

DWSC & DWDC C Series

Centrifugal compressor water cooled chillers



The new water-cooled centrifugal chiller with low GWP refrigerant
An extremely reliable, efficient, flexible and environmentally friendly solution

DWSC

Single Compressor Unit



DWSC C up to 3350kW (1000RT) with R-1234ze and up to 4500kW (1250RT) with both R-134a and R-513A, with single centrifugal compressor.

Single Compressor Unit

- › Capacity range
- › 750 – 3350kW with R-1234ze*
- › 1050 – 4500kW with R-134a/R-513A*

Daikin Centrifugal Chiller

- › High Efficiency Flooded Type Heat Exchangers
- › Unloading to 10% of full load
- › Best efficiency with up to 30% less refrigerant than previous series
- › Daikin Centrifugal Compressor technology



DWDC

Dual Compressor & Single Circuit Unit



DWDC C up to 6700kW (1900RT) with R-1234ze and up to 9000kW (2500RT) with both R-134a and R-513A, with dual centrifugal compressor.

Dual Compressor Unit

- › Capacity range
- › 1500 – 6700kW with R-1234ze*
- › 2100 – 9000kW with R-134a/R-513A*

Outstanding part load performance

Unloading to 5% of full load

Two of everything connected to the evaporator and condenser

- › Two compressors
- › Two lubrication systems
- › Two control systems
- › Two starters

Duplicate components for excellent reliability



The new water-cooled centrifugal chiller with low GWP refrigerant

DWSC & DWDC C Series

The use of R-1234ze(E) offers an environmentally friendly solution, combining a low Global Warming Potential (GWP) with high energy efficiency. R-1234ze(E) is an HFO refrigerant (Hydro Fluoro Olefins) with an Ozone Depletion Potential (ODP) is equal to zero (0). The introduction of the new R-1234ze(E) range provides a long-term solution that supports the HFC phase down schedule of the F-gas Regulation.

The range offers a choice of three different refrigerants – R134a, R513A and R1234ze – and all machines require less refrigerant than previous series. The new Daikin C Series **centrifugal compressor**

water-cooled chiller, replaces the previous water-cooled Series B and will be available with as a customer-specific solution for even higher performance ranges.

✓ **Daikin Centrifugal Compressor**

- › No compromises in application flexibility
- › Proven compressor technology (Daikin centrifugal compressor design)



✓ **Daikin Heat Exchangers: optimizing performance and reducing refrigerant charge**

- › Thanks to the new high efficiency tubes and more compact heat exchanger design
- › Shortest chiller on the market thanks to the new Heat Exchanger design by Daikin.



Evaporator pipes

- › Outside: cavities for optimized nucleate boiling
- › Inside: helical structure



Condenser tubes

- › Outside: optimized for condensation
- › Inside: helical structure

✓ **Electronic Expansion valve: fast, accurate response to load and water temperature changes**

Offering superior refrigerant management throughout the entire chiller operating range and for achieving precise control of refrigerant mass flow.



Best efficiency with up to 30% less refrigerant than previous series

New Microtech IV controller installed as standard



- › Main parameters visualization and easy modification
- › Best efficiency operating point tracker
- › Critical components' protection thanks to fast response
- › Precise monitoring of the system and sub-system
- › New options included
- › Improvements compared to MicroTech III

✓ **Control solutions**

1. Advanced logic & touch screen operator Interface

2. Touch screen operator panel

Touch screen operator panel is graphically intuitive and easy to use for enhanced operator productivity. Important status and control information is available at a glance or a touch.



3. Unit mounted electrical panel

- › 'Right-sizing' chiller selection
- › Compact frequency drive due to refrigerant cooling



4. Dismountable electrical panel and On-site disassembly

Dismountable electrical panel and On-site disassembly for suitability to all installation site needs and dimensions requirements.

✓ **Free cooling operation**

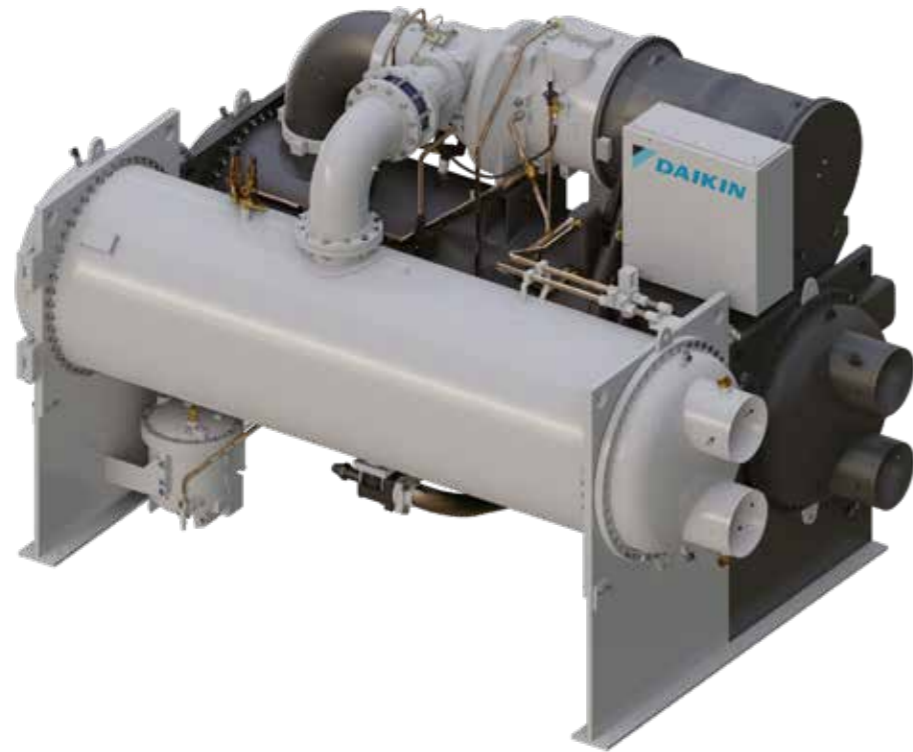
Allows to reduce the power consumption generated by traditional mechanical cooling.



✓ **Soft Starter Unit**

Soft Starter Unit Mounted for Fixed Speed application in the new compact electrical panel for plug and play solution.

Why choose DWSC, DWDC C series?



✓ Focus on inverter Daikin

- › State-of-the-art engineering
- › Unique design of Daikin's inverter for optimal unit performance
- › Designed to ensure low in-rush currents and greater reliability
- › Daikin Refrigerant cooled Inverter technology
- › Unit Mounted Electrical Panel
- › Inverter also available in a 'Low Harmonic-LH' version
- › Unique inverter design allowing to adjust the Harmonic Current based on the specific application to achieve < 3% THDi.



✓ Rapid restart for fast start-up after power loss

- › The UPS keeps the controller switched on enabling the unit to quickly reach the full load
- › Focused on data center and all applications where the cooling capacity supply is crucial.



✓ Sound level reduction

Achieved thanks to dedicated acoustic insulation installed on the unit and available as option.



✓ Heat pump mode

With reversibility on water side whenever a heating load is demanded thus improving suitability for applications with changing load during the year.



✓ Designed to help "right-sizing" and offer reduced installation costs

Extensive list of options to satisfy any customer requirement



✓ Variable Frequency Drive and Low Harmonics VFD

- › Variable Frequency Drive designed and manufactured by Daikin in the new Daikin center of Excellence located in Italy
- › VFD optimizes part load efficiency, a key performance feature since most chillers operate at part load 99% of their life
- › Low Harmonics VFD designed and manufactured by Daikin in accordance to the standards EC61000-2-4, IEC61000-3-4, IEEE 519, G5/4 achieving THD < 5%. Standard VFD and LH VFD are unit mounted and refrigerant cooled, ensuring higher efficiency and reliability.

✓ Further customization is feasible in order to meet every customer needs:

- › Cu-Ni condenser tubes to operate with sea water application
- › Halogen free cables and insulation
- › Most common marine power supply 690V/60Hz, 690V/50Hz, 440V/60Hz, and others...
- › IT-system for the Inverter
- › Holding charge for long term storage necessities before operation
- › Marine Certification for heat exchanger (i.e. DNV, Lloyd's Register, RINA, Bureau Veritas, etc.)
- › Heat exchangers suitability for Marine thanks to Marine water box, hinged covers, flanged water connections
- › Chiller designed for extreme pitching and rolling operation.

✓ Test stand capabilities

- › Voltage (V): 380 - 400 - 440 - 460 - 480 - 690 - 6000 - 6600 - 10000 - 11000
- › Frequency (Hz): 50 - 60
- › 11 MW capacity test stand AHRI approved
- › Run Test execution for every chiller manufactured.





For more information email info@daikinapplied.uk or visit www.daikinapplied.uk

For all Daikin Applied UK,
 Daikin Applied Service &
 Spares enquiries call us on:
0345 565 2700



Daikin Europe N.V. participates in the Eurovent Certified Performance programme for Liquid Chilling Packages and Hydronic Heat Pumps, Fan Coil Units and Variable Refrigerant Flow systems. Check ongoing validity of certificate: www.eurovent-certification.com

The present publication is drawn up by way of information only and does not constitute an offer binding upon Daikin Europe N.V. Daikin Europe N.V. has compiled the content of this publication to the best of its knowledge. No express or implied warranty is given for the completeness, accuracy, reliability or fitness for particular purpose of its content and the products and services presented therein. Specifications are subject to change without prior notice. Daikin Europe N.V. explicitly rejects any liability for any direct or indirect damage, in the broadest sense, arising from or related to the use and/or interpretation of this publication. All content is copyrighted by Daikin Europe N.V.

