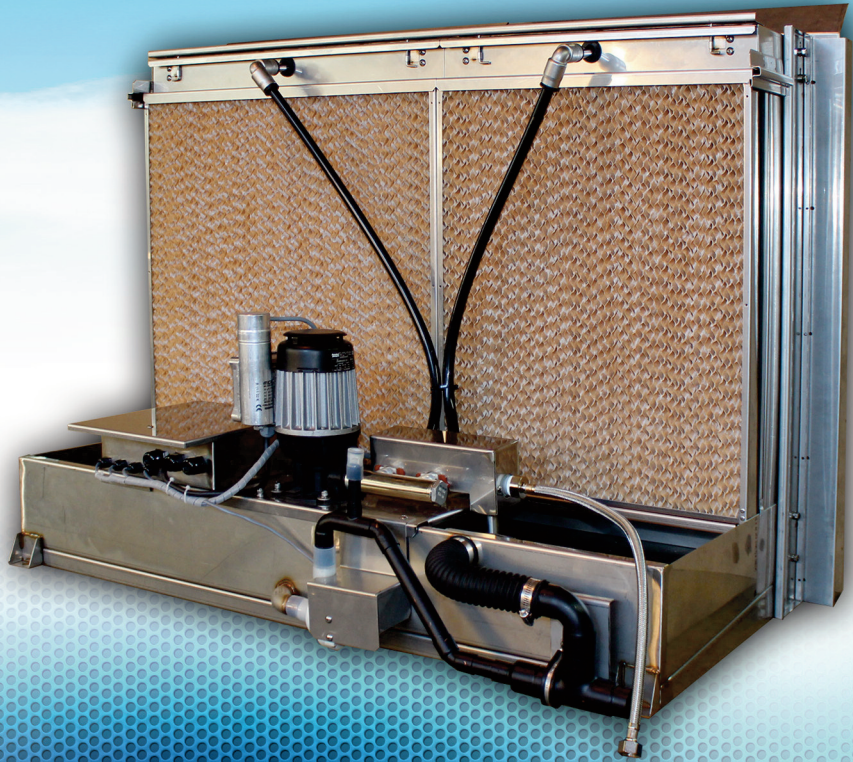


# SKV EVAPORATIVE COOLING HUMIDIFIER



**neptronic®**  
[www.neptronic.com](http://www.neptronic.com)

# SKV EVAPORATIVE COOLING HUMIDIFIER



± 1% RH



Up to 12°C

In an evaporative humidifier, water is supplied to the top of the evaporative module and flows down the wet media (like a waterfall). Warm dry air passes through the wet media, evaporates water and thus raises the humidity level. The SKV also offers up to 12°C (21.5°F) of cooling as a result of the transfer of energy when the water evaporates.

## SKV Advantages

- ▶ Very low energy consumption (< 1kW)
- ▶ Hygienic operation
- ▶ Environmentally friendly
- ▶ Very low maintenance
- ▶ Free cooling up to 12°C (21.5°F)
- ▶ Custom modular design to fit any application
- ▶ Low pressure drop

## Typical Applications

The SKV Evaporative Cooling humidifier is ideal for any application requiring cost effective and hygienic solutions for humidification needs with free cooling up to 12°C (21.5°F). With very low energy and water consumption, the SKV is the perfect complement to any green or LEED building. The SKV can be installed in applications such as:

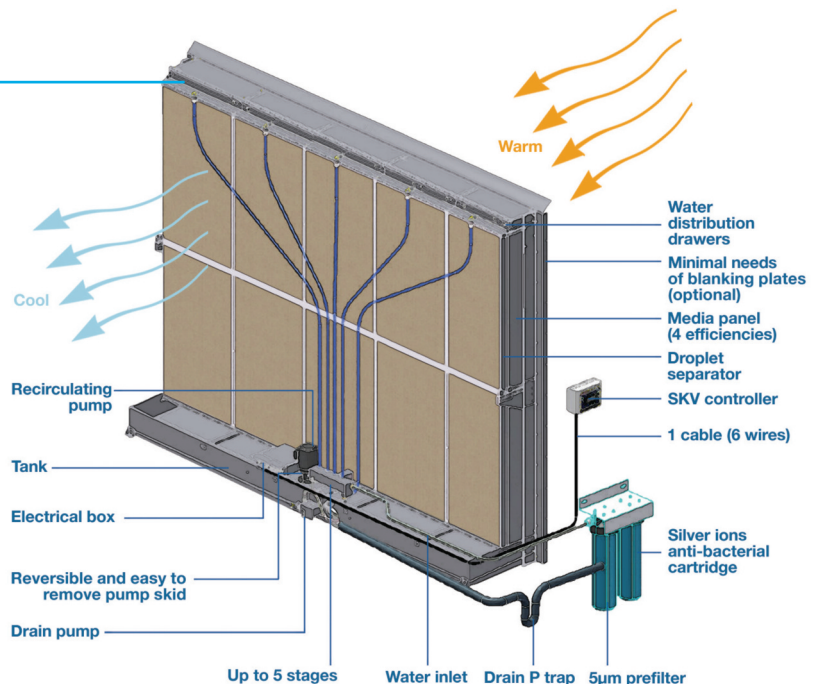
- ▶ Data Centers
- ▶ Paint Shops
- ▶ Amphitheaters
- ▶ Greenhouses
- ▶ Commercial Buildings



## Typical Installation

Use the Neptronic Humidisoft web application to customize the evaporative module to your exact duct dimensions. This minimizes the need of blanking plates, thus ensuring a lower pressure drop.

The SKV is easy to install. Just connect the drain, water supply, power supply, and 6 low-voltage wires between the controller and the evaporative module. The controller's stainless steel IP56 rated enclosure allows for outdoor installations.



# System Overview

## Inorganic Fibreglass Media

Hygienic, maintenance free, fire resistant and incombustible corrugated media, provides exceptional moisture absorption, for continuous humidification and evaporative cooling even at high air velocity.

## Parametric Design

Use Neptronic Humidisoft web application to customize the evaporative module to your exact duct dimensions. This minimizes needs of blanking plates, thus ensuring a lower pressure drop.

## Water Distribution Drawer

Easy to remove for cleaning and maintenance

## Circulation Pump

Robust pump functions with any water type (tap, RO or Di).

## Staging Valves

Offers up to 5 stages providing very flexible and accurate control.

## Drain Pump

Fast and reliable pump that can lift the drained water.

## Silver Ion Cartridge

Water pretreated with 5µm pre-filter and anti-bacterial silver ions prevent microbial growth.

## SKV Controller

The SKV controller is configured specifically for your SKV Evaporative Humidifier.

- ▶ Microprocessor based, field configurable controller
- ▶ Master/slave configuration for up to 4 evaporative modules
- ▶ On/Off or modulating control type
- ▶ Real-time clock with flexible scheduler
- ▶ Simple viewing and exporting of trending log and alarm log
- ▶ In-field firmware upgradeable via SD card
- ▶ Easy connection with only one 6-wire control cable
- ▶ Stainless steel IP56 rated (equivalent to NEMA type 4) enclosure for outdoor installations
- ▶ 8 buttons and menu driven 128 x 64 LCD

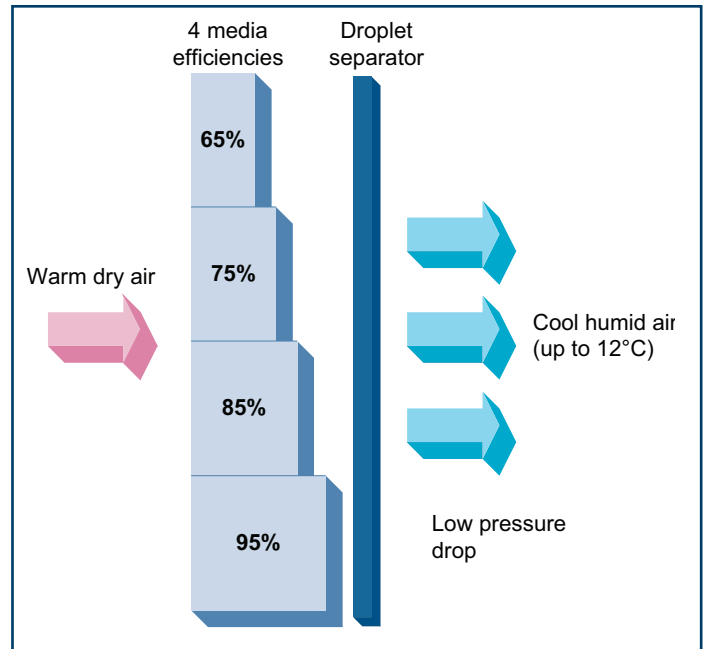


# ■ Hygienic and Safe

## SKV Media Panels

The SKV Evaporative corrugated media is made of fibreglass material bounded with a special inorganic compound, which allows exceptional moisture absorption, ensuring continuous humidification and evaporative cooling even at a high air velocity. The inorganic compound makes it hygienic, fire resistant and incombustible.

- ▶ Inorganic and inflammable material
- ▶ Safe & hygienic
- ▶ Low pressure drop
- ▶ Trouble free maintenance
- ▶ No water treatment required
- ▶ No risk of over saturation
- ▶ Available in 4 efficiencies: 65%, 75%, 85% and 95%
- ▶ Media frame made of stainless steel
- ▶ Media easily removable from stainless steel frame



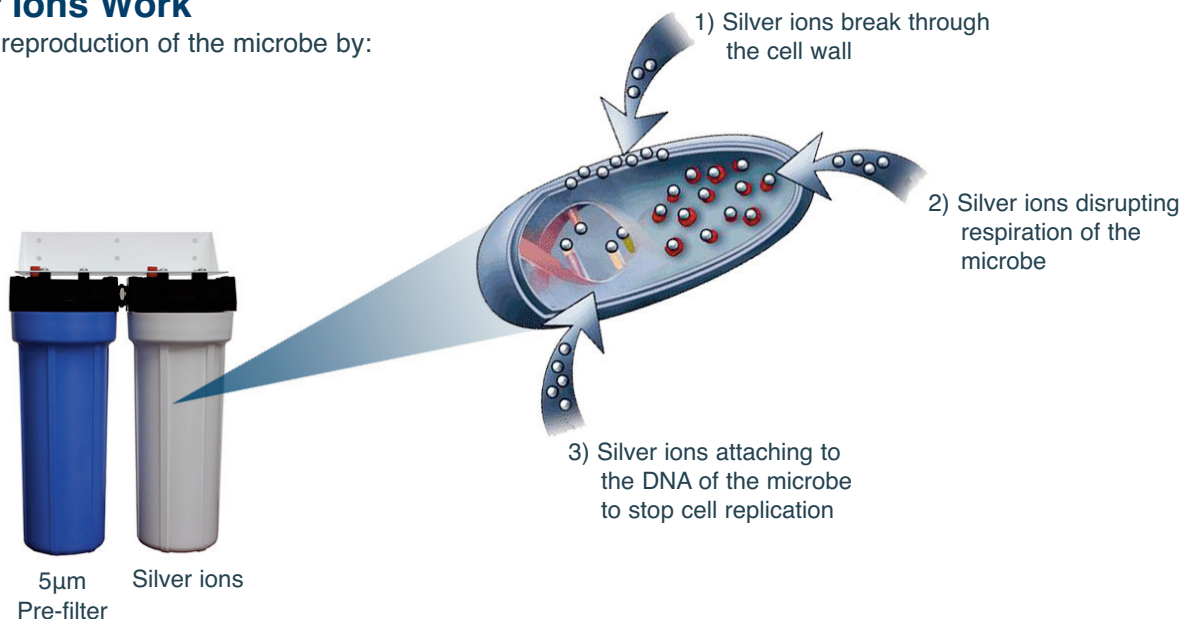
## Water Quality

Hygienic operation with any type of supplied water quality (tap, RO or Di).

- ▶ Self-cleaning, odor free media
- ▶ Water treated with 5µm pre-filter
- ▶ Anti-bacterial silver ion dosing cartridges prevent microbial growth
- ▶ UV sterilizer on water line (optional)

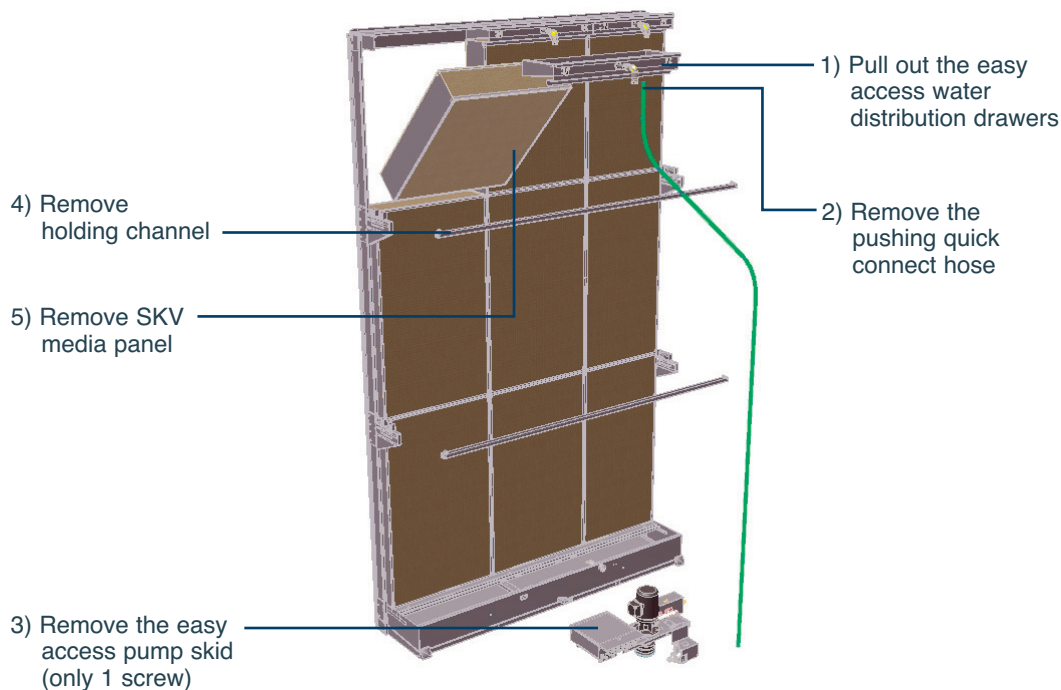
## How Silver Ions Work

They inhibit the reproduction of the microbe by:



## ■ Easy Maintenance

The SKV has been designed for easy access to components of the evaporative module for maintenance.  
Five easy steps:



## Nomenclature

SKV R 95 C 1 D C

### Type

R: Recirculation  
D: Direct Feed  
O: OEM

### Media Efficiency

65: 65% efficiency  
75: 75% efficiency  
85: 85% efficiency  
95: 95% efficiency

### Controller

C: Controller (standard)  
B: BACnet controller  
-: None

### No. of Stages

1: 1 Stage  
2: 2 Stages  
3: 3 Stages  
4: 4 Stages  
5: 5 Stages

### Droplet

D: Droplet separator included

### Voltage

A: 120Vac  
C: 230Vac

## Standards for media

### European:

- EN 13501-1, Fire classification of construction products and building elements-Part1:  
Classification using data from reaction to fire tests.
  - EN 1182, Non combustibility test method of building materials
  - EN 13823, Reaction to fire test for building products. Fire class **A2**, Smoke production class: **s2**, flaming particles class: **d0**
- ISO 846, Evaluation of the action of microorganisms' microbiology testing lab
- ILH Berlin tested and found to fulfill the requirements from VDI6022 Part I, suitable for use in HVAC-systems.

### North American:

- UL 900, Air Filter Units
  - ETL tested, Class I (no flame or spark, Less than 2.5sq.in of smoke)

# ■ Humidisoft

## Specify your SKV Online



## Humidifier System Design and Specification Web Application

Ready to specify your SKV Humidifier? Neptronic has developed a web application that saves you time when sizing and specifying Neptronic commercial, industrial or residential humidifiers.

## ■ Features

- ▶ Automatic humidification load calculation
- ▶ Customize evaporative module to exact duct dimensions
- ▶ Web based
- ▶ Selection specific report generator
- ▶ Only options related to your selections appear
- ▶ Manage users, clients, job sites and humidifier specs
- ▶ History log

## ■ Easy to Use

Go to [neptronic.com](http://neptronic.com), select Humidisoft and log in. Enter design requirements and Humidisoft automatically calculates the humidification load and adjusts available options based on your selections. When done print a complete schedule, CSI and/or submittal report at the click of a button.

Project	Humidifier	Dispersion	Options	Reports	Pricing
<b>Type</b> <input type="radio"/> Isothermal (Hot Steam) <input checked="" type="radio"/> Adiabatic (cold mist)					
<b>Category</b> <input type="radio"/> SKA Atomizing <input checked="" type="radio"/> SKV Evaporative					
<b>Indoor Conditions</b> Temperature: 22.0 °C Relative Humidity: 40 %		<b>Application</b> <input checked="" type="radio"/> Humidity <input type="radio"/> Cooling		<b>Distribution</b> <input checked="" type="radio"/> In Duct <input type="radio"/> In Space	
<b>Ventilation System</b> Total Air Flow: 60000 m³/hr    Minimum OFF Temperature: 8 °C Outside Air: 100 % Frost Coil (Δ Temp): 0.0 °C    Pre-Heat (Δ Temp): 2.9 °C OFF (supply) Temp: 22.0 °C					
<b>Humidifier(s)</b> <input type="checkbox"/> Enter Load Manually    Calculated Load: 137.41 kg/hr    Total Capacity: 137.41 kg/hr					

Project	Humidifier	Dispersion	Options	Reports	Pricing									
<b>Duct Dimensions</b> Width: 3500 mm Height: 3000 mm		<b>System Pressure</b> <input checked="" type="radio"/> Negative <input type="radio"/> Positive												
<b>Mixed Conditions</b> Temperature: 24 °C Relative Humidity: 25 %		<b>ON Conditions</b> Temperature: 26.9 °C Relative Humidity: 21 %		<b>OFF Conditions</b> Temperature: 22 °C Relative Humidity: 40 %										
<b>Humidification</b> Humidification Efficiency: 37 % Face Velocity: 2.5 m/s														
<b>Dispersion</b> <table border="1"> <thead> <tr> <th>Model</th> <th>Dimension (width x height)</th> <th>Pressure Drop</th> </tr> </thead> <tbody> <tr> <td>SKV SKV Evaporative</td> <td>3000mm x 2750mm</td> <td>30Pa</td> </tr> <tr> <td colspan="2"></td> <td>Total: 30Pa</td> </tr> </tbody> </table>						Model	Dimension (width x height)	Pressure Drop	SKV SKV Evaporative	3000mm x 2750mm	30Pa			Total: 30Pa
Model	Dimension (width x height)	Pressure Drop												
SKV SKV Evaporative	3000mm x 2750mm	30Pa												
		Total: 30Pa												

## ENGINEERED TO LAST

### ELECTRIC



#### SK300

- ▶ Capacities from 6 - 270 lb/hr
- ▶ Permanent cleanable chamber
- ▶ Outdoor enclosure available

### RESIDENTIAL



#### SKR

- ▶ Capacities from 4.5 - 12 lb/hr
- ▶ Permanent cleanable chamber
- ▶ Reliable Siphon drain

### GAS FIRED



#### SKG3000

- ▶ Capacities from 110 - 810 lb/hr
- ▶ Modular design
- ▶ Outdoor enclosure available

### STEAM TO STEAM



#### SKS

- ▶ Capacities from 33 - 1250 lb/hr
- ▶ Scale management system
- ▶ Insulated external panels

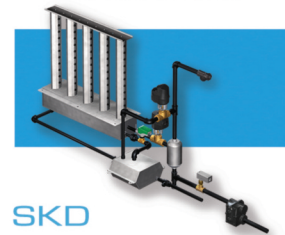
### EVAPORATIVE



#### SKV

- ▶ Free cooling up to 12 °C (22 °F)
- ▶ Custom design to fit your application
- ▶ Hygienic operation with PureFlo Ag+ dosing system

### DIRECT STREAM



#### SKD

- ▶ Capacities from 7 - 1157 lb/hr
- ▶ Jacketed or Multi-Steam Type
- ▶ Unique Electronic Steam Controller

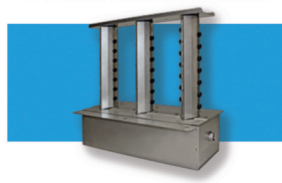
### HIGH PRESSURE ATOMIZER



#### SKH

- ▶ Capacities up to 2600 lb/hr
- ▶ Up to 32 zones
- ▶ Installation In-duct or In-space

### STEAM DISTRIBUTION



#### Distribution

- ▶ Multi-Steam distribution
- ▶ S.A.M & S.A.M.E2 wands
- ▶ SDU (Space distribution unit)

### HUMIDITY CONTROLS



#### Controls

- ▶ Humidity controls / sensors
- ▶ Safety controls
- ▶ BACnet compatible