DESIGNED FOR DISINFECTION

LIFELINE UV

- **Environmentally Friendly Chemical Free Disinfection**
- **High Efficiency Amalgam Lamps with Lifespan of up to 12000 hours**
- **Multiple Configurations offer Ultimate Design Flexibility**
- **Designed & Manufactured in the UK**
- **WRAS Approved**



HOW DOES IT WORK?

UV disinfection systems utilise the germicidal properties of short-wavelength ultraviolet (UVC) to render microorganisms, bacteria and viruses inactive. Exposing pathogens to UV light damages the cellular DNA leaving them incapable of reproducing and unable to infect.

As UV irradiation is an entirely physical phenomenon there are environmental benefits to using it in place of a chemical process. What's more, UV disinfection is also capable of protecting against organisms that are highly resistant to chemical treatments, such as Cryptosporidium.

WHY CHOOSE LIFELINE UV?

Lifeline UV incorporates cutting edge technology, developed by globally recognised specialists, to offer a market leading range of WRAS approved disinfection systems for treatment of industrial, commercial and domestic water supplies.

Our innovative UV reactor design, proven in validated large scale drinking water systems, is amongst the most efficient available. Coupled with our amalgam lamp technology, which offers significant performance advantages over conventional low pressure alternatives, Lifeline UV offers the ultimate combination of a high bacteria kill rate, low power consumption and a minimal pressure drop.

Flexible Design

The Lifeline UV range has been designed to offer configurations to meet every requirement. Installers can choose between our Basic, RC and RCM controllers before adding optional extras as required. All Lifeline UV units come with an over temperature sensor as standard and can be fitted both horizontally and vertically for installation flexibility (excluding model 10020, which must be installed in a horizontal orientation).

Lifeline UV Amalgam Lamps

Lifeline UV utilise the only UK manufactured amalgam lamps. Our advanced technology offers improved efficiency and a wider operating temperature range than low pressure alternatives and benefits from a typical operating life of 12000 hours.

Validation & Approvals

All Lifeline UV systems are WRAS approved. Our specialist PQ range has been validated by third party testing in accordance with USEPA UV Disinfection Guidance. Further information can be made available upon request.

Manufacturing Quality

Lifeline UV are manufactured in the UK at a world class ISO9001 facility. All systems go through stringent quality checks and come supplied with relevant documentation.



Lifeline UV 02300 with UV Monitor

TECHNICAL HOTLINE: 01608 811707

PRODUCT SPECIFICATION TABLE

LIFELINE UV

MODEL	Lifeline UV 00149	Lifeline UV 00322	Lifeline UV 00729	Lifeline UV 01250	Lifeline UV 02300	Lifeline UV 04400	Lifeline UV 10020
Treatment Capacity:							
30mJ/cm2 AVD (m3/hr) *	1.40	3.20	7.30	12.50	22.70	44.00	100.20
40mJ/cm2 AVD (m3/hr) *	1.10	2.40	5.40	9.40	17.50	33.00	75.40
30mJ/cm2 RED (m3/hr) *	1.40	2.80	6.00	11.90	19.00	38.90	133.70**
40mJ/cm2 RED (m3/hr) *	1.10	2.10	4.50	8.50	16.90	27.50	93.00**
Lamps	1	1	1	1	1	1	1
Lamp Type/Power (W)	Low Pressure 40W	Amalgam 80W	Amalgam 80W	Amalgam 140W	Amalgam 270W	Amalgam 270W	Amalgam 600W
Expected Lamp Life (hours) ***	9000	12000	12000	12000	12000	12000	12000
UV REACTOR							
Material of Construction	316 L Stainless Steel, Electropolished and Passivated...						
Connections – EN1092-1 PN16	DN25	DN25	DN40	DN50	DN50	DN80	DN150
Operating Pressure	7 Bar	10 Bar	10 Bar	10 Bar	10 Bar	10 Bar	10 Bar
Maximum Fluid Temperature	30C	40C	40C	40C	40C	40C	40C
IP Rating	IP65 (NEMA 4)	IP65 (NEMA 4)	IP65 (NEMA 4)	IP65 (NEMA 4)	IP65 (NEMA 4)	IP65 (NEMA 4)	IP65 (NEMA 4)
Length x Diameter (mm) ****	1150 x 63	920 x 64	1388 x 102	1388 x 102	1388 x 102	1437 x 168	1980 x 206
Verticle Mounting Option	Yes	Yes	Yes	Yes	Yes	Yes	No
ELECTRON CONTROLLER							
Material of Construction	Painted Carbon Steel...						
IP Rating	IP65 (NEMA 4)	IP65 (NEMA 4)	IP65 (NEMA 4)	IP65 (NEMA 4)	IP65 (NEMA 4)	IP65 (NEMA 4)	IP54 (NEMA 12)
H x W x D (mm) Unwiped *****	490 x 300 x 170	490 x 300 x 170	490 x 300 x 170	490 x 300 x 170	490 x 300 x 170	490 x 300 x 170	690 x 400 x 225
H x W x D (mm) Wiped*****	N/A	690 x 400 x 225	690 x 400 x 225	690 x 400 x 225	690 x 400 x 225	690 x 400 x 225	690 x 400 x 225
Supply Voltage	230V	230V	230V	230V	230V	230V	230V
Operating Temperature Range	5C to 40C	5C to 40C	5C to 40C	5C to 40C	5C to 40C	5C to 40C	5C to 40C
Maximum Cable Length	5 metres	5 metres	5 metres	5 metres	5 metres	5 metres	5 metres

CONTROLLER FEATURES		Indicators			VFC Outputs				Options
		Lamp On	Lamp Fail	Power On	Lamp On	Low UV	Reset Button	Remote Start/Stop	4-20mA % Intensity
Model:	Basic	Y	Y	N	Y	N	N	N	N
	RC	Y	Y	Y	Y	N	Y	Y	N
	RCM	Y	Y	Y	Y	Y	Y	Y	Y

* Capacity at end of lamp life based on 95% UV Transmittance

** During latest validation testing for RED dose the 10020 unit was run at a higher wattage (600W), showing improved performance against previous average dose testing

*** Consult manufacturer for vertical installations

**** Allow chamber length clearance for lamp and sleeve replacement

***** Excluding brackets

Wiped = pneumatically driven

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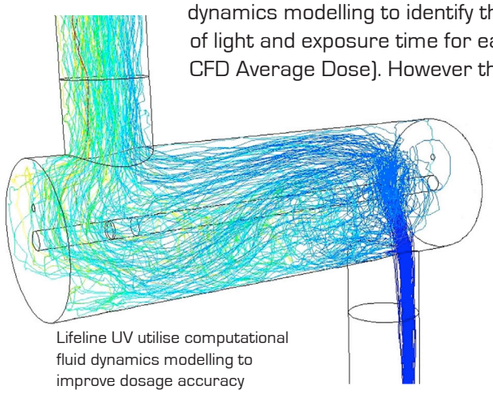
LIFELINE UV

SIZING GUIDE

To achieve optimum UV disinfection rates sufficient UV dose must be delivered to the water. UV Dose is calculated by multiplying UV light intensity by exposure time.

RED Dose V. Average Dose

Average Dose theory assumes that all microbes passing through a UV system see the same light intensity for the same amount of time. This basic approach can be improved by using computational fluid dynamics modelling to identify the different intensities of light and exposure time for each microbe (known as CFD Average Dose). However this still doesn't measure the inactivity rate of microbes. CFD Reduction Equivalent Dose (RED) provides a more accurate way of sizing as it is based on actual performance, directly measuring inactivation whilst also taking into account hydraulics.



Lifeline UV utilise computational fluid dynamics modelling to improve dosage accuracy

Correct sizing of your Lifeline UV will depend on your specific requirements, water source and water quality. For private supplies, which tend to be sourced from groundwater, to be consistent with standards that apply to UV disinfection of public supplies we recommended delivering at least 40 mJ/cm2 RED Dose at the end of the lamp life. For pathogen specific disinfection of water already deemed 'safe' we recommend delivering at least 16 mJ/cm2 RED Dose at the end of the lamps life (in accordance with NSF Standard 55 Class B).

Pre-Treatment

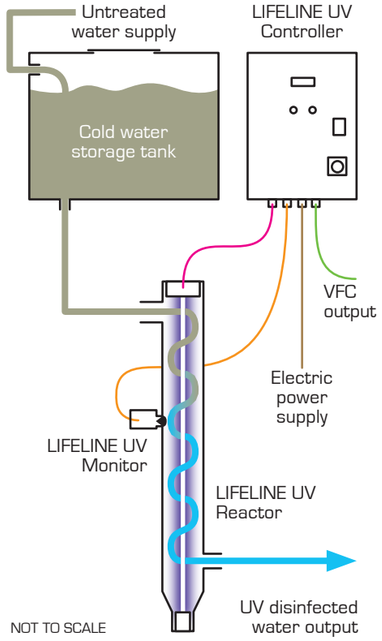
For UV disinfection to be effective, water must be clear and relatively free of dissolved substances that could deposit on the quartz sleeve to reduce the intensity of UV light reaching harmful pathogens. In some instances pre-filters may be required to improve UV transmission rates (UVT).

We recommend a minimum level of 80% UVT for UV disinfection to be practical. For sizing purposes we assume most applications using mains water supplies have a minimum UVT value of 95%.

INSTALLATION

We recommend installing UV disinfection units downstream of storage tanks on the cold water distribution system, as close to the point of use as possible.

Where required Lifeline UV systems can be supplied with WRAS approved manual and automatic reverse rinsing filters. Contact our office for further details.



CONFIGURATIONS, ACCESSORIES & SPARES

All Lifeline UV systems are supplied with a controller and an over temperature sensor as standard. We also offer a full range of spares and accessories including UV lamps and associated parts, quartz sleeves, replacement sensors and wiper systems.

To accommodate a variety of installation requirements we're able to supply three controller options:

Basic
Controller with lamp on indicator, lamp fail indicator and lamp on VFC output

RC
Controller with LCD text display, power indicator, lamp on VFC output, reset button and remote start/stop

RCM
Upgraded version of RC controller with the added functionality of relative intensity display, a low UV VFC output and 4-20mA UV Intensity output

All controller options use IP65 rated steel enclosures and provide outputs that can be linked to a building management or SCADA system.





Amalgam lamp

MAINTENANCE REQUIREMENTS

Periodic replacement of UV lamps is required. Lifeline UV use high quality Amalgam lamps with extended lifespans to reduce on-site maintenance requirements.* Our amalgam lamps have a design life of 12000 hours.

In order to ensure optimal UV transmission some of our commercial range can be fitted with wiper systems as an optional extra. This will reduce the need for on-site cleaning. Replacement quartz sleeves and O-rings are also available as spares.

* The Lifeline UV 00149 model, designed for smaller domestic applications, uses a low pressure lamp with a 9000 hour lifespan.



Lifeline UV Monitor

UV MONITORING

The RCM controller enables the continuous monitoring of UV intensity delivered by the chamber, for added peace of mind. UV intensity is displayed on the screen as a percentage of the intensity of a new lamp. The intensity output is also available as a 4-20mA passive output that can be linked to an external SCADA system.

SUGGESTED SPECIFICATION

"A Lifeline UV system with 1 amalgam lamp shall be installed to provide non-chemical disinfection of the domestic water supply. The unit will be sized according to the manufacturer's recommendations and comes with 316L stainless steel chamber, IP65 rated control cabinet, over temperature sensor and 5m of interconnecting cables. All units to be WRAS approved."

Lifeline UV product range specification table overleaf...