

Condensers

# WA



7 kW

198 kW



EUROVENT  
CERTIFIED PERFORMANCE



CERTIFY ALL  
AIR COOLED CONDENSERS

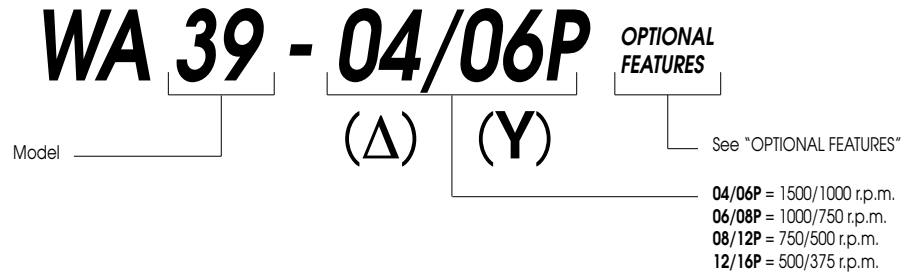
**FRIGA-BOHN**



[www.friga-bohn.com](http://www.friga-bohn.com)

62 models from 7 to 198 kW:  
 34 basic models and 28 additional models coupling two identical units, (2 or 3 fans).  
 Either horizontal or vertical mounting as standard.

## NOMENCLATURE



## DESCRIPTION

### • APPROVAL

The **WA** condenser line is EUROVENT approved. The ratings indicated are certified compliant to European standard EN 327.

### • HIGH PERFORMANCE HEAT EXCHANGER

Compact, **WA** high performance heat exchanger is manufactured with copper tubes 3/8" (9.53 mm) diameter having a grooved internal structure, fitted in a staggered arrangement (25.4 x 19 mm) in the air flow and corrugated aluminium fins, (2.12 mm fin spacing) which greatly improve heat transfer coefficient.

### • CASING

The **WA** range casings are made of galvanized steel sheet. The use of ultra violet resistant polyester paint and grey enamelled -RAL7035- galvanized steel, provide a high resistance to corrosion.

Components (fans, heat exchange coil) are fitted with stainless steel screws, fore more corrosion resistance.

### • VENTILATION

The condensers of the **WA** range are equipped with the following fan assemblies:

Ø 500 mm, 2 speed: 04/06P = 1500/1000 r.p.m. or 08/12P = 750/500 r.p.m., and

Ø 630 mm, 2 speed: 04/06P = 1500/1000 r.p.m., 06/08P = 1000/750 r.p.m., 08/12P = 750/500 r.p.m. or 12/16P = 500/375 r.p.m., 400 V, three phase, 50 Hz, (50-60 Hz for 08/12P and 12/16P motors) monobloc, with external rotor, with overload protection included, IP54, class F. They need no maintenance.

The high performance fan blades give a low sound level. The fan guards conform to the NF E51.190 standard.

2 speed motor coupling: Δ = high speed, Y = low speed.

## OPTIONAL FEATURES

### • Coil:

- MCI** Multicircuits on units with 2 and 3 fan assemblies
- BCA** Cataphoresis protection of the fins

### • Motorfans:

#### Ø 500 mm

- M60** Three phase fan assembly 60 Hz - 04/06P - 400 V/3
- MM5** Single phase fan assembly 50 Hz - 04P - 230 V/1
- M23** Three phase fan assembly 230 V \* - 04/06P - 50 Hz - 08/12P - 50-60 Hz

#### Ø 630 mm

- M60** Three phase fan assembly 60 Hz - 06/08P - 400 V/3
- MM5** Single phase fan assembly 50 Hz - 06P - 230 V/1 - 520 W - 2,4 A
- M23** Three phase fan assembly 230 V \* - 04/06P - 50 Hz - 06/08P - 50 Hz - 08/12P - 50-60 Hz - 12/16P - 50-60 Hz

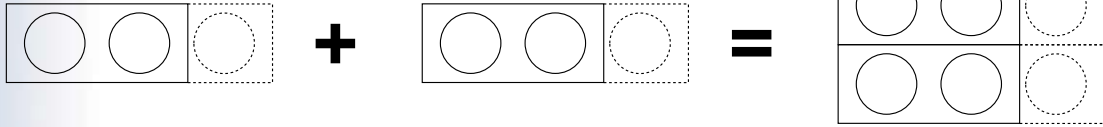
- Other options: Consult us

\* Fan assemblies not held in stock.

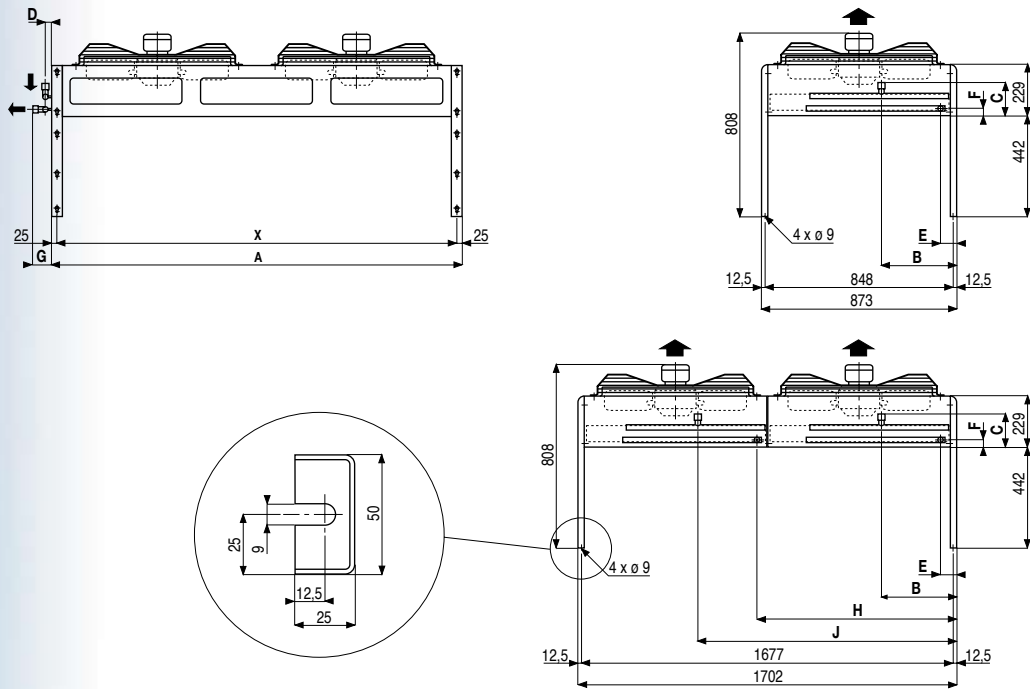
WA 39-04/06P

WA 39-04/06P

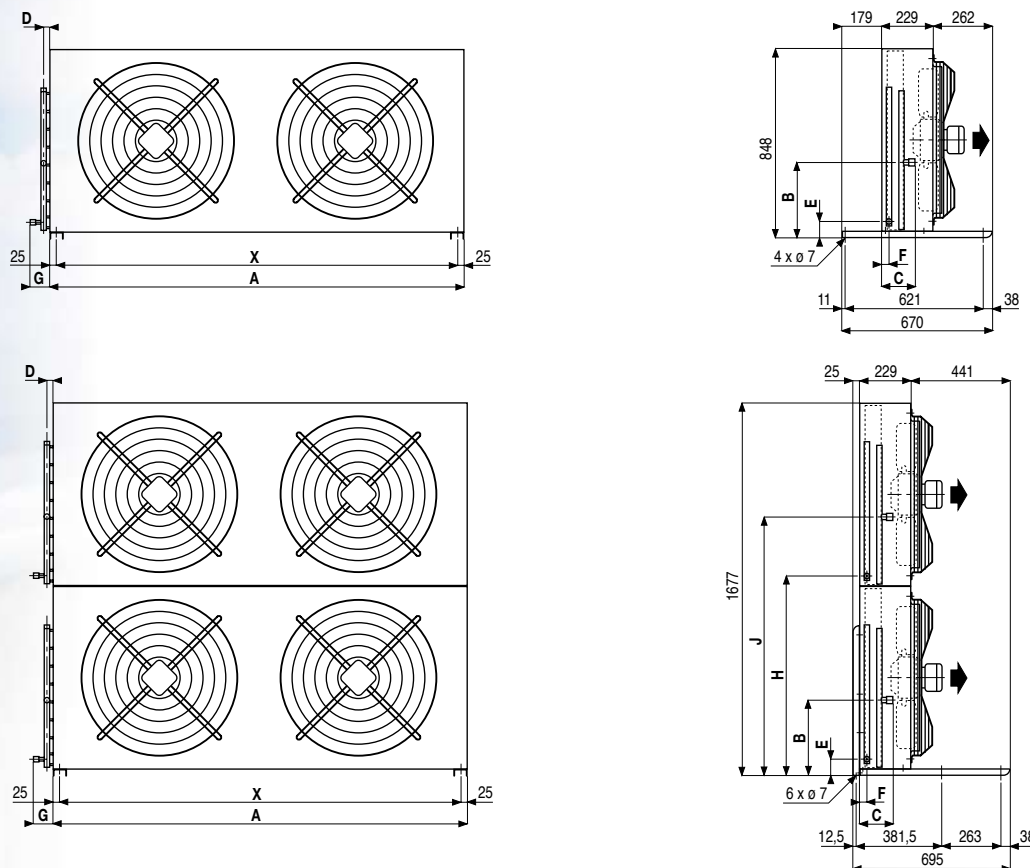
WA 2 x 39-04/06P



## VERTICAL AIR FLOW



## HORIZONTAL AIR FLOW



mm

## WA .. 04P/06P (1500/1000 r.p.m.)

Models		WA ..	15	19	22	30	39	44	48	58	67	54	59	81	95	
Capacity P <sub>1</sub>	DT1 = 15K R404A kW	04P (Δ)	12,7	16,5	18,8	25,3	33,1	37,5	38,0	49,6	56,3	56,5	62,6	85,3	98,8	
		06P (Y)	11,6	14,7	16,1	23,1	29,3	32,2	34,7	44,0	48,3	47,1	51,4	70,7	79,1	
Surface	m <sup>2</sup>		17,50	26,25	35,00	35,00	52,50	70,00	52,50	78,75	105,00	71,60	95,40	107,40	143,10	
Circuit vol.	dm <sup>3</sup>		3,3	4,9	6,4	6,0	9,2	12,1	9,0	13,3	17,5	11,1	14,7	17,3	22,7	
Fan *	Air flow	m <sup>3</sup> /h	04P (Δ)	5974	5634	5315	11948	11268	10630	17922	16902	15945	23200	21300	34800	31950
			06P (Y)	5036	4654	4275	10072	9308	8550	15108	13962	12825	16600	15100	24900	22650
	No		1x Ø 500	1x Ø 500	1x Ø 500	2x Ø 500	2x Ø 500	2x Ø 500	3x Ø 500	3x Ø 500	3x Ø 500	2x Ø 630	2x Ø 630	3x Ø 630	3x Ø 630	
Energy efficiency class		04P (Δ)	E	E	D	E	E	D	E	E	D	E	E	E	E	
		06P (Y)	E	D	D	E	D	D	E	D	D	E	E	E	E	
Acoustic	Lw (1)	dB(A)	04P (Δ)	83	83	83	86	86	86	88	88	88	93	93	95	95
			06P (Y)	78	78	78	81	81	81	83	83	83	85	85	87	87
	Lp (2)	dB(A)	04P (Δ)	52	52	52	55	55	55	57	57	57	62	62	64	64
			06P (Y)	47	47	47	50	50	50	52	52	52	54	54	56	56
Net weight	kg		36	40	44	63	72	80	92	104	116	93	103	137	152	
Circuits	No					4	6	8	8	8	8	8	8	12	16	

Models		WA ..	2 x 30	2 x 39	2 x 44	2 x 48	2 x 58	2 x 67	2 x 54	2 x 59	2 x 81	2 x 95	
Capacity P <sub>1</sub>	DT1 = 15K R404A kW	04P (Δ)	50,6	66,1	75,0	76,0	99,2	112,5	113,1	125,1	170,5	197,5	
		06P (Y)	46,2	58,6	64,4	69,3	88,0	96,5	94,1	102,9	141,3	158,3	
Surface	m <sup>2</sup>		70,00	105,00	140,00	105,00	157,50	210,00	143,20	190,80	214,80	286,20	
Circuit vol.	dm <sup>3</sup>		12,0	18,4	24,2	18,0	26,6	35,0	22,2	29,4	34,6	45,4	
Fan *	Air flow	m <sup>3</sup> /h	04P (Δ)	23896	22536	21260	35844	33804	31890	46400	42600	69600	63900
			06P (Y)	20144	18616	17100	30216	27924	25650	33200	30200	49800	45300
	No		2x Ø 500	2x Ø 500	2x Ø 500	3x Ø 500	3x Ø 500	3x Ø 500	2x Ø 630	2x Ø 630	3x Ø 630	3x Ø 630	
Energy efficiency class		04P (Δ)	E	E	D	E	E	D	E	E	E	E	
		06P (Y)	E	D	D	E	D	D	E	E	E	E	
Acoustic	Lw (1)	dB(A)	04P (Δ)	89	89	89	91	91	91	96	96	98	98
			06P (Y)	84	84	84	86	86	86	88	88	90	90
	Lp (2)	dB(A)	04P (Δ)	58	58	58	60	60	60	65	65	67	67
			06P (Y)	53	53	53	55	55	55	57	57	59	59
Net weight	kg		126	144	160	184	208	232	186	206	274	304	
Circuits	No		2 x 4	2 x 6	2 x 8	2 x 8	2 x 8	2 x 8	2 x 8	2 x 8	2 x 12	2 x 16	

\* Ø 500 mm - 400 V/3/50 Hz - Δ : 580 W max- 1,05 A max (3) - Y : 440 W max- 0,71 A max (3)  
 \* Ø 630 mm - 400 V/3/50 Hz - Δ : 1950 W max- 3,4 A max (3) - Y : 1400 W max- 2,3 A max (3)

## WA .. 06P/08P (1000/750 r.p.m.)

Models		WA ..	41	42	57	65	2 x 41	2 x 42	2 x 57	2 x 65	
Capacity P <sub>1</sub>	DT1 = 15K R404A kW	06P (Δ)	42,6	45,9	63,9	68,9	85,2	91,9	127,9	137,8	
		08P (Y)	35,1	37,3	52,6	56,0	70,2	74,6	105,3	112,0	
Surface	m <sup>2</sup>		71,60	95,40	107,40	143,10	143,20	190,80	214,80	286,20	
Circuit vol.	dm <sup>3</sup>		11,1	14,7	17,3	22,7	22,2	29,4	34,6	45,4	
Fan *	Air flow	m <sup>3</sup> /h	06P (Δ)	14190	12686	21285	19029	28380	25372	42570	38058
			08P (Y)	10460	9408	15690	14112	20920	18816	31380	28224
	No		2x Ø 630	2x Ø 630	3x Ø 630	3x Ø 630	2x Ø 630	2x Ø 630	3x Ø 630	3x Ø 630	
Energy efficiency class		06P (Δ)	C	C	C	C	C	C	C	C	
		08P (Y)	C	C	C	C	C	C	C	C	
Acoustic	Lw (1)	dB(A)	06P (Δ)	83	83	85	85	86	86	88	88
			08P (Y)	76	76	78	78	79	79	81	81
	Lp (2)	dB(A)	06P (Δ)	52	52	54	54	55	55	57	57
			08P (Y)	45	45	47	47	48	48	50	50
Net weight	kg		89	99	131	146	178	198	262	292	
Circuits	No		8	8	12	16	2 x 8	2 x 8	2 x 12	2 x 16	

\* Ø 630 mm - 400 V/3/50 Hz - Δ : 450 W max- 1,1 A max (3) - Y : 280 W max- 0,6 A max (3)

- (1) Sound power level in dB(A), obtained according to the NF EN 13487 norm (parallelepiped reference surface).
- (2) The sound pressure in dB(A) measured at a line-of-sight to reflecting parallelepiped surface distance of 10 meters, is given as an indication only. Values measured under normal working conditions with a clean coil at nominal voltage.
- (3) Setting of overload protections.

## WA .. 08P/12P (750/500 r.p.m.)

Models		WA ..	10	13	14	21	26	27	32	37	40	34	36	47	51	
Capacity P <sub>1</sub>	DT1 = 15K R404A kW	08P (Δ)	8,8	10,6	11,3	17,7	21,2	22,6	26,5	31,8	33,9	34,5	36,2	51,8	54,2	
		12P (Y)	7,5	8,8	9,1	15,0	17,6	18,3	22,5	26,3	27,4	25,9	26,6	38,8	40,0	
Surface	m <sup>2</sup>		17,50	26,25	35,00	35,00	52,50	70,00	52,50	78,75	105,00	71,60	95,40	107,40	143,10	
Circuit vol.	dm <sup>3</sup>		3,3	4,9	6,4	6,0	9,2	12,1	9,0	13,3	17,5	11,1	14,7	17,3	22,7	
Fan *	Air flow	m <sup>3</sup> /h	08P (Δ)	3165	2880	2655	6330	5760	5310	9495	8640	7965	10200	9062	15300	13593
			12P (Y)	2446	2226	2033	4892	4452	4066	7338	6678	6099	6780	6060	10170	9090
Energy efficiency class	No		1x	1x	1x	2x	2x	2x	3x	3x	3x	2x	2x	3x	3x	
			Ø 500	Ø 500	Ø 500	Ø 500	Ø 500	Ø 500	Ø 500	Ø 500	Ø 500	Ø 500	Ø 630	Ø 630	Ø 630	Ø 630
Acoustic	Lw (1)	dB(A)	08P (Δ)	64	64	64	67	67	67	69	69	69	75	75	77	77
			12P (Y)	58	58	58	61	61	61	63	63	63	67	67	69	69
Acoustic	Lp (2)	dB(A)	08P (Δ)	33	33	33	36	36	36	38	38	38	44	44	46	46
			12P (Y)	27	27	27	30	30	30	32	32	32	36	36	38	38
Net weight	kg		36	40	44	63	72	80	92	104	116	89	99	131	146	
Circuits	No					4	6	8	8	8	8	8	8	12	16	

Models		WA ..	2 x 21	2 x 26	2 x 27	2 x 32	2 x 37	2 x 40	2 x 34	2 x 36	2 x 47	2 x 51	
Capacity P <sub>1</sub>	DT1 = 15K R404A kW	08P (Δ)	35,3	42,4	45,1	53,0	63,6	67,7	69,1	72,3	103,6	108,5	
		12P (Y)	30,0	35,1	36,6	45,0	52,6	54,8	51,7	53,3	77,6	79,9	
Surface	m <sup>2</sup>		70,00	105,00	140,00	105,00	157,50	210,00	143,20	190,80	214,80	286,20	
Circuit vol.	dm <sup>3</sup>		12,0	18,4	24,2	18,0	26,6	35,0	22,2	29,4	34,6	45,4	
Fan *	Air flow	m <sup>3</sup> /h	08P (Δ)	12660	11520	10620	18990	17280	15930	20400	18124	30600	27186
			12P (Y)	9784	8904	8132	14676	13356	12198	13560	12120	20340	18180
Energy efficiency class	No		2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	
			2 Ø 500	2 Ø 500	2 Ø 500	3 Ø 500	3 Ø 500	3 Ø 500	3 Ø 500	2 Ø 630	2 Ø 630	3 Ø 630	3 Ø 630
Acoustic	Lw (1)	dB(A)	08P (Δ)	70	70	70	72	72	72	78	78	80	80
			12P (Y)	64	64	64	66	66	66	70	70	72	72
Acoustic	Lp (2)	dB(A)	08P (Δ)	39	39	39	41	41	41	47	47	49	49
			12P (Y)	33	33	33	35	35	35	39	39	41	41
Net weight	kg		126	144	160	184	208	232	178	198	262	292	
Circuits	No		2 x 4	2 x 6	2 x 8	2 x 8	2 x 8	2 x 8	2 x 8	2 x 8	2 x 12	2 x 16	

\* Ø 500 mm - 400 V/3/50-60 Hz - Δ : 115 W max- 0,3 A max (3) - Y : 75 W max- 0,15 A max (3)  
 \* Ø 630 mm - 400 V/3/50-60 Hz - Δ : 260 W max- 0,68 A max (3) - Y : 160 W max- 0,32 A max (3)

## WA .. 12P/16P (500/375 r.p.m.)

Models		WA ..	23	24	28	29	2 x 23	2 x 24	2 x 28	2 x 29	
Capacity P <sub>1</sub>	DT1 = 15K R404A kW	12P (Δ)	21,8	22,4	32,7	33,7	43,6	44,9	65,4	67,3	
		16P (Y)	16,6	16,8	24,9	25,1	33,2	33,5	49,8	50,3	
Surface	m <sup>2</sup>		71,60	95,40	107,40	143,10	143,20	190,80	214,80	286,20	
Circuit vol.	dm <sup>3</sup>		11,1	14,7	17,3	22,7	22,2	29,4	34,6	45,4	
Fan *	Air flow	m <sup>3</sup> /h	12P (Δ)	5376	4942	8064	7413	10752	9884	16128	14826
			16P (Y)	3790	3484	5685	5226	7580	6968	11370	10452
Energy efficiency class	No		2x	2x	3x	3x	2x	2x	2x	2x	
			Ø 630	Ø 630	Ø 630	Ø 630	2 Ø 630	2 Ø 630	3 Ø 630	3 Ø 630	
Acoustic	Lw (1)	dB(A)	12P (Δ)	64	64	66	66	67	67	69	69
			16P (Y)	57	57	59	59	60	60	62	62
Acoustic	Lp (2)	dB(A)	12P (Δ)	33	33	35	35	36	36	38	38
			16P (Y)	26	26	28	28	29	29	31	31
Net weight	kg		89	99	131	146	178	198	262	292	
Circuits	No		8	8	12	16	2 x 8	2 x 8	2 x 12	2 x 16	

\* Ø 630 mm - 400 V/3/50-60 Hz - Δ : 190 W max- 0,5 A max (3) - Y : 90 W max- 0,2 A max (3)

- (1) Sound power level in dB(A), obtained according to the NF EN 13487 norm (parallelepiped reference surface).
- (2) The sound pressure in dB(A) measured at a line-of-sight to reflecting parallelepiped surface distance of 10 meters, is given as an indication only. Values measured under normal working conditions with a clean coil at nominal voltage.
- (3) Setting of overload protections.

## DIMENSIONAL DATA

### WA .. Ø 500 mm

Models	WA ..	04/06P	15	19	22	30	39	44	48	58	67
		08/12P	10	13	14	21	26	27	32	37	40
Fan	Ø 500 mm	No	1	1	1	2	2	2	3	3	3
A		mm	730	730	730	1390	1390	1390	2050	2050	2050
B		mm	240	520	340	340	495	390	390	470	390
C		mm	150	150	150	150	155	155	155	155	155
D		mm	20	25	25	25	30	30	30	30	30
E		mm	55	40	55	55	45	55	55	45	55
F		mm	73	53	34	73	53	34	73	53	34
G		mm	78	81	81	81	88	88	92	88	88
X		mm	680	680	680	1340	1340	1340	2000	2000	2000
Inlet		ODF *	1/2"	5/8"	5/8"	3/4"	7/8"	7/8"	7/8"	1 1/8"	1 1/8"
Outlet		ODF *	1/2"	5/8"	5/8"	5/8"	7/8"	7/8"	7/8"	7/8"	7/8"

Models	WA ..	04/06P	2 x 30	2 x 39	2 x 44	2 x 48	2 x 58	2 x 67
		08/12P	2 x 21	2 x 26	2 x 27	2 x 32	2 x 37	2 x 40
Fan	Ø 500 mm	No	2 x 2	2 x 2	2 x 2	2 x 3	2 x 3	2 x 3
A		mm	1390	1390	1390	2050	2050	2050
B		mm	340	495	390	390	470	390
C		mm	150	155	155	155	155	155
D		mm	25	30	30	30	30	30
E		mm	55	45	55	55	45	55
F		mm	73	53	34	73	53	34
G		mm	81	88	88	92	88	88
H		mm	885	875	885	885	875	885
J		mm	1170	1325	1220	1220	1300	1220
X		mm	1340	1340	1340	2000	2000	2000
Inlet		ODF *	2 x 3/4"	2 x 7/8"	2 x 7/8"	2 x 7/8"	2 x 1 1/8"	2 x 1 1/8"
Outlet		ODF *	2 x 5/8"	2 x 7/8"	2 x 7/8"	2 x 7/8"	2 x 7/8"	2 x 7/8"

\* ODF = Female sweat type connection

### WA .. Ø 630 mm

Models	WA ..	04/06P	54	59	81	95	2 x 54	2 x 59	2 x 81	2 x 95
		06/08P	41	42	57	65	2 x 41	2 x 42	2 x 57	2 x 65
		08/12P	34	36	47	51	2 x 34	2 x 36	2 x 47	2 x 51
		12/16P	23	24	28	29	2 x 23	2 x 24	2 x 28	2 x 29
Fan	Ø 630 mm	No	2	2	3	3	2 x 2	2 x 2	2 x 3	2 x 3
A		mm	1870	1870	2770	2770	1870	1870	2770	2770
B		mm	470	390	455	455	470	390	455	455
C		mm	150	150	160	160	150	150	160	160
D		mm	25	25	50	50	25	25	50	50
E		mm	45	55	45	60	45	55	45	60
F		mm	53	34	53	34	53	34	53	34
G		mm	85	85	115	115	85	85	115	115
H		mm	-	-	-	-	875	885	875	890
J		mm	-	-	-	-	1300	1220	1285	1285
X		mm	1820	1820	2720	2720	1820	1820	2720	2720
Inlet		ODF *	1 1/8"	1 1/8"	1 3/8"	1 3/8"	2 x 1 1/8"	2 x 1 1/8"	2 x 1 3/8"	2 x 1 3/8"
Outlet		ODF *	7/8"	1 1/8"	1 1/8"	1 1/8"	2 x 7/8"	2 x 1 1/8"	2 x 1 1/8"	2 x 1 1/8"

\* ODF = Female sweat type connection