

## AXIAL FAN DRY COOLER INDUSTRIAL RANGE

Electrical power stations - Biomass - solar  
Urban heating stations - Cogeneration  
Power plant (diesel generators)  
Data centers - Telecom centers - Hospitals



20 > 1200 kW

# FC / FI NEOSTAR

### FC NEOSTAR "City"

- Compactness and high efficiency.

### FI NEOSTAR "Industry"

- Low pressure drop and high capacity.
- Wide range up to 1,200 kW, optimized head loss.

### Main applications:

- Air conditioning, free cooling, co-generation, power plants, process, industry ...  
and cooling all kinds of fluids compatible with copper, with a maximum inlet temperature of 100°C.



## DESCRIPTION

### Casing

- The casing is made of galvanized, as well as white pre-painted, galvanized sheet steel.
- The use of stainless steel screws guarantees excellent, long-lasting corrosion resistance (standard ISO 7253) and aesthetic quality.
- All models offer in standard (except A modules) to facilitate maintenance, a trapdoor between two fans for a direct access to the battery.
- All components used have successfully passed the salt mist corrosion and Kesternich tests.
- The units are delivered screwed to a wooden base.
- Full crate packaging in option.

### Ventilation

- The FC/FI NEOSTAR range is equipped with motor fans:
- **Classe F** (standard): 2 speed external rotor fans units 400V/3/50Hz (star or delta coupling).
- **Classe H**: 2 speed fans units 400V/3/50Hz (star or delta coupling).
- **EC**: electronic commutation motor fans to reduce energy consumption of your installation.
- The motor fan units are wired as standard and factory connected as follows:
  - 1 to 3 electrical boxes for the models L (motors connected in series),
  - 2 to 8 electrical boxes for the models P (motors connected in parallel).
- **We are also able to deliver the units unwired upon request (option SCU).**
- Fan guards are compliant with safety standards.
- Fans units with special voltage ratings (FC/FI NEOSTAR):
  - **M60**: Fan motor 400V/3/60Hz, IP54, class F, in version 06P Ø 910 mm
  - **M26**: Fan motor 230V/3/60Hz, IP54, class F, in version 06P Ø 910 mm

### Coil

- The dry coolers are equipped with coils with the following characteristics :
- Special fins to reduce clogging and enables efficient maintenance to ensure a sustainable performance.
- Copper tubes in a staggered arrangement and corrugated aluminium fins for optimum heat transfer.
- Headers with air vents and drain plugs.
- Connections : steel pipe, flanges.
- In option:
  - Vinyl protection (**BAE**) or Blygold Polual XT protection (**BXT**) offering greater corrosion resistance when used in aggressive atmospheres.
  - Superposed circuits **HT / LT**.

### Generalities

- The freezing point of the fluid must be at least 5K below the minimum winter ambient temperature of the site of installation.



### Freezing risk

- A standard dry cooler cannot be fully drained simply by opening the drain fitting orifices.
- Always run the piping leak tests using the selected fluid.
- For an application with water (without anti-frost), and if the ambient temperature may drop below 0°C, the dry cooler must be suitably designed to allow complete draining of the unit (option **VID**).

### Recommendations

- According to the professional regulations concerning :
  - Vents and drains
  - Surge tanks (**VEX** option)
  - Flexible connexions
  - Vibration protection
  - Correct percentage of glycol
  - Fan motor protection
- Connection on a closed loop water cooling circuit, thus eliminating any risk of corrosion due to oxygenation.
- When the water supply pipes are made of a non-ferrous metal, take all precautions necessary to avoid corrosion.

## CERTIFICATIONS



Kit	Factory	OPTIONS
		<b>Ventilation</b>
	<b>M60</b>	Fans 400 V/3/60Hz (please contact us for details).
	<b>M26</b>	Fans 230 V/3/60Hz (please contact us for details).
	<b>MTH</b>	Motors equipped with a protection thermostat. Recommended with frequent start sequences (more than 30 start sequences per hour) or when a speed controller is used.
	<b>IRP</b>	Rotary proximity switch(es).
	<b>C2V</b>	2-speed factory wired in the switching box.
	<b>SCU</b>	Unwired fans (specify when ordering).
		<b>Coil</b>
	<b>VEX</b>	Surge tank (see photo).
	<b>VID</b>	Total-draining special circuits.
	<b>BAE</b>	Vinyl protection of fins.
	<b>BXT</b>	Blygold Polual XT protection of fins.
		<b>Casing</b>
	<b>RAL</b>	Special colours.
	<b>REH</b>	Legs extended by 240 mm (ground clearance 800 mm)
	<b>RE2</b>	Legs extended by 840 mm (ground clearance 1400 mm)
	<b>RE3</b>	Legs extended by 1340 mm (ground clearance 1900 mm)
	<b>RE4</b>	Legs extended by 1840 mm (ground clearance 2400 mm)
	<b>ECB</b>	Full crate packaging.
		<b>Protection and control enclosure</b>
	<b>CMP</b>	Motor protection cabinet.
	<b>RT1</b>	CMP + speed control with cascade stoppage of fans.
	<b>RT2</b>	CMP + speed control (voltage).
	<b>RT3</b>	CMP + speed control (frequency).
	<b>MSK</b>	Floor mounting kit.
		<b>Other options</b>
		Please contact us for details.



## DESIGNATION

**FI**<sub>(1)</sub> **H**<sub>(2)</sub> **PU**<sub>(3)</sub> **06**<sub>(4)</sub> **D**<sub>(5)</sub>  
**L**<sub>(6)</sub> **04**<sub>(7)</sub> **D5**<sub>(8)</sub>

- (1) **FC** = Dry cooler "City" - **FI** = Dry cooler "Industry"
- (2) **H** = Class H motor (for **PU** and **SN** version only).
- (3) **PN** = Power Normal - **PU** = Power Ultra  
**SN** = Silence Normal - **SE** = Silence Extra - **SU** = Silence Ultra
- (4) Number of poles
- (5) **D** = delta coupling - **Y** = star coupling
- (6) Fan arrangement :  
**L** : fans in line - **P** : fans in parallel
- (7) Number of fans
- (8) Type of module



## ADVANTAGES

### Selection

As the performance of a dry cooler varies a lot with each working condition, it is not possible to present a selection method in this document. Only the selection software, at your disposal on [www.lennoxemea.com](http://www.lennoxemea.com), will allow you to select the dry cooler which suits the best your needs. In case of emergency, do not hesitate to consult us in specifying: capacity, maximum day/night noise level, type of fluid, ambient temperature, fluid inlet temperature, fluid outlet temperature (or flow), maximum allowed pressure drop, other external constraints.



### Installation

Simple and cheap installation (steel pipes).

### Servicing / Maintenance

Reduced maintenance due to direct driven fans.

Low maintenance costs.

### Dry coolers advantages

Replace advantageously cooling towers :

- no air and water bacteria contamination
- no water consumption
- no steam production
- flexible use in winter time
- easy control of fluid temperature in winter time

An optimised solution (noise level, energy consumption, size, type of temperature control...) due to multiple selection possibilities.

FC / FI NEOSTAR	POWER			SILENCE							
	PN	PU	FCH PU FIH PU	SN	SE	SU		FCH SN FIH SN	SE EC motor	SU EC motor	
Air temperature	< 70°C	< 60°C	< 80°C	< 70°C	< 80°C	< 80°C		< 80°C	< 60°C	< 60°C	
Diameter	Ø 800	Ø 910	Ø 910	Ø 800	Ø 800	Ø 800		Ø 910	Ø 800	Ø 800	
Poles	06P	06P	06P	08P	12P	12P	16P	08P	EC	EC	
400V/3/50Hz	✓	✓	✓	✓	✓	✓		✓	✓	✓	
Class	Class F	Class F	Class H	Class F	Class F	Class F		Class H	Class F	Class F	
Delta (D)	rpm	880	885	890	680	440	-		650	250/1020	250/730
	W max.	1940	2480	1950	890	330	-		880	2400	790
	A max.	3,90	5,15	4,20	2,22	0,86	-		2,00	3,80	1,40
	dB(A)	80	88	82	73	68	-		75	49/88	49/78
Star (Y)	rpm	670	685	730	540	-	330	255	480	-	-
	W max.	1210	1570	1300	590	-	190	105	500	-	-
	A max.	2,23	2,90	2,30	1,17	-	0,39	0,25	1,05	-	-
	dB(A)	75	80	78	69	-	61	48	68	-	-

