Cooler Product Catalogue

neptronic®

SKVF EVAPORATIVE COOLER

Cooling is a breeze

Neptronic's SKVF Evaporative Cooler is engineered and built to offer maximum comfort in large scale applications by providing adequate humidification and cooling. In hot applications, this cooling can greatly contribute to process efficiency by enhancing worker productivity, contributing to product quality and reducing energy consumption.

Our SKVF uses energy-efficient modulating fans to circulate outdoor fresh air or indoor recirculated air. It cools dry air when it passes through the wet media to make the water evaporate, which then raises the humidity level. Moreover, our unit cools the air due to the energy transfer generated by the water evaporation.

The SKVF's controller can be configured with either temperature control for a cooling application or humidity control for humidification. It allows you to temper industrial and commercial indoor areas where heat build-ups could be unfavorable to occupants, production and material goods.

Benefits

- ECM fan with variable output (10-100%)
- Compact, quiet and standalone evaporative cooler
- Free cooling up to 21.5°F (12°C)
- Very low energy consumption (< 1.5kW)
- Hygienic and environmentally friendly operation
- Very low and easy maintenance with removable panels
- Configurable for minimal water usage
- Configurable fan operation for continuous ventilation or media drying

Applications

Data Centers

Paint Booths

Factories

Greenhouses

Commercial Buildings

Livestock Buildings

System Overview

ECM Fan

Advantages of the SKVF's ECM fan:

- High energy efficiency – up to 30% more efficient than AC fans
- Integrated continuous control for the fan speed, torque and feedback signal
- Low operating temperatures increase the fan's reliability and longevity
- Relatively compact and versatile at high capacity

Nomenclature

SKVF	-	R	60	-	85	B	C	S
		Type	CFM		Evaporation Factor	Fan Position	Voltage	Control Panel
		R = Recirculation D = Direct Feed	15 = 1500 CFM 30 = 3000 CFM 60 = 6000 CFM		85 = 85%	B = Back L = Left R = Right	A = 120Vac/1ph B = 208Vac/1ph C = 230-240Vac/1ph	S = Standard

Control System

Integrated, Multi-Platform Controller

The SKVF controller is configured specifically for your SKVF Evaporative Cooler.

- User-friendly, menu-driven interface on a 128 x 64 LCD with 8 function buttons for faster configuration and operation
- User rights management system allows for menu to display only functions available to the type of user logged in: End User, Service Technician, Installer or Integrator
- “Quick Config” menu allows for faster and easier installation, by displaying only the most used functions and configurations
- Independent scheduling system for unit operation and drain cycle configurable via the menu or the BACnet communication interface
- In-field firmware can be upgraded via SD card, USB or BACnet
- Simple viewing and exporting of trending log and alarm log

Optional Features

- The selectable BACnet MS/TP or Modbus menus allow access to over 75 objects/registers for integration with a BMS and IoT (Internet of Things)
- Ethernet module
- BACnet IP or Modbus IP
- Web services make it possible to perform unit configurations, remote diagnostics and many more functions from any location

HRL24 Room Humidistat/Thermostat

The SKVF can be controlled remotely to monitor and control the humidity and temperature levels in a given room using the HRL24 room humidistat/thermostat.

Features

- Used to configure and operate the SKVF evaporative cooler
- Humidity and temperature sensing
- Large LCD with backlight
- Icon-driven and one line of text information
- Four wire connection between device and SKVF controller
- Selectable Fahrenheit or Celsius scale
- Network service port via on-board mini USB connector

Hygienic and Safe

SKVF Media Panels

The SKVF's 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.

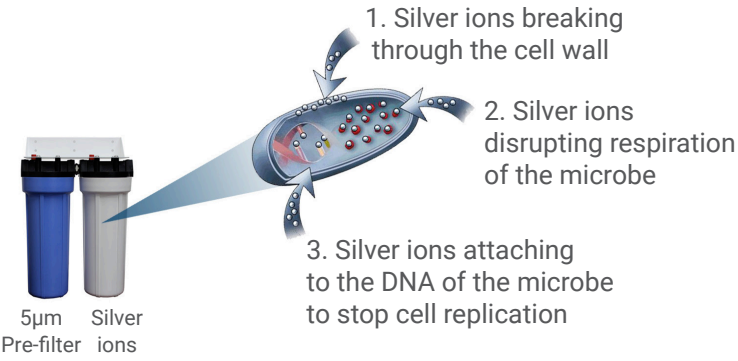
- Inorganic and inflammable material
- Safe and hygienic
- Low pressure drop
- Trouble free maintenance
- No water treatment required
- No risk of over saturation
- Media frame made of stainless steel
- Media easily removable from stainless steel frame

Water Quality

Hygienic operation with tap or RO water

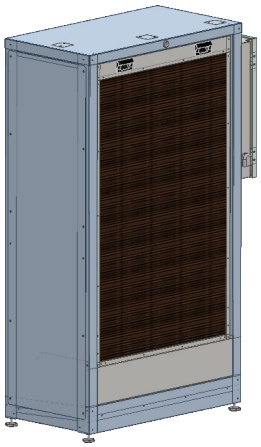
- Odor free media
- Water treated with 5µm pre-filter
- Anti-bacterial silver ion dosing cartridges prevent microbial growth
- UV sterilizer on water line (optional)
- Evaporative media fan drying sequence
- Normally open (NO) drain valve protection in case of power failure

How Silver Ions Work

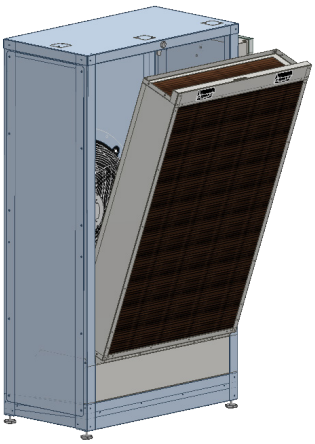


Easy Maintenance

The SKVF has been designed to facilitate access to the evaporative module components for easier maintenance. Remove the media cassette in two easy steps:



1. Use the access key to unlock the media cassette panel



2. Remove the media cassette from the SKVF

Output Specifications

120V models

	Entering RH	10% RH		20% RH		30% RH		40% RH	
72°F (22°C) Entering temperature	CFM (m³/h)	Humidification	Cooling	Humidification	Cooling	Humidification	Cooling	Humidification	Cooling
		lb/h (kg/h)	kBTU/h (kW)	lb/h (kg/h)	kBTU/h (kW)	lb/h (kg/h)	kBTU/h (kW)	lb/h (kg/h)	kBTU/h (kW)
	1250 (2124)	26.5 (12)	28.2 (8.3)	22.7 (10.3)	24.1 (7.1)	19.3 (8.8)	20.4 (6)	15.9 (7.2)	16.8 (4.7)
	2500 (4248)	52.9 (24)	53.6 (16.5)	45.3 (20.5)	48.2 (14.1)	38.5 (17.5)	40.9 (12)	31.8 (14.4)	33.8 (9.3)
	5000 (8495)	104.9 (47.6)	112.6 (33)	90.6 (41.1)	96.3 (28.2)	77.1 (35)	81.8 (24)	63.6 (28.8)	67.4 (18.6)
Leaving condition		78% RH	52°F (11°C)	82% RH	54°F (12°C)	85% RH	57°F (14°C)	88% RH	60°F (16°C)

	Entering RH	10% RH		20% RH		30% RH		40% RH	
85°F (29°C) Entering temperature	CFM (m³/h)	Humidification	Cooling	Humidification	Cooling	Humidification	Cooling	Humidification	Cooling
		lb/h (kg/h)	kBTU/h (kW)	lb/h (kg/h)	kBTU/h (kW)	lb/h (kg/h)	kBTU/h (kW)	lb/h (kg/h)	kBTU/h (kW)
	1250 (2124)	32.3 (14.7)	34.2 (10)	27.2 (12.3)	28.8 (8.4)	22.9 (10.4)	24.2 (7.1)	18.8 (8.5)	19.8 (5.8)
	2500 (4248)	64.5 (29.3)	68.3 (20)	54.3 (24.6)	57.5 (16.9)	45.8 (20.8)	48.4 (14.2)	37.4 (17)	39.4 (11.5)
	5000 (8495)	128.9 (58.5)	136.7 (40.1)	108.7 (49.3)	115 (33.7)	91.7 (41.6)	96.8 (28.4)	74.8 (33.9)	78.9 (23.1)
Leaving condition		76% RH	60 °F (16°C)	80% RH	64°F (18°C)	85% RH	67°F (19°C)	87% RH	70°F (21°C)

208 to 240V models

	Entering RH	10% RH		20% RH		30% RH		40% RH	
72°F (22°C) Entering temperature	CFM (m³/h)	Humidification	Cooling	Humidification	Cooling	Humidification	Cooling	Humidification	Cooling
		lb/h (kg/h)	kBTU/h (kW)	lb/h (kg/h)	kBTU/h (kW)	lb/h (kg/h)	kBTU/h (kW)	lb/h (kg/h)	kBTU/h (kW)
	1500 (2549)	31.8 (14.4)	33.8 (9.9)	27.2 (12.3)	28.9 (8.5)	23.1 (10.5)	24.5 (7.2)	19.1 (8.7)	20.2 (5.9)
	3000 (5097)	63.5 (28.8)	67.6 (19.8)	54.4 (24.7)	57.8 (16.9)	46.2 (21)	49.1(14.4)	38.2 (17.3)	40.5 (11.9)
	6000 (10194)	125.9 (57.6)	135.1(39.6)	108.7 (49.3)	115.5 (33.8)	92.5 (42)	98.1 (28.8)	76.3 (34.6)	80.9 (23.7)
Leaving condition		78% RH	52°F (11°C)	82% RH	54°F (12°C)	85% RH	57°F (14°C)	88% RH	60°F (16°C)

	Entering RH	10% RH		20% RH		30% RH		40% RH	
85°F (29°C) Entering temperature	CFM (m³/h)	Humidification	Cooling	Humidification	Cooling	Humidification	Cooling	Humidification	Cooling
		lb/h (kg/h)	kBTU/h (kW)	lb/h (kg/h)	kBTU/h (kW)	lb/h (kg/h)	kBTU/h (kW)	lb/h (kg/h)	kBTU/h (kW)
	1500 (2549)	38.7 (17.6)	41 (12)	32.6 (14.8)	34.5 (10.1)	27.5 (12.5)	29 (8.5)	22.5 (10.2)	23.7 (6.9)
	3000 (5097)	77.4 (44.6)	82 (24)	65.2 (29.6)	69 (20.2)	55 (24.9)	58.1 (17)	44.9 (20.4)	47.3 (13.9)
	6000 (10194)	154.7 (70.2)	164 (48.1)	130.5 (59.2)	138 (40.4)	110 (49.9)	116.2 (34)	89.8 (40.7)	94.7 (27.8)
Leaving condition		76%RH	60°F (16°C)	80% RH	64°F (18°C)	85%RH	67°F (19°C)	87% RH	70°F (21°C)

Note: Humidity output for high RH entering conditions may be less than the above values calculated with an evaporation factor for air at 50%RH.