Airedale by MODINE

DeltaChill™ DCS

Air-Cooled, High Efficiency Scroll Chiller

110kW–1600kW

The Global Critical Cooling Specialist

Global Locations:

- **Leeds, UK** – Chiller production, R&D and test laboratories, training center
- **Bradford, UK** – CDU, CRAH, CRAC, fan wall production
- **Consett, UK** – AHU production
- **Guadalajara, ES** – CDU, CRAH, fan wall production, test laboratories
- **Chennai, India** – CRAH, fan wall production
- **Franklin, WI, US** – AHU, modular, test laboratories
- **Jefferson City, MO, US** – Chiller production
- **Dallas, TX, US** – Chiller production
- **Grenada, MS, US** – CDU, CRAH, fan wall production, test laboratories
- **Rockbridge, VA, US** – Chillers, CDU, R&D and test laboratories
- **Calgary, CAN** – Modular, AHU production
- **Dubai, UAE** – Sales office

Airedale by Modine is the critical cooling specialist, with the technology and expertise to meet the specific operational demands of data centers worldwide. We take a collaborative approach, delivering customized solutions at scale to colocation and hyperscale data center clients whose network of global facilities demand a more bespoke solution.

Our hybrid cooling solutions encompass high efficiency air and liquid cooling systems, intelligent controls software and comprehensive aftersales support.

Renowned for the expertise of our people, with world class products and plants, Airedale by Modine is proud of its research and development (R&D) ethos being firmly rooted in sustainability and quality. We are committed to deliver best-in-class technical design, energy performance, project delivery and ongoing lifecycle optimization; all of which comes together to support our clients in meeting their performance, efficiency and sustainability goals.

With a global network of facilities, encompassing R&D laboratories, test chambers, production, training and sales offices, Airedale by Modine has sites across three continents, in North America, Europe and Asia.

Airedale by Modine is part of Modine (NYSE:MOD), a diversified global leader in thermal management technology and solutions.

For more information visit www.airedale.com

The Complete Cooling Solution for Global Data Centers

Today's technology, designed for tomorrow

Increasing demand for emerging digital technologies is driving the transformation of colocation and hyperscale data centers, and it is imperative that the cooling technology employed evolves at the same pace.

System design

Airedale by Modine takes a holistic approach to data center cooling; designing units as components of an integrated ecosystem that can flex and grow with the technology demands of the future. Our cooling solutions are designed with built-in redundancy and up to Tier 4 compliance, and work harmoniously with the building and each other, to maximize efficiency and resilience.

Customized solutions

Our design philosophy prioritizes flexibility over prescriptive solutions. DeltaChill DCS reflects a baseline model, showcasing some achievable configurations to serve as a starting point for discussion. Our DCS engineering team collaborates with our clients to develop customized solutions that align precisely with operational parameters and site-specific demands.

Full solution provider

Over 50 years' experience tells us that when a customer invests in a full cooling system encompassing controls and service options, it is more than a transaction – it is a relationship built on trust, with ongoing lifecycle optimization at its core.

DeltaChill DCS is designed for easy integration into air, hybrid or all liquid cooling systems. It works seamlessly with a combination of liquid and air cooling solutions, to give the very best efficiency and performance for your data center.

DeltaChill™ DCS

DeltaChill™ DCS, from Airedale by Modine, is a high-efficiency, air-cooled, scroll compressor chiller. Optimized for R32, DeltaChill offers a wide range of models between 110 and 1600kW, making it a versatile solution for almost any application.

The DeltaChill™ DCS with Enhanced Free Cooling™ has been engineered specifically for data center operation. It delivers exceptional free cooling performance, spending up to 95% of the year in free cooling mode. In mechanical cooling mode, DeltaChill has excellent part load efficiencies, ensuring no power is wasted.

Cooling Capacity

From:

110kW to **1600kW**

High Seasonal Efficiencies

ESEER up to: **5.11**

EER up to: **3.60**

Supply Water Temperature

From:

5°C to **25°C**

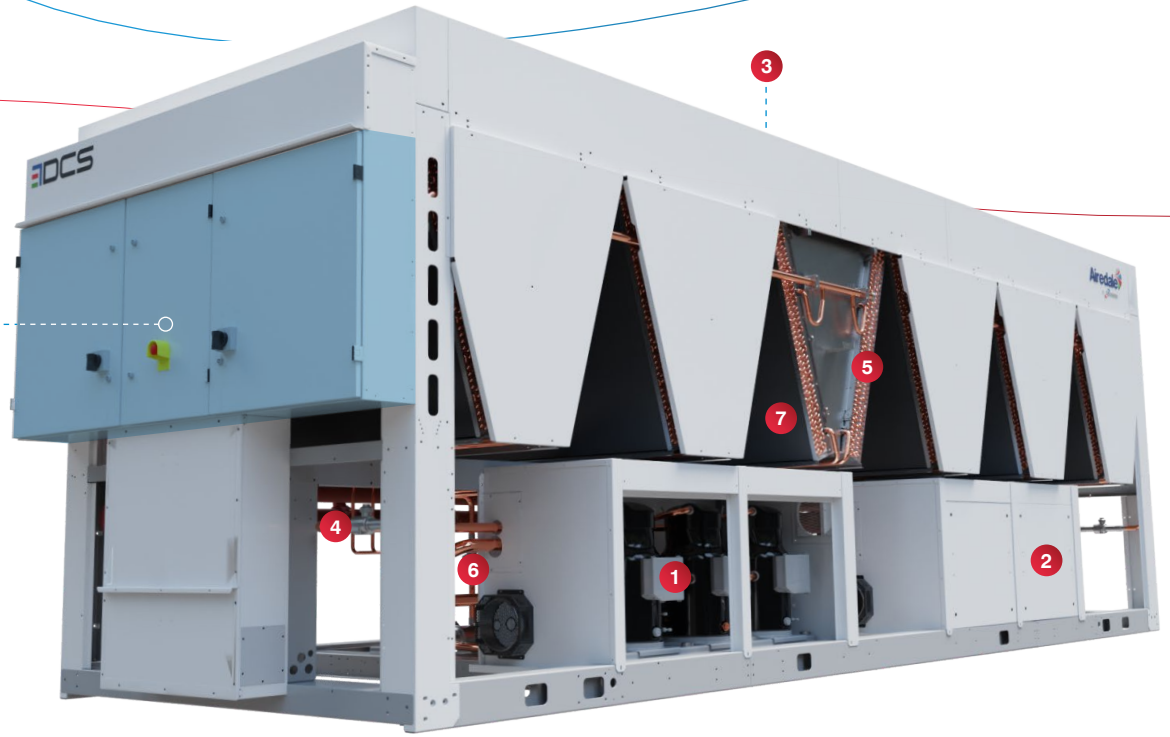
Free Cooling Models

Operate in free cooling up to **95**% of the year

DeltaChill™ DCS

Air-cooled, high efficiency scroll chiller delivering sustainable cooling solutions

helix™



Helix Unit Controls

- Dynamic cooling demand adjustment, matches compressor capacity to heat load.
- Compressor rotation for equal run hours.
- Constant superheat via EEV control promotes a lower running cost.
- Optimized head pressure control optimizes compressor and fan power to minimize overall power consumption across the whole year.
- Variable supply water temperature control. In comfort applications, the design setpoint increases at lower ambient temperatures to offset additional building heat loss.
- Eco-pumpdown creates lower evaporating temperatures that allow the crank case heaters to stay off for longer, thus reducing standby power consumption.
- Intelligent auxiliary heating reduces standby power consumption by only operating heaters when required.
- Intelligent refrigerant management safety feature shuts down the unit and activates the ventilation fan in the unlikely event of a leak.

Back to back arrangement

DeltaChill DCS can be a back to back arrangement, effectively delivering twice the cooling capacity.

Capacity

Individual units reach 800kW capacity; back to back arrangement increases capacity to 1600kW.

Safety features

All DeltaChill DCS R32 chillers come with the following safety features as standard:

- Leak detection – sensor that will shut the unit down in the presence of a refrigerant leak.
- ATEX rated ventilation fan – activates in the rare event of a leak to disperse the refrigerant in order to prevent build-up.*
- Isolating contactor – removes ignition sources within the chiller.

* applicable with compressor enclosures; optional on regular quiet versions and standard on extra quiet versions.

1 R32 scroll compressors

1– 3 compressors per circuit, with dual circuits available, offering:

- Flexibility in staging
- Higher part-load efficiency
- Improved uptime
- Reduced applied costs
- Vibration levels minimized
- Lower sound levels

2 Optional inverter controlled pump

Variable flow control; automatically adjusts its speed to maintain the design flow rate and offers low flow rate protection.

3 EC fans as standard

Up to 80% more efficient

Electronically commutated axial fans give increased performance for reduced power input.

Modbus fans to enhance insight into fan performance, support preventative maintenance, and provide alarms to alert users to potential fan failures.

4 Supply water temperature

Supply water temperature from 5°C to 25°C allows for greater energy efficiency in a variety of applications.

5 Microchannel condenser coils with e-coat

Up to 30% reduction in refrigerant charge compared to traditional coils. High surface area gives increased heat transfer and lower airside pressure drop gives lower fan powers; the slim light profile reduces weight/space claim.

6 Electronic expansion valve

- Included on all units as standard.
- Quickly and precisely adapts to the effective load required.
- Provides significant energy savings that can result in an EER (energy efficiency ratio) increase of up to 30%.

7 Heat exchangers

Plate heat exchanger delivers large exchange surfaces to maximize thermal efficiency.

Modular V frame design improves heat exchange, giving better performance and control, particularly at part load.

DeltaChill™ DCS

Engineered for Data Centers

DeltaChill™ DCS has been engineered for the demands of the data center industry, with added performance and energy efficiency boosting features.

DCS
DATA CENTER SOLUTIONS

Free cooling

Free cooling is the process of using external ambient temperature to reject heat, rather than using the refrigeration process. If used within an optimized system, free cooling can provide significant energy savings. It can take effect when the difference between the outside air supply and return water temperatures is as little as 1°C. This means that, in a 24/7 data center with a typical room temperature of 24°C, over 95% of the year can be spent with free cooling active.

Concurrent free cooling

Concurrent free cooling is a mixture of free cooling and mechanical cooling. Rather than sacrificing any free cooling opportunity, concurrent free cooling enables free cooling to be captured whenever the ambient is below the return water temperature.

The use of intelligent control systems allows for cooling to be staged, ensuring a smooth transition from mechanical cooling to free cooling. Airedale's Cooling System Optimizer™ for example, can configure between two and twenty chillers to control the cooling block in its most efficient form. On sites with an air cooled and free cooling chiller, the Optimizer ensures that when the ambient is low free cooling is optimized across all available units while maintaining system water conditions to the load.

Elevated supply and return water temperatures

Increasing operational supply and return water temperatures can further generate opportunities for free cooling. DeltaChill DCS operates with water temperatures of up to 25˚C supply water.

Enhanced Free Cooling™ and improved PUEs

Airedale by Modine's Enhanced Free Cooling package is able to deliver a higher percentage of full free cooling over the course of a year, resulting in significant annual energy cost savings. Heat exchangers are optimized for temperature differences and an improved temperature approach. Over its full life cycle, the combination of reduced energy consumption and lower approach temperatures leads to improved PUEs, allowing data center operators to more easily meet their environmental targets.

Fast start

Our DCS chillers are engineered with a fast restart protocol, so that following a power interruption they are able to return to full load in 3–3.5 minutes. This functionality resides within the chiller controller programming, so the chiller has complete control over flow without relying on external BMS.

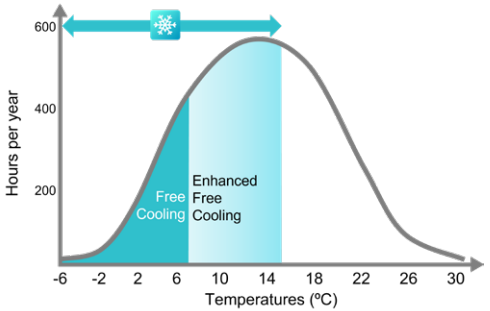
ATS enabled

In the event of an interruption to the primary power supply, the ATS (automatic transfer switch) will switch to the back-up power supply, minimising the risk of down time.

Variable flow

DeltaChill DCS can be supplied with variable flow pumps and associated technology, to allow chiller flow rates to be modulated to better match indoor data center demand. This minimises the requirement for flow bypass and reduces overall pump energy use.

Enhanced Free Cooling



High pressure offloading

As ambient temperature rises, so too does the refrigerant pressure in the chiller, and under abnormal operating conditions this pressure can approach the chiller safety trip point. It is important for a mission critical application to ensure the chiller remains active at all times. Rather than the chiller simply tripping and all cooling being lost, the controller can manage the amount of cooling output to keep the chiller active. This helps to keep the data centre operational during an abnormal period.

Reduced maintenance requirements

Free cooling enhancements and intelligent compressor management reduce the stress on components, thus reducing maintenance requirements and increasing longevity of the chiller.

24/7 operation

Crucially, our systems are designed to be failsafe and to revert to standalone control in the event of a system failure.

Optimized controls systems

Airedale DCS chillers operate with a sophisticated controls package, that encompasses unit controls, system controls and data centre BMS controls.

IQity

IQity™ is Airedale by Modine's IoT-enabled technology framework, revolutionizing how cooling is connected, controlled and automated in critical facilities at a product, system and site level.

SYSTEM

CW System Optimizer
CRAH Energy Optimizer
Chiller Sequencer
HVAC Controls Suite

Optimizer

SITE

ACIS Facility Management
- BMS
- PMS
- BEMS

ACIS Edge
ACIS Telecoms

ACIS™

PRODUCT

Precision Controls
Chiller Controls
Optimized Head Pressure Control
Chiller Fast Start
Energy Manager
Refrigerant Manager
Compressor Manager

&helix™

Sustainable as Standard

At Airedale by Modine, we believe that energy efficiency should be driven not only by legislation, but by a genuine will to reduce air conditioning's cost to our customers and the environment. As part of this commitment, the DeltaChill range includes the following energy saving technologies as standard:

Refrigerant R32

- Lower GWP of 675
- Zero ODP
- 16% less refrigerant volume per kW when compared to R410A
- In line with F-Gas phase-down regulations
- A2L rated – low toxicity and lower flammability

Supply water

Supply water temperature from 5 to 25°C allows for greater energy efficiency.

Sequencing

We have the ability to sequence multiple units for enhanced performance and redundancy assurance.

High Efficiencies

- ESEER up to 5.11
- EER up to 3.60

Electronic expansion valve

- Included on all units as standard
- Quickly and precisely adapts to the effective load required
- Provides significant energy savings that can result in an EER (energy efficiency ratio) increase of up to 30%

Tier 2 (2021) SEPR

All DeltaChills are compliant with Tier 2 (2021) SEPR requirements.

SSCEE comfort cooling

Many of our DeltaChill models comply with Tier 2 (2021) Ecodesign SSCEE comfort cooling limits.

Ambient Operation

Cooling: −20°C to 48°C

System Controls

Overall system control offers significant energy savings and enhancements to redundancy using smart control monitoring systems, reducing operational costs and increasing reliability.

BREEAM credits: 3

DeltaChill R32 is eligible for 3 BREEAM credits.

- **2 credits** – Direct Effect Life Cycle CO_2 equivalent emissions (DELC) of ≤100kg CO_2e/kW
- **1 credit** – all systems are hermetically sealed, with a tested leakage rate of less than 3g/year

Quiet and Extra Quiet

Quiet and extra quiet sound variants available, for reduced noise pollution.

Night mode

The night setback mode reduces the fan speed automatically at times when the unit is not required to work as hard, saving energy and reducing the sound level at typically quieter times.

Power limiting

This is an optional feature, employed to allow operators to float their operating parameters when they start to approach the limits of the infrastructure. For example, if load on the chiller was to rise beyond the design load, rather than it drawing more power than expected to maintain setpoint, it would allow the water temperature to float up to keep the power draw within any cap set by the client.

"Airedale by Modine is a great example of a supplier that is engaged in the sustainability collaboration challenge. They are responsive to our sustainability priorities, and we take the lead from them on areas such as controls optimization to improve energy efficiency, reducing embodied carbon in cooling equipment and sustainability performance metrics relating to our products.

Senior Carbon Accounting Engineer at a data center developer

We Are There When You Need Us

Life cycle support for critical cooling

Our specialist data center service support includes commissioning, planned maintenance, repair, tech support and spares.

We offer a 24/7 emergency helpline and call out service, available 365 days of the year to our contracted service and maintenance clients from the data center industry.

Guaranteed response times means that an accredited Airedale by Modine engineer will be with you in an agreed timeframe, maximizing your system's uptime.

Choose the right service and maintenance contract for you

Our service plans offer a preventative air conditioning maintenance service solution to improve system resilience and increase the longevity of your cooling system.

Planned maintenance not only assists in preventing unit breakdowns in business-critical environments, but also helps to improve energy efficiency and enhance system optimization for improved performance. Over the life cycle of the product this can lead to reduced running costs, improved carbon footprint and quicker returns on investment.

Unrivalled spares service, delivering worldwide

We have high volumes of spares in stock at our global facilities, ready to dispatch to our engineers and customers when they need us most.

Vodafone data center update

"Reliability and the level of service that Airedale offers are key issues for a business critical location such as this. The project ran very smoothly."

DeltaChill™ DCS Free Cool

Technical and Performance Data

Standard Supply/Return Water Temperature Operation

The tables opposite detail the model selections available, based on standard supply/return water temperature operation (10°C/15°C) in a 35°C ambient.

Free Cooling Chillers – Standard Supply/Return Water Temperature Operation

DCF Regular Quiet	No. of circuits	Nominal Cooling (kW)	EER	Sound Pressure @ 10m (dBA)	Free cooling (kW)	Free cooling EER	Ambient for 100% free cooling (A)	Dimensions (mm)
DCF051DR-10TSA0	2	514.2	3.3	63.3	442.8	19.2	1.1	2682 × 2200 × 5978
DCF056DR-10TAA0	2	557.4	3.2	64.4	452.5	19.6	0.2	2682 × 2200 × 5978
DCF060DR-10TAE0	2	600.8	3.2	65.2	460.5	19.9	−0.7	2682 × 2200 × 5978
DCF065DR-12TEE0	2	650.5	3.2	65.6	539.1	19.4	0.5	2682 × 2200 × 7110
DCF070DR-12TEH0	2	696.4	3.2	66.2	548.3	19.8	−0.2	2682 × 2200 × 7110
DCF074DR-12THH0	2	738.8	3.2	66.8	555.6	20.0	−1.0	2682 × 2200 × 7110
DCF052DR-12TSA0	2	520.7	3.5	62.8	502.0	18.1	2.6	2682 × 2200 × 7110
DCF057DR-12TAA0	2	565.2	3.4	63.8	517.0	18.6	1.9	2682 × 2200 × 7110
DCF061DR-12TAE0	2	609.5	3.3	64.8	529.4	19.1	1.2	2682 × 2200 × 7110
DCF066DR-14TEE0	2	659.8	3.4	65.2	603.3	18.6	1.9	2682 × 2200 × 8242
DCF070DR-14TEH0	2	705.0	3.4	65.9	616.1	19.0	1.3	2682 × 2200 × 8242
DCF075DR-14THH0	2	746.8	3.3	66.5	626.3	19.3	0.7	2682 × 2200 × 8242
DCF053DR-14TSA0	2	526.6	3.6	62.5	551.6	17.0	3.5	2682 × 2200 × 8242
DCF057DR-14TAA0	2	571.7	3.5	63.5	571.7	17.7	3.0	2682 × 2200 × 8242
DCF062DR-14TAE0	2	617.1	3.5	64.4	589.2	18.2	2.4	2682 × 2200 × 8242
DCF067DR-16TEE0	2	665.3	3.5	64.9	658.3	17.8	2.9	2682 × 2200 × 9374
DCF071DR-16TEH0	2	711.4	3.5	65.6	675.5	18.3	2.4	2682 × 2200 × 9374
DCF075DR-16THH0	2	754.1	3.4	66.1	689.5	18.6	1.9	2682 × 2200 × 9374
DCF Extra Quiet								
DCF051DX-12TSA0	2	513.2	3.4	55.0	410.6	34.9	0.0	2682 × 2200 × 7110
DCF055DX-12TAA0	2	553.8	3.3	55.4	419.4	35.6	−0.8	2682 × 2200 × 7110
DCF059DX-12TAE0	2	593.5	3.2	55.8	426.3	36.2	−1.7	2682 × 2200 × 7110
DCF065DX-14TEE0	2	646.0	3.3	56.2	489.3	35.6	−0.8	2682 × 2200 × 8242
DCF069DX-14TEH0	2	687.0	3.3	56.5	496.5	36.2	−1.6	2682 × 2200 × 8242
DCF072DX-14THH0	2	725.8	3.2	56.8	502.0	36.6	−2.3	2682 × 2200 × 8242
DCF052DX-14TSA0	2	523.1	3.6	55.1	457.0	33.3	1.3	2682 × 2200 × 8242
DCF057DX-14TAA0	2	565.4	3.5	55.5	470.2	34.2	0.6	2682 × 2200 × 8242
DCF061DX-14TAE0	2	607.1	3.4	55.9	481.0	35.0	−0.1	2682 × 2200 × 8242
DCF066DX-16TEE0	2	657.2	3.5	56.2	540.4	34.4	0.4	2682 × 2200 × 9374
DCF070DX-16TEH0	2	689.5	3.3	56.5	551.1	35.1	−0.2	2682 × 2200 × 9374
DCF074DX-16THH0	2	728.5	3.3	56.8	559.6	35.7	−0.9	2682 × 2200 × 9374

10°C/15°C supply/return water temperatures – 35°C ambient. Free cooling data taken at 3°C ambient.

A: Ambient temperature at which free cooling = 100% nominal cooling capacity at nominal conditions.

DeltaChill™ DCS Free Cool

Technical and Performance Data

High Supply/Return Water Temperature Operation

The tables opposite detail the model selections available, based on high supply/return water temperature operation (20°C/28°C) in a 35°C ambient.

Free Cooling Chillers – High Supply/Return Water Temperature Operation

DCF Regular Quiet	No. of circuits	Nominal Cooling (kW)	EER	Sound Pressure @ 10m (dBA)	Free cooling (kW)	Free cooling EER	Ambient for 100% free cooling (A)	Dimensions (mm)
DCF051DR-10TSA0	2	691.5	4.1	63.3	883.8	38.2	8.4	2682 × 2200 × 5978
DCF056DR-10TAA0	2	748.9	4.0	64.4	909.1	39.3	7.4	2682 × 2200 × 5978
DCF060DR-10TAE0	2	801.0	3.9	65.2	928.9	40.2	6.4	2682 × 2200 × 5978
DCF065DR-12TEE0	2	873.3	4.0	65.6	1080.2	38.9	7.8	2682 × 2200 × 7110
DCF070DR-12TEH0	2	933.6	4.0	66.2	1104.6	39.8	6.9	2682 × 2200 × 7110
DCF074DR-12THH0	2	988.8	4.0	66.8	1124.1	40.5	6.0	2682 × 2200 × 7110
DCF052DR-12TSA0	2	701.6	4.4	62.8	990.5	35.7	10.3	2682 × 2200 × 7110
DCF057DR-12TAA0	2	761.0	4.3	63.8	1025.3	37.0	9.4	2682 × 2200 × 7110
DCF061DR-12TAE0	2	819.5	4.2	64.8	1055.6	38.0	8.6	2682 × 2200 × 7110
DCF066DR-14TEE0	2	888.8	4.3	65.2	1196.7	37.0	9.4	2682 × 2200 × 8242
DCF070DR-14TEH0	2	951.6	4.2	65.9	1229.3	38.0	8.6	2682 × 2200 × 8242
DCF075DR-14THH0	2	1009.9	4.2	66.5	1256.4	38.8	7.9	2682 × 2200 × 8242
DCF053DR-14TSA0	2	712.0	4.6	62.5	1082.9	33.5	11.6	2682 × 2200 × 8242
DCF057DR-14TAA0	2	772.3	4.5	63.5	1125.6	34.8	10.8	2682 × 2200 × 8242
DCF062DR-14TAE0	2	832.2	4.4	64.4	1163.9	36.0	10.1	2682 × 2200 × 8242
DCF067DR-16TEE0	2	897.9	4.4	64.9	1296.6	35.1	10.7	2682 × 2200 × 9374
DCF071DR-16TEH0	2	961.6	4.4	65.6	1336.6	36.1	10.0	2682 × 2200 × 9374
DCF075DR-16THH0	2	1020.7	4.4	66.1	1370.3	37.0	9.4	2682 × 2200 × 9374
DCF Extra Quiet								
DCF051DX-12TSA0	2	682.4	4.2	55.0	817.7	69.5	7.1	2682 × 2200 × 7110
DCF055DX-12TAA0	2	734.2	4.1	55.4	838.2	71.2	6.1	2682 × 2200 × 7110
DCF059DX-12TAE0	2	783.7	3.9	55.8	855.6	72.7	5.1	2682 × 2200 × 7110
DCF065DX-14TEE0	2	856.1	4.1	56.2	977.7	71.2	6.1	2682 × 2200 × 8242
DCF069DX-14TEH0	2	910.2	4.0	56.5	996.8	72.6	5.2	2682 × 2200 × 8242
DCF072DX-14THH0	2	961.9	3.9	56.8	1013.1	73.8	4.3	2682 × 2200 × 8242
DCF052DX-14TSA0	2	699.2	4.5	55.1	909.2	66.2	8.8	2682 × 2200 × 8242
DCF057DX-14TAA0	2	753.8	4.4	55.5	935.4	68.1	7.9	2682 × 2200 × 8242
DCF061DX-14TAE0	2	806.6	4.2	55.9	958.3	69.8	7.0	2682 × 2200 × 8242
DCF066DX-16TEE0	2	874.7	4.3	56.2	1075.0	68.5	7.7	2682 × 2200 × 9374
DCF070DX-16TEH0	2	914.2	4.0	56.5	1099.3	70.0	6.8	2682 × 2200 × 9374
DCF074DX-16THH0	2	966.5	4.0	56.8	1120.5	71.4	6.0	2682 × 2200 × 9374

20°C/28°C supply/return water temperatures – 35°C ambient. Freecooling data at 3°C ambient.

A: Ambient temperature at which free cooling = 100% nominal cooling capacity at nominal conditions.

DeltaChill™ DCS
Technical and Performance Data

Mechanical Cooling Chillers

The tables opposite detail the model selections available, based on standard supply/return water temperature operation (7°C/12°C) in a 35°C ambient.

Mechanical Cooling Chillers – Standard Supply/Return Water Temperature Operation

DCF Regular Quiet	No. of circuits	Nominal Cooling (kW)	EER	Sound Pressure @ 10m (dBA)	Dimensions (mm)
DCC048DR-10TSA0	2	474.8	3.2	62.8	2682 × 2200 × 5978
DCC052DR-10TAA0	2	516.0	3.1	63.8	2682 × 2200 × 5978
DCC056DR-10TAE0	2	550.0	3.0	64.8	2682 × 2200 × 5978
DCC060DR-12TEE0	2	598.9	3.1	65.1	2682 × 2200 × 7110
DCC065DR-12TEH0	2	640.3	3.1	65.8	2682 × 2200 × 7110
DCC068DR-12THH0	2	676.9	3.0	66.4	2682 × 2200 × 7110
DCC048DR-12TSA0	2	484.6	3.2	62.5	2682 × 2200 × 7110
DCC052DR-12TAA0	2	525.5	3.2	63.5	2682 × 2200 × 7110
DCC056DR-12TAE0	2	560.7	3.1	64.4	2682 × 2200 × 7110
DCC061DR-14TEE0	2	609.1	3.2	64.9	2682 × 2200 × 8242
DCC065DR-14TEH0	2	651.9	3.2	65.5	2682 × 2200 × 8242
DCC069DR-14THH0	2	690.1	3.1	66.1	2682 × 2200 × 8242
DCC049DR-14TSA0	2	490.9	3.3	62.3	2682 × 2200 × 8242
DCC053DR-14TAA0	2	532.9	3.3	63.3	2682 × 2200 × 8242
DCC057DR-14TAE0	2	569.2	3.2	64.2	2682 × 2200 × 8242
DCC061DR-16TEE0	2	615.8	3.2	64.7	2682 × 2200 × 9374
DCC066DR-16TEH0	2	660.0	3.2	65.3	2682 × 2200 × 9374
DCC070DR-16THH0	2	686.5	3.2	65.9	2682 × 2200 × 9374
DCF Extra Quiet					
DCC048DX-12TSA0	2	476.2	3.2	55.0	2682 × 2200 × 7110
DCC052DX-12TAA0	2	515.4	3.1	55.4	2682 × 2200 × 7110
DCC055DX-12TAE0	2	549.4	3.1	55.8	2682 × 2200 × 7110
DCC060DX-14TEE0	2	598.0	3.1	56.2	2682 × 2200 × 8242
DCC064DX-14TEH0	2	638.9	3.1	56.5	2682 × 2200 × 8242
DCC068DX-14THH0	2	675.7	3.1	56.8	2682 × 2200 × 8242
DCC048DX-14TSA0	2	484.7	3.3	55.0	2682 × 2200 × 8242
DCC053DX-14TAA0	2	525.6	3.3	55.5	2682 × 2200 × 8242
DCC056DX-14TAE0	2	560.8	3.2	55.9	2682 × 2200 × 8242
DCC061DX-16TEE0	2	606.2	3.2	56.2	2682 × 2200 × 9374
DCC065DX-16TEH0	2	648.8	3.2	56.5	2682 × 2200 × 9374
DCC069DX-16THH0	2	685.0	3.2	56.8	2682 × 2200 × 9374

7°C/12°C supply/return water temperatures – 35°C ambient.

DeltaChill™ DCS
Technical and Performance Data

High Supply/Return Water Temperature Operation

The tables opposite detail the model selections available, based on high supply/return water temperature operation (20°C/28°C) in a 35°C ambient.

Mechanical Cooling Chillers – High Supply/Return Water Temperature Operation

DCF Regular Quiet	No. of circuits	Nominal Cooling (kW)	EER	Sound Pressure @ 10m (dBA)	Dimensions (mm)
DCC048DR-10TSA0	2	703.7	4.3	62.8	2682 × 2200 × 5978
DCC052DR-10TAA0	2	763.9	4.2	63.8	2682 × 2200 × 5978
DCC056DR-10TAE0	2	799.5	4.0	64.8	2682 × 2200 × 5978
DCC060DR-12TEE0	2	871.8	4.1	65.1	2682 × 2200 × 7110
DCC065DR-12TEH0	2	931.7	4.1	65.8	2682 × 2200 × 7110
DCC068DR-12THH0	2	985.9	4.0	66.4	2682 × 2200 × 7110
DCC048DR-12TSA0	2	712.7	4.5	62.5	2682 × 2200 × 7110
DCC052DR-12TAA0	2	770.4	4.4	63.5	2682 × 2200 × 7110
DCC056DR-12TAE0	2	819.6	4.2	64.4	2682 × 2200 × 7110
DCC061DR-14TEE0	2	892.4	4.3	64.9	2682 × 2200 × 8242
DCC065DR-14TEH0	2	955.4	4.3	65.5	2682 × 2200 × 8242
DCC069DR-14THH0	2	1013.1	4.3	66.1	2682 × 2200 × 8242
DCC049DR-14TSA0	2	728.2	4.7	62.3	2682 × 2200 × 8242
DCC053DR-14TAA0	2	785.3	4.6	63.3	2682 × 2200 × 8242
DCC057DR-14TAE0	2	836.7	4.4	64.2	2682 × 2200 × 8242
DCC061DR-16TEE0	2	905.4	4.4	64.7	2682 × 2200 × 9374
DCC066DR-16TEH0	2	971.4	4.5	65.3	2682 × 2200 × 9374
DCC070DR-16THH0	2	1005.3	4.3	65.9	2682 × 2200 × 9374
DCF Extra Quiet					
DCC048DX-12TSA0	2	695.9	4.3	55.0	2682 × 2200 × 7110
DCC052DX-12TAA0	2	749.8	4.2	55.4	2682 × 2200 × 7110
DCC055DX-12TAE0	2	797.1	4.0	55.8	2682 × 2200 × 7110
DCC060DX-14TEE0	2	870.3	4.1	56.2	2682 × 2200 × 8242
DCC064DX-14TEH0	2	929.2	4.1	56.5	2682 × 2200 × 8242
DCC068DX-14THH0	2	982.3	4.0	56.8	2682 × 2200 × 8242
DCC048DX-14TSA0	2	713.6	4.6	55.0	2682 × 2200 × 8242
DCC053DX-14TAA0	2	771.6	4.5	55.5	2682 × 2200 × 8242
DCC056DX-14TAE0	2	821.0	4.3	55.9	2682 × 2200 × 8242
DCC061DX-16TEE0	2	886.2	4.3	56.2	2682 × 2200 × 9374
DCC065DX-16TEH0	2	948.7	4.3	56.5	2682 × 2200 × 9374
DCC069DX-16THH0	2	1002.2	4.3	56.8	2682 × 2200 × 9374

20°C/28°C supply/return water temperatures – 35°C ambient.

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