



The FEC series is dedicated to every industrial sector with a modular conception. These models are characterized by SCAM T.P.E. S.r.l. well defined standards and are supplied with a structure in hot-dip galvanized steel in according to UNI EN ISO 1461:1999 to be assembled on site (FIELD ERECTED) with dimensions that are compatible for road and sea transport. The ventilation units, typically used on big cooling towers, are designed for a long durability, with high quality components and with a very easy maintenance program. Regarding this, special executions are provided for ATEX environments ("EX" versions), for low temperature environments ("SN" versions), for low noise emissions ("LN" version) and with energy optimization systems ("VDI version").

STRUCTURE / MONOLITHIC ENCLOSURE

Tower structure is characterized by hot-dip galvanized steel profiles according to UNI EN ISO 1461:1999 with portals with a pitch of 1.8 meters, stiffened by diagonals to transfer the forces acting on them, even extraordinary ones such as wind, earthquakes and snow load, to the whole structure. A large surface is dedicated to the upper deck which can be walked on for simple and intuitive maintenance. The upper deck is accessible by means of a dedicated staircase and is completely made safe by special protective handrails in galvanized steel. The HDGS beams cross in knots bolted together with stainless steel brackets.

The lateral infill walls are made of a corrugated fiberglass sheet that stiffens the panels then completely sealed together.

All FEC series cells are designed in compliance with the most recent safety regulations, as standard a marine ladder and galvanized steel railings are provided, as well as an internal inspection hatch with a ladder for descent to the separator floor for each cell.

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BOLTS are supplied as standard on this model in STAINLESS STEEL or even DUPLEX on request.

VENTILATION UNIT

For traditional execution FEC series, the choice regarding the type of fan is almost obliged. Electric motor is placed outside the saturated air flow, the carbon fiber gear shaft activates speed reducer with orthogonal axes, on which is placed the fiberglass or aluminium alloy impeller. Diffusers with or without dynamic pressure recovery and level and external lubrication unit are the main features. An indirect transmission is foreseen for each cell, except for small tower executions that use direct transmission like package ones:

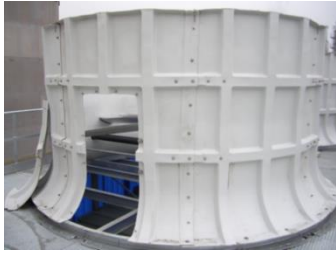
- High efficiency SCAMAIR / ST axial fan with asymmetrical "NACA" type profile of aeronautical derivation, designed for maximum efficiency and durability in compliance with the strictest acoustic standards. The components are of absolute quality such as the hub in galvanized steel or aluminium and the blades in FRP or aluminium alloy. All blades use the variable pitch solution with the fan stopped to optimize the tower performance and electricity consumption;
- Self-supporting transmission shaft able to withstand small misalignments that may occur in service; to absorb "shock", vibrations and jolts. Joints are elastic type and reduce the time required for assembly and maintenance operations;
- Electric motor designed for severe conditions with continuous service type S1 IEC IE3 high efficiency as per new IEC 60034-30 standards. The motor is located outside the wet flow passing through the FRP diffuser and is self-ventilated. Supports of the electric motors are designed to transfer dynamic loads to the cooling tower structure, minimizing vibrations and allowing simple and intuitive maintenance;
- Gearbox with orthogonal axes with perfectly watertight stiffened housing and labyrinth seals;
- Abnormal vibration switch wired in an IP67 Junction box located outside the ventilation conduct only to be powered and electrically connected;
- Lubrication oil level line, replenishing and blowdown are on the gearbox which is also equipped with a pipe that reaches the outside of the fan stack.

The system is equipped with a visual level indicator and a purge valve / it is also possible to equip the system with a safety level switch, and an oil heater for colder climates.

WATER DISTRIBUTION SYSTEM

In FEC series, water distribution is made by a main pipe in HDGS, Hot Deep Galvanized Steel unified DIN or ASME (or FRP on request) equipped with lateral branches with secondary pipes in Polyvinyl chloride (PVC) / on request in

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high density Polypropylene (PPE). Secondary pipes are equipped with "SCAM / NZ-RT" dynamic spray nozzles or "SCAM / NZ" static spray nozzles, both in PP. Our SCAM / NZ-RT rotating nozzles are highly efficient, work at low pressure, and allow for significant energy and economic savings. They are anti-clogging, equipped with interchangeable internal inserts, allowing them to be adapted in the event of variations in flow rate, if you were to work with a work pattern other than the design one.



FAN STACK

All the mechanical groups in every cell of cooling tower have a reinforced fiberglass stack. Each stack has a circular and conic inlet junction; the outlet section is divergent to reduce pressure and at the same time to recover dynamic pressure with a consequent high efficiency of impeller. The stack sections are connected with joints able to optimize diameter facilitating assembly and maximizing the performances. The stacks are fixed to the structure through dedicated bolts by securing them to the tower planking level. Each stack is equipped with an inspection door to facilitate the fan group maintenance.



DRIFT ELIMINATORS

They are mainly used to retain water droplets dragged vertically in the flow of humid air exiting the evaporative tower. Our technology has achieved exceptional goals in separation efficiency, making available two different designs SCAM / DRF-CL (CELLULAR line) and SCAM / DRF-SH (SHELL line) in PP / PVC.

AIR INLET LOUVERS

They are placed in the intake air flow entering the cooling towers. They not only retain unwanted elements (such as foliage and debris), but also prevent water from splashing outside, which could cause ice formation during winter season. In addition, the windows are a barrier, limiting the sunlight entering the basin, thus hindering the growth of algae and microorganisms inside it. They are available in the SCAM / NET65 version in PP / PVC, customized in treated steel, or INOX / FRP, where the specifications require it.



FILLING (OR HEAT EXCHANGE PACK)

It is placed inside the tower body, and provides the heat exchange surface necessary to guarantee the heat exchange between the flow of hot water, properly atomized by our nozzles and the flow of cold air coming from the outside going up against the process water. Depending on the quality of circulating water, and therefore depending on the suspended solids present in the cooling circuit, the filling is available in different PP / PVC materials and FILM, HYBRID and SPLASH systems.

For further information on the products, please visit the *** section of the site.

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