



ECL RANGEMEDIUM PRESSURE UV SYSTEMS





THE IN-LINE UV CHAMBER
DESIGN OPTIMISES FLOW
HYDRAULICS, PROVIDING
A 20% IMPROVEMENT IN
PERFORMANCE



IN-LINE MEDIUM PRESSURE UV SYSTEMS

DEFINING THE UV INDUSTRY WITH MARKET LEADING TECHNOLOGY SINCE 1981

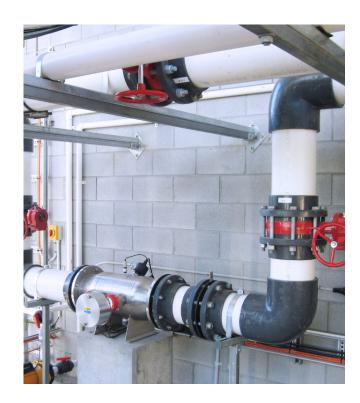
ULTRA COMPACT & VERSATILE MEDIUM PRESSURE UV DISINFECTION SYSTEMS FOR A VAST RANGE OF MUNICIPAL & INDUSTRIAL UV APPLICATIONS, TREATING 1 M³/HR TO OVER 1,200 M³/HR The atg UV Technology ECL series provides the very latest in medium pressure UV lamp technology and in-line UV chamber design. Offering increased treatment capacity and flexibility for the environmentally friendly process of UV disinfection, the ECL series provides solutions for a range of applications, including drinking water, industrial process water, food & beverages, and aquatics.

Featuring both single lamp and multi-lamp configurations and using a range of medium pressure UV lamps, the specially designed in-line UV reactors provide optimum flow distribution and hydraulic performance. The ECL range offers a state-of-the-art solution for a wide variety of water treatment applications, treating capacities of 1.0 m3/hr to more than 5,000 m3/hr in a single, high output, low footprint UV system.

The ECL range is independently 3rd party validated* and certified using biometric testing according to the USEPA UVDGM, and offers guaranteed performance for both UV doses 10 - 120 mJ/cm2 RED and 1 - 5 log reductions of Cryptosporidium.



THE ULTRA COMPACT
CHAMBER DESIGN
CAN BE INSTALLED
DIRECTLY INTO THE
PIPE EITHER VERTICALLY
OR HORIZONTALLY,
PROVIDING SUPERIOR
FLEXIBILITY



MARKET LEADING DESIGN WITH STATE-OF-THE-ART TECHNOLOGY

Performance Advantages

- ✓ Independent 3rd party validated performance*
- Chemical free, green disinfection solution
- ✓ Single lamp, 2 and 4 multi-lamp configurations
- ✓ 1.0 kW, 1.3 kW,1.5 kW, 2.0 kW, 2.5 kW, 3.0 kW UV lamps
- √ High capacity treatment upto 1,200 m³/hr
- √ 9,000 hour lamp life
- ✓ Automatic power stepping 100% 50% power
- ✓ Hydraulically optimised low headloss design
- ✓ High disinfection efficiency 1 to 5 log

Operational Benefits

- ✓ Simple to install and operate
- ✓ Significantly reduces maintenance requirements
- √ Separated lamp and wiper access
- ✓ Single sided maintenance / access
- Dry mounted UV monitors and temperature probes
- ✓ Robust, chemical free automatic wiper system
- ✓ Lamp changes without removing wiper motor
- Wiper rings can be replaced without removing wiping carriage from chamber

Installation Advantages

- ✓ Ultra compact and easy to install
- Closed system design installs directly into pipe work
- ✓ Horizontal and vertical installation options
- ✓ Multiple flange size, type and mounting options
- ✓ Significantly reduced footprint requirement
- ✓ Upto 50 meter cable distance from LCP to UV chamber
- ✓ Can be installed directly against walls / structures
- ✓ Suitable for both new builds and retrofits
- ✓ Modbus / Profibus / ICSS / BMS integration available

UV System	ECL-110-4	ECL-210-4	ECL-113-5	ECL-115-6	ECL-215-6	ECL-220-8	ECL-225-10	ECL-230-12	ECL-430-12	
Performance										
3rd Party Validation			ι	JSEPA Ultraviolet Dis	infection Guidance N	Manual (UVDGM) 200	5			
Validated unit*	N/A	Yes	Yes	N/A	Yes	Yes	Yes	Yes	Yes	
Certification			Ni	iPH / FHI Water Repo	rt 120 / CE Marked /	UL Approved / NSF-5	0*			
UV dose range	10 mJ/cm2 to 120 mJ/cm2 RED (Reduction Equivalent Dose)									
UV lamps and monitoring										
Lamp power	1.0 kW	1.0 kW	1.3kW	1.5 kW	1.5 kW	2.0 kW	2.5 kW	3.0 kW	3.0 kW	
Lamp number	1	2	1	1	2	2	2	2	4	
Lamp life	9,000 hours									
Lamp design	Medium pressure									
Standard UV monitoring	AT-463 - 4-20 mA - IP66									
Validated UV monitoring	Validated ÖNORM UV monitor - AT-900 (calibrated) - IP66 (each lamp monitored)									
Variable power	100% power to 50% power (variable automatic dose pacing)									
UV Chamber										
Connection size (mm)	DN100	DN100	DN125	DN150	DN150	DN200	DN250	DN300	DN300	
Connection type	BS4504 PN10 RF Flange									
Design pressure	10 Barg design (15 Barg test)									
Material construction	316L stainless steel									
Internal / external finish	0.8 μm Ra internal / 1.6 μm Ra external									
Lamp and wiper access	Dual sided access									
Quartz type	High purity quartz sleeves									
Mounting	N/A	Legs	N/A	N/A	Legs	Legs	Legs	Legs	Legs	
Wiper system	Manual wiper system (optional) / Automatic wiper system (optional)									
Temperature probe	AT-487 (PT-100) - IP66									
Vent & drain ports	Yes									
Ingress protection	IP66									
Installation	Vertical or horizontal									
Chamber options	0.4 μm Ra internal polish upgrade / electropolish upgrade / super duplex 25% chrome steel / connection types									
Technical										
Communication options			Ethernet / N	Modbus / Data Stream	m / ICSS Integration (other fieldbus option	s available)			
Lamp power supply	Choke	Choke	Choke	Choke	Choke	Choke	Choke	Choke	Choke	
Power consumption	1,100 W	2,200 W	1,430 W	1,650 W	3,300 W	4,400 W	5,500 W	6,600 W	13,200 W	
Mains power	230 V (210 V to 240 V options)				400 V (380 V to 480 V options)					
Power phase + neutral		1 Ph + N 3 Ph + N								
Frequency	50 Hz or 60 Hz									



ADVANTAGES OF THE US EPA UVDGM VALIDATION SYSTEM

Using the test protocols developed by the US EPA Ultraviolet Disinfection Guidance Manual (Long Term 2 Enhanced Surface Water Treatment Rule), atg UV Technology systems are rigorously biometrically tested using live surrogate microorganisms (MS2). This provides guaranteed UV disinfection performance against Cryptosporidium, Adenovirus and other harmful waterborne microorganisms.

Unlike alternative validation protocols, such as DVGW or ONORM, which only test to a single UV dose set point of 40 mJ/cm2, the US EPA UVDGM validation method allows for the selection of multiple data points. The result is a highly flexible performance validation that allows for guaranteed

UV doses between 10 mJ/cm2 RED and 120 mJ/cm2 RED. This is of particular importance when aiming for a log reduction of microorganisms, such as Cryptosporidium, Giardia, E-Coli and Adenovirius.

By adopting the US EPA UVDGM Validation, UV systems can be sized to provide the correct amount of UV intensity in direct relation to the specified UVT%. In the case of UVT% values higher than 90% T10, the power savings are typically 50% when compared to the DVWG and ÖNORM solutions, which can only offer 40 mJ/cm2. Table 1 is based upon the US EPA UVDGM log reduction tables for a 3 reduction of Cryptosporidium: 12 mJ/cm2 RED multiplied by the required RED Bias in relation to the UVT% value.

Table 1 Required UV mJ/cm2 RED Dose for 3 Log Reduction (99.9%) of Cryptosporidium								
UVT%	US EPA UVDGM	DVGW	ONORM					
95% UVT	16.56 RED	40 RED	40 RED					
90% UVT	20.76 RED	40 RED	40 RED					
85% UVT	24.12 RED	40 RED	40 RED					
80% UVT	26.64 RED	40 RED	40 RED					
75% UVT	28.32 RED	40 RED	40 RED					
70% UVT	30.06 RED	40 RED	40 RED					

ADVANCED CFD
OPTIMISES CHAMBER
DESIGN TO PRVIDE
INCREASED TREATMENT
CAPACITY WITH LESS
POWER & FEWER LAMPS



THE UNIQUE DATA
STREAM SERVICE
TRANSMITS REAL TIME
PERFORMANCE DATA
TO ANY WEB ENABLED
DEVICE, SUCH AS SMART
PHONES & LAPTOPS

MARKET LEADING DESIGN WITH STATE-OF-THE-ART UV TECHNOLOGY

Computational Fluid Dynamics

Through extensive CFD analysis and field testing, the ECL chamber design matches hydraulic flow profiles with UV lamp intensity fields inside the reactor, optimising the high intenity zones with flow paths to improve performance. This advanced analysis tool has allowed for significant improvements in efficency, typically increasing treatment capacities by upto 30% whilst using less power and fewer UV lamps.

Data Stream Service

The atg UV technology Data-Stream service is the first of its kind in the UV industry, allowing operators to monitor the performance of their UV system anywhere in the world, at any time. Using a simple Wi-fi connection, the Data-Stream service transmits operational performance data in real time (updating every 30 seconds) directly from the plant room to any web enabled device. (Includes: smart phones, I-Pads, laptop's & PC's).

5 Year Warranty

atg UV Technology are passionate about providing a first class after sales service and customer care experience. As the market leader for UV systems, atg UV Technology were the first UV manufacturer in the world to offer an exclusive 5 year warranty for standard UV systems. The 5 year warranty is a demonstration of our commitment to our customers, and an indication of the high level of quality and reliability in all of our products.







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