



AIR-COOLED CHILLERS



APPLIED SYSTEMS

R-134a



www.daikin.eu

EWAD-BJYNN(A-Q-Z) COOLING ONLY

A



ABOUT DAIKIN

Daikin has a worldwide reputation based on over 80 years' experience in the successful manufacture of high quality air conditioning equipment for industrial, commercial and residential use

Daikin Europe N.V.

LARGER OPERATION RANGE

The EWAD-BJYNN is available in 4 different versions with cooling capacities ranging from 538 to 1920kW. The units are ideal for use in severe weather conditions and over a wide operation range. This major benefit results from the incorporation of an auto adaptive control system with the following functionality:

- › Optional: Head pressure control (OPFS and OPLA): fan control for low ambient down to -15°C
- › Head pressure setback for high ambient operation: on hot days, when cooling is most needed, Daikin chillers will stay on line by modulating the capacity control in function of the high pressure.

Following integrated options are available on request:

Hydronic:

- › OPSP – Single water circulation pump
- › OTP – Twin water circulation pump
- › OPHP – High single pump
- › OPHT – High twin pump

Hydronic:

- › OPPR – Partial recovery
- › OPTR – Total recovery

	Application	Sizes	Capacity range	EERavg	Noise level
Std	Standard efficiency	14	640-1772kW	2.8	100-103dBA
/A	High efficiency	18	667-1920kW	3.1	100-103dBA
/Q	Extra low noise	12	538-1197kW	2.6	86-89dBA
/H	High ambient	7	569-1013kW	2.6	86-88dBA

LARGE FLEXIBILITY

In many applications there often exists a simultaneous cooling and heating demand requirement alongside one another. To benefit from this Daikin offers the full range of R-134a EWAD650-C180BJYNN chillers with the option of heat recovery. This option further increases the application flexibility and extends possibilities in the hotel and leisure industry as well as the industrial and process sectors.

By energetically recovering useful heat from the cooling cycle that would otherwise be rejected to the outside, extremely high COPs can be realised in heat recovery mode. The heat recovery unit aims to achieve an optimum balance between cooling and heat recovery to maximize the unit efficiency and offer savings in hot water production.

Noise

Standard units and High efficiency units can be fitted with Option Reduced Noise (OPRN). OPRN includes lower speed condenser fans and flexible discharge pipes to reduce vibration and further minimise structural noise. Sound reduction towards standard noise units is $\pm 4\text{dBA}$.

Both standard units and high efficiency units can be fitted with Option Low Noise (OPLN). OPLN includes lower speed condenser fans, suction and discharge muffler and highly absorbent sound proof cabinets around the compressors. Sound reduction towards standard noise units is $\pm 7.5\text{dBA}$.

For those particularly sound sensitive applications where full technology OPRN and OPLN do not offer the desired noise level an Extra Low Noise standard (VQ) or High efficiency (VZ) version is available. In addition to the features of OPLN the fan speed is further reduced to 500rpm and fitted with modulating fan speed control for a better "colour of sound" at lower ambient operation. The condenser section is enhanced or oversized. Sound reduction towards standard noise units is $\pm 14\text{dBA}$.

Efficiency

A

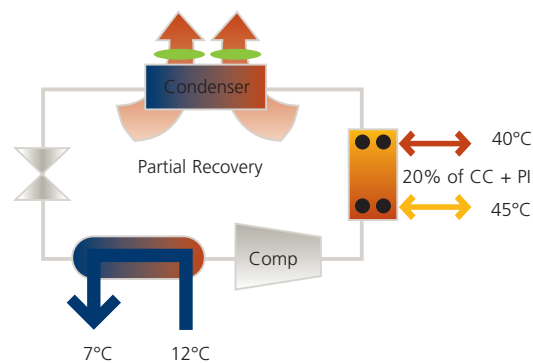
The High efficiency units (V/A) are equipped with oversized condenser coils and evaporators. These units achieve an $\text{EER}_{\text{avg}} > 3$ compared to an EER_{avg} of 2.56 for the standard units. This implies that 6 high efficiency models are Eurovent "Class A"

Heat recovery

Depending on the heating requirement either partial heat recovery (OPPR) or as a condenser full heat recovery (OPTR) may be selected.

OPPR – Partial recovery

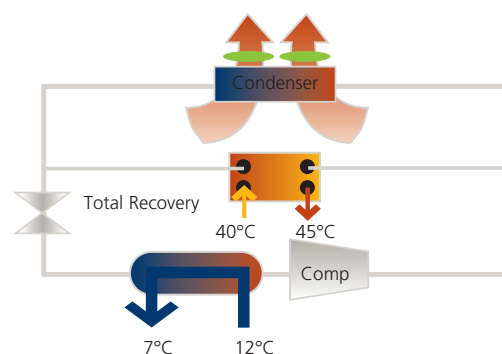
A stainless steel brazed plate heat exchanger is mounted in series between the compressor and air-cooled condenser as a desuperheater. The sensible heat from the hot discharge gas will be recovered, while the latent heat exchange will occur in the air-cooled condenser. The unit's efficiency is maintained as condensing pressure can be reduced due to air-cooled condenser becoming oversized.



Partial heat recovery $\pm 35\%$ of CC + PI

OPTR – Total recovery

A shell & tube heat exchanger is mounted in parallel with the air-cooled condenser for full heat recovery of both sensible and latent heat. Hot water temperatures up to 55°C can be achieved.





SINGLE SCREW COMPRESSOR

The new large Daikin chillers are fitted with a single screw compressor with stepless capacity control. The stepless capacity control enables the requirements to be closely matched by modulating the sliding valve position according to the chilled water control condition. Capacity control is infinitely variable between 12.5 and 100% on dual circuit units, between 8.3 and 100% on 3 circuits and between 6.25 and 100% on 4 circuit units.

Main advantages:

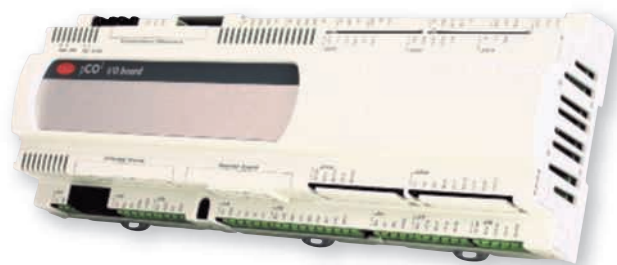
- › Better part load efficiency (ESEER)
- › More stable chilled water temperatures
- › Closer control tolerance





ELECTRONIC CONTROL

- › Advanced pCO² control
- › Detailed information on and accurate control of all functional parameters by easy menu scrolling
- › Chilled water and brine temperatures down to -8°C on standard unit (to be set up by a certified engineer)
- › Changeable digital input/output such as remote on/off, dual setpoint and capacity limit
- › Lead lag function is standard
- › Standard equipped with night setback and peak load limitation
- › Remote DDC (EKRUPCJ) can be installed up to 1.000m from the unit



HEAT EXCHANGER

Condenser

- › Constructed from specially designed header distribution pipes, combined with internally grooved Hi-X tubing and Epoxy coated fins
- › Standard anti-corrosion treated to better withstand the effects of the external environment
- › Optional: Condenser protection grilles (OPCG) are available throughout the whole range

Shell & tube evaporator

- › Special high efficiency tubes with grooves on the inside
- › Special header distribution system and design of water system results in high efficiency and reduced heat transfer surface
- › Compact dimensions and lower weight result in a smaller refrigerant volume
- › Fitted standard with evaporator heater tape

Open Network Integration

Daikin has released a gateway for connection to BACnet, LonWorks and Modbus networks equipment and building control systems. BACnet, LonWorks and Modbus networks are recognised worldwide as the de facto standard within the building controls industry. BACnet, LonWorks and Modbus data communication protocols make it possible to control access, energy management, fire/life/safety, HVAC and lighting etc.

Simultaneous operation of up to 5 chillers is optional through EKCSII sequencing panel (this function enables a Daikin 9MW chiller plant to be operated via a single controller).

SPECIFICATIONS

STANDARD UNIT			EWAD650BJYNN	EWAD700BJYNN	EWAD750BJYNN	EWAD850BJYNN	EWAD900BJYNN
Nominal capacity *	cooling	kW	640	700	761	817	886
Capacity steps *		%	Stepless 12.5 - 100				
Nominal input	cooling	kW	233	250	271	290	302
EER			2.75	2.80	2.81	2.82	2.93
ESEER			3.42	3.47	3.48	3.49	3.46
Casing	colour		RAL7032				
Dimensions (HxWxD)		mm	2,520x2,230x5,310			2,520x2,230x6,210	
Machine weight		kg	4,910	4,990	5,256	5,480	5,580
Water heat exchanger	type		Shell and tube				
	minimum water volume in the system	l	254	254	246	246	246
Nominal water pressure drop	heat exchanger cooling	kPa	36,5	43,5	67,5	77	50
Fan	type		Helical				
	nominal air flow	m ³ /min	2,850	3,168	3,486	3,798	3,870
	quantity		9	10	11	12	12
	speed	rpm	860	860	860	860	860
	motor Output	W	1,700	1,700	1,700	1,700	1,700
Compressor	type		Semi-hermetic single screw compressor				
	quantity		2	2	2	2	2
	speed	rpm	2,950	2,950	2,950	2,950	2,950
Sound power	cooling	dBA	100	100	100	100	101
Refrigerant circuit	refrigerant type		R-134a				
	refrigerant charge	kg	99	108	118	128	128
	no of circuits		2	2	2	2	2
	refrigerant control		Electronic expansion valve				
Power supply			400/50Hz/3~				

STANDARD EFFICIENCY UNIT, EXTRA LOW NOISE (/Q)			EWAD550BJYNN/Q	EWAD600BJYNN/Q	EWAD650BJYNN/Q	EWAD700BJYNN/Q	EWAD750BJYNN/Q
Nominal capacity *	cooling	kW	538	604	667	725	780
Capacity steps *		%	Stepless 12.5 - 100				
Nominal input	cooling	kW	223	235	249	267	286
EER			2.41	2.57	2.68	2.71	2.73
ESEER			3.19	3.39	3.53	3.57	3.60
Casing	colour		RAL7032				
Dimensions (HxWxD)		mm	2,520x2,230x5,310	2,520x2,230x6,210		2,520x2,230x7,110	
Machine weight		kg	5,230	5,445	5,659	5,900	6,030
Water heat exchanger	type		Shell and tube				
	minimum water volume in the system	l	261	254	254	246	246
Nominal water pressure drop	heat exchanger cooling	kPa	46,5	33	40	61	71
Fan	type		Helical				
	nominal air flow	m ³ /min	1,536	1,692	1,848	1,998	2,154
	quantity		10	11	12	13	14
	speed	rpm	500	500	500	500	500
	motor Output	W	1,700	1,700	1,700	1,700	1,700
Compressor	type		Semi-hermetic single screw compressor				
	quantity		2	2	2	2	2
	speed	rpm	2,950	2,950	2,950	2,950	2,950
Sound power	cooling	dBA	86	86	86	87	87
Refrigerant circuit	refrigerant type		R-134a				
	refrigerant charge	kg	98	107	116	126	136
	no of circuits		2	2	2	2	2
	refrigerant control		Electronic expansion valve				
Power supply			400/50Hz/3~				

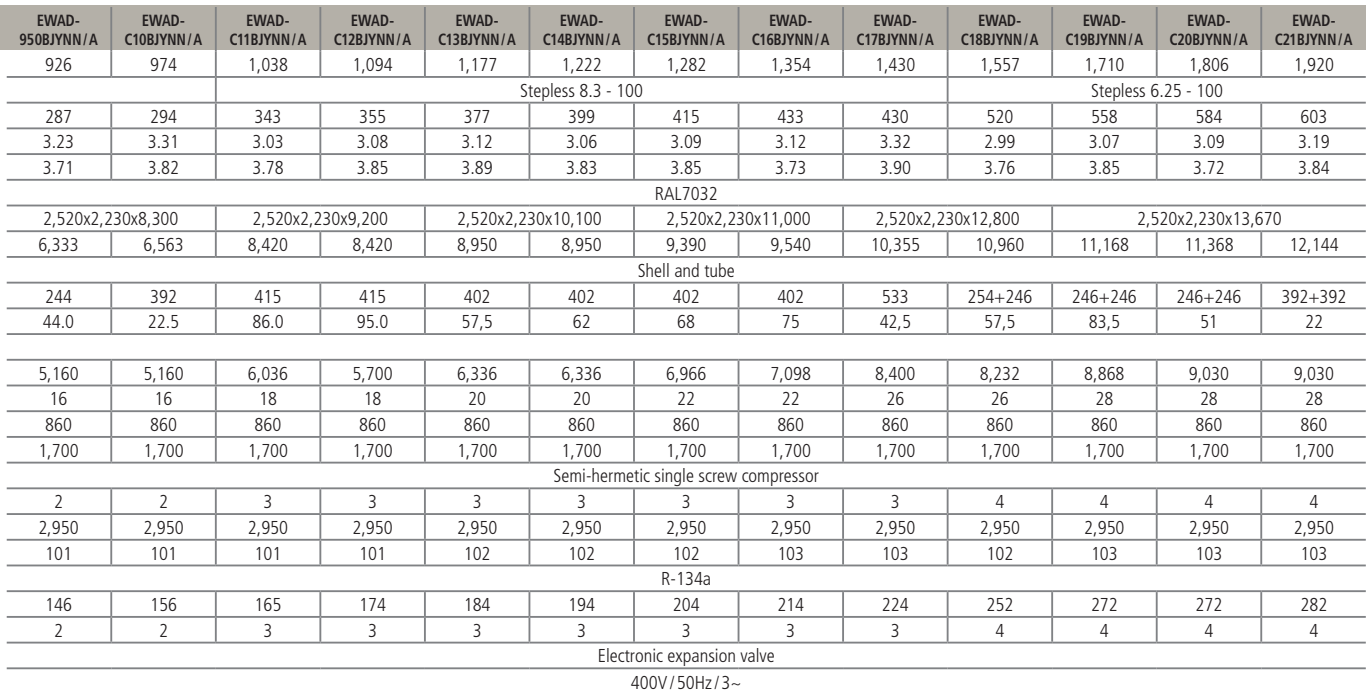
* Nominal cooling capacity and power input are based on 12/7% entering/leaving water temperature and 35°C ambient temperature. Power input is for the whole unit.

SPECIFICATIONS

HIGH AMBIENT UNIT (/H)			EWAD600B-JYNN/Z	EWAD650B-JYNN/Z	EWAD700B-JYNN/Z	EWAD850B-JYNN/Z	EWAD900B-JYNN/Z	EWAD950B-JYNN/Z	EWADC10B-JYNN/Z
Nominal capacity*	cooling	kW	569	631	668	840	914	953	1,013
Capacity steps		%	Stepless 12.5 - 100			Stepless 8.3 - 100			
Nominal input*	cooling	kW	220	241	268	328	342	367	368
EER			2.59	2.62	2.49	2.56	2.67	2.60	2.75
ESEER			3.41	3.45	3.28	3.44	3.59	3.49	3.69
Casing	colour		RAL7032						
Dimensions (HxWxD)		mm	2,520x2,230x6,210	2,520x2,230x7,110	2,520x2,230x9,200	2,520x2,230x11,000			
Machine weight		kg	5,659	5,900	6,030	8,725	9,310	9,310	9,750
Water heat exchanger	type		Shell and tube						
	minimum water volume in the system	l	254	246	246	415	402	402	402
Nominal water pressure drop	heat exchanger cooling	kPa	29	46	51.5	54.5	39.5	43	48
Fan	type		Helical						
	nominal air flow	m ³ /min	1,848	1,498	2,154	2,766	3,078	3,078	3,384
	quantity		12	13	14	18	20	20	22
	speed	rpm	500	500	500	500	500	500	500
	motor output	W	300	300	300	300	300	300	300
Compressor	type		Semi-hermetic single screw compressor						
	quantity		2	2	2	3	3	3	3
	speed	rpm	500	500	500	500	500	500	500
Sound power	cooling	dBA	86	86	86	87	88	88	88
Refrigerant circuit	refrigerant type		R-134a						
	refrigerant charge	kg	106	115	124	159	168	177	186
	no of circuits		2	2	2	3	3	3	3
	refrigerant control		Electronic expansion valve						
Power supply			400V/50Hz/3~						

HIGH EFFICIENCY UNIT (/A)			EWAD650BJYNN/A	EWAD700BJYNN/A	EWAD800BJYNN/A	EWAD850BJYNN/A	EWAD900BJYNN/A
Nominal capacity*	cooling	kW	667	723	800	855	903
Capacity steps		%	Stepless 12.5 - 100				
Nominal input*	cooling	kW	223	237	259	278	292
EER			2.99	3.04	3.09	3.07	3.09
ESEER			3.65	3.70	3.77	3.74	3.61
Casing	colour		RAL7032				
Dimensions (HxWxD)		mm	2,520x2,230x6,210		2,520x2,230x7,110		
Machine weight		kg	5,205	5,419	5,660	5,790	5,890
Water heat exchanger	type		Shell and tube				
	minimum water volume in the system	l	254	254	246	246	246
Nominal water pressure drop	heat exchanger cooling	kPa	40.0	46.0	74.0	84.0	51.5
Fan	type		Helical				
	nominal air flow	m ³ /min	3,486	3,798	4,116	4,434	4,512
	quantity		11	12	13	14	14
	speed	rpm	860	860	860	860	860
	motor Output	W	1,700	1,700	1,700	1,700	1,700
Compressor	type		Semi-hermetic single screw compressor				
	quantity		2	2	2	2	2
	speed	rpm	2,950	2,950	2,950	2,950	2,950
Sound power	cooling	dBA	100	100	100	101	101
Refrigerant circuit	refrigerant type		R-134a				
	refrigerant charge	kg	107	116	126	136	136
	no of circuits		2	2	2	2	2
	refrigerant control		Electronic expansion valve				
Power supply			400V/50Hz/3~				

* Nominal cooling capacity and power input are based on 12/7% entering/leaving water temperature and 35°C ambient temperature. Power input is for the whole unit.



OPTIONS & ACCESSORIES

OPTIONS

Reference	Products	Integrated Hydronics		Noise & HP Control				
		Single pump	Twin pump	Reduced Noise	Low noise	Fan Silent	Low Ambient	High ESP fans
		OPSP	OPTP	OPRN	OPLN	OPFS	OPLA	OPHF
EWAD-BJYNN	650-700-750-850-900-950-C10-C11-C12-C13 C14-C15-C16-C18	•	•	•	•	•	•	•(5)
				•	•	•	•	•(5)
EWAD-BJYNN/A	650-700-800-850-900-950-C10-C11-C12-C13 C14-C15-C16-C17-C18-C19-C20-C21	•	•	•	•	•	•	•(5)
				•	•	•	•	•(5)
EWAD-BJYNN/Q	550-600-650-700-750-800-850-900-950-C10-C11-C12	•	•			•		
EWAD-BJYNN/Z	600-650-700-850-900-950-C10	•	•			•		

(4) High pressure side gauge
(5) Not available with Option OPLN - OPRN

ACCESSORIES

Reference	Communication cards		Modbus gateway Bacnet gateway	Remote user interface
	EKAC200J	EKACLON	EKBMSBJ	EKRUPCK
EWAD-BJYNN	•	•	•	•
EWAD-BJYNN/A	•	•	•	•
EWAD-BJYNN/Q	•	•	•	•
EWAD-BJYNN/Z	•	•	•	•



Heat Recovery		LWE		Electrical					Refrigerant				Condenser				Misc
Total Heat Recovery	Partial Heat Recovery	High Glycol	Low Glycol	Evaporator heater	Main switch	Soft starter	Power factor 0,9	A/V meter	Electronic Expansion Valve	Pressure relief valve	Suction stop valve	Gauges	Coil guards	Blank Cu/Al coils	Cu/Sn coils	Cu/Cu coils	pring Anti Vibration Mounts
OPTR	OPPR	OPZH	OPZL	OP10	OP52	OPSS	OPPF	OP57	OPEX	OP57	OPCG	OPSS	OPCG	OPAL	OPSN	OPCU	OPSVM
•	•	•	STD	STD	STD	•	•	•	STD	•	•	•(4)	•	•	•	•	•
•	•	•	STD	STD	STD	•	•	•	STD	•	•	•(4)	•	•	•	•	•
•	•	•	STD	STD	STD	•	•	•	STD	•	•	•(4)	•	•	•	•	•
•	•	STD	STD	STD	STD	•	•	•	STD	•	•	•(4)	•	•	•	•	•
•	•	STD	STD	STD	STD	•	•	•	STD	•	•	•(4)	•	•	•	•	•

Buffer tanks				Sequencing Panel	Plant Visor	Modem		Converter RS485 to RS232
EKB1500N	EKBTC10N	EKB1500C	EKBTC10C	EKCSCII	EKP2J	EKMODEM	EKGSMOD	EKCON
•	•	•	•	•	•	•	•	•
•	•	•	•	•	•	•	•	•
•	•	•	•	•	•	•	•	•
•	•	•	•	•	•	•	•	•



ENVIRONMENTAL AWARENESS

Air Conditioning and the Environment

Air conditioning systems provide a significant level of indoor comfort, making possible optimum working and living conditions in the most extreme climates.

In recent years, motivated by a global awareness of the need to reduce the burdens on the environment, some manufacturers including Daikin have invested enormous efforts in limiting the negative effects associated with the production and the operation of air conditioners.

Hence, models with energy saving features and improved eco-production techniques have seen the light of day, making a significant contribution to limiting the impact on the environment.



Daikin's unique position as a manufacturer of air conditioning equipment, compressors and refrigerants has led to its close involvement in environmental issues.

For several years Daikin has had the intention to become a leader in the provision of products that have limited impact on the environment.

This challenge demands the eco design and development of a wide range of products and an energy management system, resulting in energy conservation and a reduction of waste.



Daikin Europe N.V. is approved by LRQA for its Quality Management System in accordance with the ISO9001 standard. ISO9001 pertains to quality assurance regarding design, development, manufacturing as well as to services related to the product.



ISO14001 assures an effective environmental management system in order to help protect human health and the environment from the potential impact of our activities, products and services and to assist in maintaining and improving the quality of the environment.



Daikin units comply with the European regulations that guarantee the safety of the product.



Daikin Europe N.V. participates in the Eurovent Certification Programme for Air Conditioners (AC), Liquid Chilling Packages (LCP) and Fan Coil Units (FC); the certified data of certified models are listed in the Eurovent Directory. Certification is valid for air cooled models <600kW and water cooled models <1500kW.

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