Airedale
APPLIED THERMAL INNOVATION

Chiller | Air Cooled



DeltaChill™ & DeltaChill™ FreeCool

110 - 1080kW

+ ESEER up to 5.03
+ Up to 38% more cooling kW/m²
+ Free-cooling models spend up to 95% of the year in free-cooling

Qualified for Energy Technology List
www.eca.gov.uk
Authorised User No. 00007

HFC R410A — HFC R410A
SCROLL COMPRESSOR
MICRO — MICROCHANNEL COIL
FREE COOL — FREE-COOLING
EC — EC FAN

www.airedale.com

BRITISH MANUFACTURER | ENERGY EFFICIENCY | CONTROLS | 24/7 SERVICE | TRAINING

Pushing the boundaries

Chiller technology, offering more for less

DeltaChill is an air cooled R410A scroll chiller offering a FreeCool variant and a wide span of cooling capacities from 110 to 1080kW.

An extremely energy efficient and compact chiller, the DeltaChill combines quiet, cost effective scroll compressors and the latest fan technology applied in a modular V-frame coil design. In higher capacity models and across all FreeCool models, microchannel heat exchangers lift efficiency even higher, whilst still minimising space claim.

282 models, exceptional flexibility, tailored exactly to your application allowing unit selection to be optimised for efficiency or footprint

SCROLL COMPRESSOR

EC FAN

MICRO
MICROCHANNEL COIL

ESEER up to 5.03

ESEER part load efficiencies are enhanced by sequenced scroll compressors; optional EC fans and the lower airside pressure drop of microchannel heat exchangers*

*polymer-coated as standard for longevity

Microchannel heat exchanger

38% more cooling kW/m²*

High surface area gives increased heat transfer and lower airside pressure drop at lower fan powers; the slim, light profile reduces weight / space claim

* than our previous generation compact free-cooling chillers

Modular V-frame

More condenser area per footprint

Vastly improves heat exchange, giving better performance and control particularly at part load; also facilitates maintenance

Scroll compressor sets

More precise capacity match

Quiet and cost effective, a choice of two or three refrigeration circuits offer up to 9 stages of cooling, for reduced operating costs

EC fans

Up to 80% more efficient*

Electronically commutated axial fans give increased performance for reduced power input

* than an AC fan at part load; EC fans are standard throughout the range

Inverter controlled pump*

Smart water flow control

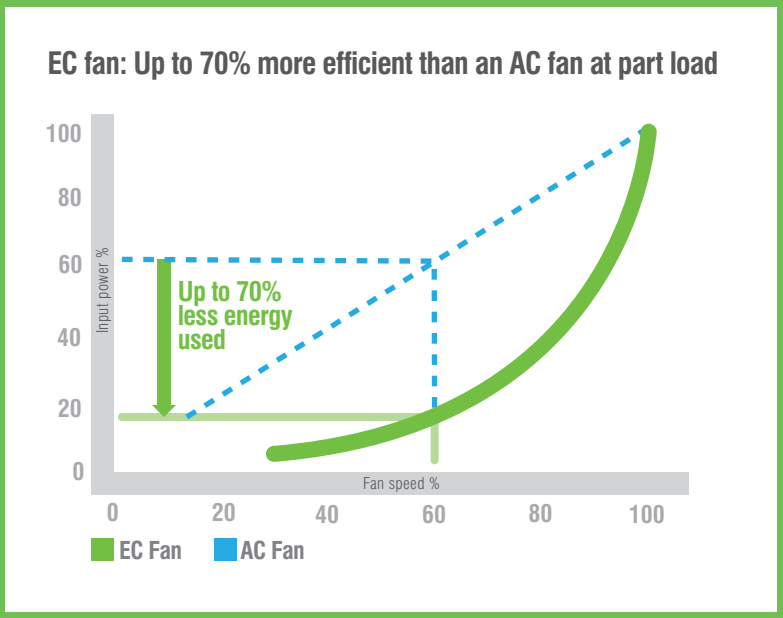
Speeds up and down to maintain the design flow rate and offers low flow rate protection

* optional

Up to 70% energy savings*

Speed controlled EC (electronically commutated) axial fans have very low air flow resistance and respond seamlessly to load fluctuations

* than an AC fan at part load; EC fans are standard throughout the range



Reducing operating costs & carbon footprint

By selecting the DeltaChill, you are investing in a chiller that significantly reduces running costs and carbon footprint. The 140 – 1080kW DeltaChill FreeCool spends up to 95% of the year in free-cooling. During any mechanical cooling, the DeltaChill has excellent part load efficiencies, ensuring no power is wasted. Typically in cooling applications, load conditions dictate that a chiller only operates at full load for 3% of the year.

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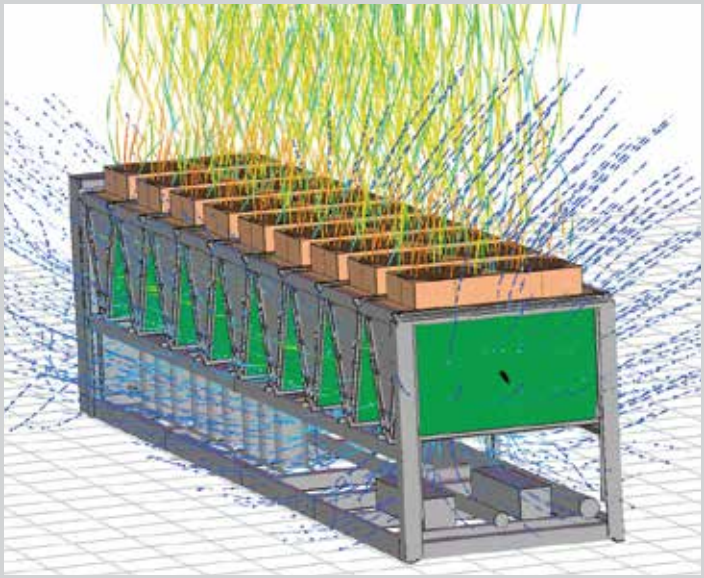
Enhanced Capital Allowance scheme: DeltaChill models up to 450kW* are included on the Energy Technology List, offering the potential for investors to claim 100% first-year capital allowance. For details see www.eca.gov.uk.

*Remaining models pending

Class A EER* up to 3.60

***EER (Energy Efficiency Ratio) @ at 7/12°C water and 35°C ambient**



CFD analysis was used to determine the optimum fan and heat exchanger size and the best distribution and total airflow through the V - block to minimise power consumption

Free-cooling

For over 95% of the year

Free-cooling saves vast amounts of energy, particularly when room temperatures are high. For free-cooling to operate, the temperature difference between the ambient air and hot return water can be as little as 1°C.

Concurrent free-cooling

The system controls constantly monitor the temperature differences and will only switch on the mechanically-driven compressor when extra cooling is needed, introducing concurrent free-cooling - a mixture of free-cooling and/or mechanical cooling. Concurrent free-cooling enables free-cooling to be captured whenever the ambient is below the return water temperature.

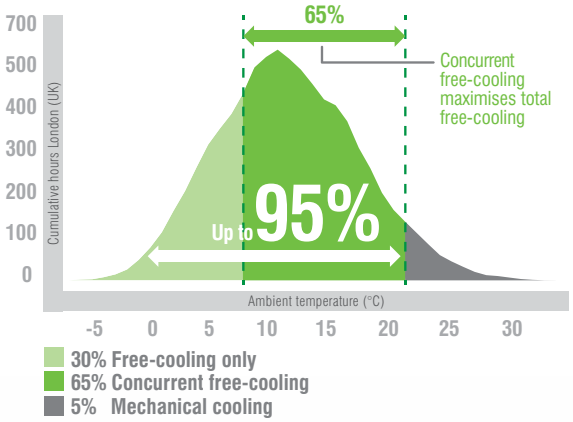
Up to 109% of nominal capacity in free-cooling

By matching compact microchannel heat exchangers with free-cooling coils, Airedale has achieved up to 109% of nominal cooling in free-cooling in the highest efficiency models, significantly reducing operating costs throughout the chiller's lifetime.

Using heat to increase free-cooling

A high water temperature capability of up to 17°C supply water temperature, raises the free-cooling threshold of all free-cooling models including the more compact variants. When linked with an air handling unit or rack-mounted unit in a 24/7 data centre with a typical room temperature of 24°C, over 95% of the year can be spent with free-cooling active (cumulative hours, London, UK).

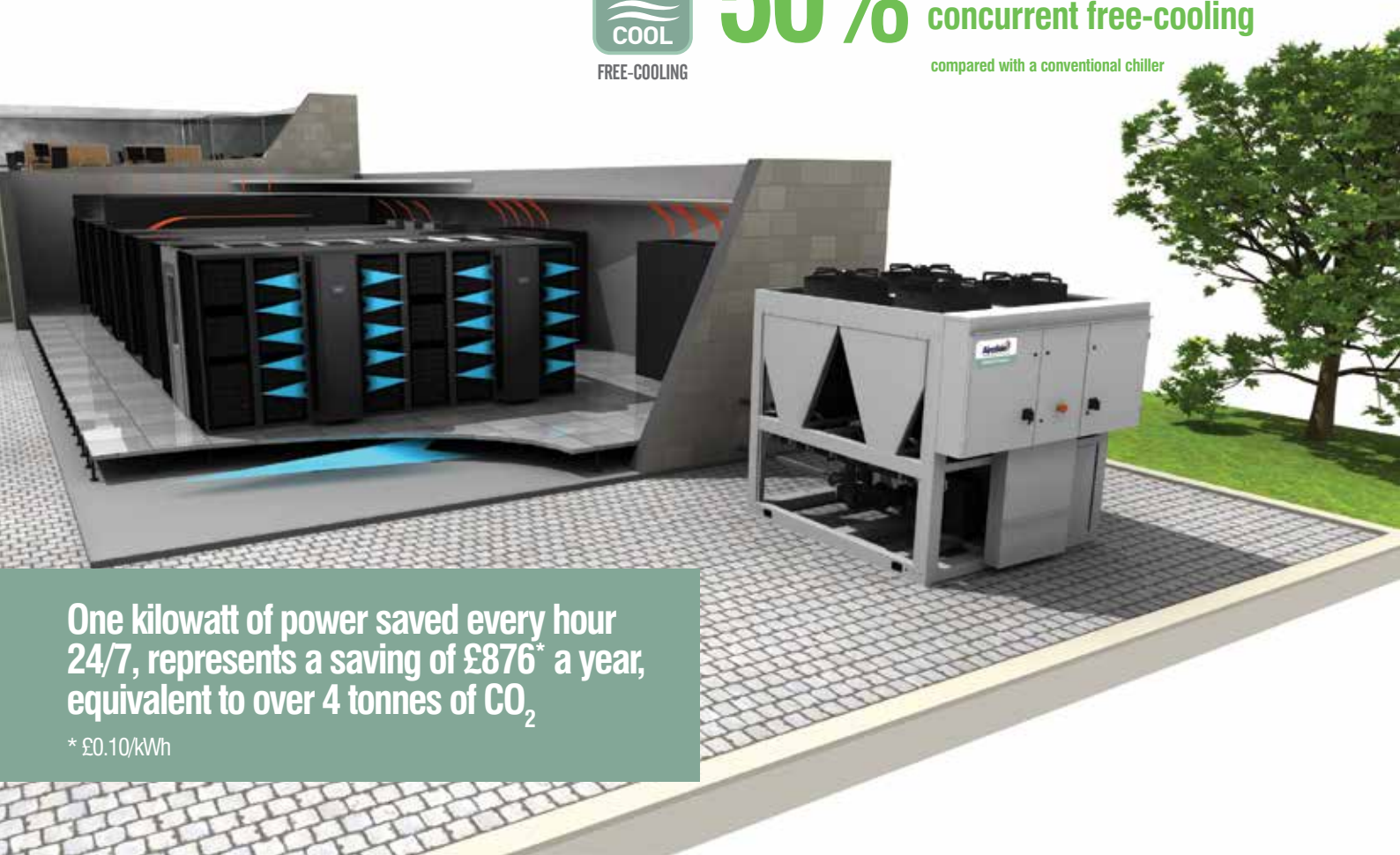
Up to 95% of the year spent in free-cooling



FREE COOL
FREE-COOLING

50% energy savings with concurrent free-cooling

compared with a conventional chiller



One kilowatt of power saved every hour 24/7, represents a saving of £876* a year, equivalent to over 4 tonnes of CO_2

* £0.10/kWh

Best energy balance

For all operating conditions

The cutting edge technology applied to the DeltaChill, driven by smart controls algorithms, enables the chiller to give the best energy balance for all operating conditions, whether it is sending chilled water into clean rooms, data centres, process plants or comfort applications such as office, retail or leisure environments.

DeltaChill - optimising the key drivers in efficient building operation:

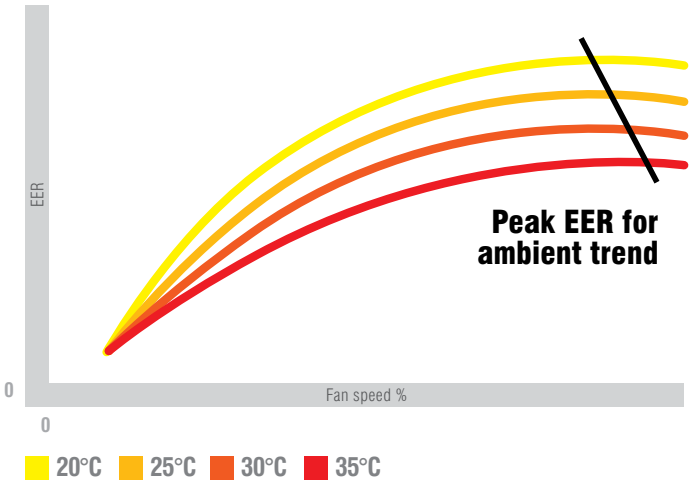
- ✔ Excellent part load performance
- ✔ Quiet or Extra Quiet options
- ✔ Quality and reliability
- ✔ Minimum space claim
- ✔ Easy maintenance

Sound levels reduced by:

- Optimised setpoint management, particularly during part load operation
- Scroll compressors with enclosures
- Reduced fan speed in Extra Quiet models
- Minimised vibration

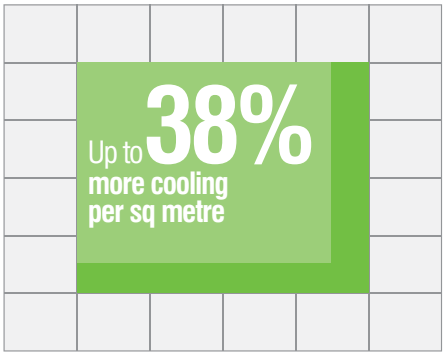
Optimised setpoint management

Fans are modulated to achieve the optimum efficiency (peak EER) for the unit at any ambient temperature, as well as reducing sound.

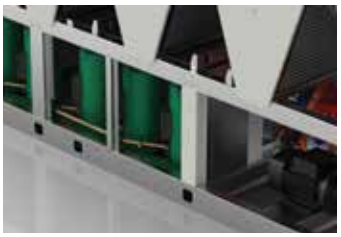


Minimum space claim

DeltaChill typically offers up to 38% more cooling kW/m² than our previous generation compact free-cooling chillers



Easy maintenance facilitated by microchannel heat exchangers and V-frame fan-coil module



BREEAM

BREEAM* aims to reduce life cycle impacts of new buildings on the environment by awarding points.

Virtually the entire DeltaChill range will contribute to a building achieving an additional 2 points:

1 point: Direct Effect Life Cycle (DELC) CO_2 equivalent emissions of ≤1000 $kgCO_2e/kW$ cooling capacity

Airedale is constantly developing its chiller technology to reduce the level of refrigerant or GWP in the system. Microchannel coils significantly reduce refrigerant charge – a critical factor in the DELC calculation.

1 point: Leak detection plus automatic shutdown and pump down of refrigerant

Leak detection and refrigerant pump down are available as a combined option in the entire DeltaChill range. During automatic pump down, the performance of the unit is entirely unaffected.

*BREEAM's New Construction Scheme Section 12 POL01

Intelligent controls

Seamlessly managing your system

CONTROLS

The control centre of each of our cooling systems is a sophisticated electronic microprocessor specially developed by Airedale.

The microprocessor uses sensors to send and receive messages to and from active components such as compressors, fans and pumps so they interact with each other, balancing cooling duty, temperature, air flow and pressure to exactly match the application.

By integrating intelligent components, the controller manages and optimises the system's performance and reduces power draw.

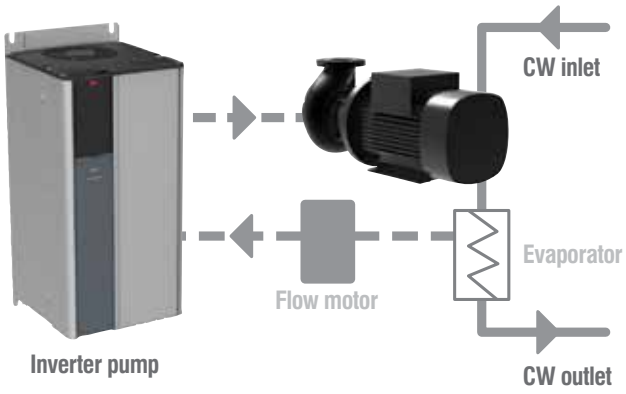
Smart networking solutions:

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**

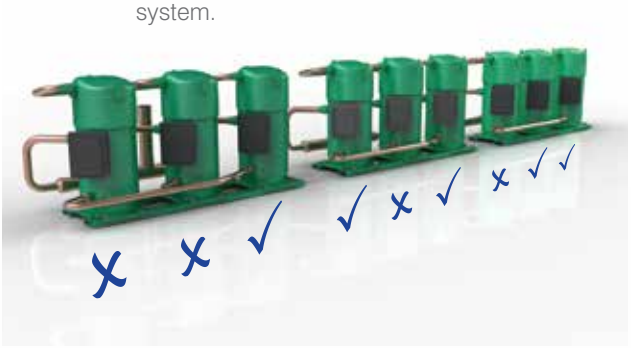
Smart water flow control

With an optional inverter-driven pump, significant energy savings can be made by running the pump to achieve exactly the right flow for the application. Coupled with electronic flow monitoring it also offers low flow rate protection and simplifies commissioning.



Staged cooling

Staged cooling on equal hour's run enables capacity to more precisely match the application and ensure even wear of the system.



Sequencing chillers for more free-cooling

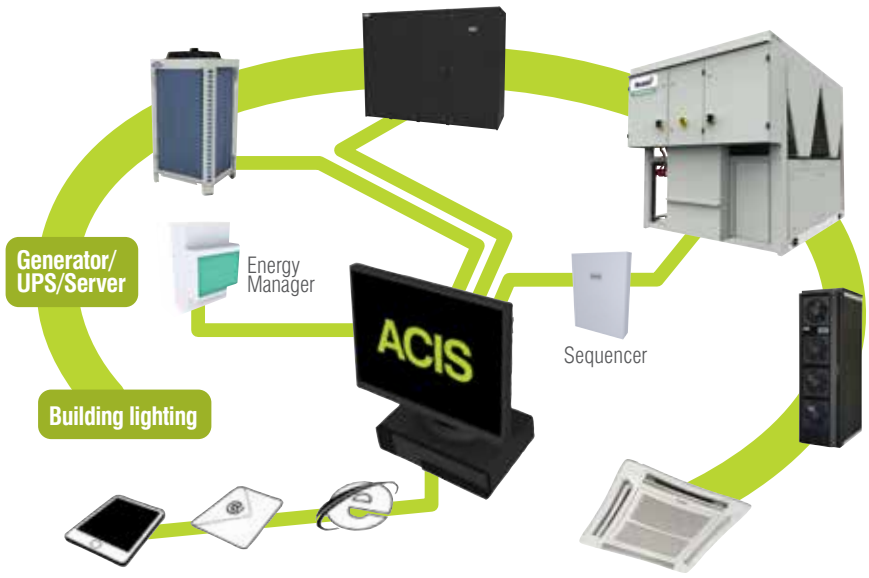
The sequencer integrates between two and six chillers into a single, seamless operating system pre-programmed to run as master/slave or run/standby. On sites with an air cooled and a free-cooling chiller, the sequencer optimises the units according to ambient temperature so when the ambient is low, the free-cooling chiller is the first to start up.

Building management

Taken to another level

ACIS building management system developed by Airedale, enables you to manage smart cooling and other building services, from any manufacturer, in a single, integrated system across multiple sites and communication protocols. ACIS sits at the front end of a building system, putting you in control of reducing operating costs.

With the click of a button on a PC, tablet or phone, valuable and intelligent information can be pulled back automatically for remote 24/7 monitoring and maintenance; enhanced system operation and improved decisions.



System optimisation increases free-cooling threshold

Data centre example

ACIS monitors all critical aspects of the chilled water (CW) system, optimising performance and ensuring supply air temperatures to servers are unaffected. ACIS identifies problems via alarm and history logging and implements change of state scenarios.

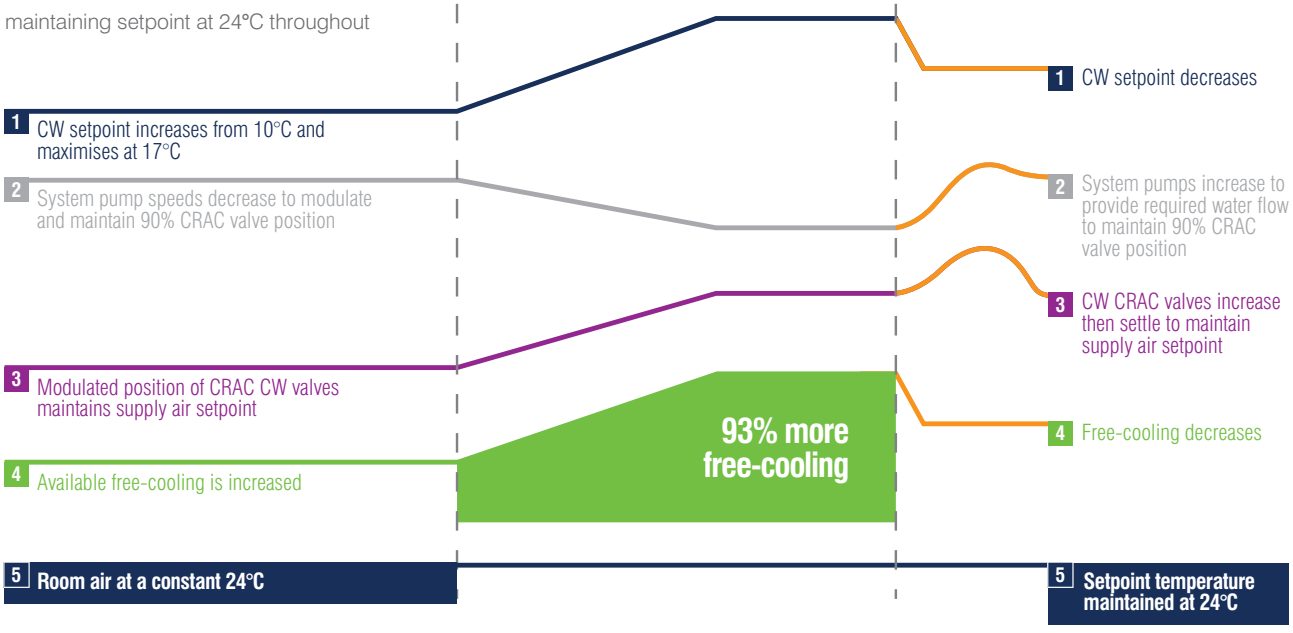
More free-cooling, less power input:

Water setpoint is raised to reduce electrical load by switching off compressors, increasing available free-cooling and reducing system pump speeds, whilst maintaining setpoint at 24°C throughout

A 7°C increase in water temperatures gives 45% saving in energy

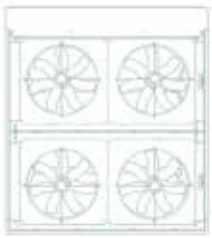
Change of state:

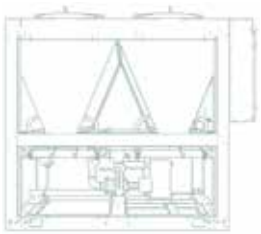
Loss of a CRAC unit: Setpoints are rescheduled to provide same cooling performance to maintain server temperature at 24°C



Specifications at a glance

Configuration flexibility and a choice of 282 models allow selection of the optimum specification in terms of capacity, pump sets, energy efficiency and sound - making the DeltaChill ideal for cooling diverse applications.





Environment

- Free-cooling at up to 109% of nominal capacity for reduced operating costs and carbon footprint (DCF)
- Optimised for R410A which only requires a minimum refrigerant charge and has a high heat transfer coefficient
- Low sound ranges: Quiet (R) and Extra Quiet (X)
- Sequenced scroll compressors minimise sound and allow capacity to more precisely match the application
- Latest axial fan technology for reduced sound and power input

Optional:

- Leak detection system for F Gas compliance
- Automatic refrigerant pump down in the event of a refrigerant leak, which together with leak detection, qualifies the DeltaChill for one BREEAM point
- Compressor enclosure minimising sound

Energy-saving

- EC fans as standard deliver ESEERs up to 5.03
- Polymer-coated microchannel coils for reduced life cycle costs and reduced footprint (all DCF models and DCC 450 – 1010kW)
- Compact footprint: Up to 38% more cooling per m^2
- Electronic Expansion Valves increase ESEER by 30%
- Optional head pressure set point management achieving optimum EER

Optional

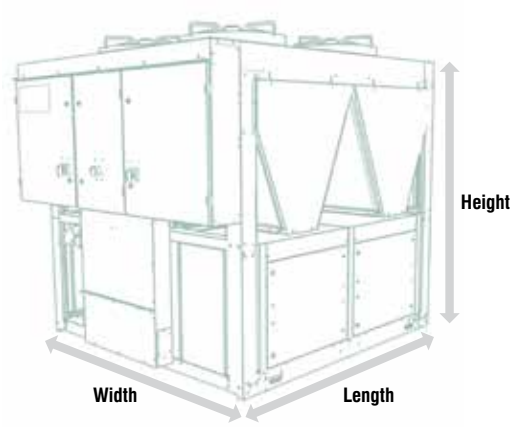
- High airflow EC fans (DCF Quiet models)
- Variable supply water temperature control to save power and raise the free-cooling threshold
- Chiller Sequence Manager integrates 2 to 6 chillers into a single, efficient operating system
- Energy Manager for local and remote energy analysis and monitoring

Hydronics

- Single and standby pumps for resilience
- Grooved water connections for simple, quick installation
- High water temperature capability; up to 14°C (DCC) and 17°C supply water (DCF)

Optional:

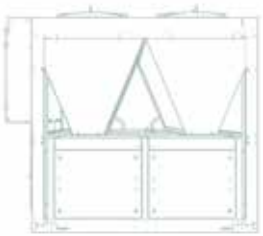
- Inverter-driven pumps enabling exact water flow control for the application
- Regulating or flushing bypass for enhanced resilience and maintenance
- Flow switch
- Glycol dosing pot to facilitate commissioning and maintenance
- Water filter safeguarding performance



Case size	No. of fans	Height (mm)	Width (mm)	Length (mm)
1	4	2405	2200	2554
2	6	2415	2200	3690
3	8	2415	2200	4820
4	8	2682	2200	4846
5	10	2415	2200	5956
6	10	2682	2200	5978
7	12	2415	2200	7090
8	12	2682	2200	7110
9	14	2682	2200	8242
10	16	2682	2200	9374
11	18	2682	2200	10506
12	20	2682	2200	11638
13	22	2682	2200	12770

Example DC F 080 T R- 14

DC	DeltaChill
C F	C - Air cooled chiller F = Free-cooling chiller
XXX	Nominal capacity (kW/10)
D T	Number of circuits Dual circuit Triple circuit
R- X-	Noise variant Regular Quiet Extra Quiet
04 - 22	Number of fans



Mechanical

- 110 – 1010kW (DCC) and 140 – 1080kW (DCF nominal cooling capacities
- 151 models (DCC) and 131 models (DCF)
- Single, dual or triple independent refrigeration circuits, allowing 2 – 9 stages of cooling
- Operation up to 40°C ambient at full load, 45 °C at reduced load
- Modular 'V'-frame coil-fan arrangement for improved part load performance and control
- Up to 38% more cooling/m^2
- Large surface area, corrosion-resistant condenser coils for enhanced heat exchange
- Standard or extended plenum for improved sound/aesthetics
- Plate evaporator requires minimum refrigerant charge (model dependent)
- Shell and tube evaporator simplifying maintenance (model dependent)
- Easy access to components

Optional:

- Anti-vibration mounts

Electrical & Controls

- Advanced Airetronix controls technology
- Electrical supply phase rotation protection
- Accessible control panel, even when unit is operational
- Separate, modular sections in control panel for isolation of specific component for greater resilience and easier maintenance (model dependent)
- Modem link for remote monitoring

Optional

- Rain hood with integrated light offering shelter when panel doors are open (model dependent)
- Low ambient kit for use in ambient temperatures as low as -30°C (model dependent)
- Electronic soft start for minimal full load current
- Active power factor correction (model dependent)
- Power monitoring to manage energy consumption
- Single point of isolation for ease of maintenance (model dependent)

DeltaChill technical specifications

Case size	DCC	No. of circuits	Nominal cooling (kW) [1]	EER [2]	ESEER [3]	Sound pressure @ 10m (dBA)
	Regular Quiet					
4 fan case - size 1: (mm): 2405 (H) x 2200 (W) x 2554 (L)	DCC011SR-04	1	117	3.56	4.77	55.8
	DCC011DR-04	2	118	3.60	4.58	55.8
	DCC013DR-04	2	134	3.50	4.64	57.3
	DCC014SR-04	1	148	3.35	4.45	58.4
	DCC014DR-04	2	149	3.38	4.20	58.4
	DCC016DR-04	2	168	3.30	4.61	58.2
	DCC017SR-04	1	172	3.29	4.39	61.3
	DCC018DR-04	2	194	3.16	4.58	59.3
	DCC021SR-04	1	215	3.06	4.46	60.9
	DCC021DR-04	2	226	3.12	4.48	60.3
	DCC023SR-04	1	248	2.92	4.35	63.8
	DCC024DR-04	2	252	2.96	4.39	61.5
	DCC027DR-04	2	276	2.82	4.10	62.5
6 fan case - size 2: (mm): 2415 (H) x 2200 (W) x 3690 (L)	DCC020DR-06	2	207	3.49	4.58	60.0
	DCC022DR-06	2	233	3.42	4.80	58.9
	DCC024SR-06	1	257	3.21	4.62	62.8
	DCC025DR-06	2	263	3.29	4.71	60.4
	DCC028DR-06	2	290	3.15	4.42	61.6
	DCC030DR-06	2	314	3.12	4.42	63.3
	DCC032DR-06	2	335	3.07	4.33	64.5
	DCC036DR-06	2	378	2.94	4.37	64.3
	DCC039DR-06	2	414	2.82	4.34	64.0
8 fan case - size 3: (mm): 2415(H) x 2200(W) x 4820(L)	DCC031DR-08	2	321	3.32	4.62	62.6
	DCC033DR-08	2	343	3.28	4.54	63.8
8 fan case - size 4: (mm): 2682(H) x 2200(W) x 4846(L)	DCC043DR-08	2	464	2.98	4.50	65.1
	DCC046DR-08	2	494	2.90	4.42	66.3
	DCC049DR-08	2	519	2.90	4.39	59.4
	DCC051DR-08	2	548	2.66	4.42	64.6
10 fan case - size 5: (mm): 2415(H) x 2200(W) x 5956(L)	DCC038DR-10	2	397	3.33	4.73	63.1
	DCC042DR-10	2	438	3.22	4.68	62.7
10 fan case - size 6: (mm): 2682(H) x 2200(W) x 5978(L)	DCC045DR-10	2	474	3.15	4.65	64.4
	DCC049DR-10	2	518	3.15	4.53	59.2
	DCC051DR-10	2	534	3.10	4.58	59.1
	DCC052DR-09	2	559	2.99	4.48	59.6
	DCC056DR-10	2	595	3.06	4.57	59.9
	DCC058DR-10	2	620	3.00	4.50	60.6
	DCC061DR-10	2	654	2.99	4.48	61.1
	DCC065TR-10	3	691	2.90	4.31	61.0
12 fan case - size 7: (mm): 2415(H) x 2200(W) x 7090(L)	DCC052DR-12	2	542	3.26	4.73	57.9
	DCC054DR-11	2	572	3.17	4.67	58.9
12 fan case - size 8: (mm): 2682(H) x 2200(W) x 7110(L)	DCC058DR-12	2	606	3.21	4.73	58.9
	DCC060DR-12	2	633	3.17	4.66	60.0
	DCC063DR-12	2	672	3.16	4.64	60.9
	DCC069TR-11	3	732	2.89	4.28	60.7
	DCC074TR-12	3	790	2.93	4.46	60.7
14 fan case - size 9: (mm): 2682(H) x 2200(W) x 8242(L)	DCC056DR-13	2	580	3.32	4.81	57.9
	DCC059DR-14	2	612	3.35	4.85	58.0
	DCC061DR-14	2	641	3.30	4.79	59.1
	DCC065DR-14	2	679	3.30	4.78	60.0
	DCC068TR-13	3	721	3.16	4.58	60.7
	DCC072TR-14	3	758	3.12	4.53	60.5
	DCC077TR-13	3	819	2.96	4.46	60.8
	DCC080TR-14	3	849	2.99	4.47	61.0
16 fan case - size 10: (mm): 2682(H) x 2200(W) x 9374(L)	DCC070TR-16	3	732	3.34	4.78	59.4
	DCC077TR-15	3	816	3.14	4.66	60.3
	DCC080TR-16	3	842	3.15	4.65	60.3
	DCC083TR-15	3	879	3.01	4.49	61.0
	DCC086TR-15	3	914	3.01	4.52	61.5
	DCC088TR-15	3	941	2.99	4.48	61.9
	DCC091TR-15	3	969	2.97	4.43	62.3
18 fan case - size 11: (mm): 2682(H) x 2200(W) x 10506(L)	DCC074TR-17	3	769	3.28	4.71	59.2
	DCC079TR-18	3	827	3.30	4.82	59.1
	DCC082TR-17	3	867	3.16	4.65	60.0
	DCC085TR-18	3	894	3.17	4.65	60.0
	DCC088TR-18	3	932	3.17	4.68	60.8
	DCC091TR-18	3	964	3.15	4.64	61.5
	DCC094TR-18	3	995	3.13	4.59	62.1
20 fan case - size 12: (mm): 2682(H) x 2200(W) x 11638(L)	DCC082TR-19	3	853	3.30	4.81	59.0
	DCC084TR-20	3	878	3.30	4.79	59.1
22 fan case - size 13: (mm): 2682(H) x 2200(W) x 12770(L)	DCC087TR-21	3	903	3.30	4.78	58.9
	DCC090TR-21	3	943	3.31	4.81	59.7
	DCC093TR-21	3	974	3.29	4.78	60.4
	DCC096TR-21	3	1006	3.27	4.73	61.0

Case size	DCC	No. of circuits	Nominal cooling (kW) [1]	EER [2]	ESEER [3]	Sound pressure @ 10m (dBA)
	Extra Quiet					
4 fan case - size 1: (mm): 2405 (H) x 2200 (W) x 2554 (L)	DCC011SX-04	1	117	3.56	4.77	47.9
	DCC011DX-04	2	118	3.60	4.58	47.9
	DCC013DX-04	2	132	3.47	4.64	48.9
	DCC014SX-04	1	145	3.30	4.45	49.7
	DCC014DX-04	2	146	3.34	4.20	49.7
	DCC015DX-04	2	158	3.27	4.25	51.7
	DCC016DX-04	2	163	3.20	4.61	50.0
	DCC017SX-04	1	167	3.19	4.38	53.0
	DCC018DX-04	2	186	2.98	4.58	50.2
	DCC019DX-04	2	191	3.01	4.21	51.9
	DCC021DX-04	2	212	2.87	4.46	50.4
	DCC023SX-04	1	229	2.63	4.36	54.6
6 fan case - size 2: (mm): 2415 (H) x 2200 (W) x 3690 (L)	DCC020DX-06	2	204	3.44	4.58	51.8
	DCC021SX-06	1	217	3.29	4.70	51.2
	DCC022DX-06	2	228	3.35	4.80	50.4
	DCC024SX-06	1	249	3.12	4.63	54.5
	DCC024DX-06	2	253	3.17	4.71	51.5
	DCC027DX-06	2	277	3.01	4.42	52.3
	DCC030DX-06	2	298	2.93	4.42	54.3
	DCC032DX-06	2	316	2.85	4.32	55.7
8 fan case size 3 (mm): 2415(H) x 2200(W) x 4820(L)	DCC025DX-08	2	264	3.43	4.90	51.4
	DCC028DX-08	2	290	3.30	4.61	52.2
8 fan case - size 4: (mm): 2682(H) x 2200(W) x 4846(L)	DCC031DX-08	2	313	3.24	4.62	54.2
	DCC033DX-08	2	333	3.18	4.54	55.5
	DCC036DX-08	2	373	3.01	4.59	54.7
	DCC039DX-08	2	406	2.86	4.56	53.8
	DCC043DX-08	2	433	2.74	4.53	55.8
10 fan case - size 5: (mm): 2415(H) x 2200(W) x 5956(L)	DCC038DX-10	2	387	3.27	4.64	54.6
	DCC046DX-10	2	479	2.91	4.59	57.0
10 fan case - size 6: (mm): 2682(H) x 2200(W) x 5978(L)	DCC048DX-10	2	499	3.03	4.49	55.0
	DCC049DX-10	2	513	2.97	4.59	53.2
	DCC051DX-10	2	530	2.58	4.62	55.7
12 fan case - size 7: (mm): 2415(H) x 2200(W) x 7090(L)	DCC042DX-12	2	435	3.29	4.79	54.1
	DCC045DX-12	2	467	3.20	4.77	55.8
12 fan case - size 8: (mm): 2682(H) x 2200(W) x 7110(L)	DCC048DX-12	2	496	3.11	4.69	57.1
	DCC049DX-12	2	515	3.26	4.70	54.9
	DCC051DX-12	2	530	3.19	4.74	53.2
	DCC053DX-11	2	552	3.06	4.68	54.1
	DCC056DX-12	2	586	3.12	4.74	55.0
	DCC058DX-12	2	609	3.05	4.67	55.6
	DCC061DX-12	2	642	3.01	4.66	56.2
14 fan case - size 9: (mm): 2682(H) x 2200(W) x 8242(L)	DCC050DX-14	2	526	3.41	4.85	54.8
	DCC052DX-14	2	542	3.36	4.85	53.2
	DCC054DX-13	2	568	3.27	4.82	54.1
	DCC057DX-14	2	602	3.31	4.86	54.9
	DCC060DX-14	2	626	3.23	4.80	55.5
	DCC063DX-14	2	662	3.22	4.79	56.1
	DCC066TX-13	3	689	3.01	4.55	55.6
	DCC070TX-14	3	727	2.98	4.52	55.1
16 fan case - size 10: (mm): 2682(H) x 2200(W) x 9374(L)	DCC055DX-15	2	580	3.41	4.94	54.0
	DCC059DX-16	2	613	3.44	4.97	54.9
	DCC061DX-16	2	638	3.38	4.90	55.4
	DCC065DX-16	2	676	3.37	4.89	56.0
	DCC068TX-16	3	716	3.28	4.78	55.5
	DCC075TX-15	3	782	3.00	4.67	54.4
	DCC077TX-16	3	810	3.02	4.67	55.1
18 fan case - size 11: (mm): 2682(H) x 2200(W) x 10506(L)	DCC072TX-17	3	753	3.22	4.71	54.9
	DCC077TX-18	3	809	3.23	4.82	54.4
	DCC080TX-17	3	838	3.06	4.66	55.6
	DCC083TX-18	3	865	3.08	4.66	56.2
	DCC086TX-18	3	899	3.06	4.69	56.6
	DCC088TX-18	3	925	3.02	4.66	57.0
	DCC091TX-18	3	951	2.99	4.61	57.3
20 fan case - size 12: (mm): 2682(H) x 2200(W) x 11638(L)	DCC070TX-19	3	735	3.47	4.94	55.3
	DCC074TX-20	3	771	3.39	4.86	54.8
	DCC080TX-19	3	835	3.24	4.81	54.9
	DCC082TX-20	3	861	3.26	4.79	55.6
22 fan case - size 13: (mm): 2682(H) x 2200(W) x 12770(L)	DCC079TX-21	3	826	3.40	4.94	54.2
	DCC081TX-22	3	853	3.40	4.92	54.9
	DCC085TX-21	3	887	3.26	4.78	55.9
	DCC088TX-21	3	923	3.24	4.82	56.4
	DCC091TX-21	3	951	3.21	4.78	56.7
	DCC094TX-21	3	980	3.19	4.74	57.1

1) Nominal cooling capacity at 7/12°C water and 35°C ambient temperature
2) EER at 7/12°C water and 35°C ambient temperature, based on TOTAL input power of compressors and fans
3) ESEER based on Eurovent standard calculation method
Performance data calculated in accordance with BSEN 14511-2011 and Eurovent 6/6

DeltaChill FreeCool technical specifications

Case Size	DCF	No. of circuits	Nominal cooling (kW) [1]	EER [2]	ESEER [3]	Free-cooling (kW) [4]	Free-cooling EER [5]	Sound pressure @ 10m (dBA)
Regular Quiet								
4 fan case - size 1: (mm): 2405 (H) x 2200 (W) x 2554 (L)	DCF013DR-04	2	145	3.55	4.45	158	18.98	57.5
	DCF014SR-04	1	159	3.37	4.35	165	19.87	58.6
	DCF014DR-04	2	160	3.40	4.00	166	19.90	58.6
	DCF015DR-04	2	173	3.34	4.04	171	20.61	60.4
	DCF016DR-04	2	181	3.29	4.46	174	20.95	58.7
	DCF017SR-04	1	185	3.26	4.24	176	21.14	61.6
	DCF018DR-04	2	209	3.12	4.42	184	22.05	60.0
	DCF021SR-04	1	226	2.96	4.27	188	22.60	61.7
6 fan case - size 2: (mm): 2415 (H) x 2200 (W) x 3690 (L)	DCF020DR-06	2	219	3.49	4.37	238	19.09	60.1
	DCF023DR-06	2	247	3.38	4.63	252	20.15	59.3
	DCF025SR-06	1	272	3.16	4.48	261	20.98	63.1
	DCF026DR-06	2	280	3.24	4.56	265	21.23	61.2
	DCF029DR-06	2	310	3.11	4.25	274	21.98	62.5
8 fan case - size 3: (mm): 2415(H) x 2200(W) x 4820(L)	DCF032DR-08	2	343	3.31	4.49	342	20.54	62.9
	DCF035DR-08	2	368	3.24	4.39	351	21.08	64.1
8 fan case - size 4: (mm): 2682(H) x 2200(W) x 4846(L)	DCF046DR-07	2	499	2.95	4.43	364	24.96	58.8
	DCF048DR-07	2	513	2.98	4.27	368	25.16	59.4
	DCF051DR-08	2	546	3.05	4.28	412	24.68	59.8
	DCF053DR-08	2	560	2.98	4.41	415	24.83	59.4
10 fan case - size 5: (mm): 2415(H) x 2200(W) x 5956(L)	DCF039DR-10	2	423	3.32	4.61	425	20.42	63.4
	DCF044DR-10	2	467	3.19	4.57	442	21.23	63.2
10 fan case - size 6: (mm): 2682(H) x 2200(W) x 5978(L)	DCF049DR-09	2	523	3.24	4.68	442	23.55	59.1
	DCF051DR-09	2	541	3.29	4.56	446	23.78	59.7
	DCF053DR-10	2	568	3.31	4.56	488	23.37	59.6
	DCF055DR-10	2	583	3.23	4.61	491	23.56	59.6
	DCF055DR-09	2	592	3.05	4.42	459	24.41	59.6
	DCF058DR-10	2	624	3.10	4.45	502	24.06	59.9
	DCF062DR-10	2	667	3.10	4.52	511	24.52	60.6
	DCF065DR-10	2	696	3.05	4.44	518	24.80	61.1
	DCF069TR-10	3	732	2.94	4.22	531	25.46	61.0
12 fan case - size 7: (mm): 2415(H) x 2200(W) x 7090(L)	DCF051DR-11	2	531	3.43	4.88	506	22.05	57.6
	DCF053DR-11	2	549	3.48	4.77	512	22.34	58.4
12 fan case - size 8: (mm) 2682(H) x 2200(W) x 7110(L)	DCF055DR-12	2	578	3.49	4.77	551	22.01	58.4
	DCF057DR-12	2	591	3.40	4.78	557	22.22	58.2
	DCF058DR-11	2	610	3.26	4.61	532	23.19	59.3
	DCF060DR-12	2	638	3.28	4.62	572	22.86	59.2
	DCF065DR-12	2	688	3.29	4.68	587	23.44	60.4
	DCF068DR-12	2	721	3.26	4.61	595	23.78	61.2
	DCF074TR-11	3	792	2.98	4.29	581	25.31	60.7
	DCF079TR-12	3	842	2.99	4.42	628	25.10	60.7
14 fan case - size 9: (mm): 2682(H) x 2200(W) x 8242(L)	DCF059DR-13	2	618	3.41	4.77	594	21.91	58.1
	DCF062DR-14	2	646	3.41	4.75	632	21.64	58.2
	DCF066DR-14	2	696	3.44	4.82	652	22.30	59.4
	DCF070DR-14	2	731	3.40	4.76	664	22.70	60.3
	DCF073TR-13	3	772	3.24	4.53	647	23.86	61.0
	DCF078TR-14	3	831	3.27	4.56	696	23.85	61.0
	DCF082TR-13	3	876	3.03	4.41	673	24.82	60.8
	DCF085TR-14	3	907	3.07	4.42	716	24.52	61.0
16 fan case - size 10: (mm): 2682(H) x 2200(W) x 9374(L)	DCF075TR-16	3	784	3.44	4.73	743	22.27	59.7
	DCF082TR-15	3	878	3.24	4.62	742	23.73	60.7
	DCF085TR-16	3	905	3.26	4.61	784	23.49	60.7
	DCF090TR-15	3	956	3.15	4.52	763	24.38	61.0
	DCF092TR-15	3	984	3.11	4.49	770	24.59	61.5
	DCF094TR-15	3	1011	3.08	4.46	776	24.79	61.9
	DCF096TR-15	3	1031	3.02	4.39	780	24.94	62.3
18 fan case - size 11: (mm): 2682(H) x 2200(W) x 10506(L)	DCF080TR-17	3	844	3.44	4.76	794	22.38	59.5
	DCF085TR-18	3	890	3.42	4.78	839	22.34	59.4
	DCF088TR-17	3	932	3.27	4.61	824	23.23	60.4
	DCF093TR-18	3	979	3.33	4.68	869	23.14	60.4
	DCF095TR-18	3	1011	3.30	4.66	879	23.40	61.2
	DCF098TR-18	3	1043	3.27	4.63	888	23.66	61.8
	DCF100TR-18	3	1067	3.22	4.55	895	23.82	62.4
20 fan case - size 12: (mm): 2682(H) x 2200(W) x 11638(L)	DCF088TR-19	3	918	3.42	4.77	878	22.13	59.3
	DCF090TR-20	3	945	3.42	4.75	915	21.92	59.3
22 fan case - size 13: (mm): 2682(H) x 2200(W) x 12770(L)	DCF095TR-21	3	989	3.48	4.82	960	21.90	59.2
	DCF098TR-21	3	1023	3.44	4.80	972	22.20	60.0
	DCF101TR-21	3	1055	3.41	4.77	985	22.48	60.7
	DCF103TR-21	3	1079	3.36	4.68	993	22.68	61.2

Case Size	DCF	No. of circuits	Nominal cooling (kW) [1]	EER [2]	ESEER [3]	Free-cooling (kW) [4]	Free-cooling EER [5]	Sound pressure @ 10m (dBA)
Extra Quiet								
4 fan case - size 1: (mm): 2405 (H) x 2200 (W) x 2554 (L)	DCF013DX-04	2	142	3.49	4.43	126	54.12	48.9
	DCF014SX-04	1	154	3.29	4.34	130	55.92	49.7
	DCF014DX-04	2	154	3.32	3.96	131	56.01	49.7
	DCF015DX-04	2	166	3.20	3.99	134	57.33	51.7
	DCF016DX-04	2	172	3.13	4.44	135	57.94	50.0
	DCF017SX-04	1	175	3.10	4.21	137	58.29	53.0
	DCF018DX-04	2	193	2.81	4.41	140	59.77	50.2
6 fan case - size 2: (mm): 2415 (H) x 2200 (W) x 3690 (L)	DCF020DX-06	2	214	3.41	4.36	190	54.32	51.8
	DCF021SX-06	1	228	3.24	4.62	195	55.62	51.2
	DCF023DX-06	2	237	3.27	4.62	197	56.48	50.4
	DCF025SX-06	1	257	2.99	4.50	203	57.94	54.5
8 fan case - size 3: (mm): 2415(H) x 2200(W) x 4820(L)	DCF026DX-08	2	281	3.45	4.81	252	53.97	51.4
	DCF029DX-08	2	307	3.28	4.49	261	55.85	52.2
8 fan case - size 4: (mm): 2682(H) x 2200(W) x 4846(L)	DCF032DX-08	2	330	3.18	4.48	267	57.19	54.2
	DCF035DX-08	2	349	3.08	4.37	272	58.19	55.5
10 fan case - size 5: (mm): 2415(H) x 2200(W) x 5956(L)	DCF039DX-10	2	406	3.19	4.48	333	56.96	54.6
	DCF047DX-09	2	496	3.05	4.71	355	52.37	53.2
10 fan case - size 6: (mm): 2682(H) x 2200(W) x 5978(L)	DCF049DX-09	2	510	3.08	4.54	357	52.71	54.0
	DCF051DX-10	2	541	3.13	4.54	393	52.15	55.0
	DCF053DX-10	2	552	3.05	4.63	395	52.42	53.2
12 fan case - size 7: (mm): 2415(H) x 2200(W) x 7090(L)	DCF044DX-12	2	460	3.27	4.73	391	55.82	53.5
	DCF049DX-11	2	517	3.35	4.89	416	50.21	53.2
12 fan case - size 8: (mm): 2682(H) x 2200(W) x 7110(L)	DCF051DX-11	2	533	3.38	4.77	420	50.67	53.9
	DCF053DX-12	2	562	3.40	4.76	454	50.16	54.9
	DCF055DX-12	2	573	3.32	4.79	457	50.47	53.2
	DCF055DX-11	2	583	3.09	4.63	431	51.90	54.1
	DCF058DX-12	2	612	3.13	4.63	465	51.42	55.0
	DCF062DX-12	2	653	3.11	4.69	473	52.24	55.6
	DCF065DX-12	2	680	3.05	4.63	477	52.71	56.2
14 fan case - size 9: (mm): 2682(H) x 2200(W) x 8242(L)	DCF050DX-13	2	531	3.56	5.03	468	47.83	53.2
	DCF053DX-13	2	549	3.60	4.94	475	48.42	53.9
	DCF055DX-14	2	576	3.60	4.91	506	47.97	54.8
	DCF057DX-14	2	589	3.52	4.90	510	48.35	53.2
	DCF057DX-13	2	602	3.33	4.77	489	49.99	54.1
	DCF060DX-14	2	631	3.35	4.76	523	49.54	54.9
	DCF064DX-14	2	675	3.34	4.83	533	50.60	55.5
	DCF068DX-14	2	705	3.29	4.77	540	51.21	56.1
	DCF069TX-13	3	729	3.05	4.47	519	52.97	55.6
	DCF075TX-14	3	785	3.06	4.54	559	52.94	55.1
16 fan case - size 10: (mm): 2682(H) x 2200(W) x 9374(L)	DCF059DX-15	2	616	3.51	4.88	542	47.93	54.0
	DCF061DX-16	2	644	3.51	4.86	573	47.53	54.9
	DCF066DX-16	2	691	3.52	4.94	588	48.83	55.4
	DCF069DX-16	2	722	3.47	4.87	597	49.57	56.0
	DCF073TX-16	3	762	3.36	4.71	610	50.65	55.5
	DCF079TX-15	3	832	3.05	4.64	596	52.78	54.4
	DCF082TX-16	3	863	3.09	4.63	632	52.46	55.1
18 fan case - size 11: (mm): 2682(H) x 2200(W) x 10506(L)	DCF078TX-17	3	819	3.36	4.75	651	50.81	54.9
	DCF082TX-18	3	864	3.33	4.79	688	50.75	54.4
	DCF085TX-17	3	893	3.11	4.62	667	52.08	55.6
	DCF089TX-18	3	938	3.18	4.70	705	51.95	56.2
	DCF092TX-18	3	964	3.13	4.68	710	52.33	56.6
	DCF094TX-18	3	990	3.09	4.64	714	52.68	57.0
	DCF096TX-18	3	1009	3.02	4.57	717	52.91	57.3
20 fan case - size 12: (mm): 2682(H) x 2200(W) x 11638(L)	DCF074TX-19	3	785	3.57	4.88	690	48.17	55.3
	DCF079TX-20	3	842	3.57	4.91	731	48.51	54.8
	DCF085TX-19	3	893	3.34	4.78	721	50.43	54.9
	DCF088TX-20	3	921	3.35	4.76	755	50.09	55.6
22 fan case - size 13: (mm): 2682(H) x 2200(W) x 12770(L)	DCF084TX-21	3	887	3.53	4.91	769	48.57	54.2
	DCF087TX-22	3	915	3.53	4.89	800	48.29	54.9
	DCF092TX-21	3	966	3.40	4.83	792	50.06	55.9
	DCF095TX-21	3	994	3.36	4.81	799	50.54	56.4
	DCF097TX-21	3	1023	3.32	4.78	806	50.97	56.7
	DCF099TX-21	3	1044	3.26	4.69	811	51.27	57.1

1) Nominal cooling capacity at 10/15°C water 20% ethylene glycol and 35°C ambient temperature
2) EER at 10/15°C water 20% ethylene glycol and 35°C ambient temperature based on TOTAL input power of compressors and fans
3) ESEER based on standard Eurovent calculation method
4) Free-cool capacity at 15°C return water 20% ethylene glycol and 3°C ambient temperature
5) Free-cooling EER at 15°C return water; 20% ethylene glycol; 3°C ambient temperature and based on TOTAL input power of fans. Free-cooling is available for up to 95% of the year

Performance data calculated in accordance with BSEN 14511-2011 and Eurovent 6/6

Performance tested

And proven

Quality is assured by our on-site, world-class testing and production facilities and the application of the latest manufacturing techniques and continuous improvement.

Airedale's dedicated test facility is the only purpose-built one of its kind in the UK. Here all our product lines are performance tested for a global market. Accurate test data is produced anywhere from -5°C to +55°C in controlled ambient environments. The climate test chambers include a hemi-anechoic chamber for accurate measurement of product sound data.

Load conditions are simulated right from early development of a new product through to final assembly. Cooling and heating capacities of test units range from 2kW up to 1MW. Customers can witness-test products to verify duty and energy performance to ensure they will meet operational requirements.

"A factor influencing selection of Airedale was its transparency and facility to witness test. We prefer working with a UK manufacturer who is carrying out product development work and can give us support and reassurance throughout."

Steve Vandyke
Head of Technical Services
National Gallery

"We are targeting a PUE of 1.3 or less

"We have invested in four DeltaChill FreeCool chillers supplying chilled water to ten SmartCool precision air conditioning units, enabling us to target PUE of less than 1.3. Airedale provides us with a fully integrated cooling solution designed for maximum efficiency and critical redundancy."

Rob Garbutt
CEO, LDeX

"Free-cooling makes sense

"Our target is to reduce building energy costs by 7% annually which we have achieved over the past two years. Airedale's free-cooling chillers are already contributing to 3% of this annual saving."

Paul Lovegrove
General Affairs Assistant Manager
Epson

"Energy efficiency was the crucial factor

"Airedale proved that its free-cooling chiller can save energy and is the right system for us. Anything that improves payback is of interest to the Society. We have also had good service from other Airedale products."

Steven Ward
Premises Engineer
Yorkshire Building Society

"Iceland Frozen Foods has realised savings of £1.5m to date

"By using an Airedale solution, over 500 stores have been upgraded to date, with energy costs reduced on average by £3,000 per store p.a.. Across the whole group this equates to a saving of over £1.5m and a CO_2 reduction of 9,890 tonnes."

Graham Ireland
Building Services Manager
Iceland Frozen Foods

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.

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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.

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