

# MASTER<sup>®</sup>

2015



## BIO COOLERS

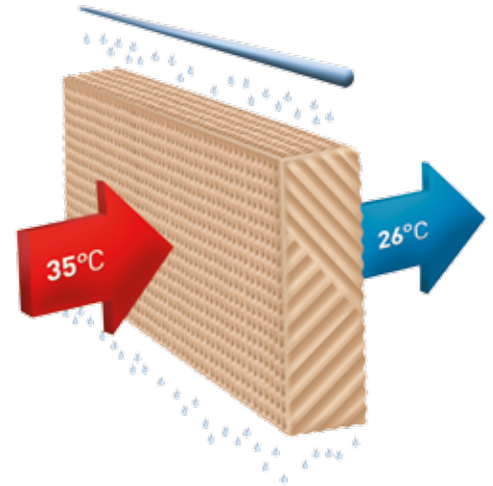
**MCS GROUP**  
[www.mcsworld.com](http://www.mcsworld.com)

# MASTER BIO COOLERS

MASTER Bio Coolers cool the air using a simple natural process: the evaporating water decreases the temperature of the air.

A pump takes the water from a tank and wets a wide filter of natural cellulose. A powerful ventilator aspirates air through the filter. The water evaporates from the filter and decreases the temperature of the air of several degrees. The fresh and clean air flows into the ambient, and cools it.

MASTER evaporative bio coolers are an environmentally friendly green solution using only water and air to provide energy efficient cooling. This method uses up to 80% less energy than refrigerant air conditioning. These coolers can be used outdoors or indoors even with windows and doors left open; giving fresh filtered air perfect for a comfortable environment. MASTER are the natural choice for all your cooling requirements.



Intake air °C	Air relative humidity				
	10 %	20 %	30 %	40 %	50 %
	Exit air °C				
20	10,1	11,4	12,8	13,9	15,2
25	13,4	15,0	16,6	18,0	19,4
30	16,6	18,6	20,4	22,0	23,6
35	19,8	22,2	24,4	26,2	28,0
40	23,0	25,6	28,1	30,4	32,3
45	25,9	29,2	32,0	34,4	
50	29,0	32,7	35,8		

## How does evaporative cooling work?

Evaporative cooling is a simple and easy method of cooling that has been used throughout our history. As early as two thousand five hundred years ago, the Egyptians used wet curtains made of Phragmites to cool down the air. The cooling effect is achieved when water in the medium absorbs heat from the air as it passes through. The same effect can be felt after rain. The ambient air can drop several degrees because the rain droplets absorb the heat from the surrounding air.

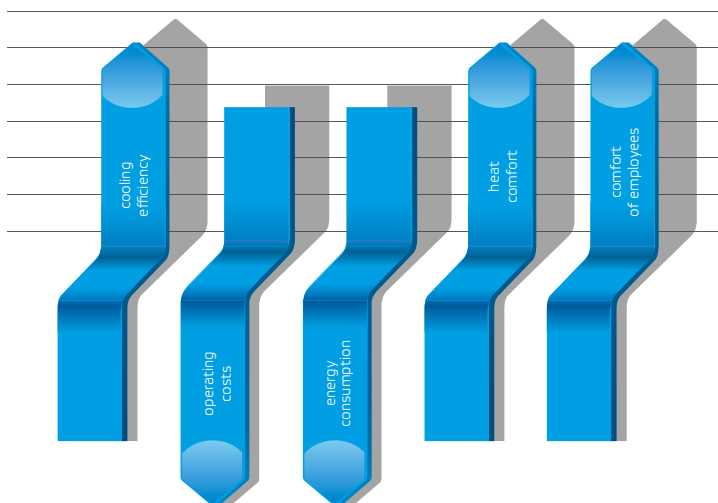
The evaporative cooling system does not use refrigerants or compressors. Instead, it delivers cooling by combining water evaporation with air movement through a specially designed evaporative pad. The water is pumped from the tank and distributed over the pad to form a water screen through which the air is cooled.

## Why evaporative cooling?

Evaporative cooling is the green alternative to traditional air conditioning. It consumes up to 80% less energy and requires significantly lower initial investment, installation and maintenance cost. It also uses natural water as a cooling agent instead of refrigerants that pollute the environment.

## Cleaner and fresher air, creating a comfortable indoor environment

Evaporative cooling increases air circulation and the exchange of fresh air, eliminating the risk of sick building syndrome. Windows and doors can be left open without compromising the cooling effect. The pad also functions as an effective filter removing airborne particles such as dust, pollen and other contaminants.



**NATURAL**



**ECOLOGICAL**



**ECONOMIC**



**UNIVERSAL**

# APPLICATION

- Workshops
- Warehouses
- Repair / maintenance areas



- Schools
- Offices
- Sports recreational areas
- Institutional facilities



- Shops
- Restaurants and clubs
- Commercial kitchens
- Laundries / dry cleaners



- Greenhouses
- Farm buildings dairy / poultry / stables





# INDEX

<p><b>BC 180</b></p>		<p>An energy saving and environmentally friendly evaporative cooler. Designed to cool a large area like: shops, restaurants, hospitals, schools, workshops, tents.</p>	<p><b>Air displacement</b> 18 000 m<sup>3</sup>/h</p>	<p><b>PAGE:</b> <b>6</b></p>
<p><b>FCA 15</b></p>		<p>An efficient cooler for climate control of large facilities. It creates a comfortable indoor climate with optimal combination of temperature and humidity.</p>	<p><b>Air displacement</b> 15 000 m<sup>3</sup>/h</p>	<p><b>PAGE:</b> <b>7</b></p>
<p><b>FCA 10</b></p>		<p>Designed for multiple uses: workshops, garages, commercial or industrial areas, production lines, sporting events and tent cooling.</p>	<p><b>Air displacement</b> 10 000 m<sup>3</sup>/h</p>	<p><b>PAGE:</b> <b>8</b></p>
<p><b>BC 60</b></p>		<p>Ideal for cooling open areas: workshops, garages, offices. It renovates and clean the air from fumes, dust and odours.</p>	<p><b>Air displacement</b> 6 000 m<sup>3</sup>/h</p>	<p><b>PAGE:</b> <b>9</b></p>
<p><b>FCA 5</b></p>		<p>Designed for multiple usages. It can circulate, refresh and cool the air in a room by placing it on a stand or wall mounted. It might be also mounted in a window or other ventilation openings, cooling the outdoor air and replacing the warm old air in the facility.</p>	<p><b>Air displacement</b> 5 000 m<sup>3</sup>/h</p>	<p><b>PAGE:</b> <b>10</b></p>
<p><b>CCX</b></p>		<p>It is designed for various commercial areas such as small shops, offices, restaurants and smaller workshops. The unit is very easy to move whenever it is needed.</p>	<p><b>Air displacement</b> 1 500 - 2 500 m<sup>3</sup>/h</p>	<p><b>PAGE:</b> <b>11</b></p>

# BIO COOLER BC 180



- Quiet running
- Adjustable speed
- Automatic swing function as a standard
- Time setting function
- Large water tank for longer operating hours
- Large wheels and brake allow easy movement
- No need for compressed air
- No installation, no duct work required
- Easy to use, easy to clean
- Corrosion resistant plastic casing
- Easy to maintain

SPECIFICATIONS		BC 180
Air displacement	m <sup>3</sup> /h	18 000
Maximum area	m <sup>2</sup>	160
Power supply	V/Hz	220-240/50
Power consumption	kW	0,7
Rated current	A	3,3
Fan speed		3
Outlet versions		front
Water consumption	l/h	10-15
Tank capacity	l	60
Noise	dB(A)	58/64/68
Dimensions (h x w x d)	mm	1490 x 700 x 1120
Weight (without/with water)	kg	62/122

# BIO COOLER FCA 15



IN COOPERATION  
WITH MUNTERS

- Low installation and maintenance cost and low life cycle cost
- Remote control for simple operation and possibility to run units in parallel
- Light weight polymer casing
- High performance axial fan for ducting options
- Suitable for a wide range of applications
- Simple and flexible installation
- Environmentally friendly
- Installation options: floor, roof, wall, wheels



SPECIFICATIONS		FCA 15
Air displacement	m <sup>3</sup> /h	15 000
Maximum area	m <sup>2</sup>	150
Power supply	V/Hz	230/50
Power consumption	kW	1,1
Rated current	A	4,8
Fan speed		1
Outlet versions		top/bottom
Water consumption	l/h	35 - 65
Tank capacity	l	35
Evaporation efficiency	%	75
Noise	dBA	79
Dimensions (h x w x d)	mm	1020 x 1100 x 1100
Weight (without/with water)	kg	68/103

# BIO COOLER FCA 10



IN COOPERATION  
WITH MUNTERS



## OPTIONAL ACCESSORIES:



High stand



Low stand



Portable water tank

- Low installation and maintenance cost
- Remote control and possibility to run units in parallel
- Light weight polymer casing
- Free standing or equipped with wheels
- Simple and flexible installation
- Low noise
- Unit available with removable water tank and tank capacity of 100 l

SPECIFICATIONS		FCA 10
Air displacement	m <sup>3</sup> /h	10 000
Maximum area	m <sup>2</sup>	120
Power supply	V/Hz	230/50
Power consumption	kW	0,51
Rated current	A	2,8
Fan speed		3
Outlet versions		front
Water consumption	l/h	20 - 35
Tank capacity	l	27,5
Evaporation efficiency	%	80
Noise	dBA	76
Dimensions (h x w x d)	mm	955 x 1100 x 905
Weight (without/with water)	kg	65/92,5



# BIO COOLER BC 60



- Easy to move on wheels
- Flaps swing automatically
- No installation required
- Eco friendly: no compressor, no gas, very low consumption
- It renovates and cleans the air from fumes, dust and odours
- Remote control
- Ionizer
- It can perfume the air
- It sends mosquitos away



SPECIFICATIONS		BC 60
Air displacement	m <sup>3</sup> /h	6 000
Maximum area	m <sup>2</sup>	60
Power supply	V/Hz	230/50
Power consumption	kW	0,28
Rated current	A	1,2
Fan speed		3
Outlet versions		front
Water consumption	l/h	7
Tank capacity	l	57
Noise	dBA	62
Dimensions (h x w x d)	mm	1380 x 780 x 560
Weight (without/with water)	kg	35/92

# BIO COOLER FCA 5



IN COOPERATION  
WITH MUNTERS



- Low installation and maintenance cost
- Remote control for simple operation and possibility to run units in parallel
- Light weight polymer casing
- Suitable for a wide range of applications
- Wall mounting kit available as an installation option
- Simple and flexible installation
- Environmentally friendly

SPECIFICATIONS		FCA 5
Air displacement	m <sup>3</sup> /h	5 000
Maximum area	m <sup>2</sup>	80
Power supply	V/Hz	230/50
Power consumption	kW	0,29
Rated current	A	1,3
Fan speed		3
Outlet versions		front
Water consumption	l/h	12 - 23
Tank capacity	l	30
Evaporation efficiency	%	75
Noise	dBA	77
Dimensions (h x w x d)	mm	1000 x 850 x 480
Weight (without/with water)	kg	32/62

# BIO COOLER CCX

## CCX 1,5



IN COOPERATION  
WITH MUNTERS

## CCX 2,5



IN COOPERATION  
WITH MUNTERS

- Attractive compact design
- Low installation, running and maintenance cost
- Remote control for easy operation
- Different settings and running features
- Handles to easily carry the unit
- Wheeled units with integrated water tank for multiple applications
- Long uninterrupted running time without need of water refilling
- Low noise
- Ionizer
- Centrifugal fan



SPECIFICATIONS		CCX 1,5	CCX 2,5
Air displacement	m <sup>3</sup> /h	1 500	2 500
Maximum area	m <sup>2</sup>	30	50
Power supply	V/Hz	230/50	230/50
Power consumption	kW	0,17	0,28
Rated current	A	0,75	1,45
Fan speed		3	3
Outlet versions		front	front
Water consumption	l/h	1,8 - 4,8	3 - 7
Tank capacity	l	25	31
Noise	dBA	64	67
Dimensions (h x w x d)	mm	1115 x 540 x 410	1170 x 620 x 440
Weight (without/with water)	kg	17/42	23/54

# MASTER®

# HEATERS DEHUMIDIFIERS FANS COOLERS

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