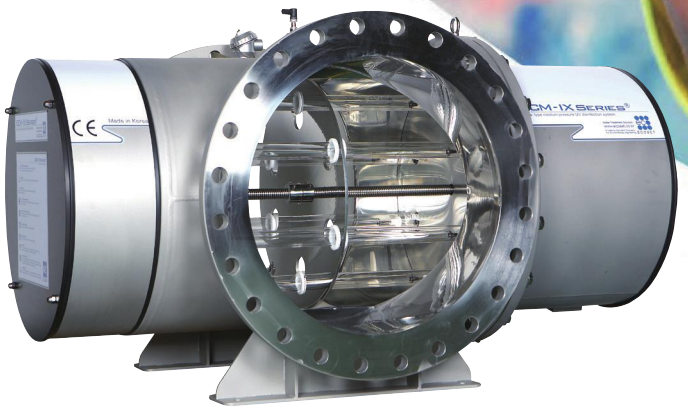
NEOTEC
For World Class UV Technology

life
OZONE
eco
clean life aqua
fresh water
aqua MUNICIPAL
clean life WATER
Oxidation TREATMENT
Advanced
RECLAMATION
Neotec bwt fresh
eco water
sea Sludge eco reclamation
municipal
ecology clean life
Leading company aqua water treatment
in high-tech pretection environmental
ozone WATER technology
Medium Pressure
water
WASTE UV & UVAOP
reclamation
NEOTEC ecology
pretection
waste
Ozone municipal water treatment water
health water New Advanced Technology
ecology Leading eco
Sludge clean life company
Environment in high-tech environmental sea
aqua municipal
water Oxidation



NEOTEC

MEDIUM PRESSURE UV DISINFECTION / UV-AOP (ADVANCED OXIDATION PROCESS) SYSTEM

A leading company in Advanced Environment Technology

NEOTEC

NEOTEC Co., Ltd. has invested over 35 billion KRW in research and development to break into the advanced environmental product sector, which has long been dominated by developed nations. We are proud to be the first Asian company to introduce flow-through ultraviolet (UV) equipment to the U.S. market, earning Title 22 validation according to NWRI guidelines, UVDGM validation under U.S. EPA guidelines, and NSF 50, 60, and 61 certifications. To expand into the European market, we also secured DVGW validation for most of our medium-pressure UV equipment models. This enables us to confidently export to municipal and industrial sectors worldwide, including the U.S. and Europe, where we compete with global leaders.

Our most recent innovation, the UV AOP (Ultraviolet Advanced Oxidation Process) system, was developed after seven years of dedicated research. We successfully implemented this cutting-edge technology at the Ilsan Water Treatment Plant, achieving the world' s highest performance (150,000 tons/day) and laying the groundwork for global market expansion.

In Korea, we hold the largest market share, supported by exclusive patents and advanced technologies. Recognized by the Ministry of Environment as an "Excellent Environmental Company," we continue to lead the industry.

NEOTEC is dedicated to ongoing innovation and customer satisfaction. With the collective strength of our skilled team, we promise to develop unique technologies, distribute them globally, and contribute to environmental sustainability and an improved quality of life for all.

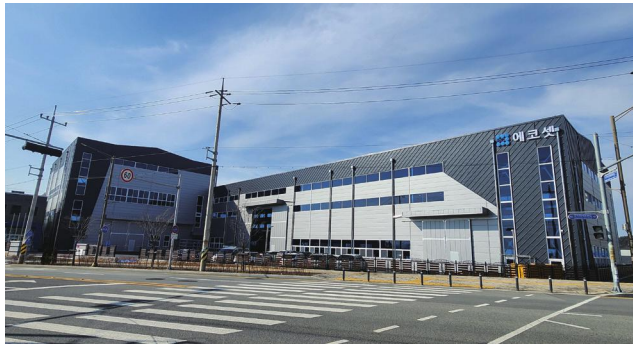
FACTORY



1st Factory & Research Lab – Ansan



2nd Factory – Dangjin



3rd Factory – Daegu







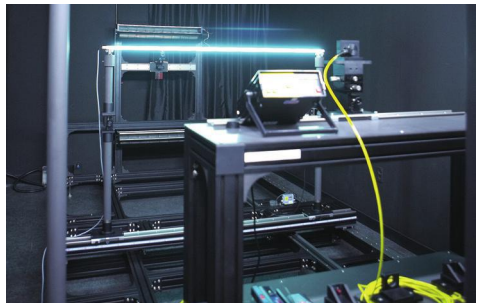






RESEARCH LAB

TEST EQUIPMENT














CERTIFICATION & VALIDATION

UV SAFTEY & PERFORMANCE

- Title 22 - NWRI Guidelines, Reuse
- DVGW-W294 - Europe, Drinking Water
- UVDGM - US EPA Guidelines, Drinking Water
- NSF 50 - Recreational Water Facilities
- NSF 60 - Drinking Water Treatment
- NSF61 & 372 - Drinking Water Components

PRODUCTS (UVDGM/DVGW)	
NCM-I300	12kW
NCM-I450	24kW
NCM-I600	36kW
NCM-I750	48kW
NCM-I800-8L	64~80kW
NCM-I800-12L	96~120kW

QUALITY MANANGEMENT

- ISO 9001
- ISO 14001

ELECTRICAL SAFTEY

- CE-MD
- KC-EMC



NSF 50 / NSF 60/ NSF 61&372 CERTIFICATES

UVDGM
EPA United States Environmental Protection Agency

A guide manual for UV Disinfection Equipment for drinking water sourced from surface water in compliance with the LT2 standard set by the US EPA (United States Environmental Protection Agency). UVDGM Validation is required for water treatment plants across the United States.

DVGW CERT

A certification body in Germany that tests and certifies compliance with technical requirements related to hygiene, safety, and overall functionality. It specializes in the gas and water industries.

NSF®

The American National Standards Institute (ANSI) certifies various products and components through testing for sanitary function and safety. It currently holds NSF 50, NSF 60, and NSF 61&372 certifications.

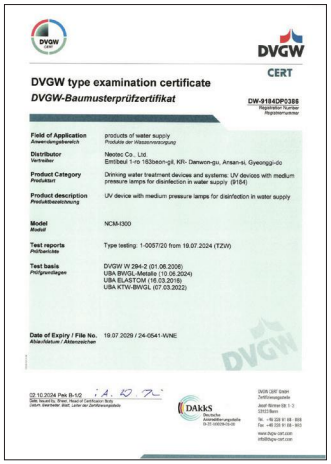
NSF 50 : Safety Standards Certification for Equipment and Chemicals for Swimming Pools, Spas, Hot Tubs, and Other Recreational Water Facilities

NSF 60 : Safety Standards Certification for Drinking Water Treatment Chemicals

NSF 61&372 : Safety standards certification for Drinking Water Components

CERTIFICATION & VALIDATION

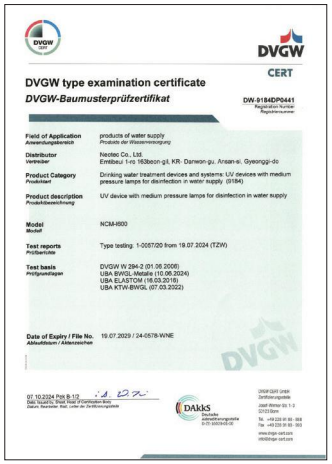
DVGW CERTIFICATES



NCM-I300 (300A, 4kW x 3Lamps)



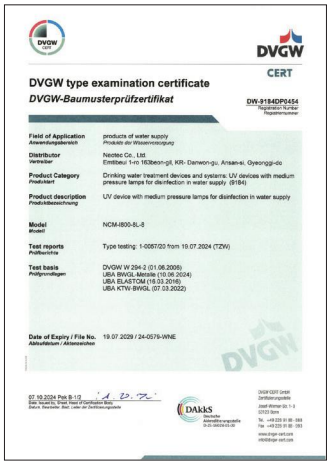
NCM-I450 (450A, 4kW x 6Lamps)



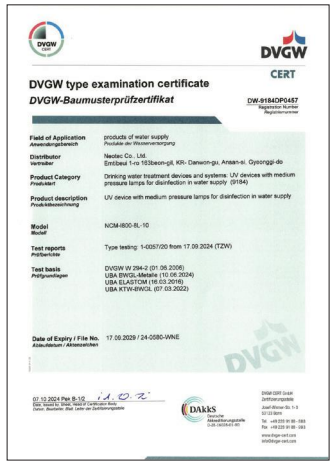
NCM-I600 (600A, 6kW x 6Lamps)



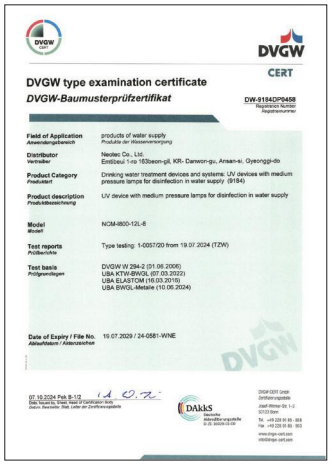
NCM-I750 (750A, 8kW x 6Lamps)



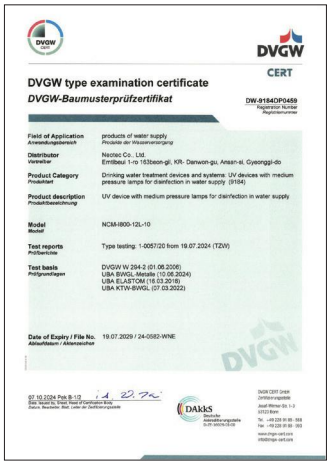
NCM-I800-8L-8 (800A, 8kW x 8Lamps)



NCM-I800-8L-10 (800A, 10kW x 8Lamps)



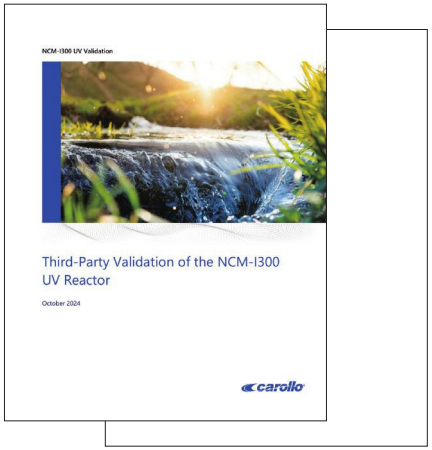
NCM-I800-12L-8 (800A, 8kW x 12Lamps)



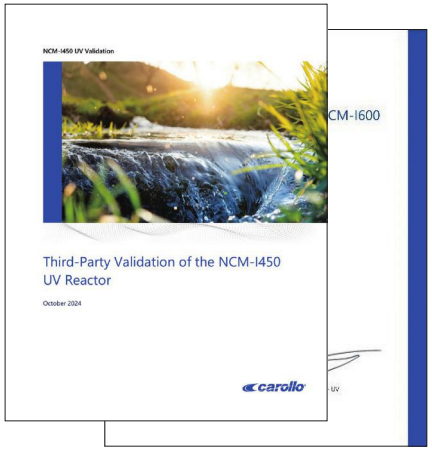
NCM-I800-12L-10 (800A, 10kW x 12Lamps)

CERTIFICATION & VALIDATION

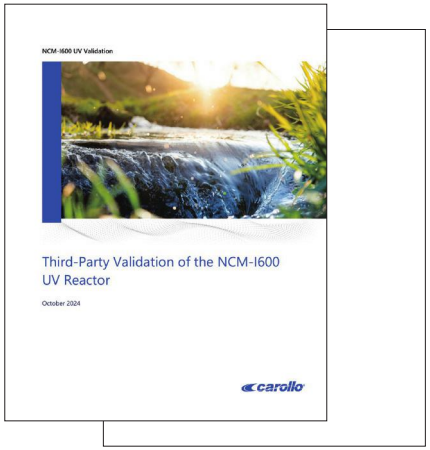
US EPA UVDGM



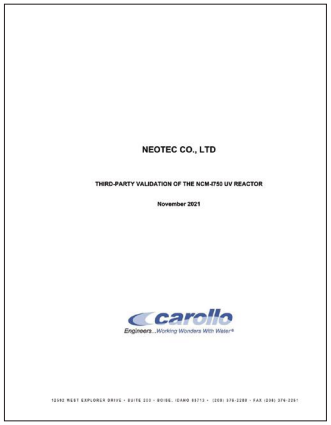
NCM-I300 (300A, 4kW x 3Lamps)



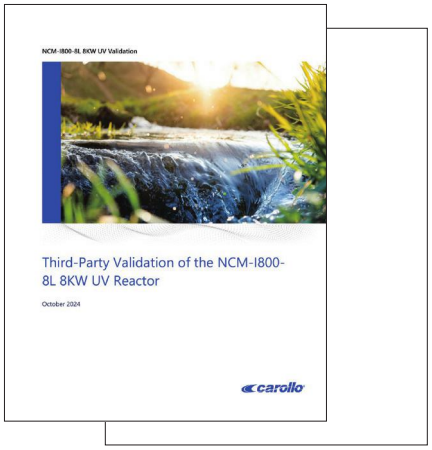
NCM-I450 (450A, 4kW x 6Lamps)



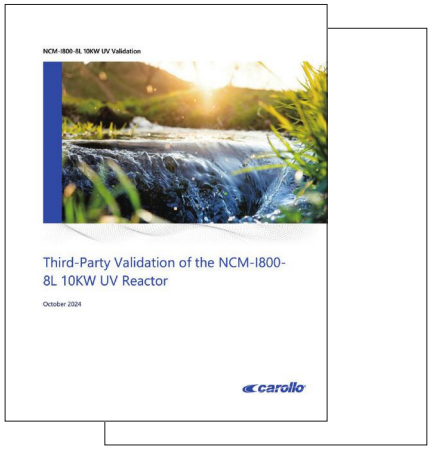
NCM-I600 (600A, 6kW x 6Lamps)



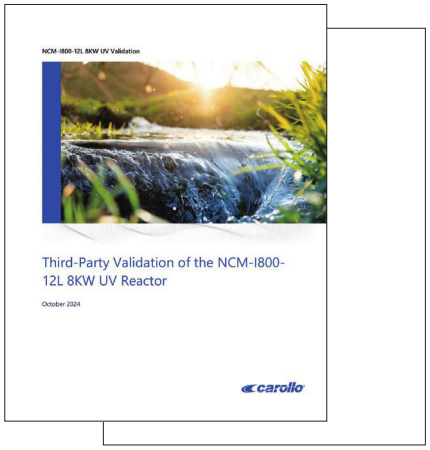
NCM-I750 (750A, 8kW x 6Lamps)



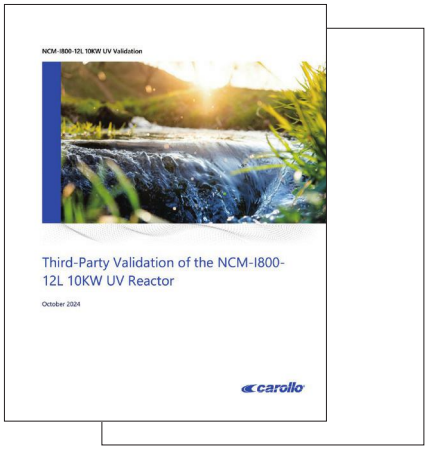
NCM-I800-8L-8 (800A, 8kW x 8Lamps)



NCM-I800-8L-10 (800A, 10kW x 8Lamps)



NCM-I800-12L-8 (800A, 8kW x 12Lamps)



NCM-I800-12L-10 (800A, 10kW x 12Lamps)

MEDIUM PRESSURE UV DISINFECTION

MEDIUM-PRESSURE UV APPLICATION

Neotec's medium pressure UV disinfection equipment lineup is applied across various fields, ensuring maximum satisfaction for customers. It is used not only in water treatment and wastewater treatment plants at public facilities but also in swimming pools where families can enjoy leisure time together, providing the best water quality.



U Shpe Type UV Reactor



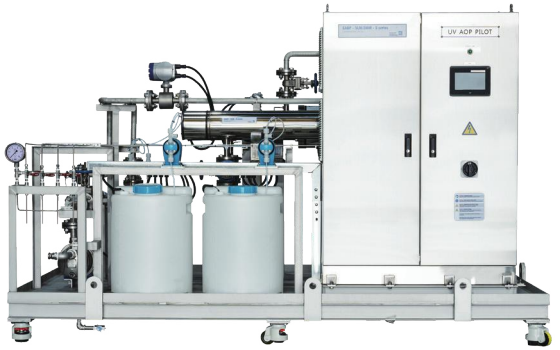
In-Line Type UV Reactor

APPLICATIONS

- Wastewater Treatment Plant
- Drinking Water Treatment Plant
- Food & Beverage, Pharma
- Industrial Wastewater (UV-AOP)
- Power Plant Wastewater (UV-AOP)
- Industrial process water
- Removal of Micropollutants
- Swimming Pools, Spas, Recreational Water Facilities
- Test equipment (Universities and Research Lab)



UV AOP SKID



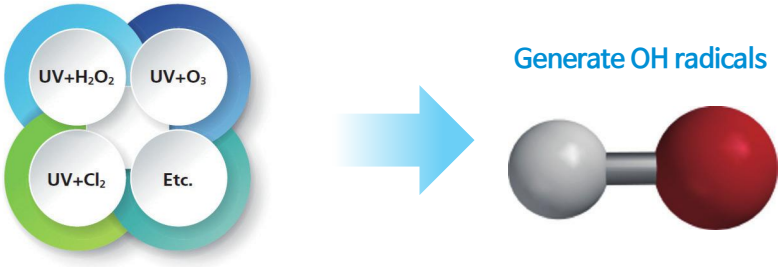
UV AOP PILOT TEST EQUIPMENT

MP UV-AOP (ADVANCED OXIDATION PROCESS) TECHNOLOGY

FEATURES

- Higher Energy Efficiency, Lower Cost and Compact Footprint than Other Technologies
- Ensures Safety for Operators without using Toxic chemicals like Chlorine and Ozone
- No Taste and Odor (2-MIB, Geosmin) due to No DBPs (Disinfection Byproducts)
- Effective Disinfection Performance for removing Pathogens, Viruses and more
- Particularly Effective against Chlorine-tolerant protozoa (e.g., Cryptosporidium, Giardia)
- Excellent Removal Performance for Micropollutants (NDMA, 1,4-dioxane and others)

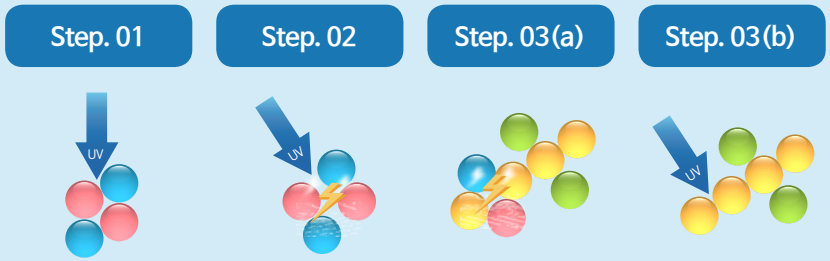
UV-AOP TECHNOLOGY



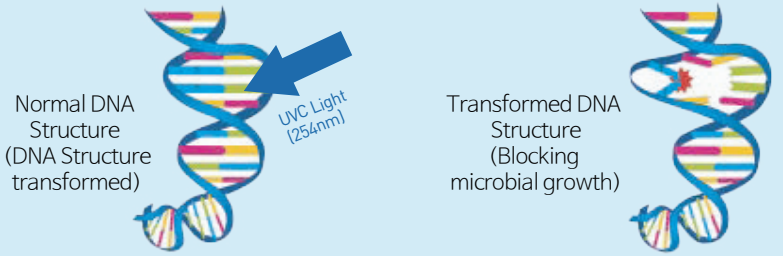
OH radicals 〉〉 O_3 〉 Chlorine

- OH radical : 2000 times more powerful than Ozone, and 180 times than solar Ultraviolet rays
- O_3 : 3600 times faster oxidation speed and 7 times more oxidation power of chlorine
- Chlorine : Sterilization and oxidation power are significantly lower than OH radicals and ozone

OXIDATION PROCESS



DISINFECTION PROCESS



MP UV-AOP (ADVANCED OXIDATION PROCESS) TECHNOLOGY

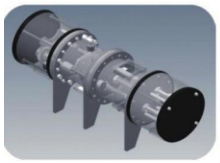
❸ Additional equipment (optional)

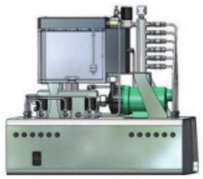
Online UVT meter

Measuring real-time water quality information and providing it to SCP

Bubble Clean System

Reduction in energy consumption through improved cleanliness of quartz tubes







❷ Power Supply Unit (low-frequency ballast applied)

Increased the maximum distance between SCP and UV Reactor by using a Low-frequency ballast

❶ System Control Panel (Automatic Control)

Automatic control of lamp output and oxidant injection amount based on real-time flow and water quality fluctuations.

❺ AOP Applicable

UV advanced oxidation treatment possible with the addition of an oxidant tank and metering pump

Operating options

-Standard: UV disinfection operation
(No oxidant used)
- AOP: UV advanced oxidation operation
(oxidant injected upon target substance inflow)

❹ Maintainability

Increased space efficiency by applying easily maintainable one-end base lamps

*Add-on parts

Flow meter - Providing flow rate information to SCP
Static mixer, Diffuser - Uniforming performance by agitating the liquid within the pipe

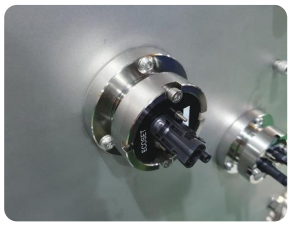
UV REACTOR DESIGN BASED ON CFD-RED ANALYSIS

UDGM / DVGW VALIDATED PERFORMANCE

- Proven Performance : Obtained USEPA-UVDGM, DVGW-W294, and NSF 50
- Ensured Drinking water Safety : Obtained NSF 60 and NSF 61 & 372
- Flexible Operating Conditions : Capable of treating a wide range of water quality through lamp output operation from a minimum of 25% to a maximum of 100%
- Optimized Design : Optimized disinfection capacity and minimized head loss design through CFD-RED analysis. Both vertical and horizontal installation possible
- Over 10% reduction in maintenance space compared to existing systems
- Maintenance space minimized by using single-end type lamps, resulting in reduced installation costs
- Use of domestically manufactured parts : Eliminates the hassle of importing foreign parts by using domestically developed long-life, high-efficiency UV lamps and ballasts
- Low-frequency ballasts usage : AC square wave ballasts allow for a maximum distance of 100m between the control panel and reactor
- Optimized energy efficiency for equipment operation : Energy savings achieved through the use of high-efficiency, high-power factor ballasts
- Verified parts usage : DVGW-W294 certified UV sensors used
- Various installation fields : Applicable in various areas such as drinking water, wastewater, and industrial water treatment
- Efficient cleaning (Bubble clean, cleaning solution supply system) :
  Expected to achieve higher cleaning effectiveness compared to existing cleaning mechanisms (mechanical wiper) through the use of micro bubbles and high-speed circulation cleaning system (Optional)





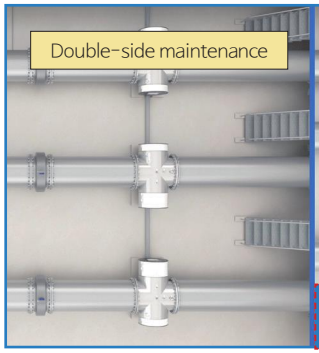


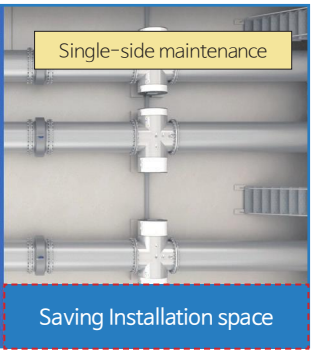


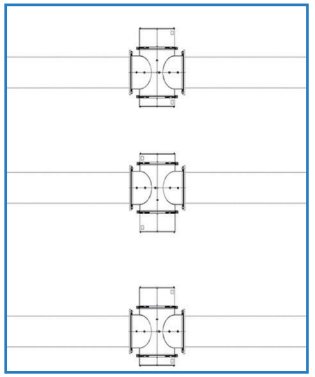
How to install
a single-end lamp

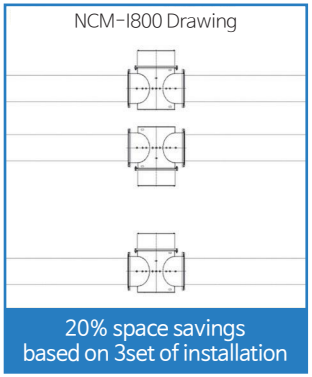












MEDIUM PRESSURE UV LAMPS AND BALLASTS

MP UV LAMP SPECIFICATION						
Lamp Power (kW)	4	6	8	10	12	24
Arc length (mm)	350	500	800	800	1000	1748
Lamp length (mm)	480	630	930	930	1128	1870
Lamp voltage (V)	400	600	800	1000	1820	2300
Lamp current (A)	10				6.6	10.43
Lifetime (Hrs)	4000				1500	1000

MEDIUM PRESSURE UV LAMPS

The lamp uses a roll sealing type, which applies the best conditions for cooling efficiency, thereby delaying electrode wear and aging. Additionally, it can be applied as a one-end type to reduce the installation space of the UV equipment by up to 10% as needed.



MP ELECTRONIC BALLAST SPECIFICATION						
Ballast power (kW)	4	6	8	10	12	24
Dimming range (%)	25 ~ 100	33 ~ 100	25 ~ 100	20 ~ 100	33 ~ 100	33 ~ 100
Max. voltage (V)	500	1000		1100	1800	2700
Max. current (A)	10	12		12	11	15
Input power	220V Φ3	380V Φ3			400V Φ3	400V Φ3
Dimension (mm)	475x143x166	669x215x162			270x235x230	270x449x230
Weight (kg)	10	20			8	16
Communication	LAN, RS485, RS232				4-20mA	4-20mA
Certification	KC-EMC				CE	CE

MP ELCTRONIC BALLASTS

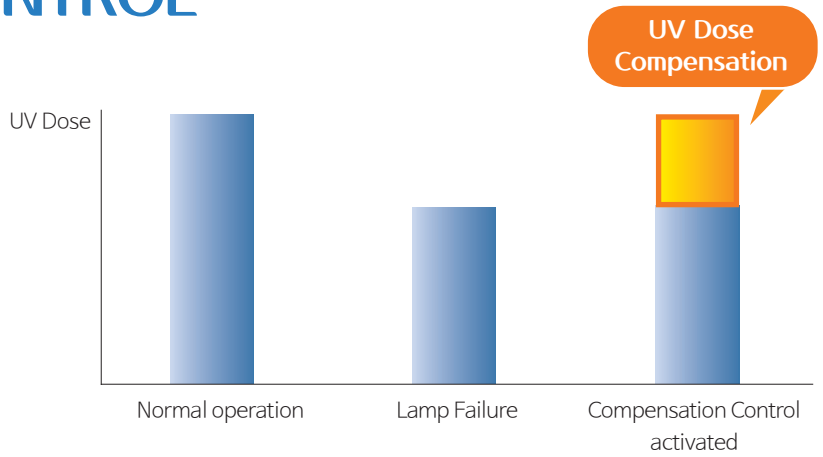
Using a low-frequency AC square wave waveform Ballast allows for stable power supply between the UV reactor and the ballast even over long distances, reducing constraints on the installation locations of the UV reactor and control panel. Additionally, the vertical structure provides excellent space efficiency and cooling efficiency within the control panel. Variable linear output control is implemented to minimize energy loss.

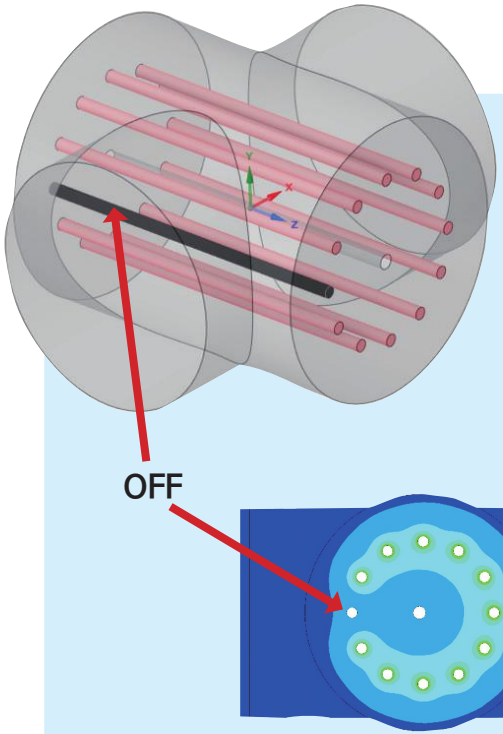


LAMP OUTPUT COMPENSATION CONTROL

What is Lamp Output Compensation Control Technology?

Lamp Output Compensation Control Technology involves programming the control panel to immediately adjust the output of surrounding lamps in the event of a lamp failure. This ensures that the UV Dose delivered to the UV reactor remains sufficient, allowing for prompt action and control. This technology minimizes losses by providing adequate UV exposure until the faulty lamp issue is resolved.





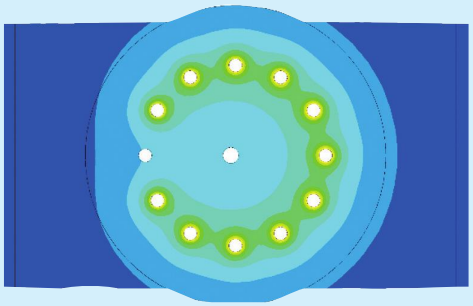
Lamp Output Reduction or Failure

Immediate signal transmission to the control panel via individual lamp monitoring sensors

Start of Lamp Output Compensation Control

Increase the output of all lamps except the failed lamp to compensate for UV Dose





Calculation of UV Dose reduction in the Control Panel and UV Reactor

Calculate the lost UV Dose due to the absence of the lamp and compensate for the dose through surrounding lamp output control.

SYSTEM CONTROL PANEL (SCP)

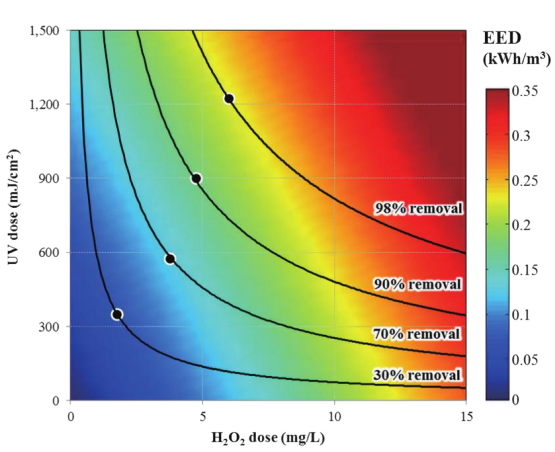
- Through a PLC-based control system, real-time external input values (flow rate, UVT, lamp intensity) are monitored to adjust the required dose
- Variable linear output control maximizes energy consumption efficiency
- High-efficiency, high-power factor, low-frequency AC square wave ballasts ensure power delivery without loss over long distances
- Integrated with online UVT meters for optimal dose calculation and application
- Individual lamp monitoring provides status checks and maintenance timing
- Individual lamp output can be adjusted as needed
- Compensation control functionality prevents disinfection performance degradation in case of lamp faults
- Immediate alarms and notifications to the central control room in case of issues
- Alarm list and data logging capabilities
- Supports remote monitoring and control functionality
- (Option) Automatic UV dose control linked with online UVT meters for optimal performance

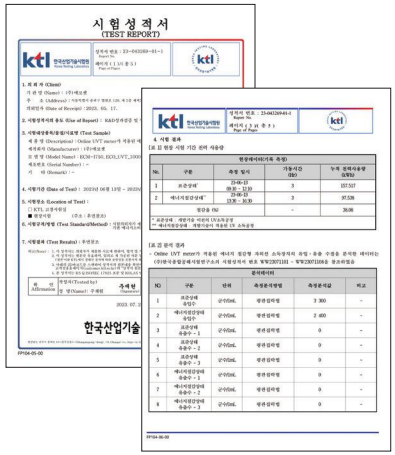


Medium pressure UV reactor



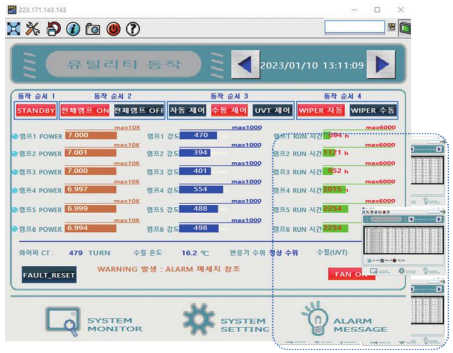
System Control Panel (SCP)



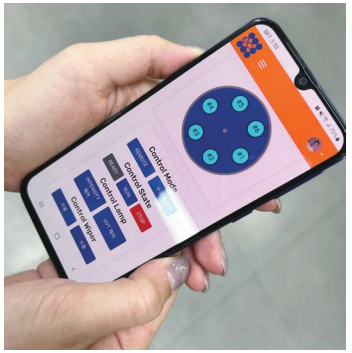


Existing control vs. NEOTEC automatic control - Energy savings rate: 38%
(Results from J STP, KTL testing and evaluation)

control system



PLC screen



Mobile monitoring and control

NCM-I SERIES (SPECIFICATION)

FOR DRIKING WATER & WASTEWATER PLANT

SYSTEM GENERAL FEATURES						
System	NCM-I300	NCM-I450	NCM-I600	NCM-I750	NCM-I800-8L	NCM-I800-12L
Total Lamp Power (kW)	12	24	36	48	64 / 80	96 / 120
Nominal Lamp Number	3	6	6	6	8	12
Nominal Lamp Power (kW)	4	4	6	8	8 / 10	8 / 10
UVT range	70 ~ 98%					
Max, Operating Temp	40℃					
Max Water Temp	30℃					
Maintenance (Cleaning system)	OMC or OMCC (Optional)					
Validation/Certification	DVGW, UVDGM, NSF61, CE, NSF60(Optional)					
CHAMBER GENERAL FEATURES						
Material	SUS 316L					
Lamp Monitoring	DVGW W294 Compliant germicidal UV sensor					
NSF 60, 61	√					
CONTROL PANEL GENERAL FEATURES						
Material	Painted Mild Steel, Stainless Steel					
Separation Distance	Max. 100m					
Power Input	220V Φ3		380V Φ3			
CE Certification	√					

NCM-I series has obtained performance certification for drinking water UV disinfection equipment, specifically DVGW-W294 and USEPA UVDGM validations. It can handle a wide range of UVT conditions and process up to 150,000 tons of water per day. It is suitable for use not only in drinking water but also in industrial water, wastewater, and sewage treatment plants.

- Removes protozoa, E. coli, microorganisms, and viruses
- Cleaning device for efficient maintenance (mechanical, chemical- mechanical)
- Status monitoring with individual sensors for each lamp
- Adjusts lamp output based on flow rate and UVT variations to optimize energy consumption



NCM-US SERIES (SPECIFICATION)

FOR SWIMMING POOLS / SPAS / RECREATIONAL WATER FACILITES

SYSTEM GENERAL FEATURES							
System	NCM-US152	NCM-US150	NCM-US200			NCM-US320	
Total Lamp Power (kW)	1.5	2.5 / 4	2.5. / 4 / 6			6/12	
Nominal Lamp Power (kW)	1.5	2.5 / 4	2.5	4	6	6	4
Nominal Lamp Number	1						3
UVT range	70 ~ 98%						
Max, Operating Temp	40℃						
Max Water Temp	30℃						
Maintenance (Cleaning system)	OMC or OMCC (Optional)						
Validation/Certification	NSF 50						
Chamber							
Material	SUS 316L						
Lamp Monitoring	DVGW W294 Compliant germicidal UV sensor						
NSF 60, 61	√						
Control Panel							
Material	Painted Mild Steel, Stainless Steel						
Power Input	380V Φ3						
CE Certification	√						

To maintain the cleanliness of existing swimming pool water, chlorine disinfection is the most commonly used method. However, customers often report significant discomfort due to the odors and irritations that can result from chlorine use.

The NCM-US series, which has obtained NSF 50 certification for the safety and performance of aquatic facility equipment, helps to improve the water quality of swimming pools, making them clearer and cleaner for a more pleasant experience.

- Removes protozoa, E. coli, microorganisms, and viruses
- Addresses issues with chlorine odors in pools
- Prevents the formation of chloramines (NH2Cl), which can occur from chlorine (Cl2) or ammonia, creating a more pleasant environment
- Produces high-quality pool water and protects metal structures within pool maintenance systems from corrosion
- Effective in removing chlorine-resistant protozoa when applicable.







INDUSTRINAL WASTEWATER UV-AOP SYSTEM (SPECIFICATION)

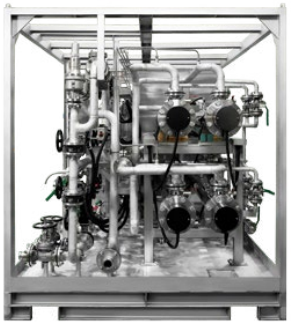
FOR INDUSTRIAL WASTEWATER APPLICATIONS

SYSTEM GENERAL FEATURES		
System	Industrial Wastewater	
Total Lamp Power (kW)	24	96
Nominal Lamp Number	2	4
Nominal Lamp Power (kW)	12	24
UVT range	0 ~ 90%	
Max, Operating Temp	55℃	
Max Water Temp	40℃	
Maintenance (Cleaning system)	OMC or OMCC (Optional)	
CHAMBER GENERAL FEATURES		
Material	SUS 316L/Nonmetal	
Lamp Monitoring	DVGW W294 Compliant germicidal UV sensor	
CONTROL PANEL GENERAL FEATURES		
Material	Painted Mild Steel, Stainless Steel	
Separation Distance	Max. 30m	
Power Input	380V Φ3	380V Φ3
CE Certification	√	

INDUSTRIAL WASTEWATER UV AOP SYSTEM (SKID TYPE)

UV AOP System for Industrial wastewater increases biodegradability, reduces COD and TOC, and remove the toxic contaminants in the industrial wastewater, It also provides compact footprint, easier installation and maintenance due to all-in-one system.

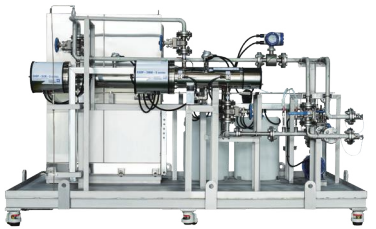




UV AOP PILOT TEST EQUIPMENT

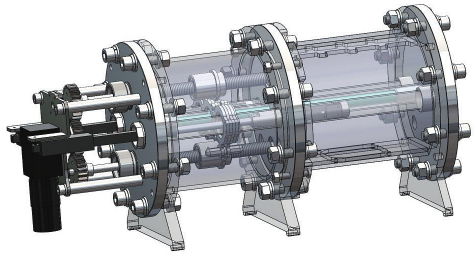
UA AOP PILOT TEST equipment is used for optimizing treatment conditions through batch operation of targeted industrial wastewater and contaminated water before the actual field implementation of UV disinfection and oxidation equipment.

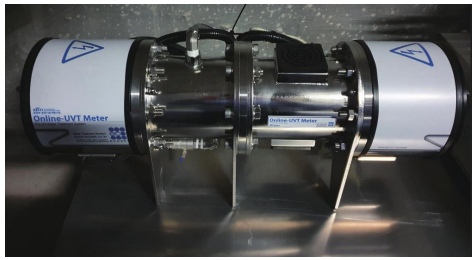


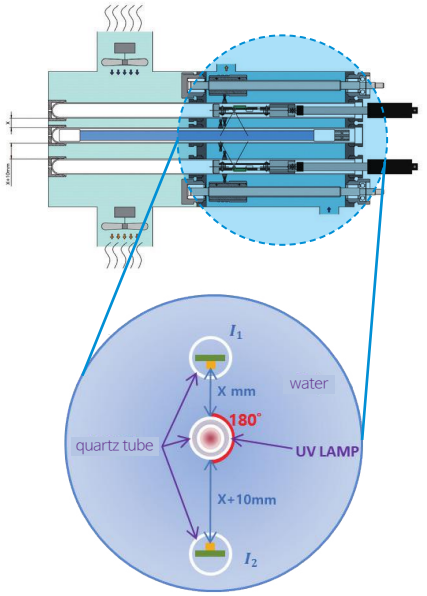


Online UVT meter

SYSTEM GENERAL FEATURES	
UVT Measuring range	70~100%
Light Source	LP UV lamp
Operation	Connection to SCP
Self-diagnostic	Detect fault and send alarms to SCP
Measuring time	Initial : ~ 1min Continuous : ~ 10sec
Measuring Type	Dual-sensor detection
Maintenance (Cleaning system)	OMC or Bubble clean (optional)
Cleaning Time	5mins / cycle
Calibration Type	Automatic contnuous calibration
Output	0 - 5V
Size (mm)	800 x 350 x 250 (L x W x H)
Lamp life	2 years
Water Temp.	0 ~ 60˚C







- First developed and patented product in Korea (Smart BB grade)
- Energy savings for UV systems through efficient lamp output control via real-time UVT monitoring
- Automatic calibration of UVT measurement values through self-diagnosis
- Normal UVT measurement possible even if one of the two sensors malfunctions
- Easy maintenance with the application of mechanical or chemical-mechanicalcleaning devices
- Optional sharing of cleaning solution in the Bubble Clean System when using achemical-mechanical cleaning device
- Compact size for easy installation space management
- ±2% error compared to laboratory-grade UV/Vis analytical equipment (certified test report available)

Description		Company A	NEOTEC
Type		Bypass	Bypass
Measurement method		Single sensor measurement by distance	Dual sensor measurement
Measurement time		1~20 min	10 sec
Cleaning method		None	Mechanical or mechanochemical
Issues	Maintenance	Periodic shutdown followed by maintenance needed	Automatic maintenance When selecting mechanochemical, joint use of cleaning solution for the reactor
	Calibration	Periodic offline sensor calibration needed	Automatic calibration through self-diagnosis
	In case of sensor failure	Measurement not possible	Normal measurement possible even with one sensor failure

BUBBLE CLEAN SYSTEM

CLEANING SYSTEM (OPTIONAL)

Certified to NSF/ANSI 60

Ministry of Environment certification of korea

Online mechanical + chemical + microbubble cleaning device

- Chemical cleaning solution containing microbubbles rapidly rotates along the outer surface of the sleeve to maximize cleaning efficiency.
- Safety verified with Bubble Clean Solution made from food additive ingredients (NSF 60 certification obtained).

Existing OMCC system	Bubble Clean
Continuous contamination of the injected chemical cleaning solution	Easy confirmation of contamination levels and replacement
When the injected chemical cleaning solution is lost, only the lower part of the quartz tube is cleaned.	No concerns
Even when replacing just one quartz tube, all chemical cleaning solution must be removed before reinjection.	Not necessary
If the wiping seal is damaged, there is a risk of chemical cleaning solution leaking from the reactor.	Automatic monitoring and shutdown for sealing material leakage
The inconvenience of individually lifting each module off the ground for injection. Note: In the case of large-scale wastewater treatment plants, hundreds of modules need to be lifted and cleaning solution replaced (worktime: several days).	Completion of charging after draining one cleaning solution tank on the ground. Note: Replacement is completed within a short time regardless of the number of modules.

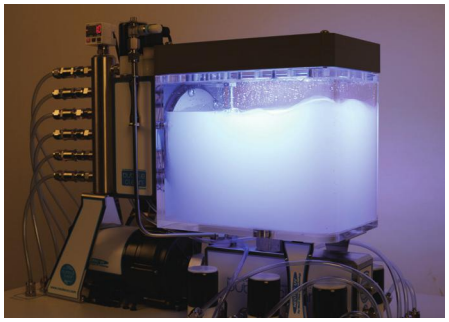
Cleaning solution supply device

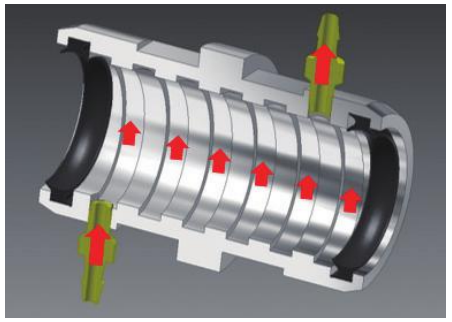
- Automatic supply and recovery function of the cleaning solution
- Can supply multiple systems with a single unit
- Visual confirmation of cleaning solution contamination is possible, and replenishing/replacing the solution is easy
- Microbubbles generated by the supply device increase cleaning efficiency
- Leak detection and alarm function within the cleaning device
- Control panel integration for setting cleaning cycles and replacement timing notifications



Acid + Microbubbles + High-Speed Rotation









Bubble Clean / Before



Bubble Clean / After



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