

COOLING TOWER OPEN TYPE - FORCED DRAFT

UNIC sal is equipped to produce a wide range of COOLER® Air conditioning and Refrigeration units, conforming to the international standards and works continually to improve its products and facility. As a result, the design and specifications of each product at the time of order may be changed without notice and may not be described herein. Please contact our customer department for specific information on the current design.

Consultancy & Design Our Engineering Dep't is always available to solve special requirements, investigating the client situation and using the most sophisticated available tools. The knowledge and the precious experience of our Engineers is supported by the most advanced computerized calculations and design programs.

Revision AG 16-07



COOLER® Cooling Towers Open Type Forced Draft

The CCTO series of metal towers with centrifugal fan, has constantly been updated and improved, based on the experience of a large number of units which have been operating in a variety of conditions and climates.

Our Research and Testing Laboratory, equipped with modern testing and measuring equipment, was the starting point for the design of this line of cooling towers.

A team of skilled engineers developed the range, taking into consideration the suggestions of Clients, Sale and Servicing engineers. The modern machinery of our factory allows high quality constructions. Each unit is aerodynamically tested before shipment.

Cooling Towers Open Type Forced Draft are available in a wide range of standard capacity from 90 to 4,500 KW

= All Sizes are available to fit all special Client's needs =

CCTO Series

The series CCTO have 47 models that exactly match the needs of the most different air conditioning, refrigeration and process systems. All Centrifugal fans, are placed at one side of the unit, allow a very quiet operation. As the overall dimensions are very important both for transport and installation cost, they have been carefully considered in designing this line. The maximum width of all the models is such that no special transport or permits are needed. Moreover, as much as 27 models with nominal capacity up to 1300 kW, do not need any assembling operation at site, which reduces installation costs and limits danger for inconveniences. Particular care was given to the protection against atmospheric corrosion; hot dip galvanized steel is used and special painting cycles have been formulated to give further protection to the galvanized steel parts. Also available Stainless Steel construction.

Easy maintenance

The water distribution system of CCTO towers employs exclusive design nozzles made of special ABS compound; they need non gaskets simplifiing maintenance operations. The nozzles can be removed and applied again without any problem. The maintenance is reduced to a minimum by the large orifices that make the nozzles practically non-clogging.

Stainless steel filter

The water filter, placed on the cold water outlet connection, is important to protect the hydraulic circuit and pumps from the impurities carried by the air flow and normally transferred to the re-circulating water. Being built in stainless steel, it stands many maintenance operations without damage, and its anticavitating design, so it prevents air from being sucked in the circuit.

Economical transportation

Transportation is an important item of the final installation cost of a cooling tower. All the CCTO models have a maximum width within 2.30 mt., which does not require special and costly transports, even with sea-worthy packing. Moreover as many as 27 models can be transported completely assembled with standard lorries. Only the larger models, can be divided horizontally, if one does not want to use low bed trailers.

Container compatible

Not only the road, but also the sea transportation has been carefully considered in designing CCTO towers. As much as 27 models are compatible with the modern and economic container, completely assembled and ready for operation. The remaining models are also compatible with containers after having been horizontally divided in two sections only.

TURBOsplashPAC

Of an exclusive design and manufactured by NERI Co Italy, the TURBOsplashPAC fill has a high air and water turbulence for the best efficiency of the tower. Panels modules are assembled with a snap-together system and are made with sturdy, temperature resistant Polypropylene plastic. Therefore fill modules can be cleaned with high pressure water or steam jets, and/or the panels can be easily disassembled, mechanically and/or chemically cleaned.

Certified Quality

Also the CCTO series is manufactured in accordance with the **COOLER®** production quality standard of the ISO 9001:2015 Quality System. From the commercial quotation to the after sale service, the Company aim is: the Customer satisfaction.



ENGINEERING SPECIFICATIONS

COOLING TOWER. Supply and installation of a cooling tower as shown on plans. The tower shall be built with steel sheets hot dip galvanized with the Sendzimir method and will have centrifugal fans completely enclosed in the fan section, with air inlet on a single side. Also available Stainless Steel body construction.

CAPACITY. The cooling tower shall have the capacity of ___KW to cool ___l/s of water from temperature of ___°C to the temperature of ___°C, with entering air Wet Bulb temperature of ___°Cwb.

HEAT TRANSFER AND WATER BASIN SECTION. The heat transfer section shall be built in hot dip galvanized steel panels, bolted and sealed for water tightness. The section will be complete with:

- water inlet for hot water;
- water outlet for cold water with large capacity water filter of the anti-cavitation type in stainless steel net, easily inspectable;
- overflow and drain connections;
- makeup water connection complete with float valve;
- water tight man hole access door for inspection.

The section shall include the wet-deck surface consisting of TURBOsplashPAC modular panels formed with a special shape to obtain high counterflow fluids turbulence. The TURBOsplashPAC fill shall be of the autoextinguishing type, biologically and corrosion resistant. Water distribution system. Formed by main header made of hot dip galvanized steel with resins; secondary headers and selfcleaning centrifugal type nozzles made of special PVC compound, assembled without gaskets. The PVC nozzles shall be quickly removable without any problem.

FAN SECTION. The fan section shall include one or more fans of double inlet type, with forward curved blades, dynamically balanced, fitted on a solid or tubular type shaft, depending on models. The bearings will be of the self-aligning with permanent lubrication ball bearing type. The fans will be complete with V-belt drivers, wire mesh guards on the air inlet. The electric motor shall be three phase TEFC with IP55 protection according to the international rules IEC 72 and 34/1/5/6/7 and shall be mounted on a special bracket for easy belt tensioning. The belt drive shall be designed for not less than 160% of motor power. Drift eliminators with suitably shaped, polypropylene sheets.

PAINTING:

The standard painting will be made externally by a layer of electrostatic powder coating;

Optional double protection, against corrosion and oxidation, protecting both internally and externally the metal casing.

DIMENSIONS. The unit shall not exceed the following dimensions:

Length: ___mm width: ___mm height: ___mm The operating weight shall not exceed ___kg

The tower shall be **COOLER® CTO**_____

Fill free to apply for a free quotation with dimensions, according to your any special needs

Accessories and special versions:

- Two speed fan motor for reducing fan RPM.
- Higher power motor for additional pressure drop up to 100 Pa.
- Vs silenced version.
- Electric immersion heater complete with internal limit thermostat, installed in the cooling tower basin to prevent freezing of pan water (control thermostat optional).
- Panels to close the bottom of the fan section for models with a width of 2180 mm.
- Drift eliminators in galvanized or stainless steel.
- Inspection ladder and platform for inspecting the upper part of the unit, complying with safety rules.
- Version with opposite side connections to place side by side Two units with connections at the same side.

COOLER® Service Department is always available to serve our customer and ready to solve any problem.

COOLER® Project Department is ready to study cases and to supply the most economic, yet feasible solutions.

QUALITY GUARANTEE

UNIC sa **COOLER®** guarantees contractual free maintenance, availability of all parts and components, and qualified field technicians to carry out the maintenance requirements.

UNIC sa Company is ISO 9001:2015, DQS-UL, IQNet and CE Certified.

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