

• **EIS** ENERGY SAVE

Light Commercial Systems

Reversible air source heat pump
for heating & cooling



ES AW Monobloc

The AW Monobloc is a simple but powerful machine that meets heating, cooling and domestic hot water demands for commercial applications, such as apartment buildings, hotels, schools and warehouses.



The ES AW Monobloc air source heat pump is available in three models with a heating capacity range of 30 kW to 90 kW. Up to 16 units can be arranged in a cascade configuration to deliver a total capacity of up to 1 440 kW, all manageable through a single controller, thus providing a flexible solution using standardized products. This makes them ideal for commercial installations. For even larger applications, multiple banks of up to sixteen heat pumps can be installed, with the option to integrate several control units for enhanced system scalability and management.

Using the latest inverter and EVI (Enhanced Vapour Injection) technology, the AW Monobloc is designed as a highly energy-efficient and stable heating solution. The inverter driven compressor automatically adjusts output according to heat demand which optimises system efficiency and the pairing of EVI technology ensures a stable heat output is maintained throughout the winter to minimise energy consumption.

- Monobloc design for easy installation
- Electronic expansion valve control for precise superheat regulation
- Modbus communication with BMS for smart buildings
- Self-adjusting EEV control

Energy efficiency	A++
COP (A7/W35)	4.42–4.50
SCOP	4.06–4.20
Heating output	28.7–89.6 kW
Max. flow temperature	60 °C
Working range	-30 °C–55 °C
Power supply	415 V
Sound power level	66–75 dB(A)

EVI powered

AW 30, 45 and 90kW units are equipped with EVI technology, enabling high energy efficiency and stable performance. With inverter and EVI technology, the series reaches A++ energy level and COP is up to 4.5.

Nano-coated outdoor evaporator unit

Large volumes of air circulate through the outdoor unit on all air source heat pumps and energy is collected from this air. When this air is cold, ice can form on heat pump condensers which can be problematic and hinder performance. The nano-coating applied to AW condensers allows condensing water to drain faster, reducing defrost times and the risk of ice build up.

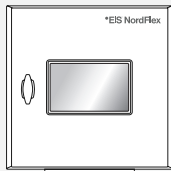
R410A refrigerant

The units use a R410A refrigerant, which has been used for inverter heat pumps for several years. It has been proven to be a reliable and efficient medium for air-to-water heat pumps, as well as air conditioning systems.



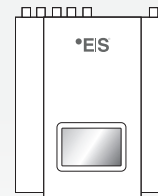
Commercial heat pump system solutions

Energy Save has designed and developed the AW Monobloc series, successfully delivering over 10,000 heat pumps to the Swedish market. Building on this success, Energy Save is now collaborating with various partners to supply highly efficient heat pump system solutions to the broader European market.



ES NordFlex

- Cascade up to 16 units from one controller
- Control of four mixing circuits with different temperature zones, including DHW production
- Simultaneous Heating, cooling and DHW production
- Remote Control
- BMS compatible



Cascade AWC

- Cascade up to 16 units from one controller
- Control of two mixing circuits with different temperature zones
- Remote control
- BMS compatible

Integrated sub-cooling pipe prevents ice build up during defrosting and negates the need for an electrical heating element.

Highly efficient EC fan motors, coupled with an improved air duct system, ensures quiet operation as low as 66 dB(A).

Steel shell and tube heat exchangers with large waterways reduces pressure drop and allows a higher tolerance of water quality.



ES NordFlex

Cascade AWC

ES AW90

ES AW45

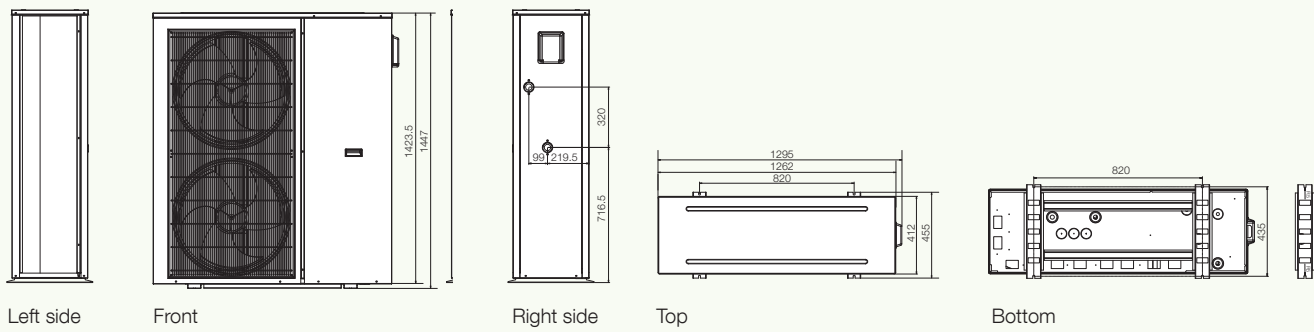
ES AW30

Dimensions

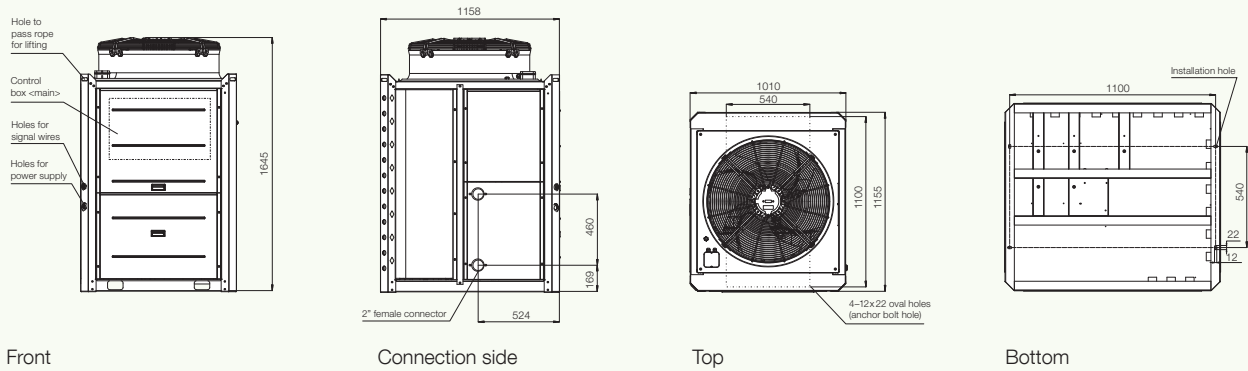
Clearances (mm)	ES AW30	ES AW45	ES AW90
Front	3000	1000	1000
Rear	300	1000	1000
Left	300*	1000	1000
Right	500*	1000	1000
Top	1000	3000	3000

*In modular configurations, the clearance is 1000 mm

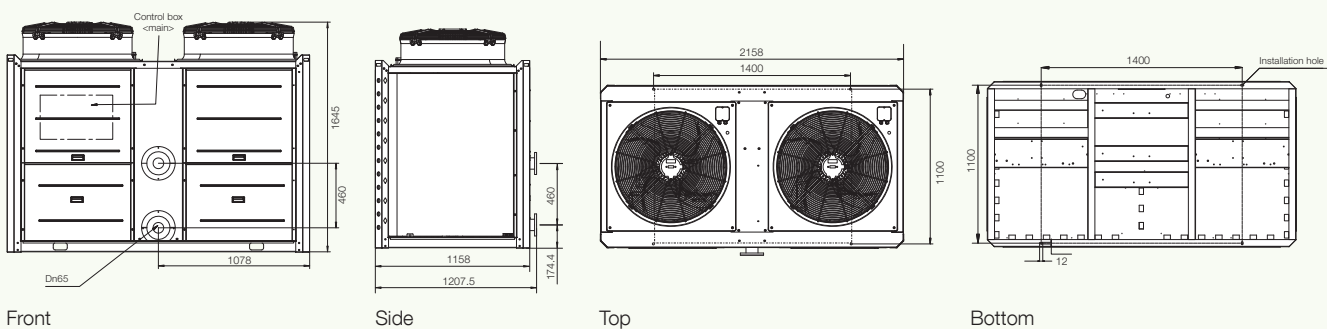
ES AW30



ES AW45



ES AW90



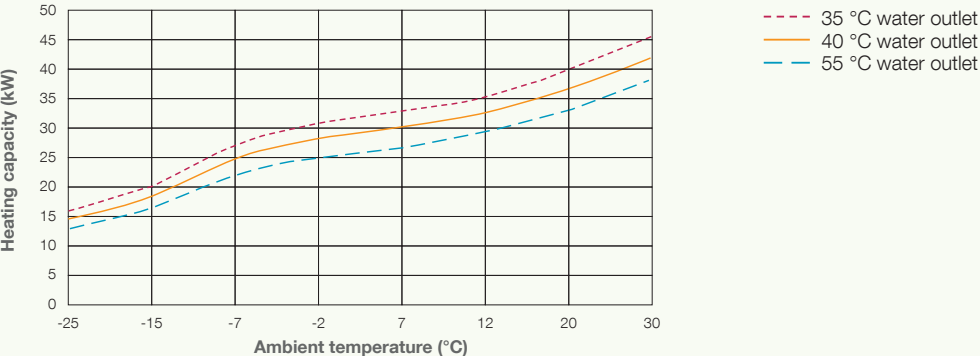
Performance data

			AW 30-EVI-M	AW 45-EVI-M	AW 90-EVI-M	
Min/max heating capacity (1)		kW	15.2–28.7	13.7–43.7	27.4–89.6	
Min/max input power (1)		kW	3.5–7.5	3.3–12.1	6.7–24.3	
COP min/max (1)		W/W	3.83–4.43	3.62–4.42	3.68–4.5	
Min/max heating capacity (2)		kW	12.2–29.4	13.6–43.2	28.2–89.5	
Min/max input power (2)		kW	3.8–9.0	4.2–14.3	8.2–28.3	
COP min/max (2)		W/W	3.26–3.43	2.99–3.38	3.16–3.48	
SCOP – Average climate, low temperature (1)		W	4.21	4.18	4.14	
Energy class (1)			A++	A++	A++	
SCOP – Average climate, high temperature (6)		W	3.31	3.62	3.62	
Energy class (6)			A++	A++	A++	
Min/max cooling capacity (3)		kW	15.2–26.8	17.7–32.0	36.4–66	
Min/max input power (3)		kW	3.3–8.8	3.15–11.6	6.9–23.5	
E.E.R min/max (3)			3.06–4.68	2.72–5.09	3.16–3.48	
Min/Max cooling capacity (4)		kW	7.3–21.2	11.2–29.9	23.4–61.2	
Min/Max input power (4)		kW	3.1–8.0	3.5–11.6	6.9–23.5	
E.E.R min./max. (4)		W/W	2.33–2.84	2.6–3.3	2.6–3.4	
Min/Max ambient working temperature in heating mode		°C	-30°–55°	-30°–55°	-30°–55°	
Min/Max ambient working temperature in cooling mode		°C	15°–55°	15°–55°	15°–55°	
Max flow temperature in heating mode		°C	60°	60°	60°	
Min flow temperature in heating mode		°C	20°	20°	20°	
Min flow temperature in cooling mode		°C	7°	7°	7°	
Sound power level LwA – Average climate, low temperature (1)	Outdoor	dB (A)	66	71	74	
Sound power level LwA – Average climate, high temperature (6)	Outdoor	dB (A)	71	72	75	
Fan	Quantity	pcs	2	1	2	
	Airflow	m³/h	5 250 x 2	13 500	13 500 x 2	
	Rated power	W	93 x 2	800	800 x 2	
	Blade diameter	mm	552 x 2	760	760 x 2	
Plate heat exchanger	Water press. drop	kPa	60	80	100	
	Pipe connection	inch	1 1/2" female	2" female	DN65 Flange	
Refrigerant	Type		R410A	R410A	R410A	
	Charge	kg	5.2	8	8 x 2	
	GWP	Co ₂ /kg	2088	2088	2088	
	t CO ₂ Equiv		10.9	16.7	33.4	
Compressor	Manufacturer		Panasonic, twin rotary	SIAM (5)	SIAM (5)	
	Type		Inverter + EVI	Inverter + EVI	Inverter + EVI	
Power supply – Outdoor unit		V/Ph/Hz	400V/3N/50	400V/3N/50	400V/3N/50	
Fuse Outdoor unit		A	3p/25A/C	3p/40A/C	2 x 3p/40A/C	
Electrical compressor heater		W	30	30	30 x 2	
Nominal water flow		m³/h	5.2	8	16	
Hydraulic connections		inch	1 1/2" female	2" female	DN65 Flange	
Flow switch			Yes	Yes	Yes	
Net dimensions (L x D x H)	Outdoor unit	mm	1295 x 455 x 1447	1010 x 1158 x 1645	2158 x 1158 x 1645	
	Indoor unit	Cascade AWS	mm	389 x 476 x 165	389 x 476 x 165	389 x 476 x 165
		NordFlex	mm	400 x 400 x 200	400 x 400 x 200	400 x 400 x 200
Packaging dimensions (L x D x H)	Outdoor unit	mm	1325 x 475 x 1580	1110 x 1260 x 1865	2180 x 1220 x 1865	
	Indoor unit	Cascade AWC	mm	400 x 490 x 180	400 x 490 x 180	400 x 490 x 180
		NordFlex	mm	420 x 420 x 250	420 x 420 x 250	420 x 420 x 250
Net weight	Outdoor unit	kg	191	330	682	
	Indoor unit	Cascade AWC	kg	9	9	9
		NordFlex	kg	12	12	12
Packaging weight	Outdoor unit	kg	215	390	717	
	Indoor unit	Cascade AWC	kg	10	10	10
		NordFlex	kg	13	13	13
Article number	Outdoor unit		120314	120300	120307	
	Indoor unit	Cascade AWC	120301	120301	120301	
		NordFlex	120223	120223	120223	

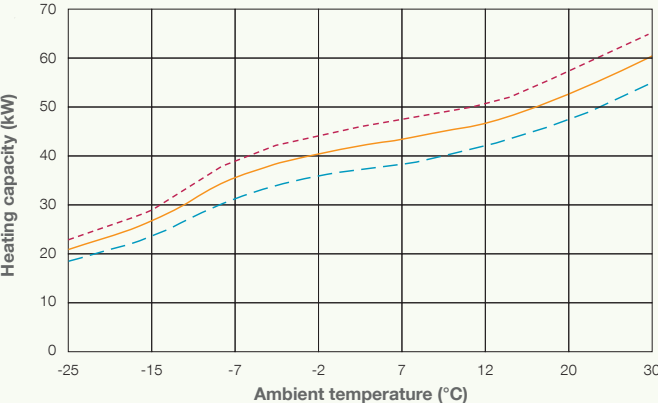
(1) Heating conditions: water inlet/outlet temperature in/out: 30°C/35°C, Ambient temperature: DB 7°C /WB 6°C (2) Heating conditions: water inlet/outlet temperature in/out: 40°C/45°C, Ambient temperature: DB 7°C /WB 6°C (3) Cooling conditions: water inlet/outlet temperature in/out: 23°C/18°C, Ambient temperature: DB 35°C /24°C (4) Cooling conditions: water inlet/outlet temperature in/out: 12°C/7°C, Ambient temperature: DB 35°C /24°C (5) A part of Mitsubishi Group (6) Heating conditions: water inlet/outlet temperature in/out: 50°C/55°C, Ambient temperature: DB 7°C /WB 6°C

Performance graphs

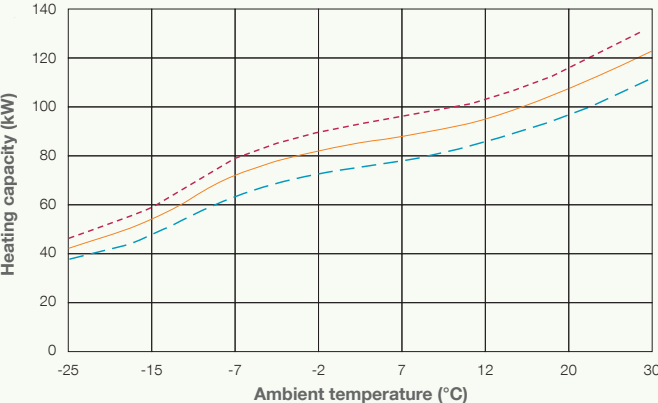
ES AW30



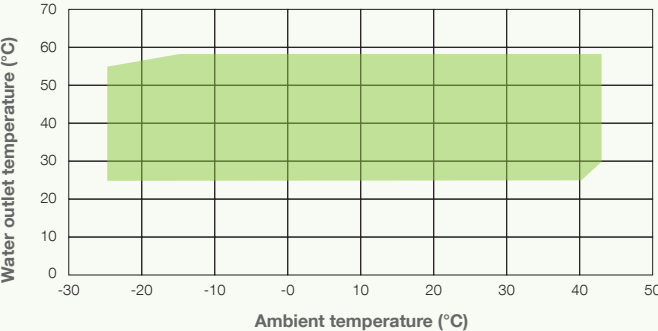
ES AW45



ES AW90



Operational temperature range - ES AW30-90 kW



Controller data

	ES NordFlex	Cascade AWC
Possible cascade heat pump control	16 (1.4 MW)	16 (1.4 MW)
Possibility to connect multiple controllers	Yes	No
System configuration tool	Yes	No
Cascade control logic	Need based on heating/cooling demand – output based on the maximum COP output of each heat pump	Based on heating/cooling demand
Preprogramed system specific	Yes	No
Heat demand calculations	Calculated curve or laninary curve	Laninary curve
Additional heater support	Yes – multiple	Yes
Additional heating sources control logic	On/Off; 0–10 V signal; Modbus communication	On/Off
District heating connectivity	Yes	No
Domestic hot water production	Yes	Yes
Domestic hot water circulation control	Yes	No
Cooling production	Yes	Yes
Simultaneous production of Heat/DHW/Cooling	Yes all modes – Simultaneous Heating/ DHW/Cooling	Yes dual modes – Heating/DHW; Cooling/DHW
Display	7" touch screen	7" touch screen
Tailored system documentation	Yes – Tailored system documentation	No
Scheduling functions	Holiday mode, Night mode, DHW Boost, Anti-legionella mode	Holiday mode, Night mode, DHW temp. mode timer, Anti-legionella mode
Software update	Via USB or OTA	Via USB
Settings and configurations	Installer menu & USB auto upload	Installer menu
Internet access	Yes – with LAN cable or modem	Yes – with LAN cable
Possible user groups (zones)	4	2
Energy consumption meter	Yes – optional	No
Energy production meter	Yes – optional	No
Room sensor support	Multiple – based on demand	1
Pressure monitoring	Yes – Support for pressure switches and pressure measurement on primary and/or secondary water circuit	No
Input/output standard	12 Analog inputs (NTC or 0–10 V) 4 Digital inputs (230 V) 4 Digital inputs (24 V) 2 Analog outputs (0–10V) 14 Relays (2 A, 250 V)	12 Analog inputs 4 Digital inputs 2 Analog outputs 11 Relays
Flexible function for inputs/outputs	Yes – functions dedicated to inputs/outputs by installer	No
Additional input/output	Yes – with input/output expansion module	No
Power supply to switching valves etc.	24V DC 40 VA included	230 V
Power supply	230 V	230 V
Communication	Modbus RTU/TCP	Modbus RTU/TCP
Specific hydraulic and electric scheme included	Yes – project specific with configurator	No
BMS compatibility	Yes	Yes

Want to know more?

We can help you take control of your property's climate and choose the right energy solution that meets your needs and challenges. Energy Save can assist you when it comes to optimizing your building energy systems to maintain or obtain an environmental certification and of course reduce both consumption and cost. You can also contact your local supplier directly among our distribution and installation partners.

Our energy efficient solutions are suitable for:

Existing properties, new production and all kinds of temporary and mobile solutions including construction site heating and drying.

Contact us today if you would like to:

- Reduce your carbon footprint
- Reduce your energy costs
- Reduce investment costs
- improve and take control of your indoor climate
- Invest in a sustainable energy solution

About Energy Save

ES Energy Save Holding AB (publ) is an innovative Swedish energy technology company that, through costeffective and smart air/water heat pump systems, contributes to sustainable energy conversion in Europe. The company has been supplying heat pumps to the European market since 2009 and is listed on Nasdaq First North Growth Market.

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