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microlene

Model Number:
ACX2, ALX2/6, ALX2/8, ALX4/6,
ALX4/8, ALX6/10, ALX8/10, ALX8/12, ALX10/12

WARRANTY
1 YEAR

APPLICATIONS

- Farm washdown
- Large scale irrigation
- Playing field and golf course watering
- Non-validated potable water supply
- Final stage UV treatment of greywater to discharge
- Giardia and Cryptosporidium protection.

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UV Systems

MICROLENE HIGH FLOW ULTRAVIOLET WATER DISINFECTION SYSTEM

FEATURES & BENEFITS

Davey Steriflo UV disinfection systems neutralise bacteria viruses and a variety of water bourne pathogens including Cryptosporidium and Giardia.

Steriflo systems incorporate a sophisticated controller with a rugged treatment chamber constructed from 316L schedule 10 stainless steel pipe.

Easy set up with “plug and play” technology, including, inbuilt temperature sensor, relative UV sensor and view port.

Visual and audible alarm system to notify cleaning, lamp life and faults.

System control options include two special pump start functions to ensure only treated water is discharged while the lamps come up to full power during initial start-up.

The lamps in ALX series UV systems are high output, high efficiency Indium Amalgam lamps. These lamps are able to work at water temperatures of up to 60ºC, where normal UV systems won’t operate. The lamps also lock the small amount of mercury always present in UV lamps in an amalgum making them much safer for the environment.

Larger models are available on request.

Smaller units for domestic purposes are detailed seperately.

UV Water Disinfection

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		ACX2	ALX2/6	ALX2/8	ALX4/6	ALX4/8	ALX6/10	ALX8/10	ALX8/12	ALX10/12
TREATMENT CHAMBER	Material	Electropolished 316 stainless steel								
	Number of Indium Amalgam lamps	2			4		6	8		10
	Number of sleeves	2			4		6	8		10
	Sleeve material	High purity quartz								
	Number of Orings	4			8		12	16		20
	Oring material	Food grade silicon								
	Viewing port	Yes								
	Standard Inlet and outlet connections	80mm			100mm		125mm	150mm		
	Connection flange	Table E								
	Maximum pressure (chamber)	1000 kPa (145 psi)								
	Design flow (m^3/hr) DI water @ 40mJ/cm^2 dosage	25	35	45	70	85	150	200	240	275
	Typical Rainwater (90%T) flow (m^3/hr) @ 40mJ/cm^2 dosage	22.5	31.5	40.5	63	76.5	135	180	216	247.5
	Typical Rainwater (90%T) flow (m^3/hr) @ 30mJ/cm^2 dosage	30	42	54	84	102	180	240	288	330
	Minimum flow	Nil								
	Design lamp life	9000 hours								
	Head loss at max flow	<0.5 metres								

		ACX2	ALX2/6	ALX2/8	ALX4/6	ALX4/8	ALX6/10	ALX8/10	ALX8/12	ALX10/12
ELECTRICAL	Voltage/Cycles (standard)	230 - 240V/50Hz								
	Power consumption	415Watts			815Watts		1225Watts	1625Watts		2025Watts
	Circuit breaker	6A					10A			15A
	Control voltage	24VDC								
	4-20mA %UV output	Standard								
	Modbus RS485 communications	Standard								
	WEB based remote access	Not available			Optional					
	Fan forced ventilation	10W 23 m^3/hr					18W 105 m^3/hr			
	UV Sensor type	Filtered LDR 4-20mA signal								
	Temperature	Thermopile 4-20MA								
	User configurable inputs	2								
	User configurable outputs	2								
	Earth leakage circuit breaker	Optional								

		ACX2	ALX2/6	ALX2/8	ALX4/6	ALX4/8	ALX6/10	ALX8/10	ALX8/12	ALX10/12
CONTROL PANEL	Panel dimensions (WXHXD) mm	310 X 410 X 190			500 x 700 x 210		500 x 700 x 300			600 x 800 x 300
	Protection rating	IP54 (indoor)								
	Materials	ABS			Mild Steel Polyester Powder coated RAL 7035					
	Operator interface	2x16 Alpha numeric LCD display								
	On/off/auto switch	Internal - Push button								
	Status indication	Yes - Via display								
	Run indicator	LED								
	Fault indication	LED & Display								
	PAUSE INDICATION	LED & DISPLAY								
	Mode indicator	LED & Display								
	Hours counter	Yes-Resettable								
	UV meter (0-100%)	Calibratable after tube cleaning								
	UV/ballast fault detection	Individual								
	Volt free remote alarm contacts	Standard, 5A rated								
	Low UV/lamp fail alarm	Standard								
	Programmable operation	Yes								

		ACX2	ALX2/6	ALX2/8	ALX4/6	ALX4/8	ALX6/10	ALX8/10	ALX8/12	ALX10/12
MISC.	Control panel weight	9 kg			50 kg		55 kg	60 kg	tbc	tbc
	Chamber weight	50 kg		70 kg	50 kg	70 kg	TBA	TBA	TBA	TBA
	Interconnecting cable supplied	5 metres with connector								

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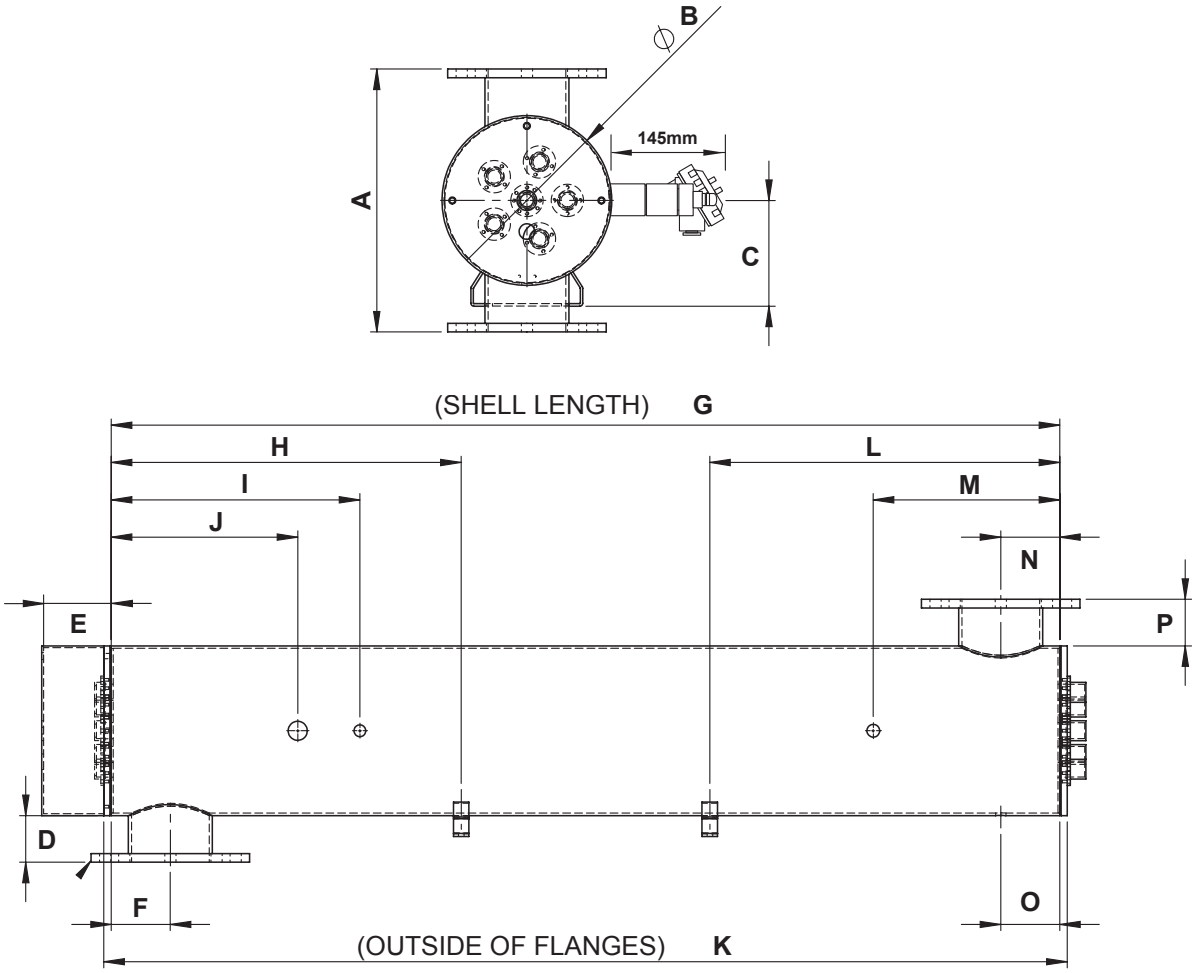
DIMENSIONS (mm)																	
Model	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Table E Flange Size
ACX2	318.3	168.3	110	75	100	75	856	254	250	150	880	254	150	75	75	75	80
ALX2/6	318.3	168.3	110	75	100	75	1526	564	400	300	1550	564	300	75	75	75	80
ALX2/8	369	219	140	75	100	75	1526	563	400	300	1550	563	300	75	75	75	80
ALX4/6	318.3	168.3	110	75	100	85	1526	563	400	300	1550	563	300	85	85	75	100
ALX4/8	369	219	140	75	100	85	1526	563	400	300	1550	563	300	85	85	75	100
ALX6/10	423.1	273.1	170	75	100	95	1526	563	400	300	1550	563	300	95	95	75	125
ALX8/10	423.1	273.1	170	75	100	110	1526	563	400	300	1550	563	300	110	110	75	150
ALX8/12	473.85	323.85	190	75	100	110	1526	558	400	300	1550	558	300	110	110	75	150
ALX10/12	473.85	323.85	190	75	100	110	1526	558	400	300	1550	558	300	110	110	75	150



CONSUMABLES		
Model	ACX2	All other models
Lamp	GIA840NW	GIA1554NW
Quartz Sleeve	TT900	TT1575
O-ring	S24X3S70	

UV Water Disinfection

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UV TRANSMITTANCE OF VARIOUS WATERS

Water clarity must be taken into account when selecting a UV system, particularly its ability to pass UV light (% transmittance). Transmittance depends on several factors (colour, turbidity, suspended solids and organics content in particular) and a conventional water analysis may only give an indication of the UV transmission.

The worse the water quality the less UV penetrates to kill bacteria, which in practice means that a UV system needs to be more powerful to treat water with a low UV transmission.

Distilled water	100%	Stream/river water	50-95%
Adelaide tapwater	85%	Deep well	98-100%
Auckland tapwater	98%	Shallow well	80-90%
Christchurch tapwater	98%	Primary treated sewage	20-30%
Dunedin tapwater	85%	Secondary treated sewage	40-70%
Melbourne tapwater	90%	Sugar syrup	10-40%
Sydney tapwater	95%	Salting brine	5-20%
Wellington tapwater	95%	Cooling water	10-90%

Most dissolved components present in water, hardness salts or other dissolved solids do not affect UV transmission, nor does pH. Seawater for example has an excellent UV transmission. The figures shown are measured from actual samples and can vary depending on season and water treatment. Figures for cooling water are particularly dependent on the treatment chemicals being used in the system. Effluents vary depending on upstream processes and many process waters such as condensates or permeates can be affected by dissolved organic matter.

UV 254nm dose (mJ/cm2) required for a 1 log reduction (90% kill) of various micro-organisms*

BACTERIA	DOSE	BACTERIA	DOSE	YEASTS	DOSE
Aeromonas hydrophala	1.1	Staphylococcus aureus	3.9	Baker	3.9
Bacillus anthracis	4.5	Streptococcus faecalis	4.5	Brewers	10
Bacillus enteritidis	4	Streptococcus haemolyticus (a)	6.7	Common yeast cake	6
Bacillus megaterium (spores)	3.75 (9.07)	Streptococcus haemolyticus (d)	9.5	Saccharomyces cerevisiae	6
Bacillus subtilis spores	29	Streptococcus lactis	6.15	Saccharomyces sake	8.5
Campylobacter jejuni	1.6	Streptococcus salivarius	2	Saccharomyces sp	8
Clostridium botulinum	12	Streptococcus viridans	2	Saccharomyces turbidans	9
Clostridium terani	4.9	Tuberculose bacillus	10	Saccharomyces willianus	34
Corynebacterium diphtheriae	3.75	Vibrio cholerae	6.5	Torula sphaerica (milk and cream)	2.3
Dysentery bacilli	2.2			OTHER ORGANISMS	
Escherichia coli	3-4			Blue-green algae	10-20
Escherichia coli 0157:H7	1.5	VIRUSES		Chiorella vulgaris algae	12
Legionella bozemanii	1.8	Adenovirus type 40	30	Cryptosporidium	2.5
Legionella dumoffii	3	Adenovirus type 41	22	Giardia	2.1
Legionella gormanii	2.5	Bacteriophage (e. coli virus)	3	Nematode eggs	51
Legionella longbeachae	1.5	Coxsackie virus a9	12	Paramecium	110
Legionella pneumophila	2.04	Coxsackie virus b5	6.9	*Algae in water features is easily controlled with UV	
Leptospira spp (infectious jaundice)	3	Echovirus 1	5.5	FISH DISEASE	
Listeria	3.4	Hepatitis	11	Fungi (typical)	24
Micrococcus candidus	6.05	Poliovirus type 1	4.0 – 5.7	Ichtyophthirus (white spot)	40
Micrococcus lysodeikticus (m lutea, phosphate buffer)	23	Reovirus 1	15.4	Infectious pancreatic necrosis (ipn)	60
Micrococcus piltoniensis	8.1	Rotavirus sa11	7.1-9.1	Saprolengnia (fungal disease)	13
Micrococcus radiodurans	20.5			Viral hemorrhagic septicaemia (vhs)	10
Micrococcus sphaeroides	10			PLANT DISEASE	
Mycobacterium tuberculosis	6.2			Botrytis cinerea	82.3
Neisseria catarrhalis	4.4	MOULD SPORES		Corynebacterium fascians	6
Phytomonas tumefaciens	4.4	Aspergillus amstelodami (meat)	70	Cylindrocladium scoparicum	25
Proteus vulgaris	3	Aspergillus flavus	60	Erwinia chrysanthemi	5
Pseudomonas aeruginosa	5.5	Aspergillus glaucus	44	Fusarium culmorum	25
Pseudomonas fluorescens	3.5	Aspergillus niger (bread)	100	Fusarium oxysorum sp.pisi	10
Salmonella enteridis	7.6	Cladosporium herbarum (cold sores)	30-50	Penicillium sp	30
Salmonella paratyphi (enteric fever)	6.1	Mucur mucedo (meat,fat, bread, cheese)	50-70	Phytophthora cinnamoni	7.5
Salmonells typhi	1.8	Mucor racemosus a/b	17	Phytopthoria nicotanae	17.5
Salmonella typhosa (typhoid fever)	6	Oospara lactis	5	Pythium ultimum	25
Sarcina lutea	19.7	Penicillum chrysogenum	30-50	Rhizoctonia solani	30
Serratia marcescens	2.42	Penicillum digitatum	44	Thielaviopsis basicola (chlamydospores)	>750
Shigella dysenteriae (dysentery)	4.2	Penicillium expansum	13	Thielaviopsis basicola (yeast)	25
Shigella flexneri	1.7	Penicillium roqueforti	13	Tobacco mosaic virus	240
Shigella paradysenteriae	1.68	Rhizopus nigricans	110	Verticillium dahliae	>150
Shigella sonnei	2.1	Scopulariopsis brevicaulis (cheese)	50-80	Xanthomonas campestris pv: pelargonii	6.5

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