

Ultra slim direct expansion precision air conditioners

15-45kW



- ▶ **Microchannel evaporator**
ensures consistent and predictable heat transfer
- ▶ **Superior energy efficiency**
global energy efficiency leadership with EER up to 4.02
- ▶ **Slim design**
space saving solution with enclosure depth of 490mm

Compact DX

Compact direct expansion precision cooling system



SCROLL



R410A



EC-FANS



MICROCHANNEL



DOWNFLOW



UPFLOW

Eight models in 4 enclosure sizes with upflow and downflow air discharge

Compact cooling solution

Compact DX is the range of ultra compact direct expansion precision air conditioners with enclosure depth as short as 490mm. Despite of its slim design, the Compact DX units feature all the functionality of full-size direct expansion air conditioners, and offer the customers a wide array of options and accessories. Equipped with microchannel evaporator, Compact DX ensures the highest possible energy efficiency and cooling capacity range from 15kW to 45kW.

1 EC fans

Compact DX features the new radial fans with unique blade geometry and offers more airflow by smaller size and wide efficiency range. In combination with EC-motors with integrated control functionality, communication interface and overtemperature protection, these fans provide unbeatable energy efficiency, maximum flexibility, and lowest possible sound emission.

The EC motor technology provide significant savings at both full-load and part-load operation. Compact's EC-motors are maintenance free and have a longer lifetime in comparison to brushed motors.

2 Scroll compressor

The Copeland scroll compressors is the result of large scale research and development efforts underway since 1979. These efforts have led to the production of the most advanced scroll compressor design currently available for air-conditioning applications.

Compact DX units are perfectly suitable for both constant heat load and variable heat load applications.

The customers of Compact DX systems with R410a optimized scroll compressors can benefit from quiet operation, unmatched reliability and low operating cost.

3 Microchannel evaporator

Compact DX air conditioning units based on newly developed microchannel evaporators with advanced design that combines high performance flat tubes, state-of-the-art airside fins and ultra low pressure manifolds with integrated refrigerant distributors.

Unique geometry of the manifolds and refrigerant distributors make it possible to feed the microchannel tubes equally for evaporation and ensures consistent and predictable heat transfer. Vertically-oriented microchannel tubes ensure free condensate water shedding.

Microchannel evaporators allow achieving a number of advantages, including low airside pressure drops, higher cooling capacity, extremely less weight and reduced refrigerant charge.



based on microchannel coils

Compact DX air conditioning system provides precise and reliable control of indoor temperature, humidity and airflow for proper operation of cooled facilities. In addition to vast array of options, this gives our customers the flexibility to design solutions, matching increasingly complex requirements as closely as possible. Compact DX cooling solution provides the excellent balance of high predictability, high power density, adaptability, and the best overall TCO.

4 Refrigerant circuit

Refrigerant circuit of the Compact DX units equipped with electronic expansion valve (EEV) which has the function of regulating and optimizing the refrigerant quantity to the evaporator according to the current needs.

Through the use of microchannel evaporator, the refrigerant charge of the Compact DX air conditioners significantly reduced in comparison to old-style fin/tube designs.

Compact DX features refrigerant leak detection system, which is becoming a high priority for many customers, especially considering the potential for loss of inventory if a major leak renders a cooling system inoperable.

All the components of Compact DX's refrigerant circuit are located within the separate compartment, thus allowing easy access for maintenance and servicing.

5 Controls

The control hub of Compact DX is a sophisticated processor with control logic specially developed for direct expansion precision cooling units.

Users can deploy various control strategies based on either continuous temperature control, or on-demand airflow control, or continuous pressure control by maintaining a pressure differential between the cold and hot aisles.

Unit identification

Compact DX U 18

Air discharge direction Upflow (U)
Downflow (D)

Enclosure size 09/12/15/18

Enclosure size	Length mm	Width mm	Height (DX) mm	Height (DXU) mm
900	985	490	2050	1950
1200	1285	490	2050	1950
1500	1585	490	2050	1950
1800	1885	490	2050	1950



Technical specifications

Model	Enclosure size	Total capacity kW	Sensible capacity kW	Compressors qty.	Fans qty.	EER kW/kW	Compressors consumption kW	Fans consumption kW	Airflow m ³ /h	External static pressure Pa	Delta T °C
Compact DXD w/ downflow air discharge											
Compact DXD09	900	16.6	15.2	1	1	3.79	3.97	0.41	4500	20	10.3
Compact DXD12	1200	26.0	23.8	1	1	3.86	5.92	0.82	7000	20	10.4
Compact DXD15	1500	36.1	33.0	1	2	4.02	8.07	0.91	9750	20	10.3
Compact DXD18	1800	43.1	39.9	1	2	3.82	10.01	1.27	12000	20	10.2
Compact DXU w/ upflow air discharge											
Compact DXU09	900	16.6	15.2	1	1	3.79	3.97	0.41	4500	20	10.3
Compact DXU12	1200	26.0	23.8	1	1	3.86	5.92	0.82	7000	20	10.4
Compact DXU15	1500	36.1	33.0	1	2	4.02	8.07	0.91	9750	20	10.3
Compact DXU18	1800	43.1	39.9	1	2	3.82	10.01	1.27	12000	20	10.2

Air inlet temperature: 24°C; Relative humidity: 45%; Ambient air temperature: +35°C; Condensing temperature: 45°C

Package, options and accessories

Features	Features
General	
MCHE electrocoat	<input type="checkbox"/> Motorized backdraft damper
MCHE thermoguard	<input type="checkbox"/> Underfloor discharge plenum (DXD only)
Multi-stage electric heater with thyristor control (regular/high capacity)	<input type="checkbox"/> Air intake plenum (DXD only)
Steam humidification system (regular/high capacity)	<input type="checkbox"/> Air discharge plenum (DXU only)
Dehumidification system	<input type="checkbox"/> Noise-reduction shells for compressors
Condensate discharge system	<input checked="" type="checkbox"/> Thermal/noise reduction insulation
Condensate tray leak detection	<input checked="" type="checkbox"/> Touch screen HMI
Smoke/fire detection	<input type="checkbox"/> Floorstand
Air side	
EC fans	<input checked="" type="checkbox"/> G4 air filtration w/ filter change switch
Temperature/humidity probe on air supply (supplied loose)	<input checked="" type="checkbox"/> Bottom air intake (DXU only)
Temperature/humidity probe on air intake	<input type="checkbox"/> Front air intake (DXU only)
Refrigerant side	
Electronic expansion valves (EEV)	<input checked="" type="checkbox"/> Temperature transmitters (on suction, discharge and liquid line)
Solenoid valve for liquid line	<input type="checkbox"/> Pressure transmitters (on suction, discharge and liquid line)
Liquid receivers (supplied loose)	<input type="checkbox"/> Test connections (on suction, discharge and liquid line)
Filter driers (DXU: supplied loose)	<input checked="" type="checkbox"/> Refrigerant leak detection
Check valve on compressor discharge	<input checked="" type="checkbox"/> Sight glass
Power and controls	
Continuous temperature/humidity control	<input checked="" type="checkbox"/> BMS connectivity
Continuous pressure control (incl. differential pressure switch)	<input checked="" type="checkbox"/> SNMP connectivity
Continuous airflow control (incl. differential pressure switch)	<input type="checkbox"/> Power factor capacitor
Soft starter	<input type="checkbox"/> Phase sequence control
Controller UPS	<input type="checkbox"/> Energy management
Dual power supply changeover switch	<input type="checkbox"/> Remote monitoring software

- Standard feature
 Option



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