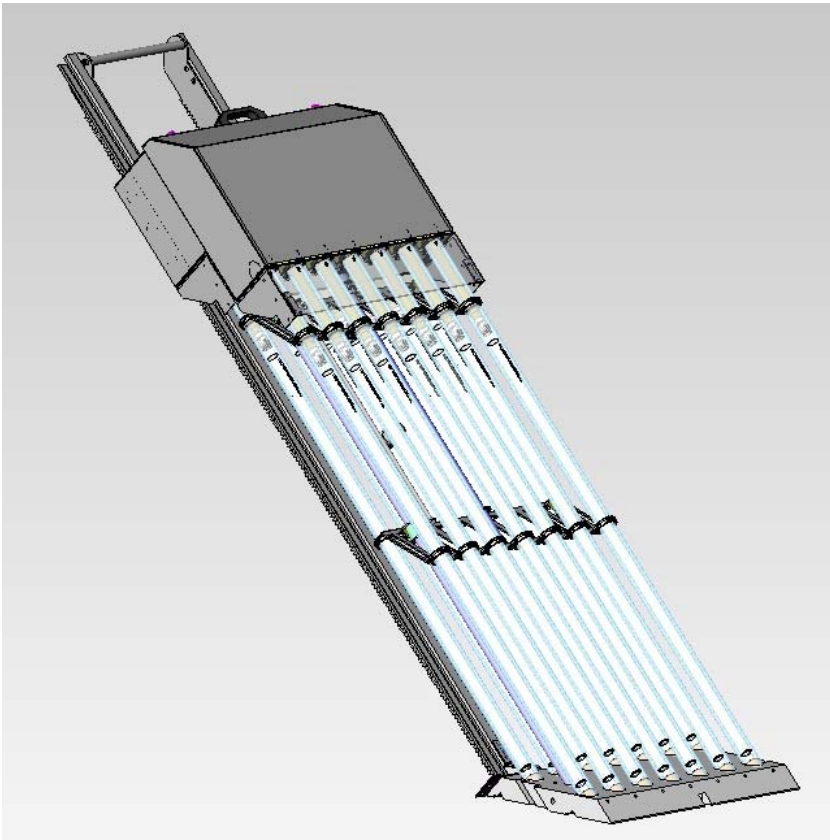
## DURON

Optimal UV Disinfection

# Duron Overview



# The Duron Design Uses a Staggered Lamp Array to Optimize the UV Dose Delivery



# A Wide Range of Testing Parameters Ensures the Duron's Disinfection Capability

## State of the Art Validations

- Huge validation envelope
  - 4 different surrogate organisms
  - UVT range from less than 30% to more than 70%
  - Flow rates from less than 3 MGD up to 16 MGD
- Tested to and compliant with all current validation guidelines
- Largest system worldwide used for validation purposes

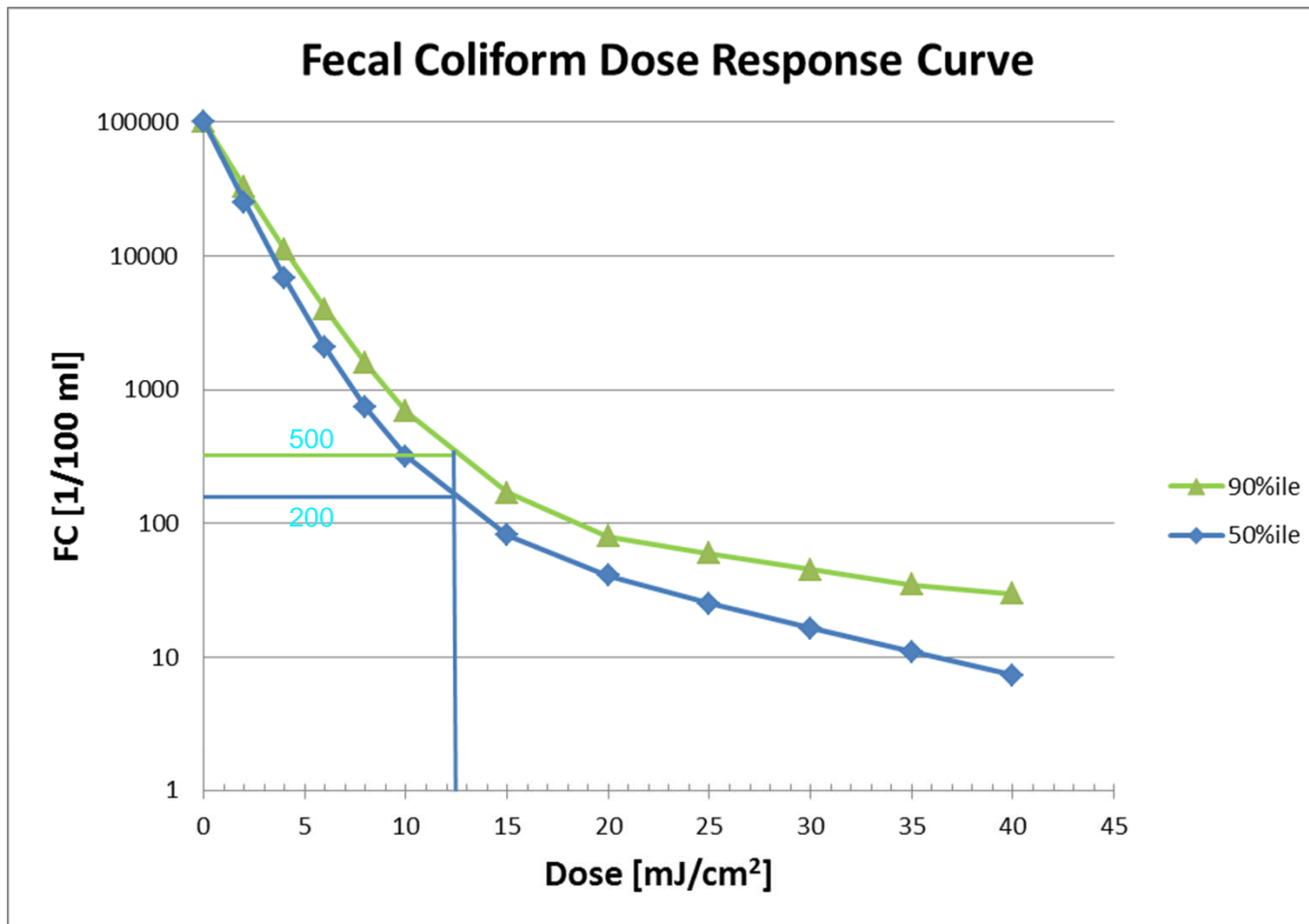


# Wedeco Lab & Field Test Services



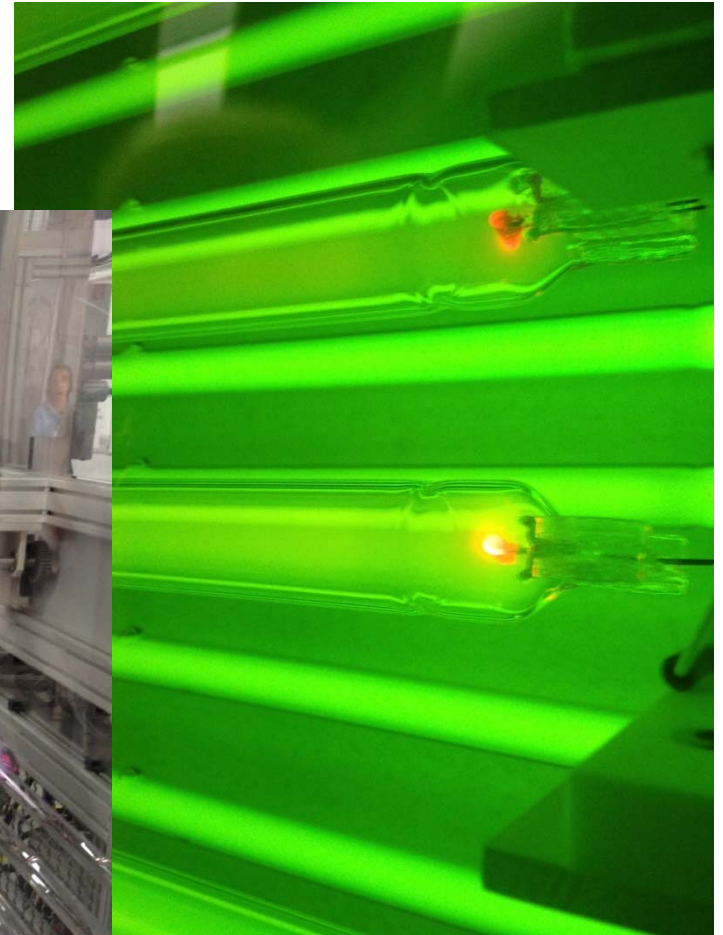
# Dose Response Curves – Fecal Coliform

## Secondary treated Waste Water





# Wedeco's Lamp, Ballast, and Instrumentation Knowledge Sets Us Apart as a Complete UV System Manufacturer



# Xylem TotalCare Provides Reliable, Responsive, and Knowledgeable Service



Maintenance Contracts



Training & Technical Support



Asset Refurbishment



Parts & Logistics



Repair & Maintenance



Monitoring & Supervision



Inspection & Auditing







Plant Operation & Maintenance



Installation & Commissioning

# *TotalCare Advantages*

-  Predictable Preventive Maintenance
-  Optimized Plant Performance
-  100% System Compliance Guarantee
-  Lower Cost of Ownership!!

# Technical Memorandum #1

## Flow Summaries

### Average Dry Weather Flows (MLD)

	2030	2045
Clover Outfall	47.7	53.4
Macaulay Outfall	<u>60.2</u>	<u>92.6</u>
	107.9	146.0

### Design Flows (MLD)

	Secondary		Primary Bypass	
	2030	2045	2030	2045
Clover Outfall	95.4	106.8	47.7	53.4
Macaulay Outfall	<u>120.4</u>	<u>185.2</u>	<u>120.4</u>	<u>185.2</u>
	215.8	292.0	168.1	238.6
Combined	383.9	530.6		

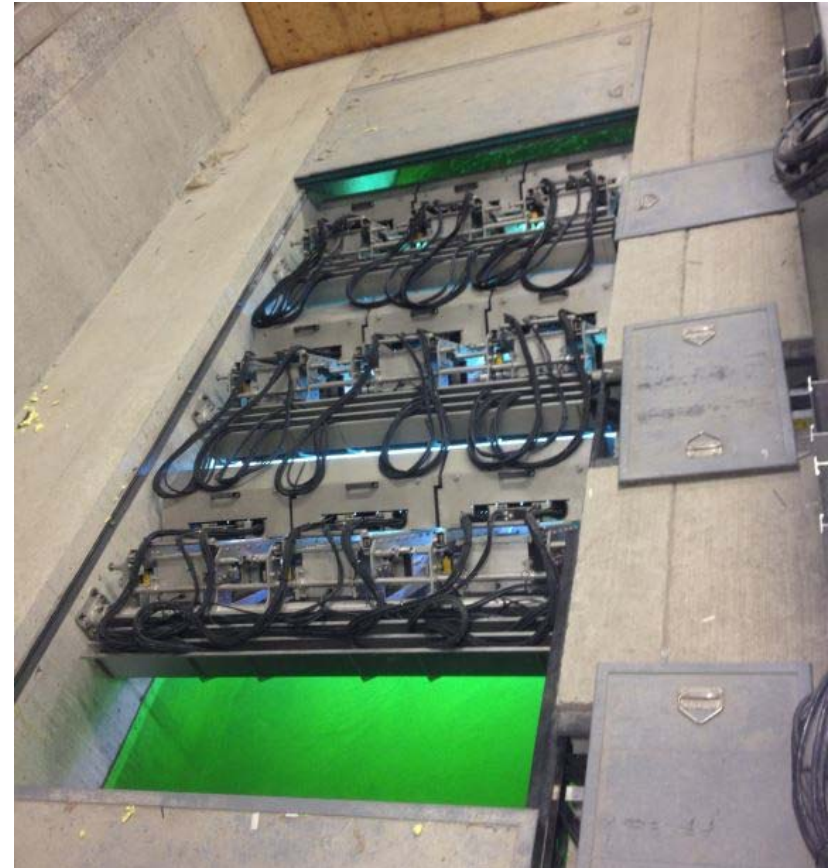
# Sample Duron Installation



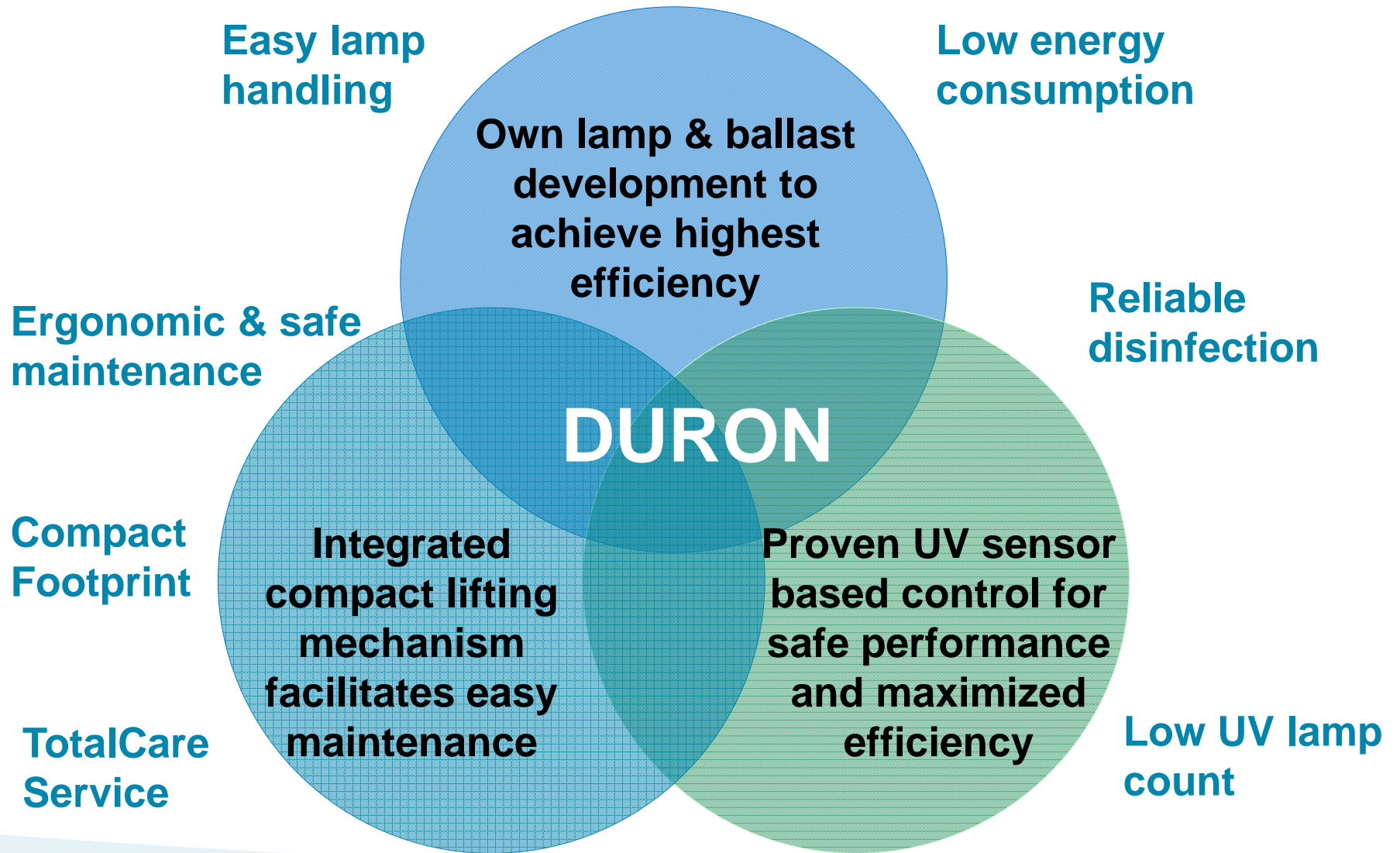
**Model:** Duron

**Quantity:** 2 channels, 3 banks per channel,  
3 modules per bank

**Flow Rate:** 245 MLD

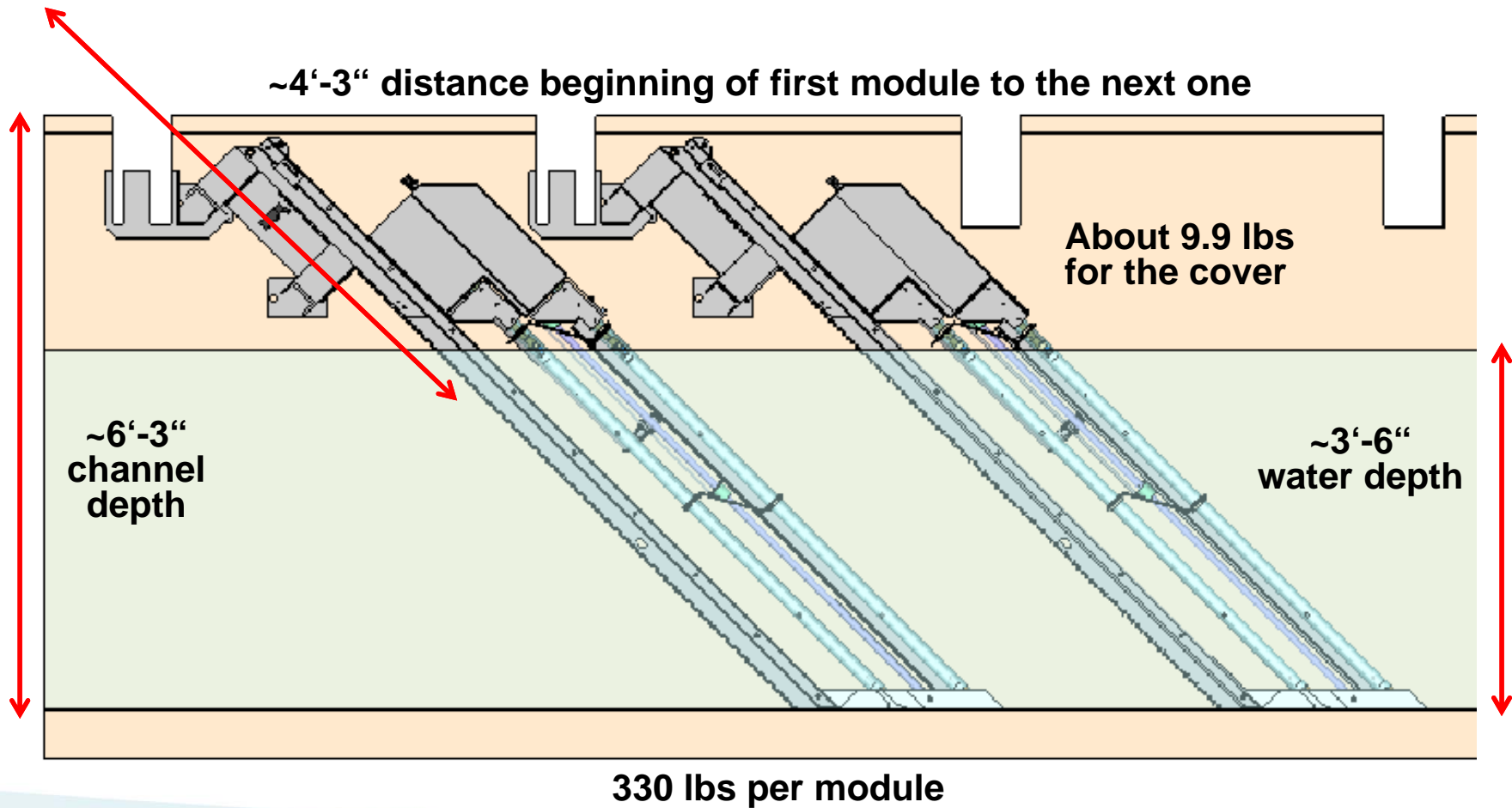


# “Shining new lights on our original ideas”



# Efficient Layout Allows a Compact Footprint

## Lamps Slide out Automatically



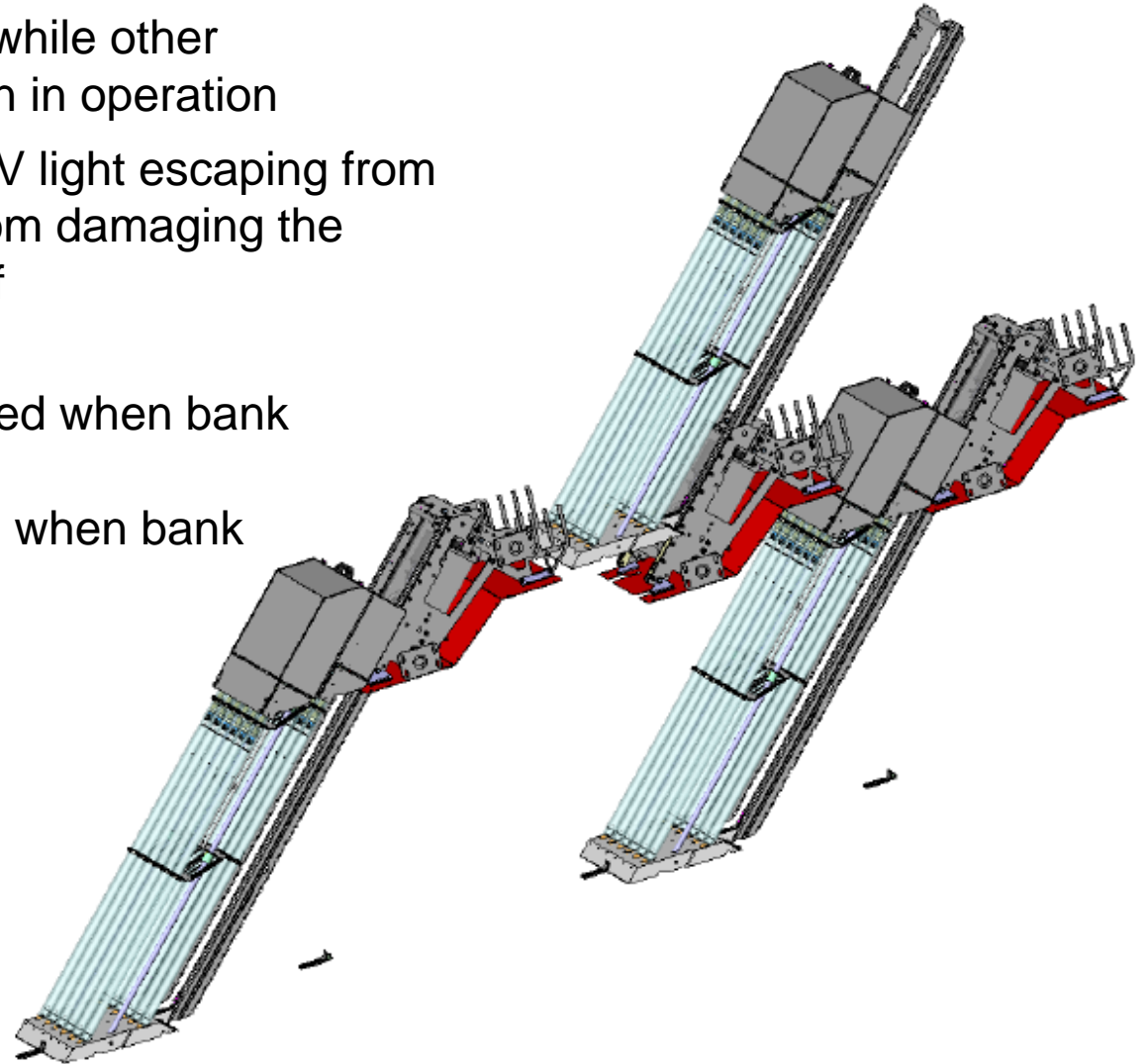
# Automatic Lifting Allows for Quick, Simple, and Safe Maintenance



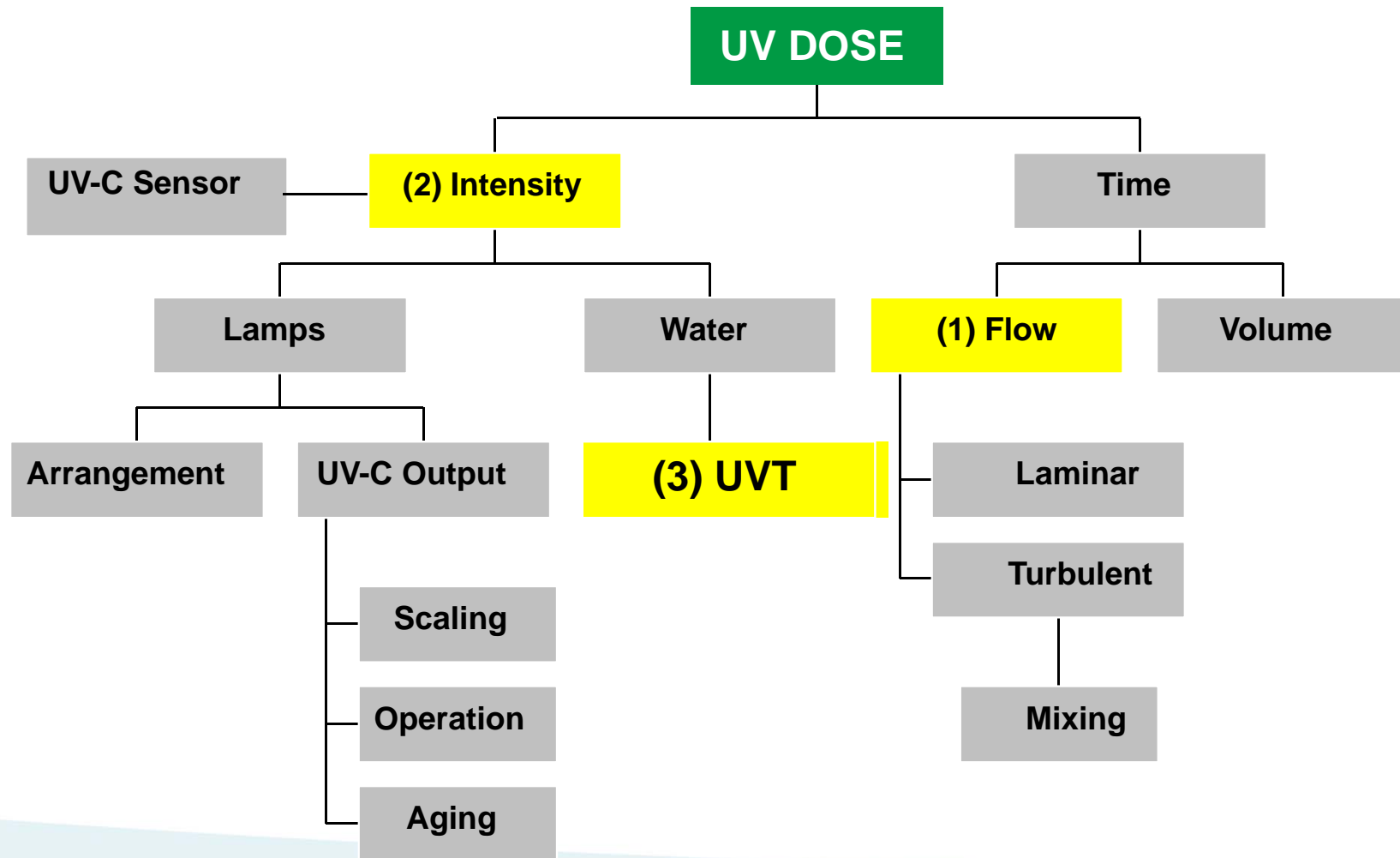


# Design for Operator Safety

- One bank can be serviced while other banks in the channel remain in operation
- Provisions to prevent the UV light escaping from the channel area and thus from damaging the eyes of the maintenance staff
- Safety Features:
  - Lamps can only be replaced when bank is off
  - Modules can only be lifted when bank is off



# Wedeco Provides UV Dose Safety by Monitoring Dose Delivery to Drinking Water Standards



# Electric Actuated Wiping Improves Reliability and Reduces Maintenance



# Recognizing Low UV Intensities, the Controls Will Automatically Clean the Lamps



# Duron Installation Albany WWTP



# DURON Installation Lagares WWTP



8 banks / channel, 3 channels  
Flow 172.8 MLD  
UVT 37%  
Target 1000 F.C.

# Large Wedeco Site (1998)

## 1,425 MLD, 35% UVT, 12 Channels



# Modulating Weir Gate & Ultrasonic Level Sensor Provide Accurate Water Level Control







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