



UV Systems

Water Treatment and Disinfection

www.fileder.co.uk





filerder
EXPERTS IN FILTRATION

UV Systems

SPECTRUM Sabre systems are designed to deliver a high dosage of UV light, destroying the DNA of microorganisms in water, preventing growth and reproduction.

Contents

Typical Applications	3
How UV Works	4
Pre-filtration	5
How to Select Your UV System	5
SPECTRUM Sabre Ultraviolet Range.....	6
Residential & Light Commerical, up to 57 lpm	7
Commercial, up to 250 lpm	8
Spares and Components.....	9



For T&C's, Terms of Use and Copyright, please see www.fileder.co.uk

Typical Applications

Whether the water source is from mains supply, borehole, well or river, microbiological contamination can be effectively treated using ultraviolet (UV) light.

For use where incoming water quality may be compromised or process water sterility is required, UV systems provide effective disinfection without the introduction of chemicals or biocides. Suitable for private residential protection, food and beverage, aquatics, and water storage loop systems, UV systems utilise the natural disinfection properties of ultraviolet light to protect against bacteria and other microorganisms.



Bottled Water



Borehole



Private Water Supply

How UV Works

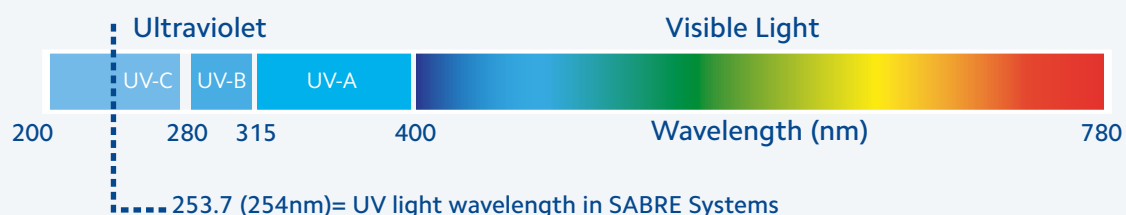
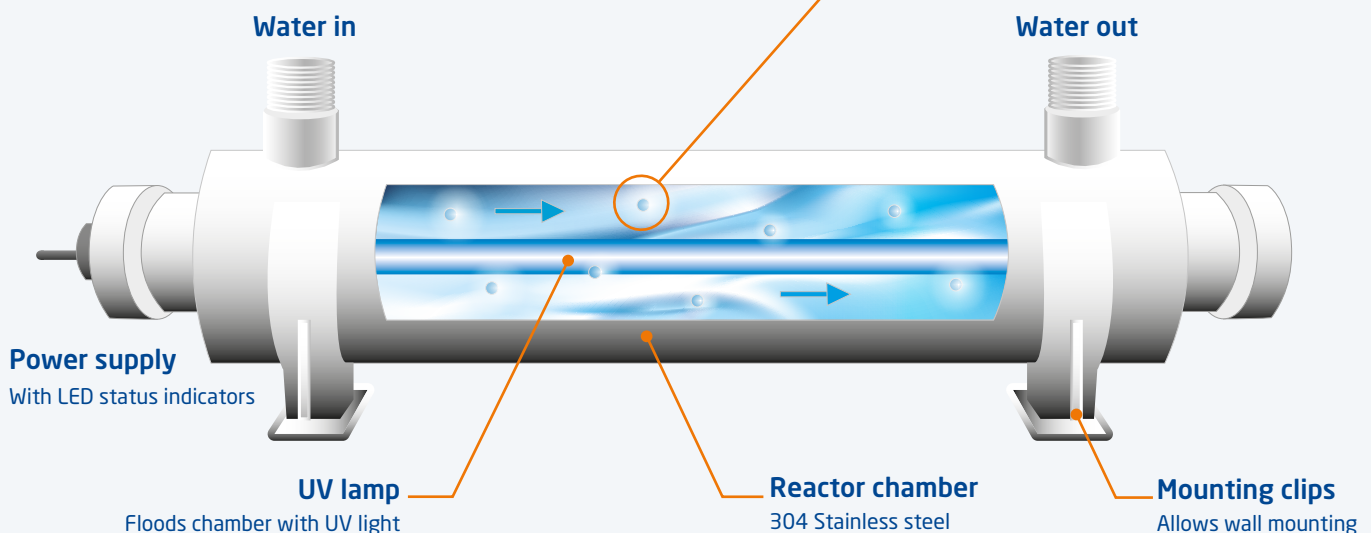
UV light is effective against contaminants, such as bacteria, viruses, mould spores, algae and other microorganisms, as it prevents growth and reproduction. If left untreated, these organisms will remain in water, producing a bio-film coating throughout the system; harbouring more bacteria and making the water less safe to drink.

UV Systems

The unique natural properties of ultraviolet light have the ability to inactivate bacteria by destroying (or disassociating) the DNA of harmful organisms. This act of destroying the DNA means that the organism is unable to function, which in turn disables the replication process and prevents the ability to multiply and cause illness.



Shortwave, high energy UV light—specifically at 253.7 (254nm)—is especially effective at disrupting microorganism DNA. SPECTRUM SABRE systems use high quality UV lamps and glass quartz sleeves to target the exact wavelength required for disinfection.



Pre-filtration

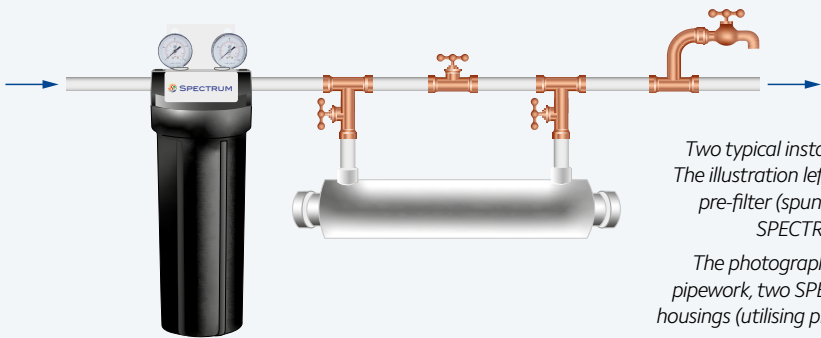
Effective pre-filtration is essential before a UV system to maximise the exposure of microorganisms to disinfecting UV light.

Organisms attached to suspended solids, such as dirt, sediment and debris, can be protected from UV light as they pass through the system by a phenomenon known as ‘shadowing’. Filerder recommends using five micron pre-filtration prior to all UV system installations, to reduce the possibility of shadowing and optimise system performance.



Microorganisms (green) attached to particulate, protected from UV light (blue) by shadowing.

Recommended Pre-filtration System



Two typical installations of a UV filter. The illustration left, utilising a five micron pre-filter (spun or pleated) inside a SPECTRUM housing.

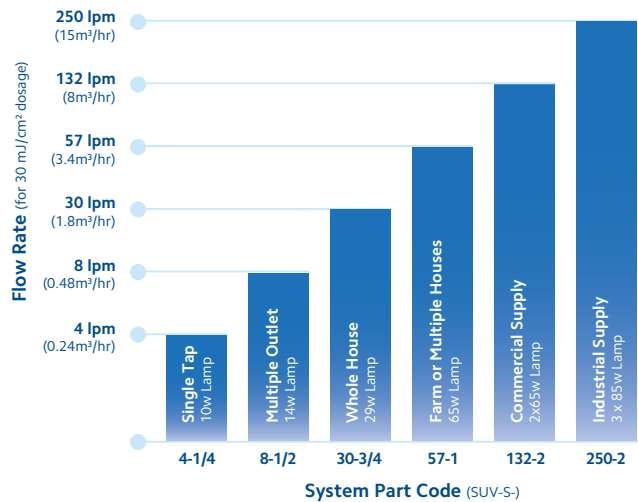
The photograph, right, displays feed pipework, two SPECTRUM stainless steel housings (utilising pre-filters) and UV system



Designed primarily for use as an excellent safeguard in private water supplies and UV applications, the specialist antimicrobial spun (AMS) prevents premature blocking from biofilm. Using impregnated silver ion technology, the AMS inhibits the growth of trapped bacteria and microorganisms. Right is a guide to the typical prefiltration system required.

Product	Flowrate @ 30 mJ/cm ²	Housing	Cartridges
SUV-S-4-1/4	3.8 (0.24)	EFHS-PK-1-10SL - 1/4	AMS-5-97/8
SUV-S-8-1/2	7.6 (0.48)	EFHS-PK-1-10 - 3/4	AMS-5-97/8
SUV-S-30-3/4	30 (1.8)	EFHS-PK-1-20 - 3/4	AMS-5-20
SUV-S-57-1	57 (3.4)	SFH-SPC-3-20-2-GP-MT	AMS-5-20
SUV-S-132-2	132 (8.0)	SFH-SPC-5-20-2-GP-MT	AMS-5-20
SUV-S-250-2	250 (15)	SFH-SPC-5-40-2-GP-MT	AMS-5-40

How to Select your UV System



SPECTRUM Sabre systems have been designed to provide an effective dosage of 30mJ/cm² at the stated system flowrate. Each system is tailored to provide both a higher or lower dosage at different flowrates.

Product	Flow rate in lpm (m³/hr)		
	@ 16 mJ/cm ²	@ 30 mJ/cm ²	@ 40 mJ/cm ²
SUV-S-4-1/4	6 (0.36)	3.8 (0.24)	3 (0.18)
SUV-S-8-1/2	13 (0.78)	7.6 (0.48)	5 (0.3)
SUV-S-30-3/4	52 (3.1)	30 (1.8)	23 (1.4)
SUV-S-57-1	100 (6.0)	57 (3.4)	43 (2.6)
SUV-S-132-2	232 (13.9)	132 (8.0)	100 (6)
SUV-S-250-2	441 (26.5)	250 (15)	191 (11.5)

Across the Range



Specification

Operating Temperature Range
2-40°C

Operating Pressure Range
0.7-6.8 bar

Voltage
100-240V

Frequency
50-60 Hz

Lamp Life
9,000 hours



Materials of Construction

Reactor Chamber
304 Stainless Steel

Sleeve
Quartz

O-Rings
Silicone Viton available

Nuts
Aluminium



SPECTRUM Sabre Ultraviolet Range

Effective and Dependable Disinfection

With standard systems ranging from 4 to 250 lpm, the WRAS approved SPECTRUM Sabre range delivers an effective solution for the average sized home, light commercial or industrial application. SPECTRUM Sabre

systems, combined with recommended industry standard 5µm pre-filtration, provide assurance of safe and effective protection against microorganism contamination with no chemicals, additives or changes to the taste of treated water.



SPECTRUM Sabre 4, 8, 30 and 57

Residential & Light Commercial, up to 57 lpm

These compact, single lamp systems are designed for smaller commercial applications, providing effective microorganism control in point-of-use applications such as private drinking water and tank-loop systems.

Key Features

- Supplied with power ballast including audible and visual alarm
- Single lamp design for simple maintenance
- High quality stainless steel reactor chamber

Typical Applications

- Domestic private water supply
- Aquatics
- Tank-loop disinfection
- Humidification



SUV-S-4-1/4



SUV-S-8-1/2



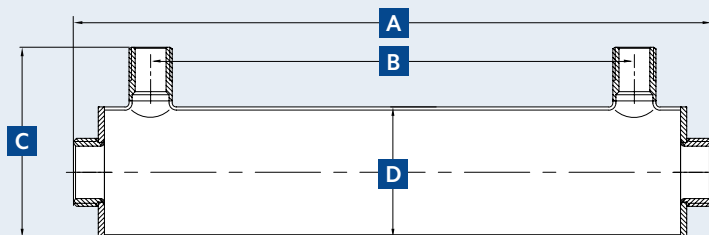
SUV-S-30-3/4



SUV-S-57-1



Technical Drawing



Product Specifications

	Flow (lpm)	Port Size (")	Lamp (W)
SUV-S-4-1/4	3.8	1/4	10 x 1
SUV-S-8-1/2	7.6	1/2	14 x 1
SUV-S-30-3/4	30	3/4	29 x 1
SUV-S-57-1	57	1	65 x 1

Dimensions, Box Quantity & Weight

Code	Dimensions				System Weight (kg)
	A	B	C	D	
SUV-S-4-1/4	245	168	75.8	50.8	1.5
SUV-S-8-1/2	310	235	95.5	63.5	2
SUV-S-30-3/4	660	575	94.5	63.5	3.5
SUV-S-57-1	890	800	120	89	12



SPECTRUM Sabre 132 and 250

Commercial, up to 250 lpm

For higher flow rate demands associated with commercial and industrial applications, the SPECTRUM Sabre range can answer the most challenging of high capacity requirements, increasing the quantity and power output of associated UV lamps.

Key Features

- Separate control box with audible and visual indicators of system operation
- High dosage UV lamps
- Quality stainless steel construction

Typical Applications

- Food and beverage
- General industrial process water
- Commercial borehole supplies



SUV-S-132-2

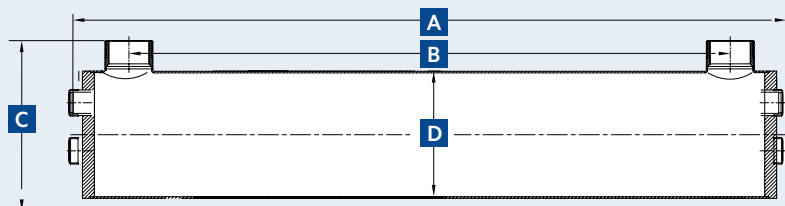


SUV-S-250-2

Control box included with industrial UV systems, featuring LED lights, alarms and cooling fan.



Technical Drawing



Product Specifications

	Flow (lpm)	Port Size (")	Lamp (W)
SUV-S-132-2	132	2	65 x 2
SUV-S-250-2	250	2	85 x 3

Dimensions, Box Quantity & Weight

Code	Dimensions				System Weight (kg)
	A	B	C	D	
SUV-S-132-2	890	760	127	89	13
SUV-S-250-2	890	750	197	159	24



Lifespan

A UV lamp's intensity will gradually fade over time and should be typically changed after 12 months or 9,000 hours of use, whichever comes first.

Lamp

A countdown timer, such as the CT1, can be used to provide a simple and effective reminder to change the lamp.

O-Ring

There are two O-rings per quartz sleeve with silicone seals provided as standard. It is advisable to visually check O-rings for wear or damage after 6 months of use and replace after 12 months.

Quartz Sleeve

With average application use, the quartz sleeve should be cleaned after 3-6 months and inspected after 12 for scratches or staining. The maximum lifespan of a quartz sleeve is 24 months.

Ballast

Within normal operating conditions the UV ballast or control box LED will show a green light; a red light and audible alarm indicates that there is a system or lamp fault.

Product Code

Product	SUV-S-4-1/4	SUV-S-8-1/2	SUV-S-30-3/4	SUV-S-57-1	SUV-S-132-2	SUV-S-250-2
Lamp	SUV-S-4LAMP x1	SUV-S-8LAMP x1	SUV-S-30LAMP x1	SUV-S-57LAMP x1	SUV-S-57LAMP x2	SUV-S-57LAMP x3
Quartz Sleeve	SUV-S-4SLEEVE x1	SUV-S-8SLEEVE x1	SUV-S-30SLEEVE x1	SUV-S-57SLEEVE x1	SUV-S-57SLEEVE x2	SUV-S-57SLEEVE x3
O-ring*	SUV-O-ring-Silicone x2	SUV-O-ring-Silicone x2	SUV-O-ring-Silicone x2	SUV-O-ring-Silicone x2	SUV-O-ring-Silicone x4	SUV-O-ring-Silicone x6
Ballast	SUV-S-4BALLAST x1	SUV-S-4BALLAST x1	SUV-S-30BALLAST x1	SUV-S-57BALLAST x1	-	-
Control Box	-	-	-	-	SUV-S-132CONTROLBOX**	SUV-2-250-CONTROLBOX***
















* SUV-O-ring-VITON also available; ** Includes x2 pre-wired ballasts; *** Includes x3 pre-wired ballast

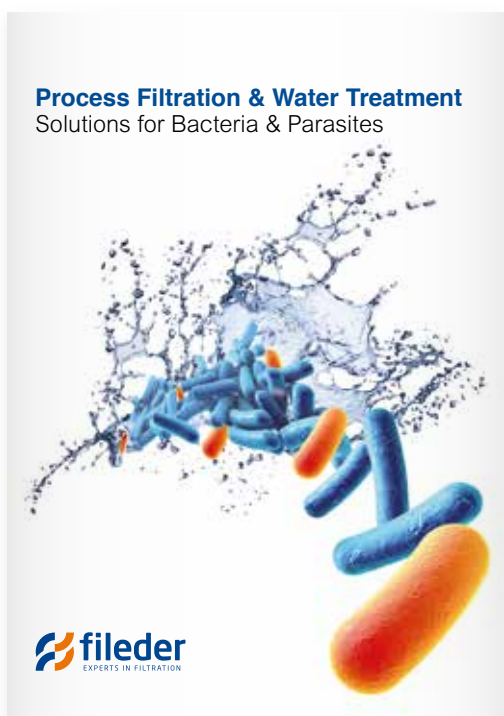
Spares and Components For Continued System Operation









To ensure system performance and integrity are maintained throughout the effective lifespan of the UV lamp,

consumable and replacement parts should be maintained or checked on a regular basis as highlighted above.



	Reverse Osmosis Components
	Stainless Steel Filter Housing
	Plastic Filter Housing
	Water Treatment, Carbon & Media Cartridges
	Depth Filtration
	Reverse Osmosis Systems
	Pressure Vessels & Media
	High Flow Filtration
	Water Softeners
	Stainless Steel Cartridges
	UV Systems
	Food Service
	Large Diameter Filtration
	Filtration & Water Treatment Rental
	Installation & Servicing



	Solutions for Bacteria and Parasites
	Solutions for Hospitals
	Solutions for Beverage Production
	Solutions for Cosmetics and Toiletries
	Solutions for Food and Dairy Production
	Solutions for Chemical Production
	Solutions for Microelectronics
	Solutions for Buildings and Facilities Management

The Filerder Markets



Everyday Life



Food & Beverage



Industrial



Life Sciences



Export

Contact us

Filerder Filter Systems Ltd

20/20 Business Park

Maidstone, Kent

ME16 0LS

Phone: 01622 691886

Fax: 01622 621932

Email: info@filerder.co.uk

Website: www.filerder.co.uk

