



Daikin Altherma mid  
temperature split  
Technical Data  
EPRA08-12EV





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# EPRA08-12EV

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# 1 Features

## 1 - 1 EPRA08-12EV

- › Outdoor unit extracts heat from the outdoor air, even at -28°C
- › By heat pump operation only, the outdoor unit delivers a leaving water temperature of 65°C at -15°C ambient temperature
- › By -15°C ambient temperature, the outdoor unit limits heating capacity loss
- › Choosing for an R-32 product, reduces the environmental impact with 68% compared to R-410A, leads directly to lower energy consumption thanks to its high energy efficiency and has a 30% lower refrigerant charge
- › WLAN cartridge included



Guaranteed operation down to -28°C



Daikin Residential Controller (optional)

## 2 Specifications

### 1 - 1 EPRA08-12EV

Technical specifications				ETVH12SU18E6V + EPRA08EV3	ETVH12SU23E6V + EPRA08EV3	ETVH12SU18E6V + EPRA10EV3	ETVH12SU23E6V + EPRA10EV3	ETVH12SU18E6V + EPRA12EV3	ETVH12SU23E6V + EPRA12EV3	
Indoor unit				ETVH12SU18E6V	ETVH12SU23E6V	ETVH12SU18E6V	ETVH12SU23E6V	ETVH12SU18E6V	ETVH12SU23E6V	
Outdoor unit				EPRA08EAV3		EPRA10EAV3		EPRA12EAV3		
Heating capacity	Min.		kW	3.44 (1)						
	Nom.		kW	6.17 (2)						
	Max.		kW	7.95 (1)		9.25 (1)		9.97 (1)		
Power input	Heating	Min.	kW	0.72 (3)						
		Nom.	kW	1.25 (2)						
		Max.	kW	1.69 (3)		2.04 (3)		2.28 (3)		
	Domestic hot water from 10°C to 50°C	Nom.	kWh	2.63 (4)	3.19 (4)	2.63 (4)	3.19 (4)	2.63 (4)	3.19 (4)	
		Heat up time from 10°C to 50°C	hr	1h51min	2h 10min	1h51min	2h 10min	1h51min	2h 10min	
COP				4.92 (2)						
Pump	Type	Grundfos UPM3LK								
	Nominal Heating ESP unit		kPa	59.8 (5)						
Water side Heat exchanger	Water flow rate	Heating Nom.	l/min	18.3 (2)						
General	Supplier/Manufacturer details	Daikin Europe N.V. - Zandvoordestraat 300, 8400 Oostende, Belgium								
	Name or trademark	Daikin Europe N.V.								
	Product description	Air-to-water heat pump			Yes					
		Brine-to-water heat pump			No					
		Heat pump combination heater			Yes					
		Low-temperature heat pump			No					
		Supplementary heater integrated			Yes					
	Water-to-water heat pump			No						
LW(A) Sound power level (according to EN14825)	Indoor		dB(A)	44.0						
LW(A) Sound power level (according to EN14825)	Outdoor		dB(A)	53.0						
Sound condition Ecodesign and energy label				Sound power in heating mode, measured according to the EN12102 under conditions of the EN14825						
Tank	Name			Stainless steel domestic hot water tank 180 l	Stainless steel domestic hot water tank 230 l	Stainless steel domestic hot water tank 180 l	Stainless steel domestic hot water tank 230 l	Stainless steel domestic hot water tank 180 l	Stainless steel domestic hot water tank 230 l	
Space heating general	Air to water unit	Rated airflow (outdoor)		m <sup>3</sup> /h	3,542					
		Other	Capacity control			Inverter				
	Pck (Crankcase heater mode)		kW	0.000						
	Poff (Off mode)		kW	0.021						
	Psb (Standby mode)		kW	0.021						
Pto (Thermostat off)		kW	0.024							
Domestic hot water heating	General	Declared load profile			L					
Space heating general	Integrated supplementary heater	Psup		kW	6.0					
		Type of energy input			Electrical					
Domestic hot water heating	Average climate	AEC (Annual electricity consumption)		kWh	877	810	877	810	877	810

## 2 Specifications

### 1 - 1 EPRA08-12EV

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Technical specifications			ETVH12SU18E6V + EPRA08EV3	ETVH12SU23E6V + EPRA08EV3	ETVH12SU18E6V + EPRA10EV3	ETVH12SU23E6V + EPRA10EV3	ETVH12SU18E6V + EPRA12EV3	ETVH12SU23E6V + EPRA12EV3	
Domestic hot water heating	Average climate	COPdhw	2.72	2.96	2.72	2.96	2.72	2.96	
		Heat up time	1h57min	2h 14min	1h57min	2h 14min	1h57min	2h 14min	
		η <sub>wh</sub> (water heating efficiency) %	117	126	117	126	117	126	
		Qelec (Daily electricity consumption) kWh	4.280	3.940	4.280	3.940	4.280	3.940	
		Reference hot water temperature °C	53.0	52.0	53.0	52.0	53.0	52.0	
		Stand-by power input W	517	44.8	517	44.8	517	44.8	
		Water heating energy efficiency class	A+						
	Cold climate	AEC (Annual electricity consumption) kWh	966	891	966	891	966	891	
		COPdhw	2.48	2.70	2.48	2.70	2.48	2.70	
		Heat up time	1h 55min	2h 02min	1h 55min	2h 02min	1h 55min	2h 02min	
		η <sub>wh</sub> (water heating efficiency) %	106	115	106	115	106	115	
		Qelec (Daily electricity consumption) kWh	4.700	4.320	4.700	4.320	4.700	4.320	
		Reference hot water temperature °C	53.0	52.0	53.0	52.0	53.0	52.0	
		Stand-by power input W	55.4	47.7	55.4	47.7	55.4	47.7	
Warm climate	AEC (Annual electricity consumption) kWh	719	666	719	666	719	666		
	COPdhw	3.31	3.59	3.31	3.59	3.31	3.59		
	Heat up time	1h 54min	2h 06min	1h 54min	2h 06min	1h 54min	2h 06min		
	η <sub>wh</sub> (water heating efficiency) %	142	154	142	154	142	154		
	Qelec (Daily electricity consumption) kWh	3.530	3.250	3.530	3.250	3.530	3.250		
	Reference hot water temperature °C	53.0	52.0	53.0	52.0	53.0	52.0		
	Stand-by power input W	45.4	39.7	45.4	39.7	45.4	39.7		
Space heating	Average climate water outlet 55°C	General Annual energy consumption kWh	5,142		5,120				
		η <sub>s</sub> (Seasonal space heating efficiency) %	134						
		Prated at -10°C kW	8.5						
		Qhe Annual energy consumption (GCV) GJ	19		18				
		SCOP	3.41		3.43				
		Seasonal space heating eff. class	A++						
		A Condition (-7°CDB/-8°CWB)	Cdh (Degradation heating)	10					
			COPd	2.21					
			Pdh kW	76					
			PERd %	88.5					
		B Condition (2°CDB/-1°CWB)	Cdh (Degradation heating)	10					
			COPd	3.37					
			Pdh kW	4.6					
		C Condition (7°CDB/6°CWB)	PERd %	134.8					
Cdh (Degradation heating)	10								
COPd	4.48								

## 2 Specifications

### 1 - 1 EPRA08-12EV

Technical specifications				ETVH12SU18E6V + EPRA08EV3	ETVH12SU23E6V + EPRA08EV3	ETVH12SU18E6V + EPRA10EV3	ETVH12SU23E6V + EPRA10EV3	ETVH12SU18E6V + EPRA12EV3	ETVH12SU23E6V + EPRA12EV3		
Space heating	Average climate water outlet 55°C	C Condition (7°CDB/6°CWB)	Pdh	kW					3.0		
			PERd	%					179.2		
		D Condition (12°CDB/11°CWB)	Cd <sub>h</sub> (Degradation heating)							10	
			COP <sub>d</sub>							5.98	
			Pdh	kW						3.7	
			PERd	%						239.4	
		Tol (temperature operating limit)	COP <sub>d</sub>			193				197	
			Pdh	kW		7.0				8.3	
			PERd	%		77.2				78.7	
			TOL	°C						-10	
			WTOL	°C						55	
		Rated heat output supplementary capacity	P <sub>sup</sub> (at T <sub>design</sub> -10°C)			15				0.0	
			T <sub>biv</sub> (bivalent temperature)	COP <sub>d</sub>			2.21				1.97
		Pdh		kW		7.6				8.3	
		PERd		%		88.5				78.7	
		T <sub>biv</sub>		°C		-7				-10	
		Cold climate water outlet 55°C	General	Annual energy consumption			7,303		7,173		7,146
				η <sub>s</sub> (Seasonal space heating efficiency)	%		118			121	
Prated at -22°C									9.0		
Q <sub>he</sub> Annual energy consumption (GCV)									26		
A Condition (-7°CDB/-8°CWB)	Cd <sub>h</sub> (Degradation heating)							10			
	COP <sub>d</sub>								2.52		
	Pdh		kW						5.2		
	PERd		%						100.6		
B Condition (2°CDB/1°CWB)	Cd <sub>h</sub> (Degradation heating)							10			
	COP <sub>d</sub>								3.77		
	Pdh		kW						3.3		
C Condition (7°CDB/6°CWB)	Cd <sub>h</sub> (Degradation heating)							151.0			
	COP <sub>d</sub>							4.81			
D Condition (12°CDB/11°CWB)	Cd <sub>h</sub> (Degradation heating)							10			
	COP <sub>d</sub>							4.81			
Tol (temperature operating limit)	Pdh	kW						3.4			
	PERd	%						192.2			
	COP <sub>d</sub>							6.36			
Tol (temperature operating limit)	Pdh	kW						4.2			
	PERd	%						254.2			
Tol (temperature operating limit)	COP <sub>d</sub>			1.48		1.48		1.54			
	Pdh	kW		4.9		6.1		7.2			

## 2 Specifications

### 1 - 1 EPRA08-12EV


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Technical specifications					ETVH12SU18E6V + EPRA08EV3	ETVH12SU23E6V + EPRA08EV3	ETVH12SU18E6V + EPRA10EV3	ETVH12SU23E6V + EPRA10EV3	ETVH12SU18E6V + EPRA12EV3	ETVH12SU23E6V + EPRA12EV3
Space heating Cold climate water outlet 55°C	Tol (temperature operating limit)	PERd	%		57.4		59.7		61.7	
		TOL	°C				-22			
		WTOL	°C				55			
	G Condition (-15°CDB/-)	COPd			193				196	
			Pdh	kW	6.0				7.2	
		PERd	%		77.2				78.4	
		Tbiv (bivalent temperature)	COPd		2.17				196	
			Pdh	kW	6.6				7.2	
	Rated heat output supplementary capacity	PERd	%	86.9				78.4		
			Tbiv	°C	-12				-15	
	Warm climate water outlet 55°C	General	Annual energy consumption	kWh			3,039			
			ηs (Seasonal space heating efficiency)	%			166			
			Prated at 2°C	kW			9.6			
Qhe Annual energy consumption (GCV)			Gj			11				
B Condition (2°CDB/1°CWB)		CdH (Degradation heating)					10			
			COPd				2.57			
		Pdh	kW			8.0				
C Condition (7°CDB/6°CWB)		CdH (Degradation heating)					102.6			
			COPd				3.65			
		Pdh	kW			6.7				
D Condition (12°CDB/11°CWB)		CdH (Degradation heating)					146.2			
			COPd				10			
		Pdh	kW			5.71				
Tbiv (bivalent temperature)		PERd	%			228.3				
						3.02				
	Tbiv	°C			8.4					
Average climate water outlet 35°C	General	Annual energy consumption	kWh	3,659				3,637		
		ηs (Seasonal space heating efficiency)	%	184				186		
		Prated at -10°C	kW			8.3				
		Qhe Annual energy consumption (GCV)	Gj			13				
		SCOP		4.69				4.71		
		Seasonal space heating eff. class				A+++				



## 2 Specifications

### 1 - 1 EPRA08-12EV

Technical specifications				ETVH12SU18E6V + EPRA08EV3	ETVH12SU23E6V + EPRA08EV3	ETVH12SU18E6V + EPRA10EV3	ETVH12SU23E6V + EPRA10EV3	ETVH12SU18E6V + EPRA12EV3	ETVH12SU23E6V + EPRA12EV3	
Space heating 	Average climate water outlet 35°C	A Condition (-7°CDB/-8°CWB)	COPd						3.10	
			Pdh	kW					7.5	
			PERd	%						124.1
		B Condition (2°CDB/-B/1°CWB)	CdH (Degradation heating)							10
			COPd							4.76
			Pdh	kW						4.4
		C Condition (7°CDB/-B/6°CWB)	CdH (Degradation heating)							190.4
			COPd							10
			Pdh	kW						6.14
		D Condition (12°CDB/11°CWB)	CdH (Degradation heating)							4.3
			COPd							245.8
			Pdh	kW						10
	Cold climate water outlet 35°C	Tol (temperature operating limit)	COPd			2.80				2.77
			Pdh	kW		6.9				8.1
			PERd	%		112.2				110.8
		TOL	°C							-10
			°C							35
		Tbiv (bivalent temperature)	COPd			3.10				2.77
			Pdh	kW		7.5				8.1
			PERd	%		124.1				110.8
		Rated heat output supplementary capacity	Tbiv			-7				-10
			Psup (at Tdesign -10°C)		kW	1.4				0.0
		General	Annual energy consumption		kWh	5,554		5,401		5,387
ηs (Seasonal space heating efficiency)			%	157		161		162		
Prated at -22°C			kW			9.0				
Qhe Annual energy consumption (GCV)			Gj	20			19			
A Condition (-7°CDB/-8°CWB)	COPd							3.36		
	Pdh		kW						5.4	
	PERd		%						134.5	
B Condition (2°CDB/-B/1°CWB)	CdH (Degradation heating)							10		
	COPd								5.21	
	Pdh		kW						3.6	
C Condition (7°CDB/-B/6°CWB)	PERd		%					208.4		
	CdH (Degradation heating)							10		

## 2 Specifications

### 1 - 1 EPRA08-12EV

2

Technical specifications				ETVH12SU18E6V + EPRA08EV3	ETVH12SU23E6V + EPRA08EV3	ETVH12SU18E6V + EPRA10EV3	ETVH12SU23E6V + EPRA10EV3	ETVH12SU18E6V + EPRA12EV3	ETVH12SU23E6V + EPRA12EV3	
Space heating Cold climate water outlet 35°C	C Condition (7°CDB/ B/6°CWB)	COPd					6.29			
		Pdh	kW				5.3			
		PERd	%				2517			
	D Condition (12°CDB/11°CWB)	CdH (Degradation heating)					10			
		COPd					7.69			
		Pdh	kW				6.6			
		PERd	%				3076			
	Tol (tem- perature operat- ing limit)	COPd			2.04		2.07		2.09	
		Pdh		kW	4.9		5.9		6.4	
		PERd		%	816		82.9		83.6	
		TOL		°C				-22		
		WTOL		°C				35		
	G Con- dition (-15°CDB/ -)	COPd			2.60			2.56		
		Pdh		kW	6.0			7.0		
		PERd		%	103.8			102.6		
	Tbiv (bivalent tempera- ture)	COPd			2.86			2.56		
		Pdh		kW	6.5			7.0		
		PERd		%	114.4			102.6		
		Tbiv		°C	-12			-15		
	Rated heat output supple- mentary capacity	Psup (at Tdesign -22°C)		kW	4.1		3.1		2.6	
General		Annual energy consumption	kWh			1,992				
Warm climate water outlet 35°C	ηs (Seasonal space heating efficiency)		%				228			
	Prated at 2°C		kW				8.6			
	Qhe Annual ener- gy consumption (GCV)		Gj				7			
	B Con- dition (2°CDB/ B/1°CWB)	CdH (Degradation heating)					10			
		COPd					3.95			
		Pdh		kW			7.7			
	C Con- dition (7°CDB/ B/6°CWB)	CdH (Degradation heating)					10			
		COPd					5.65			
		Pdh		kW			5.5			
	Tbiv (bivalent tempera- ture)	PERd		%			225.9			
COPd					4.80					
Pdh		kW			6.9					
PERd		%			192.0					
D Condition (12°CDB/11°CWB)	Tbiv		°C			5				
	CdH (Degradation heating)					10				
	COPd					7.56				
Space heating Warm climate water	D Condition (12°CDB/11°CWB)	Pdh		kW			6.2			
		PERd		%			302.6			

(1)Capacity according to standard EN14511 and valid for heated water range dT = 3~8°C at Ta 7°C |

(2)Condition: Ta DB/WB 7°C/6°C - LWC 35°C (DT = 5°C) |

(3)Power input is total input of indoor and outdoor units, including the circulation pump; according to EN14511 |

(4)Test at Ta DB/WB 7°C/6°C. According to EN 16147. |

(5)DB/WB 7°C/6°C - LWC 35°C (dT=5°C) with pump at full speed |

Cooling: EW 12°C; LW 7°C; ambient conditions: 35°CDB |

Cooling: EW 23°C; LW 18°C; ambient conditions: 35°CDB

Technical Specifications				EPRA08EV3	EPRA10EV3	EPRA12EV3
Casing	Colour			Silver / Black		
	Material			Polyester painted galvanised steel plate		
Dimensions	Unit	Height	mm	1,003		
		Width	mm	1,270		
		Depth	mm	533		
	Packed unit	Height	mm	1,340		
		Width	mm	1,440		
		Depth	mm	690		
Weight	Unit	kg	118			
	Packed unit	kg	150			

## 2 Specifications

### 1 - 1 EPRA08-12EV

Technical Specifications				EPRA08EV3	EPRA10EV3	EPRA12EV3
Packing	Material			Carton / Wood (pallet) / PE (Straps) / Metal		
	Weight			kg	28	
Heat exchanger	Length			mm	1,200	
	Rows	Quantity			2	
	Fin pitch			mm	2.00	
	Passes	Quantity			10	
	Face area			m <sup>2</sup>	1.19	
	Stages	Quantity			44	
	Tube type				ø7 Hi-XSL	
	Fin	Type			WF fin	
	Treatment			Anti-corrosion treatment (PE)		
Fan	Type			Propeller fan		
	Quantity			1		
	Air flow rate	Heating	Nom.	m <sup>3</sup> /min	59.0	
			High	m <sup>3</sup> /min	80.1	
		Cooling	Nom.	m <sup>3</sup> /min	80	
			High	m <sup>3</sup> /min	80.1	
Discharge direction			Horizontal			
Fan motor	Quantity			1		
	Model			Brushless DC motor		
	Output			W		
	Drive			183		
	Speed			Direct drive		
		Steps			6	
	Heating	Nom.	rpm	390		
	Cooling	Nom.	rpm	520		
Compressor	Quantity			1		
Compressor	Model			2Y260BPDX1P#C		
	Type			Hermetically sealed swing compressor		
	Starting method			Inverter driven		
PED	Category			Category II		
Operation range	Heating	Min.	°CDB	-28.0		
		Max.	°CDB	25		
	Cooling	Min.	°CDB	10		
		Max.	°CDB	43		
	Domestic hot water	Max.	°CDB	35		
		Min.	°CDB	-28		
PED	Most critical part	Name		Accumulator		
		P <sub>s</sub> *V	Bar*I	109		
Piping connections	Water inlet heat exchanger diameter			inch		
	Water outlet heat exchanger diameter			inch		
Sound power level	Heating	Nom.	dB(A)	54.0 (1)		
	Cooling	Nom.	dB(A)	60.1 (2)	60.6 (2)	61.5 (2)
Sound pressure level	Heating	Nom.	dB(A)	40.6 (3)		
	Cooling	Nom.	dB(A)	47.0 (4)	47.4 (4)	48.5 (4)
	Night quiet mode	Heating	dB(A)	43.2 (3)		
		Cooling	dB(A)	43.7 (4)		
Refrigerant	Type			R-32		
	GWP			675.0		
	Charge			TCO <sub>2</sub> Eq		
	Charge			kg		
	Control			2.19		
	Circuits			Quantity		
Refrigerant oil	Type			FW68DE		
	Charged volume			l		
Piping connections	Piping length	OU - IU	Max.	m	50	
		High pressure side	Design pressure	bar	46	
	Level difference	IU - OU	Max.	m	10.0	
	Water circuit	Filter ball valve		Yes		
Defrost control				Sensor for outdoor heat exchanger temperature		
Capacity control	Method			Inverter controlled		
Safety devices	Item	01		High pressure switch		
		02		High pressure switch		
		03		Thermal protector for compressor		
Safety devices	Item	04		Fuse		
Defrost method				Reversed cycle		

## 2 Specifications

### 1 - 1 EPRA08-12EV

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Electrical Specifications			EPRA08EV3	EPRA10EV3	EPRA12EV3	
Power supply	Name		V3			
	Phase		1~			
	Frequency	Hz	50			
	Voltage	V	230			
	Voltage range	Min.	%	-10		
		cos phi	Nom.	0.95		
			Max.	0.98		
	Max.	%	10			
Current	Minimum Ssc value	kVa	Equipment complying with EN / IEC 61000-3-12			
	Recommended fuses	A	32			
	Inverter modulation	Min. %	44	37	35	
Wiring connections	For power supply	Remark	See installation manual outdoor unit			
	For connection with indoor	Remark	See installation manual indoor unit			

(1)Cooling Ta 35°C - LWE 18°C (DT = 5°C); Heating Ta DB/WB 7°C/6°C - LWC 35°C (DT = 5°C) |

(2)Condition 2: cooling Ta 35°C - LWE 7°C (DT = 5°C); heating Ta DB/WB 7°C/6°C - LWC 45°C (DT = 5°C) |

(3)Sound pressure level is a relative value, depending on the distance and acoustic environment. For more details, please refer to the sound level drawings. |

(4)The sound pressure level is measured via a microphone at a certain distance from the unit. It is a relative value depending on the distance and acoustic environment. Refer to sound spectrum drawing for more information. Condition: Ta 35°C - LWE 7°C (DT =

### 3 Electrical data

#### 3 - 1 Electrical Data

EPRA08-12EV  
EPRA08-12EW

#### \* Electrical meter specification

- Pulse meter type/voltage-free contact for 5 V DC detection by PCB.
- Possible number of pulses
  - 0.1· pulse/kWh
  - 1· pulse/kWh
  - 10· pulse/kWh
  - 100· pulse/kWh
  - 1000· pulse/kWh
- Pulse duration
  - minimum On time: ·40ms·
  - Minimum OFF time: ·100ms·
- Measurement type (depending on installation)
  - Single-phase AC meter
  - Three-phase AC meter
  - Balanced loads
  - Unbalanced loads

#### \* Electrical meter installation guideline

- It is the responsibility of the installer to cover the complete power consumption with electrical meters (combination of estimation and metering is not allowed).
- Required number of electrical meters

Outdoor unit type		EPRA(08/10/12)EA*					
Indoor unit type		ETB(H/X)12EF*			ETV(H/X/Z)12S(U)*EA*		
	Backup heater type	6V		9W	6V		9W
	Backup heater power supply	1~ 230V	3~ 230V	3~ 400V	1~ 230V	3~ 230V	3~ 400V
	Backup heater configuration	2 / 4 / 6 kW	6 kW	3 / 6 / 9 kW	2 / 4 / 6 kW	6 kW	3 / 6 / 9 kW
<b>Normal kWh rate power supply</b>							
Electrical meter type	1~	1	-	-	1	-	-
	3~ balanced	-	-	-	-	-	-
	3~ unbalanced	-	1	1	-	1	1
<b>Preferential kWh rate power supply</b>							
Electrical meter type	1~	2	1	1	2	1	1
	3~ balanced	-	-	-	-	-	-
	3~ unbalanced	-	1	1	-	1	1

4D133788

# 4 Capacity graphs

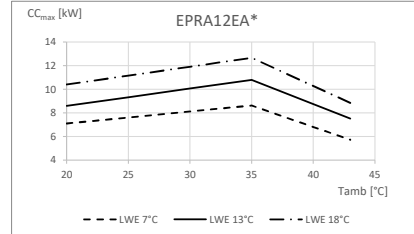
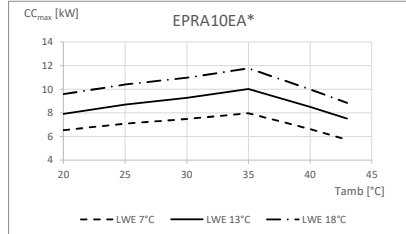
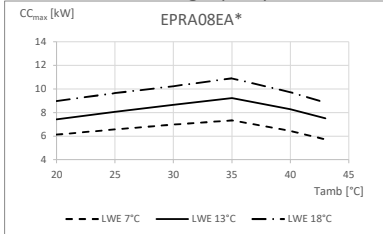
## 4 - 1 Cooling Capacity Graphs

4

EPRA08-12EV

EPRA08-12EW

Maximum cooling capacity



**Symbols**

CC<sub>max</sub> Cooling capacity at maximum operating frequency, measured according to EN 14511.

LWE Leaving water evaporator temperature [°C]

Tamb Ambient temperature [°C DB]

**Conditions**

Cooling capacity

Capacity according to standard EN 14511 and valid for chilled water range ΔT = 3~8°C.

**Notes**

The capacity and power input is valid for ·V3· models at ·230·V and for for ·W1· models at ·400·V.

The capacity and the power input are at maximum operation.

4D133539

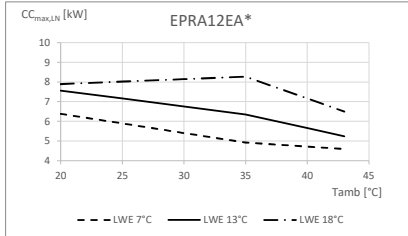
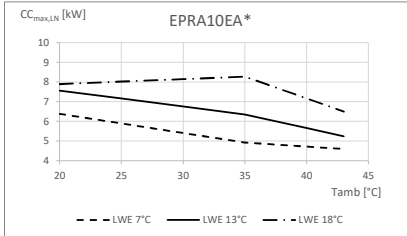
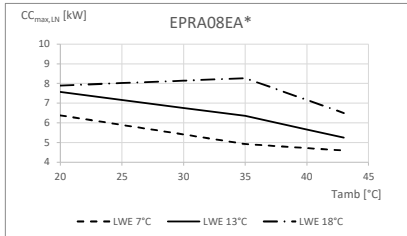
# 4 Capacity graphs

## 4 - 2 Cooling Capacity Graphs - quiet mode

EPRA08-12EV

EPRA08-12EW

Maximum cooling capacity



**Symbols**

CC<sub>maxLN</sub> Cooling capacity at maximum operating frequency, measured according to EN 14511.

LWE Leaving water evaporator temperature [°C]

Tamb Ambient temperature [°C DB]

**Conditions**

Cooling capacity

Capacity according to standard EN 14511 and valid for chilled water range ΔT = 3-8°C.

**Notes**

The capacity and power input is valid for -V3- models at -230-V and for -W1- models at -400-V.

Full load (maximum fan rps and maximum compressor rps for the dedicated low noise mode)

Low noise level -1-

4D133540

# 4 Capacity graphs

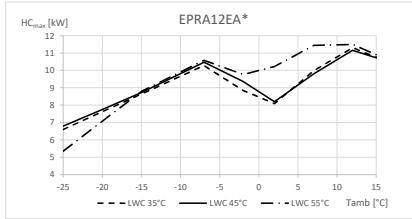
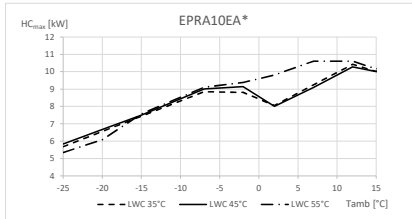
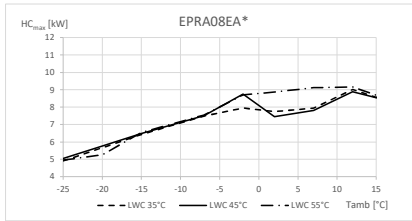
## 4 - 3 Heating Capacity Graphs

4

**EPRA08-12EV**

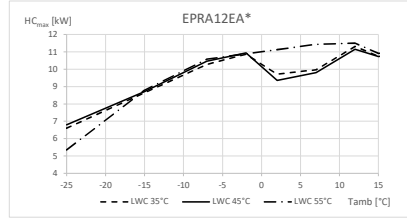
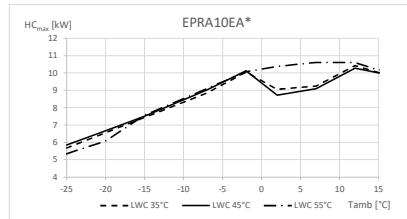
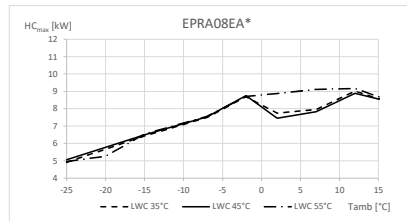
**EPRA08-12EW**

Maximum heating capacity - integrated value



**Symbols**  
 HC<sub>max</sub> Heating capacity for maximum load, measured according to EN 14511  
 LWC Leaving water condensor temperature [°C]  
 Tamb Ambient temperature [°C DB]

Maximum heating capacity - peak values



**Heating capacity**  
 Capacity according to standard EN 14511 and valid for heated water range ΔT = 3°-8°C.

**Notes**  
 The capacity and power input is valid for -V3- models at -230-V and for -W1- models at -400-V.  
 The capacity and the power input are at maximum operation.

**4D133537A**



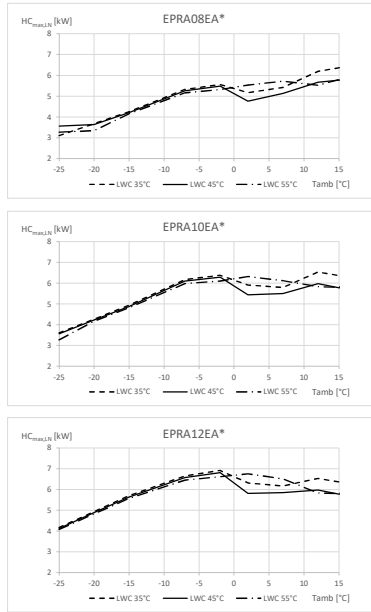
# 4 Capacity graphs

## 4 - 4 Heating Capacity Graphs - quiet mode

EPRA08-12EV

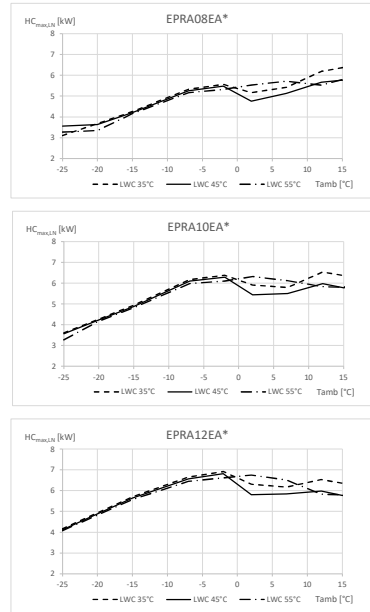
EPRA08-12EW

Maximum heating capacity - integrated value



**Symbols**  
 HC<sub>max,12</sub> Heating capacity for maximum load, measured according to EN 14511  
 LWC Leaving water condenser temperature [°C]  
 Tamb Ambient temperature [°C DB]

Maximum heating capacity - peak values



**Conditions**  
Heating capacity  
 Capacity according to standard EN 14511 and valid for heated water range  $\Delta T = 3-8^{\circ}\text{C}$ .

**Notes**  
 The capacity and power input is valid for -V3- models at -230-V and for for -W1- models at -400-V.  
 Full load (maximum fan rps and maximum compressor rps for the dedicated low noise mode)

Low noise level -1-

**4D133538**

# 5 Capacity tables

## 5 - 1 Certification Programs

### EPRA08-12EV

### EPRA08-12EW

Rated data for certification programmes - heating mode

Tamb [°C]	EWC [°C]	LWC [°C]	EPRA08EAV3		EPRA10EAV3		EPRA12EAV3		EPRA08EAW1		EPRA10EAW1		EPRA12EAW1		Used for:
			HC [kW]	COP	HC [kW]	COP	HC [kW]	COP	HC [kW]	COP	HC [kW]	COP	HC [kW]	COP	
7/6	30	35	6,17	4,92	6,17	4,92	6,17	4,92	6,17	5,10	6,17	5,10	6,17	5,10	Keymark, EHPA
2/1	(30)	35	5,74	4,08	5,74	4,08	5,74	4,08	5,74	4,23	5,74	4,23	5,74	4,23	EHPA
-7/-8	(30)	35	7,49	3,04	7,49	3,04	7,49	3,04	7,49	3,14	7,49	3,14	7,49	3,14	General
7/6	40	45	7,73	3,57	7,73	3,57	7,73	3,57	7,73	3,70	7,73	3,70	7,73	3,70	General
-2/-3	(40)	45	8,58	2,83	8,66	2,59	9,36	2,54	8,58	2,91	8,66	2,69	9,36	2,64	MCS
7/6	47	55	7,72	2,94	7,72	2,94	7,72	2,94	7,72	3,05	7,72	3,05	7,72	3,05	Keymark, EHPA
-7/-8	47	55	7,55	2,05	9,02	2,11	9,02	2,11	7,55	2,13	9,02	2,19	9,02	2,19	GET

Rated data for certification programmes - cooling mode

Nominal cooling capacity

Tamb [°C]	EWE [°C]	LWE [°C]	EPRA08EAV3		EPRA10EAV3		EPRA12EAV3		EPRA08EAW1		EPRA10EAW1		EPRA12EAW1		Used for:
			CC [kW]	EER	CC [kW]	EER	CC [kW]	EER	CC [kW]	EER	CC [kW]	EER	CC [kW]	EER	
35	23	18	6,47	5,56	6,47	5,56	6,47	5,56	6,47	5,75	6,47	5,75	6,47	5,75	General
35	12	7	6,81	3,17	7,97	3,00	8,62	2,91	6,81	3,28	7,97	3,10	8,62	3,01	DAPT General

Seasonal data - cooling LWE 7°C Low temperature Application

	EPRA08EAV3	EPRA10EAV3	EPRA12EAV3	EPRA08EAW1	EPRA10EAW1	EPRA12EAW1
Pdes [kW]	6,5	7,5	8,5	6,5	7,5	8,5
SEER [-]	5,38	5,34	5,31	5,42	5,41	5,41
ηs,c [%]	212	211	209	214	214	213
QCE [kWh/annum]	725	843	961	719	831	943

Rated data for certification programmes - domestic hot water performance

Indoor unit	ETV*12S(U)-J18EA*		ETV*12S(U)-J23EA*		ETS(X/H)(B)-J12P30EF		ETS(X/H)(B)-J12P50EF		Used for:
Outdoor unit	EPRA*EAV3	EPRA*EAW1	EPRA*EAV3	EPRA*EAW1	EPRA*EAV3	EPRA*EAW1	EPRA*EAV3	EPRA*EAW1	
Application	Average climate		Average climate		Average climate		Average climate		
Domestic hot water tank volume [l]	180		230		294		477		
Tapping pattern	L		L		L		XL		
Heat-up time (hh:mm:ss)	01:57:00		02:14:00		02:29:00		03:13:00		
θ <sub>wh</sub> [°C]	52,5		52,5		47,2		44,5		Keymark
P <sub>es</sub> [W]	51,7	50,7	44,8	43,9	38,1	37,4	32,7	32,1	
V <sub>eq40</sub> [l]	240		298		194,0		246,0		
η <sub>wh</sub> [%]	116,7	120,3	126,4	130	116	119	128	131	
COP <sub>DHW</sub> [l]	2,72	2,8	2,96	3,05	2,75	2,83	3,1	3,17	

**Symbols**

- HC Heating capacity measured according to EN 14511
- CC Cooling capacity, measured according to EN 14511.
- COP/EER Coefficient of Performance/Energy efficiency ratio according to EN 14511.
- EWC Entering water condenser temperature [°C]
- LWC Leaving water condenser temperature [°C]
- EWE Entering water evaporator temperature [°C]
- LWE Leaving water evaporator temperature [°C]
- Tamb Ambient temperature [°C DB/WB]
- θ<sub>wh</sub> Reference Domestic hot water temperature [°C] According to EN16147.
- P<sub>es</sub> Standby power input According to EN16147.
- V<sub>eq40</sub> Equivalent domestic hot water volume [l] According to EN16147.
- η<sub>wh</sub> Efficiency [%] Domestic hot water heating mode According to EN16147.
- COP<sub>DHW</sub> Domestic hot water COP

Rated data for certification programmes - heating mode  
Measured according to UNI/TS 11300

Condition	Tamb [°C]	LWC [°C]	PLR [%]	EPRA08EAV3		EPRA10EAV3		EPRA12EAV3		EPRA08EAW1		EPRA10EAW1		EPRA12EAW1	
				HC [kW]	COP	HC [kW]	COP	HC [kW]	COP	HC [kW]	COP	HC [kW]	COP	HC [kW]	COP
A	-7/-8	34	100	7,49	3,10	8,73	3,02	10,22	2,93	7,49	3,20	8,73	3,12	10,22	3,03
B	2/1	30	100	7,62	4,30	8,15	4,01	8,41	3,86	7,62	4,42	8,15	4,13	8,41	3,98
C	7/6	27	100	8,44	5,60	9,84	5,42	10,61	5,32	8,44	5,78	9,84	5,59	10,61	5,48
D	12/11	24	100	9,27	7,52	10,70	7,35	11,59	7,24	9,27	7,77	10,70	7,58	11,59	7,46
A	-7/-8	52	100	7,54	2,20	8,91	2,21	10,55	2,22	7,54	2,28	8,91	2,29	10,55	2,30
B	2/1	42	100	7,81	3,47	8,04	3,21	8,16	3,08	7,81	3,58	8,04	3,31	8,16	3,18
C	7/6	36	100	8,16	4,43	9,54	4,42	10,31	4,41	8,16	4,57	9,54	4,56	10,31	4,55
D	12/11	30	100	9,04	6,16	10,49	6,21	11,39	6,24	9,04	6,35	10,49	6,40	11,39	6,43

Rated data for certification programmes - cooling mode  
Measured according to UNI/TS 11300

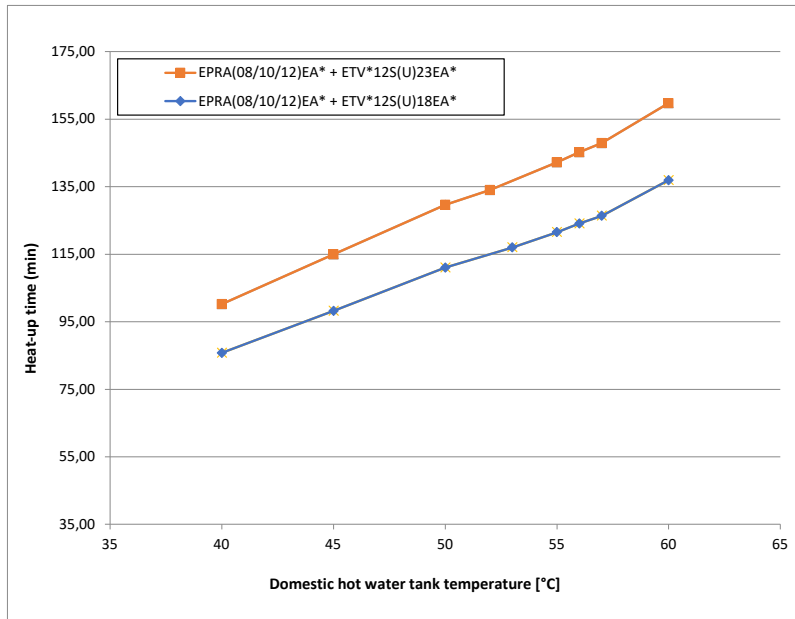
Condition	Tamb [°C]	LWE [°C]	PLR [%]	EPRA08EAV3		EPRA10EAV3		EPRA12EAV3		EPRA08EAW1		EPRA10EAW1		EPRA12EAW1	
				CC [kW]	EER	CC [kW]	EER	CC [kW]	EER	CC [kW]	EER	CC [kW]	EER	CC [kW]	EER
A	35	18	100	10,89	4,35	11,77	4,11	12,66	3,87	10,89	4,51	11,77	4,26	12,66	4,01
B	30	18	75	7,96	6,05	8,73	5,98	9,51	5,90	7,96	6,26	8,73	6,19	9,51	6,11
C	25	18	50	5,51	8,83	5,90	8,36	6,28	7,88	5,51	9,04	5,90	8,60	6,28	8,17
D	20	18	25	3,47	12,42	3,47	12,42	3,47	12,42	3,47	12,29	3,47	12,29	3,47	12,29
A	35	7	100	7,33	3,09	7,97	3,00	8,62	2,91	7,33	3,20	7,97	3,10	8,62	3,01
B	30	7	75	5,34	4,06	5,86	4,01	6,38	3,96	5,34	4,20	5,86	4,15	6,38	4,10
C	25	7	50	3,66	5,21	3,95	5,22	4,24	5,23	3,66	5,36	3,95	5,39	4,24	5,42
D	20	7	25	2,19	6,20	2,19	6,20	2,19	6,20	2,19	6,17	2,19	6,17	2,19	6,17

# 5 Capacity tables

## 5 - 2 Domestic Hot Water performance

EPRA08-12EV  
EPRA08-12EW

**Heat-up times**



**Notes**

1. Time the indoor unit (**heat pump only operation**) requires to heat up the domestic hot water tank from 10°C to the indicated temperature.  
See the operation range for maximum domestic hot water tank temperature during heat pump only operation.

Model name	Heat-up time domestic hot water tank until 45°C
EPRA(08/10/12)EA* + ETV*12S(U)18EA*	:98 min.
EPRA(08/10/12)EA* + ETV*12S(U)23EA*	:115 min.

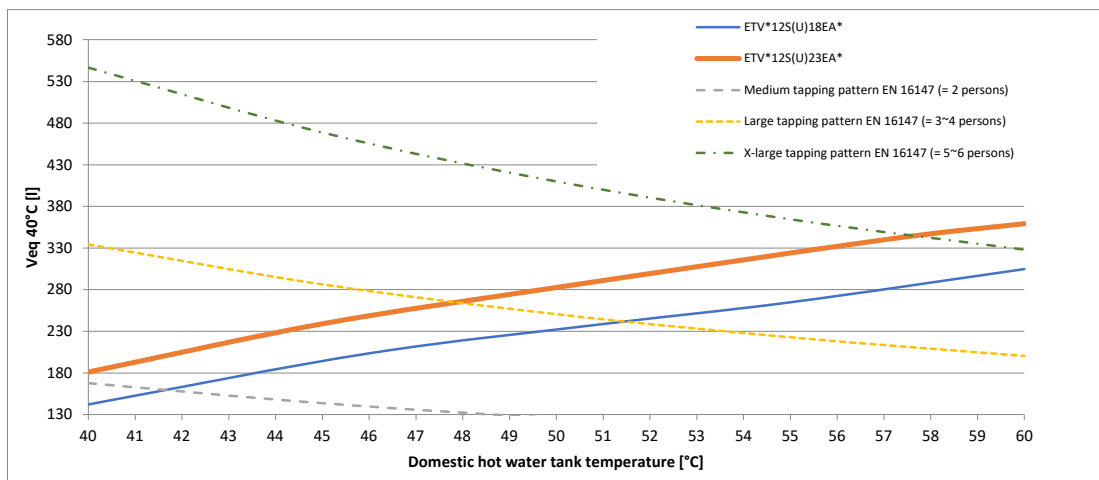
4D133480

EPRA08-12EV  
EPRA08-12EW

**Selection guide for the domestic hot water tank volume**

(1)

Ve<sub>q</sub> 40°C = the amount of water with a temperature of 40°C that can be tapped when the domestic hot water tank is heated to a certain temperature, and the temperature of the cold inlet water is 10°C.



If a higher daily Ve<sub>q</sub> 40°C is required, then additional heat-up cycles are required within 24 hours.  
See the operation manual for more information.

**Notes**

- (1) According to EN16147.

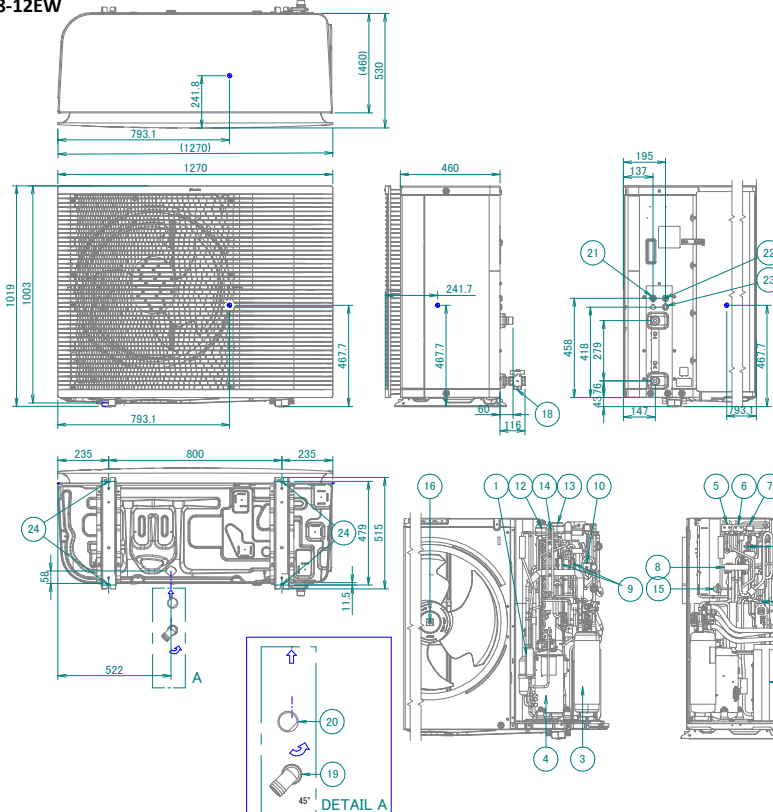
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# 6 Dimensional drawings

## 6 - 1 Dimensional Drawings

6

EPRA08-12EV  
EPRA08-12EW



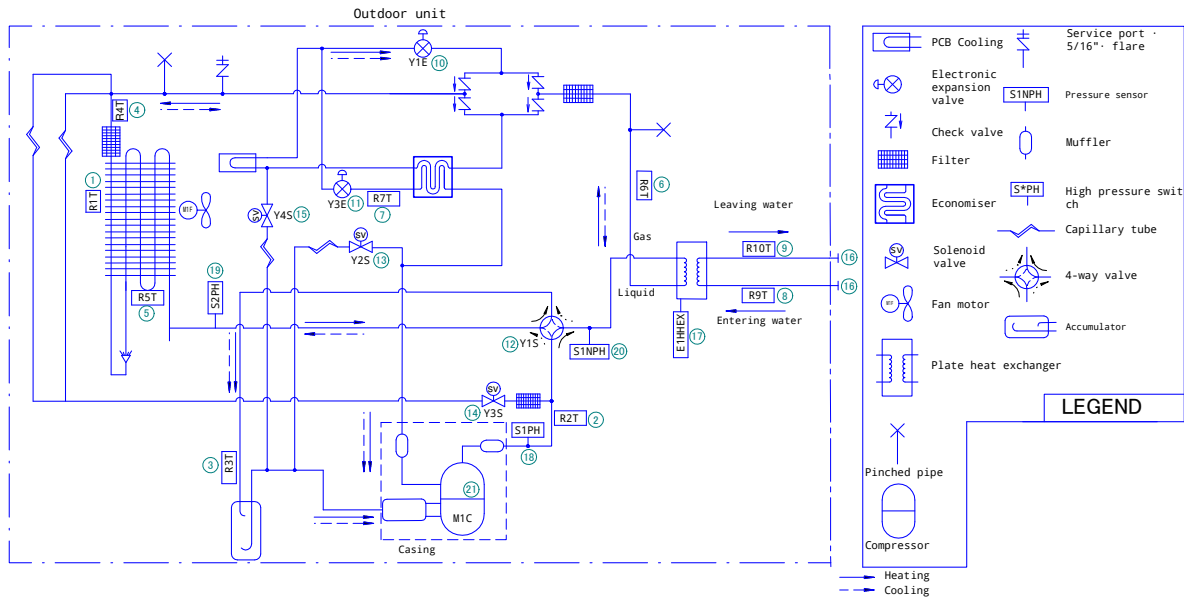
- 1 Muffler
- 2 High pressure switch ·41.7 bar·
- 3 Accumulator
- 4 Compressor
- 5 Solenoid valve (low pressure bypass)
- 6 Solenoid valve (hot gas pass)
- 7 Solenoid valve (liquid)
- 8 4-way valve
- 9 Capillary tube
- 10 4-way valve
- Coil
- 11 Plate heat exchanger
- 12 Electronic expansion valve (main)
- 13 Electronic expansion valve (injection)
- 14 High pressure switch ·46 bar·
- 15 Pressure sensor
- 16 Fan
- 17 Service port ·5/16"· flare
- 18 Shut-off valve / filter (included accessory)
- 19 Drain elbow (included accessory)
- 20 Sealing (included accessory)
- 21 Drain tube heater cable intake
- 22 Interconnection cable intake
- 23 Power supply cable intake
- 24 4 holes for anchor bolts
- M12
- 25 Outlet ·1"G·
- 26 Inlet ·1"G·

3D133408

# 7 Piping diagrams

## 7 - 1 Piping Diagrams

EPRA08-12EV  
EPRA08-12EW



- ① R1T: Ambient thermistor
- ② R2T: Thermistor (discharge)
- ③ R3T: Thermistor (suction)
- ④ R4T: Thermistor (heat exchanger, liquid pipe)
- ⑤ R5T: Thermistor (heat exchanger middle)
- ⑥ R6T: Thermistor (liquid)
- ⑦ R7T: Thermistor (injection)

- ⑧ R9T: Inlet water thermistor
- ⑨ R10T: Outlet water thermistor
- ⑩ Y1E: Electronic expansion valve (main)
- ⑪ Y3E: Electronic expansion valve (injection)
- ⑫ Y1S: Solenoid valve (4-way valve)
- ⑬ Y2S: Solenoid valve (low pressure bypass)
- ⑭ Y3S: Solenoid valve (hot gas pass)

- ⑮ Y4S: Solenoid valve (liquid injection)
- ⑯ Screw connection ·1"·
- ⑰ E1HHEX: Plate heat exchanger Heater
- ⑱ S1PH: High pressure switch ·4.6MPa·
- ⑲ S2PH: High pressure switch ·4.17MPa·
- ⑳ S1NPH: High pressure sensor
- ㉑ Q1E Overload

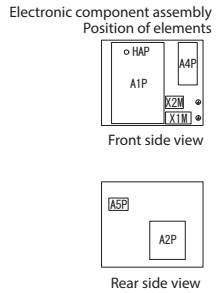
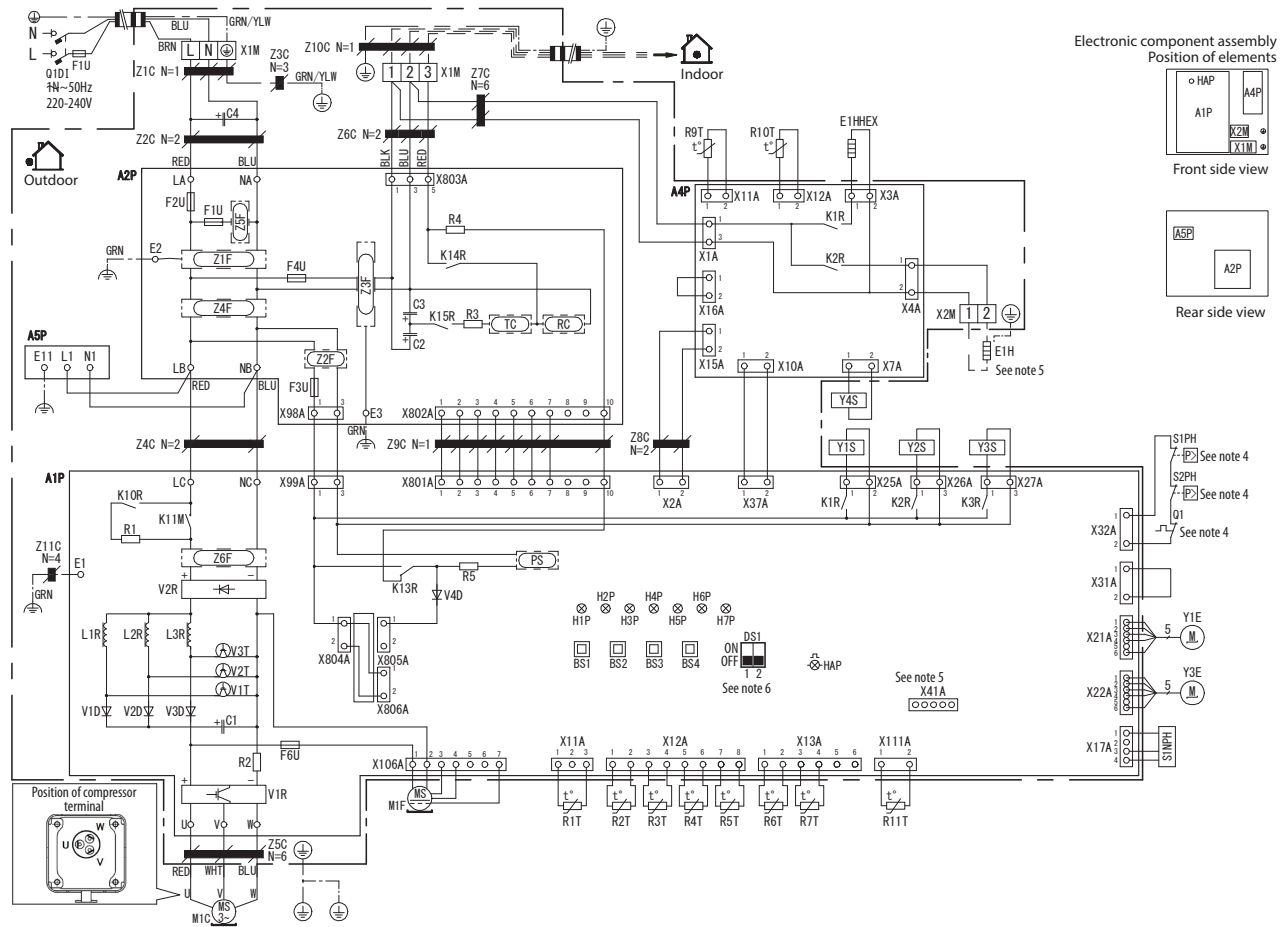
3D127127

# 8 Wiring diagrams

## 8 - 1 Wiring Diagrams - Single Phase

8

EPRA08-12EV



A1P	Printed circuit board (main)
A2P	Printed circuit board (noise filter)
A4P	Printed circuit board (ACS)
A5P	Printed circuit board (flash)
BS1~BS4 (A1P)	Push-button switch
C1~C4 (A1P, A2P)	Capacitor
DS1 (A1P)	DIP switch
E1H	Drain tube heater (field supply)
E1HHEX	PHE heater
F1U	Field fuse (supply supply)
F1U~F4U (A2P)	Fuse (T 6.3A / 250V)
F6U (A1P)	Fuse (T 5.0A / 250V)
H1P~H7P (A1P)	Light-emitting diode (service monitor is orange)
HAP (A1P)	Light-emitting diode (service monitor is green)
K1R (A1P)	Magnetic relay (Y1S)
K1R (A4P)	Magnetic relay (E1HHEX)
K2R (A1P)	Magnetic relay (Y2S)
K2R (A4P)	Magnetic relay (E1H)
K3R (A1P)	Magnetic relay (Y3S)
K10R (A1P)	Magnetic relay
K11M (A1P)	Magnetic contactor
K13R~K15R (A1P, A2P)	Magnetic relay
L1R~L3R (A1P)	Reactor
M1C	Motor (compressor)
M1F	Motor (fan)
PS (A1P)	Switching power supply
Q1DI	Earth leakage circuit breaker (30mA) (field supply)
Q1	Thermal overcurrent protector
R1~R5 (A1P, A2P)	Resistor
R1T	Thermistor (ambient)
R2T	Thermistor (discharge)
R3T	Thermistor (suction)
R4T	Thermistor (heat exchanger liquid pipe)
R5T	Thermistor (heat exchanger middle)
R6T	Thermistor (refrigerant liquid)
R7T	Thermistor (injection)
R9T	Thermistor (inlet water)

R10T	Thermistor (outlet water)
R11T	Thermistor (fin)
RC (A2P)	Signal receiver circuit
S1NPH	High pressure sensor
S1PH~S2PH	High pressure switch
TC (A2P)	Signal transmission circuit
V1D~V4D (A1P)	Diode
V1R (A1P)	IGBT power module
V2R (A1P)	Diode module
V1T~V3T (A1P)	Insulated Gate Bipolar Transistor (IGBT)
X1M~X2M	Terminal strip
Y1E	Electronic expansion valve (main - black)
Y3E	Electronic expansion valve (injection - blue)
Y1S	Solenoid valve (4-way valve)
Y2S	Solenoid valve (low pressure bypass)
Y3S	Solenoid valve (hot gas bypass)
Y4S	Solenoid valve (liquid injection)
Z1C~Z11C	Noise filter (ferrite core)
Z1F~Z6F (A1P, A2P)	Noise filter

**NOTES**

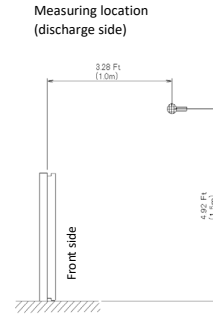
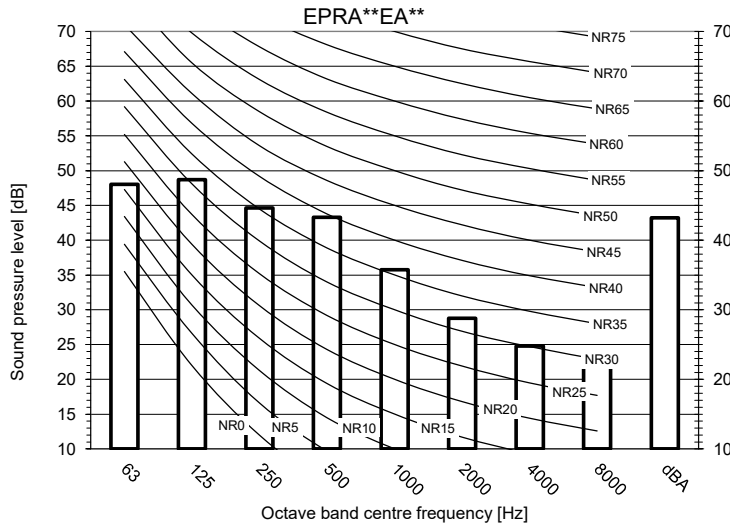
- L : Live
  - : Protective earth
  - : Neutral
  - : Noiseless earth
  - : Field wiring
  - : Option
  - : Terminal strip
  - : Terminal
  - : Connector
  - : Connection
- Colours: BLK: black, RED: red, BLU: bleu, WHT: white, GRN: green, YLW: yellow, PNK: pink, ORG: orange, GRY: grey, BRN: brown
- This wiring diagram applies only to the outdoor unit.
- When operating, do not short-circuit protection device Q1, S1PH and S2PH.
- Refer to the combination table and the option manual for how to connect the wiring to X41A and X2M.
- The factory setting of all switches is OFF, do not change the setting of the selector switch (DS1).

2D129645A

# 9 Sound data

## 9 - 1 Sound Pressure Spectrum

EPRA08-12EV  
EPRA08-12EW



Maximum sound day	Maximum sound night	Maximum sound day Sound Power Level [dBA]			Maximum sound night Sound Power Level [dBA]		
		EPRA08EA*	EPRA10EA*	EPRA12EA*	EPRA08EA*	EPRA10EA*	EPRA12EA*
Default	Low noise level -1-	62	62	62	58,5	58,5	58,5
Low noise level -2-	Low noise level -3-	53	53	53	49,8	49,8	49,8

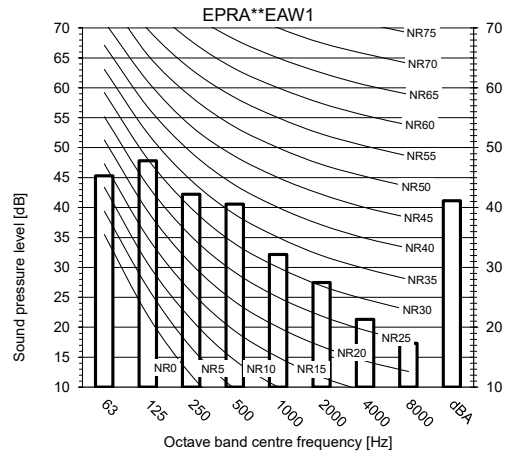
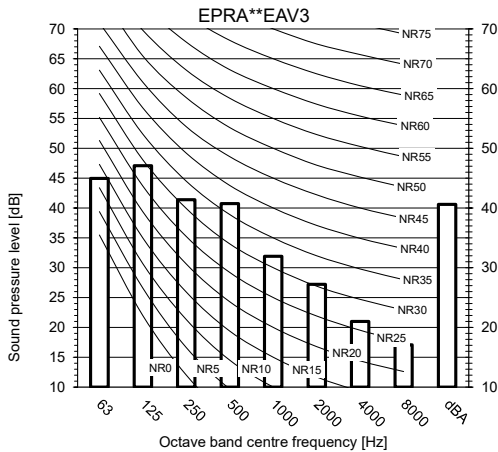
Full load (maximum fan rps and maximum compressor rps for the dedicated low noise mode)

**Notes**

- Data is valid at free field condition.
- Data is valid at nominal operation condition.
- Conditions: Ta DB/WB -7/-6°C - LWC -55°C
- dBA = A-weighted sound pressure level (A scale according to IEC).
- Reference acoustic pressure 0 dB = 20 µPa
- If the sound is measured under actual installation conditions, the measured value will be higher due to environmental noise and sound reflections.

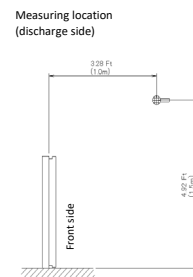
3D133527A

EPRA08-12EV  
EPRA08-12EW



Maximum sound day	Maximum sound night	Maximum sound day Sound Power Level [dBA]			Maximum sound night Sound Power Level [dBA]		
		EPRA08EA*	EPRA10EA*	EPRA12EA*	EPRA08EA*	EPRA10EA*	EPRA12EA*
Default	Low noise level -1-	62	62	62	58,5	58,5	58,5
Low noise level -2-	Low noise level -3-	53	53	53	49,8	49,8	49,8

Full load (maximum fan rps and maximum compressor rps for the dedicated low noise mode)



**Notes**

- Data is valid at free field condition.
- Data is valid at nominal operation condition.
- Conditions: Ta DB/WB -7/-6°C - LWC -35°C
- dBA = A-weighted sound pressure level (A scale according to IEC).
- Reference acoustic pressure 0 dB = 20 µPa
- If the sound is measured under actual installation conditions, the measured value will be higher due to environmental noise and sound reflections.

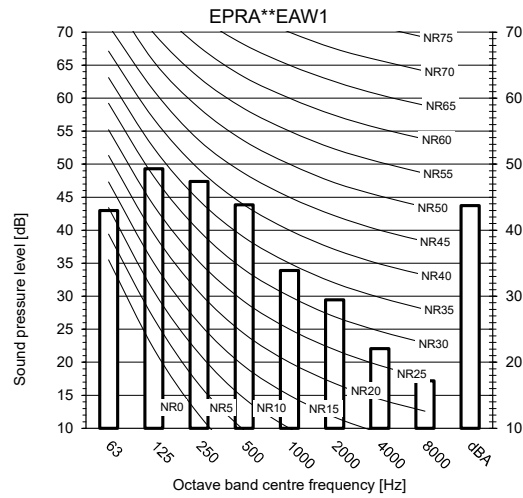
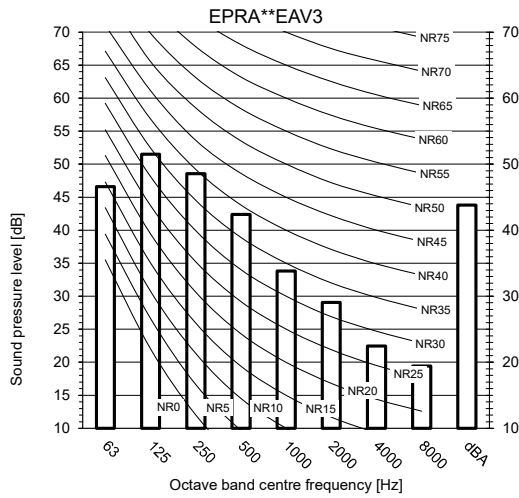
3D133528A

# 9 Sound data

## 9 - 1 Sound Pressure Spectrum

9

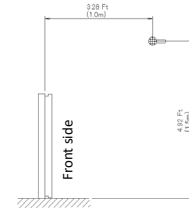
EPRA08-12EV  
EPRA08-12EW



**Notes**

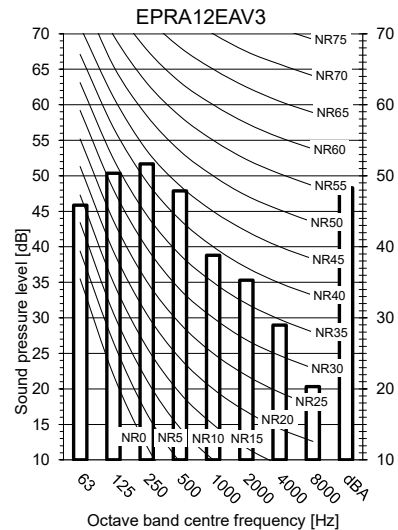
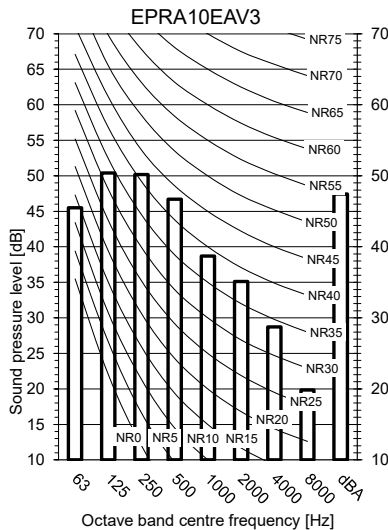
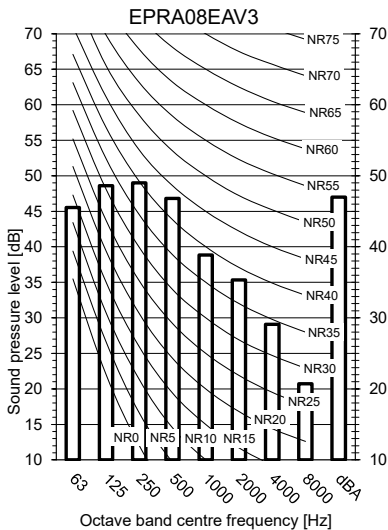
- Data is valid at free field condition.
- Data is valid at nominal operation condition.
- dBA = A-weighted sound pressure level (A scale according to IEC).
- Reference acoustic pressure 0 dB = 20 µPa
- If the sound is measured under actual installation conditions, the measured value will be higher due to environmental noise and sound reflections.

Measuring location (discharge side)



3D133529

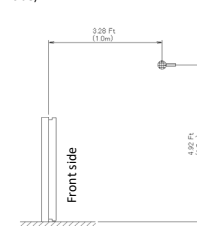
EPRA08-12EV



**Notes**

- Data is valid at free field condition.
- Data is valid at nominal operation condition.
- dBA = A-weighted sound pressure level (A scale according to IEC).
- Reference acoustic pressure 0 dB = 20 µPa
- If the sound is measured under actual installation conditions, the measured value will be higher due to environmental noise and sound reflections.

Measuring location (discharge side)



3D133530

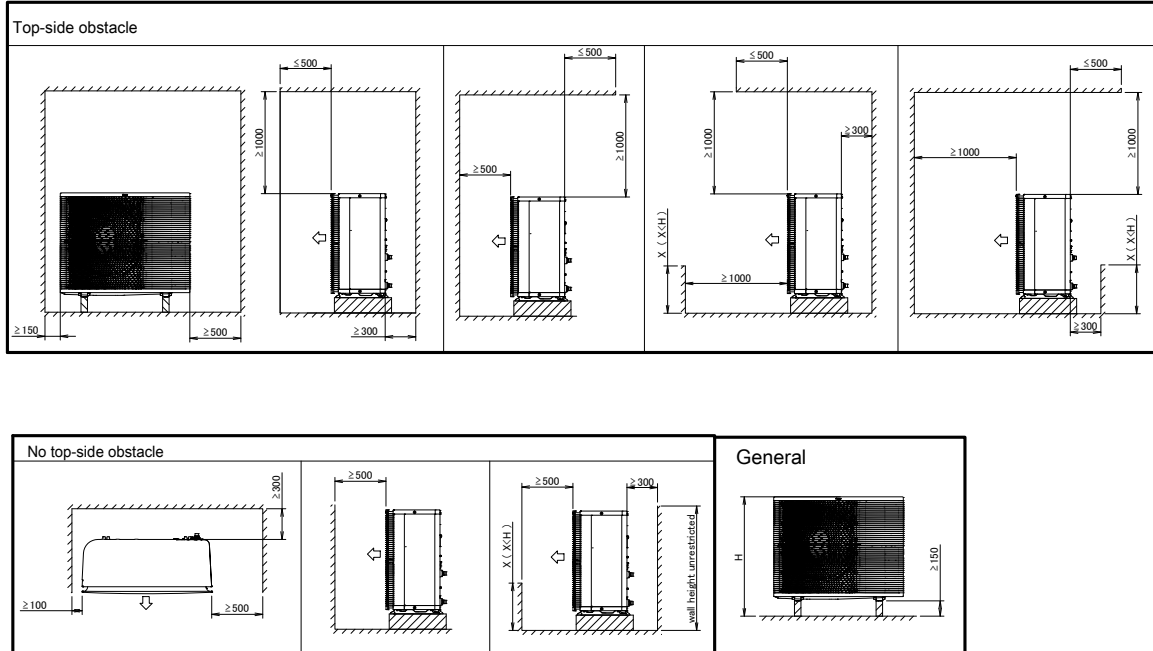


# 10 Installation

## 10 - 1 Installation Method

EPRA08-12EV  
EPRA08-12EW

Minimum space for air passage

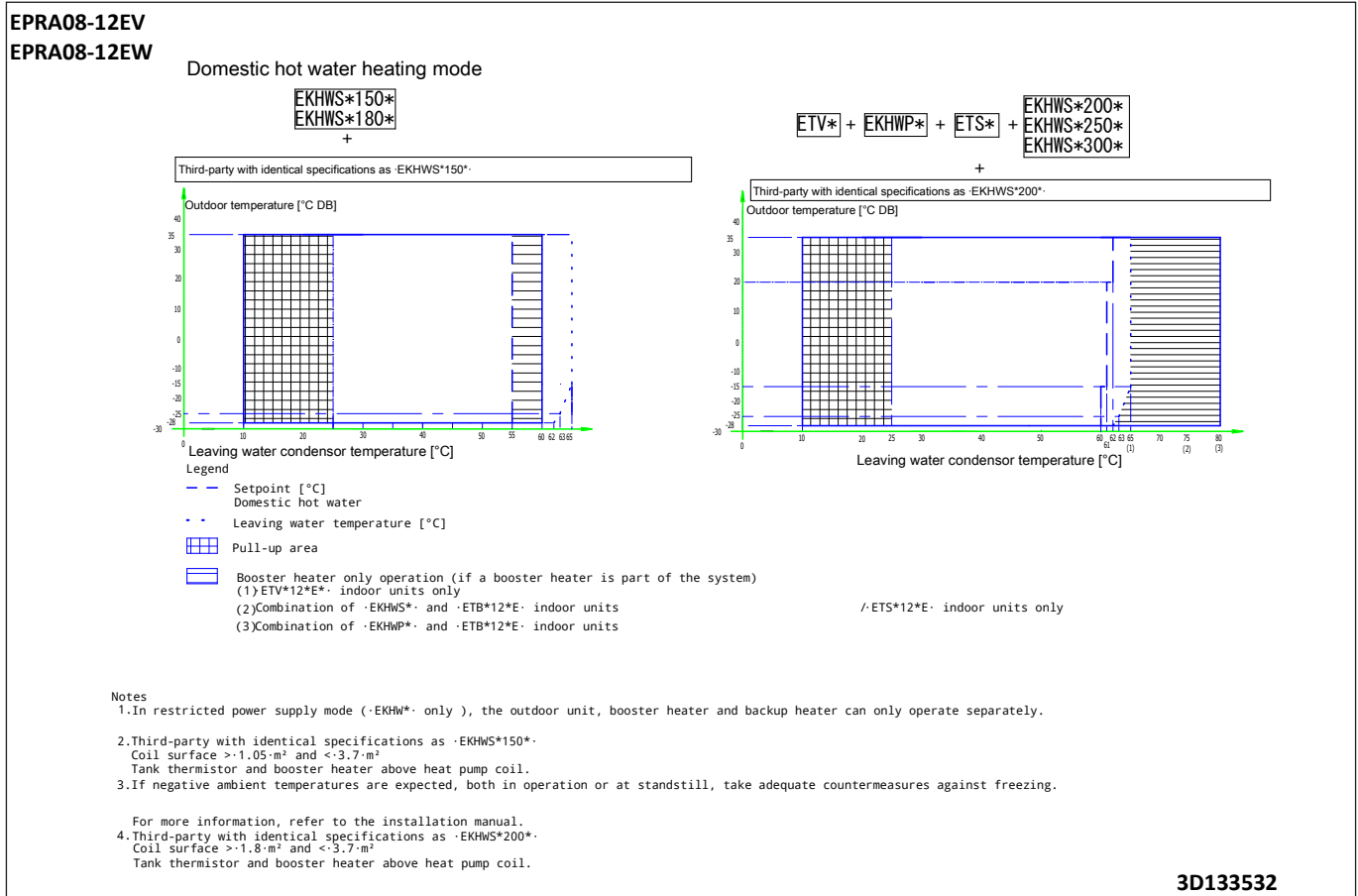
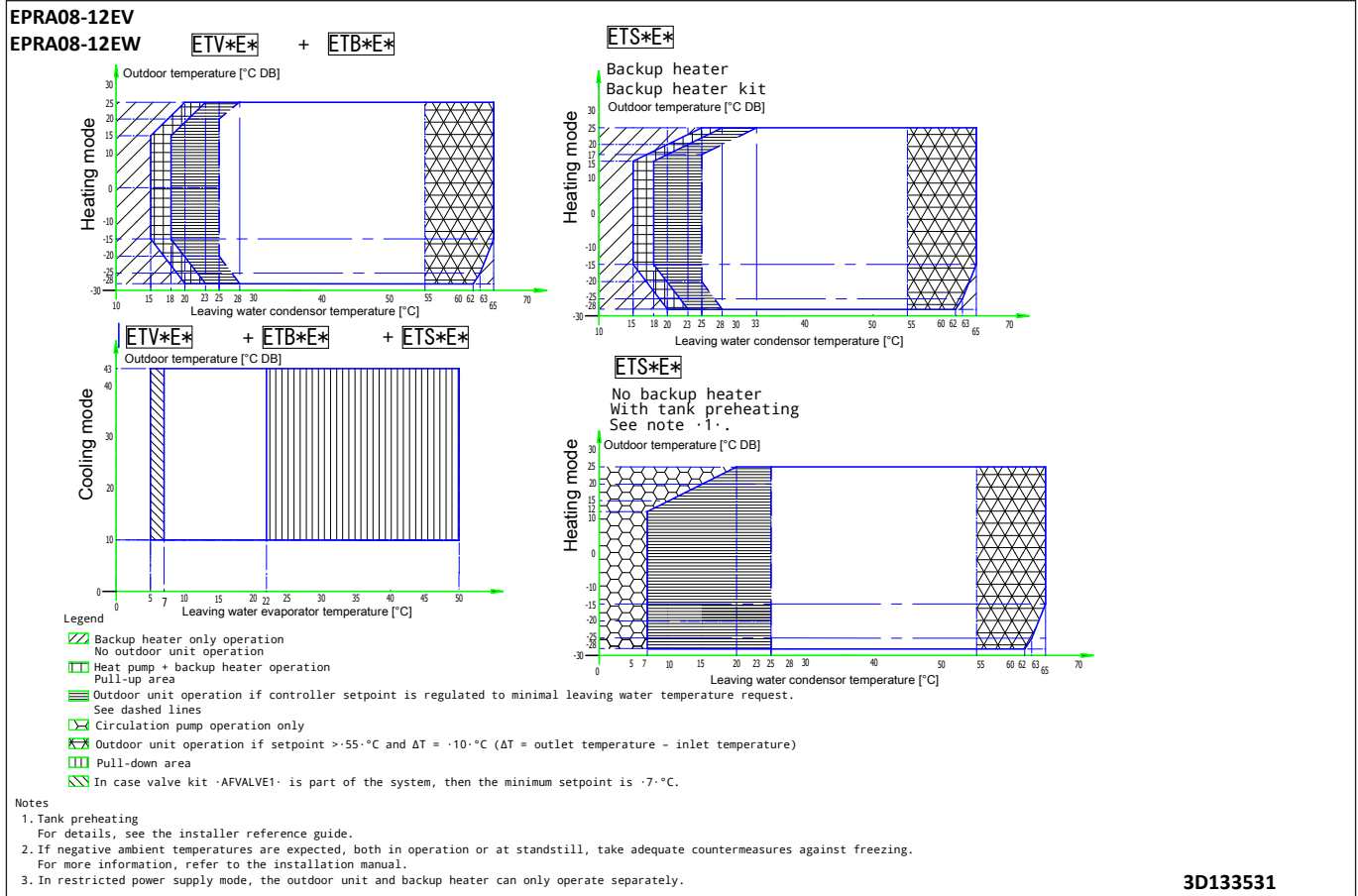


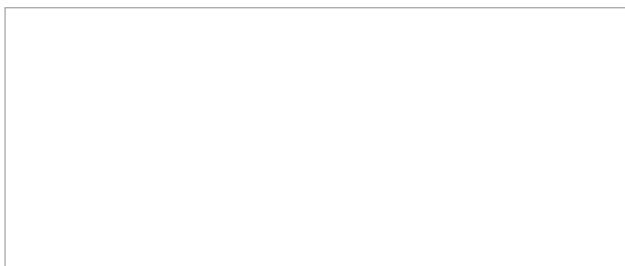
3D124412

# 11 Operation range

## 11 - 1 Operation Range

11





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