

NEXT-GEN COMFORT COOLING SOLUTION

BY CREATIVE COOLING TECHNOLOGY



CCT

CREATIVE COOLING TECHNOLOGY

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- **CREATIVE COOLING TECHNOLOGY** a Chilled Water based HVAC Systems Manufacturer is coming up with India's First Variable Water Flow (VWF) AC Systems. Our Plant is Located in Vadodara – an industrial Hub of Gujarat.
- At **CCT**, our commitment to creating innovative air conditioning products has made us one of the most respected organizations in the industry. From concept to market, **CCT** takes a hands-on approach to ensure that each and every step meets our stringent standards of quality, durability and dependability.
- We have great pleasure in introducing, ourselves as Certified Progressive organization in the field of Air Conditioning & refrigeration systems, i.e. Chilling Plants, Cold Room, Compressed Air Systems, Centralized A.C. Systems and Cooling Towers, as well as Turnkey project of Air Conditioning / Chilled / Cooling Water & Compressed Air Distribution System.
- We are a professionally organized engineering Company with team of Technocrats having vast experience of 40 years in this field. We have long list of more than 2500 Satisfied Customers with us. We are catering the clients all over INDIA & ABROAD, backed up with good Service after Sales.
- We provide excellent service support with a team of more than 14 service technocrats for our most reliable products and with wide Dealer Network.

CCT FOUNDER

YOGESH SHAH,

HVAC Engineer A Specialist In HVAC Has A Vast.

Experience in designing, developing & execution for more than 40 years. HVAC new development are his main motive to reduce energy He is HVAC engineer by profession who has ideas of research & development. Project development & Execution expert.



- CCT A specialist in Variable Water Flow technology the first manufacturer of Process Chillers in India, having exports to countries around the world. Our Product range includes the advanced Screw Chillers, versatile Scroll Chillers, rugged Reciprocating Chillers as well as Customized Chillers, precisely designed and made as per the peculiar process cooling applications, some of them being Brine Chillers, Oil Chillers, Gas liquefaction Chillers, Batching Chillers, Cascade Chillers, Hazardous area Chillers etc.
- We are accredited through various prominent international organizations for the management as well as engineering processes and are approved through various prestigious consultants and certifying bodies for the specific process cooling applications across the world. As specialists in the refrigeration industry, we provide solutions for almost all the segments, through the widest range of technologies in fluid compression as well as largest capacity and temperature ranges.
- The endeavor is being recognized by our clients, many of them being associated with us on a continued basis, namely, AMUL Dairy, kaizen Switchgear, Saraf Foods, Ahilya Pharmaceuticals, Arjun Bees, shankar packaging, National Foods, Pragya Plastics, Indonet Plastics, Siva Lab, Suzuki, Honda, Technico Industries, Jay Agro, Shiv Industries, United Enterprise, RO Plants water cooling, and many more.

TECHNOLOGY

CCT-is an air-cooled chiller system designed to satisfy the requirements of Indian as well as International residential and commercial like new Construction, retrofit, add-on, process industries, Hospitality market segments. "CCT" from CCT is available in compact size from 1 to 40 ton, as a Central chiller from 41 to 150 ton cooling capacities and is matched with a variety of indoor fan coils, unsurpassed in application flexibility. "CCT" is a self-contained chiller unit with no add-on modules or additional assembly needed to make chilled water. "CCT" is designed with great care to provide easy service access and readily available components. CCT works using the basic refrigeration cycle. R-410 / R22 & other useful refrigerant is circulated through the system by a Scroll compressor (Copeland from Emerson , Danfoss) which increases the pressure and temperature of the refrigerant and pumps it into the condenser coil. In the condenser, the refrigerant vapor is cooled as air passes over the coil using two, fractional horsepower, fan/motor assemblies configured for horizontal discharge. The refrigerant then condenses into liquid. The liquid refrigerant flows through a thermostatic expansion valve where the flow is metered. The pressure and temperature are reduced. After passing through the expansion valve, the refrigerant flows into a brazed plate heat exchanger (PHE) where it boils by absorbing heat from the water passing through parallel circuits of the heat exchanger. As the refrigerant starts the trip back through its self-contained cycle, the newly chilled water passes through a stainless steel head, fractional horsepower pump.

The waters head pressure is boosted such that it travels at a specific flow rate (LPM) into the home or other conditioned spaces that are to be cooled. As this chilled water flows through any one of a myriad of fan coil combinations, it passes through a copper coil. Air is moved across the coil and the chilled water absorbs the heat of the space. Cold, dehumidified air is then supplied to the conditioned space.

Variable Water Flow Chiller Systems

Performance Comparison Between DX (Split Units) V/S Chilled Water Systems

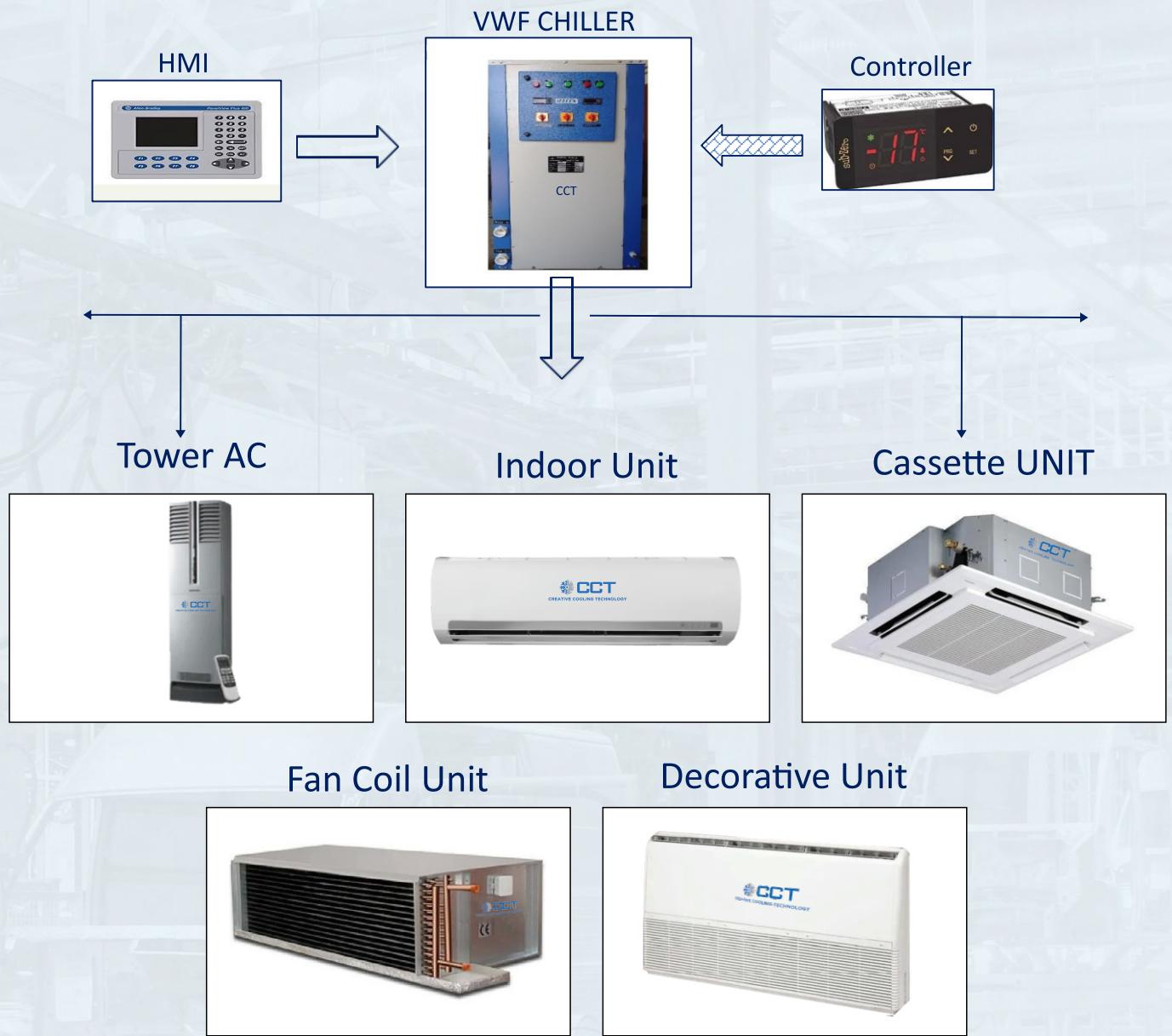
Sr.	Parameter	Direct Expansion System	Innovative Chilled Water System
01	Circulatory force per ton refrigerator	300 Cfm /TR	400 Cfm /TR
02	Average electricity load per ton	1.8 kw	1.2 Kw
03	Electricity consumption per 100 hrs running	186 units	120 units
04	Saving in energy charges	NA	35%
05	Outdoor unit space requirement	100 Sq.ft	40 Sq.ft
06	Distance between indoor/outdoor units	Limited	No Limits
07	Leakage problem	Loss of refrigerant	No Loss of refrigerant
08	Repairs of leakage	Costly & time consuming	Easy repairs
09	Problem due to blower failure	Liquid refrigerant will damage compressor	No problem as chiller will be off load
10	Temperature control	Precise control not possible	Precise control possible
11	Maintenance requirements	High charges at extra	Low charges or no charges
12	Life expectancies	10 years or lower	15 years or higher

Refrigerant Handling - The need to charge our air cooled hydronic chiller system with refrigerant, "CCT" closed refrigerant system does away with the need for EPA certified installation technician's to handle refrigerants. Because there are no refrigerant lines outside the outdoor water chiller cabinet, installation costs are lower vs. standard DX (5 Star) ducted and ductless split system.

Ductwork - Cooling with "CCT" air conditioning chillers and our line of ductless hydronic fan coils means running small, flexible water pipes into spaces within the walls instead of large ductwork runs. This can save hundreds of useable square feet for living space. Using ductless fan coils results in zero percent duct air loss compared to traditional ducted systems.

Zero Line Length Limitations - With insulated water lines carrying the cooling capacity, there is minimal capacity loss allowing for unlimited line length runs to any hydronic fan coil. This method of delivering rated capacity is far more efficient than traditional direct expansion ductless split systems. The "CCT" Chiller - Our chillers contain standard Scroll compressors and common, off the shelf components allowing for easy serviceability and repair. "CCT" chillers are used for residential chiller systems, commercial chiller systems, and process chiller applications for industries. "CCT" also manufactures a heat pump chiller for those lower ambient climate needs.

Logical Diagram Connection for “CCT” VWF Chiller & connected units VARIABLE WATER FLOW System



These are **CCT** chill water system for domestic use in house, hall, offices, club houses, restaurants, party halls, pharmaceuticals and any other medium areas of cooling.

(Logic diagram shown are only to clients view of acceptance. Change may occur depending upon the area of usage with cost effectiveness, automation is interconnected to auto operation only on client acceptance and requirement. remote operation is initiated by client with profile interface).

INDOOR UNIT DATA



WALL MOUNT INDOOR UNIT

Parameters			CCT-12	CCT-18	CCT-24	CCT-36
AIR FLOW Cu.m/H	High	Cu.m/H	680	1020	1200	1650
	Medium	Cu.m/H	550	815	960	1320
	Low	Cu.m/H	340	510	600	825
COOLING CAPACITY	High Kw		TH	3.6	5.17	6.15
			SH	2.49	3.59	4.31



CASSETTE UNIT 2/3/4/6 sides

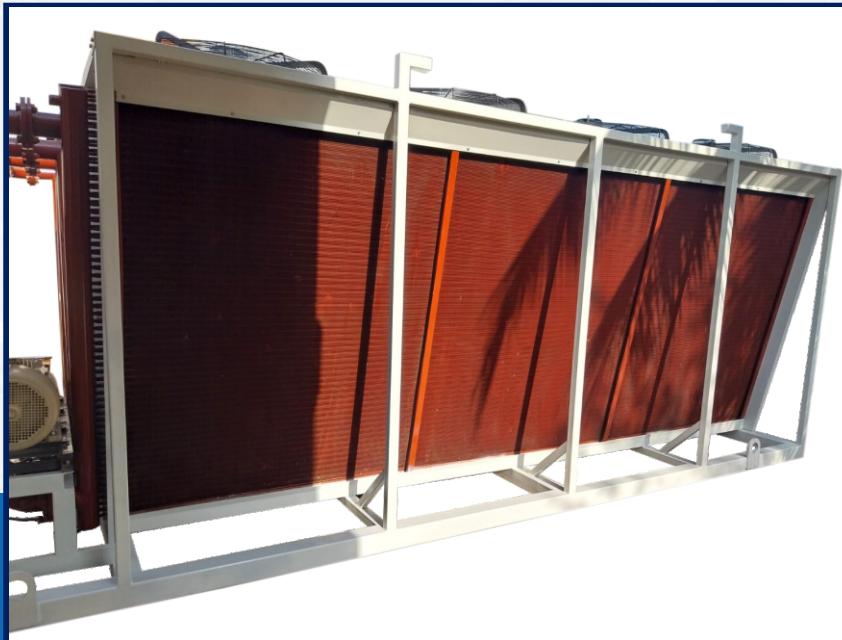
Parameters			CCT-400A	CCT-400 B	CCT-600	CCT-800
AIR FLOW Cu.m/H	High	Cu.m/H	680	680	1020	1360
	Medium	Cu.m/H	520	520	765	1020
	Low	Cu.m/H	400	410	580	710



FLOOR DECORATIVE INDOOR UNIT

Parameters			CCT-400	CCT-600	CCT-800	CCT-1000
AIR FLOW Cu.m/H	High	Cu.m/H	670	970	1350	1575
	Medium	Cu.m/H	540	827	1170	1440

Abbreviation: CCT indoor, CCT cassette indoor, CCT floor unite indoor



DRY COOLER



INDUSTRIAL CHILLER

CREATIVE COOLING TECHNOLOGY “CCT” Industrial chillers are very compact in size, durable and dependable running at high capacity ranging from 25 to 140 ton. “CCT” chillers are ready to run fully wired, charged and factory tested to standards under load condition to ensure ease in operations. “CCT” chillers are manufactured to withstand any climatic conditions, hermetically protected to weather conditions .“CCT” chiller parts are installed with proper calculation to client requirement and ease of operation, parts are listed for clients choice based on area of operation. Automation with HMI and interconnected parts shall be listed on clients requirement.

“CCT” VWF System - Chiller Unit Specification

MODEL NO	CCT-2	CCT-3	CCT-5	CCT-8	CCT-10	CCT-15	CCT-20	CCT-25
Cooling capacity KW/Btu	7/24000	10.5/36000	17.5/ 60000	28/96000	35/120000	52.5/180000	70/240000	87.5/300000
Compressor/Nos	1 Nos	1 Nos	1 Nos	2Nos	2 Nos	2 Nos	2 Nos	2 Nos
Evaporator	Shell & tube type							
Condenser	Aluminium fins copper tube							
Axil Fan info/Nos	Ø400/1 nos	Ø400/1 nos	Ø400/1 nos	Ø400/2 nos	Ø400/2 nos	Ø500/2 nos	Ø500/2 nos	Ø500/2 nos
Fluid pump capacity/Qty	½ Hp/1 No	½ Hp/1 No	3/4 Hp/1 No	1Hp/1No	1Hp/1No	1.5Hp/1No	2Hp/1No	3 Hp/1No
Water line connection PVC	1" x 1 "	1" x 1 "	1" x 1 "	11/4" x11/4"	11/12" x11/2"	1/12" x11/2"	2" x2"	2" x2"
Refrigerant (R)	R-22/407C/410a/134/32/33							
Control & Electrical Parts	Branded							
DimenNCInal data	90x87x67 cm	90x87x67 cm	120x97x87cm	150x87x110cm	165x105x160cm	165x105x160cm	185x105x160cm	200x105x170cm
Power Supply	230/420 V	230/420 V	420 V	420V	420 V	420 V	420 V	420V
Weight	80 kg. Approx	90 Kg. Approx	100 Kg. Approx	150 Kg Approx	190 Kg Approx	250 Kg Approx	300 Kg Approx	400 Kg Approx
Enclosure	GI/powder coated body							
Main connection wire	3core x 4 mm	3core x 4 mm	4core x 4 mm/N	4corex6 mm/N	4Corex6 mm/N	4Corex10mm/N	4Corex16 mm/N	4Corex 16 mm/N

A) Compressors & accessories

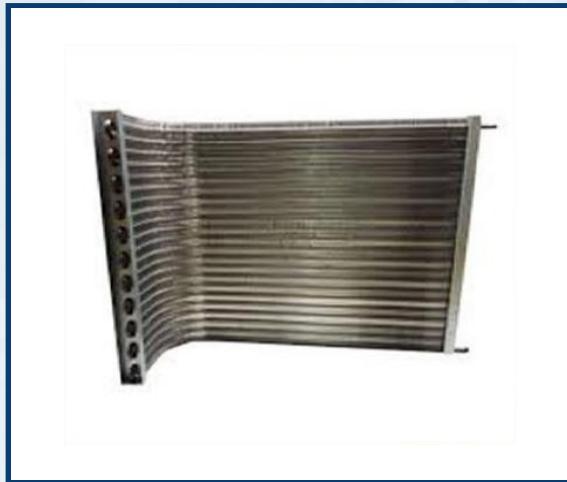


Scroll Compressor:

“CCT” chillers are equipped with Scroll compressors to give maximum output without any maintenance. It suits various application in operation. Many advantages are

- Reduce power input per heater by 25% to 38% compared to a standard belt type crankcase heater.
- Reduce sensitivity to ambient air temperature and wind speed surrounding the compressor.
- Enhance heat transfer with larger surface area and wider contact with the compressor.
- Improve system efficiency through uniform heating and lower power consumption.
- Attenuate the sound level.:

B) Industrial & Domestic Cell & Tube Chiller



We use high quality Air Cooled Condenser in our all Chillers, which is made using best grade raw material procured from reliable vendors and is in huge demand across various markets. These are manufactured as per the customer's specific orders at competitive prices. Made using cutting edge technology, these condensers are known for their efficient performance, durability, year around usage, easy installation, low electricity consumption and low maintenance.

Features:

- Improved efficiency
- Low maintenance
- Excellent performance
- Easy to install
- High durability
- Uninterrupted operation

“CCT’ chiller components

C) Expansion Valve Accessories



We use Danfoss/Emerson expansion valves for our chiller units.(2-way/3-way)

An air conditioning system with a TX valve is often more efficient than other designs that do not use one. A thermal expansion valve is a key element to a heat pump; the cycle that makes air conditioning, or air cooling, possible. A basic refrigeration cycle consists of four major elements, a compressor, a condenser, a metering device and an evaporator. As a refrigerant passes through a circuit containing these four elements, air conditioning occurs. The cycle starts when refrigerant enters the compressor in a low-pressure, moderate temperature, gaseous form. The refrigerant is compressed by the compressor to a high-pressure and high-temperature gaseous state. The high-pressure and high-temperature gas then enters the condenser. The condenser converts the high-pressure and high-temperature gas to a high-pressure liquid by transferring heat to a lower temperature medium, usually ambient air. The high-pressure liquid then enters the expansion valve where the TX valve allows a portion of the refrigerant to enter the evaporator. In order for the higher temperature fluid to cool, the flow must be limited into the evaporator to keep the pressure low and allow expansion back into the gas phase. The TXV has sensing bulbs connected to the suction line of the refrigerant piping. The sensing bulbs give temperature readings to the TXV to adjust flow of refrigerant

D) PHE Plate condenser PHE plate heat exchanger

Material The PHE (Brazed Plate Heat Exchanger) main



Components are stainless corrugated plates and copper sheet, the stainless steel plates are brazed together by brazing material (Copper or Nickel) in Vacuum furnace. Copper brazed heat exchanger can be used for numerous of applications. However, for food or applications involving aggressive fluids, Nickel brazed units are recommended.

Brazed plate heat exchanger Fluid Flow principle The basic flow principle in Baode brazed heat exchanger is parallel (except dual system BPHE) and current flow, this design can achieve the most efficient heat transfer performance. Normally the connections are located on one side of the heat exchanger, this design make easier for installation **Multipass Design brazed plate heat exchanger**.

The heat exchanger can be designed as a Multipass unit according to customers' need: different connections location and type & size. Customer specific designs are available on request

“CCT” Chiller - Electrical & Control System

Electrical panel Sub-zero controller



CREATIVE COOLING TECHNOLOGY provides electrical control panel that integrate all the basic control functions required by a chiller for “CCT” Air Conditioning System. It has Compressor & Pump protection algorithm which include shutting down the system incase of various faults, Emergency stop switch which stop the entire system incase of emergency condition and Continuous display of Ampere loading of the system on panel gives as ample & visual proof of Energy Savings Sub Zero digital controller is fixed into the electrical panel to make compact/ease in operation.

HMI-Human Machine Interface CCT- Chiller Controller



Innovative graphical user interface

The new innovative user interface provides a great variety in terms of experiencing and operation. The new SIMATIC HMI Basic Panels feature user-friendly touch screens and particularly handy, freely configurable keys.

Advance usability

The new USB interface facilitates the connection of keyboard, mouse or barcode scanner and supports easy data archiving on a USB stick.

interaction

Thanks to a PROFIBUS or PROFINET interface, SIMATIC HMI Basic Panels 2nd Generation allow for connection with various PLCs.

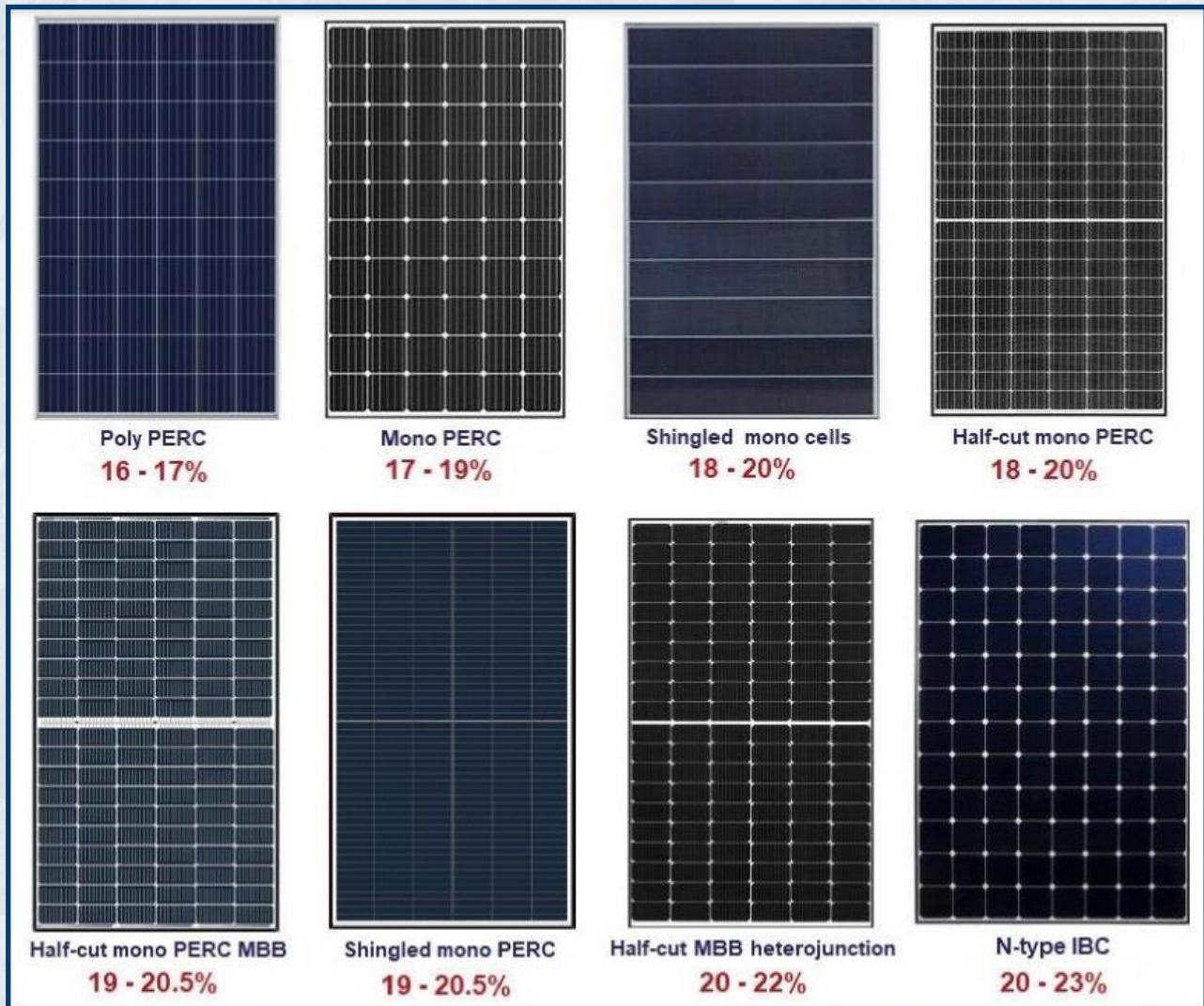
The visualization of applications of the Basic Controller SIMATIC S7-1200 offers particularly great added value.

“CCT” Chiller - Electrical & Control system



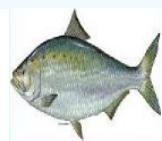
CREATIVE COOLING TECHNOLOGY has innovative solar power connection compatible for our “CCT” Chillers. They are efficient and long lasting with 40% grid power saving to the client. **CCT** has various types of solar power panels and variety of load % supply for smooth operation of our cooling system.

CCT- Solar cell efficiency % for chillers



Types of solar power panels

“CCT” Ice Flake Making Machine



Fish



Bakery



Vegetables



Meat



Concrete



Chemicals



Ice Cubes

MODEL	HPFO.5	HPFO 1	HPFO 1.5	HPFO 2	HPFO 2.5	HPFO 5	HPFO 8
Theoretical Capacity(Ton/day)	0.5	1	1.5	2	2.5	5	8
Basic Refrigeration capacity(Kw)	2.8	5.52	5.56	11.2	22.5	37.5	52.5
Compressor HP	3	4	6	8	12.5	25	40
Reduced power (Kw)	0.18	0.18	0.18	0.37	0.37	0.37	0.75
Circulating power (Kw)	0.125	0.125	0.125	0.125	0.125	0.125	0.25
Evaporative Temp ©	-20	-20	-20	-20	-20	-22	-22
Type of Condenser	Air Cooled Condenser						
Refrigerant							
Total power(Kw)	2.5	3.2	4.7	6.4	9.8	19.5	31

CHILLER/FREEZER ROOM



We **CCT** are Manufacturer of Cold & Freezer rooms which are compact & Economical in operation. **CCT** offers Cold Room Systems to food, Pharma's, Laboratory industry. CCT specialized in design and installation of cold rooms & cold stores, temperature at clients requirement from -20 to +10 Deg. Flooring with Floor epoxy or Vinyl sheets.

Uses of cold room:- cold rooms use an evaporator inside the unit and a condenser outside the unit to move heat outside, thus cooling the inside.... To help cold rooms operate efficiently, their walls are constructed with insulated walls, floors, and ceilings. A cold room is a type of refrigeration chamber or insulated space designed to maintain an artificially generated temperature or range of temperatures. Cold rooms are used for storing temperature-sensitive, perishable items, such as food items and pharmaceutical products like vaccine

AIR DRYER Industrial use



We **CREATIVE COOLING TECHNOLOGY** are manufacturer of Industrial AIR DRYER of all required sizes. What makes our Aerial range stand out is

Features like:

- Technology for Energy-saving operation - even at low humidity's and temperatures
- Turbo Fan for faster dehumidification
- Easy-To-Use Electronic DRY displays RH level, kWh and operating hours Feature
- Highlights of dehumidifies like energy efficiency, digital humidity control, silent operation.

Working of Air Dryer:

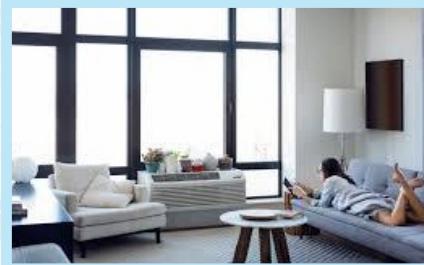
A compressed air dryer is a piece of equipment designed to separate water vapor or moisture (de-humidify) from industrial process air. In the typical system, a compressor **draws in humid air and compresses** it, which raises the air temperature and then cooling the air condensing water vapor out of the unit.

Application Across Wide Range of Industries & Domestic use

- Paper- Manufacturer printing, PET plastic films
- Air- Conditioning- Civil, industrial, Process, Domestic.
- Steel Working Machinery- CNC, Waterjet, Hydraulic power packs.
- Food- Beverages, Bakeries, Confectionery, Dairy, Storage.
- Plastic- Injection moulding, Extrusion, film, thermoforming, PET/PC moulding.
- Laser- Welding, Profiling, Cutting, Medical , Marking, Aesthetics.
- Chemical- Oil,& Gas, Petrochemical, Solvents, Paints, Temperature control.
- Mechanical- All mechanical industries use cold-water conditioning for reducing heat.
- Others- Wood, ceramics, Gold/Silver, Pharmaceuticals, Textile.



Paper / Plastic



Home



Laser



Process



Hospital



Chemical



Gold & Silver



Food



Mechanical

- ❖ Ideal for cooling water in various process application.
- ❖ Easy to install.
- ❖ Optimally sized to minimized POWER CONSUMPTION.
- ❖ Single point power connection(3 Phase + Neutral/Earth).
- ❖ Heavy duty EMERSON COPELAND/DANFOSS tropicalized reciprocating/Scroll compressors.
- ❖ Built in stainless steel pumps & PHE, UPVC pipes,
- ❖ Environment friendly, energy efficient and operation friendly refrigerant(variable water flow technology system for cooling).
- ❖ Generously sized copper tube finned air cooled condenser with anti corrosive coating.
- ❖ High efficiency brazed tube heat exchanger.
- ❖ Heavier frame & external GI body with powder coating 65 microns. (Standard weather proof enclosure)
- ❖ Acoustic-composite axial discharge fans for low noise levels & higher efficiency.
- ❖ Adjustable time delay switch & complete safety of unit through sensors & electrical relays
- ❖ Standard Electrical controls & safety accessories with temperature indicators. Central control HMI system as per client request.
- ❖ Temperature controls local & remote available .Adjustable from 5 Deg to 30 Deg. (Domestic) & Industrial – 60 Deg to 30 Deg (Digital).
- ❖ Warranty for 1 year for the unit on compressor. (Ref warranty card details on units panel enclosure).
- ❖ Our “CCT” air-condition is applicable for cooling & heating purpose.

SCHEMATIC- Diagram of “CCT” water chiller

CCT Variable Water Flow System Technology

COMERCIAL CHILLERS



Heat Pump



OUR BENEFITS

"Unlock unparalleled cooling comfort and efficiency by choosing Creative Cooling Technology expert solutions."



Emergency Service

Emergency service provides immediate assistance in critical situations to address urgent issues and ensure safety or restoration of functionality.



40 Years of Experience

"40 years of experience" reflects a long history of knowledge and expertise acquired over four decades in a particular field or industry.



Satisfaction Guarantee

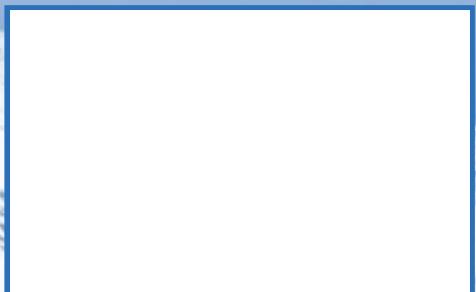
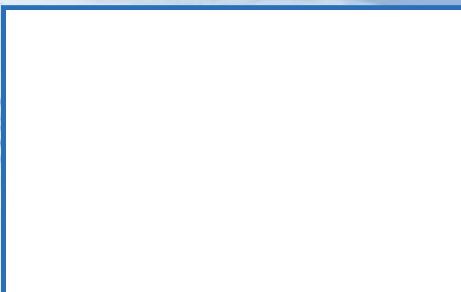
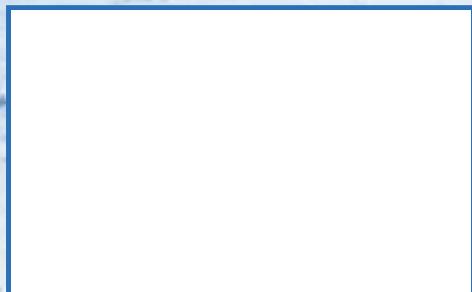
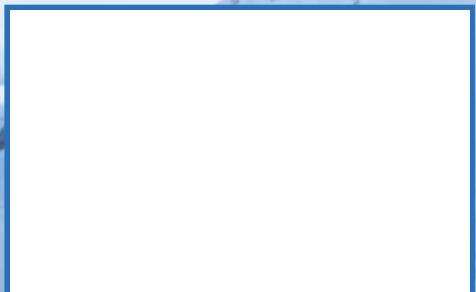
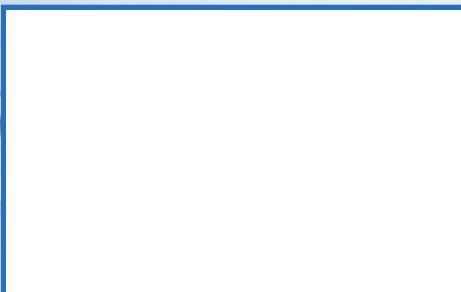
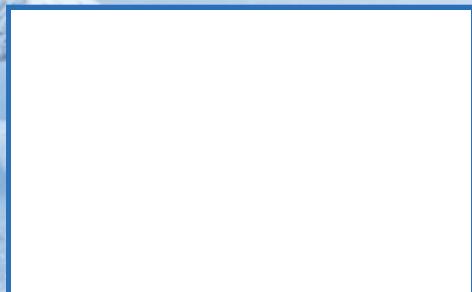
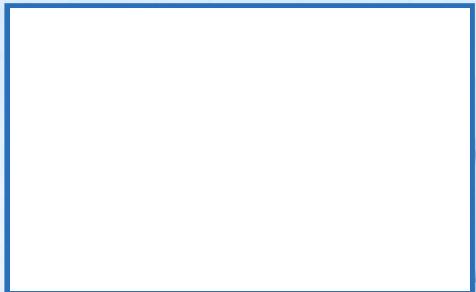
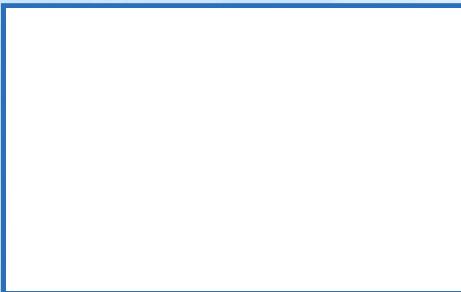
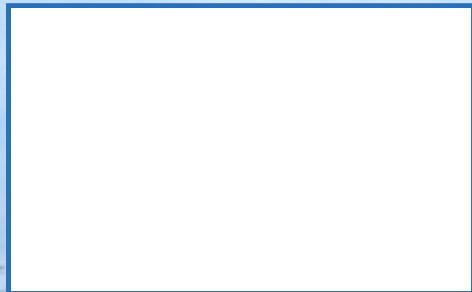
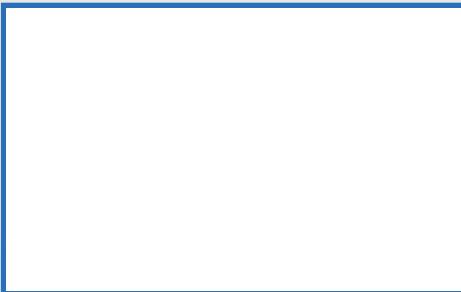
Satisfaction guarantee assures customers that their expectations will be met, offering remedies or refunds if products or services fall short.



CERTIFICATE



Agents & Distributors in state



Head Office

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