

SKV EVAPORATIVE COOLING HUMIDIFIER



neptronic®
www.neptronic.com

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± 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 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
- ▶ 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:

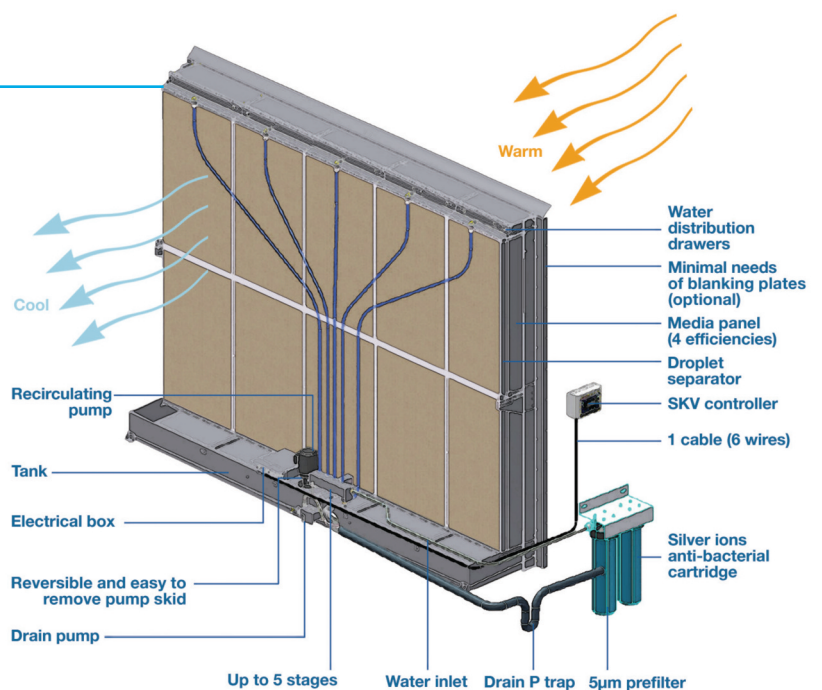
- ▶ Data Centers
- ▶ Paint Shops
- ▶ Amphitheatres
- ▶ Greenhouses
- ▶ Commercial Buildings



Typical Installation

Use the Neptonic 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 Fiberglass 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

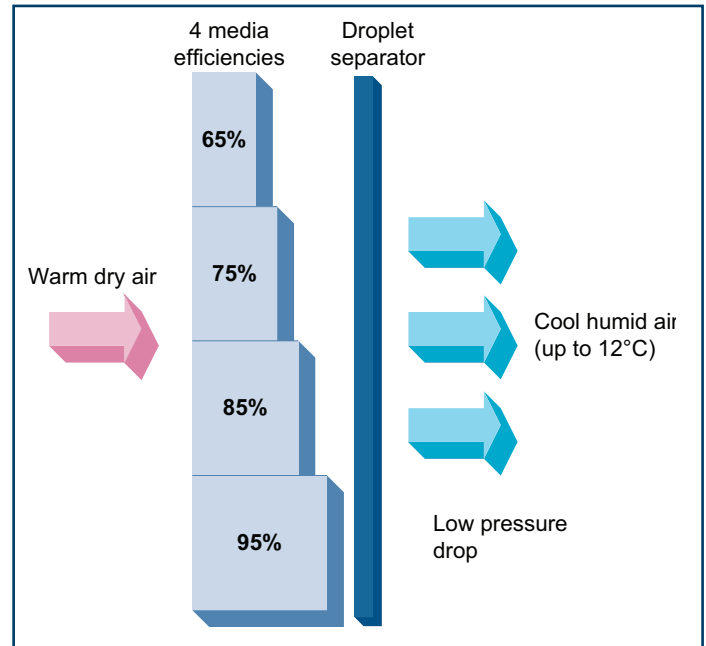


Hygienic and Safe

SKV Media Panels

The SKV Evaporative corrugated media is made of fiberglass 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



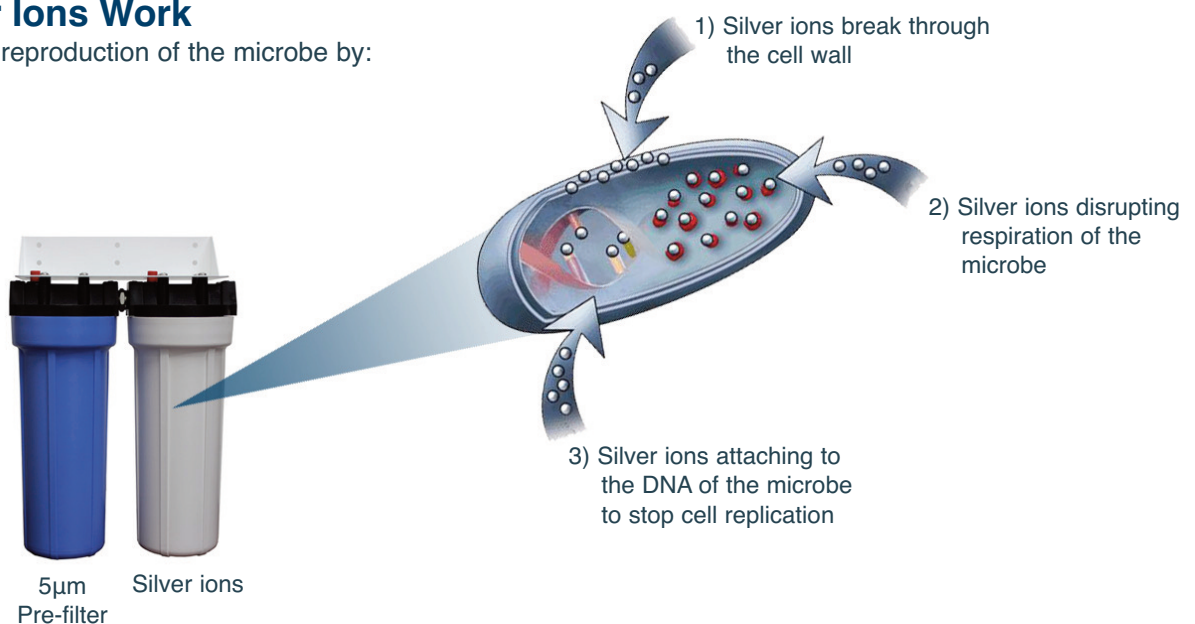
Water Quality

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)

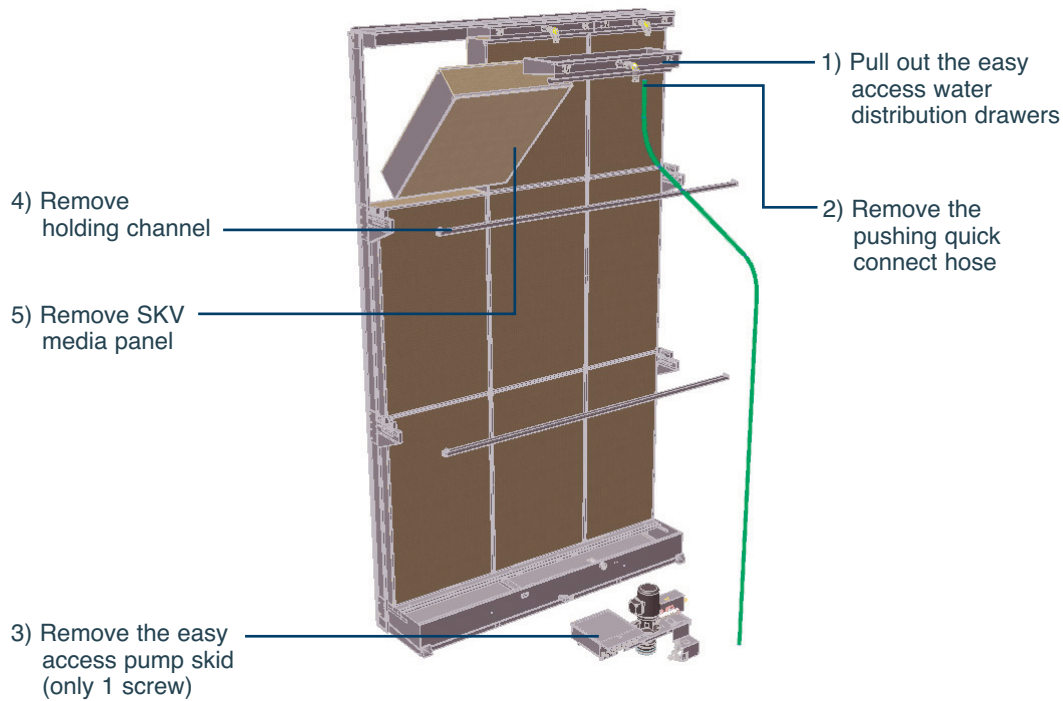
How Silver Ions Work

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? Nepronic has developed a web application that saves you time when sizing and specifying Nepronic 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 nepronic.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
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 <input type="text" value="22.0"/> °C		<input checked="" type="radio"/> Humidity		<input checked="" type="radio"/> In Duct	
Relative Humidity <input type="text" value="40"/> %		<input type="radio"/> Cooling		<input type="radio"/> In Space	
Ventilation System					
Total Air Flow <input type="text" value="60000"/> m ³ /hr		Minimum OFF Temperature <input type="text" value="8"/> °C			
Outside Air <input type="text" value="100"/> %		Frost Coil (Δ Temp) <input type="text" value="0.0"/> °C			
OFF (supply) Temp <input type="text" value="22.0"/> °C		Pre-Heat(Δ Temp) <input type="text" value="2.9"/> °C			
Humidifier(s)					
<input type="checkbox"/> Enter Load Manually Calculated Load <input type="text" value="137.41"/> kg/hr Total Capacity <input type="text" value="137.41"/> kg/hr					

Project	Humidifier	Dispersion	Options	Reports	Pricing
Duct Dimensions		System Pressure			
Width <input type="text" value="3500"/> mm		<input checked="" type="radio"/> Negative			
Height <input type="text" value="3000"/> mm		<input type="radio"/> Positive			
Mixed Conditions		ON Conditions		OFF Conditions	
Temperature <input type="text" value="24"/> °C		Temperature <input type="text" value="26.9"/> °C		Temperature <input type="text" value="22"/> °C	
Relative Humidity <input type="text" value="25"/> %		Relative Humidity <input type="text" value="21"/> %		Relative Humidity <input type="text" value="40"/> %	
Humidification					
Humidification Efficiency <input type="text" value="37"/> %					
Face Velocity <input type="text" value="2.8"/> m/s					
Dispersion					
Model	Dimension (width x height)	Pressure Drop			
SKV SKV Evaporative	3000mm x 2750mm	30Pa			
Total: 30Pa					

ENGINEERED TO LAST

ELECTRIC



SKE

- ▶ Capacities from 5-120 kg/hr
- ▶ Permanent cleanable chamber
- ▶ Outdoor enclosure available

RESIDENTIAL



SKR

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

GAS FIRED



SKGE3

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

STEAM TO STEAM



SKS

- ▶ Capacities from 15-670 kg/hr
- ▶ Scale management system
- ▶ Insulated external panels

EVAPORATIVE



SKV

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

DIRECT STEAM



SKD

- ▶ Capacities from 3-711 kg/hr
- ▶ Jacketed or Multi-Steam Type
- ▶ Unique Electronic Steam Controller

HIGH PRESSURE ATOMIZER



SKH

- ▶ Capacities up to 1200 kg/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

MANUFACTURER OF ■

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



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