

Technical Data Sheet



Project: Barnsley Hospital

Unit: AHU Coil Chiller

EWAH275TZXR1

- > Air cooled chiller
- > Inverter driven single screw compressor
- > Gold Efficiency
- > Reduced sound configuration
- > R1234ze refrigerant



EWAH275TZXR1

Unit description

Daikin air-cooled chiller with inverter driven screw compressor and R1234ze refrigerant. Unit colour is ivory White (Munsell code 5Y7.5/1) (±RAL7044).

Compressor

Semi-hermetic single screw compressor type with integrated Variable Frequency Drive (VFD) designed by Daikin to achieve optimized performances at full capacity as well as in part-load conditions. The capacity is continuously modulated by the integrated VFD. The drive is cooled directly by the refrigerant allowing for continuous operation regardless environmental condition (unlike the air cooled and glycol cooled drives).

Gold and Platinum versions are also equipped with Variable Volume Ratio (VVR) technology to further enhance compression efficiency during part load operation.

Evaporator

The single circuit unit is equipped with direct expansion plate to plate evaporator made of stainless-steel brazed plates with an electric heater for protection against freezing and Victaulic type water connections as standard. The dual circuit unit is equipped with direct expansion shell & tube evaporator with enhanced copper tubes rolled into steel tube sheets for maximum heat transfer. The evaporators are single-pass on both refrigerant and water sides with low refrigerant pressure drops and Victaulic type water connections as standard.

Condenser

Full Aluminum – Microchannel type is provided as standard configuration. It is made entirely of aluminum with flat tubes containing small channels. Full-depth louvered aluminum fins are inserted between the tubes maximizing the heat exchange. The microchannel technology ensures the highest performance with the minimum surface for the exchanger. The quantity of refrigerant charge is reduced if compared to tubes and fins condenser. Cu/Al - Tube & fins type is available as option. It is manufactured with internally enhanced seamless copper tubes arranged in a staggered row pattern and mechanically expanded into lanced and rippled aluminum air side heat exchanger fins with full fin collars. An integral sub-cooler circuit provides sub-cooling to effectively eliminate liquid flashing and increase cooling capacity without increasing the power input.

Condenser fans

The condenser fans are propeller type with high efficiency design blades developed by Daikin to maximize performances. Standard units are equipped with AC motor fans, EC motors are available as option to enhance efficiency at part load, to reduce sound and extend operating range towards negative ambient temperatures.

Refrigerant circuit

Each unit has one or two independent refrigerant circuits and each one includes: Compressor, Refrigerant, Evaporator, Air Cooled Condenser, Electronic expansion valve, Sight glass with moisture indicator, Filter drier, Charging valves, High pressure switch, High pressure transducers, Low pressure transducers, Oil pressure transducers and Suction temperature sensor.

Electrical

Power and control are in the main panel that is manufactured to ensure protection against all weather conditions. It is IP54 and internally protected against possible accidental contact with live parts when the doors are open. The main panel is fitted with interlocked main switch door that interrupts power supply when opening.

Controller

New MicroTech 4 controller provides an easy-to-use control environment. The control logic is designed to provide maximum efficiency, to continue operation in unusual operating conditions and to provide history of unit operation. Easy interface with,



BACnet, Ethernet TCP/IP or Modbus communications. Master/Slave operation is provided as standard allowing to connect 4 units working as single system.



Unit Overview

Model Number	Efficiency version	Sound configuration	Power supply
EWAH275TZXRD1	Gold	Reduced	400 V/ 50 Hz / 3~

Performances calculated according to EN14511-3

Cooling mode performances

Cooling capacity	266.3 kW	IPLV.IP	6.452 kW / kW
Power input	80.87 kW	SEER	5.942 kW / kW
Cooling Efficiency EER	3.293 kW / kW	$\eta_{s,c}$	234.7 %
Lw / Lp @ 1m	89.3 dB(A) / 69.6 dB(A)	SEPR	7.013 kW / kW
Ambient temperature	35.0 °C		
Evaporator			
Fluid IN/OUT	12.00 °C / 6.00 °C	Fluid Flow	10.58 l/s
Pressure Drops	8.54 kPa	Fouling Factor	0.00e+0°C m²/W
Fluid	Water		

IPLV.IP is calculated according to AHRI 550/590. SEER declared according to EN14825, fan coil application 12/7°C (inlet/outlet) water temperatures. SEPR declared according to EN14825, high temperature process cooling application (not Eurovent certified). Sound power level according to ISO 9614-1. IPLV.IP and seasonal efficiency data generally refer to standard unit without option.

Unit information

Capacity control	Stepless	Condenser fans control	Brushless
Compressor type	Screw	Condenser type	Microchannel
Compressor N°	1	Condenser fans N°	6
Circuit N°	1	Nominal air flow	28330 l/s
Refrigerant type	R1234ze	Evaporator type	BrazedPlate
Refrigerant charge	35 kg	Altitude	0 m

Refrigerant charge data is intended as guideline only, refer to unit nameplate for specific value.

Refrigerant information

Refrigerant type	R1234ze	Refrigerant charge	35 kg
GWP100 (F-GAS)	1.400	ASHRAE Safety Classification	A2L



CO2 equivalent **0.049t**

Electrical information

Power supply	400 V/ 50 Hz / 3~	Compressor starting method	Variable Frequency Drive
Running current	135 A	Max. current wires sizing	235 A
Max. Running current	214 A	Max. inrush current	0.00 A

Voltage tolerance $\pm 10\%$. Phase Voltage unbalance $\pm 3\%$. Electrical data are referred to base unit without additional options, refer to unit nameplate for specific value.

Physical information

Connections size	88.9 mm	Length	3608 mm
		Width	2238 mm
Weight shipping/operating	3419 kg / 3467 kg	Height	2553 mm

Information referred to standard unit configuration without options, refer to certified unit drawing.

Acoustic information

Sound pressure level at 1 m from the unit (rif. 2×10^{-5} Pa)								
63 Hz	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz	db(A)
62.7	64.4	64.9	67.6	64.8	58.0	61.8	52.3	69.6

Values referred to Evap. IN/OUT 12/7°C and 35°C Amb, full load operation, to base unit without additional options. Sound pressure level calculated from sound power level. Sound pressure in octave band is for intended as guideline only and not considered binding.

Sound power level (rif. 1×10^{-12} W)								
63 Hz	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz	db(A)
82.4	84.1	84.6	87.3	84.5	77.7	81.5	72.0	89.3

Values referred to Evap. IN/OUT 12/7°C and 35°C Amb, full load operation, to base unit without additional options. Sound power in octave band is for intended as guideline only and not considered binding.

Options

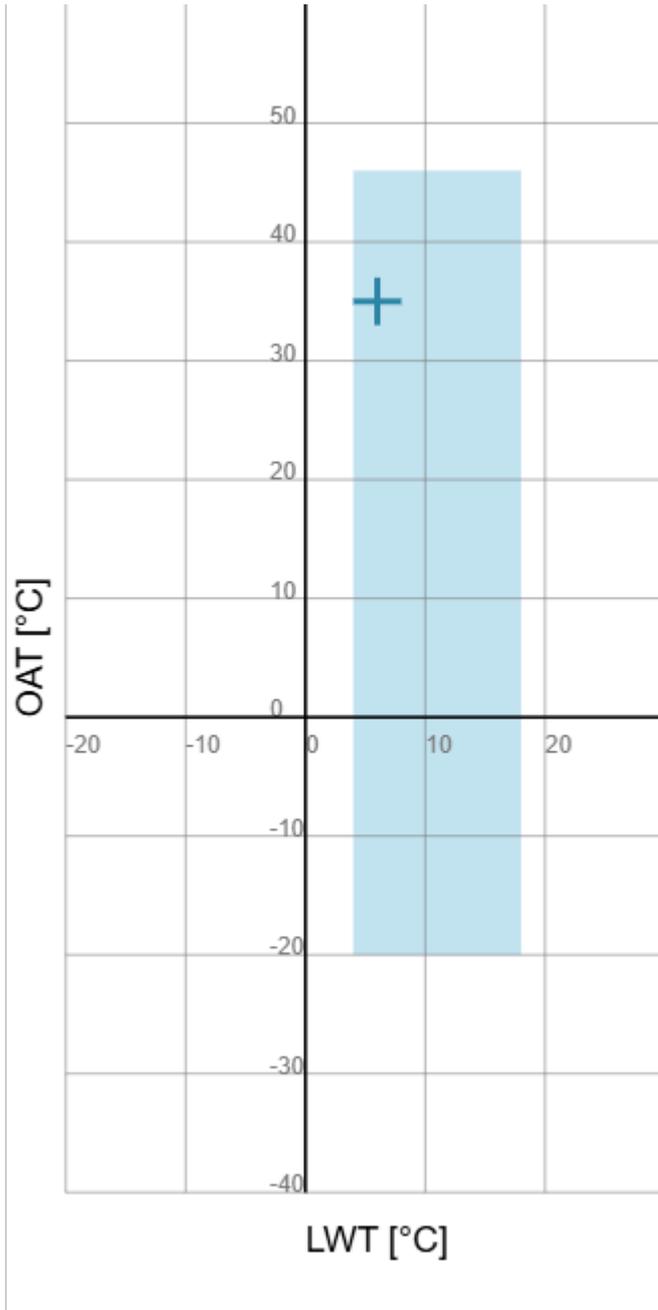
29	20 MM EVAPORATOR INSULATION
61	DISCHARGE LINE SHUT OFF VALVE
220	MOBILE APP HMI (ACCESS POINT ONLY)
15	PHASE MONITOR AND UNDER / OVERVOLTAGE CONTROL
57	EVAPORATOR ELECTRIC HEATER



229	BRUSHLESS FAN (WITH FAN SILENT MODE)
67	AMBIENT OUTSIDE TEMPERATURE SENSOR AND SET-POINT RESET
97	MAIN SWITCH INTERLOCK
90	SET-POINT RESET, DEMAND LIMIT AND ALARM FROM EXTERNAL DEVICE
13A	PHASE SEQUENCE PROTECTION
128	MASTER SLAVE
76-B	SOUND PROOF SYSTEM (COMPRESSOR)
69	GENERAL FAULT CONTACTOR
20	EVAPORATOR VICTAULIC KIT
60	ELECTRONIC EXPANSION DEVICE
62	SUCTION LINE SHUT OFF VALVE
96	AUTOMATIC CIRCUIT BREAKERS (FANS)
42B	SPEEDTROL (MIN AMBIENT -20°C)
11A	THERMAL OVERLOAD PROTECTION
10	DOUBLE SET POINT
14	INVERTER COMPRESSOR STARTER
68	HOUR RUN METER



Envelope



Certification notes

Within the scope of AHRI Air-Cooled Water-Chilling Packages Certification Program. AHRI Certified performance may be obtained from the manufacturer's representative

Certified in accordance with Eurovent Certification Program: Liquid Chilling Packages and Heat Pumps (LCP-HP). Standard ratings are specified in the section "Rating requirements" of the Rating Standards. All standard ratings are verified by tests conducted in accordance with the following standards: EN 14511-3 (performance testing) and ISO 9614 (acoustic testing).



General notes

For more information about the above selected product, please go to <http://www.daikineurope.com/industrial/>. Unit performances are reproducible in laboratory test environment only in accordance to recognized industry standards. This technical data sheet is generated by Daikin Applied Tool software designed and distributed by Daikin Applied Europe S.p.A. The present software does not constitute an offer binding upon Daikin Applied Europe S.p.A who compiled the content of this software 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. Product images are indicative only and are intended for illustrative purposes only; pictures may be differed from the ordered product and are subject to change without prior notice. Daikin Applied Europe S.p.A. 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 document. All content is copyrighted by Daikin Applied Europe S.p.A.

