Airedale
APPLIED THERMAL INNOVATION

Chiller | Water cooled

TurboChill™ Water Cooled

200 – 2000kW

+ ESEER up to 8.7
+ Class A EER up to 5.6
+ 200-2000kw water cooled models

ecoDesign COMPLIANT

HFC R134a — HFC R134a

HFO R1234ze — HFO R1234ze

CENTRIFUGAL COMPRESSOR

www.airedale.com

BRITISH MANUFACTURER | ENERGY EFFICIENCY | CONTROLS | SERVICE | TRAINING

Unparalleled efficiency

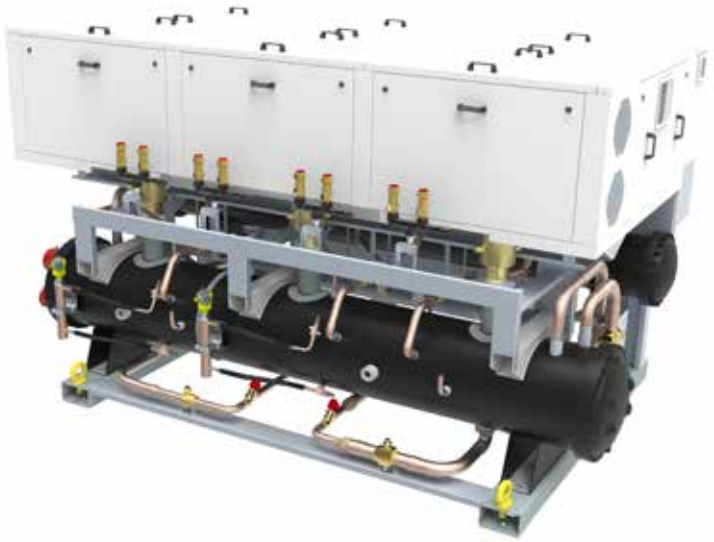
Ultimate in advanced chiller technology

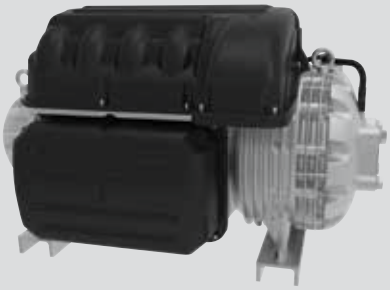
The TurboChill™ is a high-capacity, water cooled, single/dual circuit chiller, which offers exceptional ESEER values of up to 8.7.

With an extensive cooling capacity of up to 2000kW, the TurboChill™ range has been engineered using the very best chiller technology and components to increase efficiency and deliver improved performance.

Increased flexibility and choice

The TurboChill™ offers increased flexibility and choice, these models have been specifically developed for use with the low Global Warming Potential (GWP) refrigerant R1234ze.





Centrifugal compressor

30 - 100% variable speed control for tighter setpoint management and substantial energy savings at part load

Flooded evaporator

Enhanced optimum heat exchange and system efficiency give 15% energy savings in compressor operation particularly at part load

Next generation

Oil-free compressor technology

The TurboChill™ range utilises oil-free centrifugal compressors (TT300, TT350 / R134a) and the new TG310 compressors, which operate using the next generation low, global warming potential refrigerant R1234ze.

These intelligent, self-optimising compressors enable variable speed control and minimise input power with near silent operation. Magnetic bearings within the centrifugal compressor levitate the compressor shaft and with no mechanical contact or friction between mating surfaces, the need for lubrication is eliminated.

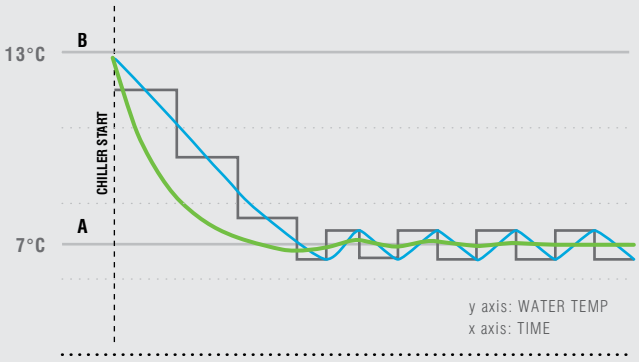
Efficient flooded evaporator

The flooded evaporator results in 15% energy savings in compressor operation particularly at part load. The compressor runs at 20°C condensing temperature when evaporating at 5°C, as opposed to around 35°C condensing for a conventional screw compressor. The addition of an integral heat exchanger within the evaporator extends cooling capacity and increases the efficiency of the system whilst keeping the evaporator footprint to a minimum.

Image shown: TG310 Compressor

Excellent reliability: No operational wear and tear

With virtually no vibration and fewer moving parts within the compressor, there is no operational wear and tear. Costly bearing replacement is therefore avoided and equipment life extended. In the event of a power failure, the compressor acts as a generator and powers itself down in a controlled manner.



30-100% modulating TurboChill™ vs. staged screw chiller

- TurboChill modulating supply water temperature
- Conventional screw chiller water temperature
- Step control conventional screw chiller - 4 stages of cooling

A = Supply temperature setpoint B = Actual water temperature

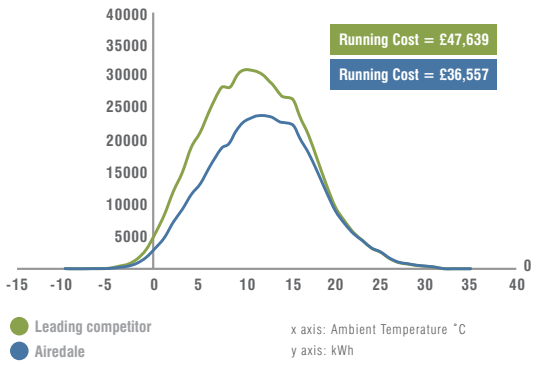
Exact capacity match

Variable speed compressor control ranging from 30 - 100%, allows the TurboChill™ to save substantial amounts of energy when operating at part load. Variable speed control facilitates accurate supply water set point control. It enables the TurboChill™ to react to system load fluctuations and exactly match cooling demand.

* based on air cooled chiller.

Brilliantly engineered

For enhanced performance and increased reliability



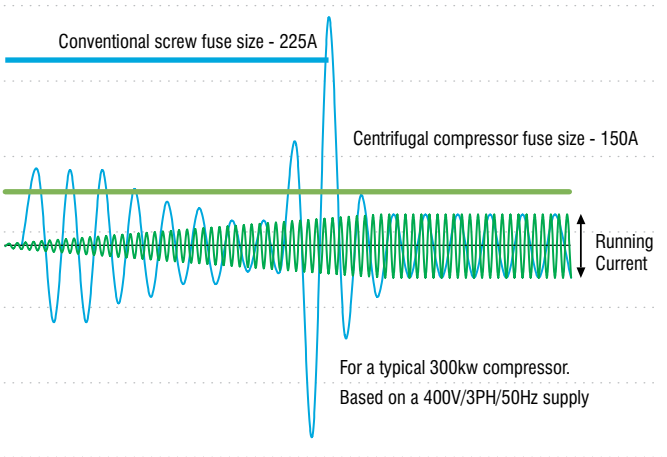
Save up to **23%** in operating costs p.a

Running costs significantly reduced by up to 23% p.a*, when operating at part load.

*compared with the leading competitor screw chiller over an annual cycle in Leeds, UK

Low current start

By removing the transient starting 'spikes' normally associated with screw chillers of this capacity, electrical supply components need not be oversized on site.

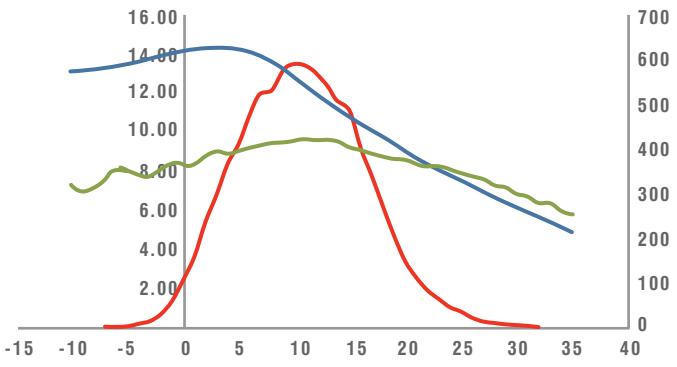


Integral low current start (2A)

Centrifugal compressor Conventional screw

EER over 15.0 at part load

EER increase of over 22%



Leading competitor screw chiller vs. TurboChill™ @ 50% load

Leading competitor
Airedale
Ambient Hours Leeds

x axis: Ambient Temperature °C
y axis 1: EER
y axis 2: Ambient Hours

TurboChill™ Water Cooled

Technical Specifications

Nomenclature

Nomenclature explained TTWC 2 3 G

TTWC	TurboChill Water-cooled
1 / 2	Number of Circuits (1 or 2)
1 - 4	Number of Compressors (1 to 4)
S / L / G	Compressor code (S = TT300, L = TT350, G = TG310)

Specifications

Model no.	Nominal Cooling (kW)	Nominal Power Input (kW)	EER	ESEER	Refrigerant
TTWC12S	500	94.0	5.32	8.47	R134a
TTWC23S	720	136.9	5.26	8.54	R134a
TTWC24S	950	208.0	4.57	8.53	R134a
TTWC12L	700	138.5	5.05	8.14	R134a
TTWC23L	1000	196.5	5.09	8.03	R134a
TTWC24L	1300	262.0	4.96	8.27	R134a

Model no.	Nominal Cooling (kW)	Nominal Power Input (kW)	EER	ESEER	Refrigerant
TTWC12G	500	90.8	5.51	8.69	R1234ze
TTWC23G	720	132.4	5.44	8.59	R1234ze
TTWC24G	950	178.3	5.33	8.56	R1234ze

1) Nominal cooling capacity and EER for air cooled units is at 7/12°C evaporator water and 30/35°C condenser water*
2) ESEER based on Eurovent standard calculation method***
* Based on compressor input power only
** Does not include external valve work
*** Does not include pump power

Dimension data

Model no.	Height (mm)	Width (mm)	Length (mm)
TTWC12S	2095	1675	2600
TTWC23S	2170	2080	3600
TTWC24S	2180	2170	4100
TTWC12L	2095	1825	2600
TTWC23L	2170	2080	3600
TTWC24L	2180	2170	4100
TTWC12G	2095	1825	2600
TTWC23G	2170	2080	3600
TTWC24G	2180	2170	4100

*Dimensions may vary dependant on specification (e.g. handing of water connections, presence of compressor enclosures etc.)

Intelligent controls

Seamlessly managing your system

The control centre of each of our cooling systems is a sophisticated electronic microprocessor specially developed by Airedale. The intelligent microprocessor uses sensors which allow active components to interact. By integrating and sequencing components, the controller manages and optimises the system's performance, availability and power draw, giving the operator complete system control.

Fully-programmable via the control panel's user-friendly display, the microprocessor can be linked with all standard BMS protocols to:

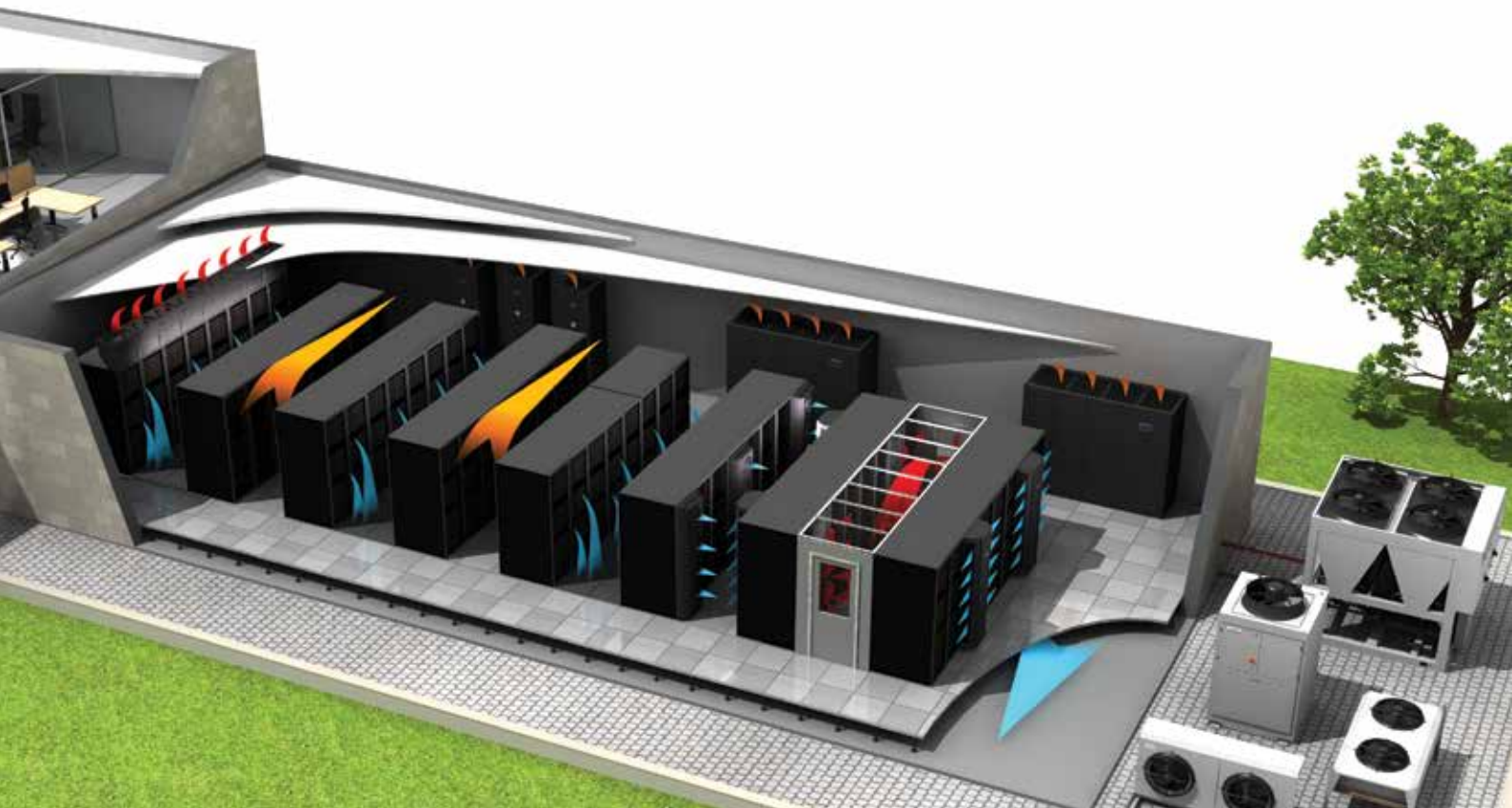
- **Trigger alarm messages**
- **Send alarm/service messages via email or SMS using an interface**
- **Operate time scheduling**
- **Allow adjustment of temperature setpoints**

ACIS™

ACIS™ is a building management system developed by Airedale, which enables smart cooling and other building services, from any manufacturer, to be managed through a single, integrated solution across multiple sites and communication protocols.

ACIS™ sits at the front end of a building management system and puts the operator in full control of reducing building operating costs.

Through the click of a button on a PC, tablet or phone, intelligent information can be retrieved automatically allowing informed, data driven decisions to be made. With 24/7 access, ACIS™ provides an ideal solution for remote monitoring and maintenance, including live PUE, EER and COP calculations and power distribution monitoring.



Total support

Whenever you need it

At Airedale, we don't just manufacture and supply cooling and refrigeration products; we also provide a broad range of supporting services to ensure our customers receive the best possible aftersales care.

With more than 40 years' experience in business critical cooling, investing in an Airedale cooling or refrigeration solution means that you can benefit from our advice, expertise and technical support too. From design and selection, through to commissioning and beyond, we make sure your system reduces your total cost of ownership, whilst providing maximum availability and longevity.

Service plans

Maximising your system's effectiveness 24/7

An Airedale service plan provides a planned, preventative maintenance package to sustain the optimum efficiency of your system, enabling the user to see real savings in energy costs and reduced carbon emissions.

With Airedale, you can rest assured that help is never far away. Our 24/7 emergency helpline and call out service is available 365 days of the year, ensuring that we are always on hand to provide expert advice and immediate help, day or night.

A guaranteed emergency response time means that a qualified Airedale engineer will be with you in no time, therefore maximising your system's uptime. Service plans also ensure F Gas compliance and incorporate a full parts and labour warranty for the first 12 months.

For more information visit **www.airedale.com**

* For customers outside the UK, our international distributors trained by Airedale would be pleased to offer service on Airedale units

Talk directly with an experienced engineer

Find out how we design our systems to reduce your whole life costs. Our highly experienced engineers are adept at tailoring our systems to suit your requirements.

+44 (0)113 239 1000

Have complete control of your site

Customers with critical sites can benefit from our remote monitoring facility. Aftersales services include chiller sequencing, network setup and integration as well as a live demonstration and training centre at our head office.

24/7 support; maintenance and spares

Immediate help on hand to keep your critical cooling system operational. Realise the full potential of your system; improve its longevity and efficiency and be F Gas compliant. Avoid downtime with our fast, efficient spares service.

Develop your skills

Learn more about your cooling system by attending an air conditioning and refrigeration course in our purpose-built training school. Train on high-tech cooling systems and fully operational rigs in our dedicated workshops. Industry recognised courses also available. Email **training@airedale.com** for further details.

Distributed by:

Airedale
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