

## PharmaLine DC PH

### *UV DECHLORINATION FOR PHARMACEUTICALS*

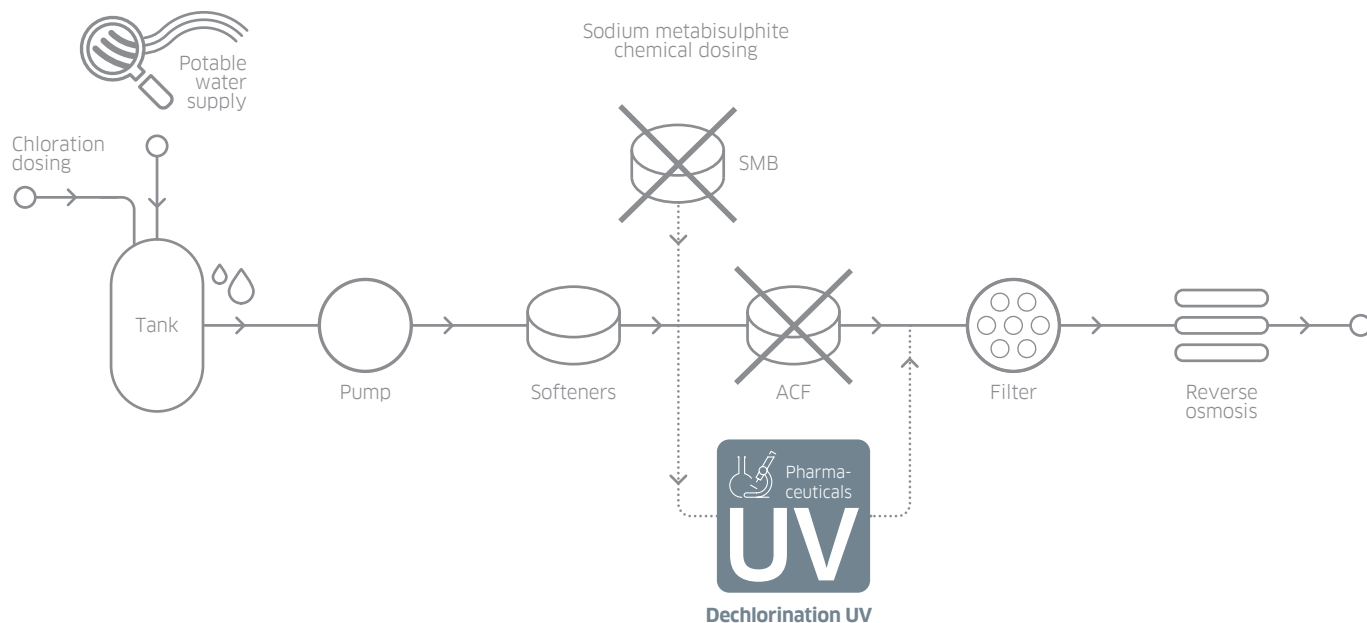
Our **PharmaLine DC PH** UV systems deliver guaranteed high UV doses for effective free chlorine removal and treatment for the pharmaceutical and cosmetic industries.

UV dechlorination provides advantages over traditional technologies such as ACF or SMB, which are prone to microbial contamination and require more operator involvement and plant room space. UV dechlorination provides distinct advantages over traditional technologies, leading to higher lifetime costs.

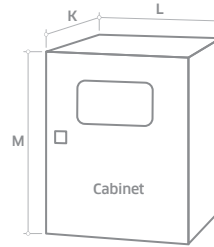
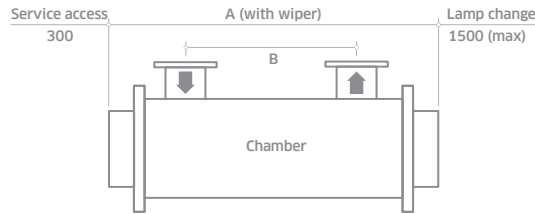
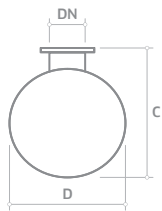


Application  
Optimised UV for  
Pharmaceuticals

# POTENTIAL LOCATION OF THE PHARMALINE DC PH™



KEY FEATURES	WHAT IT GIVES YOU	BENEFITS FOR YOU
<b>INTELLIGENCE</b>		
UV intensity monitor	Continuous verification of performance with in-built low intensity alarm	Easy to monitor and log system performance
<b>OPTIMISATION</b>		
Medium pressure lamp	Provides high intensity UV light at 200 to 400 nm wavelengths ideal for the destruction of free chlorine (HOCl and OCl <sup>-</sup> )	Prolongs the life of RO and EDI equipment by removing free chlorine
	Chemical free reduction of free chlorine	No risk of contamination or running out of chemical
	Unlike ACF does not require backwashing or media replacement	Saves on water and maintenance costs
	Provides high intensity germicidal wavelengths to treat the water	Prolongs the life of RO and EDI equipment compared to ACF by reducing the bio-burden
Designed for pre-treatment processes in the pharmaceutical industry	Flanged connections, standard internal finish	Reduced system costs when cGMP design not required
	FDA-approved materials used for all wetted parts	Industry compliant materials
Option of sanitary design for the pharmaceutical industry based on cGMP principles	Sanitary design with <0.38 µm internal surface finish and tri-clamp connections as standard	Industry compliance; reduced risk of microbiological contamination; enhances control of your process as part of a multi-barrier system
<b>INTEGRATION</b>		
Compact design	Can be fitted to skids Can be retrofitted to existing process	Easy integration
Robust design	Maximum of 2 service visits annually	Easy to maintain compared to ACF and SMB dosing



All dimensions are approximate for clearance purposes only. We have a policy of continuous product development, exact drawings are available on request. All specifications are subject to change without notification. Your distributor or our account manager can advise on correct sizing and specification requirements.

- \* Allow dimension L in front of cabinet for door opening and panel access.
- \*\* M dimension includes the space for the cabinet mounting brackets but you need to allow space below the cabinet for cable entry and access (minimum of 250 mm).
- \*\*\* CC: Control cabinet, PC: Power cabinet.

MODEL NUMBER	MAX POWER (KW)	MIN T10(%)	DIMENSIONS (MM)							APPROX WEIGHT (KG)			
			Chamber				Cab.	Cabinet (fan cooled)		Chamber	Cabinet		
			A	B	C	D	DN	No***	K*	L	M**	Empty	Fan cooled
PharmaLine DC PH 50	1.6	85	850	280	319	240	40	1	330	750	850	45	75
PharmaLine DC PH 100	2.7	85	1300	682	319	240	40	1	330	750	850	50	85
PharmaLine DC PH 200	4.2	85	1300	674	319	240	40	1	330	750	850	50	95
PharmaLine DC PH 230	4.2	85	1300	674	319	240	50	1	330	750	850	50	95
PharmaLine DC PH 250	5.8	85	1300	674	319	240	40	1	330	900	1100	50	160
PharmaLine DC PH 300	5.8	85	1300	674	319	240	50	1	330	900	1100	50	160
PharmaLine DC PH 305	5.8	85	1300	674	319	240	65	1	330	900	1100	50	160
PharmaLine DC PH 315	7.8	85	1300	674	420	290	80	1	330	1100	1100	50	160
PharmaLine DC PH 320	12.5	85	1300	674	420	290	80	1	330	1100	1100	50	290
PharmaLine DC PH 360	16.5	85	1300	674	420	290	100	1	330	1100	1600	65	310
PharmaLine DC PH 400	25.2	85	1300	674	505	410	50	1 CC	330	900	1100	140	165
								1 PC	330	1100	1600		282
PharmaLine DC PH 500	25.2	85	1300	674	505	410	100	1 CC	330	900	1100	140	165
								1 PC	330	1100	1600		282
PharmaLine DC PH 600	25.2	85	1300	674	505	410	150	1 CC	330	900	1100	140	165
								1 PC	330	1100	1600		282

#### UV CHAMBER

Material:	Stainless steel 316L / 1.4404
Internal finish:	As made pipe and tube, welds as laid, electropolished and passivated
External finish:	Sateen polish (120 grit) electropolished and passivated
Process (mating) connections:	Flange EN 1092-1 PN16
Drain connection:	Tri-clamp
End plate:	Removable end plate
Degree of protection:	IP65 equivalent to NEMA 4 but not for outside use
Arc tube (lamp):	Medium pressure
Arc tube enclosure:	Pure quartz (F200)
Number of arc tubes (lamps):	1 (DC PH 50-315), 3 (DC PH 320), 4 (DC PH 360), 6 (DC PH 400-600)
Expected lamp life:	8000 hours, 4000 hours DC 250 and 300
Temperature sensor:	Yes
UV monitor:	Wet UV monitor
Working fluid temperature:	1°C to 60°C (80°C unwiped)
Maximum CIP temperature:	95°C with cabinet electrically isolated
Hydrostatically pressure tested:	Yes to PED requirements EN 13445
Chamber mounting:	Horizontal only
Operating pressure:	6 bar (positive pressure only)
Seals:	EPDM, FDA 21 CFR 177.2600, USP Class VI 121°C approved

#### OPTIONS

Document Support Pack	
Cabinet material: Stainless steel 316	
Operation and Maintenance manual and printed Installation and Commissioning manual in Chinese, English, French, German and Spanish	
Wiper: Automatic (electrically driven)	
Quartz sleeve F240 (reduces performance)	
Flange options: ANSI 150, JIS, Table 'E' and tri-clamp	
Chamber internal finish: <0.38 µm welds polished out, electropolished and passivated	
Lead length: 20 m, 30 m or 50 m cabinet to chamber	
Welder Document Pack for chamber construction	
Maximum CIP temperature: 130°C (panel switched off)	

#### OPTIONS (CONTINUED)

Bleed valve: Hygienic valve with tri-clamp connection
Skid mounting (not shipboard or earthquake zone)
Operating pressure: 10 bar
Air vent connection: Tri-clamp blanked off
Stainless steel cabinet with air to air heat exchangers IP 56, NEMA 4X, relative humidity <95% non condensing. If fitted no UL listing. See sales drawings for sizes.
Aggressive water package: For 400 ppm to 20000 ppm chloride water
UV Disconnect™: Power cut-out for lamp access (except DC 320 to 500)
Water leak detection: Detects water leaks from quartz sleeve (except DC 320 to 500)

#### CABINET (CONTROLLER PHOTON)

Material:	Polyester coated carbon steel
Degree of protection:	IP54 NEMA 12
Supply voltages (nominal):	DC PH 50-100: 95 V to 260 V (+/-10%) DC PH 200-300: 190 V to 480 V (+/-10%) DC PH 320-500: 380 V to 480 V (+/-10%) 50/60 Hz
Operating temperature range:	5°C to 40°C
Relative humidity:	<85% non-condensing
Cooling fans:	Yes
Interconnecting cable lengths:	10 m cabinet to chamber

#### CUSTOMER OUTPUTS

4-20 mA passive output:	UV intensity %
VFC outputs:	System warning, lamp ready, low UV intensity, common trip, remote reset, ELCB or water leak, system available, local or remote mode

#### CUSTOMER INPUTS

4-20 mA passive or active input:	Flow meter
VFC inputs:	Remote stop/start and remote reset

#### CUSTOMER COMMUNICATIONS PORT

None
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#### APPROVALS

CE marked, UL listed E 149108



# PharmaLine DC PH

Also available in our Pharmaceutical product range...



**PHARMALINE  
PQ+PQH**

3rd party validated systems for critical treatment or as a pathogen barrier



**PHARMALINE  
D+DH**

Treatment as part of a multi barrier approach or secondary maintenance



**PHARMALINE  
DO**

Ozone removal and treatment

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# NUVONIC

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