ARKLITE®

SPECIALITY LAMPS

AN ISO 9001:2015 CERTIFIED COMPANY

Company Introduction

ARKLITE Specialty Lamps Pvt. Ltd. was established in 1996 at Chakan, Pune.

We are the leading manufacturer of specialty lamps, based on quartz glass technology in South and East Asia. We are the only manufacturer of UV Quartz lamps in India & Also having range of Medium pressure mercury UV curing lamps and high wattage lamps in India.

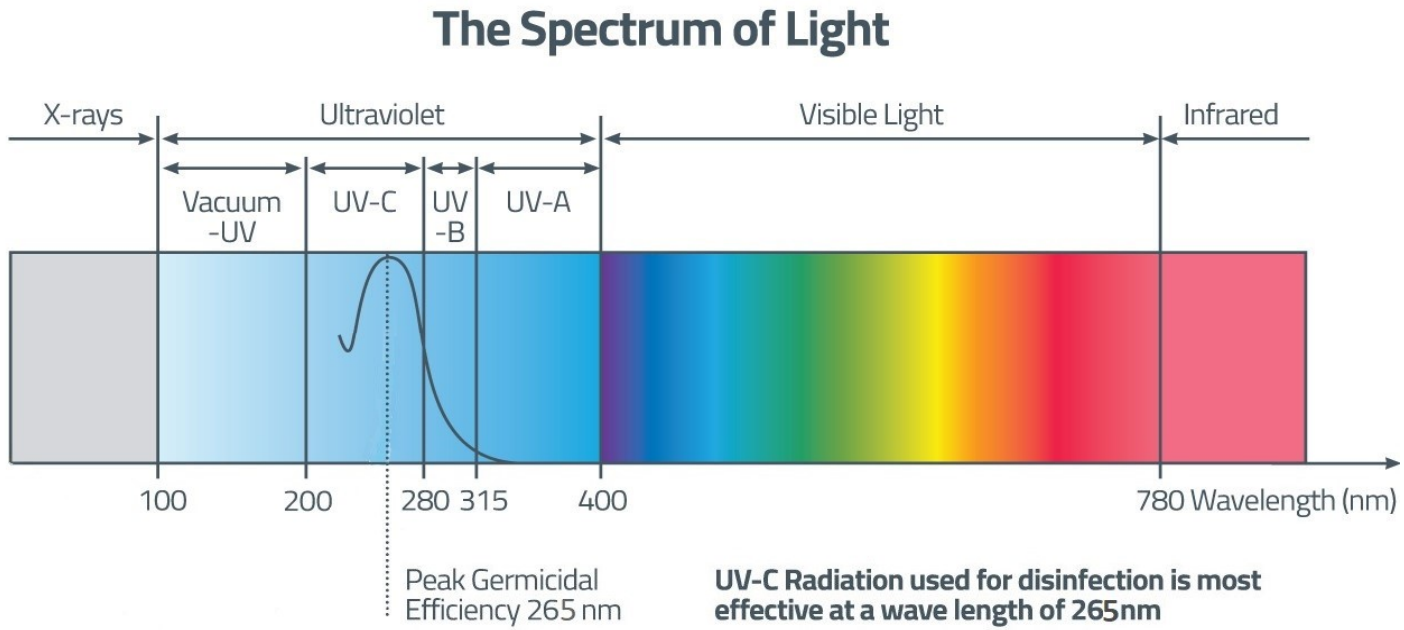
Our ISO 9001.2015 certified unique quartz processing facility, is capable of manufacturing a diversified range of UV lamps ranging from 6 watts low pressure germicidal lamps to 6500 watt medium pressure lamps which are the back bone of our state-of-the-art WD systems based on UV lamps.

We also provide systems for disinfection applications in Air, Surface, Water & wastewater treatment, Food & Beverage, Pharmaceutical, Brewery, Dairy, Swimming pool & Spa, Poultry, and Fish Farming ,Aqua culture etc.

ARKLITE®
SPECIALITY LAMPS
AN ISO 9001:2015 CERTIFIED COMPANY

UV Technology

UV radiation has three wavelength zones: UV-A, UV-B, and UV-C, and it is this last region, the shortwave UV-C that has germicidal properties for disinfection.

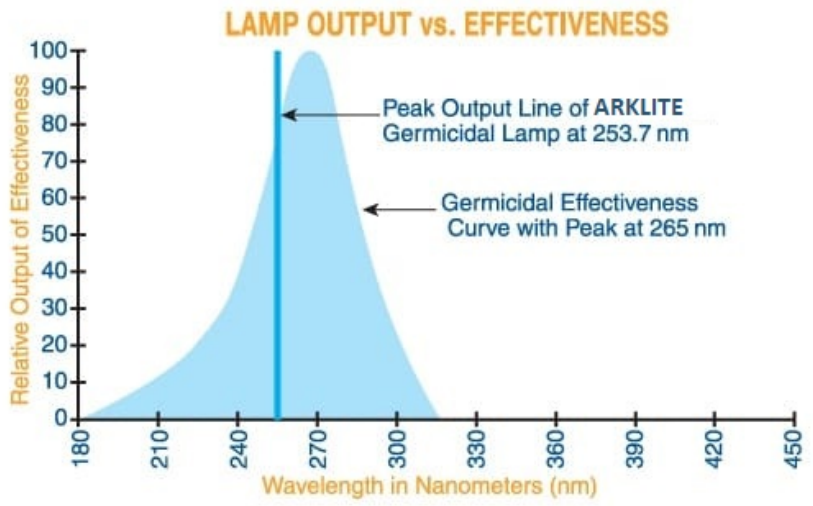


UV Technology

Germicidal UV Technology

Low-pressure mercury lamps are specially designed to produce the highest amount of UV radiation emitting 85% of energy at 253.7 nm. This radiation is very close to the peak of the germicidal effectiveness curve and extremely lethal Wavelength to micro-organisms.

The other major UV radiation is at 185nm.



Advantages Of UV Technology Over Chemical Dosing

- UV disinfection is effective at inactivating most viruses, spores, and cysts.
- UV disinfection is a physical process rather than a chemical disinfectant, which eliminates the need to generate, handle, transport, or store toxic/hazardous or corrosive chemicals.
- There is no residual effect that can be harmful to humans or aquatic life.
- UV disinfection is user-friendly for operators.
- UV disinfection has a shorter contact time when compared with other disinfectants
- UV disinfection equipment requires less space than other methods.

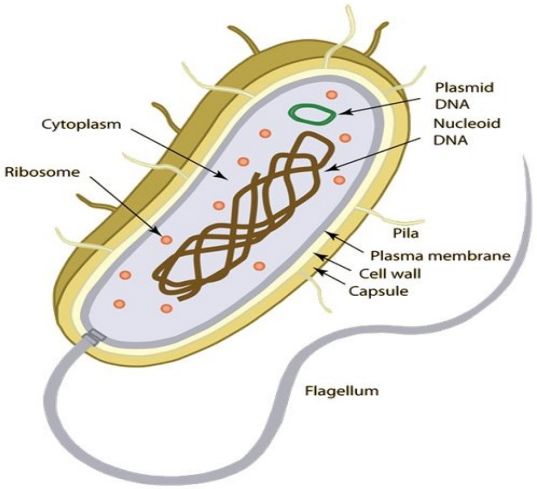
UV Technology

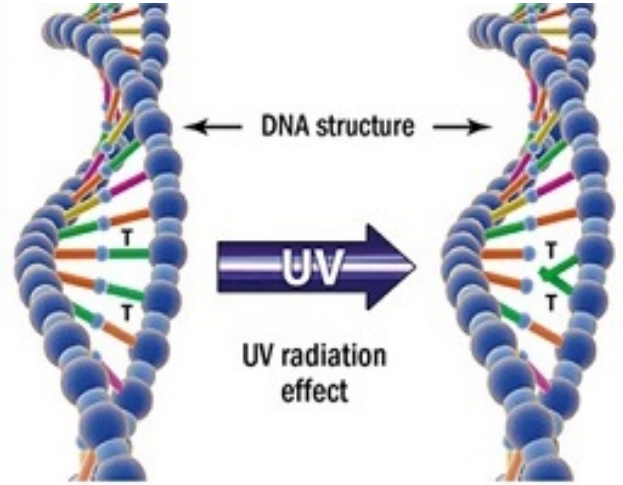
How UV radiation works

Disinfection is considered as primary mechanism of inactivation of pathogenic organisms to prevent the spread of waterborne diseases to the environment.

UV radiation affects microorganisms by altering the DNA in the cells and impeding reproduction. UV treatment does not remove organisms from the water, it merely inactivates them.

UV inactivates microbes primarily by chemically altering nucleic acids. However, the inactivated microbes can be repaired by cellular enzymatic mechanisms, some of which are independent of light (dark repair) and others of which require visible light (photo repair or photo reactivation).





Recommended Water Quality

Maximum contaminant levels in water entering a UV System.

Turbidity	<5 NTU
Suspended solids (5 to 10 micron prefiltration recommended)	< 5 mg/L
Color	None
Hardness	<120 mg/L
Iron	< 0.3 mg/L
Manganese	< 0.05 mg/L
pH	6.5-9.5

Advantages of UV Disinfection Technology over Chlorination

- UV disinfection is effective at inactivating bacteria, viruses, spores, and cysts.
- UV disinfection is a physical process rather than a chemical disinfectant, which eliminates the need to generate, handle, transport, or store toxic/hazardous or corrosive chemicals.
- There is no residual effect that can be harmful to humans or aquatic life.
- UV disinfection is user-friendly for operators.
- UV disinfection has a shorter contact time when compared with other disinfectants

Advantages of UV Disinfection Technology over Chlorination

- UV disinfection equipment requires less space than other methods.

- Chlorine disinfection methods using chlorine gas or liquid form have been revealed dangerous disinfection by-product formation such as Tri Halo Methane (THMs) and Halo acetic acids (HAAs) with others still unknown.

- High costs due to increasing requirements in the de-chlorination step, the administration that follows, and the danger of handling and storing toxic chemicals.

Advantages of UV Disinfection Technology over Chlorination

- All of these facts with chlorine disinfection has made UV disinfection the preferred method, proven to be effective for secondary and tertiary treatments. It also offers a significantly lower environmental impact, design footprint, and costs. Additionally, unlike chlorine, it is effective against Cryptosporidium and Giardia.

Why Arklite?

- Getter Technology: Getter within lamp eliminates impurities continuously, enhancing lamp life and UV maintenance
- Coating Technology: For improving lamp life and UV maintenance (Patent Pending) - Wide Range: Wattages from 6W to 320W
- Quartz UV lamp: Have higher UV output and superior UV maintenance as compared to soft glass UV lamps.
- Ozone forming: Use of quartz gives an option of manufacturing either ozone forming or non zone forming UV lamps Both are available With Arklite
- Bases: Wide range of bases available, custom design possible.
- Custom Solution: Designing capabilities for a complete solution with Lamp, Jacket & Control gear helps to deliver optimized solutions to customers.

Application

Wastewater Treatment

Drinking Water

Food & Beverage

Pharmaceuticals & Cosmetic

Brewery

Dairy

Poultry & Fish Farming

Spa & Swimming Pools

ARKLITE®
SPECIALITY LAMPS
AN ISO 9001:2015 CERTIFIED COMPANY

Product Range

1) ADWS Drinking System

Application

- Domestic application for drinking water requirement
  - 1)Residential & Commercial Complex
  - 2)Hotels
  - 3)Hospitals
  - 4)Educational Institute
- Industrial Application for process water requirement
  - 1)Food & Beverage Industries
  - 2)Dairies
  - 3)Breweries
  - 4)Poultries
  - 5)Cosmetics
  - 6)Packaged Drinking water bottling plants
  - 7)Spa & swimming pools
  - 8)Semiconductor industries
  - 9)Boiler water treatment
  - 10)Cooling tower water treatment

Features

1. High Caliber quartz based UV lamp with high UV output & superior maintenance as compared to soft glass UV lamps
2. CFD Modeling of reactor is studied to optimize hydraulic behavior & UV disinfection capacity.
3. High standard electro polished SS 304L/316L reactor chamber
4. UV intensity Sensor & monitor
5. UV lamp hour meter
6. UV lamp replacement reminder with audio visual indication
7. UV lamp Failure alarm
8. Operating pressure 75 psi
9. UVT 90% to 95%
10. UV dosage based on following standards :
    1. US public health
    2. AUV Standard
    3. NSF/EPA
11. UV lamp life- 9000 Hrs

Product Range

ADWS Drinking System Models

Sr. No	Industry	Models	Reactor MOC	Surface Finish	Flow rate (m3/hr)	UV Dose @ mJ/Cm2
1	Drinking Water	ADWS01	SS304	Electro polished	2	30
2		ADWS02	SS304	Electro polished	4	
3		ADWS04	SS304	Electro polished	8	
4		ADWS07	SS304	Electro polished	15	
5		ADWS015	SS304	Electro polished	1	
6		ADWS016	SS304	Electro polished	0.5	
7		ADWS017	SS304	Electro polished	0.2	

Product Range

2) AWWS Wastewater System

Application

- Domestic application for drinking water requirement
  - 1)Residential & Commercial Complex
  - 2)Hotels
  - 3)Hospitals
  - 4)Educational Institute
- Industrial Application for process water requirements:
  - 1)Food & Beverage Industries
  - 2)Dairies
  - 3)Breweries
  - 4)Poultries
  - 5)Cosmetics
  - 6)Packaged Drinking water bottling plants
  - 7)Spa & swimming pools
  - 8)Semiconductor industries
  - 9)Boiler water treatment
  - 10)Cooling tower water treatment

Features

1. Quartz based high output & amalgam lamps
2. CFD Modeling of reactor is studied to optimize hydraulic behavior & UV disinfection capacity.
3. High standard electro polished SS 316 reactor chamber
4. UV intensity Sensor & monitor
5. UV lamp hour meter
6. UV lamp replacement reminder with audio visual indication
7. UV lamp Failure alarm
8. Operating pressure 120 psi
9. UVT 65% to 75%
10. UV dose >= 60 mJ/cm2
11. UV lamp life- 9000 Hrs

OPTIONAL FEATURES :

1. Automatic quartz wiper system
2. BMS connectivity
3. GSM Communication
4. Hardwire & MODBUS communication for remote lamp operation

Product Range

2) AWWS Wastewater System

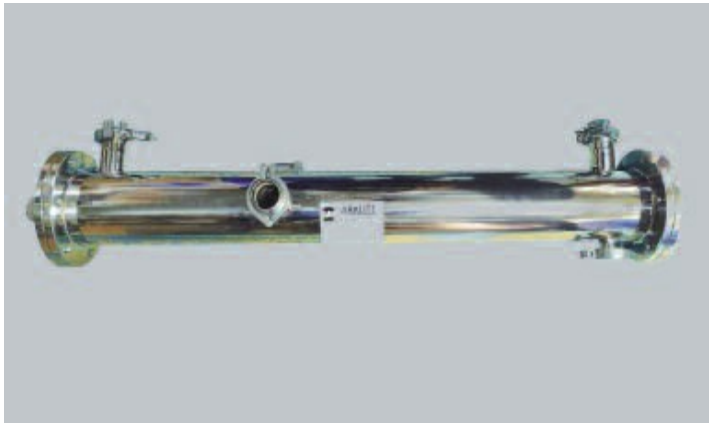
Sr.No	Industry	Models	Reactor MOC	Surface Finish	Flow rate (m3/hr)	UV Dose @ mJ/Cm2
1	Waste Water	AWWS50	SS316	Electro polished	5	60
2		AWWS100	SS316	Electro polished	10	
3		AWWS150	SS316	Electro polished	15	
4		AWWS250	SS316	Electro polished	25	
5		AWWS500	SS316	Electro polished	50	
6		AWWS1250	SS316	Electro polished	125	
7		AWWS2500	SS316	Electro polished	250	

Product Range

3) APWS Pharmaceutical System

Application

1. Purified water generation plants
2. Ultrapure water disinfection loops
3. Ultrapure water recirculation loops
4. WFI disinfection loops



Features

1. Individually validated high output quartz based amalgam lamps
2. CFD Modeling of reactor is studied to optimize hydraulic behavior & UV disinfection capacity.
3. High standard electro polished SS 316L reactor chamber
4. MS panel with IP64 protection
5. Internal surface finish Ra
6. UV intensity Sensor & monitor
7. Maximum sanitization temp. 125 Deg C (Lamp turned off)
8. UV lamp hour meter
9. UV lamp replacement reminder with audio visual indication
10. UV lamp Failure alarm
11. Operating pressure 120 psi
12. UVT 95%
13. UV lamp life- 9000 Hrs

OPTIONAL FEATURES:

1. UV sensor with 4-20 mA output, PLC integration
2. Hardwire & MODBUS communication for remote lamp operation
3. Data logger to map trends and provide data
4. MS control panel with IP64 protection
5. Temperature controller for UV reactor to avoid overheating of UV lamps
6. Nitrogen purged UV sensor as per German DVGW standards for 125 Deg C

Product Range

APWS Pharmaceutical System Models

Sr. No	Industry	Models	Reactor MOC	Surface Finish	Flow rate (m3/hr)	UV Dose @ mJ/Cm2
1	Pharmaceutical Water	APWS02	SS316L	Electro polished	2	30
2		APWS03	SS316L	Electro polished	2	60
3		APWS04	SS316L	Electro polished	3	120
					10	40
					13	30
4		APWS04	SS316L	Electro polished	6	120
					18	40
					19	30

ARKLITE® SPECIALITY LAMPS
AN ISO 9001:2015 CERTIFIED COMPANY

Product Range

UV System Accessories

UV Lamp

Ballast

Sensor

Control Panel

ARKLITE® SPECIALITY LAMPS
AN ISO 9001:2015 CERTIFIED COMPANY

Open Channel UV Water Disinfection System

Open Channel UV Disinfection System

We provide technical expertise solutions of Open Channel UV disinfection systems for large Municipal projects above 5 MLD to several hundred MLDs.

What is Open Channel System?

- In an Open Channel System, UV lamp banks are placed in concrete channels typically used when waste water is discharged by gravity flow.

- The lamps are easily accessible and can be removed for replacement and cleaning.

Open Channel UV Water Disinfection System

UV Open Channel Disinfection Module

- Modular design is being used by Arklite UV Open Channel water disinfection system.

- Each UVC disinfection module consists of a
  - stainless steel frame
  - several UV lamps
  - and quartz sleeve with high transmittance
  - automatic cleaning system
  - power distribution system and data acquisition system.

- The installation mode for lamp and quartz sleeve is horizontal. The whole UVC disinfection system can consists of several UV disinfection modules.

Open Channel UV Water Disinfection System

Advantages of Modular UV Open Channel System Design

- Open channel systems offer safe, chemical-free disinfection for municipal and industrial wastewater disinfection.
- UV lamps technology and their cross-row layout ensure exposure of all pathogens and contribute to energy and disinfection efficiency.
- With its robust, modular shell design, the open channel UV system provides its users with a range of scaling and retrofitting options for existing water treatment infrastructure, such as old chlorination tanks.
- Modular material of 316 L stainless steel is corrosion-free.

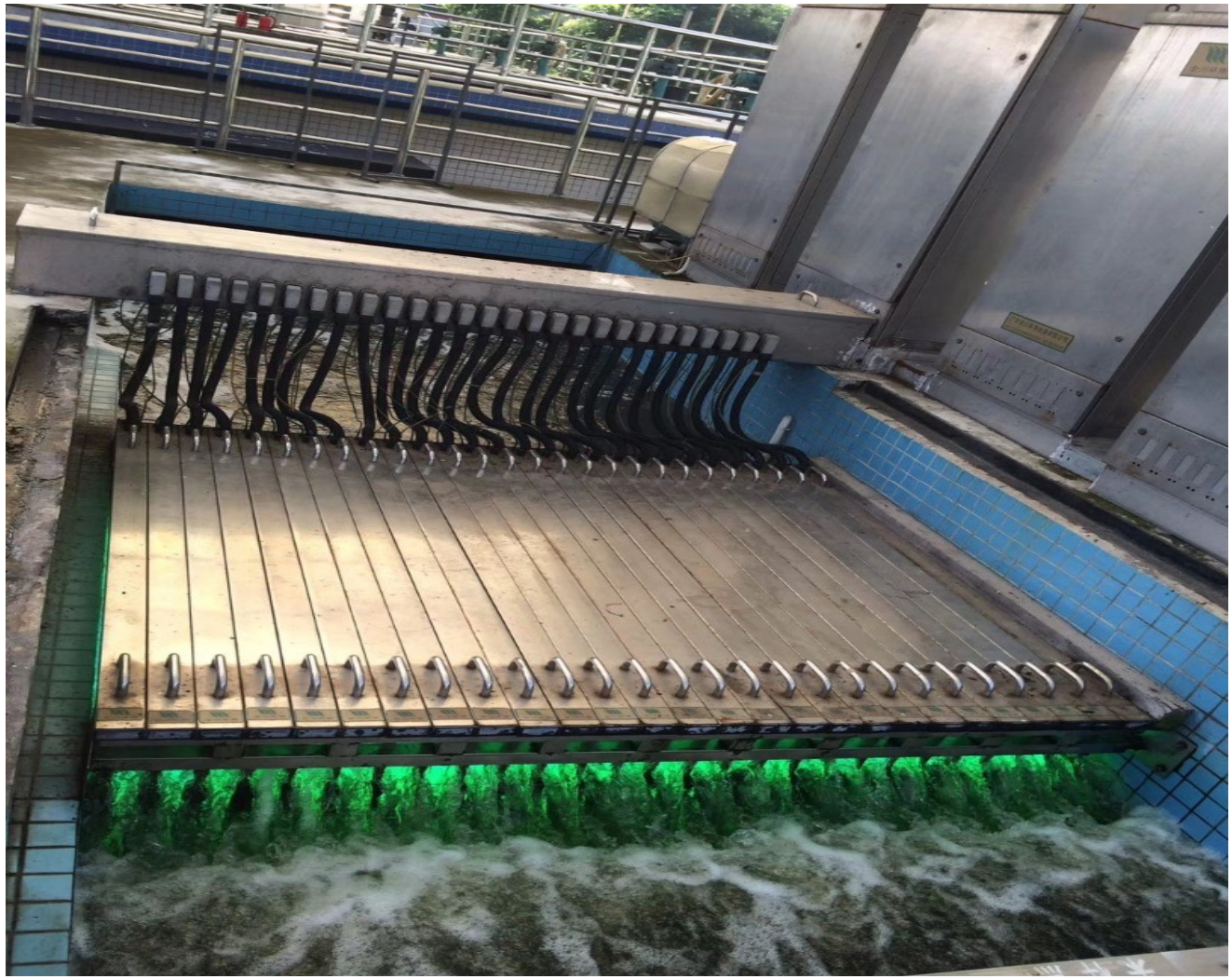
Open Channel UV Water Disinfection System

- No exposure to sewage, UV lamps,UV lamp cables and signal cables, Lamp sockets, power sockets are enclosed in the module, protected against effluent and UV irradiation respectively.

- Each module can be pulled out separately without affecting the operation of other modules when replacing the lamp or quartz sleeve

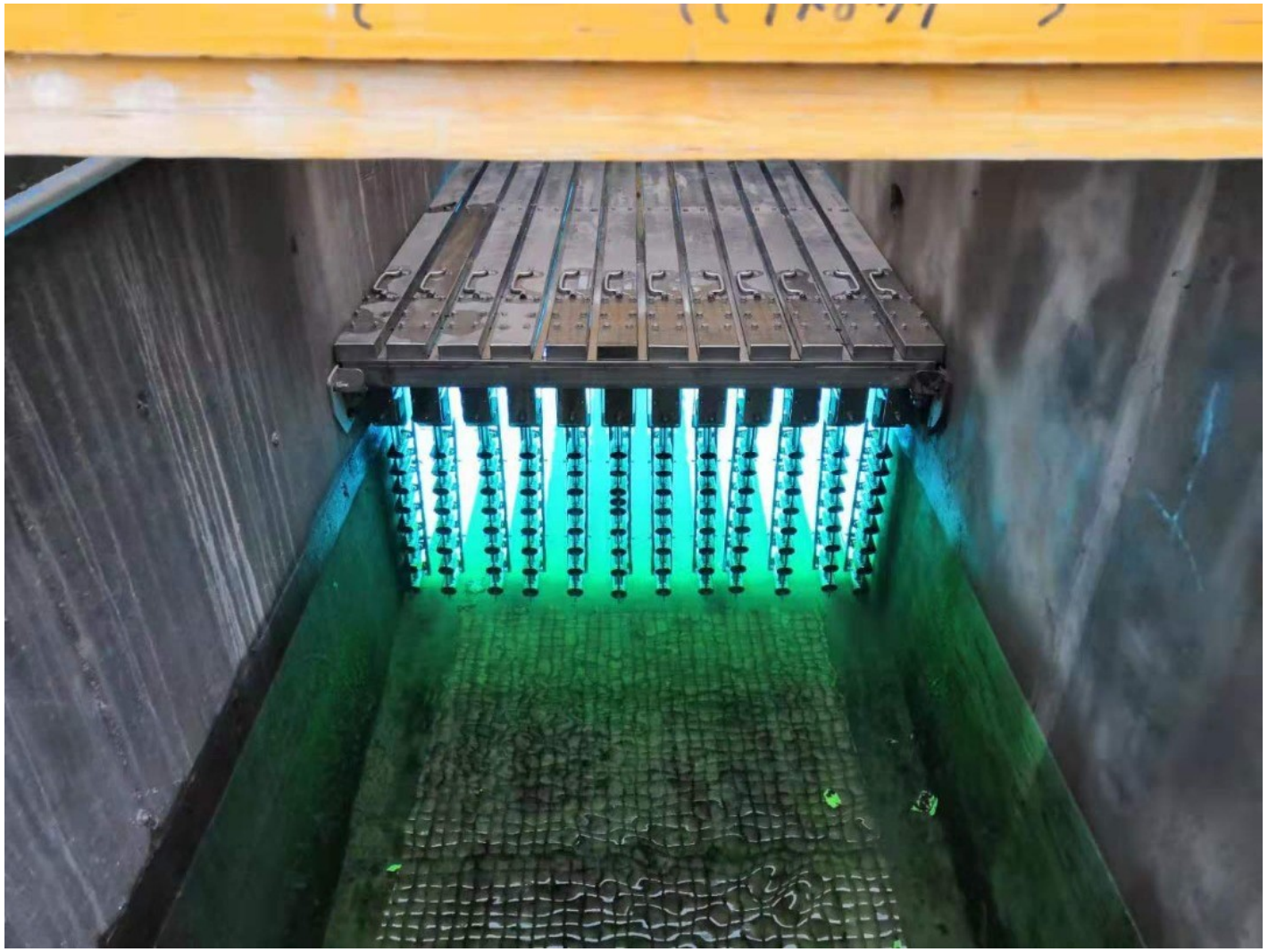
- Module lamp socket structure meets the fluid mechanics characteristic, increases pass-flowing area, which can effectively reduce the head loss of UV Open Channel Module, and with good sealing performance and maximum corrosion-free safety.

Open Channel UV Water Disinfection System



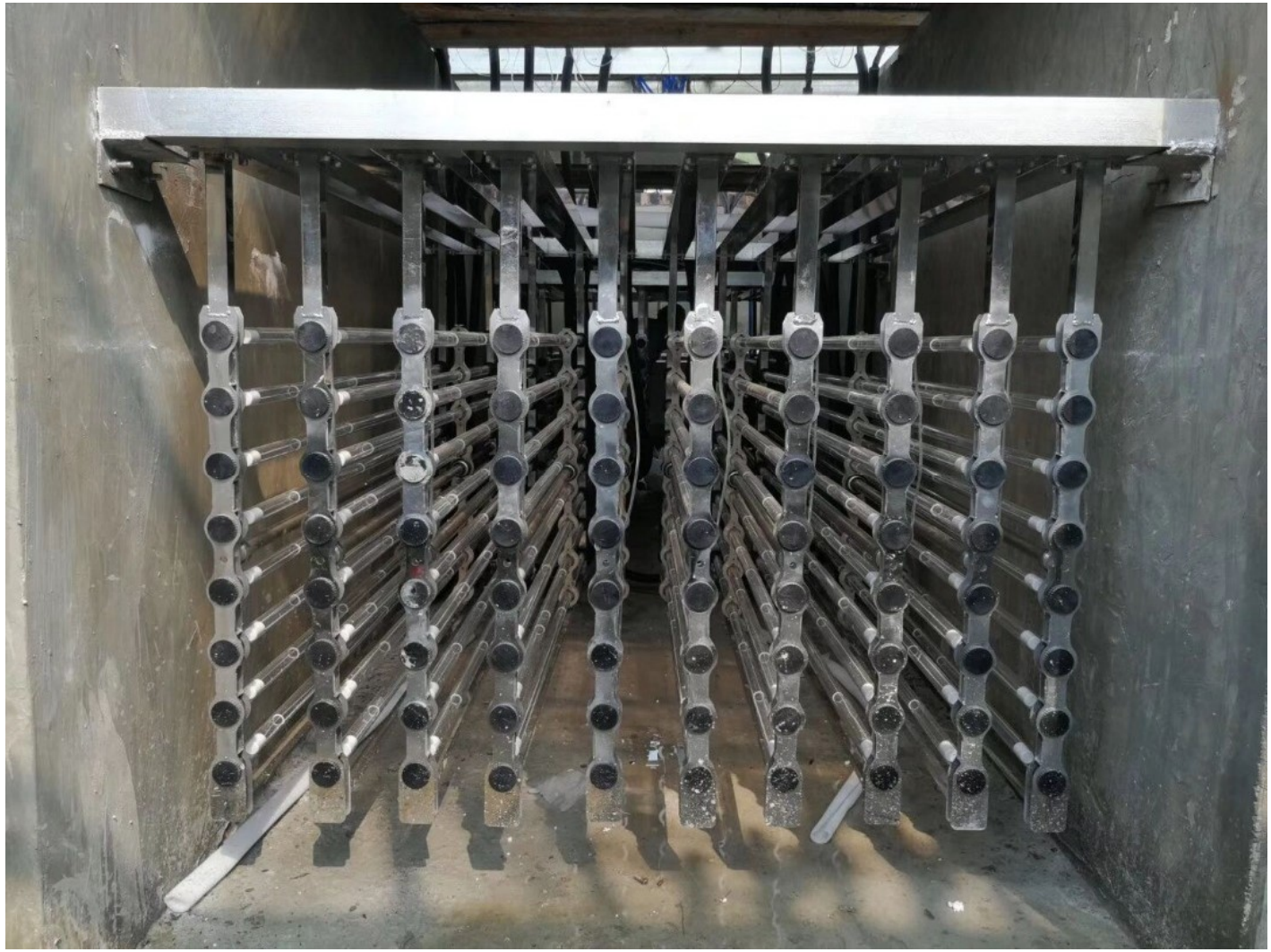
ARKLITE®
SPECIALITY LAMPS
AN ISO 9001:2015 CERTIFIED COMPANY

Open Channel UV Water Disinfection System



ARKLITE®
SPECIALITY LAMPS
AN ISO 9001:2015 CERTIFIED COMPANY

Open Channel UV Water Disinfection System



ARKLITE®
SPECIALITY LAMPS
AN ISO 9001:2015 CERTIFIED COMPANY

Open Channel UV Water Disinfection System

ARKLITE®
SPECIALITY LAMPS
AN ISO 9001:2015 CERTIFIED COMPANY

Service & Support

ARKLITE®
SPECIALITY LAMPS
AN ISO 9001:2015 CERTIFIED COMPANY

Thank You

ARKLITE®
SPECIALITY LAMPS
AN ISO 9001:2015 CERTIFIED COMPANY