



# UVC Germicidal lamps

Disinfection for pure water and air



**AUVL**



ADVANCED UV LIGHT

# High quality light for disinfection

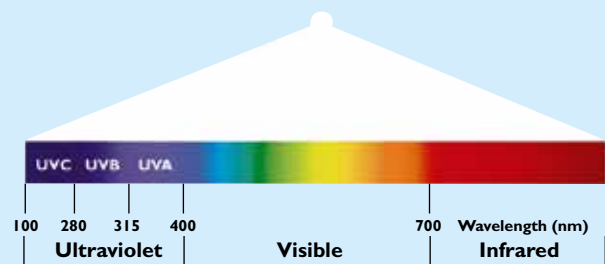
## What is UV Technology

Ultra-Violet (UV) light is made up of three ranges, UVA, UVB and UVC. UV is totally invisible to the human eye.

### Across the light spectrum the ranges are as follows:

- **UVA** has a range between 315 nm to 400 nm
- **UVB** has a range between 280 nm to 315 nm
- **UVC** has a range between 100 nm to 280 nm

Below 200 nm the radiation is known as Vacuum UV



UVC light radiation is used for various applications both in water and air treatment due to the germicidal properties, UV is also used mainly in disinfection applications that reduce the use of chemicals in the processing. UV radiation is used as an alternative to chemical treatments and UV radiation will also remove organic and inorganic chemicals. UVC radiation has the ability to break bacteria of DNA, viruses and spores, therefore they remain harmless.

## Disinfection with UV:

UV is effective for treating several types of microorganism's, which include protozoa such as Cryptosporidium and Giardia, plus bacteria, viruses and fungi.

### Benefits:

- UVC acts immediately
- Operating costs and capital reduced
- Maintenance reduced
- Water remains the same – no change in taste
- Environmentally friendly – chemical free
- Specific needs can be easily adapted reducing problems



# Segments of UVC Germicidal lamps

AUWL Germicidal UVC Lighting is the ideal solution for disinfection and sanitization purposes covering a broad range of applications including water treatment and air and surface disinfection.

Our vast product range can cover applications used for small residential purposes to large commercial and municipal applications. UVC Lighting is a cost effective and environmentally friendly way of treating water and air making it an ideal choice over technologies which use chemicals.

Our modern machines allow us to produce 4 basic lamp types: standard low pressure lamps, high output low pressure lamps, amalgam lamps and soft glass lamps.

Our lamps are made of the highest quality by using three basic quartz types (ozone free, ozone generating and SPLICED „ozone free and ozone generating fused“) and our manufacturing flexibility allows us to produce lamps with various designs (linear and „U“ shape) which will make the ideal fit to the customer application, whether it is used for OEM equipment or aftermarket replacement due to standard and customised lamp base and pin configurations.

## Segments:



• Waste water (municipal) • Drinking water (residential) • Water rereclamation • Pool and SPA water • Aquaculture



• Air sterilization • Kitchenhood purification • Surface disinfection

# Product Overview

## AMALGAM SECTION:

AUWL amalgam lamps are an ideal solution for municipal and industrial applications because they have the ability to deliver up to 3 times the UVC output over standard low pressure UVC lamps of the same length while maintaining a very high UVC efficiency. Our amalgam lamps are also capable of operating in a very broad temperature range (4-40C) without sacrificing UVC output. This makes our amalgam technology an ideal solution due to the high UVC output and disinfection rate while keeping equipment costs low due to fewer lamps necessary.

All of our amalgam lamps are available in both 254nm (ozone free) and 185nm (ozone), and we are also capable of making them in 4 pin single ended configuration as well as double ended bipin. Custom designs and models are available upon request.

Our amalgam lamps range from 100-800 Watts, T5-T12 diameter, and up to 2.5M in length. Lifetime for these lamps is up to 16,000 hours while maintaining >80% of original output.

**APPLICATIONS:** Municipal and Industrial Wastewater; Drinking Water; TOC Reduction, Pool and Spa Water; Kitchen Hood Purification and Deodorization, Aquaculture



UVC Amalgam Germicidal Lamps	BF - BF Length mm	Arc Length mm	Diameter mm	Lamp Watts W	UVC Watts W	UV Output @ 1 Meter* $\mu\text{W}/\text{cm}^2$	Lamp Current A	Lamp Voltage V	Lifetime hrs.
GPHA843T5L/4 105	843	767	15	105	35	320	1,2	88	16,000
GPHA1554T5L/4 190	1554	1483	15	190	68	500	1,2	164	16,000
GPHA843T6L/4 127	843	767	19	127	43	400	1,8	71	16,000
GPHA1554T6L/4 240	1554	1483	19	240	87	630	1,8	134	16,000
GPHA1554T6L/4 320	1554	1483	19	320	105	750	2,2	145	16,000
GPHA1554T9L/4 350	1554	1483	28	350	125	950	3,8	92	16,000
GPHA1800T12L/4 800	1800	1645	38	800	225	1600	8	100	9,000
GPHA843T5VH/4 105	843	764	15	105	35	320	1,2	88	16,000
GPHA1554T5VH/4 190	1554	1483	15	190	68	500	1,2	164	16,000
GPHA1554T6VH/4 240	1554	1483	19	240	27	630	1,8	134	16,000
GPHA1512T9VH/4 350	1554	1483	28	350	125	950	3,8	92	16,000

\*All lamp measurements were performed with an electronic ballast under laboratory conditions at room ambient temperature.



# Product Overview

## HIGH OUTPUT SECTION:

AUWL High Output (HO) lamps are capable of producing up to 2/3 more UV output compared to standard lamps of the same dimensions. Due to the higher UV intensity compared to standard lamps, the OEM has the benefit of decreasing the amount of lamps needed in a system and thus reducing cost. These lamps are also capable of being made with either ozone free quartz or ozone producing quartz, and a wide variety of single ended or double ended base configurations. HO lamps can be specially designed in order to run optimally under specific water temperatures.



**APPLICATIONS:** Municipal and Industrial Wastewater; Drinking Water; TOC Reduction, Pool and Spa Water; Kitchen Hood Purification and Deodorization, Aquaculture

High Output Germicidal Lamps	BF - BF Length mm	Arc Length mm	Diameter mm	Lamp Watts W	UVC Watts W	UV Output @ 1 Meter* μW/cm <sup>2</sup>	Lamp Current A	Lamp Voltage V	Lifetime hrs.
GPH212T5L/HO/4	212	136	15	18	5	23	800	50	12,000
GPH287T5L/HO/4	287	211	15	27	7.5	34	800	75	12,000
GPH357T5L/HO/4	357	281	15	32	10	40	800	95	12,000
GPH436T5L/HO/4	436	360	15	48	13	120	800	60	12,000
GPH843T5L/HO/4	842	755	15	87	28	260	800	110	12,000
GPH893T5L/HO/4	893	815	15	95	30	270	800	120	12,000
GPH1554T5L/HO/4	1554	1421	15	155	54	395	800	195	12,000

\*All lamp measurements were performed with an electronic ballast under laboratory conditions at room ambient temperature.  
**All models can be produced with VH/Ozone producing glass.**



# Product Overview

## STANDARD OUTPUT SECTION:

AUWL Standard Output quartz lamps are also available in both ozone and ozone free quartz, a wide variety of standard and unique end caps, as well as lengths from 100-1,600mm. Standard output lamps are highly efficient and perform well under a broad range of temperatures. Industry standard or custom design models are available depending on the specific need of the OEM.



**APPLICATIONS:** Industrial and residential water, Aquaculture, commercial and residential air; home appliance air purifiers, deodorization, hospitals, cosmetics

Standard Output Germicidal Lamps	BF - BF Length mm	Arc Length mm	Diameter mm	Lamp Watts W	UVC Watts W	UV Output @ 1 Meter* $\mu\text{W}/\text{cm}^2$	Lamp Current A	Lamp Voltage V	Lifetime hrs.
GPH212T5L/4	212	136	15	12	2.8	28	425	27	12,000
GPH287T5L/4	287	211	15	17	4	40	425	40	12,000
GPH357T5L/4	357	281	15	17	5.7	51	425	56	12,000
GPH436T5L/4	436	360	15	26	7.3	62	425	72	12,000
GPH793T5L/4	793	717	15	48	13.5	113	425	125	12,000
GPH843T5L/4	843	767	15	42	14.4	100	425	150	12,000
GPH1554T5L/4	1554	1478	15	75	30	175	425	260	12,000

\*All lamp measurements were performed with an electronic ballast under laboratory conditions at room ambient temperature.

**All models can be produced with VH/Ozone producing glass.**



# Product Overview

## SOFT GLASS UVC:

AUWL soft glass UVC lamps are an ideal economical solution for a wide variety of residential water and air applications. Our lamps are made with the highest quality glass ensuring optimal UVC transmission. Our glass filters out the 185nm wavelength ensuring no production of ozone is present. Our portfolio contains both T5 and T8 linear lamps, as well as compact lamps which are designed for use with both electronic and electromagnetic drivers. AUWL soft glass lamps are also very environmentally friendly due to their extremely low mercury content.



**APPLICATIONS:** Industrial and residential water, Aquaculture, commercial and residential air, home appliance air purifiers, deodorization, hospitals, cosmetics

	SOFT Glass Germicidal Lamps	BF - BF Length or BF-Top mm	Arc Length mm	Diameter mm	Lamp Watts W	Cap	UVC Watts W	UV Output @ 1 Meter* $\mu\text{W}/\text{cm}^2$	Lamp Current A	Lamp Voltage V	Lifetime hrs.
T5 linear	G4T5 UVC*	135,9	103	16	4	G5	0,9	9	180	23	8,000
	G6T5 UVC*	212,1	146	16	6	G5	1,5	15	160	42	9,000
	G8T5 UVC	288	225	16	8	G5	2,0	20	170	55	9,000
	G11T5 UVC*	212,1	146	16	11	G5	2,5	25	330	42	11,000
	G16T5 UVC	288	225	16	16	G5	4,0	40	390	45	8,000
	G20T5 UVC*	398	332	16	20	G5	6,0	60	450	45	11,000
	G25T5 UVC*	516,9	451	16	25	G5	7,2	72	450	55	5,000
T8 linear	G15T8 UVC	438	355	26	15	G13	4,8	47	310	55	9,000
	G18T8 UVC	590	507	26	18	G13	5,7	56	370	57	9,000
	G30T8 UVC	895	812	26	30	G13	12,0	100	365	96	9,000
	G36T8 UVC	1.200	1.117	26	36	G13	14,0	145	430	103	9,000
	G55T8 UVC	895	812	26	55	G13	17,5	165	770	75	9,000
	G58T8 UVC	1.500	1.417	26	58	G13	23,2	215	670	110	9,000
	G75T8 UVC*	1200	1.117	26	75	G13	27,0	225	840	110	9,000
Compact	CP18W UVC	225	538	18	18	2G11	5,5	51	370	60	9,000
	CP24W UVC	320	552	18	24	2G11	7,0	65	340	92	9,000
	CP36W UVC	415	742	18	36	2G11	12,0	110	435	106	8,000
	CP55W UVC	535	982	18	55	2G11	17,5	158	530	109	9,000
	CP60W UVC*	415	742	18	60	2G11	19,0	179	800	82	9,000
	CP95W UVC*	535	982	18	95	2G11	27,0	254	800	115	9,000

\*On request \*\*All lamp measurements were performed with an electronic ballast under laboratory conditions at room ambient temperature.



# Product Overview

## **AFTERMARKET REPLACEMENT LAMPS:**

AUVL provides an extensive portfolio of replacement lamps for existing major OEM systems in the market. Our lamps have been tested in parallel with the original lamps and produce equal to or better results, and we offer all these lamps at very competitive prices. All replacement lamps have been tested on the original OEM power supply ensuring full compatibility with the original system. Unique lengths, diameters, and end caps can all be provided in order to comply with all necessary specifications of the original OEM lamp. Further modifications can be made to these lamps in order to easier retrofit a lamp into a given system.

**Please contact AUVL with specific OEM name and model number for further information.**







# Guaranteed development, compatibility and success

## **RESEARCH and DEVELOPMENT are of the utmost importance at AUVL.**

AUVL is passionate about continually improving its products, increasing the lamps' output and extending their service life. AUVL's engineers invest a great deal of time every day in developing high-performance light sources of tomorrow. They are driven on by the conviction that there is considerably more that can be achieved in lamp technology than what is considered state of the art at the present time. They focus particularly on the lamps' various areas of use and their optimum spectra. Customer-specific requirements and the most up-to-the-minute research findings are implemented in the product in a timely manner: this leads to optimised lamps!

## **AUVL sets standards and is always compatible.**

The ballast is a critical component of the UV system and matching the correct ballast and lamp together is essential. AUVL has tested our lamps with all the major ballast manufacturers and can design our lamps optimally based on the manufacturer and type of ballast. AUVL does not manufacture ballasts ourselves, but we maintain relationships with the major ballast manufacturers and can assist our customers in choosing the ideal manufacturer and model type depending on their needs.

AUVL's germicidal lamps and quartz sleeves are manufactured using 99.9% pure fused quartz. This material allows for maximum UV transmission. Quartz sleeves are available in a wide variety of lengths and diameters. AUVL's capabilities include cutting, doming, bending, polishing, splicing, and flaring. Other operations are available upon request.





# NARVA – Glass Factory of AUVL

Our UV lamps meet the European standard and offer complete security and reliability in every application when correctly applied. Advanced UV Light GmbH has focussed on developing and delivering UV lamp technologies for over 85 years.

## **MANUFACTURING**

At AUVL's sister company NARVA Licht GmbH + Co. KG in Germany all UVC soft glass lamps are manufactured in their own glass factory.

## **PRODUCTION**

They produce more than 20 million lamps and other products related to light per year. In its certified manufacturing process according to ISO 9001 and ISO 13485 highly automated manufacturing technologies come into operation.

## **DEVELOPMENT**

Their core competence is in the field of development and production of light for special applications. The synthesis of expert knowledge and experience on the one hand, and of cooperation with research institutes and light users are the basis for innovative product developments.

## **TESTING**

They have a modern laboratory for the measurement of radiometric, photometric and electrical properties of lamps, spotlights and appliances. In this accredited test laboratory, in accordance with ISO 17025, UV and light sources are measured to testify compliance with the UV protection regulation. All UVC measurements are done in accordance with the protocol established by the IUVA Manufacturer's Council.







# The Company

AUWL, which stands for Advanced UV Light, has focussed on developing and delivering UV lamp technologies for over 85 years. Versatile applications attributed to the spectrum of a high-end radiation source open up a wide range of operational fields for the company.

Established in 1926 as Dr. Müller quartz lamp factory, the company was renamed Advanced UV Light GmbH and was taken over by JW Holding in 2006. Apart from its own glass factory in Germany, several sales organisations are operating in different countries.

With the benefits of a lean organization, AUWL takes advantage of being affiliated with the JW Holding group thus benefiting from the access to the highest competence in the field of science and technology. These benefits also include an international network, first class service quality and state-of-the-art logistic solutions.

## **AUWL is specialist in different lamp technologies:**

- **Low pressure discharge lamps**
- **High pressure lamps**
- **LED lamps**
- **Halogen lamps**
- **Energy-saving lamps**

## **AUWL is expert in special lighting:**

- **Air & water purification (UVC)**
- **Greenhouse & horticulture**
- **Beauty applications**
- **Medical therapy**
- **Tanning**

**AUWL**  
  
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