

GACST[™] ADIABATIC COOLING SYSTEM ENHANCE YOUR AIR-COOLED CHILLER PERFORMANCE



100% PROTECTION FOR THE CONDENSERS



REDUCE AIR-COOLED CHILLER ELECTRICAL BILL UP TO 35%



ENHANCE AIR-COOLED CHILLER COOLING CAPACITY UP TO 40%



IMPRESSIVE RETURN ON INVESTMENT UP TO 12 - 24 MONTHS



SUPPORT YOUR CONTRIBUTION TO THE UAE NET ZERO 2050



IT HAS BEEN TEN AMAZING YEARS SINCE GACST[™] REDUCING CARBON EMISSIONS
AND SAVING ENERGY ALONG THE WAY THANKS TO OUR CLIENTS.
WWW.GERABENERGY.COM

GACS ADIABATIC COOLING SYSTEM

GERAB ENERGY SYSTEMS

Is a leading designer and manufacturer of the Adiabatic Cooling System for Air-Cooled Chillers with a strong track record of providing high quality products, services and turnkey solutions for adiabatic cooling system design, supply, installation, testing, commissioning, measurement, verification, and annual maintenance contracts.

We focus on manufacturing systems for applications including residential and commercial buildings, data centers, and any other facilities that utilize Air-Cooled Chillers. Our efforts have been recognized by many clients to whom GACST[™] have successfully implemented adiabatic cooling system.

Based in the UAE, we are innovators of technologically advanced cooling solutions that deliver industrial connectivity benefits, reduce energy, and water consumption and automatically control Legionella risk. That's why our products are the chosen option for some of the world's most reputable OEMs.

SMARTER

We work at the forefront of industrial and commercial connectivity, with integrated PLC (Programmable Logic Controller) interfaces as standard, for smart environments and a combination of temperature probes for data collection and analysis.

COOLER

We strive to deliver optimum adiabatic cooling system performance for each individual project. Our mechanical & energy engineers have the skills and experience required to develop bespoke product design alternations which suit challenging installation environments, working hands-on to create a cooling solution that is designed within your site's exacting specification variables.

Our products are manufactured in UAE, fully built, with control panels supplied fitted and pre-wired. Every GACST[™] Adiabatic Cooling System ensure our designs are safe and our standards uncompromising.

EASIER

Taking a consultative approach to best practice specification, our experienced team will produce fit-for-purpose, data-rich proposals designed to optimize adiabatic cooling system performance on a project-by-project basis. Don't take our word for it though, we'll provide you with all the thermal, water and energy consumption and climatic data we've used to work out your achievable ROI, so that you can specify our products with complete confidence.

We're proud to be a customer-centric, family owned and managed business. We work hard to maintain long standing relationships with our customers, adding value to their supply chain with our efficient product specification processes, established logistics and delivery services, alongside fast, convenient installation, testing and commissioning with customized annual maintenance by experienced team.



GACS ADIABATIC COOLING SYSTEM

WHAT IS GACST[™] ADIABATIC COOLING SYSTEM:

GACST[™] Adiabatic Cooling System is a product designed to function as a pre cooler to the standard Air-Cooled Chiller. It reduces the incoming air temperature to chiller condenser coils resulting in a significant improvement in Air-Cooled Chiller efficiency. This improvement will result into:

 Reduction in chiller electrical consumption by up to 35%.

 Increases in chiller cooling capacity by up to 40%.



Chiller



GACST[™] Adiabatic Cooling System (GACST[™])



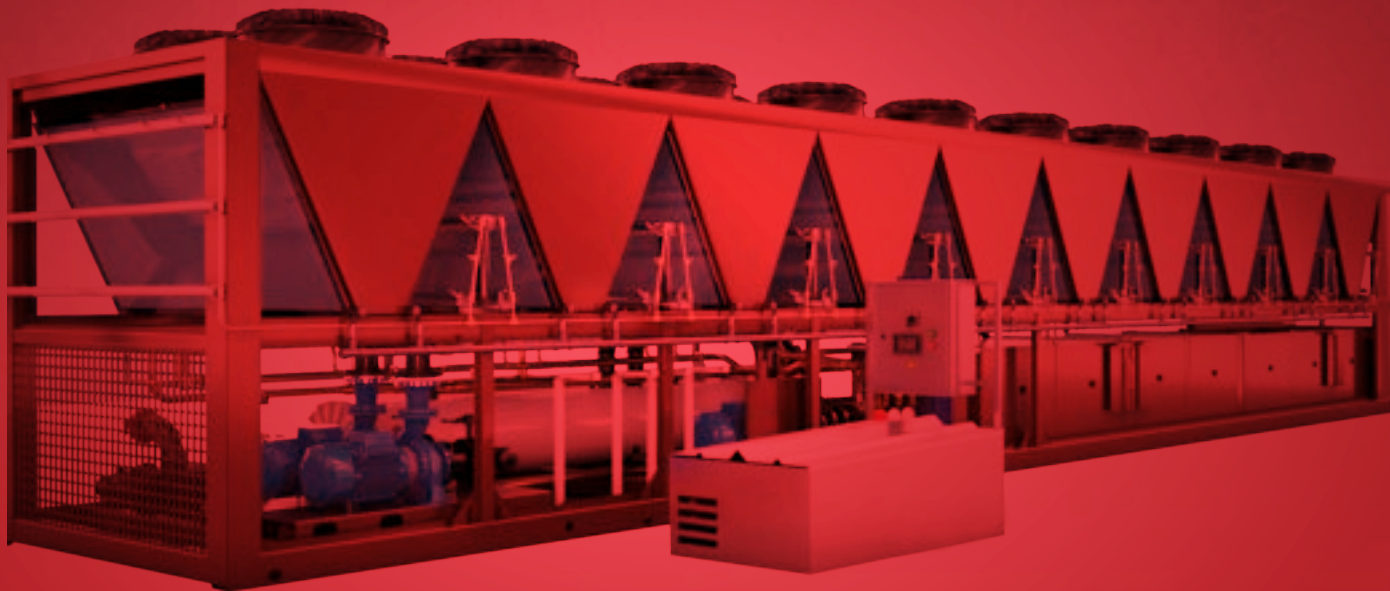
Chiller + GACST[™] Adiabatic Cooling System (GACST[™])
= Higher Chiller Efficiency

GACST[™] ADIABATIC COOLING SYSTEM

- ➔ Protects Condenser coils from dust, rust, calcium, and mineral deposit (limescale) & Direct Sunlight.
- ➔ Protects Air-Cooled Chiller from overheating / tripping.
- ➔ Advanced control unit analyses ambient temperature & relative humidity and chiller fan load ensuring evaporation efficiency up to 90% with no water losses/ dripping.
- ➔ Four-stages of filtration and treatment: assures elimination of dirt, mineral deposit, bacteria from the sprayed fine mist.
- ➔ High durability and long-term reliable performance.
- ➔ Fits all types of Air-Cooled Chillers, modular setup, easy to install and maintain.



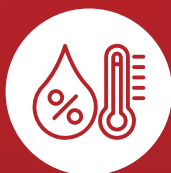
THE BENEFITS OF GACS™ ADIABATIC COOLING SYSTEM



UP TO 35% CHILLER ENERGY SAVINGS



UPTO 40% INCREASE IN CHILLER COOLING CAPACITY



UP TO 2° C ABOVE WET BULB TEMPERATURE DROP



REDUCES GAS PRESSURE IN CHILLER GAS CIRCUIT THAT MINIMIZES COMPRESSOR'S LOAD AND ENHANCE COP

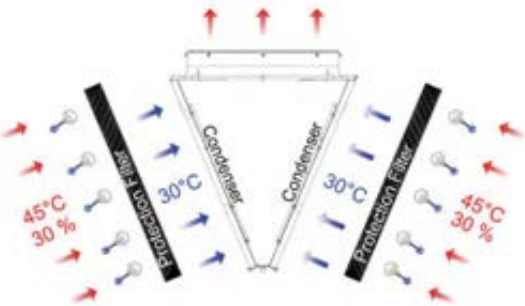


100% PROTECTION OF THE CONDENSERS FROM DIRECT SUN LIGHT, DUST, MINERAL DEPOSIT, CALCIUM AND RUST

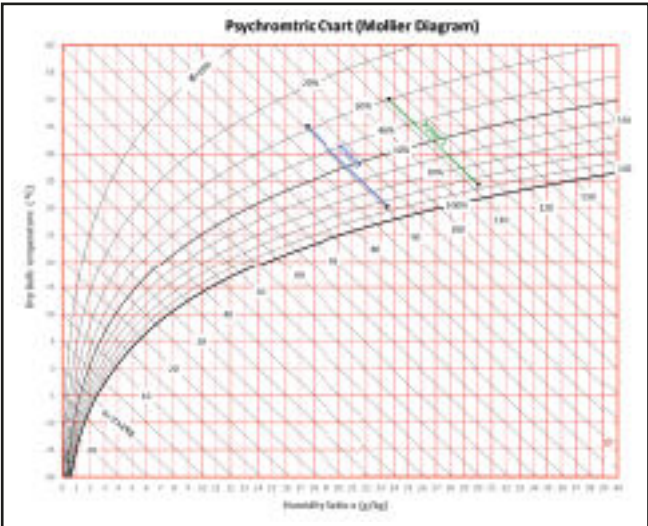
GACS ADIABATIC COOLING SYSTEM

HOW THE GACST[™] ADIABATIC COOLING SYSTEM WORKS:

GACST[™] Adiabatic Cooling System combines an adiabatic evaporative cooling process, condenser protection, water purification and intelligent sequence of operation. The system is mounted in front of condenser coil of the Air-Cooled Chiller protected by air protection filters preventing condenser coils from calcium and mineral deposit formation (limescale), rust and direct sunlight as well as eliminate water droplets to reach the condenser coils. The system includes 4 stages of water purification & treatment to ensure sustainable performance and protection of the chiller as well as includes a recirculation module that ensures 100% of water usage. The system generates fine mist powered by intelligent sequence of operation which largely evaporates instantaneously and ensures significant reduction in the temperature of the incoming air into the condenser coils.



GACST [™] Status	POINT 1		POINT 2	
GACST [™] (OFF)	50.0 deg.c DBT	32.3 deg.c WBT	45.0 deg.c DBT	28.4 deg.c WBT
GACST [™] (ON)	34.3 deg.c DBT	32.3 deg.c WBT	30.0 deg.c DBT	28.4 deg.c WBT



“Significant temperature drops, higher chiller efficiency with lower electricity consumption and improved cooling capacity.”

LCWT (C)	30XA UNIT SIZE	CONDENSER INTAKE AIR TEMPERATURE (C)											
		30			35			40			45		
		Cap. kW	Input Power (kW)	Cooler Flow Rate (l/s)	Cap. kW	Input Power (kW)	Cooler Flow Rate (l/s)	Cap. kW	Input Power (kW)	Cooler Flow Rate (l/s)	Cap. kW	Input Power (kW)	Cooler Flow Rate (l/s)
8	080	292.4	88.2	12.6	276.8	93.8	11.9	260.7	99.9	11.2	244.0	106.5	10.5
	090	322.1	90.1	13.8	310.0	97.2	13.3	297.4	105.1	12.8	284.0	113.7	12.2
	100	357.7	102.0	15.4	344.2	110.8	14.8	329.8	120.4	14.2	314.2	130.7	13.5
	110	388.6	112.1	16.7	373.4	121.7	16.0	367.4	132.6	15.4	340.6	144.6	14.6
	120	420.3	122.6	18.1	403.2	133.0	17.3	385.5	145.0	16.6	367.4	158.8	15.8
	140	503.0	138.9	21.6	485.5	151.2	20.9	467.0	164.6	20.1	447.3	179.1	19.2
	160	577.4	162.8	24.8	556.6	176.7	23.9	534.5	192.2	23.0	511.3	209.7	22.0
	180	647.1	179.8	27.8	625.5	195.4	26.9	602.8	212.4	25.9	579.0	230.7	24.9
	200	732.9	204.8	31.5	708.1	221.7	30.4	681.5	240.5	29.3	652.6	261.5	28.0
	220	795.9	228.3	34.2	769.2	246.9	33.1	740.7	267.7	31.8	709.9	291.0	30.5
	240	856.4	254.6	36.8	825.9	275.4	35.5	793.6	298.5	34.1	743.9	307.7	32.0
	260	947.3	285.5	40.7	915.4	288.2	39.3	882.2	313.2	37.9	846.5	341.1	36.4
	280	1012.0	288.1	43.5	977.0	310.3	42.0	940.3	337.3	40.4	901.8	366.9	38.7
	300	1081.5	311.8	46.5	1043.7	337.2	44.8	1003.8	365.6	43.1	947.2	380.2	40.7
	325	1161.2	326.2	49.9	1120.3	355.0	48.1	1078.0	386.8	46.3	1033.9	421.7	44.4
	350	1222.4	356.2	52.5	1179.2	386.9	50.7	1134.3	420.8	48.7	1057.5	444.8	45.4
	400	1442.9	427.5	62.0	1392.0	464.3	59.8	1338.2	505.0	57.5	1222.8	514.2	52.5
	450	1604.2	483.8	68.0	1547.4	526.4	66.5	1473.7	566.4	63.3	1238.9	524.6	52.8
	500	1716.1	527.6	73.7	1654.9	572.2	71.1	1568.1	611.8	67.4	1297.6	550.1	55.3

GACS ADIABATIC COOLING SYSTEM

GACS™ ADIABATIC COOLING SYSTEM KEY COMPONENTS:

**CONDENSER PROTECTIVE FILTER:**

Made of polyurethan alloy cell material that is mounted into an aluminum casing. The Condenser Protective Filter gets installed on the front of chiller condenser coils, protects it from calcium and mineral (limescale) deposits dirt, direct, sunlight and does not allow the water mist to pass through it and come into direct contact with the condenser coil.

**HIGH-PRESSURE NOZZLE PANEL:**

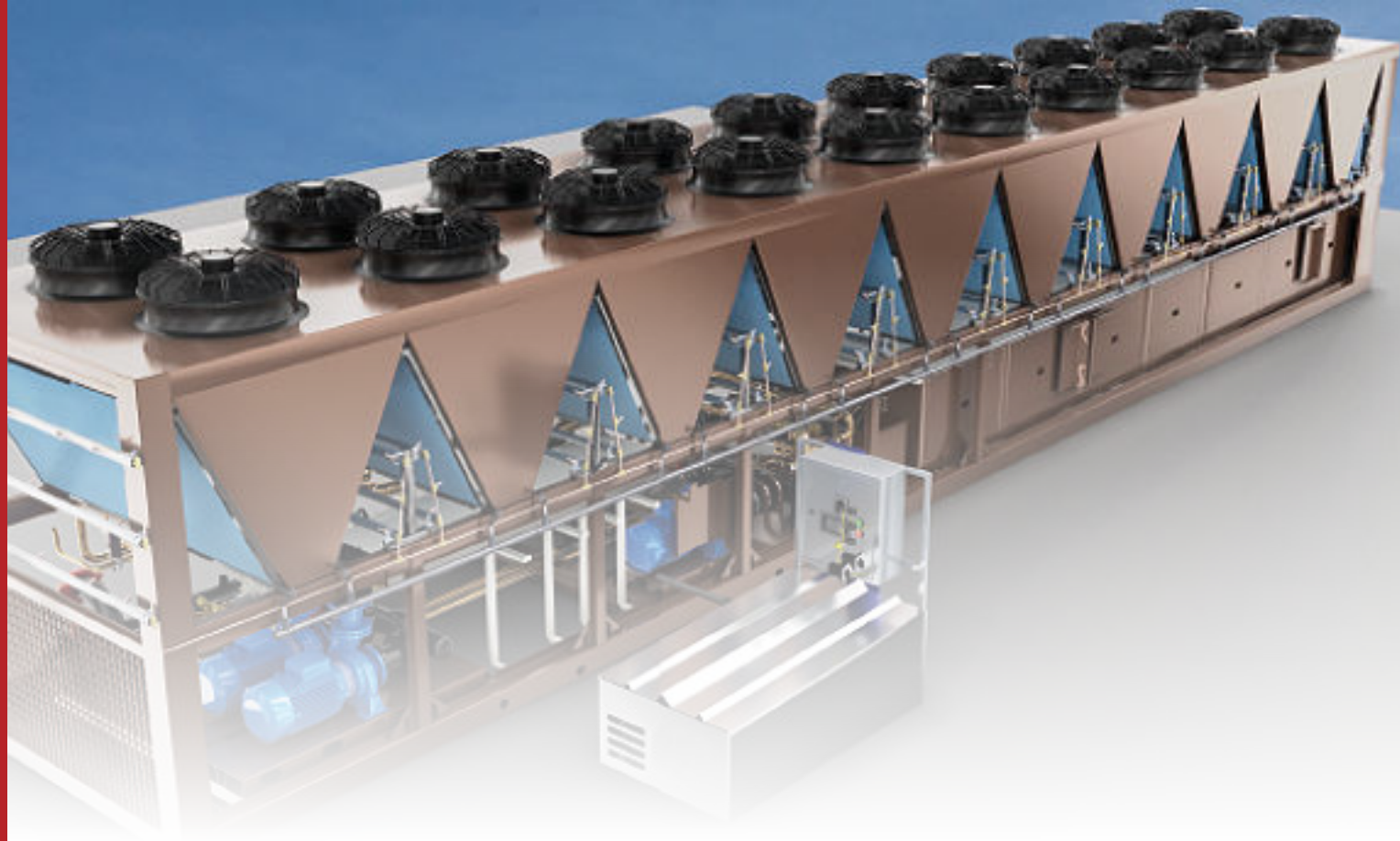
Consists of high resistance aluminum casing and stainless-steel micro-nozzles lines with high pressure misting nozzles and all connection components, mounted opposite to the condenser protective filter. The high-pressure misting nozzle panel creates a fine mist wall which comes in contact with the incoming hot air to condenser coil allowing the adiabatic process to take place.

**PUMP STATION AND WATER TREATMENT:**

Designed to produce fine mist and collect the non-evaporative water droplets using intelligent sequence of operation. The pump station includes high-pressure pumps that operates at 50- 70 bars pressure, valves, water recirculation Module and 4-stage water purification & treatment levels, UV sterilization block for protection against CaCo₃, Bacteria and Legionella.

**CONTROL UNIT:**

Designed to enable the system to use precise amount of water required at different weather conditions and chiller load. The controller analyses relative air humidity, air temperature and chiller load & airflow, then processes the data to regulate the high-pressure pumps to produce fine mist for maximum efficiency.



UPGRADE YOUR SYSTEM WITH GACST™ ADIABATIC COOLING SYSTEM

SAVE ENERGY

JOIN THE UAE NET ZERO 2050 JOURNEY



Global Presence



**GERAB OPERATES
FROM 11 ASSOCIATE
OFFICES WORLDWIDE
600+ STAFF ACROSS
ALL LOCATIONS**

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