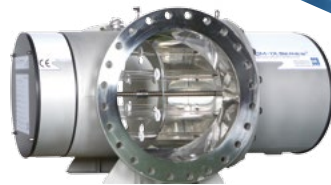
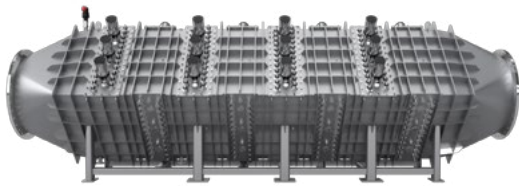




life
OZONE
eco
clean life aqua
fresh water
aqua MUNICIPAL
clean life WATER
Oxidation
Advanced
TREATMENT
RECLAMATION
Ecaset bwt **fresh water**
eco sea **Sludge** eco reclamation
ecology clean life municipal
Leading company aqua water treatment
in high-tech protection environmental
WATER technology
Oxidation Advanced Oxidation ozone
water
WASTE **UV-AOP** eco
reclamation **ECOSSET** ecology
protection 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**



UV-AOP 低压及中压紫外线高氧化设备

New Advanced Technology
Advanced Oxidation Process

尖端技术领先企业环境 ECOSSET

数百年来被发达国家抢先占领的高科技环境产品，本公司投资了350多亿韩元研发资金，作为东南亚企业，首次获得美国NWR1指标的 Title 22 validation及NSF 50、60 认证，进入美国市场，为进入欧洲，获得中压紫外线设备大部分机型的 DVGW validation，所有经过DVGW验证的机型均通过美国EPA的UVDGM手册得到验证，与包括美国和欧洲在内的世界各国的Municipal (政府)及Indri产业领域展开竞争。Title 22 validation及NSF 50、60认证，进军美国市场，为进军欧洲，获得中压紫外线设备大部分机型的DVGW validation，所有经过DVGW 验证的机型均通过美国 EPA的UVDGM 手册得到验证，与包括美国和欧洲在内的世界各国的Municipal (政府工程)及Indri产业领域展开竞争。

净水厂及污水、废水处理厂高度处理设备的最新技术UV AOP(紫外线高度氧化处理)设备也经过7年的技术开发成功，向一山净水厂供货，确保了世界最高业绩(125,000吨/天，2-MIB85%去除率)，为进军世界市场奠定了桥头堡。

本公司在国内市场也获得了各产品差别化的专利和新技术，目前确保了国内最大的市场占有率，被环境部选为“优秀环境产业体”

通过不断的技术开发,尽最大努力成为受到顾客喜爱的企业,以具备优秀能力的职员们的团结力量开发世界唯一的技术,并承诺在世界市场广泛普及,为改善人类环境、提高生活质量做出贡献。谢谢。



FACTORY & RESEARCH LAB



安山研究所及第一工厂

唐津第二工厂



技术研究所

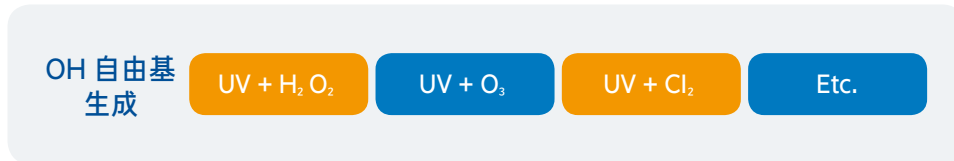
01

高级氧化技术

通过与K-Water的技术开发合作，实现UV-AOP System设计技术 完成国产化，在环境部下
属的韩国环境产业技术院的研究开发资金支援下实现技术的 高度化

AOP 技术是？

利用紫外、O₂、H₂O₂、超声波、E-beam和伽马射线辐照等产生高反应性的OH自由基，对各种 有机污染物进行氧化处理。近年来，由于现有处理设施难以去除的致味物质和微量有害污染 物的增加，引入了AOP技术，未来有望应用于大部分 水处理领域。



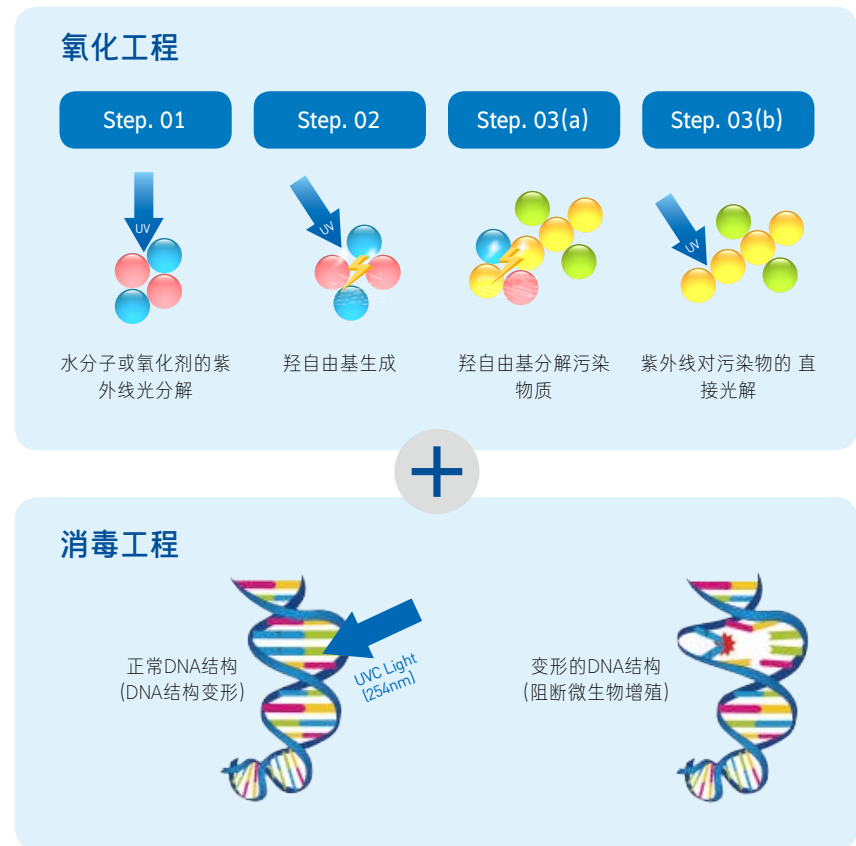
ECOSSET的UV AOP是？

通过CFD Modeling确保了最佳设计技术力及运营控制系统,通过国家R&D事业其技 术力得到了 认可。最近也通过持续的性能验证和研究开发,以世界最高的技术力而自豪。

氧化力比较

氧化力比较 OH自由基 >> O₃ > 氯

- OH 自由基：臭氧的2000倍、太阳紫外线的180倍杀菌及氧化能力
- O₃：比氯氧化速度3600倍及氧化能力7倍
- 氯气：与OH自由基和臭氧相比，杀菌及氧化能力明显地低



Application

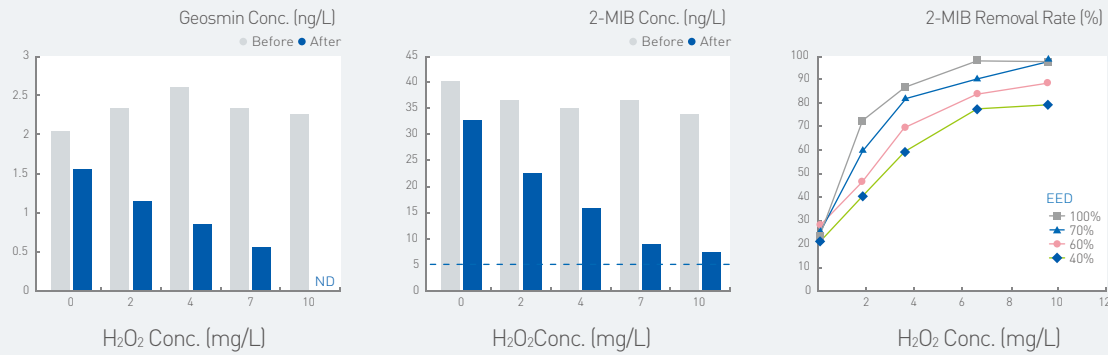


Removal

味觉物质	持久性油脂污染物
<ul style="list-style-type: none"> Geosmin, MIB (2-Methylisoborneol), 其他 	<ul style="list-style-type: none"> 潮水毒素 (microcystin, neurotoxins, 其他)
微量污染物	
<ul style="list-style-type: none"> 消毒副产品 (NDMA) 残留药物 (PPCPs) 其他有害物质 (氰化钾, 其他) 燃料及燃料添加剂 (MTBE, BTEX 等) 	<ul style="list-style-type: none"> 内分泌系障碍物质 (EDCs) 有机化合物 (1,4-Dioxane,PCE,TCE 等) 农药及除草剂 Surfactants
高浓度有机污染物	
<ul style="list-style-type: none"> 有机废液(草酸盐 等) 	<ul style="list-style-type: none"> 镀金废液

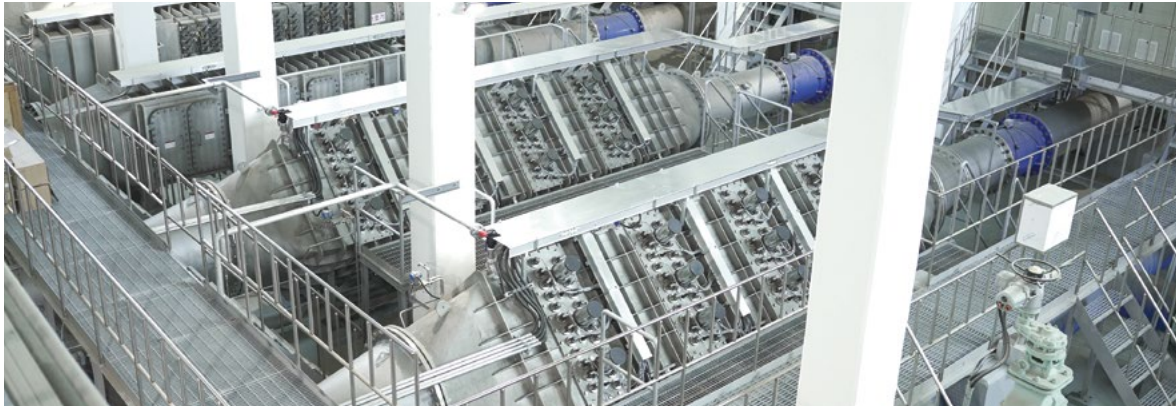


Efficiency



02

LOW-PRESSURE UV AOP CERTIFIED



一山淨水厂设备



漆西淨水厂设备



TOPAZ设备

海外认证

- CE(COC)
- CE(DOC)
- NSF60 (Cleaning System)
- UL

国内认证

- 优秀研发革新
- 环境标志认证
- 绿色产品认证
- 绿色技术认证

企业认证

- 大韩民国环境大奖 (Korea Environmental Awards)
- 技术革新型中小企业(INNO-BIZ)
- 优秀环境产业企业指定

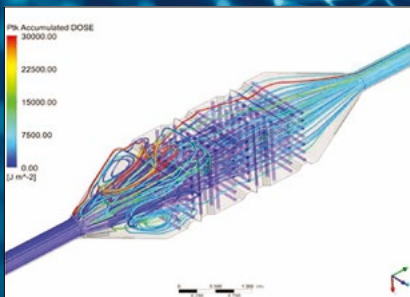
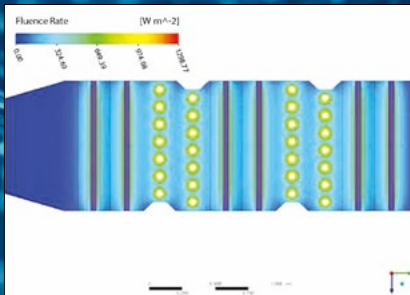
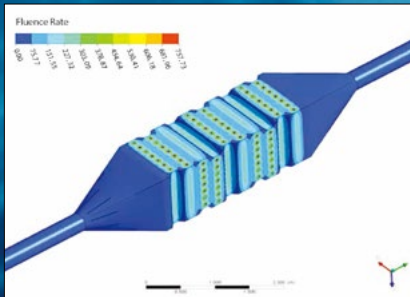
专利证书

- 为高度氧化工艺的紫外线反应器设计方法
- 包括可变挡板装置的紫外线高度氧化系统
- 清洗液wiper及包括该清洗液wiper housing的石英管 清洗装置
- 紫外线灯及包含这些的流体杀菌净化装置
- 紫外线发光装置及包括这些在内的水处理装置
- 石英管清洗装置
- 具备水中用气缸清洗装置的管路型紫外线杀菌器
- 管道密封式中压紫外线消毒设备
- 紫外线消毒设备石英管的化学清洗系统及化学清洗方法

LOW PRESSURE UV SYSTEM FOR

ADVANCED OXIDATION PROCESS

CFD Modeling



1 Oxidant Storage Tank

2 Oxidant Dosing Control Panel

Standard : 注入用氧化剂的定量泵
(SCP 实时控制注入量)

Option : 在线紫外线透过度监测
(SCP实时提供紫外线的透过变化信息)

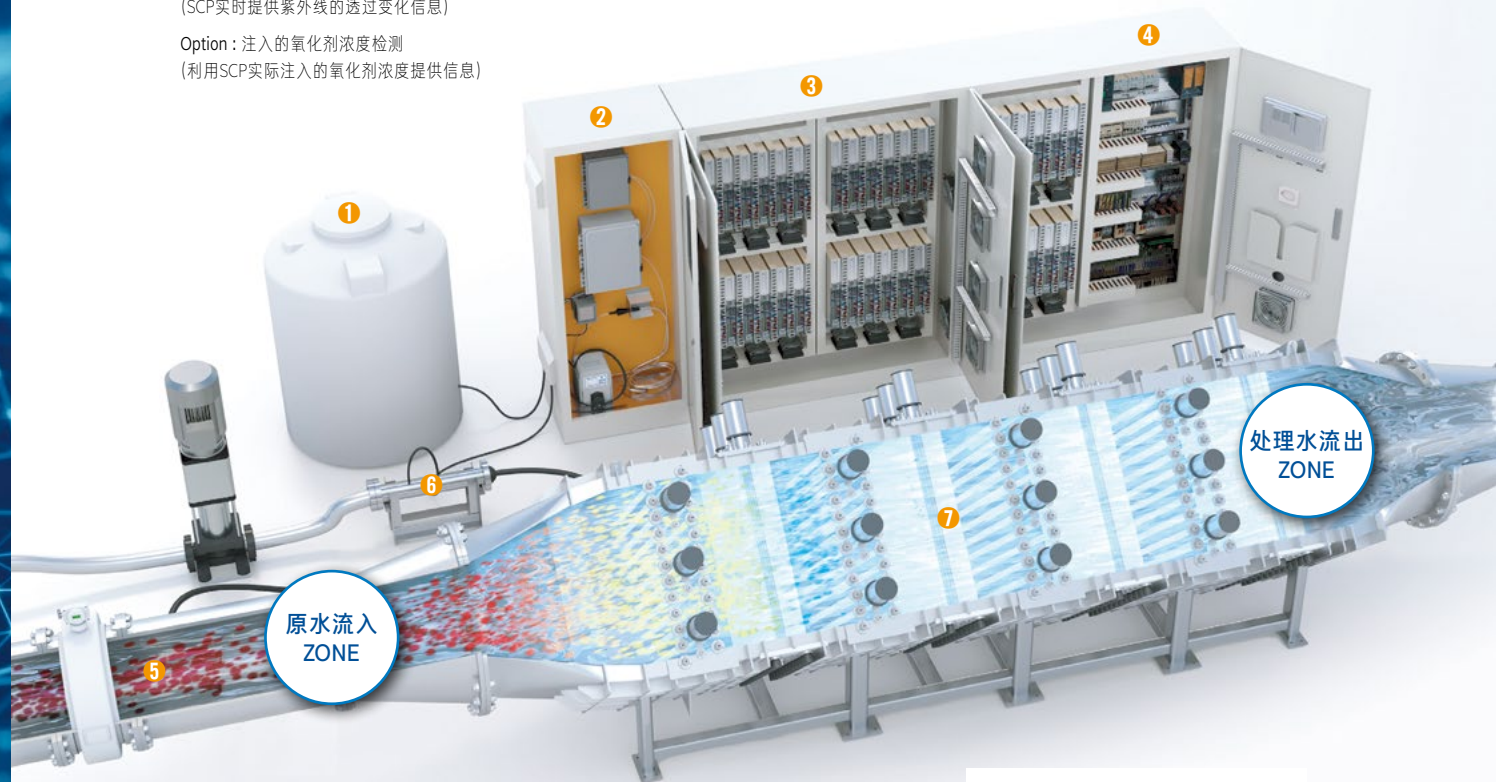
Option : 注入的氧化剂浓度检测
(利用SCP实际注入的氧化剂浓度提供信息)

3 Power Supply Panel (PSP)

紫外线灯电源供应 Electronic
适用Ballast控制灯管的功率量

4 System Control Panel (SCP)

时流量及水质变动带来的灯功率
及氧化剂注入量自动控制源水



5 Flow Meter

为实现实时自动
控制的SCP提供流
量信息

6 Oxidant Dosing System (Option)

由Oxidation Agent投入泵、Static搅拌器、
香蕉藤条等构成，在管道内注入 Oxidation
Agent

7 UV Chamber

STS316L材质
Option : Wiper System
Option : Temperature Sensor
Option : UV Intensity Sensor System

LOW - PRESSURE DIAMOND TYPE AOP LM(LN) SERIES REACTOR

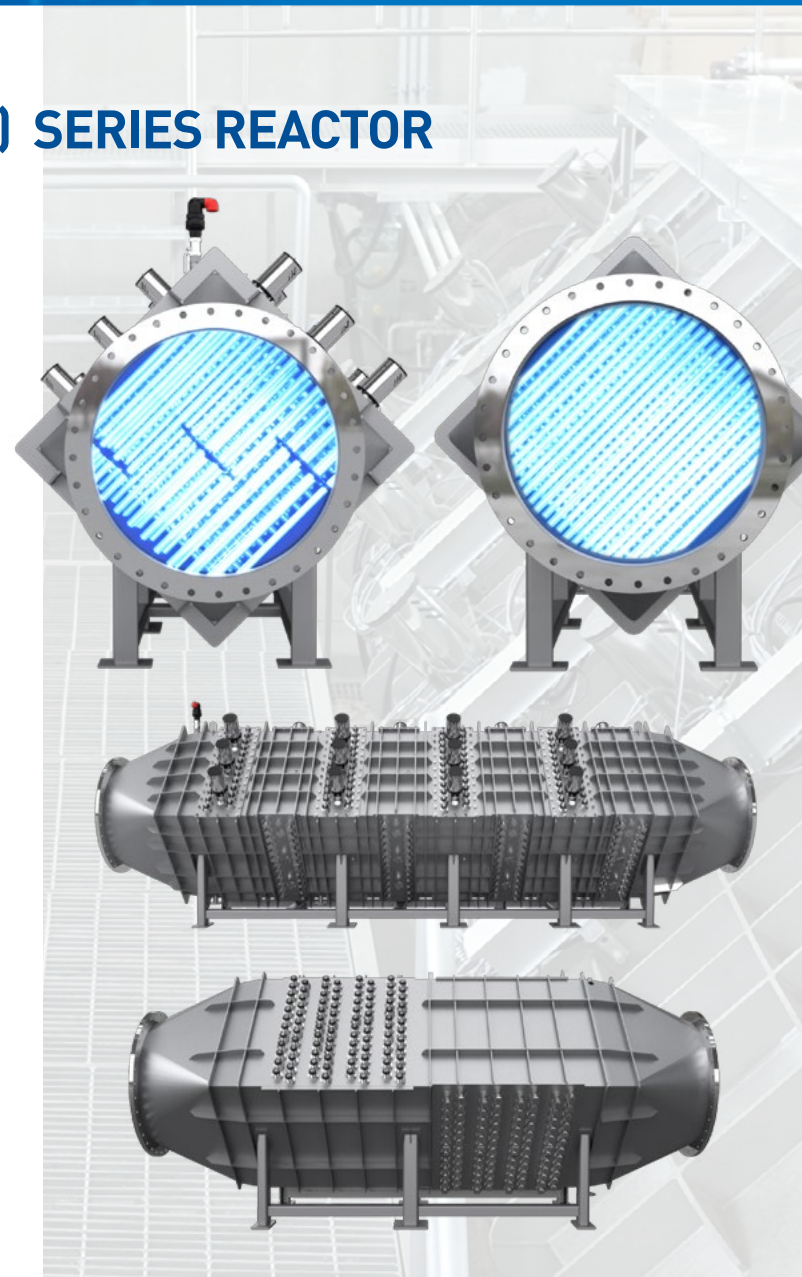
LM – Cleaning System / LN - Non-Cleaning System

SYSTEM GENERAL FEATURES

Model No.	EAOP-5(6)LM(LN)-D series
Chamber Configuration	Diamond type
Module Configuration	24 lamps per module
Cleaning System	Mechanical wiper, Manual
Material	STS 316 / 316L or Duplex STS 2205
Lamp Type	Low-Pressure High Output
Pressure Rating	130 psi (9 bar), 87 psi (6 bar)
Input Power Per Lamp	550w, 600w
Operating Water Temperature	5°C~45°C (41°F~113°F)

SYSTEM CONTROL PANEL (SCP)

Material	Painted Steel / STS 304 Available
Contorller	Programmable Logic Controller (PLC)
Inputs	4-20mA, Ethernet, RS-485
Outputs	Ethernet, RS-485
Voltage / Frequency	360 ~ 480 ±10% / 50/60 Hz
Operating Temperature	0°C~50°C (32°F~120°F)
Location	Indoor and Outdoor
Ballast Type	Variable output electronic ballast

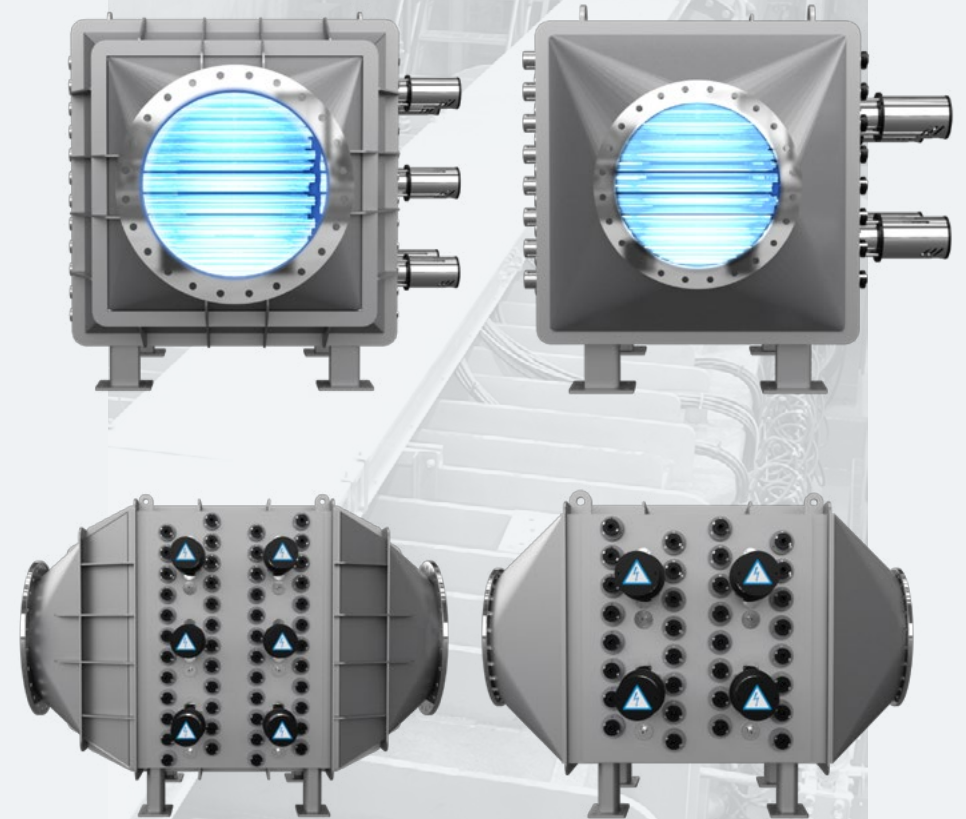


LOW - PRESSURE TOPAZ TYPE AOP LM(LN) SERIES REACTOR

LM – Cleaning System / LN - Non-Cleaning System

SYSTEM GENERAL FEATURES	
Model No.	EAOP-5(6,10)LM(LN) series
Chamber Configuration	Topaz type
Module Configuration	24 lamps per module
Cleaning System	Mechanical wiper, Manual
Material	STS 316 / 316L or Duplex SUS 2205
Lamp Type	Low Pressure High Output
Pressure Rating	130 psi (9 bar), 87 psi (6 bar)
Input Power Per Lamp	550w, 600w, 960w
Operating Water Temperature	5°C~45°C (41°F~113°F)

SYSTEM CONTROL PANEL (SCP)	
Material	Painted Steel / STS 304 Available
Controller	Programmable Logic Controller (PLC)
Inputs	4-20mA, Ethernet, RS-485
Outputs	Ethernet, RS-485 Communication
Voltage / Frequency	360 ~ 480 ±10% / 50/60 Hz
Operating Temperature	0°C~50°C (32°F~120°F)
Location	Indoor and Outdoor
Ballast Type	Variable output electronic ballast

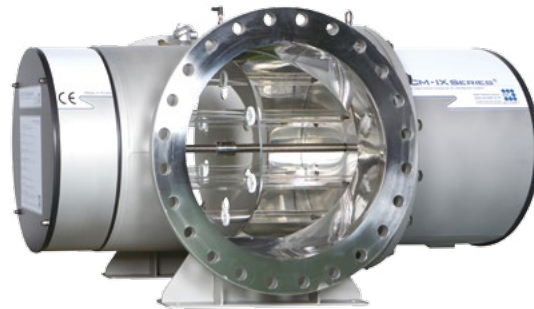


03

MEDIUM-PRESSURE UV AOP CERTIFIED



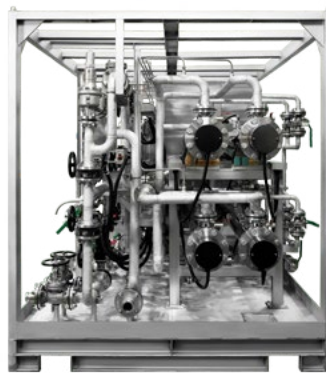
U Type 设备



In-Line Type 设备



净化系统



海外取得认证及现状

CE(COC)

CE(DOC)

NSF50

NSF60

认证进行中

DVGW / UVDGM 认证

- 300A 4kW x 3 Lamp (12kW) 认证进行中
- 450A 4kW x 6 Lamp (24kW) 认证进行中
- 600A 6kW x 6 Lamp (36kW) 认证进行中
- 750A 8kW x 6 Lamp (48kW) 认证完成
- 800A 8kW x 8 Lamp (64kW) 认证进行中
- 800A 8kW x 12 Lamp (96kW) 认证进行中
- 800A 10kW x 12 Lamp (120kW) 认证进行中

国内认证

- 优秀研发认证
- 绿色产品/技术认证
- 环境标志认证

企业认证

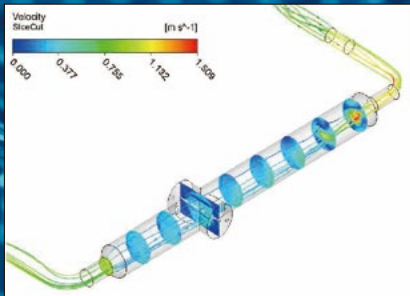
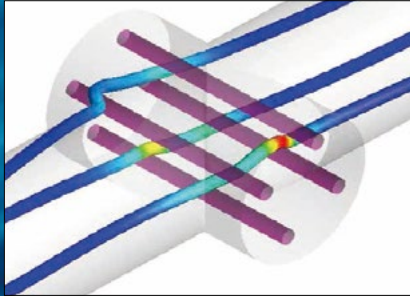
- 大韩民国环境大奖 (Korea Environmental Awards)
- 技术革新型中小企业 (INNO-BIZ)
- 优秀环境产业企业指定



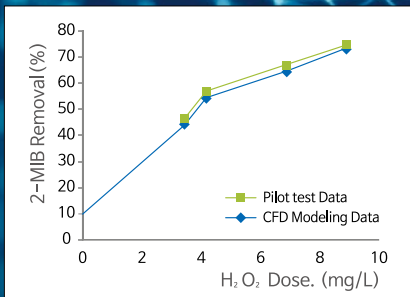
NSF 认证设备

MEDIUM PRESSURE UV SYSTEM FOR ADVANCED OXIDATION PROCESS

CFD Modeling



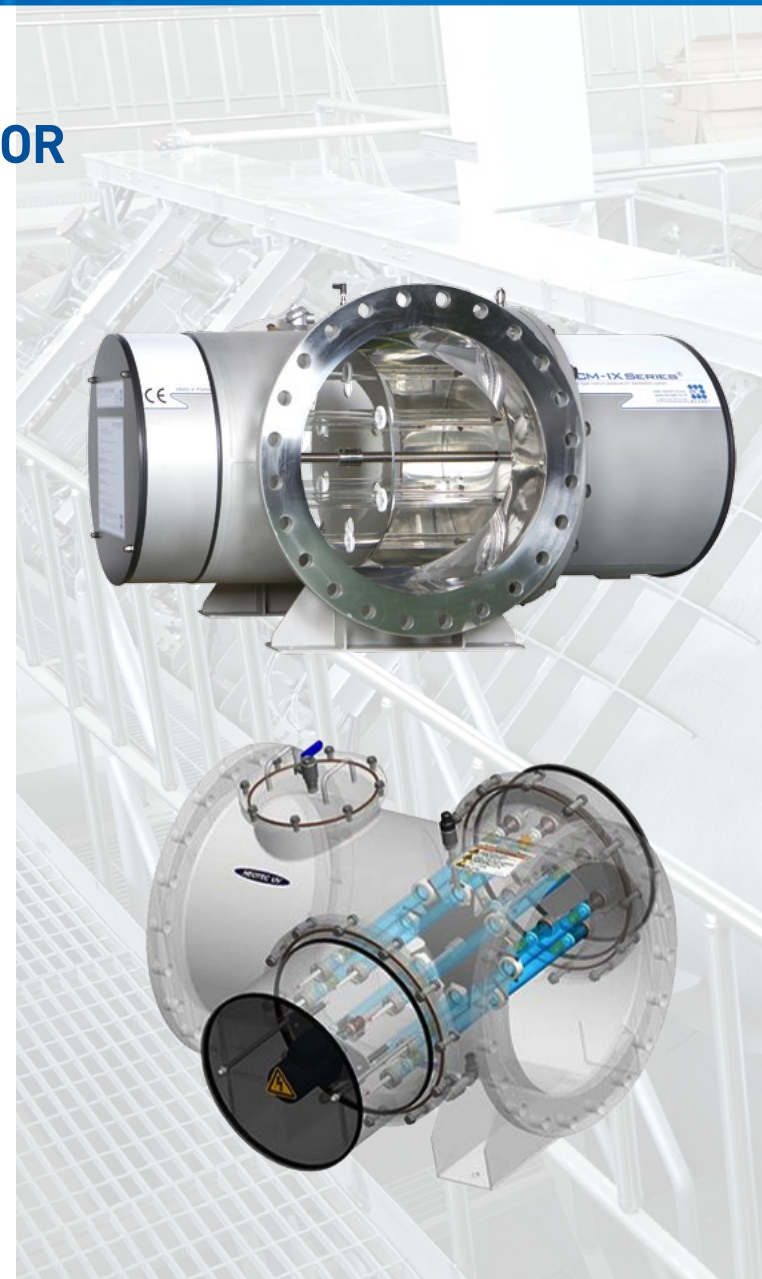
CFD VS Test Data



MEDIUM - PRESSURE AOP MM – I SERIES REACTOR IN-LINE TYPE WITH CLEANING SYSTEM

SYSTEM GENERAL FEATURES	
Model No.	EAOP-4(6, 8, 10)MM-I series
Chamber Configuration	In-Line type
Module Configuration	4 to 12 lamps
Cleaning System	Mechanical wiper
Material	STS 316 / 316L
Lamp Type	Medium Pressure
Pressure Rating	Up to 145 psi (10 bar)
Input Power Per Lamp	4kW, 6kW, 8kW, 10kW
Operating Water Temperature	5°C~45°C (41°F~113°F)

SYSTEM CONTROL PANEL (SCP)	
Material	Painted Steel / STS 304 Available
Controller	Programmable Logic Controller (PLC)
Inputs	4-20mA, Ethernet, RS-485
Outputs	Ethernet, RS-485
Voltage / Frequency	360 ~ 480 ±10% / 50/60 Hz
Operating Temperature	0°C~50°C (32°F~120°F)
Location	Indoor and Outdoor
Ballast Type	Variable output electronic ballast



MEDIUM-PRESSURE AOP MM –U(S) SERIES REACTOR

U-TYPE & S-TYPE WITH CLEANING SYSTEM

SYSTEM GENERAL FEATURES	
Model No.	EAOP-4(6, 8, 10)MM-U(S) series
Chamber Configuration	U-type, S-type
Module Configuration	1 to 12 lamps
Cleaning System	Mechanical wiper
Material	STS 316 / 316L
Lamp Type	Medium Pressure
Pressure Rating	Up to 145 psi (10 bar)
Input Power Per Lamp	4kW, 6kW, 8kW, 10kW
Operating Water Temperature	5°C-45°C (41°F-113°F)

SYSTEM CONTROL PANEL (SCP)	
Material	Painted Steel / STS 304 Available
Controller	Programmable Logic Controller (PLC)
Inputs	4-20mA, Ethernet, RS-485
Outputs	Ethernet, RS-485
Voltage / Frequency	360 ~ 480 ±10% / 50/60 Hz
Operating Temperature	0°C-50°C (32°F-120°F)
Location	Indoor and Outdoor
Ballast Type	Variable output electronic ballast



U-Type 设备

S-Type 设备

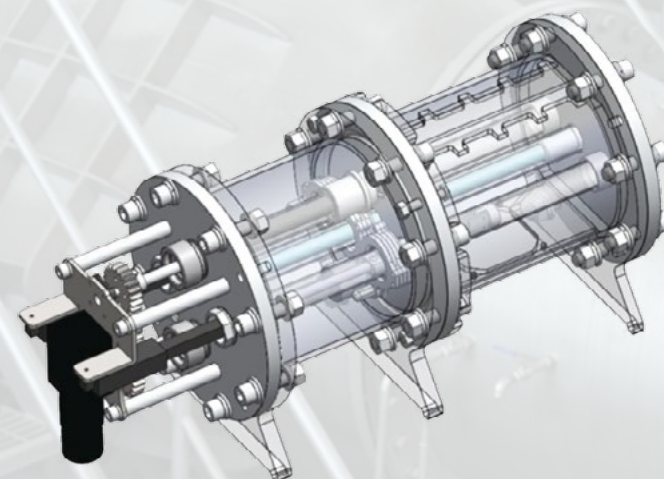
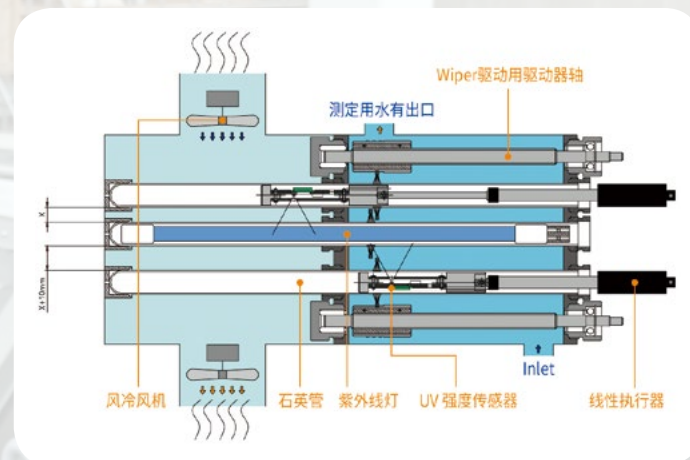
ONLINE UVT METER (OPTION)

UV Transmittance Measuring System

SYSTEM GENERAL FEATURES	
UVT Measuring range	10~100%
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)
Cleaing time	5mins / cycle
Calibaration 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

Features of Online UVT Meter

- 通过有效的灯功率控制，为了保存UV Chamber的能量的装置
- 通过自动/持续calibration自行计算和验算UVT值并保持准确度
- 2个双传感器中1个发生故障(malfunction)时也可测定UVT
- 采用机械式(optional Bubbleclean)清洗装置，便于UVT计器的维护管理
- 采用机械化学式时，无需通过UV反应器和Bubble clean system共享另行提供清洗液的装置

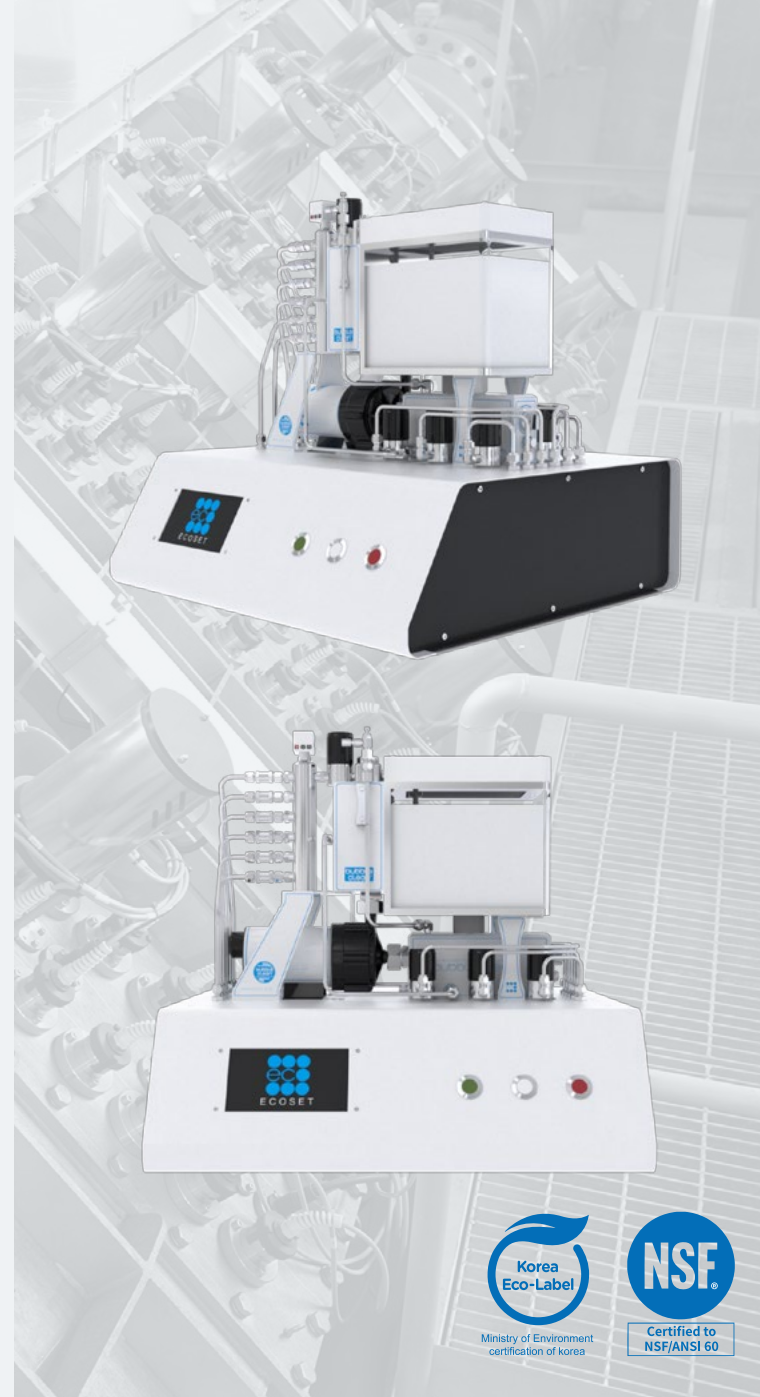


BUBBLE CLEAN SYSTEM (OPTION) CLEANING SYSTEM

SYSTEM GENERAL FEATURES	
Notification System	Automatic
Cleaning method	OMCC + Microbubble + Rapid Circulating Cleaning Solution (机械 + 化学 + Microbubble + 清洗液高速循环)
Leak detection	Automatic Alarm system
Refill system	Easy to replace without drainage

Features of Bubble Clean System

- 用单一清洁液供给机组也可供给多个消毒模块
- 石英管、灯管更换时无需清洁液漏极或充电
- 易于补充和更换化学清洗液
- 不会因清洁液不足导致清洁效率低下
- 清洗液更换周期自动通知
- 清洗装置停止时，wiper内清洗液全部回收功能
- 易于确认清洗液污染程度
- 不会因清洗液污染而降低清洗效率
- 无需担心清洗液漏水导致用水污染
- 清洗液漏水警告通知（可自动检测清洗液漏水模块）
- 使用以食品添加剂为成分制造的专用清洗液（NSF 60 认证完成）





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第二厂家 | 大邱广域市达城郡求智面鹰岩里1282-9(水产业集群)