

# Air Cooled Heat Pump

## EuroScroll 240-660 Air HP



217-581 kW



Air cooled



Scroll



256-679 kW



Plate



410A

### Technical feature

- 10 sizes
- Cooling capacity from 216,5 to 580,6 kW
- Heating capacity from 255,9 to 679,1 kW
- Fans versions:
  - STD (Standard)
  - HT (High Temperature)
  - HPF (High Pressure Fans)
- Acoustic versions:
  - - (Basic Low Noise)
  - L (Low Noise)
  - S (Super Low Noise)
- Two refrigerant circuits
- 3/4/5/6 Scroll compressors
- Electronic expansion valve

### Accessories and options

- Automatic circuit breaker
- BMS interface
- Coils treatments
- Compressors acoustic box (standard)
- Compressors jackets (standard as Super Low Noise)
- Desuperheater
- Fan speed control (standard as Super Low Noise version)
- Hydrokit with 1 or 2 pumps with or without buffer tank
- Mechanical gauges
- Overload protection for compressors
- Power factor corrector capacitors
- Sequence phases control (standard)
- Softstarter
- Unit protection grilles
- Water differential pressure switch (standard)
- Water filter
- Water flow switch



Operating limit (to be confirmed following selection software issue)

EuroScroll 240-360 Air HP				240		270		290		320		360	
				Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
Chilled liquid	Liquid outlet temperature	Water	°C	+6 to +18									
		Water with glycol <sup>1</sup>	°C	-10 to +6									
		ΔT	K	3 to 7									
	Maximum operating pressure	bar	6										
Ambient air	Air entering temperature Cooling	-	°C	+5 to +42	+5 to +42	+5 to +42	+5 to +42	+5 to +42	+5 to +42	+5 to +42	+5 to +42		
		L	°C	+5 to +40	+5 to +40	+5 to +40	+5 to +40	+5 to +40	+5 to +40	+5 to +40	+5 to +40		
		S	°C	-14 to +40	-14 to +40	-14 to +40	-14 to +40	-14 to +40	-14 to +40	-14 to +40	-14 to +40		
		HT-HPF	°C	-18 to +44	-18 to +44	-18 to +44	-18 to +44	-18 to +44	-18 to +44	-18 to +44	-18 to +44		
	External static pressure	Standard fans	Pa	0									
		High pressure fans	Pa	< 120									
Recommended system chilled water volume <sup>1</sup>			l	960	1.080	1.160	1.280	1.280	1.280	1.080	1.080		
Minimum capacity step			%	31	33	30	27	27	27	23	23		
Power supply voltage <sup>2</sup>			V	400 V / 3 Ø / 50 Hz (nominal)									

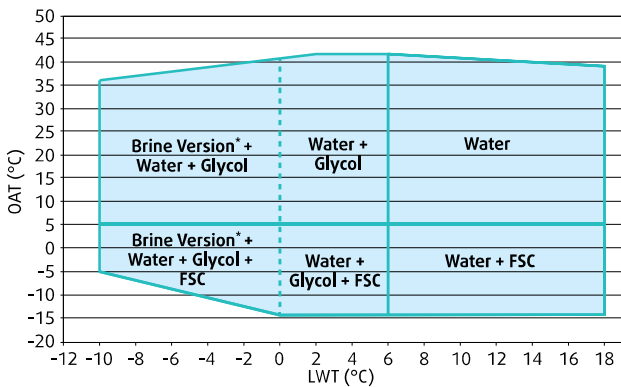
EuroScroll 420-660 Air HP				420		470		540		590		660	
				Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
Chilled liquid	Liquid outlet temperature	Water	°C	+6 to +18									
		Water with glycol <sup>1</sup>	°C	-10 to +6									
		ΔT	K	3 to 7									
	Maximum operating pressure	bar	6										
Ambient air	Air entering temperature Cooling	-	°C	+5 to +42	+5 to +42	+5 to +42	+5 to +42	+5 to +42	+5 to +42	+5 to +42	+5 to +42		
		L	°C	+5 to +40	+5 to +40	+5 to +40	+5 to +40	+5 to +40	+5 to +40	+5 to +40	+5 to +40		
		S	°C	-14 to +40	-14 to +40	-14 to +40	-14 to +40	-14 to +40	-14 to +40	-14 to +40	-14 to +40		
		HT-HPF	°C	-18 to +44	-18 to +44	-18 to +44	-18 to +44	-18 to +44	-18 to +44	-18 to +44	-18 to +44		
	External static pressure	Standard fans	Pa	0									
		High pressure fans	Pa	< 120									
Recommended system chilled water volume <sup>1</sup>			l	1.260	1.128	1.296	1.180	1.180	1.180	1.320	1.320		
Minimum capacity step			%	25	24	20	14	14	14	17	17		
Power supply voltage <sup>2</sup>			V	400 V / 3 Ø / 50 Hz (nominal)									

<sup>1</sup> For Liquid outlet temperature <0 °C provide Brine Version (available for CO<sub>2</sub> on request for HP).

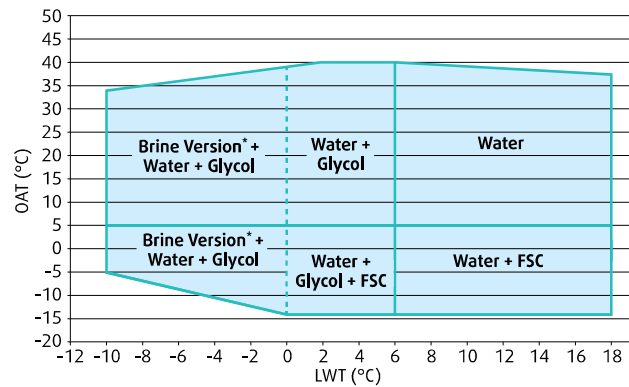
<sup>2</sup> Table shows minimum water / brine volume of system (about 3 lt/kW).

<sup>2</sup> Voltage 400V +/- 10%.

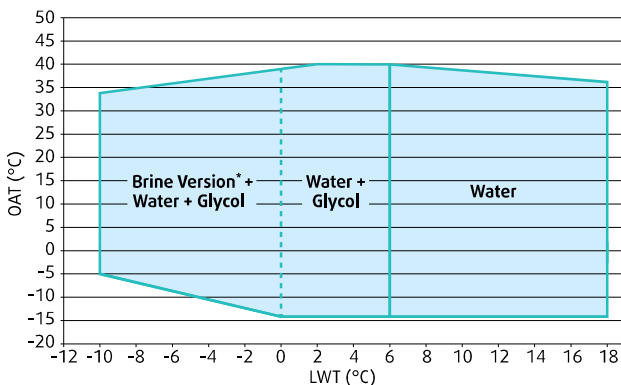
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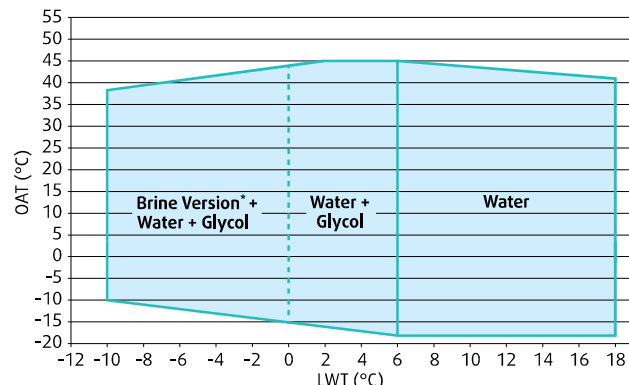
L Version



S Version



HT-HPF Version



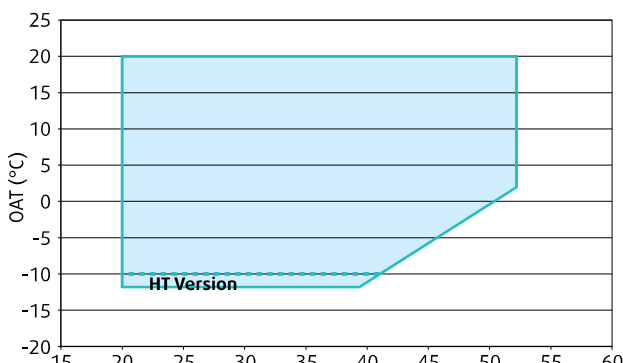
Operating limit - Heating (to be confirmed following selection software issue)

EuroScroll 240-360 Air HP				240		270		290		320		360	
				Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
Warmed liquid	Liquid outlet temperature	Water	°C	+20 to +52									
		Temperature spread	K	3 to 7									
	Maximum operating pressure	bar	6										
Ambient air	Air entering temperature heating	- / L / S	°C	-10 to +20	-10 to +20	-10 to +20	-10 to +20	-10 to +20	-10 to +20	-10 to +20	-10 to +20		
		HT	°C	-12 to +20	-12 to +20	-12 to +20	-12 to +20	-12 to +20	-12 to +20	-12 to +20			
	External static pressure	Standard fans	Pa	0									
		High pressure fans	Pa	< 120									
Recommended system chilled water volume <sup>1</sup>			l	720	810	870	960	1.080					
Minimum capacity step			%	31	33	30	27	23					
Power supply voltage <sup>2</sup>			V	400 V / 3 Ø / 50 Hz (nominal)									

EuroScroll 420-660 Air HP				420		470		540		590		660	
				Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
Warmed liquid	Liquid outlet temperature	Water	°C	+20 to +52									
		Temperature spread	K	3 to 7									
	Maximum operating pressure	bar	6										
Ambient air	Air entering temperature heating	- / L / S	°C	10 to +20	-10 to +20	-10 to +20	-10 to +20	-10 to +20	-10 to +20	-10 to +20			
		HT	°C	-12 to +20	-12 to +20	-12 to +20	-12 to +20	-12 to +20	-12 to +20				
	External static pressure	Standard fans	Pa	0									
		High pressure fans	Pa	< 120									
Recommended system chilled water volume <sup>1</sup>			l	1.260	1.410	1.620	1.770	1.980					
Minimum capacity step			%	25	24	20	14	17					
Power supply voltage <sup>2</sup>			V	400 V / 3 Ø / 50 Hz (nominal)									

<sup>1</sup> Table shows minimum water / brine volume of system (about 3 lt/kW).  
<sup>2</sup> Voltage 400V +/- 10%.

Heating mode (Cooling mode see page 43)



## Technical feature

EuroScroll 240-660 Air HP (STD-EC-HPF)		240	270	290	320	360	420	470	540	590	660
Nominal cooling capacity <sup>1</sup>	kW	216,5	251,6	263,8	287,1	330,0	380,7	435,1	481,9	530,7	580,6
Input power <sup>1</sup>	kW	85,5	100,5	105,2	113,9	131,3	151,7	169,1	189,9	207,3	228,3
EER <sup>1</sup>		2,53	2,50	2,51	2,52	2,51	2,51	2,57	2,54	2,56	2,54
Energy efficiency class		D	D	D	D	D	D	D	D	D	D
ESEER		3,55	3,43	3,52	3,66	3,66	3,79	3,80	3,66	3,74	3,82
EER <sup>2</sup>		2,56	2,53	2,54	2,55	2,54	2,54	2,60	2,56	2,59	2,57
ESEER <sup>2</sup>		3,63	3,50	3,60	3,74	3,74	3,88	3,89	3,74	3,81	3,90
EER <sup>3</sup>		2,41	2,40	2,38	2,41	2,40	2,40	2,46	2,42	2,44	2,43
ESEER <sup>3</sup>		3,21	3,16	3,19	3,32	3,31	3,43	3,45	3,35	3,41	3,58
Nominal heating capacity <sup>2</sup>	kW	255,9	289,1	313,3	333,0	382,4	444,0	491,5	556,4	605,0	679,1
Input power <sup>2</sup>	kW	92,7	106,8	117	117,4	136,2	159,7	170,5	191,2	209,2	231,1
COP <sup>2</sup>		2,76	2,71	2,68	2,84	2,81	2,78	2,88	2,91	2,89	2,94
Energy efficiency class		D	D	D	C	C	D	C	C	C	C
COP <sup>3</sup>		2,79	2,73	2,71	2,87	2,84	2,81	2,91	2,94	2,92	2,97
COP <sup>4</sup>		2,63	2,60	2,56	2,71	2,68	2,66	2,75	2,78	2,76	2,81
Total capacity steps	%	31-62-100	33-67-100	30-60-100	27-64-100	23-46-69-100	25-50-75-100	24-47-65-82-100	20-40-60-80-100	14-29-43-62-81-100	17-33-50-67-83-100
<b>Refrigerant</b>											
Type		HFC 410A									
Number of refrigerant circuits		2	2	2	2	2	2	2	2	2	2
<b>Compressor</b>											
Qty		3	3	3	3	4	4	5	5	6	6
Type		Scroll									
<b>Evaporator</b>											
Qty		1	1	1	2	2	2	1	1	1	1
Type		Plate									
Water flow cooling	m <sup>3</sup> /h	37,4	43,5	45,6	49,5	57,0	65,8	75,1	83,2	91,6	100,3
Water pressure drop cooling	kPa	42	55	61	29	38	50	38	46	44	53
Water flow heating <sup>2</sup>	m <sup>3</sup> /h	43,8	49,4	53,5	57,1	65,5	76,0	84,2	95,3	103,6	116,2
Water pressure drop heating <sup>2</sup>	kPa	56	71	83	38	49	65	48	60	56	70
Water volume	l	14	14	14	24	24	24	32	32	39	39
Antifreeze heater	W	130	130	130	130	130	130	130,0	130	130	130
<b>Air cooled condenser</b>											
Qty		5	5	6	6	7	8	9	10	11	12
Total coil face area per coil	m <sup>2</sup>	2,4	2,4	2,4	2,4	2,4	2,4	2,4	2,4	2,4	2,4
<b>Fan</b>											
Qty		5	5	6	6	7	8	9	10	11	12
Nominal speed	rpm	900	900	900	900	900	900	900	900	900	900
Total airflow	m <sup>3</sup> /h	107.500	107.500	129.000	129.000	150.500	172.000	193.500	215.000	236.500	258.000
Total input power	kW	8,5	8,5	10,2	10,2	11,9	13,6	15,3	17,0	18,7	20,4
Total input power <sup>5</sup>	kW	7,5	7,5	9,0	9,0	10,5	12,0	13,5	15,0	16,5	18,0
Total input power <sup>6</sup>	kW	13,0	13,0	15,6	15,6	18,2	20,8	23,4	26,0	28,6	31,2
External static pressure	Pa	0 or 120 Pa <sup>6</sup>									
<b>Water Connections (Evaporator)</b>											
Type		Male GAS Threaded					Victaulic				
Inlet diameter	inch	3"	3"	3"	3"	4"	4"	4"	4"	5"	5"
Outlet diameter	inch	3"	3"	3"	3"	4"	4"	4"	4"	5"	5"
<b>Water Connections (Desuperheater)</b>											
Type		Male GAS Threaded									
Inlet diameter/Outlet diameter	inch	1"/1"									
<b>Weight</b>											
Shipping	kg	1.934	1.935	2.041	2.098	2.509	2.634	3.151	3.278	3.718	3.829
Operating	kg	1.948	1.949	2.055	2.122	2.534	2.659	3.189	3.316	3.762	3.873
<b>Additional weight</b>											
HT/HPF versions	kg	50	50	60	60	70	80	90	100	110	120
With desuperheater	kg	49	49	49	49	62	62	73	73	83	83
<b>Dimensions</b>											
Length	mm	3.500	3.500	3.500	3.500	4.550	4.550	5.600	5.600	6.650	6.650
Width	mm	2.150	2.150	2.150	2.150	2.150	2.150	2.150	2.150	2.150	2.150
Height	mm	2.600	2.600	2.600	2.600	2.600	2.600	2.600	2.600	2.600	2.600
<b>Acoustical data</b>											
Sound power level <sup>3</sup>	dB(A)	93	93	94	94	94	95	95	96	96	97
Sound pressure level 10 m <sup>4</sup>	dB(A)	61	61	62	62	62	63	63	64	63	64

<sup>1</sup> Data refers to 7°C leaving chilled water temperature and 35°C condenser air temperature, according EN14511 standard.<sup>2</sup> Data refers to 45°C leaving warm water temperature and 7°C ambient coil air temperature with 87% R.H., according EN14511 standard.<sup>3</sup> Sound levels are at fully loaded conditions. Sound power level values refers to ISO 3744 standard.<sup>4</sup> Sound pressure levels refer to ISO 3744 standard, parallelepiped shape.<sup>5</sup> Unità alta temperatura (HT) con ventilatori inverter.<sup>6</sup> HPF Units with high static pressure fans.

Technical feature

EuroScroll 240-660 Air HP L		240	270	290	320	360	420	470	540	590	660
Nominal cooling capacity <sup>1</sup>	kW	204,9	236,3	249,9	269,8	311,1	358,4	409,7	453,2	499,5	545,9
Input power <sup>1</sup>	kW	88,6	105,2	109,0	118,7	137,0	158,0	176,3	197,8	216,1	237,8
EER <sup>1</sup>		2,31	2,24	2,29	2,27	2,27	2,27	2,32	2,29	2,31	2,30
Energy efficiency class		E	F	F	F	F	F	E	F	E	F
ESEER		3,50	3,29	3,51	3,56	3,66	3,80	3,77	3,60	3,82	3,79
Nominal heating capacity <sup>2</sup>	kW	253,0	285,5	309,7	328,9	377,7	438,6	485,4	539,8	597,5	670,7
Input power <sup>2</sup>	kW	90,1	104,1	113,6	114,1	132,3	155,1	165,7	188	202,7	224
COP <sup>2</sup>		2,81	2,74	2,72	2,88	2,86	2,83	2,93	2,87	2,95	2,99
Energy efficiency class		C	D	D	C	C	C	C	C	C	C
Total capacity steps	%	31-62-100	33-67-100	30-60-100	27-64-100	23-46-69-100	25-50-75-100	24-47-65-82-100	20-40-60-80-100	14-29-43-62-81-100	17-33-50-67-83-100
<b>Refrigerant</b>											
Type		HFC 410A									
Number of refrigerant circuits		2	2	2	2	2	2	2	2	2	2
<b>Compressor</b>											
Qty		3	3	3	3	4	4	5	5	6	6
Type		Scroll									
<b>Evaporator</b>											
Qty		1	1	1	2	2	2	1	1	1	1
Type		Plate									
Water flow cooling	m <sup>3</sup> /h	35,4	40,8	43,2	46,5	53,7	61,9	70,7	78,2	86,2	94,2
Water pressure drop cooling	kPa	37	49	55	26	34	44	34	41	39	47
Water flow heating	m <sup>3</sup> /h	43,3	48,8	52,9	56,4	64,7	75,1	83,2	92,4	102,4	114,8
Water pressure drop heating	kPa	55	69	81	37	48	64	46	57	55	68
Water volume	l	14	14	14	24	24	24	32	32	39	39
Antifreeze heater	W	130	130	130	130	130	130	130	130	130	130
<b>Air cooled condenser</b>											
Qty		5	5	6	6	7	8	9	10	11	12
Total coil face area per coil	m <sup>2</sup>	2,4	2,4	2,4	2,4	2,4	2,4	2,4	2,4	2,4	2,4
<b>Fan</b>											
Qty		5	5	6	6	7	8	9	10	11	12
Nominal speed	rpm	700	700	700	700	700	700	700	700	700	700
Total airflow	m <sup>3</sup> /h	85.000	85.000	102.000	102.000	119.000	136.000	153.000	170.000	187.000	204.000
Total input power	kW	6,0	6,0	7,2	7,2	8,4	9,6	10,8	12,0	13,2	14,4
<b>Water Connections (Evaporator)</b>											
Type		Male GAS Threaded				Victaulic					
Inlet diameter	inch	3"	3"	3"	3"	4"	4"	4"	4"	5"	5"
Outlet diameter	inch	3"	3"	3"	3"	4"	4"	4"	4"	5"	5"
<b>Water Connections (Desuperheater)</b>											
Type		Male GAS Threaded									
Inlet diameter/Outlet diameter	inch	1"/1"									
<b>Weight</b>											
Shipping	kg	1.934	1.935	2.041	2.098	2.509	2.634	3.151	3.278	3.718	3.829
Operating	kg	1.948	1.949	2.055	2.122	2.534	2.659	3.189	3.316	3.762	3.873
<b>Additional weight</b>											
With desuperheater	kg	49	49	49	49	62	62	73	73	83	83
<b>Dimensions</b>											
Length	mm	3.500	3.500	3.500	3.500	4.550	4.550	5.600	5.600	6.650	6.650
Width	mm	2.150	2.150	2.150	2.150	2.150	2.150	2.150	2.150	2.150	2.150
Height	mm	2.600	2.600	2.600	2.600	2.600	2.600	2.600	2.600	2.600	2.600
<b>Acoustical data</b>											
Sound power level <sup>3</sup>	dB(A)	88	88	89	89	90	91	91	91	92	92
Sound pressure level 10 m <sup>4</sup>	dB(A)	56	56	57	57	58	59	59	59	59	59

<sup>1</sup> Data refers to 7°C leaving chilled water temperature and 35°C condenser air temperature, according EN14511 standard.

<sup>2</sup> Data refers to 45°C leaving warm water temperature and 7°C ambient coil air temperature with 87% R.H., according EN14511 standard.

<sup>3</sup> Sound levels are at fully loaded conditions. Sound power level values refers to ISO 3744 standard.

<sup>4</sup> Sound pressure levels refer to ISO 3744 standard, parallelepiped shape.

## Technical feature

EuroScroll 240-660 Air HP S		240	270	290	320	360	420	470	540	590	660
Nominal cooling capacity <sup>1</sup>	kW	186,8	212,3	228,4	243,4	281,5	324,0	370,5	409,0	451,5	492,5
Input power <sup>1</sup>	kW	96,3	115,5	117,9	129,4	149,7	172,0	192,4	215,4	235,6	258,9
EER <sup>1</sup>		1,94	1,84	1,94	1,88	1,88	1,88	1,93	1,90	1,92	1,90
Energy efficiency class		G	G	G	G	G	G	G	G	G	G
ESEER		3,28	3,12	3,30	3,38	3,62	3,60	3,61	3,70	3,76	3,64
Nominal heating capacity <sup>2</sup>	kW	249,0	280,7	304,8	323,3	371,4	431,3	477,3	540,4	587,5	659,5
Input power <sup>2</sup>	kW	87,5	101	110	111,1	128,8	150,6	161,4	179,9	197,4	219,8
COP <sup>2</sup>		2,85	2,78	2,77	2,91	2,88	2,86	2,96	3,00	2,98	3,00
Classe energetica		C	D	D	C	C	C	C	B	C	B
Total capacity steps	%	31-62-100	33-67-100	30-60-100	27-64-100	23-46-69-100	25-50-75-100	24-47-65-82-100	20-40-60-80-100	14-29-43-62-81-100	17-33-50-67-83-100
<b>Refrigerant</b>											
Type		HFC 410A									
Number of refrigerant circuits		2	2	2	2	2	2	2	2	2	2
<b>Compressor</b>											
Qty		3	3	3	3	4	4	5	5	6	6
Type		Scroll									
<b>Evaporator</b>											
Qty		1	1	1	2	2	2	1	1	1	1
Type		Plate									
Water flow cooling	m <sup>3</sup> /h	32,2	36,7	39,5	42,0	48,6	55,9	63,9	70,6	77,9	85,0
Water pressure drop cooling	kPa	31	40	46	21	28	36	28	34	32	38
Water flow heating	m <sup>3</sup> /h	42,6	48,0	52,1	55,4	63,6	73,8	81,8	92,6	100,6	112,9
Water pressure drop heating	kPa	53	67	79	36	47	62	45	57	53	66
Water volume	l	14	14	14	24	24	24	32	32	39	39
Antifreeze heater	W	130	130	130	130	130	130	130	130	130	130
<b>Air cooled condenser</b>											
Qty		5	5	6	6	7	8	9	10	11	12
Total coil face area per coil	m <sup>2</sup>	2,4	2,4	2,4	2,4	2,4	2,4	2,4	2,4	2,4	2,4
<b>Fan</b>											
Qty		5	5	6	6	7	8	9	10	11	12
Nominal speed	rpm	550	550	550	550	550	550	550	550	550	550
Total airflow	m <sup>3</sup> /h	67.500	67.500	81.000	81.000	94.500	108.000	121.500	135.000	148.500	162.000
Total input power	kW	4,5	4,5	5,4	5,4	6,3	7,2	8,1	9,0	9,9	10,8
<b>Water Connections (Evaporator)</b>											
Type		Male GAS Threaded				Victaulic					
Inlet diameter	inch	3"	3"	3"	3"	4"	4"	4"	4"	5"	5"
Outlet diameter	inch	3"	3"	3"	3"	4"	4"	4"	4"	5"	5"
<b>Water Connections (Desuperheater)</b>											
Type		Male GAS Threaded									
Inlet diameter/Outlet diameter	inch	1"/1"									
<b>Weight</b>											
Shipping	kg	1.934	1.935	2.041	2.098	2.509	2.634	3.151	3.278	3.718	3.829
Operating	kg	1.948	1.949	2.055	2.122	2.534	2.659	3.189	3.316	3.762	3.873
<b>Additional weight</b>											
With desuperheater	kg	49	49	49	49	62	62	73	73	83	83
<b>Dimensions</b>											
Length	mm	3.500	3.500	3.500	3.500	4.550	4.550	5.600	5.600	6.650	6.650
Width	mm	2.150	2.150	2.150	2.150	2.150	2.150	2.150	2.150	2.150	2.150
Height	mm	2.600	2.600	2.600	2.600	2.600	2.600	2.600	2.600	2.600	2.600
<b>Acoustical data</b>											
Sound power level <sup>3</sup>	dB(A)	85	86	87	87	88	88	89	89	90	90
Sound pressure level 10 m <sup>4</sup>	dB(A)	53	54	55	55	56	56	57	57	57	57

<sup>1</sup> Data refers to 7°C leaving chilled water temperature and 35°C condenser air temperature, according EN14511 standard.

<sup>2</sup> Data refers to 45°C leaving warm water temperature and 7°C ambient coil air temperature with 87% R.H., according EN14511 standard.

<sup>3</sup> Sound levels are at fully loaded conditions. Sound power level values refers to ISO 3744 standard.

<sup>4</sup> Sound pressure levels refer to ISO 3744 standard, parallelepiped shape.