



PECTRUM

H Y B R I D

ELECO
ENGINEERING



TAKING UV SANITISATION TO THE NEXT LEVEL: UV + HO

The Spectrum Hybrid utilises all of the well known and proven benefits of traditional UV water treatment and takes it to the next level by harnessing the power of hydroxyl radicals [HO] to oxidise pool water.

The next generation of UV treatment

Natural oxidising solution

Traditional UV systems are effective at removing chloramines, however they do not possess the power to oxidise; instead the UV light attacks the DNA of the contaminant and prevents it from further reproducing, but will remain in the water as effectively 'neutralised'. The Spectrum Hybrid advances the benefits of UV by naturally creating powerful hydroxyl radicals that have the ability to sanitise your pool water by actually destroying harmful viruses, bacteria and pathogens in the pool water.

Built to be installed easily into your existing set-up the Spectrum Hybrid is completely safe and complimentary to any existing treatment method, including chlorine, bromine, salt water electrolysis or hydrogen peroxide. The powerful Spectrum Hybrid typically provides an increased efficiency of 45% when compared to traditional UV alone.

Costing no more to run than a common light bulb, the Spectrum Hybrid is the method of choice for those that favour UV treatment but are looking to take water sanitisation to the next level.



PRODUCT OVERVIEW

- **Safe:** Only clean treated water is released from the reaction chamber; no harmful gases or by-products are generated.
- **Efficient:** Consumes no more electricity than a common light bulb, providing continuous savings.
- **Effective:** Combines the well documented benefits of traditional UV and improves effectiveness by 45% by actually oxidising the water.
- **Easy to Use:** Comes pre-assembled with all necessary sensors and control components: no complicated parts to piece together. The lamp replacement indicator will alert after 9,000 hours of use.
- **Built to last:** Corrosion resistant; salt and sea water safe.
- **Enhancing:** Works with and compliments traditional treatments such as chlorine, bromine, active oxygen and salt electrolysis.
- **Natural:** Replicates nature's way of sanitising the earth by using light and creating hydroxyl radicals.



HOW DOES IT WORK?

With a wide range of products available on the market that offer a variety of technologies to sanitise swimming pool water, how do you decide what method is best for you?

The Spectrum Hybrid applies all of the benefits of traditional UV by removing chloramines, reducing the need to shock treat the pool and therefore typically reducing chemical consumption by 25-50%, and enhancing traditional treatment methods. Beneficially UV does not affect the pH of a pool and it is impossible to overdose with UV treatment.

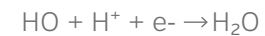
The benefits of UV are elevated in the Spectrum Hybrid due to the natural production of hydroxyl radicals. Nature provides the inspiration behind this enhanced water sanitising unit. The vast majority, 85%, of the sterilising effect of our atmosphere is produced by UV light reacting with cloud surfaces to produce hydroxyl radicals. The Spectrum Hybrid uniquely replicates this effect within a compact chamber, oxidising pollutants in its path.

As with traditional UV, to keep pool water safe and hygienic it is good practice to use a residual dosing system such as chlorine, bromine, active oxygen or salt. As an example chlorine combines with organic substances to become chloramines. It is chloramines that cause the smell, taste, discomfort, itchy eyes or skin irritation in pool water that users complain about, not the chlorine itself. The Spectrum Hybrid destroys chloramines providing a much more pleasant environment for bathers, and lowers the amount of free chlorine required to keep your pool safe and effective.

THE SCIENCE

The Spectrum Hybrid is designed with a narrow chamber and long flow path in order to maximise exposure to the UV and increase the contact time. The polished titanium reaction chamber increases the intensity of the UV light, furthermore increasing the dose and power of UV sterilisation. By utilising the polished titanium as a reflector, all of the problems of corrosion associated with stainless steel units are avoided.

When the UV light reacts with the polished titanium chamber, powerful hydroxyl radicals are naturally produced. Hydroxyl Radicals are essentially a water molecule with a Hydrogen atom removed, and a highly reactive unpaired electron, forming holes in the valence band of the atom. The exceptionally mobile molecules that are generated within the reaction chamber are highly volatile and rapidly oxidise pollutants/bacteria/pathogens present in the water. Once the Hydroxyl Radicals have reacted and oxidised with a pollutant it converts back into water.



Hydroxyl Radicals can be produced in many ways, however instead of adding more chemicals or gases that are potentially damaging to health, the creation within the Spectrum Hybrid reaction chamber requires no chemicals and is non-sacrificial; the titanium reflector is not consumed during the reaction, with the benefit that it is not only safe but also long lasting.

Intelligent Peristaltic Dosing Pump Option:

The Spectrum Hybrid has the option of being supplied complete with integral intelligent peristaltic dosing pump which is pre-programmed to dose Hydrogen Peroxide [Active Oxygen]. Featuring:

- **Temperature Sensor:** The water temperature is monitored and the dosing amount is automatically adjusted according to the water temperature. No ongoing adjustments required.
- **Flow Switch:** The dosing will only be started when there is a consistent water flow being delivered to the unit.
- **Automated:** Dosing is set to take place at a desired time every day.
- **Digital lamp life countdown timer** & Neon indicator: Green = OK, Amber = under 500 hours remaining, Red = Lamp change required.
- **Lamp** will be automatically switched off during the dosing period and for 30 minutes immediately after [ensuring that the Hydrogen Peroxide is entering the pool and not consumed within the reaction chamber].



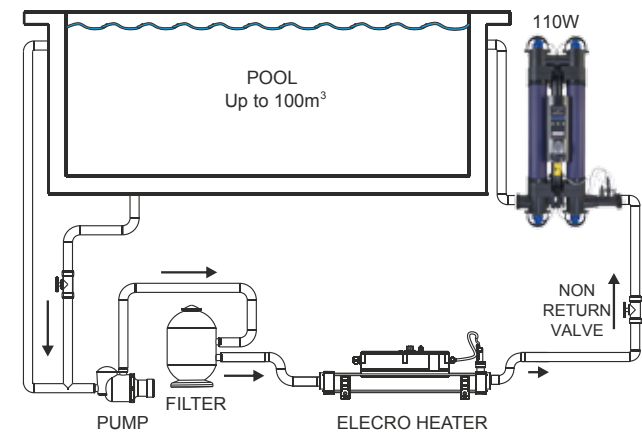
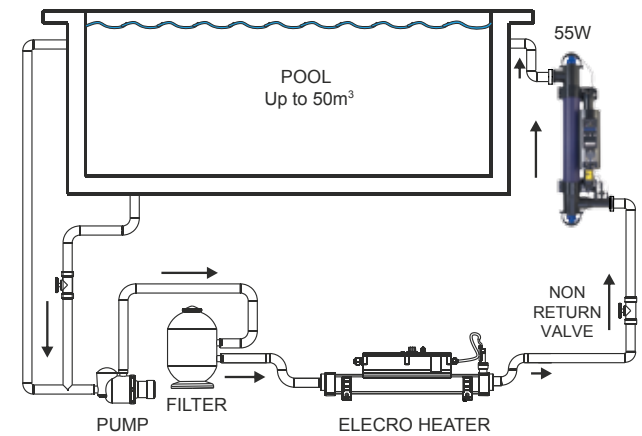
INSTALLATION & SIZE GUIDE

The Specrum Hybrid can be easily installed into your new or existing pool system.

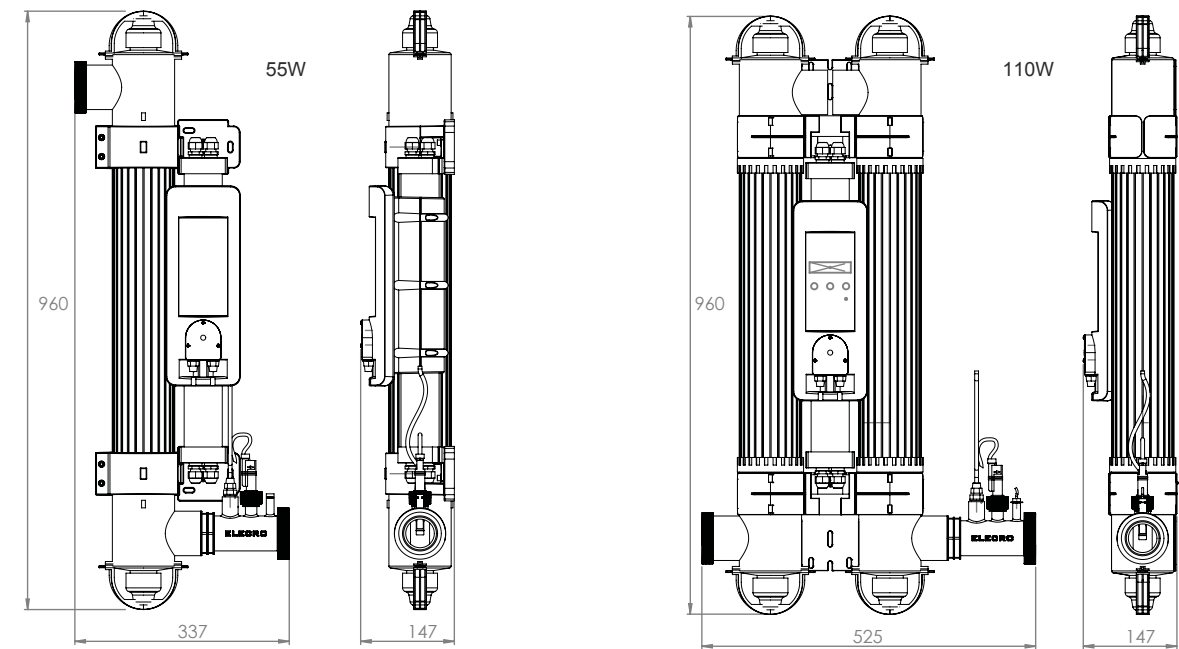
Compared to other products in the market place, Specrum Hybrid offers superior performance at reduced levels of power consumption. On this basis we recommend:

- Single tube [55W input] for up to 50m³ volume of swimming pool
- Double tube [110W input] for up to 100m³ volume of swimming pool

Installation is quick and easy and can be fitted directly into your new or existing system, using the pre-assembled threaded unions. The Specrum Hybrid is integrated with all controls and flow switch, along with the option of a peristaltic pump and temperature probe ensuring accurate dosing. Giving the pool owner peace of mind that they are choosing a natural, effective sanitiser that once installed requires no further adjustments.



DIMENSIONS (MM)



MODEL OPTIONS

All Specrum Hybrid units are supplied complete with flow switch and either an analogue lamp life indicator and reset switch, or digital lamp life countdown with intelligent dosing pump.

Product Code	Lamp Output	Max Pool Volume	Features
SH - 55	55W	50m ³	Analogue Lamp Life Indicator & Reset Switch
SH - 110	110W	100m ³	Analogue Lamp Life Indicator & Reset Switch
SHP - 55	55W	50m ³	Digital lamp life countdown with Intelligent dosing pump
SHP - 110	110W	100m ³	Digital lamp life countdown with Intelligent dosing pump

Product Code Suffix -UK = UK Plug / -EU = European Plug

TECHNICAL SPECIFICATION

Voltage and frequency	220V ~ 240V 50/60Hz or 110V ~ 120V 50/60Hz
Maximum operating pressure	3 bar
Max. power consumption	Single Tube: 64W Double tube: 128W
Lamp	Low pressure / High output
Lamp life	9000 hours
Minimum flow rate	4,000 litre per hour [4m³/h]
Maximum flow rate	Single Tube: 14,000 litres per hour [14m³/h] Double Tube: 28,000 litres per hour [28m³/h]
Maximum pool size	Single Tube: 50,000 and 50m³ Double Tube: 100,000 litres and 100m³
IP rating	IP65
Water connections	2" / 63mm stepped + reducers 1½" / 50mm
Dosing rate	Exceeds the equivalent of 30mj/cm² at maximum flow rate
Salt water	100% sea water safe
Approvals	CE approved
Oxidisation processes	UV & hydroxyl radicals [HO]

DID YOU KNOW?



It is a misunderstanding that ozone gas in the ozone layer sterilises the earth's atmosphere. In fact 85% of the sterilisation effect is actually a result of UV rays from the sun creating Hydroxyl Radicals on the surface of clouds.





SPECTRUM

H Y B R I D



ELECR0
ENGINEERING

www.elecro.co.uk

Unit 11 Gunnels Wood Park, Gunnels Wood Road,
Stevenage, Hertfordshire, SG1 2BH, United Kingdom

T: +44 [0]1438 749 474 | F: +44 [0]1438 361 329 | E: sales@elecro.co.uk