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## DX

### UNIT HEATERS FOR USE WITH HEAT PUMPS

#### APPLICATION

DX unit heaters are suitable for use alongside air-to-air heat pumps. Thanks to the reversible system, they can also perform a heating or cooling function.

The unit heaters are designed for heating and cooling areas such as:

- > factory floors
- > workshops
- > warehouses
- > showrooms
- > sports and entertainment halls etc.

#### DESCRIPTION

The "DX" unit heaters are available in two sizes.

The unit heater range consists of:

- > axial fan with AC or EC single-phase motor;
- > high-efficiency 3-row fin coil suitable for use with heat pumps in a two-pipe reversible system;
- > casing made of coated steel sheet;
- > air outlet grille with adjustable blades allowing to adjust the direction of discharge air.

Accessories:

- > specially designed wall mounting bracket that allows the position of the unit heater to be adjusted at an angle of  $\pm 45^\circ$  in the horizontal plane and at an angle of  $25^\circ$  in the vertical plane;
- > drip tray for collecting the condensate generated during the cooling process.

#### OPERATING CONDITIONS

The "DX" units can be fed by R410A refrigerant; working pressure up to 4.2MPa ( 42 Bar)

#### DESIGNATIONS

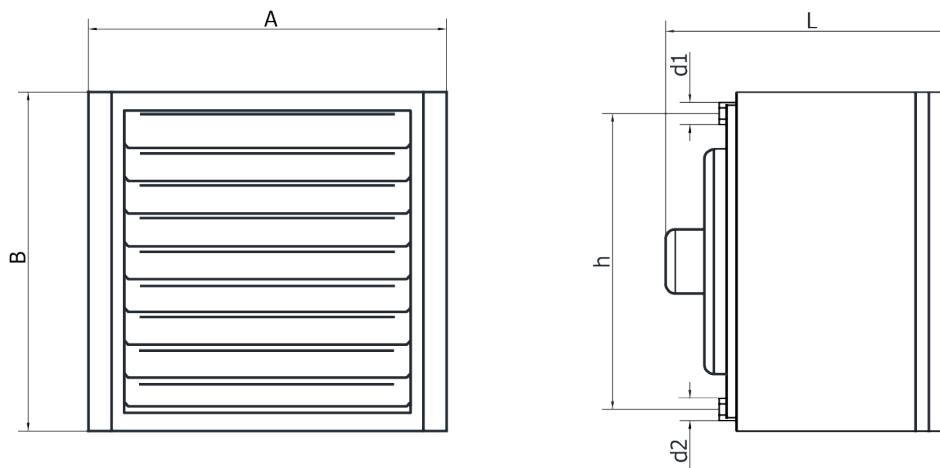
Unit heater	DX -1-III-EC
Size	1; 2
Number of coil rows	III
Fan type	AC; EC

#### DESIGNATION OF ACCESSORIES:

Wall bracket	KM-1
Size	1 & 2
Condensate drip tray	TC-2
Size	1 & 2

# UNIT HEATERS

## TECHNICAL DATA



Unit heater size		DX-1	DX-2
A (mm)		556	677
B (mm)		527	686
h (mm)		460	620
Number of coil rows		III	III
d <sub>1</sub>   d <sub>2</sub>		12   22	12   28
Volume (dm <sup>3</sup> )		2.0	3.2
AC	L (mm)	445	461
	weight (kg)	29	49
EC	L (mm)	350	423
	weight (kg)	27	54

AC fans parameters		
Supply voltage (V)	230	230
Motor power (W)	140	250
Current (A)	0.65	1.2
Speed (rpm)	1400	1350
IP	54	54
Operating temperature	60°C	60°C

EC fans parameters		
Supply voltage (V)	230	230
Motor power (W)	140	332
Current (A)	1.45	2.16
Speed (rpm)	1160	1300
IP	54	54
Operating temperature	40°C	70°C

Noise level				
	DX-1-AC	DX-1-EC	DX-2-AC	DX-2-EC
Noise level (dB(A))	53	56	62	64

Noise level — sound pressure level taking into account the sound absorption in the room  $A=100\text{m}^2$  and directivity factor  $Q=2$  at a distance of 5 m.

## Heating capacity

Unit heater size		DX-1							
Fan type		AC				EC			
Number of coil rows		III							
Air flow (m <sup>3</sup> /h)		1900		1700		2150		1700	
Condensation temp. (°C)	Air inlet temperature (°C)	Heating capacity (kW) and air outlet temperature (°C)							
		kW	°C	kW	°C	kW	°C	kW	°C
45	14	11.6	32	10.8	32	12.5	31	10.8	32
	16	10.7	32	10.0	33	11.6	32	10.0	33
	18	9.8	33	9.1	34	10.6	32	9.1	34
	20	9.0	34	8.3	34	9.7	33	8.3	34
40	14	9.3	28	8.6	29	10.0	28	8.6	29
	16	8.4	29	7.8	29	9.0	28	7.8	29
	18	7.5	30	7.0	30	8.1	29	7.0	30
	20	6.7	30	6.2	31	7.2	30	6.2	31

## Heating capacity

Unit heater size		DX-2							
Fan type		AC				EC			
Number of coil rows		III							
Air flow (m <sup>3</sup> /h)		4200		3200		5450		3200	
Condensation temp. (°C)	Air inlet temperature (°C)	Heating capacity (kW) and air outlet temperature (°C)							
		kW	°C	kW	°C	kW	°C	kW	°C
45	14	22.8	30	19.3	32	26.5	28	19.3	32
	16	21.0	31	17.8	32	24.4	29	17.8	32
	18	19.2	31	16.3	33	22.4	30	16.3	33
	20	17.5	32	14.8	33	20.3	31	14.8	33
40	14	18.1	27	15.3	28	20.9	25	15.3	28
	16	16.3	27	13.8	29	18.9	26	13.8	29
	18	14.6	28	12.4	29	16.8	27	12.4	29
	20	12.8	29	10.9	30	14.8	28	10.9	30

## Cooling capacity

Unit heater size		DX-1							
Fan type		AC				EC			
Number of coil rows		III							
Air flow (m <sup>3</sup> /h)		1900		1700*		2150		1700*	
Evaporation temp. (°C)	Air inlet temperature (°C)	Cooling capacity (kW) and air outlet temperature (°C)							
		kW	°C	kW	°C	kW	°C	kW	°C
6	28	7.5	18	7.2	17	8.0	18	7.2	17
	25	6.2	16	5.9	15	6.6	16	5.9	15
	22	5.1	14	4.8	14	5.4	15	4.8	14
8	28	6.6	18	6.2	18	7.0	19	6.2	18
	25	5.4	17	5.1	16	5.7	17	5.1	16
	22	4.3	15	4.1	15	4.6	16	4.1	15

## Cooling capacity

Unit heater size		DX-2							
Fan type		AC				EC			
Number of coil rows		III							
Air flow (m <sup>3</sup> /h)		4200		3200*		5450		3200*	
Evaporation temp. (°C)	Air inlet temperature (°C)	Cooling capacity (kW) and air outlet temperature (°C)							
		kW	°C	kW	°C	kW	°C	kW	°C
6	28	14.6	19	11.2	18	16.4	19	11.2	18
	25	12.1	17	10.5	16	13.7	18	10.5	16
	22	9.8	15	8.6	14	11.1	16	8.6	14
8	28	12.8	19	11.2	18	14.5	20	11.2	18
	25	10.5	18	9.2	17	11.9	19	9.2	17
	22	8.4	16	7.3	15	9.4	17	7.3	15

Cooling capacity indicated at 50% relative humidity

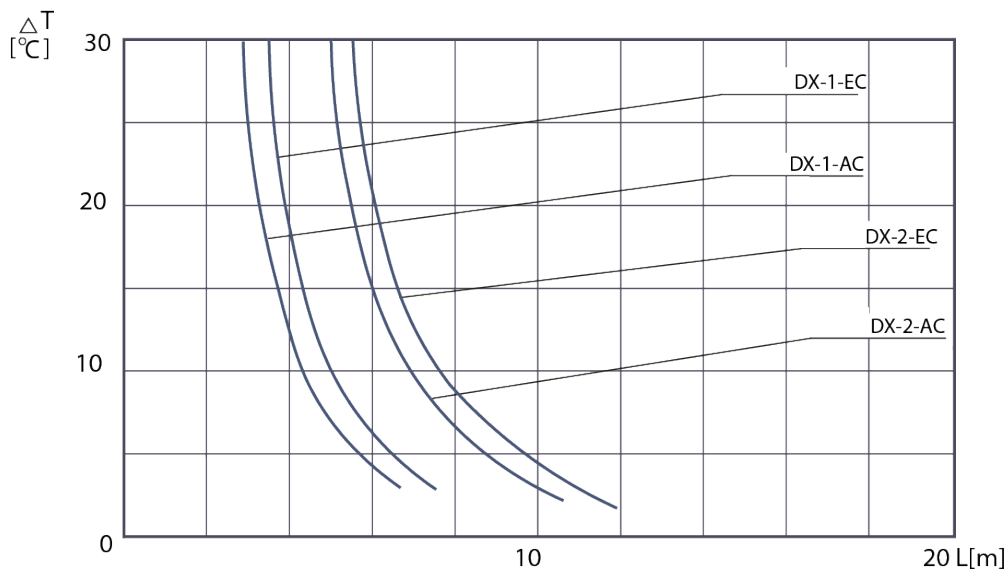
\*Recommended air flow for cooling

When the unit heater is operating in cooling mode, condensation may be entrained by the air stream. In such a situation, the air flow should be reduced to the value indicated in the table (the value marked with an asterisk) and the outlet grille blades should be set at an angle of 45°.

The following are the recommended maximum values for supply power or control signal:

- for DX-1-AC operation with reduced control voltage up to 180 VAC
- for DX-1-EC operation at speed control signal ~ 6VDC
- for DX-2-AC operation with reduced control voltage up to 155 VAC
- for DX-2-EC operation at speed control signal ~ 8VDC

## Warm air throw toward the floor



L – air throw toward the floor.

ΔT – temperature difference between supply and ambient air.

DX -1 unit heaters can be mounted at a height of between 3 and 7 metres.

DX -2 unit heaters can be mounted at a height of between 4 and 11 metres.

## Isothermal air throw

Isothermal air throw* (m)		
Fan type	AC	EC
Unit size 1	12	14
Unit size 2	18	21

\*With a terminal velocity in the air stream axis of 0.5 m/s and an average velocity in the air stream of ~ 0.2 m/s

## CONTROLS

The controls depend on the heat pumps used with the unit heaters. The control options should be discussed with your heat pump supplier.

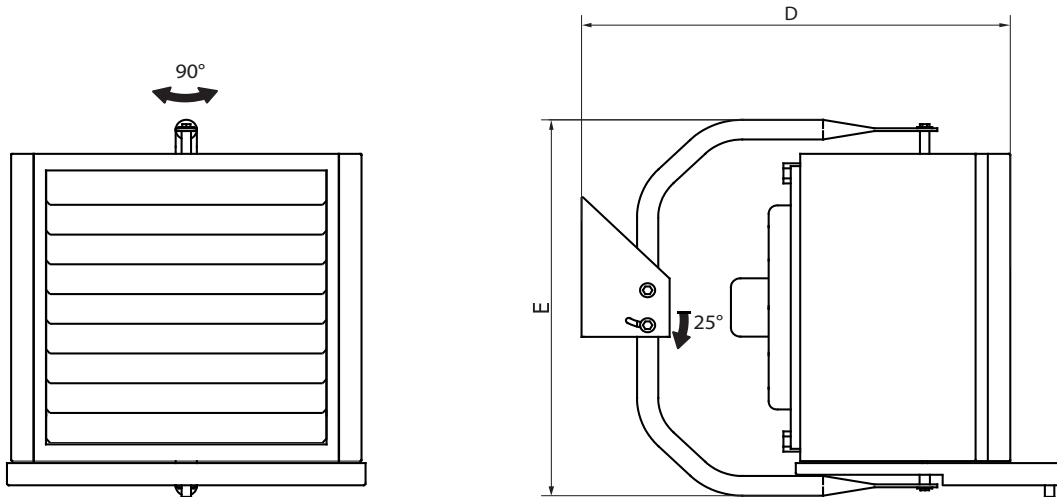
## INSTALLATION

The units can be mounted on the wall using the mounting bracket that is available as an accessory for the UVERS W units.

Adjustment range:

- > horizontal rotation from  $-45^{\circ}$  to  $+45^{\circ}$
- > inclination from the vertical plane to  $25^{\circ}$

For units with a cooling function, use the drip tray available as an accessory. When cooling, the heaters should only be operated in the vertical position.



Wall bracket	D (mm)	E (mm)	Bracket weight (kg)	Condensate drip tray	Weight of dip tray (kg)
KM-1	682	645	3.1	TC-1	2.0
KM-2	782	804	3.6	TC-2	2.5

## Operation modes

