ilmed IMPIANTI

Since **1981**

FROM 200 TO 1000 KW	FROM 1000 TO 4000 KW	FROM 1000 TO 4500 KW	FROM 1000 TO 5000 KW
T SERIES	**GTP** SERIES	**NC/ST** SERIES	**GT** SERIES *FILM FILLING*

FACTORY **ASSEMBLED**

WATER COOLING **TOWER**

> DESIGN FEATURES

The GT water cooling towers are specially conceived for medium-large thermal capability.
They comply to a specific standard and are supplied completely pre-assembled, since their dimensions are compatible with transportation by road, avoiding the separation between the cooling tower body from the ventilation group.

> STRUCTURE

Each module is made of a main unit which is composed by the cooling section and by one or two ventilation units, totally pre-assembled and joined through bolts. The module can be completed with the air inlet section and with the cooled water collection basin. The reticular structure made of carbon steel open section is simple, strong and light. The upper part is flat so that is possible to walk on it.

> FAN UNITS

The ventilation is operated by induced draught, characterized by fans in drawing position.
The electric motors are equipped with all the special protections for the operation in presence of water droplets and high humidity; the fan is assembled directly on the motor shaft and the whole group is assembled on a monolithic structure which can be easily disassembled. The fans have an high efficiency wing profile. The ventilation duct is protected by a safety metal grid.

> DISTRIBUTION SYSTEM

The water to be cooled enters into the module through a single flanged connection. The nozzles are assembled through a threaded connection and their dimensions are factory selected to suit the design water flow and guarantee the best performances.
The passages size are large, in order to avoid any risk of blockage.

> FILM FILLING

The filling system, which works on the “film” principle, is made of many layers of PVC/PP elements with cross-fluted or vertical ducts, in order to form a thermal exchange system characterized by a high surface – volume ratio. Depending on the working conditions, different configurations of the elements with different geometrical shapes can be supplied.
ILMED IMPIANTI designed and developed new film PVC filling; now ILMED cooling towers are supplied with these special fillings as original equipment.

> HYBRID SPLASH FILLING

The new filling system TRUST (Tridimensional Ultimate Splash Type) consists of modular elements made of high thickness polypropylene copolymer (PP) "SPLASH" type; it is specially developed by Ilmed Impianti to be used in and to cool water in cooling towers with dirty industrial water and high levels of suspended solids. The modular characteristics of the filling system facilitate its handling and cleaning during maintenance phases, in order to prolong the functional and performance life of the component. The TRUST system is the natural evolution of the traditional grid system, setting new high levels of robustness, installation easiness, performance and durability.

> DRIFT ELIMINATORS

The drift eliminators are made of PVC/PP sheet modular elements. The efficiency of the eliminator is very high and it limits the water leaks due to dragging to less than 0.005% of the circulating range.

> SPECIAL EXECUTION

In the case of shipments by container Ilmed Impianti is able to supply special versions with perfectly compatible measures. We are also fully available for studies and customized according to specific customer requirements.

> OPTIONAL EQUIPMENT

Every cooling towers can be equipped with several optionals, selected according to ILMED IMPIANTI experience.

> VIBRASWITCH

The vibration switch is available, to monitoring the anomalous vibrations of the fan units. The device, operating on a on/off control, when the vibration reaches such a level as to become dangerous for good operation, the vibraswitch automatically disconnects the electrical circuit of the unit. The vibraswitch is provided with a reset button and a reset coil remote control switch.

> ELECTRIC HEATERS

Electric immersion heaters are available factory installed into the basin of the cooling tower. The heaters are sized to keep at + 4-5°C the basin water temperature with an ambient air temperature of - 15°C and with the fans switched off. They are supplied complete of thermostat in weatherproof enclosure for outdoor use.

> CAGED LADDER

For the inspection and maintenance of the fan units a caged ladder can be supplied, to climb over the fan deck. The caged ladder will be manufactured in HDGS.

> FAN DECK HANDRAIL

In case of supply of caged ladder, the safety handrail all around the fan deck is strongly recommended. The handrail is manufactured in HDGS, according to the most common international regulations. In any case the access to the fan deck has to be restricted to authorized and skilled personnel.

> MAKE-UP VALVE

A mechanical valve an float assembly is available for a simple water level control and make-up. Float valve is plugged in the water make-up manifold. It allows to automatically make-up the water consumed for evaporation and other reasons. It is made by a copper or plastic floating sphere and a cast iron floating tap.

> WATER LEVEL CONTROL

The electric water level control is also available, for an accurate control of the basin level. It is a liquid point level switch based on the technology of the vibrating fork, to be assembled inside the basin of the cooling tower.

> TEMPERATURE SENSOR

An electric temperature sensor is available, to be assembled in the basin of the cooling tower, or preferably on the outlet piping. The sensor is made by an electric probe of the PT100 type, complete of signal transmitter 0-20 mA.

> SNOW EXECUTION

This special execution is available, when the cooling tower has to be operated in very cold conditions with fans switched on, and/or for installation on snow making systems, to avoid the freezing of drifted droplets on the fan duct. The fan stack is externally provided with heating cables system that prevent ice formation in the fan assembly. Heating cable are powered by single-phase 220V voltage. The system is completely connected to a junction box, and it is operated with a thermostat. The assembly is thermally insulated, and further protected by a metal lining.

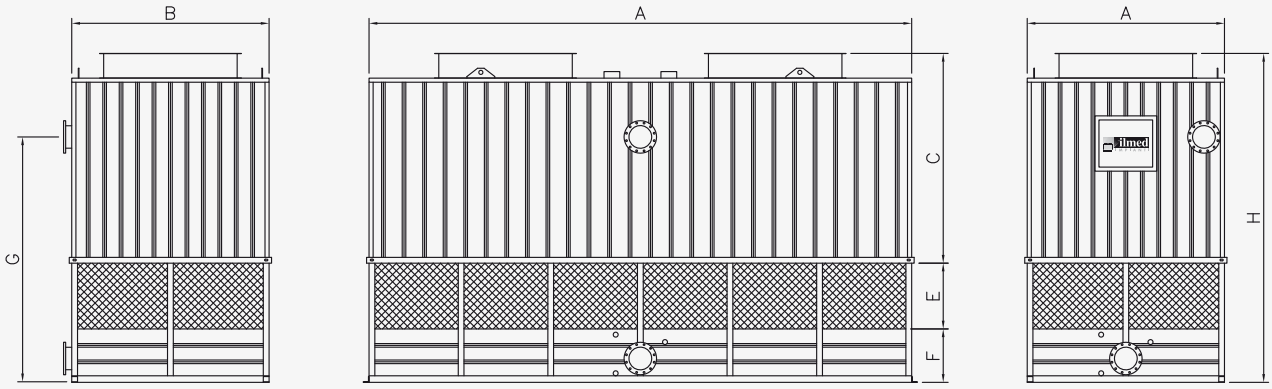
> BASIN NOISE ATTENUATOR

To reduce the noise due to the splashing of the falling water into the basin, a special assembly is available.

> ENVIRONMENTAL IMPACT - LOW NOISE MODELS

The sound power level generated by the GT cooling towers is suitable for the installation in most environments. In case of very strict requirements, special models and execution are available, which are characterized by differentiated and very low level of sound emissions. ILMED is in position to propose many technical solutions, and to combine them together in order to attain the best result through a low noise ventilation groups, attenuation system splash in basin and installation of silencers in the suction / ejection section.

> TECHNICAL DATA



		L1/10	L1/10/S	L1/13	L1/11	N1/10	N1/10/S	N1/13	N1/11	P1/10	P1/10/S	P1/13	P1/11	Q1/10	Q1/10/S	Q1/13	Q1/11
MODULE SIZE	Lenght A (mm)	2.700	2.700	2.700	2.700	3.020	3.020	3.020	3.020	3.300	3.300	3.300	3.300	3.600	3.600	3.600	3.600
	Widht B (mm)	2.400	2.400	2.400	2.400	2.400	2.400	2.400	2.400	2.400	2.400	2.400	2.400	2.400	2.400	2.400	2.400
	Height C (mm)	2.250	2.250	2.250	2.250	2.250	2.250	2.250	2.250	2.250	2.250	2.250	2.250	2.250	2.250	2.250	2.250
AIR INLET	Height E (mm)	650	650	650	0	650	650	650	0	650	650	650	0	650	650	650	0
BASIN	Height F (mm)	550	1.000	0	0	650	1.000	0	0	650	1.000	0	0	650	1.000	0	0
COMPLETE CT	Height H (mm)	3.750	4.200	3.200	2.550	3.850	4.200	3.200	2.550	3.850	4.200	3.200	2.550	3.850	4.200	3.200	2.550
NOMINAL WATER FLOW RATE	mc/h	140	140	140	140	166	166	166	166	185	185	185	185	193	193	193	193
NOMINAL CAPABILITY	kW	977	977	977	977	1158	1.158	1.158	1.158	1.291	1.291	1.291	1.291	1.347	1347	1.347	1.347
ARRANGEMENT		standard	basin h=1,0 mt	air inlet no basin	no air inlet no basin	standard	basin h=1,0 mt	air inlet no basin	no air inlet no basin	standard	basin h=1,0 mt	air inlet no basin	no air inlet no basin	standard	basin h=1,0 mt	air inlet no basin	no air inlet no basin
MOTOR	N	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	kW	7,5	7,5	7,5	7,5	11	11	11	11	11	11	11	11	11	11	11	11
FITTINGS	Inlet	200	200	200	200	200	200	200	200	200	200	200	200	250	250	250	250
	Outlet	200	200			200	200			200	200			250	250		

		R1/10	R1/10/S	R1/13	R1/11	H2/10	H2/10/S	H2/13	H2/11	L2/10	L2/10/S	L2/13	L2/11	N2/10	N2/13	N2/11
MODULE SIZE	Lenght A (mm)	4.200	4.200	4.200	4.200	4.400	4.400	4.400	4.400	5.400	5.400	5.400	5.400	6.000	6.000	6.000
	Widht B (mm)	2.400	2.400	2.400	2.400	2.400	2.400	2.400	2.400	2.400	2.400	2.400	2.400	2.400	2.400	2.400
	Height C (mm)	2.250	2.250	2.250	2.250	2.250	2.250	2.250	2.250	2.250	2.250	2.250	2.250	2.250	2.250	2.250
AIR INLET	Height E (mm)	650	650	650		650	650	650	0	650	650	650	0	800	800	0
BASIN	Height F (mm)	650	1.000			650	1.000	0	0	650	1.000	0	0	650	0	0
COMPLETE CT	Height H (mm)	3.850	4.200	3.200	2.550	3.850	4.200	3.200	2.550	3.850	4.200	3.200	2.550	4.000	3.350	2.550
NOMINAL WATER FLOW RATE	mc/h	234	234	234	234	240	240	240	240	282	282	282	282	340	340	340
NOMINAL CAPABILITY	kW	1.633	1.633	1.633	1.633	1.674	1.674	1.674	1.674	1.967	1.967	1.967	1.967	2.372	2.372	2.372
ARRANGEMENT		standard	basin h=1,0 mt			standard	basin h=1,0 mt	air inlet no basin	no air inlet no basin	standard	basin h=1,0 mt	air inlet no basin	no air inlet no basin	standard	air inlet no basin	no air inlet no basin
MOTOR	N	1	1	1	1	2	2	2	2	2	2	2	2	2	2	2
	kW	15	15	15	15	7,5	7,5	7,5	7,5	7,5	7,5	7,5	7,5	11	11	11
FITTINGS	Inlet	250	250			250	250	250	250	250	250	250	250	250	250	250
	Outlet	250	250			250	250			250	250			250		

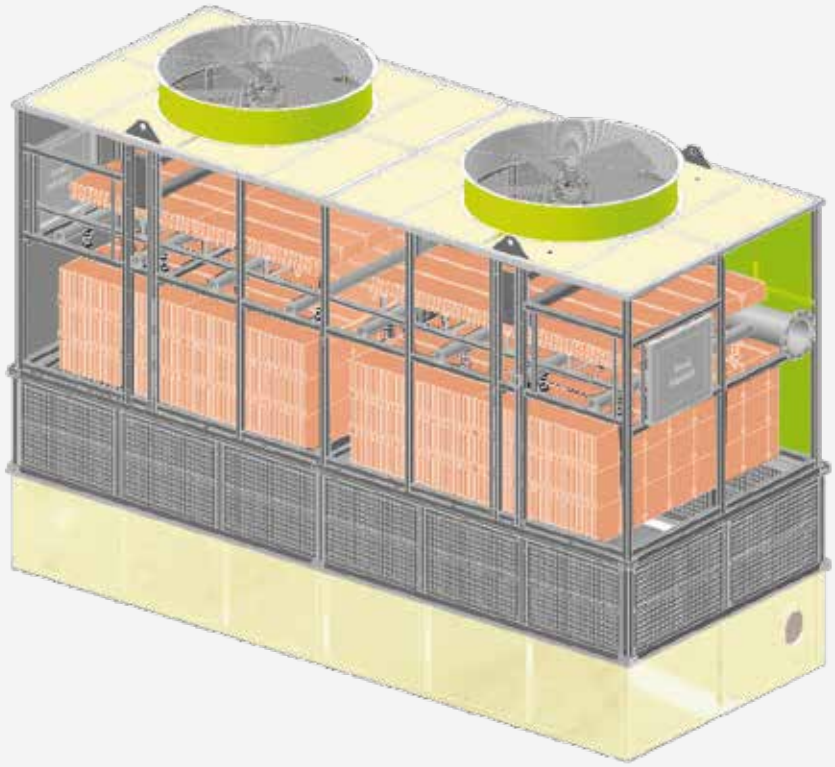
		P2/10	P2/13	P2/11	Q2/10	Q2/13	Q2/11	Q2/20	Q2/23	Q2/21	R2/10	R2/13	R2/11	R2/20	R2/23	R2/21
MODULE SIZE	Lenght A (mm)	6.600	6.600	6.600	7.120	7.120	7.120	7.120	7.120	7.120	8.400	8.400	8.400	8.400	8.400	8.400
	Widht B (mm)	2.400	2.400	2.400	2.400	2.400	2.400	2.400	2.400	2.400	2.400	2.400	2.400	2.400	2.400	2.400
	Height C (mm)	2.250	2.250	2.250	2.250	2.250	2.250	2.550	2.550	2.550	2.250	2.250	2.250	2.550	2.550	2.550
AIR INLET	Height E (mm)	800	800	0	800	800	0	800	800	0	800	800	0	800	800	0
BASIN	Height F (mm)	650	0	0	650	0	0	650	0	0	650	0	0	650	0	0
COMPLETE CT	Height H (mm)	4.000	3.350	2.550	4.000	3.350	2.550	4.300	3.650	2.850	4.000	3.350	2.550	4.300	3.650	2.850
NOMINAL WATER FLOW RATE	mc/h	372	372	372	389	389	389	445	445	445	474	474	474	494	494	494
NOMINAL CAPABILITY	kW	2.595	2.595	2.595	2.714	2.714	2.714	3.105	3.105	3.105	3.307	3.307	3.307	3.447	3.447	3.447
ARRANGEMENT		standard	air inlet no basin	no air inlet no basin	standard	air inlet no basin	no air inlet no basin	standard	air inlet no basin	no air inlet no basin	standard	air inlet no basin	no air inlet no basin	standard	air inlet no basin	no air inlet no basin
MOTOR	N	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
	kW	11	11	11	11	11	11	15	15	15	15	15	15	15	15	15
FITTINGS	Inlet	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250
	Outlet	300			300			300			300			300		

> OVERSEA SHIPMENT BY CONTAINER

A special production range of cooling towers is available, with dimensions suitable for the transportation by container.

> MATERIALS

The production range considers different interchangeable and compatible materials to answer every customer requirements and specifications.



COMPOSITION OF THE SUPPLY								
	GTT				GTG			
ITEM	*STANDARD*	*OPTIONAL*			*STANDARD*	*OPTIONAL*		
COOLING BODY								
MAIN FRAME	PAINTED STEEL				HDGS			
CASING	FRP	LIGHT ALLOY			FRP	LIGHT ALLOY		
FAN STACK	FRP	PAINTED STEEL			FRP	HDGS		
SAFETY GRID	HDGS				HDGS			
FAN	LIGHT ALLOY	PP			LIGHT ALLOY	PP		
FAN UNIT BRIDGE	PAINTED STEEL				HDGS			
BOLTS	AISI 304				AISI 304			
PIPING	PAINTED STEEL	PP	PVC		HDGS	PP	PVC	
SPRAYING NOZZLES	PPG				PPG			
FILLING	FILMED 15 - PVC	ONDA 13 - PP	FILMED 20 - PVC	ONDA 20 - PP	FILMED 15 - PVC	ONDA 13 - PP	FILMED 20 - PVC	ONDA 20 - PP
DRIFT ELIMINATORS	PVC	PP			PVC	PP		
LOWER BODY								
AIR INLET FRAME	PAINTED STEEL				HDGS	PAINTED STEEL		
LOUVERS	PVC	HDGS	PP		PVC	HDGS	PP	
BASIN	PAINTED STEEL				HDGS	PAINTED STEEL		
BOLTS	AISI 304				AISI 304			

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