

CHATROOM

2nd Issue 2007

Editor's Words

Aloha ! It's good to see you again. We are very excited to give birth to the second issue of our Newsletter! The first one has received tremendous feedbacks from our friends and I hope you would enjoy this one as well.

It's a  **HOT HOT** summer and Air-conditioning is certainly one thing that we cannot live without this summer. As a green company whose mission is "To contribute to our customers' success by providing a better environment and a more beautiful world", we will continue to introduce some energy savings solutions on chillers application. And for the recent hot topics, you have heard about things like **Tiers, EC fan**. Do you know what exactly these terms mean? Check it out in this issue! We would also like to invite you to celebrate with us the  awards we have received for two of our products, gensets and UPS.



Wishing you a Happy and  **Cool** Summer !

Tier 1? Tier 4? What is Tier Classifications?

When coming to Data Center, many people talk about "Tiers". But what actually are "Tiers" and what are their definitions ?

People are often confused the "Tier" classification with the "Nines". While the "Nines" purely refers to the percentage uptime., the tier classification involves several definitions. Apart from the redundancy level, Tier requirement also defines the following :

1. Fault Tolerance

A site that can sustain at least one unplanned, worst-case infrastructure failure with no critical load impact is considered fault tolerant.

2. Concurrently Maintainable

A site that is able to perform planned site infrastructure activity without shutting down of critical load is considered concurrently maintainable.

Here are the Tier requirement.

	Tier I	Tier II	Tier III	Tier IV
Number of Delivery Paths	Only 1	Only 1	1 Active 1 Passive	2 Active
Redundancy	N	N + 1	N + 1	S + S er 2 (N + 1)
Concurrently Maintainable	No	No	Yes	Yes
Fault tolerance to Worst Event	None	None	None	Yes
Uninterruptible Cooling	None	None	Maybe	Yes
Single Point-of Failure	Many + human error	Many + human error	Some + human error	None + human error
Annual Site-Caused IT Downtime (actuals)	28.8 hours	22.0 hours	1.6 hours	0.4 hours
Site Availability	99.81%	99.749%	99.982%	99.995%

Level of Availability	Percent	Downtime per Year
Six Nines	99.9999	32 seconds
Five Nines	99.999	5 minutes, 15 seconds
Four Nines	99.99	52 minutes, 36 seconds
Three Nines	99.9	8 hours, 46 minutes
Two Nines	99	3 days, 15 hours, 40 minutes

As you can see, a Tier IV site will not satisfy a Five Nines (99.999%) Uptime. The best a Tier IV can achieve over time is 99.995%, something between Four Nines and Five Nines. Only the top 10% Tier IV sites will achieve this level of performance. The site outage is also assumed to be instantaneously restored.

Q AND A SECTION

Interesting facts about TIERS

Q : Who developed the tiered classification approach ?
A : The uptime Institute, Inc.

Q : When did the fist "Tier I", "Tier II", "Tier III" and "Tier IV" appear ?
A : Tier I first appeared in early 1960s, Tier II in 1970s, Tier III in 1980s and Tier IV in 1994.

Q : Which was the first site in the world achieving the Tier IV standard ?
A : United Parcel Service Windward project.

Q : Who invent Tier IV site ?
A : Ken Brill, Executive Director of the Uptime Institute, Inc. They patented the computer hardware with dual power inputs and made Tier IV possible.

What is EC fan?



EC Fan = Fan with Electronic Commutated DC Motor (EC motor)

EC motor = Brushless Motor which does not require carbon brushes to commutate

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Electronically Commutated by semiconductor switches

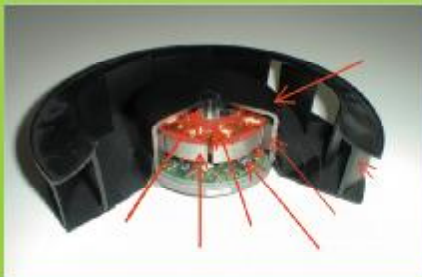
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Magnetic field produced by permanent magnets in the rotor

With

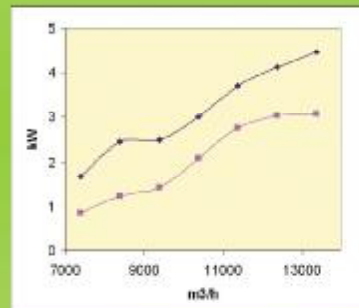
External rotor & Integrated electronics & AC main power supply provided directly to the electronics

Dissection of "EC Fan"



What are the Advantages ?

- High efficiency vs Standard AC motor = save energy and money



- Variable speed = "move" according to your actual needs = save energy and money
- Suitable for 50Hz and 60Hz
- Low Noise
- Maintenance Free
- Soft Start
- External Static Pressure Upto 350Pa

PAY BACK IN ONLY 1 YEAR!

Who can provide EC Fan ?

EC Fans are standard options for ALL of our CRAC Units.

Technical Data

Input voltage range : 380-480VAC

Frequency : 50-60Hz

Input power : max. 3kW

Insulation class : F

Protection : IP54

Stator & electronic housing : die-cast aluminium

Balancing : Q2, 5 fan balanced dynamically in two planes

Ambient temperature : -20 bis +55°C or +65°C with air movement

Approvals : UL, CSA, VDE

Chiller Info

Climaveneta Chillers in the first ECO-EFFICIENT building in China

SIEEB University

The first building of its kind in China, SIEEB University, aiming at eco-efficiency objectives. This building, with an area of 20,000m² was designed to act like a leaf by using and converting sunlight into energy. The building has made use of various substances, such as vegetation, photovoltaic panels and a special horse-shaped complex to reduce the demand for power.



The project is an important step forward in the field of low power consumption building in China. With all these green thinkings in mind, the building has chosen Climaveneta FOCUS Water and TECS chillers with a total cooling capacity of 1110 kW. This project introduces the TECS series chiller with centrifugal compressor into China market.

FOCS Water 2602 x 2
TECS-H 2AS x 1

643kW x 2
624kW x 1



Climaveneta has been a "Green" manufacturer since 30 years ago. It has pioneered many energy-efficient design. Most of the solutions, like heat-pumps and energy raiser that we talk about today have actually been developed by Climaveneta in the late 1970s. Thus, the technology is highly mature for Climaveneta.

developed since 1979 by Climaveneta

Heat pump units



Air-cooled heat pump, range from 34kW to 730kW
Water-cooled heat pump, range form 110kW to 3,054kW
Use environmental friendly refrigerant (R407C, R134a, R410A, etc)
Applications: Hotel, Swimming Pool, Hospital, Shopping Mall, etc

developed since 1982 by Climaveneta

"Energy Raiser" multi-use chiller units

energy saving
up to 55%

Multi-use "Energy Raiser" units was developed by "Climaveneta" since Year 1982 and have three function modes:
1) Cooling only mode – chilled water only
2) Cooling and heating mode – simultaneous hot and chilled water
3) Heating only mode – hot water only

"Class A" Air-cooled Chillers



"Class A" means that EER values are guaranteed higher than 3.1. This series use R134a refrigerant with screw compressor, and supports partial and total heat recovery, which can produce hot water up to 55°C.



This series of units have heat recovery while operating as a chiller. This function makes it possible simultaneously to produce hot and chilled water in two separate circuits independently of the ambient air temperature. The associated system needs to be provided with four pipes. The incorporated microprocessor unit automatically activates the optimum operating mode to fit the load requirements.

UPS

2007

FROST & SULLIVAN

Product Line Leadership Award

AROS UPS has been awarded the 2007 Frost & Sullivan Product Line Leadership Award following a recent review of the European uninterruptible power supplies market. The award recognizes Aros UPS's commitment to customer focused solutions and its range of innovative single and three-phase power systems.

"The new FLEXUS series UPS is a clear example of why the company deserves this award" commented Frost & Sullivan Research Analyst Ms. Pallavi Suresh. "This UPS was designed to meet the call for a UPS that could be used across the widest possible number of load types and installation environments with energy saving features, advanced communications options and outstanding electrical performance.



Zero Impact Source

Flexus can solve any problem of connection in installations where the supply mains has a limited installed power, where the UPS is also powered by a generator set or where there are problems of compatibility with loads that generate current harmonics; Flexus has indeed zero impact on the power supply source, be it the mains or a generator set:

- Distortion of input current – less than 3%
- High performance up to 94%
- Input power factor 0.99
- Lowest Footprint in the market – 0.26m² for 20KVA with internal batteries
- Graphic mimic panel display

Genset

CoolTech Approved for Patent Right in Diesel Gensets with Nuclear Plant Safety Standard



The CoolTech Diesel Generator sets with Nuclear Plant Safety Standard Project was approved by China Institute of Atomic Energy last year, and was inspected and accepted by China Experiment Fast Reactor Engineering Headquarters. Recently, we have filed the state patent application for this project.

Due to the excellent performance of the rubber gaskets in anti-vibration test and the trailer generator fast-installation front supporting devices, altogether we filed five patent applications, including one for invention patent, three for practical new type patent and one for exterior appearance patent.

The various patents have greatly enhanced COOLTECH products' core value and competitive edge. All the patents will become a part of the company legacy, which will play an important role in the continuous development of the company.

Our Sales Network

To stay close to our clients, we have over 60 branch offices throughout major cities of China. A staff of over 1200 members are currently employed.

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- Data Centre Turnkey Solutions
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- Electrical & Mechanical Engineering
- Maintenance Service
- Equipment Supply



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