

# SKV EVAPORATIVE COOLING HUMIDIFIER



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

# SKV EVAPORATIVE COOLING HUMIDIFIER

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 of cooling as a result of the transfer of energy when the water evaporates.



Up to 12°C



± 1% RH

## SKV Advantages

- Very low energy consumption (< 1kW)
- Hygienic operation
- Environmentally friendly
- Very low maintenance
- Free cooling up to 12°C
- 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. 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

■ Amphitheatres

■ Greenhouses

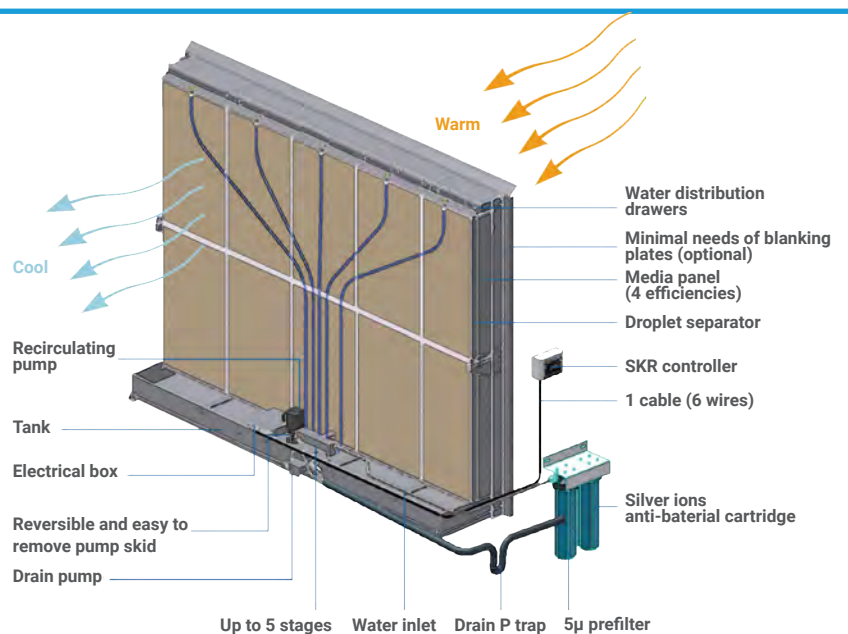
■ Commercial Buildings



## 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 plate, thus ensuring a lower pressure drop.

## Circulation Pump

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

## Water Distribution Drawer

Easy to remove for cleaning and maintenance

## 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.

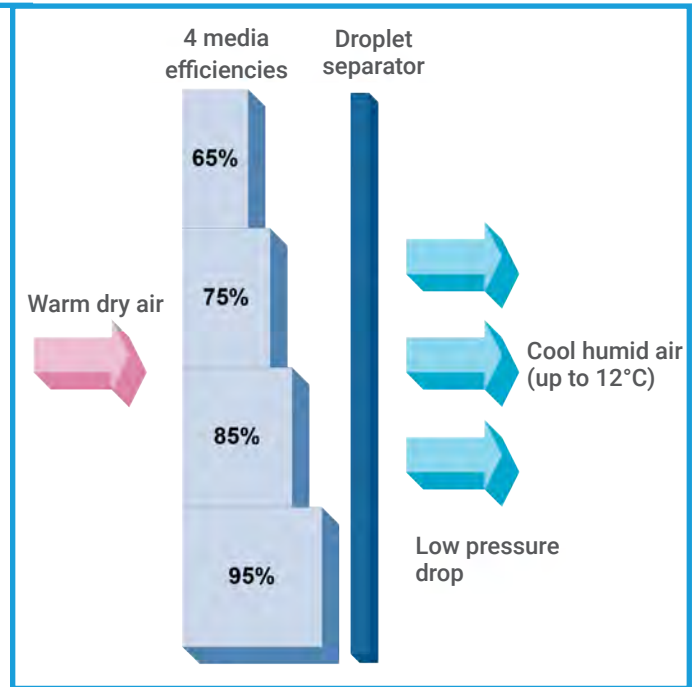
- Microprocessor based, field configurable controller
- Master/slave configuration for up to 4 evaporative modules
- On/Off or modulating control type
- Real-time clock with flexible scheduler
- Simple viewing and exporting of trending log and alarm log
- In-field firmware upgradeable via SD card
- Easy 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



## 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

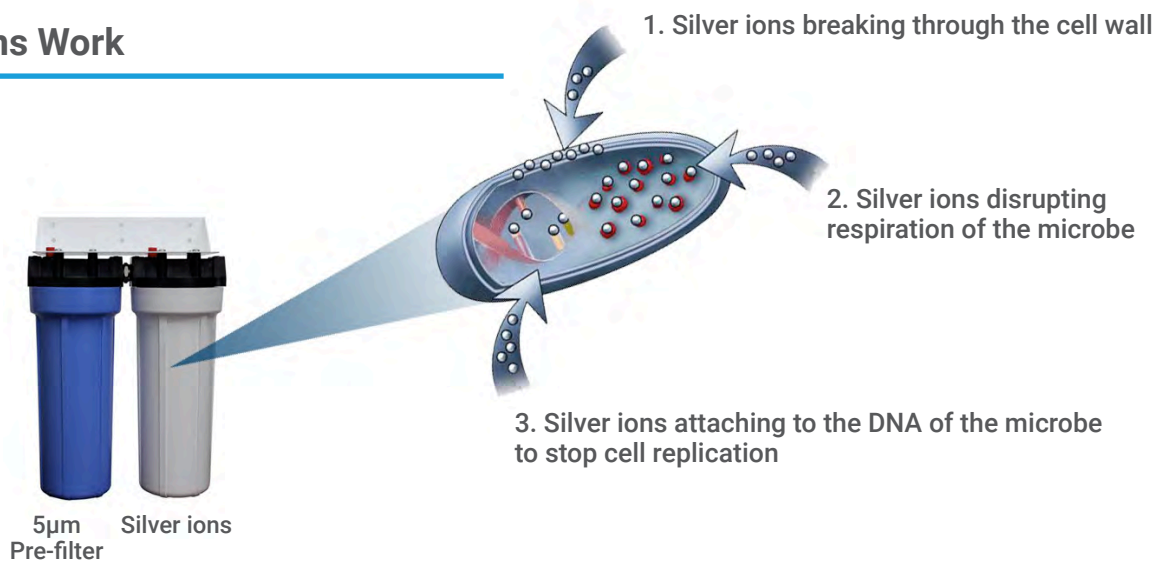


## Water Quality

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

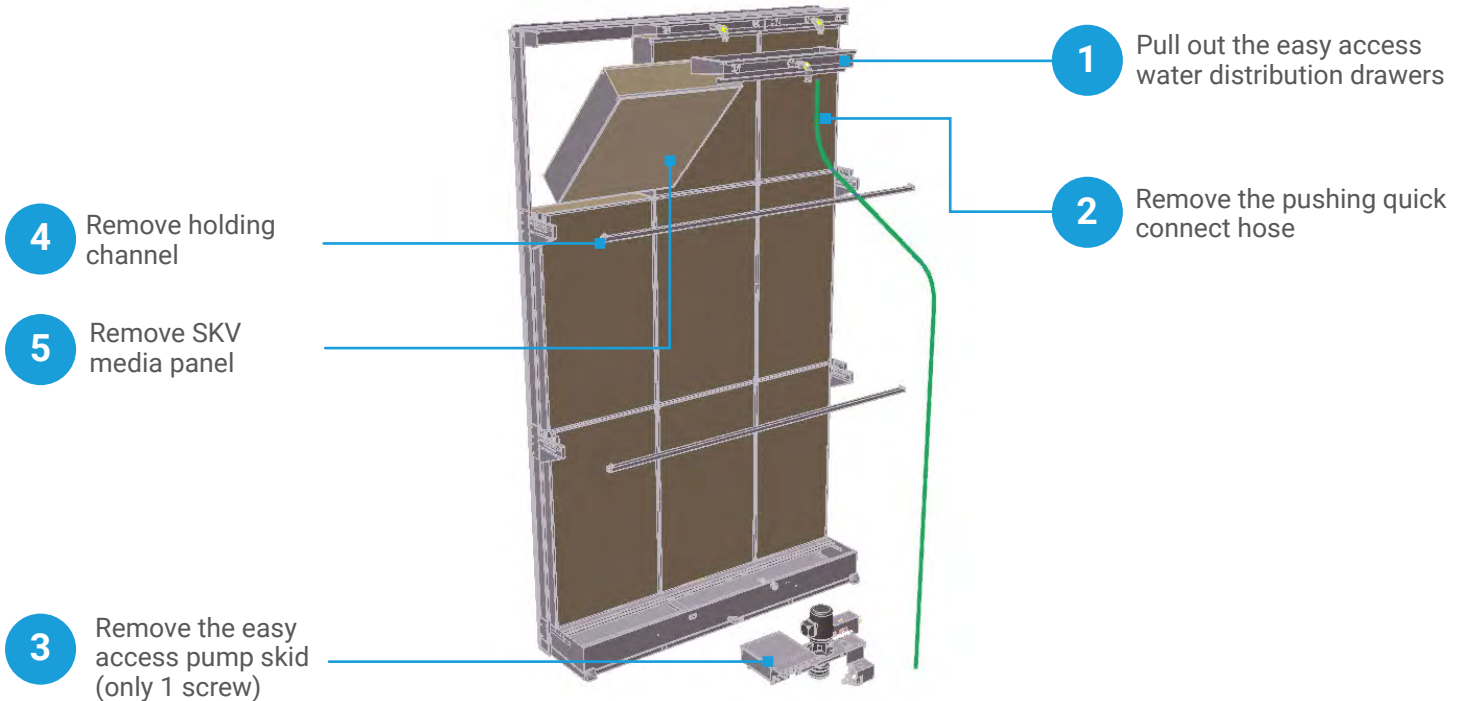
- Self-cleaning, odor free media
- Water treated with 5µm pre-filter
- Anti-bacterial silver ion dosing cartridges prevent microbial growth
- UV sterilizer on water line (optional)

## How Silver Ions Work



# 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 test
- 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)



## Specify your SKV online

### Humidifier System Design and Specification Web Application

Ready to specify your 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

Project	Humidifier	Dispersion	Options	Reports	Pricing
Type					
<input type="radio"/> Isothermal (Hot Steam) <input checked="" type="radio"/> Adiabatic (cold mist)					
Category					
<input type="radio"/> SKA Atomizing <input checked="" type="radio"/> SKV Evaporative					
Indoor Conditions		Application		Distribution	
Temperature	22.0 °C	<input checked="" type="radio"/> Humidity <input type="radio"/> Cooling		<input checked="" type="radio"/> In Duct <input type="radio"/> In Space	
Relative Humidity	40 %				
Ventilation System					
Total Air Flow	60000 m <sup>3</sup> /hr	Minimum OFF Temperature		8 °C	
Outside Air	100 %	Pre-Heat(Δ Temp)			
Frost Coil (Δ Temp)	0.0 °C	2.9 °C			
OFF (supply) Temp	22.0 °C				
Humidifier(s)					
<input type="checkbox"/> Enter Load Manually		Calculated Load	127.41 kg/hr	Total Capacity	137.41 kg/hr

## 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
Duct Dimensions		System Pressure			
Width	3500 mm	<input checked="" type="radio"/> Negative <input type="radio"/> Positive			
Height	3000 mm				
Mixed Conditions		ON Conditions		OFF Conditions	
Temperature	24 °C	Temperature	26.5 °C	Temperature	22 °C
Relative Humidity	25 %	Relative Humidity	21 %	Relative Humidity	40 %
Humidification					
Humidification Efficiency		37 %			
Face Velocity		2.5 m/s			
Dispersion					
Model	Dimension (width x height)	Pressure Drop			
SKV SKV Evaporative	3000mm x 2750mm	30Pa			
		Total: 30Pa			

## Electric



### SKE4

- Capacities from 5 - 120 kg/hr
- Remove chamber easily, without tools
- Outdoor unit available

## Gas Fired



### SKG4

- Capacities from 50 - 400 kg/hr
- Modular design
- Outdoor unit available

## Steam to Steam



### SKS4

- Capacities from 15 - 670 kg/hr
- Scale management system for easy maintenance
- Insulated external panels

## Residential



### SKR

- Capacities from 3 - 5 kg/hr
- Permanent cleanable chamber
- Reliable siphon drain

## High Pressure Atomizer



### SKH

- Capacities up to 2100 kg/hr
- Up to 10 zones
- Installation in-duct or in-space

## Evaporative



### SKV

- Free cooling up to 12°C
- Custom design to fit your application
- Hygienic operation with silver ion dosing system

## Direct Steam



### SKD

- Capacities from 2 - 750 kg/hr
- Jacketed or Multi-Steam™ SD/HD
- Unique electronic steam controller
- Optional pressurized condensate return (PCR) system

## Steam Distribution



### Distribution

- Multi-Steam™ SD/HD distribution
- S.A.M. & S.A.M.E2 wands
- SDU (Space distribution unit)

## Humidity Controls



### Controls

- Humidity controls/sensors
- Safety controls
- BACnet compatible

MANUFACTURER OF ■

- HVAC CONTROLS
- ELECTRIC ACTUATORS
- ACTUATED VALVES
- HUMIDIFIERS
- ELECTRIC HEATERS

■  
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