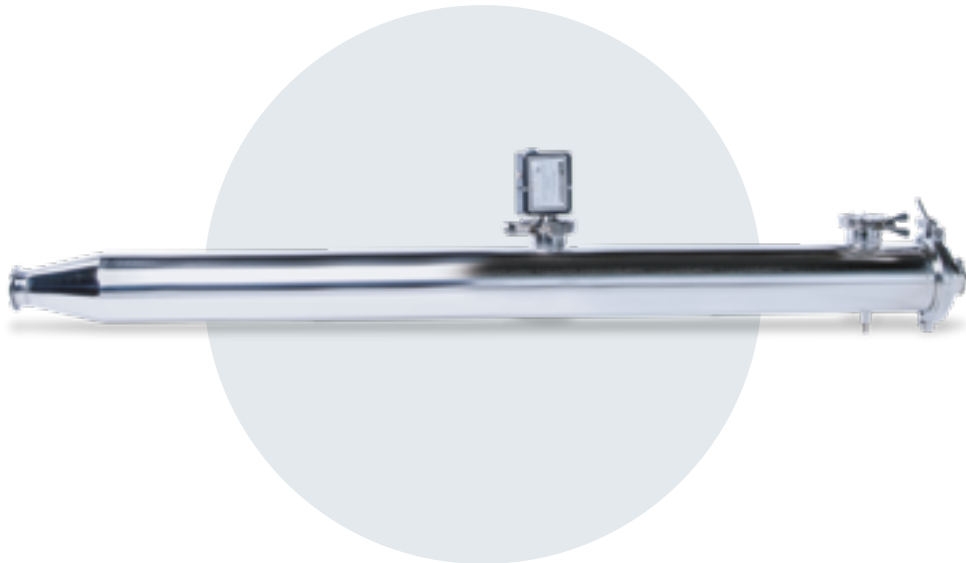


We UVCare...



# Application Optimized UV for Pharmaceuticals

**PHARMALINE D AF H**



UV disinfection for  
Purified Water and  
distribution  
(Hygienic Design-H)

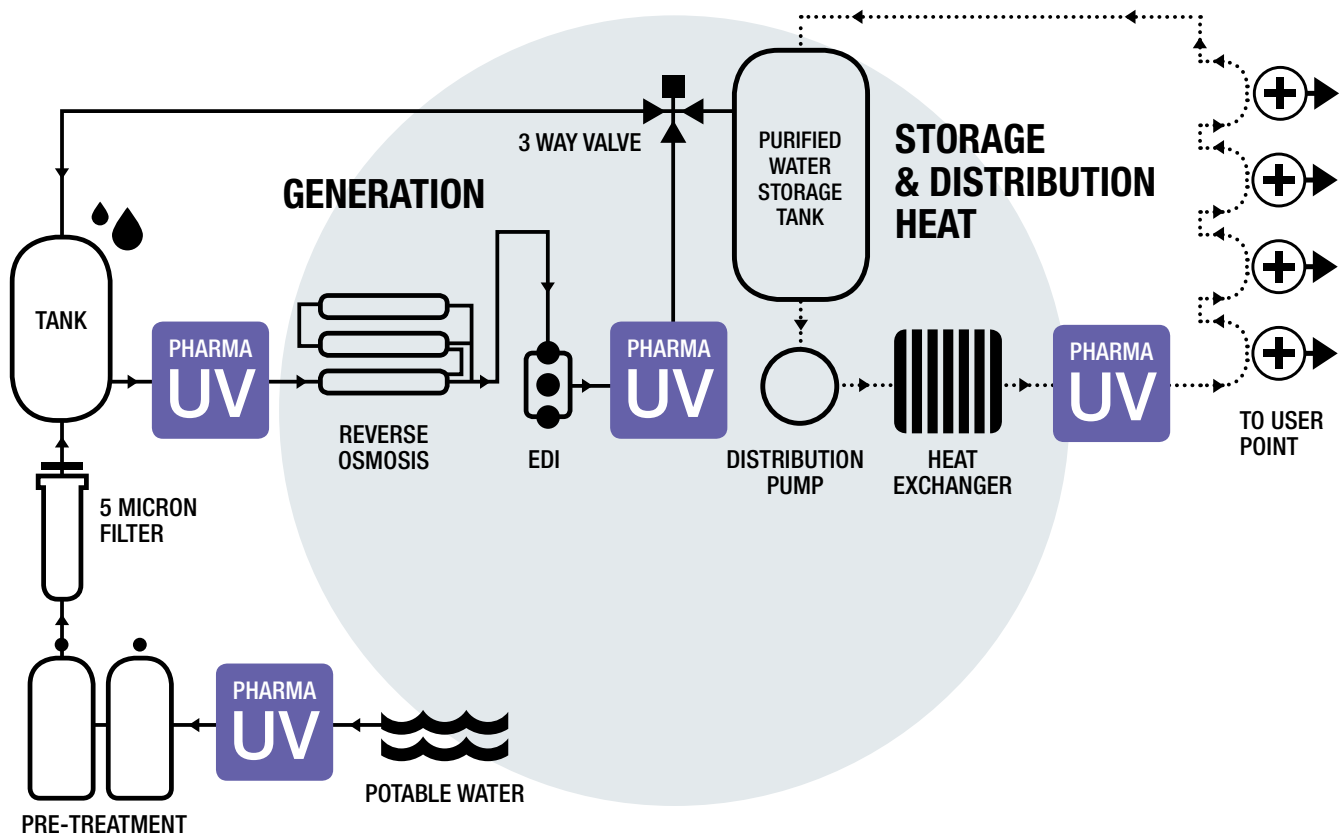
Our PharmaLine D AF H systems are designed for hygiene based on cGMP principles and aimed specifically at providing UV disinfection in Pharmaceutical Purified Water Generation and distribution loop systems where sanitary design is critical. By using a UV system you will disinfect the water, eliminate objectionable organisms, reduce the bio-burden, protect against bio-fouling, lead to fewer CIP / SIP cycles and lower operating costs. Each system comes with a UV monitor to measure the germicidal output of the UV system and make it easy to monitor and log performance. The systems all use low pressure amalgam lamps providing an energy efficient germicidal wavelength and long lamp life to reduce operating costs.

**berson**

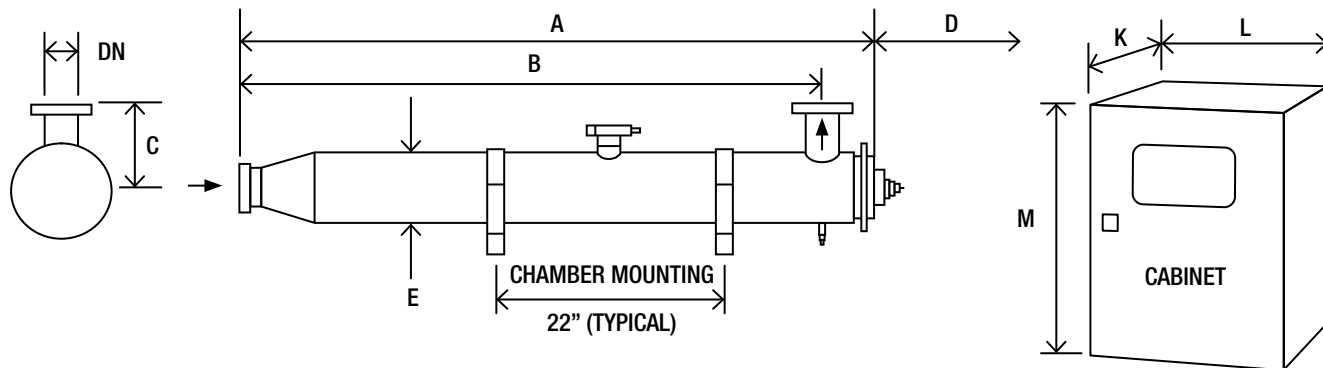
**hanovia**

**aquionics**

# The Operating Cycle of the PharmaLine D AF H™



KEY FEATURES	WHAT IT GIVES YOU	BENEFITS FOR YOU
<b>INTELLIGENCE</b>		
UV intensity monitor measuring germicidal wavelengths	Continuous verification of performance with in-built low intensity alarm	Easy to monitor and log system performance
<b>OPTIMIZATION</b>		
Single low pressure amalgam lamp technology (LPHO)	Targeted microbiological wavelength	Proven log reduction of microorganisms as part of a multi-barrier purified water process
		Reduced bio-burden in pre-treatment equipment, leading to fewer CIP / SIP cycles and optimised production efficiency
		Protects RO membranes from bio-fouling, reducing CIP frequency and downtime
Designed for the pharmaceutical industry based on cGMP principles	Sanitary design with <math><0.38 \mu\text{m}</math> 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
	FDA-approved materials used for all wetted parts	
<b>INTEGRATION</b>		
Compact design	Can be fitted to skids	Easy integration
	Can be retrofitted to existing process	



PharmaLine D AF H (low pressure amalgam lamp)			Dimensions (Inches)									Approx weight (lb)	
Model Number	Maximum Power (W)	Min T <sub>10</sub> (%)	A	B	C	D	E	DN***	K*	L	M**	Chamber (Empty)	Control Cabinet
PharmaLine D AF H 0003	115	60	36	33	3	31.5	2.5	1	6.7	11.8	19.3	11	24.3
PharmaLine D AF H 0005	115	60	54.6	50	3.2	51	4	1.5	6.7	11.8	19.3	19.8	24.3
PharmaLine D AF H 0008	165	60	54.6	50	3.2	51	4	2	6.7	11.8	19.3	19.8	24.3
PharmaLine D AF H 0016	345	60	54.6	50	3.2	51	4	2	6.7	11.8	19.3	19.8	24.3
PharmaLine D AF H 0030	345	60	17	51	6	51	6.6	3	6.7	11.8	19.3	53	24.3
PharmaLine D AF H 0090	600	60	78	71.7	8	75	8.1	6	9	15.7	27.2	102	48.5

\* 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 9.8").

\*\*\* DN tri-clamp sizes over 3" may not fit with standard sanitary tube. Please consult with Aquionics for correct dimensions.

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.

UV CHAMBER	
Material:	StSt 316L / 1.4404
Internal finish:	<0.38 µm Ra, welds left as laid, electropolished and passivated
External finish:	Sateen polish (120 grit) electropolished and passivated
Process (mating) connections:	Tri-clamp. For sizes see Tri-clamp technical bulletin 910425-0001
Drain connection:	Tri-clamp to ISO 2852 Table 2
End plate:	Removable tri-clamp
Degree of protection:	IP65 equivalent to NEMA 4 but not for outside use
Arc tube (lamp):	Low pressure amalgam
Arc tube enclosure:	Pure quartz
Number of arc tubes (lamps):	1
Expected lamp life:	12000 hours
Temperature sensor:	On D AF H 0090 only
UV monitor:	Wet UV monitor
Working fluid temperature:	41°F to 104°F
Maximum CIP temperature:	266°F (D AF H 0003 – D AF H 0016) 203°F (D AF H 0030 – D AF H 0090) with cabinet electrically isolated
Hydrostatically pressure tested:	Yes to PED requirements EN 13445
Chamber mounting:	Horizontal or vertical except D AF H 0090 which is horizontal only
Operating pressure:	10 bar
Seals:	EPDM, FDA 21 CFR 177.2600, USP Class VI 250°F approved

OPTIONS	
Document Support Pack	
Cabinet material: Stainless steel 304	
Operation and Maintenance manual and printed Installation and Commissioning manual in Chinese, English, French, German and Spanish	
Maximum CIP temperature: 266°F (D AF H 0030 – D AF H 0090, panel switched off)	
Welder Document Pack for chamber construction	
Skid mounting	
CABINET	
Material:	Polyester coated carbon steel
Degree of protection:	IP65 / NEMA 4 except D AF H 0090 which is IP54 NEMA 12
Supply voltages (nominal):	230 V (207 V to 253 V) 50/60 Hz
Operating temperature range:	41°F to 104°F
Relative humidity:	<95% non-condensing
Cooling fans:	D AF H 0090 only
Interconnecting cable lengths:	16.4 ft
CUSTOMER OUTPUTS	
4-20 mA passive output:	UV intensity %
VFC outputs:	Lamp ON and Low UV warning
CUSTOMER INPUTS	
VFC inputs:	Remote stop/start and remote reset
CUSTOMER COMMUNICATIONS PORT	
None	
APPROVALS	
CE marked	



## PHARMALINE D AF H

Also available in our Pharmaceutical product range...



### PHARMALINE PQ+PQH

3rd party validated systems for critical disinfection



### PHARMALINE DO

Ozone removal and disinfection



### PHARMALINE DC

Chlorine removal



[www.weuvcare.com](http://www.weuvcare.com)

BERSON, HANOVIA & AQUIONICS WORKING TOGETHER AS PART OF THE HALMA GROUP.

#### Netherlands

t: +31 40 2907777  
e: sales@bersonuv.com

#### China

t: +86 21 61679599  
e: china@hanovia.com

#### USA

t: +1 980 256 5700  
e: sales@aquionics.com

#### Germany

t: +49 611 44575375  
e: verkauf@hanovia.com

#### Malaysia

t: +60 16 440 8834  
e: asia@hanovia.com

#### Canada

t: +1 980.256.5700  
e: sales@aquionics.com

#### United Kingdom

t: +44 1753 515300  
e: sales@hanovia.com

#### Mexico

t: +1 980.256.5700  
e: sales@aquionics.com



A **Halma** company