



THE EUROPEAN LEADER

IN CENTRAL CLIMATE CONTROL SYSTEMS

with growing presence in specific world areas



SOUTH AMERICA

Cutting-edge technology for an innovative approach to air conditioning

EUROPE

Unchallenged leadership in high efficiency climate control

MIDDLE EAST

Air conditioning beyond traditional technological frontiers

FAR EAST

Dedicated ranges and operations for China and Far East



BY FAR THE BEST PROOF IS EXPERIENCE

1971

Our 40 years of leading Experience in comfort solutions allowed us to identify some major applications, sharing similar structural characteristics and comfort requirements.



FACTS

- 1976 1° Ground Water Sources Heat Pump in Operation in Europe
- 1982 1° Heat Recovery Multi Function Heat Pump in Operation
- 1990 1° Free Cooling Air-cooled Chiller in Operation
- 1999 EUROVENT Certified for all products
- 2004 1° Magnetic Bearing Oil-Free Chiller in Operation
- 2009 Launch of Air / Water-cooled Variable Speed Screw Chiller



9 EXCELLENCE CENTRES WORLDWIDE



**ORGANIZATION BASED ON LEAN
MANUFACTURING PRINCIPLES**



**SPECIALIZED PRODUCT
DEVELOPMENT**



**DEDICATED PRODUCTION
LINES**

CLIMAVENETA 1 Bassano-Italy



Productive area: 12.500 m²

- LIQUID CHILLERS
- REVERSIBLE CHILLERS
- INTEGRA UNITS up to 500 kW

CLIMAVENETA 2 Belluno-Italy



Productive area: 25.000 m²

- LIQUID CHILLERS
- REVERSIBLE CHILLERS
- INTEGRA UNITS
- ROOFTOP UNITS from 500 kW to 2400 kW

CLIMAVENETA 3 Belluno-Italy



Productive area: 7.000 m²

- AIR HANDLING UNITS

CLIMAVENETA 4 Treviso-Italy



Productive area: 10.000 m²

- RESIDENTIAL UNITS
- DEDICATED HEAT PUMPS
- HYDRONIC TERMINALS
- HPAC UNITS

CV PARETS DE VALLES Barcellona-Spagna



Productive area: 2.500 m²

- LIGHT COMMERCIAL
- UNITA' ROOFTOP

CV CHAT UNION Shanghai-China



Productive area: 15.000 m²

- LIQUID CHILLERS
- REVERSIBLE CHILLERS for the Eastern market

CV REFRIGERATION Shanghai-China



Productive area: 2.500 m²

- HPAC UNITS for the Eastern market

CLIMAVENETA 8 Shanghai-China



Productive area: 2.000 m²

- AHU UNITS
- FAN COILS

CLIMAVENETA 9 Bangalore - India



Productive area: 2.500 m²

- HPAC UNITS



**DIRECT LOCAL PRESENCE
IN MAJOR MARKETS**
through Climaveneta
subsidiaries



**SPECIALIZED NETWORK
OF DISTRIBUTORS**
in more than 100
countries around the world

- ✓ Full market coverage thanks
to a worldwide network
- ✓ Leadership of the distributor
in the relevant market
- ✓ Sales and after sales
activities for a complete
support to the customer
- ✓ Constant Training and
Support from the Head
Offices

CLIMAVENETA
U K



CLIMAVENETA
FRANCE



CLIMAVENETA
DEUTSCHLAND



CLIMAVENETA
POLSKA



CLIMAVENETA
ESPAÑA



HEAD OFFICES
Bassano del Grappa (VI) Italy



CLIMAVENETA
Climate Technologies



CLIMAVENETA
CHAT UNION





Climaveneta strives for combining perfect comfort with energy efficiency and environmental standards to develop custom-made and innovative solutions.

3 core values are the pillars of the company philosophy.



Through the systematic reduction of atmospheric emissions and the extensive use of renewable sources.



Thanks to innovative solutions that ensure high energy efficiency, low maintenance and longer life cycle.



Thanks to innovative solutions that ensure high energy efficiency, low maintenance and longer life cycle.



A long-term commitment to improving sustainability of the products, contributing to an eco-friendly air conditioning market.

ENERGY EFFICIENCY



- ✓ Low energy consumption units
- ✓ Efficient plants in all sectors
- ✓ Systematic reduction of emissions



37% of products are in class A or above

EXTENSIVE USE OF RENEWABLES



- ✓ Increasing use of renewables
- ✓ Intelligent use of the energy in line with international sustainable trends
- ✓ Solutions that achieve the credits for the energy certification of buildings



35% of products use renewable energy



REDUCED NOISE EMISSIONS

- ✓ Extremely silent operations that increase the comfort of the building

4 STANDARD versions of noise level for all products:

 B	standard	 SL	-10dB(A) noise reduction
 LN	-6dB(A) noise reduction	 XL	-12dB(A) noise reduction

INTEGRATED POLICY



- ✓ Sustainable operations clearly expressed by the recent ISO 14001 certification achievement
- ✓ 90% of recycled water
- ✓ Advanced waste management
- ✓ Direct contribution to the EU '20-20-20' sustainability targets.



WIDEST RANGE OF SOLUTIONS

- ✓ Product series in basic configuration
- ✓ 11 Product Families



Modern architecture and the increased sensitivity to comfort require a focus on the specific characteristics of each building.

Climaveneta develops air conditioning solutions, optimised and tailored to every kind of building.



HIGH CONFIGURABILITY

- ✓ Highly configurable solutions for every type of building

COUNTLESS CONFIGURATIONS
for all products:

3 efficiency versions	2 recovery options for all air systems
4 noise versions	3 air treatment versions
4 recovery options for hydronic systems	



TAILOR-MADE SOLUTIONS

- ✓ Units adaptable to specific features of the individual building



20% of total turnover generated by custom-made solutions for special projects



ROI (Return on Investment) is a central financial metric for many industrial decisions as it measures the overall profitability of an investment.

Climaveneta achieves the maximum ROI by implementing the following guidelines in all its activities.



LOW ENERGY CONSUMPTION

- ✓ Reduced Operating Costs
- ✓ Better energy performance and certification class of the building



LOW MAINTENANCE

- ✓ Products conceived for continuous update
- ✓ Full range of maintenance packages



PLUG & PLAY SOLUTIONS

- ✓ Reduced on-site operations
- ✓ Simplified system design



LONGER LIFETIME

- ✓ High flexibility for no need of anticipated updates/refurbishments

Water-cooled Magnetic Levitation Variable Frequency Centrifugal Chiller



r HFC
R-134a

How do Climaveneta Benefit the System ?

Climaveneta has focused forty years of leadership and experience on cooling to develop a full range of computer room air conditioning (CRAC) solutions giving a no compromise answer to the peculiar requirements of critical cooling systems of every application.

- ◆ Reduce Operating Cost
- ◆ Reduce Carbon Emission
- ◆ Facilate Installation
- ◆ Optimize Areas
- ◆ Simplify Maintenance



Chiller Profile

TECS-W-5204L-E

TECS-W5204L-E



Definition of Integrated Part Load Value

1. IPLV by AHRI 550/590:

$$\text{IPLV} = 0.01*A + 0.42*B + 0.45*C + 0.12*D$$

Operating conditions:

chilled water leaving T: 6.7 C (constant), delta T at full-load: 5.6 C,

cooling water entering T: 29.4C (100%), 23.9C (75%), 18.3C (50%), 18.3C (25%).

2. ESEER by EUROVENT:

ESEER: European Seasonal Energy Efficiency Ratio

$$\text{ESEER} = 0.03*A + 0.33*B + 0.41*C + 0.23*D$$

Operating conditions:

chilled water leaving T: 7 C (constant), delta T at full-load: 5 C,

cooling water entering T: 30C (100%), 26C (75%), 22C (50%), 18C (25%).

3. IPLV by China GB/T 18430.1-2007:

$$\text{IPLV} = 0.023*A + 0.415*B + 0.461*C + 0.101*D$$

Operating conditions:

chilled water leaving T: 7 C (constant), delta T at full-load: 5 C,

cooling water entering T: 30C (100%), 26C (75%), 23C (50%), 19C (25%).

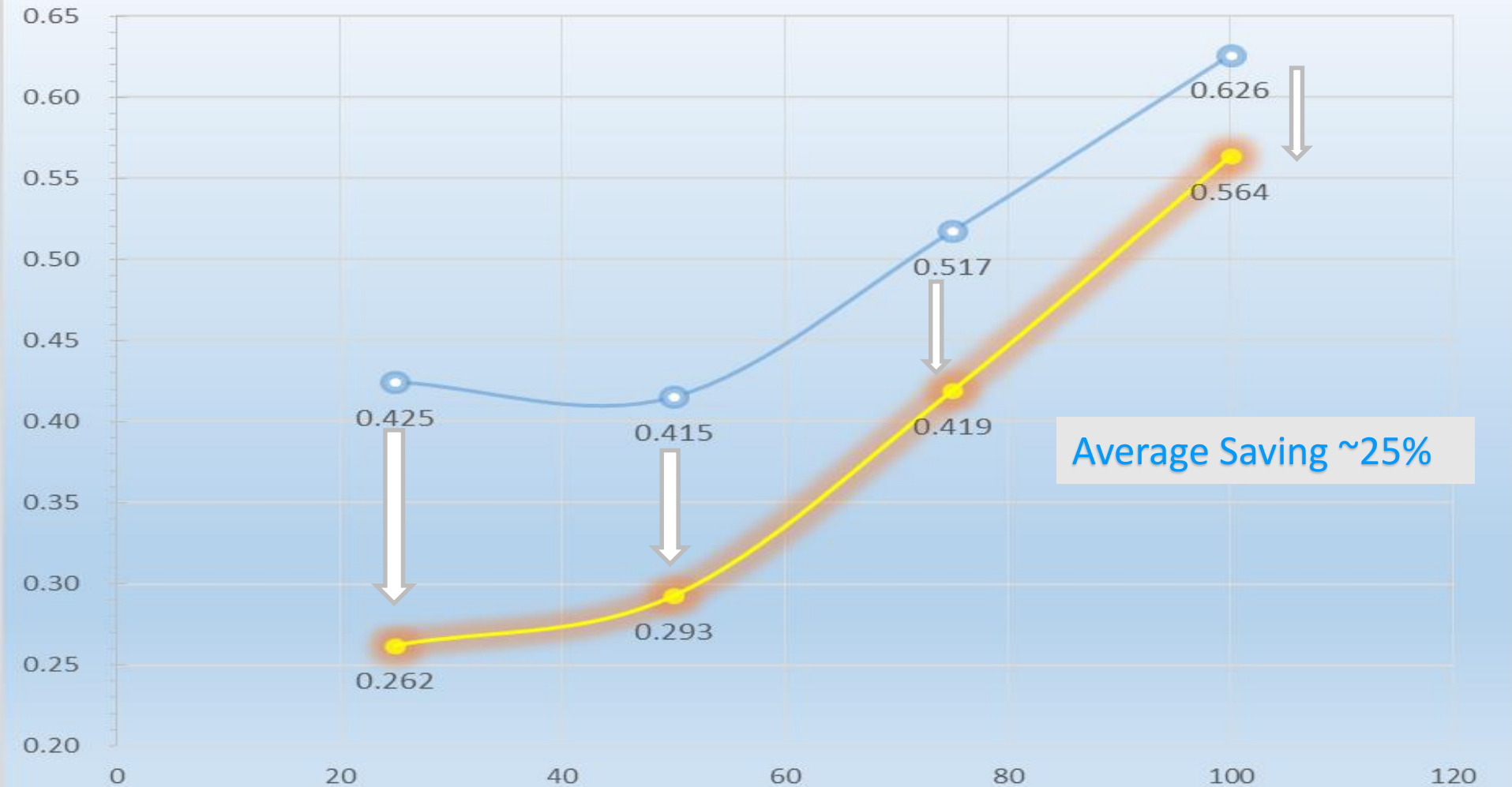
CLIMAVENETA High-tech Water-cooled Chiller

LOAD [%]	Magnetic Oil Free		Conventional		% DIFF. IN PERFORMANCE
	EER	kW/RT	EER	kW/RT	
100	6.07	0.579	5.66	0.621	6.8%
90	6.80	0.517	6.17	0.570	9.3%
80	7.79	0.451	6.74	0.522	13.5%
70	9.00	0.391	7.21	0.488	19.9%
60	10.33	0.340	7.74	0.454	25.1%
50	12.13	0.290	8.34	0.422	31.2%
40	12.58	0.279	8.36	0.421	33.5%
30	13.22	0.266	8.13	0.432	38.5%
20	13.91	0.253	7.88	0.446	43.4%
10	14.94	0.235	6.84	0.514	54.2%

Condition at AHRI 550/590 relief, Evap. 7 /12 °C, Cond. 30 / 35 °C

CLIMAVENETA High-tech Water-cooled Chiller

COEFFICIENT OF PERFORMANCE



Energy Efficient Solution for Chillers

■ TECS, the magnetic oil free technology

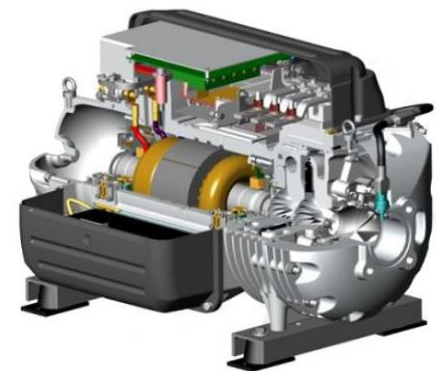
- Intelligent compressor: Magnetic levitated Oil Less
- High efficient integrated components

■ TECS, the energy efficient solution

- Super high efficiency to reduce operation cost
- Variable frequency, soft starter

■ TECS, the stable and reliable operation

- No friction, no oil, no maintenance
- Supper light weight and low noise



CLIMAVENETA High-tech Water-cooled Chiller



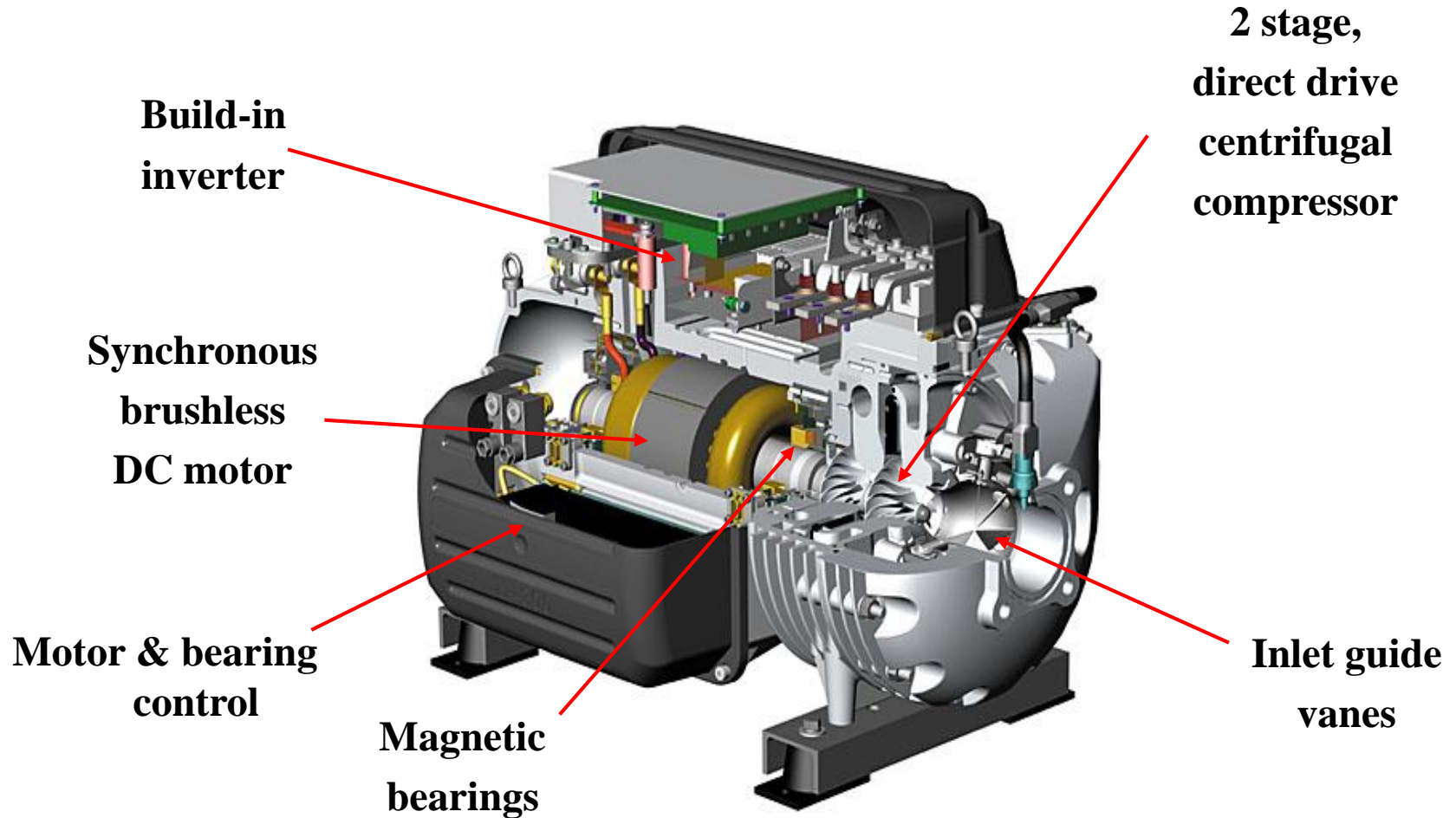
CLIMAVENETA High-tech Water-cooled Chiller

NEWS



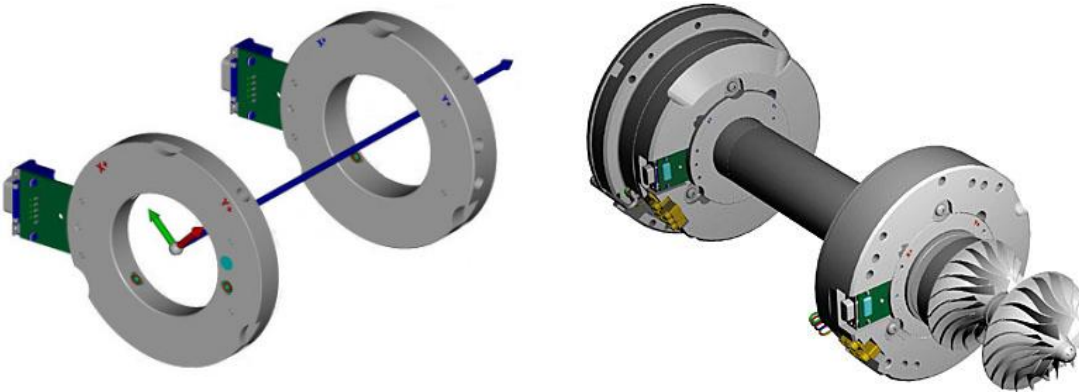
- Climaveneta's triumph as PLATINUM CUSTOMER, also for 2013 edition and for the fourth consecutive year, is just the latest proof of the leading role and experience of our company applying this technology to liquid chillers.
- Reflects both the market share as well as the contribution in terms of R&D and technical competence of Climaveneta in the application of this technology.

Turbocor Compressor

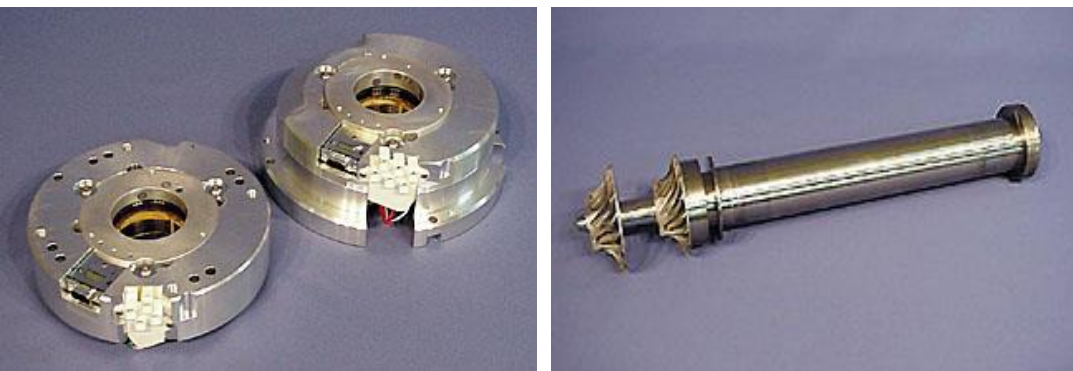


CLIMAVENETA High-tech Water-cooled Chiller

Magnetic Bearing



- Eliminate high mechanical friction losses
- Without speed increasing gear, no transmission loss;
- Increase equipment life
- Permit soft shut down
- 2 stage compression, high compression efficiency



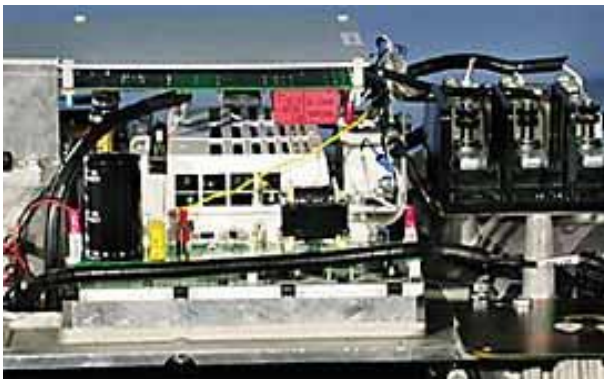
Inverter Speed Control



DC Synchronous motor

- its frequency is directly related to motor's speed
- its frequency is “managed” by the inverter
- Automatically adjust the speed to match the load and operating conditions for maximum efficiency

(Speed range: 20,000-48,000 rpm)

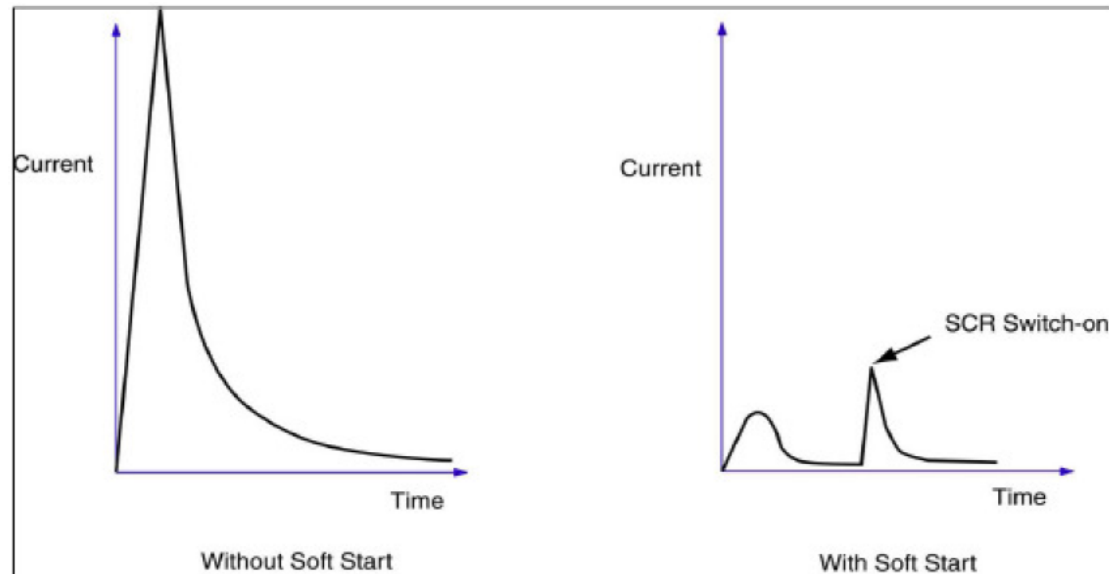
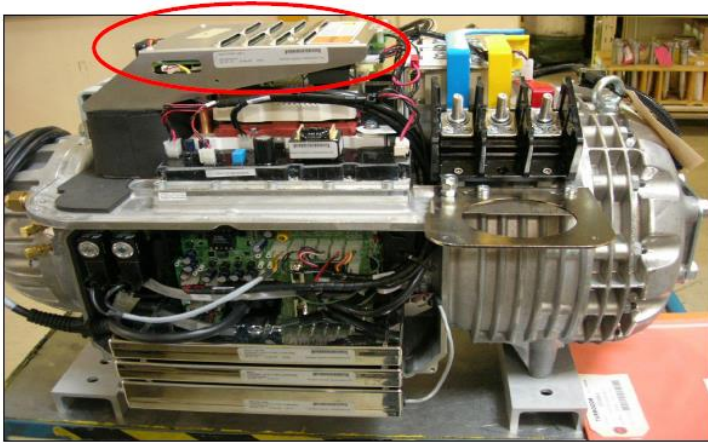


CLIMAVENETA High-tech Water-cooled Chiller

Soft Start Device

Electronic device to regulate the voltage to the capacitors once the compressor is energized

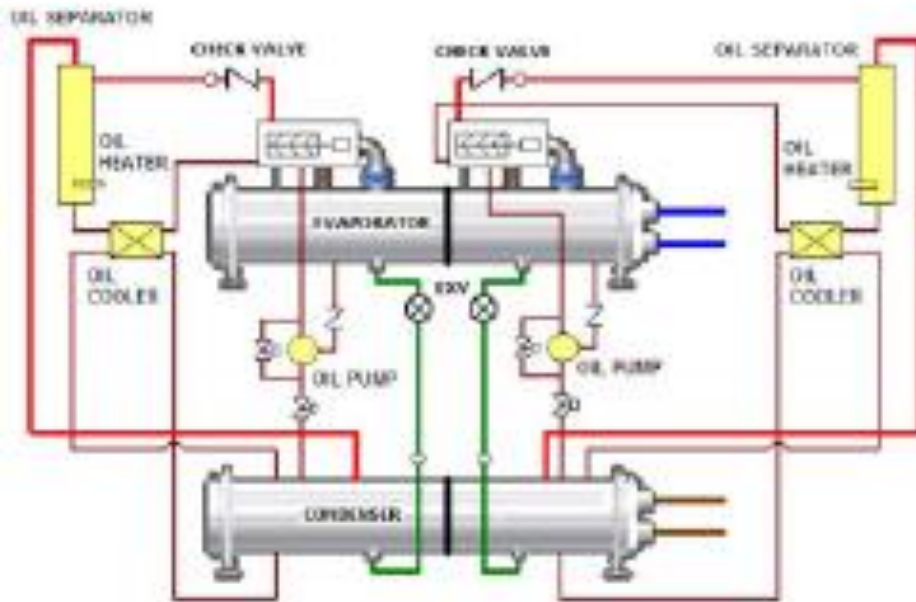
Prevent high inrush current when main power is initially applied to compressor



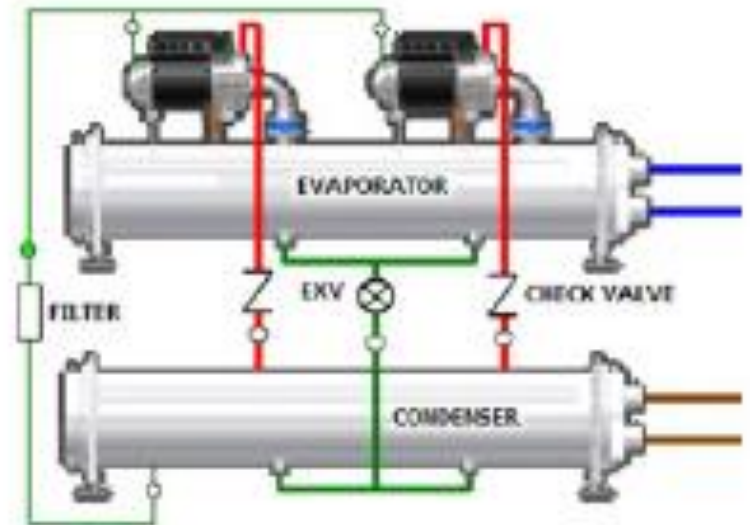
CLIMAVENETA High-tech Water-cooled Chiller

Compact & Simple

Typical screw chiller



Turbocor water-cooled chiller





Around 300 tons

Around 600 tons



Compact & Simple

- Maximizing the effective floor area of building
- Maximizing capacity of building
- Simplifying site installation
- Maintenance become easier, all problems related to oil circuit are eliminated
- Low noise & Low vibration



TECS Size:

4470x1580x2130 (mm), footprint = 7 m²

Conventional Size:

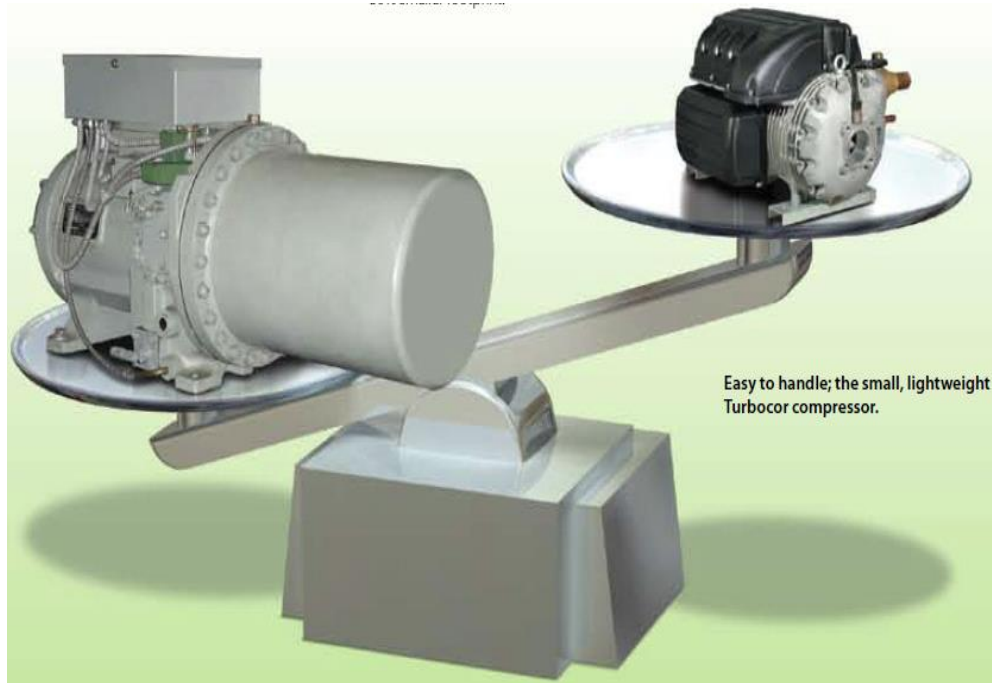
5250x2520x2140 (mm), footprint = 13.2 m²

TECS Weight: 6428 kg

Conventional Weight: 11420 kg



Compact & Simple



1/5 weight of traditional screw compressor under same specification.



TECS-WL

Noise 70dB(A)

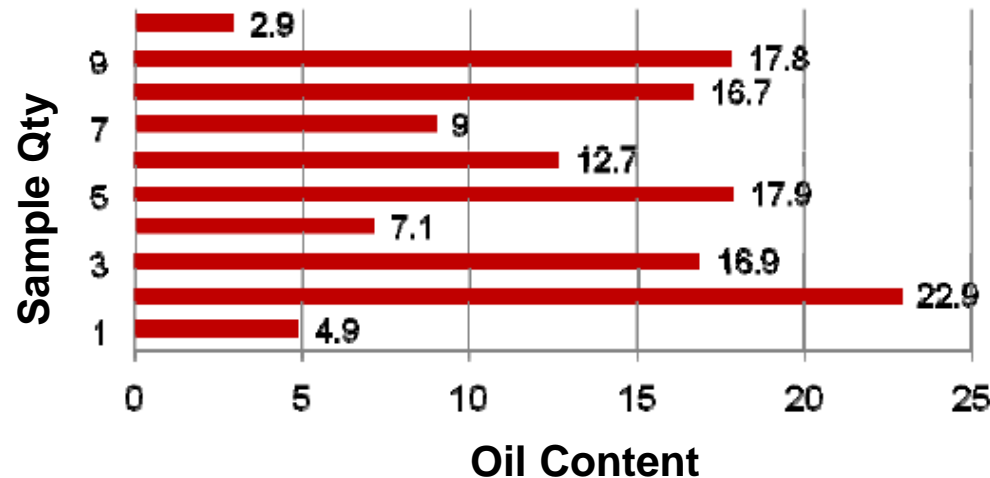


Traditional centrifugal chiller

Noise 87dB(A)

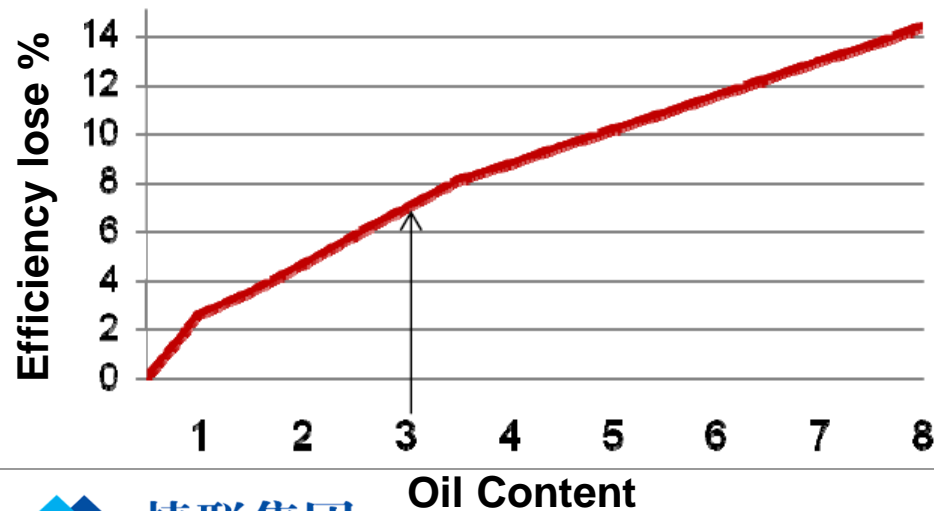
CLIMAVENETA High-tech Water-cooled Chiller

No Oil—Higher Efficiency, No Maintenance



Most chillers are charged by excessive amount of oil.

—According to ASHRAE Report 601

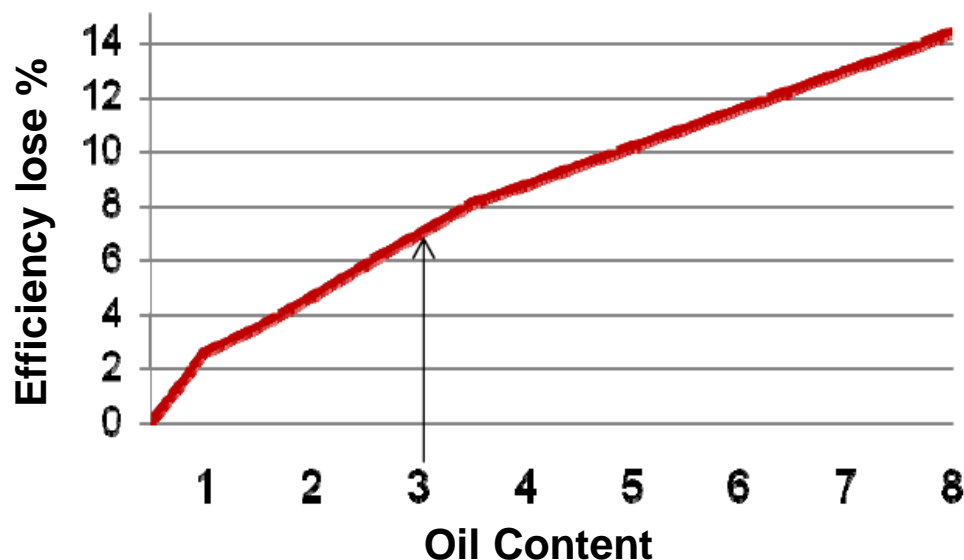


3.5 % oil content, the efficiency will reduce 8%.

After 2 years running, the flooded type chiller's oil content will reach to 3.5%, based on the whole life cycle cost analysis and energy efficiency analysis.

No Oil—Higher Efficiency, No Maintenance

The test based on 10 sets water cooled chillers with High Oil Content



10 sets chillers are tested by ASHRAE

**Conclusion: The average oil content is 12.88%;
The corresponding efficiency lost is 21%;**

CLIMAVENETA High-tech Water-cooled Chiller

No Oil—Higher Efficiency, No Maintenance

Shaft & Gear



Shaft Calibration



Replace Shaft Seal



Gear Inspection

Oil Filter



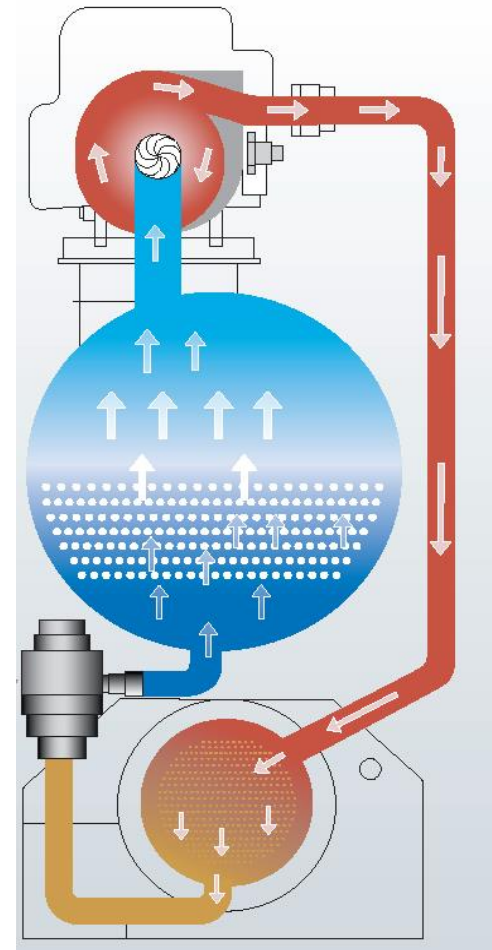
Replace Oil Filter

Regular Maintenance	Oil Filter	Replace Oil	Refrigerant Filter	Cost (Each Time)	Total Cost (Twice a year)
2000~3000 h/time (USD)	492	1640	492	2624	5248

CLIMAVENETA High-tech Water-cooled Chiller

Optimized Flooded Heat Exchanger

- Specific application with Magnetic Oil Free compressor
- liquid-phase refrigerant covers completely the tubes, within which the water flows
- Low pressure resistance, save water pump power



CLIMAVENETA WORLDWIDE EXPOSURE



Exhibition in all major industry worldwide expo :



HYDRONIC



- Liquid chillers
- Reversible chillers
- Dedicated heat pumps
- Units for 4 pipe systems



Hydronic terminals



Air handling units



Control, measurement
& monitoring devices

ALL AIR SYSTEMS



Rooftop units with
heat recovery



Control, measurement
& monitoring devices

HPAC SYSTEMS



- Close control units
- Inverter driven & on/off
- Direct expansion and
Water cooled



- Cooling doors
- Rack coolers
- Aisle containment systems
- Remote condensers



Liquid chillers with free
cooling or magnetic
levitation



Control & monitoring
devices for HPAC
applications

WLHP SYSTEMS



Indoor heat pumps for
water loop systems



Outdoor heat pumps
for water loop systems



Control, measurement
& monitoring devices



Singapore Sport Hub Stadium
Singapore, 2012

8 x WC Magnetic Oil Free Chiller, 400TR each
8 x WC Screw Heat Recovery Chiller, 280TR each
7 x WC Screw Chiller, 280TR each
Terminal Units



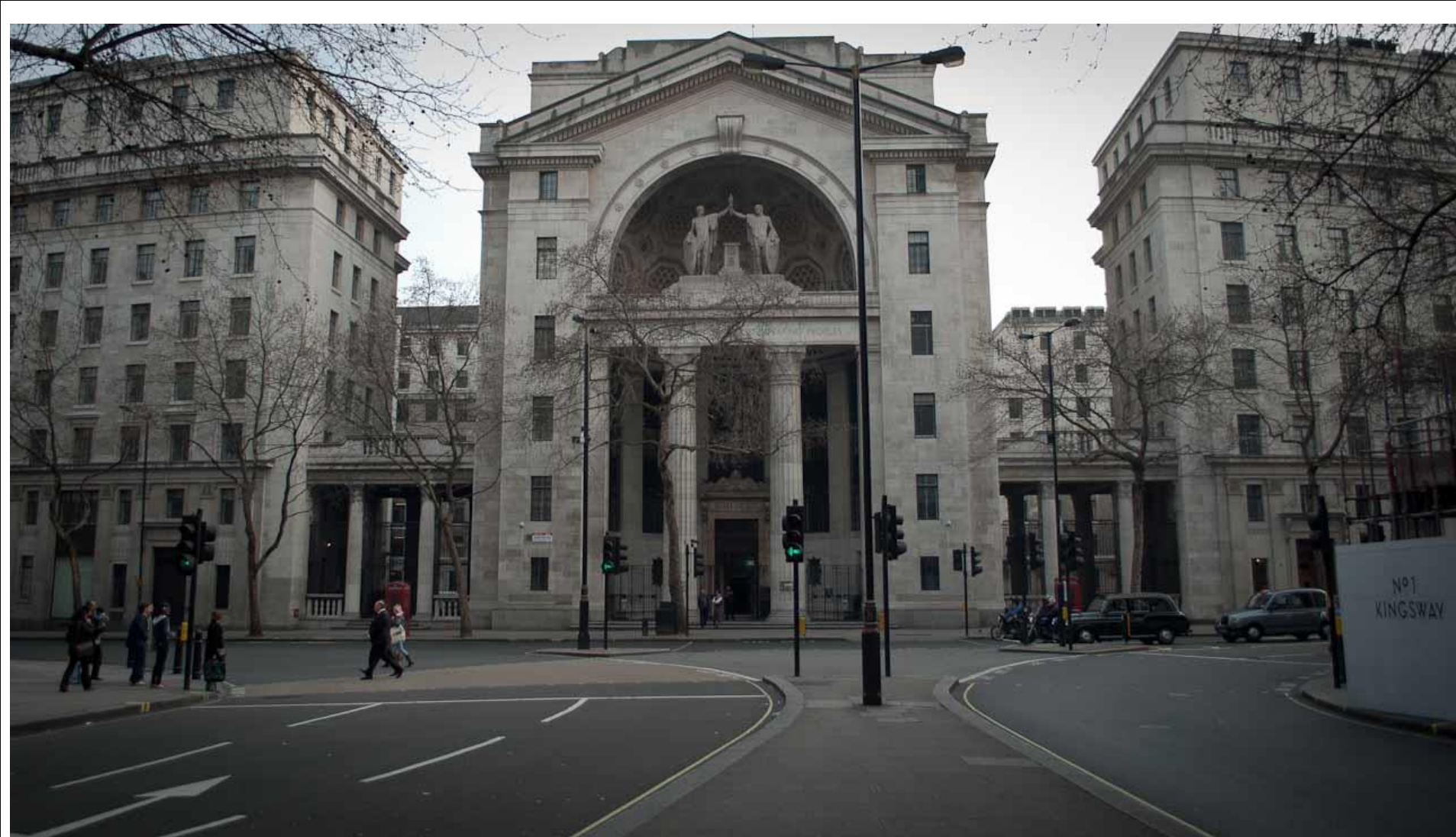
Cisco Live 2014, Milan Data Center

Chiller, Close Control, Airside, System Control
Cooling Cap.: 4505 kW, Heating Cap.: 459 kW





TECS water cooled,
5299 kW,
Sheraton Mirage Resort,
Australia, 2013



TECS air cooled
3124kW
Bush House London
2013

Citic Ap Lei Chau Data Center 信鴨脷洲數據中心



Air- cooled oil free chiller x 1

- Model: TECS2/SL-CA-E 1154
- Cooling capacity: 1300 kW
- 5 years extended warranty
- Design and build

浸會大學中醫藥大樓



Air- cooled screw type chiller x 1 ; Air- cooled oil free chiller x 2

- Model: CSRAT 2712-B-Y ; TECS2/SL-CA-E 0512 ; TECS2/SL-CA-E0652
- Total cooling capacity: 1830 kW
- Replacement job

Tin Sui Wai Hospital 天水圍醫院



Air- cooled oil free chiller x 4

- Model: TECS2/SL-CA-E 1154
- Total Cooling capacity: 5080 kW
- Design and build



TECS water cooled
978 kW
Euroairport Basel Mulhouse Freiburg,
France, 2013

香港體育館 Hong Kong Coliseum



TECS Sea water cooled
1350 kW
HK Coliseum
2014



Hong Kong Coliseum, Hong Kong



TECS water cooled
2635 kW
IKEA STORE - PORTA DI ROMA
Italy, 2013



TECS water cooled
5299 kW
Intesa San Paolo Tower
Italy, 2013



France

- Bobigny
- Bordeaux
- Douai
- Lyon
- Nantes
- Paris
- Nice
- Toulouse
- Venissieux



Galileo Connect London Central, England

TECS Chiller, Close Control, Airside, Cooling Cap.: 4852kW



Hospital De Talca, Chile. Chiller, Close Control, Airside, System Control
Cooling Cap.: 5800 kW, Heating Cap.: 4800 kW



Range International Information Group Data Center, China

Chiller, Close Control. Cooling Cap.: 12700 kW

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