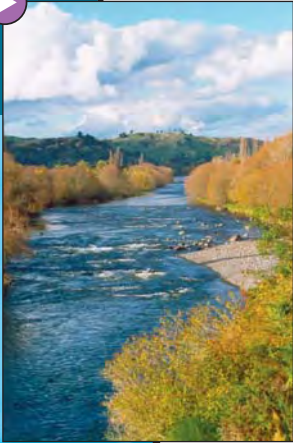


# CONTAMINATION CONTROL LIMITED

## STERIFLO UV Systems

### Package UV Systems for Wastewater Treatment



Protect waterways

Contamination Control offer a range of package open channel and pressurised chamber disinfection systems, developed in New Zealand to meet the requirements of small wastewater treatment systems. The most convenient design for small sites uses UV lamps in an open channel as these are easy to keep clean. For pressurised flows or installations where a horizontal channel is not appropriate there is a range of cylindrical chamber units which can be installed horizontally or vertically.

The range covers basic low cost systems intended for single household use through to multilamp channel units with a comprehensive electrical specification for larger treatment plants serving subdivisions, small townships, campgrounds, resorts and facilities such as motorway service centres or industrial site domestic sewage plants. A separate range of higher capacity UV systems is also available.

#### • Wastewater quality

The capacity of a given UV steriliser depends on a number of factors, the quality of the pretreatment being the most important as this determines the clarity of the wastewater (%UV transmission) as well as parameters like suspended solids and BOD. Measurement of the UV transmittance is a free service, a 50mL sample is required.

#### • Service requirements

The major service requirement for UV systems used in the disinfection of sewage is cleaning which is required at intervals determined by the quality of the wastewater. There is a gradual accumulation of foulants on the quartz sleeve around the lamp - dead bacteria, grease, iron and other minerals. Channel system sleeves can be cleaned in a few moments after the removal of the cover whereas pressurised chambers require disassembly with removal of the seals and quartz sleeves from the system for cleaning, followed by re-assembly. In-place acid cleaning of the treatment chamber can therefore be appropriate for larger pressurised units.

Lamp changing is usually an annual task. In chamber systems and small channels replacement takes seconds. In larger channels lamp replacement takes up to 30 minutes depending on the number of lamps.

#### • Quartz sleeves

Quartz is the preferred material for the sleeves around the lamp as it is easier to return to its original cleanliness than the fluoropolymer alternative (USEPA finding). In addition quartz based designs are more efficient resulting in fewer lamps being required to disinfect a given flow.

**Effective**

**Low maintenance**

**No moving parts**

**Single dwelling to subdivision sizes available**

**No chemicals or by-products**

**Gravity channel or pressurised chamber options**



Pressurised system



Channel system



Re-use wastewater

# Domestic Systems

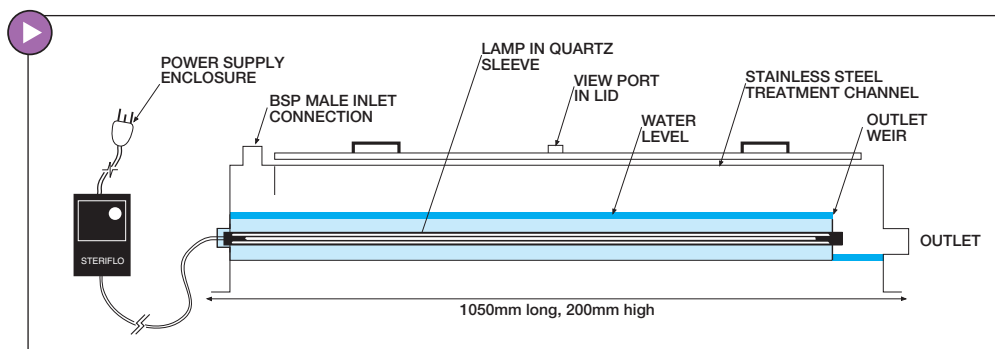
## Channel Systems

These units feature a compact single lamp design with lamp viewing port and audible lamp failure alarm. Steriflo C1 systems are intended for lower flow applications such as single dwellings or small package wastewater plants. The channel is 316L stainless steel and is suitable for outdoor use, the control panel should be under cover.

As an option the C1 units can be supplied with industrial specification IP65 power supplies suitable for use outdoors. The comprehensive specification of these units includes a UV intensity meter, hours counter and alarm with remote contacts. The channel includes an inspection window and level control weir.

Model	Power consumption (Watts)	Lamp life (hours)	Treatment capacity* (L/hour)	Control panel dimensions h x w x d (mm)	Channel dimensions h x w x d (mm)	Connection size (mm)
C1	55	9000	600-1000	210 x 105 x 65	180 x 1050 x 85	40mm
C1H	85	6000	1200-2200	340 x 180 x 65	200 x 1050 x 85	50mm

\*Capacities are approximate and depend on wastewater quality.

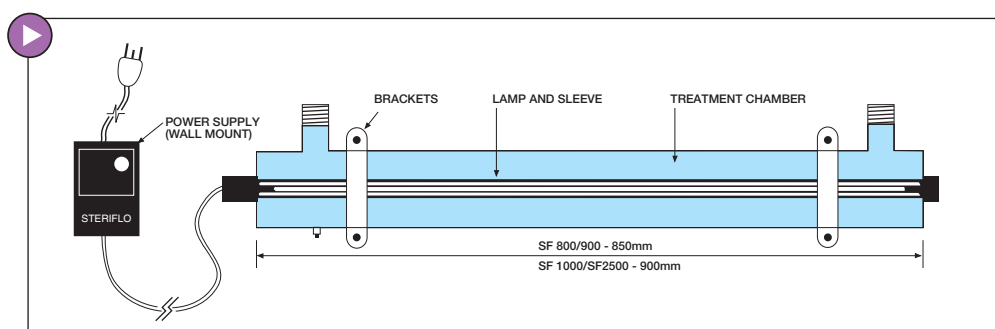


## Pressurised Chamber Models (SF Series)

In wastewater systems that are pressurised for irrigation purposes or recycling, or if lack of space requires a vertical installation then pressurised treatment chambers are appropriate. This avoids repumping which may be required with a channel system. All models use short (840mm) UV lamps resulting in compact installations. Disassembly for cleaning of quartz sleeves is simple but consideration should be given during installation to valving for isolation and depressurisation of the treatment chamber for service.

Using a compact single lamp design SF models are intended to deliver performance at an economical price. These units use lamps proven in many thousands of installations. Treatment chambers are 304 stainless steel with the option of black polypropylene. Standard features include a lamp failure alarm with the option of remote alarm contacts and viewport (not polypropylene models). SF Series units are intended for use under cover.

Model	Power consumption (Watts)	Lamp life (hours)	Treatment capacity* (L/hour)	Control panel dimensions h x w x d (mm)	Overall Length (mm)	Connection size (mm)
SF800	55	9000	up to 600	250 x 105 x 65	850	20
SF900	55	9000	600-1000	250 x 105 x 65	850	20
SF1000	85	6500	1200-2200	340 x 180 x 65	900	40
SF2500	170	6500	2000-4000	340 x 180 x 65	900	50



# Commercial Systems

## Package Channel Systems (CP series)

The package approach includes the stainless steel channel and controls, including alarms, UV meter, safety interlock and wiring. The prefabricated channel minimises civil work and installation costs. The specification of these systems is appropriate for remote operation and monitoring by telemetry.

A level concrete pad or support is required for the channel.

### Standard Features:

- 316L stainless steel channel
- IP65 control panel
- On/off indication for each lamp
- UV intensity display
- Audible/visible alarm
- Remote alarm contacts
- Level control weir

- Hours counter
- Earth leakage protection
- Channel lid safety interlock

### Optional:

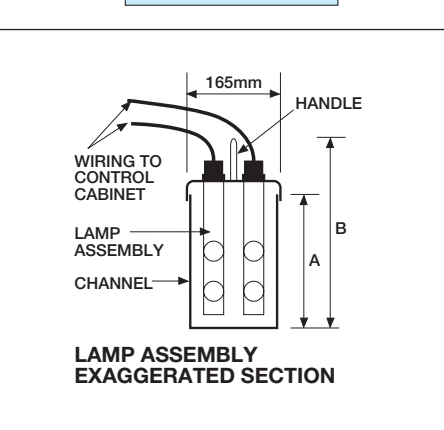
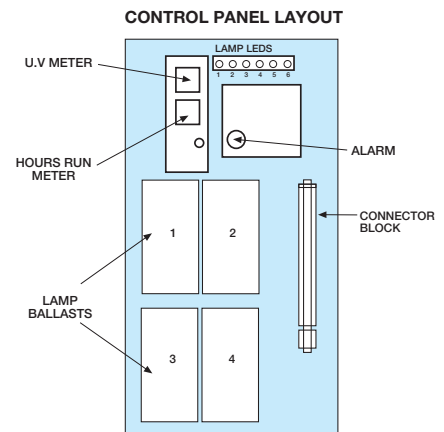
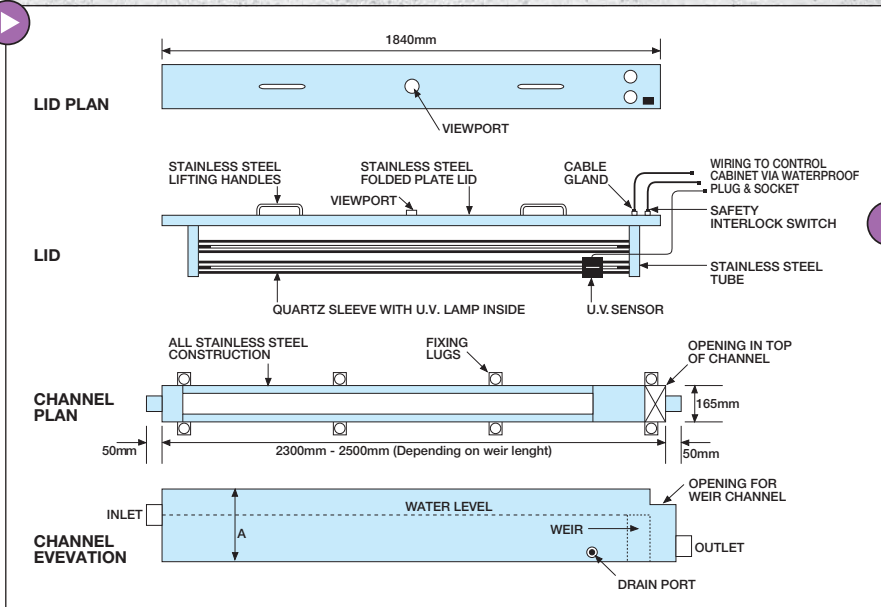
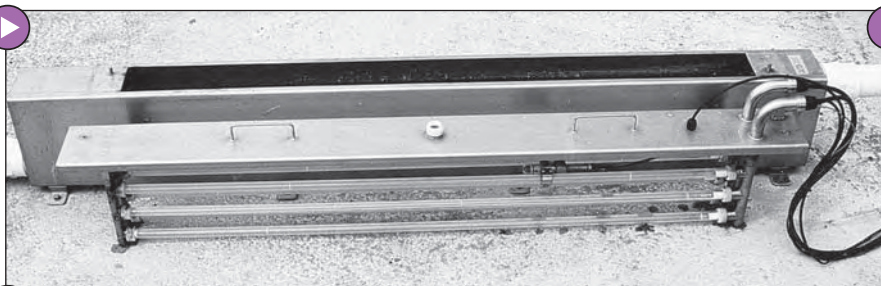
- Stainless steel control panel
- Remote alarm delay timer
- 4-20mA UV meter output

Model	No of Lamps	Power consumption (Watts)	Treatment capacity*		Typical inlet/outlet size (bsp or flange)
			(m3/hr*)	(L/sec)	
CP2	2	170	6	1.8	50mm
CP4	4	340	10	2.8	75mm
CP6	6	510	15	4.2	75mm
CP8	8	680	20	5.6	100mm
CP10*	10	850	25	7.0	100mm

\*Capacity based on 30:20 (BOD:SS) sewage with a UV Transmission of at least 50%. Treated E.Coli level <200/100mL.

Model	Control Panel Dimensions* h x w x d (mm)	Control Panel Weight (kg)	Channel Height Above Ground (A)	Overall Height Including Lid (B)
CP2	540 x 270 x 200	20	175	225
CP4	750 x 500 x 320	25	250	300
CP6	750 x 750 x 320	60	325	375
CP8	1000 x 750 x 320	85	400	450
CP10	1000 x 750 x 320	100	475	525

\*Dimensions Subject to change with equipment specification.



# Commercial Systems

## Pressurised Chamber Systems (VX and L Series)

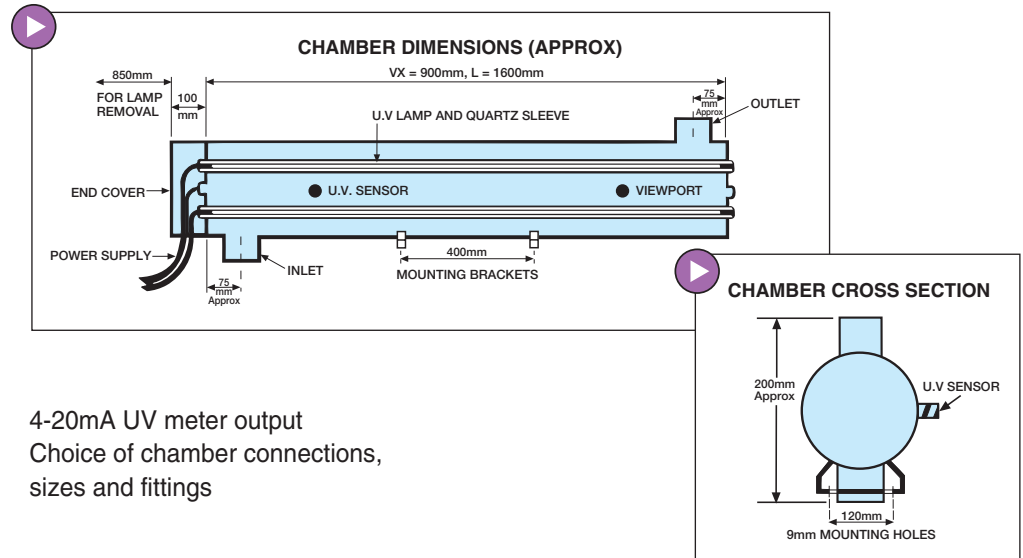
The VX and L series of pressurised chamber systems is intended for commercial/small municipal applications where pressurised flows are present. Available in one, two, four, six and nine lamp versions these systems offer a comprehensive electrical specification suitable for remote monitoring. These systems are suitable for outdoor use.

### Standard features:

- IP65 control panel
- Audible/visible alarm
- UV intensity display
- On/off indication for each lamp
- Remote alarm contacts
- Earth leakage protection
- 316 stainless steel chamber
- Viewing port

### Options:

- Stainless steel control enclosure
- Remote alarm delay timer
- Acid cleaning ports
- 4-20mA UV meter output
- Choice of chamber connections, sizes and fittings



Model	No of Lamps	Power consumption (Watts)	Treatment capacity*		Connection size (mm)	Control panel dimensions h x w x d (mm)	Weight (kg)
			(m3/hr*)	(L/sec)			
VX1	1	85	2	0.6	40mm	360 x 270 x 180	15
VX2	2	170	6	1.7	50mm	540 x 360 x 180	20
L4	4	340	10	2.8	80mm	750 x 500 x 320	25
L6	6	510	15	4.2	80mm	750 x 750 x 320	60
L9	9	765	24	6.7	100mm	1000 x 750 x 320	90

\*Capacities are approximate and depend on wastewater quality. Figures shown are for 50% UV transmission and a 30:20 (BOD:SS) quality.

## Why Use UV To Disinfect Wastewater?

Sewage contains pathogenic (harmful) micro-organisms that can cause infections when they are released into the environment. People swimming or collecting shellfish in water contaminated with sewage are at risk. Therefore any sewage discharged to a waterway or used for irrigation near water, or where people or crops may be affected requires disinfection. Traditionally chlorine has been used but chlorine reacts with organic matter in the sewage forming harmful byproducts.

Chlorine is of course a toxic chemical and requires careful handling.

Ultra-violet irradiation is a non-chemical method of disinfection. The UV light generated by the lamps at a wavelength of 254nm kills the majority of organisms of concern. Typically UV systems are installed to disinfect the sewage to meet a guideline of 200 E.Coli per 100mL in the treated wastewater.



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