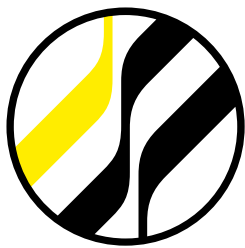


Kelvion



COUNTERFLOW COOLING TOWERS

POLACEL CMDR SERIES





WE ARE KELVION – THE NEW BRAND IN HEAT EXCHANGE

GEA Heat Exchangers has changed: another new standalone company has been created out of the former Heat Exchanger Division of the GEA Group AG. The name Kelvion is new, but we continue as global experts in heat exchange. As always, we remain committed to earning your trust.

You'll still recognize us. We continue to develop our products, manufacture them with precision and distribute globally. We continue to offer one of the world's largest heat exchanger product portfolios: Plate heat exchangers, shell & tube heat exchangers, finned tube heat exchangers, modular cooling towers and refrigeration heat exchangers for a wide range of applications.

We operate in global markets for power generation, oil and gas, chemistry, marine applications, climate and environment, and food and beverages. From us, you can expect products with outstanding levels of efficiency, safety, and sustainability. More importantly, we care about your business, like close, trusted partners.

Customers rely on us to understand their needs, boost their performance, and deliver products that always get the job done. We compete for the toughest deals, in the harshest environments. But we're not too big to care. We're Kelvion – ready to take on the challenges of heat exchange. www.kelvion.com

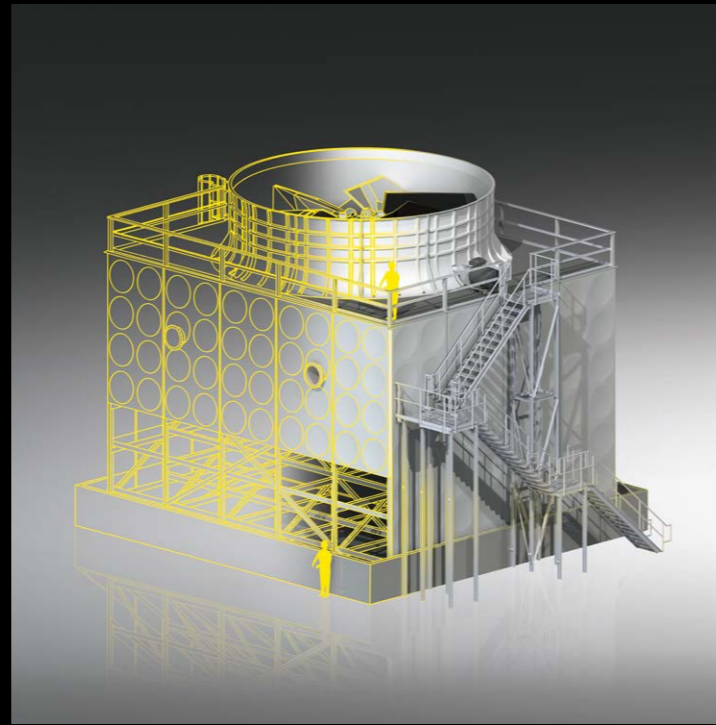
Experts in Heat Exchange.

CUSTOM-MADE OUT OF STANDARD COMPONENTS



Characteristics:

- Over 40 years of experience in the development, design, production, installation and maintenance of cooling towers
- Modular products available for all popular sizes
- Extreme durability through the usage high quality materials like stainless steel, glass fiber reinforced plastics and thermoplastics like polypropylene
- Over 500 models in both counter and cross flow certified in the thermal rating program of the Cooling Technology Institute (CTI)
- Customizable to your demands by our own sales engineers



POLACEL CMDR COOLING TOWERS

Kelvion designs, manufactures and maintains cooling towers for process and climate Cooling. Our energy-efficient and environmentally-friendly cooling water generators stand out because of the complete quality policy we employ.



The Polacel CMDR systems combine a high cooling capacity with low energy consumption. The modules are supplied ready to use and they are easy to adjust to cooling requirements and the available space. Whether they are used single or in series. The cooling performance of these cooling towers is optimal and operation is problem free. The efficient Polacel CMDR systems are the best choice for man and his environment.

The Effect of Counterflow

Polacel CMDR cooling towers work on the principle of counterflow. This means that the water flows down while the air is pulled upwards by a fan. As the water flows further through the system, the air it encounters is fresher. In other words cooler and less saturated with moisture. Counterflow cooling towers can approach the wet bulb temperature better compared to crossflow cooling towers.

Benefits

- HVAC
- Chemical Industry
- Power and Energy
- Metallurgy and Paper
- One contact person for all Solutions
- Globally active in more than 40 countries
- Maximum availability, security of operation and system efficiency



COOLING WITH A GEARED MOTOR ON AN AXIAL FAN



Benefits:

- Built for continuous operation over long lifetime
- Proven concept
- Standardized 3D modeling stand for an easy and reliable assembly on site
- All models can be hoisted completely preassembled
- Structural strength has been calculated for a variety of wind loads and seismic conditions
- Low noise measurements can easily be integrated in every model
- Special applications with trickle fill and heavy duty grids



The Polacel CMDR series are characterized by a compact motor gearbox combination that is mounted directly on top of the cooling tower above the axial fan. The cooling generated by evaporation of approximately 1% of the cooling water. The direct contact between water and ambient air is created over the surface of plastic fills. The cooling towers have a counter flow configuration, this provides the most efficient exchange of enthalpy and the coldest water. Although modular by size the Polacel CMDR series can be adapted to the requirements of the customer with regards to noise limitations or heavy duty water conditions.

Polacel CMDR series of modular cooling towers. These models have a successful history in the market for industrial cooling tower applications. The modular built standard cells are Available in a range of 14 sizes between 12 an 120m². Most applications are industrial water cooling between 1 and 30 MW per cell.



THE ADVANCE DESIGN ENGINEERING HAS ALSO RESULTED IN A NUMBER OF SPECIAL STRUCTURAL ADVANTAGES

- Only a minimum number of support points are necessary as a result of the self-supporting foundation and the high internal stiffness
- Completely transportable, ready to be installed
- The Polacel frost-proof water tank can withstand sub-zero temperatures
- The Polacel CMDR system can also be installed on existing water basin
- The extendable modular system has virtually no limitations in terms of form and capacity
- All structural design premises are analyzed and tested by means of dynamic calculations and computer studies beforehand.

Cooling performance measured: The wet Bulb

The wet bulb temperature is in fact the lowest temperature that can be achieved by air cooling in different circumstances.

This temperature can be measured by wrapping a glass thermometer in a piece of cotton that has been drenched in water and placing in a stream of air. The water will evaporate and lose heat. (sweating while taking exercise has the same function and makes a “cooling tower” out of our skin). The wet bulb temperature is therefore lower than the ambient temperature.

Cooling towers try to approach this achievable minimum temperature using as little energy and as efficiently as possible. The Polacel CMDR range succeeds in doing this and combines maximum efficiency with low power consumption, and therefore minimal costs.

Pre-assembling

Polacel CMDR cooling towers can be easily assembled on site. Using the extended manuals with 3D instructions. If required, the smaller models Polacel CMDR can be delivered completely pre-assembled on a low loader. Then the complete cooling tower can be shipped to its final destination in 2 pieces.

Modules to size

The cooling water temperature (inlet and outlet), the wet bulb temperature, noise and the water load are the five most important factors in the selection of a cooling tower. Kelvion makes an inventory of the requirements together with the client and uses this inventory as the basis of the design for a suitable solution. The modular Polacel CMDR system can be extended and there are standard solutions available for different capacity needs. Kelvion engineers make customized changes to meet special requirements.



Benefits:

- Stand alone
- Inline
- Back to back arrangements

Noise reduction

Mostly cooling towers are standing on a roof or at the edge of the site. The noise produced by the cooling tower such as the fan, falling water and the electrical motor or geared motor can be a problem. Kelvion has put a number of developments into practice that reduces the noise nuisance. Larger fans (lower speed, less noise and higher efficiency) floating silencers to reduce the noise of splashing water. There are also other noise reducing measures that combat the different sources of noise. Kelvion makes calculations for all cooling towers in relation to the requirements laid down in environmental permits.

The security of quality

Kelvion designs and manufactures cooling towers with long lifetimes and minimal maintenance needs. This is achieved through the materials used - stainless steel combined with glass fibre and plastic - the sound design and the experience of our engineers. The result is a cooling tower that is low maintenance, energy efficient and able to supply constant excellent problem-free performance.

Advice and service

Kelvion builds cooling modules that meet precise specifications. Our sales engineers give advice, analyze your wishes and take personal responsibility for delivery so that your order is completely in line with your instructions.

Kelvion own service organization specializes in cooling tower maintenance. Irrespective of brand or version, the maintenance specialists know all the ins and outs of the whole technical area and are involved in the latest developments. Kelvion has broad experience in cooling tower maintenance. We work in accordance with the requirements described by ISO, VCA, VDMA, CTI and Eurovent. The technicians can carry out the maintenance needed in virtually every location and in practically any time frame.

Kelvion B.V.

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