



Westherm

Propeller Fan Unit Heaters



Technical Brochure
TW 300.0E/10.02
Supersedes : TW 300.0E/02.00



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Electrical Westherm

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7 sizes (10 to 450 kW)

Versions : Hot water
 Steam
 Electrical



Westherm Range

Propeller type heater. A rugged unit for heating large buildings in the tertiary industries.

In winter, it is used for rapidly increasing air temperature using a mixing process for destratifying varying temperature layers.

It can be used in combination with the WESTHERM air blowing units.

In summer, it ensures space airing, with the hot water distribution stopped. It can operate as an air cooled fluid cooler (please consult the factory).

WESTHERM air blowing units ensure optimum ventilation.

WESTHERM units are supplied with a large choice of air diffusers and accessories and in varying arrangements ensuring permanent fresh air supply according to applicable standards and rules.

They improve working conditions and keep floor areas free. Their control and programming characteristics ensure power savings that increase when operating on low temperature water conditions.

WESTHERM units and accessories are available on stock, specially designed to meet present economical needs expressed in terms of investment, return time and operating balance-sheet.

Westerm Water / Steam Type Unit Heaters

Coding

WESTHERM

45 2 E C1 9 VM 3 Ph/230/400 1

Size of casing : 35 to 110

Coil number of rows : 1 - 2 - 3

Type of heating fluid : E(water) - V(steam)

Coil specification : C1 (Copper) - CN (Cupro-Nickel)

Fan speed : 7 - 9 - 9/7 - 14 - 14/9 (x 100 rpm)

Air diffuser : VM, VN, HO, HP, VR, HN

Voltage : 1 Ph/230 V - 3 Ph/230/400 V - 3 Ph/400 V

Standard arrangements : see pages 16 and 17

Using limits

Raw materials used according to temperatures and pressures.

FLUID			TUBE	
Type	Temperatures / Pressures	Code	Raw material	Code
Hot water	<120 °C	E	Copper	C1
	>120 °C	E	Cupro Nickel	CN
Saturated Steam	2 to 10 bar	V	Cupro Nickel	CN

Test pressure data

Tests are carried out after mechanical expansion of coils at a minimum pressure of 20 bar.

Operating pressure

Hot operating pressure shall not exceed 10 bar.

For higher pressure values, please consult the factory.

When units are not used or when the ambient temperature is under 0 °C, coils must be protected against freezing up and have to be carefully drained.

For horizontal installation, maximum water temperature shall be 120 °C.

Air flow

Models	Coil nb of rows	Volume (m ³ /h)		
		700 rpm motor	900 rpm motor	1400 rpm motor
35	1	-	1 300	1 840
	2	-	1 140	1 650
	3	-	1 030	1 530
45	1	-	3 160	4 820
	2	-	2 880	4 380
	3	-	2 620	4 120
50	1	-	4 420	6 750
	2	-	4 080	6 240
	3	-	3 820	5 830
55	1	-	5 800	8 940
	2	-	5 280	8 290
	3	-	4 950	7 760
65	1	-	7 890	11 960
	2	-	7 320	11 040
	3	-	6 980	10 460
70	1	11 830	15 260	-
	2	11 160	14 400	-
	3	10 660	13 780	-
110	1	-	11 600	17 880
	2	-	10 560	16 580
	3	-	9 900	15 520

Technical Features

Standard unit

Casing / Cabinet

All parts are constructed from heavy gauge sheet steel with an oven-baked epoxy paint finish (**RAL 9002**) to give an excellent protection against corrosion.

Consult factory for application in glasshouses where relative humidity is higher than 70 %.

Coils

Coils are made of copper tubes with aluminium fins. These fins with full depth collars are mechanically bonded onto the tubes to assure perfect contact in order to offer optimum heat transfer efficiency.

Optional cupro-nickel tubes can be supplied for steam or high temperature hot water (see table of using limits).

Headers are of brass type with threaded connections for copper tubes or steel type with smooth connections for optional cupro-nickel tubes.

Fan motor assembly

Propeller fan with wide aluminium blades.

Impeller special profile provides optimum air volume/pressure performance and assures a low noise level.

Fan is statically and dynamically balanced.

The air inlet side is designed to offer minimum pressure drop and noise level.

Fan speed is coded as follows :

Fan rpm	700	900	900/700	1400	1400/900
Code	7	9	9/7	14	14/9

Motors

The standard motors used for the different sizes are as follows :

Sizes	Speed (rpm)	Voltage (V - Ph - Hz)	Power (kW)	Current (A)	Insul. class	IP
35	900	230-1-50	0.022	0.25	F	54
	900	230/400-3-50	0.037	0.46 / 0.27	F	54
	1400	230-1-50	0.06	0.6	F	54
	1400	230/400-3-50	0.038	0.4 / 0.23	F	54
45	900	230/400-3-50	0.25	1.44 / 0.83	F	55
	1400	230/400-3-50	0.25	1.41 / 0.81	F	55
	1400/900	400-3-50	0.40 / 0.12	1.38 / 0.51	F	55
50	900	230/400-3-50	0.25	1.44 / 0.83	F	55
	1400	230/400-3-50	0.55	2.46 / 1.42	F	55
	1400/900	400-3-50	0.55 / 0.18	1.62 / 0.73	F	55
55	900	230/400-3-50	0.25	1.44 / 0.83	F	55
	1400	230/400-3-50	0.55	2.46 / 1.42	F	55
	1400/900	400-3-50	0.55 / 0.18	1.62 / 0.73	F	55
65	900	230/400-3-50	0.37	2.08 / 1.19	F	55
	1400	230/400-3-50	0.75	3.22 / 1.86	F	55
	1400/900	400-3-50	1.1 / 0.38	2.65 / 1.35	F	55
70	700	230/400-3-50	0.37	2.00 / 1.16	F	55
	900	230/400-3-50	0.75	3.65 / 2.10	F	55
	900/700	400-3-50	0.75 / 0.37	2.09 / 1.32	B	54
110 *	900	230/400-3-50	0.25	1.44 / 0.83	F	55
	1400	230/400-3-50	0.55	2.46 / 1.42	F	55
	1400/900	400-3-50	0.55 / 0.18	1.62 / 0.73	F	55

* equipped with 2 motors requiring 2 overload thermal protections.

Notes : Other classes of insulation upon request. Optional motors for glasshouses are available upon request. **Data given in the table above are only for standard motors and are specific to a supplier. They can be modified, when changing the supplier (consult factory for new data). Data are in compliance with Standard C 51111.**

Options

Wire guards for fan and motor protection.

PN 16 flanges with mating flanges and bolts (supplied loose).

Air blower : consists of a propeller fan and a diffuser HO, HN or HP. It shall be located at highest level in a given space to eliminate the hot air accumulated by stratification below the ceiling. Below is table of air volume (m³/h) of these air blowers :

Speed/Sizes	35	45	50	55	65	70
900 rpm (1)	1340	3260	4560	5980	8130	12200
1400 rpm (2)	1900	4970	6950	9210	12320	15720

(1) 700 rpm for size 70.

(2) 900 rpm for size 70.

Special motors :

High safety motors : Ratings similar to standard motor data (consult factory).

Cast aluminium or iron housing : in compliance with Standards C 20010 / C 51115 / C 23110 / C 23519.

Index of protection : IP 55.

Sizes	Class F only			
	Voltage	Enclosure	Speed	Group
45 to 110	230/400 V-3 Ph-50 Hz	IP 55	1400/900	T4

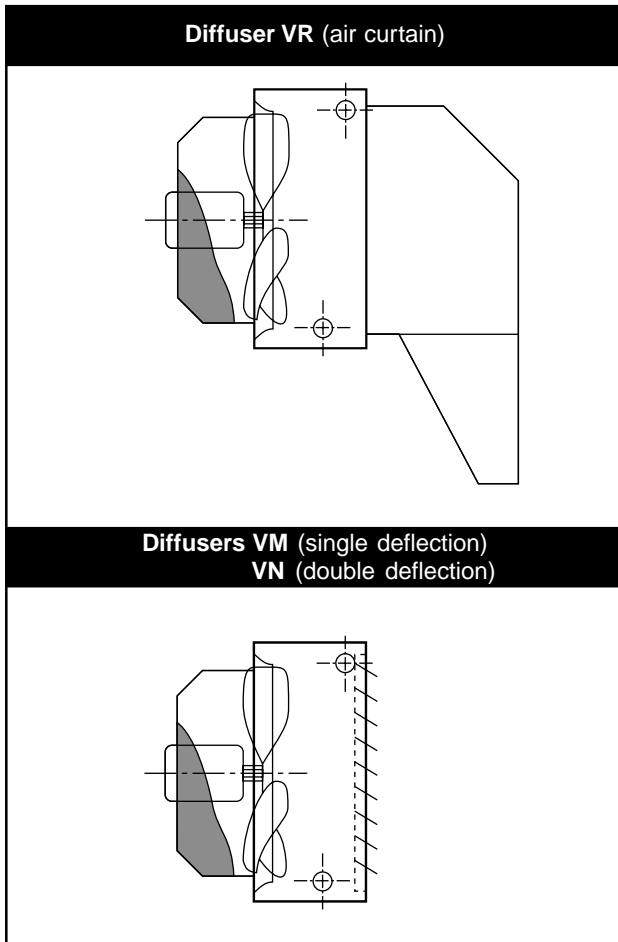
Flame-proof motors

Consult factory.

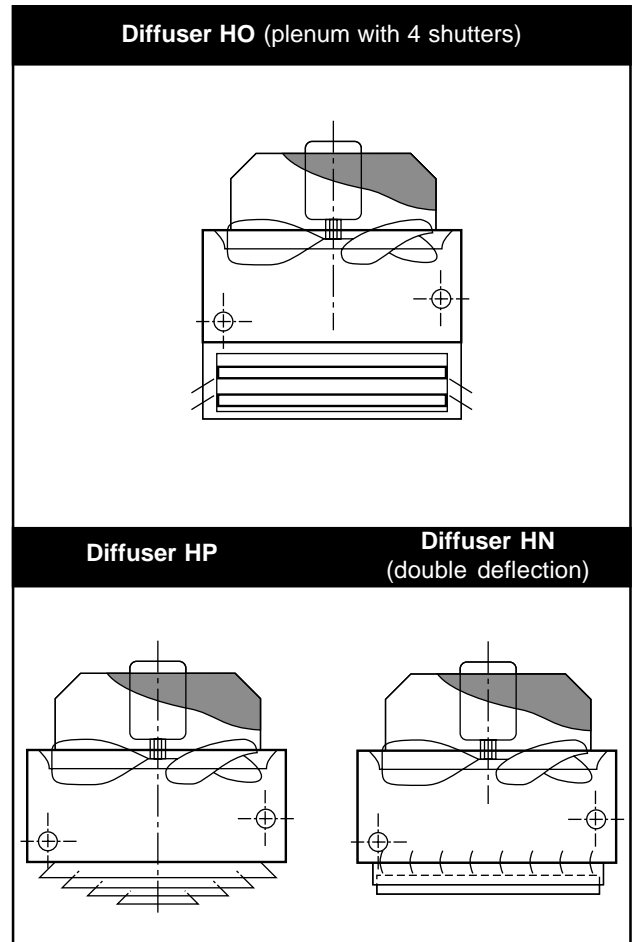
Technical Data

Westherm units can be fixed in vertical or horizontal position. But, for some models, in order to drain the coil, it is necessary to indicate the mounting arrangement when placing the order (352, 353, 652, 653, 702, 703, 1102, 1103).

Vertical arrangement



Horizontal arrangement



Selection

Thermal capacity

Based on the needed heating (1 kW = 860 kcal/h).

Mixing rate

The mixing rate = $\frac{\text{Supply air volume per hour}}{\text{Space area}}$

Mixing rate plays an important part in providing uniform air temperature in a space.

Permissible values are generally as follows :

- for a room under 5 m high = 3 to 5.
- for a room above 5 m high = 4 to 5.

Should the value of mixing rate be under those above-mentioned, the supply air volume shall be increased by selecting a heater of a higher size or using more WESTHERM units.

Supply air temperature

In order to avoid stratification of air layers of varying temperatures, supply air temperature should range within following values :

- lower limit : 10 °C above ambient.
- upper limit : 35 °C above ambient.

Air throw

Corresponds to the distance between the WESTHERM unit and points where the air velocity is no longer felt by the human body (approx. 0.2 m/sec.).

Enables installation of units in the room.

The table on page 18 gives the air throw for a given unit model and a supply air temperature of 15 °C above ambient.

For other temperature differences, use the correction factor.

Correction factor

Temperature difference	10 °C	15 °C	20 °C	30 °C	40 °C
Correction fact.	1.28	1.00	0.90	0.70	0.60

Performance Data

Thermal capacities for an inlet air temperature of : -15 °C

	Sizes	Air volume m ³ /h	Water temperature (°C)										Steam pressure (bar)					
			45/37		90/70		105/75		140/100		180/120		2		4		6	
			Ts	P	Ts	P	Ts	P	Ts	P	Ts	P	Ts	P	Ts	P	Ts	P
Low speed	351	1300	-	-	9	11.8	10	12.4	18	16.7	26	20.3	21	18.1	26	20.6	33	23.9
	352	1140	13	12.1	32	20.7	36	22.4	52	29.5	-	-	52	29.5	61	33.4	-	-
	353	1030	23	15.1	50	25.8	57	28.4	-	-	-	-	-	-	-	-	-	-
	451	3160	-	-	7	26.6	8	28.5	16	37.6	23	45.7	16	37.3	20	42.5	26	49.5
	452	2880	9	26.3	25	44.5	28	47.9	42	63.3	55	77.2	43	63.8	51	72.4	61	83.8
	453	2620	18	32.7	40	55.6	45	60.3	-	-	-	-	-	-	-	-	-	-
	501	4420	-	-	6	35.9	8	38.8	14	49.9	21	60.9	14	49.2	18	55.9	23	65.1
	502	4080	8	35.9	24	61.1	27	66.4	39	85.3	52	104.0	39	85.1	47	96.7	57	112.0
	503	3820	16	45.9	39	78.5	43	85.6	60	110.0	-	-	-	-	-	-	-	-
	551	5800	-	-	6	46.8	8	50.7	15	66.3	21	80.7	13	62.8	17	71.5	22	83.2
	552	5280	8	46.7	24	79.3	27	86.1	41	113.0	53	137.0	38	108.0	46	123.0	55	143.0
	553	4950	17	59.8	39	102.0	43	111.0	-	-	-	-	-	-	-	-	-	-
	651	7890	-	-	6	54.8	8	68.4	15	90.0	21	109.0	14	88.2	18	100.0	24	117.0
	652	7320	8	65.7	25	111.0	28	121.0	41	158.0	54	193.0	39	153.0	47	174.0	57	201.0
	653	6980	16	82.7	38	141.0	42	152.0	60	201.0	-	-	-	-	-	-	-	-
	701	11830	-	-	-	-	6	93.5	12	122.0	18	149.0	12	122.0	16	139.0	21	161.0
	702	11160	6	90.6	21	154.0	24	167.0	36	217.0	47	265.0	35	215.0	42	244.0	51	284.0
	703	10660	14	119.0	35	204.0	39	222.0	55	287.0	-	-	-	-	-	-	-	-
	1101	11600	-	-	6	94.3	8	102.0	15	131.0	21	160.0	13	127.0	17	144.0	23	168.0
	1102	10560	8	92.3	24	157.0	27	171.0	39	219.0	51	268.0	39	218.0	46	248.0	56	287.0
	1103	9900	17	121.0	40	207.0	45	228.0	62	291.0	-	-	-	-	-	-	-	-
High speed	351	1840	-	-	-	-	6	14.6	13	19.6	19	23.9	15	21.3	19	24.3	25	28.3
	352	1650	9	15.1	25	25.6	29	27.7	43	36.4	55	44.4	42	36.2	50	41.1	60	47.6
	353	1530	19	19.7	42	33.5	47	36.7	-	-	-	-	-	-	-	-	-	-
	451	4820	-	-	-	-	-	-	10	39.1	15	55.2	9	44.8	13	51.1	17	59.6
	452	4380	-	-	18	55.6	21	59.7	32	78.8	42	82.5	32	78.7	38	89.5	47	104.0
	453	4120	12	42.9	31	72.9	35	78.6	51	104.0	-	-	-	-	-	-	-	-
	501	6750	-	-	-	-	-	-	8	59.0	13	71.9	7	56.5	10	64.5	14	75.3
	502	6240	-	-	16	75.1	19	81.3	30	107.0	39	130.0	28	103.0	34	118.0	42	137.0
	503	5830	11	58.7	30	100.0	34	109.0	49	143.0	63	174.0	-	-	-	-	-	-
	551	8940	-	-	-	-	-	-	7	75.7	12	91.9	6	70.9	9	81.0	13	94.5
	552	8290	-	-	15	96.9	18	105.0	28	138.0	38	167.0	26	130.0	32	149.0	39	173.0
	553	7760	11	77.1	29	131.0	33	142.0	48	186.0	61	227.0	-	-	-	-	-	-
	651	11960	-	-	-	-	-	-	8	105.0	13	127.0	7	101.0	10	116.0	14	135.0
	652	11040	-	-	17	137.0	20	149.0	31	195.0	41	237.0	29	185.0	35	211.0	43	246.0
	653	10460	11	105.0	29	178.0	33	192.0	48	253.0	62	309.0	-	-	-	-	-	-
	701	15260	-	-	-	-	-	-	8	134.0	13	163.0	7	131.0	11	150.0	15	175.0
	702	14400	-	-	16	174.0	19	188.0	30	247.0	40	302.0	29	241.0	35	274.0	43	319.0
	703	13780	11	138.0	29	235.0	33	256.0	48	335.0	63	410.0	-	-	-	-	-	-
	1101	17880	-	-	-	-	-	-	7	153.0	12	187.0	6	144.0	9	165.0	13	192.0
	1102	16580	-	-	15	193.0	18	209.0	28	274.0	38	334.0	27	264.0	32	302.0	40	351.0
	1103	15520	11	157.0	30	267.0	34	293.0	49	382.0	63	467.0	-	-	-	-	-	-

Ts : outlet air temperature (°C)

P : thermal capacity (kW)

Air volume (D) and thermal capacity (P) correction factors

	Standard arrangements (see pages 16 and 17)											Diffusers	Filters
	2	3	4	5	6	7	8	9	10	11	12	O.P.R.	1 and E
D	0.98	0.95	0.95	0.92	0.92	0.92	0.90	0.93	0.93	0.90	0.90	0.91	0.85
P	0.99	0.98	0.98	0.96	0.96	0.96	0.95	0.97	0.97	0.95	0.95	0.95	0.85

Performance Data (cont'd)

Thermal capacities for an inlet air temperature of : -7 °C

	Sizes	Air volume m ³ /h	Water temperature (°C)										Steam pressure (bar)					
			45/37		90/70		105/75		140/100		180/120		2		4		6	
			Ts	P	Ts	P	Ts	P	Ts	P	Ts	P	Ts	P	Ts	P	Ts	P
Low speed	351	1300	-	-	15	10.4	16	11.1	25	15.3	32	18.9	28	16.9	33	19.3	40	22.5
	352	1140	17	10.1	37	18.5	41	20.2	57	27.1	-	-	58	27.4	-	-	-	-
	353	1030	26	12.6	53	23.1	60	25.6	-	-	-	-	-	-	-	-	-	-
	451	3160	-	-	13	23.7	15	25.6	22	34.6	29	42.6	23	34.9	27	39.9	33	46.7
	452	2880	13	21.7	30	39.7	33	43.1	47	58.1	60	71.8	48	59.3	56	67.8	-	-
	453	2620	21	27.1	44	49.6	49	54.2	-	-	-	-	-	-	-	-	-	-
	501	4420	-	-	13	32.1	14	35.0	21	46.0	27	56.7	21	45.8	25	52.5	30	61.5
	502	4080	13	29.9	29	54.7	32	59.9	45	78.4	57	96.9	45	79.2	53	90.6	-	-
	503	3820	20	38.3	42	70.2	47	77.2	-	-	-	-	-	-	-	-	-	-
	551	5800	-	-	12	42.0	14	45.7	21	61.2	28	75.3	20	58.5	24	67.0	29	78.5
	552	5280	13	39.0	29	70.9	33	77.7	46	104.0	58	128.0	44	101.0	52	115.0	61	134.0
	553	4950	20	49.9	42	91.1	47	100.0	-	-	-	-	-	-	-	-	-	-
	651	7890	-	-	12	56.9	14	61.6	21	82.9	28	102.0	21	82.2	25	94.1	31	110.0
	652	7320	13	54.7	30	99.7	33	109.0	48	146.0	59	180.0	45	142.0	53	163.0	-	-
	653	6980	19	68.6	41	126.0	46	137.0	-	-	-	-	-	-	-	-	-	-
	701	11830	-	-	11	77.8	12	84.3	18	112.0	24	138.0	19	113.0	23	130.0	28	153.0
	702	11160	11	75.4	26	138.0	29	151.0	41	199.0	52	246.0	41	200.0	48	229.0	57	268.0
	703	10660	18	99.4	39	182.0	43	200.0	60	264.0	-	-	-	-	-	-	-	-
1101	11600	-	-	13	84.6	14	92.6	21	121.0	28	149.0	20	118.0	24	135.0	30	159.0	
1102	10560	13	76.9	29	141.0	32	154.0	44	202.0	56	249.0	45	203.0	52	232.0	62	271.0	
1103	9900	21	102.0	43	186.0	49	206.0	-	-	-	-	-	-	-	-	-	-	
High speed	351	1840	-	-	11	12.3	12	13.0	19	18.0	25	22.1	22	19.9	26	22.8	32	26.7
	352	1650	13	12.5	30	22.9	34	24.9	48	33.5	60	41.4	48	33.7	56	38.5	-	-
	353	1530	22	16.4	46	30.0	51	33.0	-	-	-	-	-	-	-	-	-	-
	451	4820	-	-	9	28.8	10	31.0	16	41.9	22	51.5	16	41.9	20	48.0	24	56.3
	452	4380	10	27.2	23	49.6	26	53.6	37	72.5	48	89.3	38	73.3	45	84.0	53	98.2
	453	4120	16	35.6	35	65.0	39	70.6	55	95.3	-	-	-	-	-	-	-	-
	501	6750	-	-	8	37.7	9	41.0	15	55.0	20	67.8	14	53.3	17	61.2	22	71.9
	502	6240	9	37.1	22	67.9	25	74.1	36	99.4	46	123.0	35	97.2	41	112.0	49	130.0
	503	5830	16	48.9	34	89.6	38	98.2	53	131.0	-	-	-	-	-	-	-	-
	551	8940	-	-	8	48.5	9	52.8	14	70.6	19	86.8	13	66.8	16	76.9	20	90.2
	552	8290	9	48.2	21	87.7	24	95.7	34	128.0	44	158.0	33	123.0	39	141.0	46	165.0
	553	7760	15	64.8	34	118.0	38	129.0	53	173.0	-	-	-	-	-	-	-	-
	651	11960	-	-	8	67.0	9	72.4	15	97.5	20	120.0	15	95.8	18	110.0	22	129.0
	652	11040	10	67.9	23	124.0	26	135.0	37	180.0	47	223.0	35	174.0	42	200.0	50	233.0
	653	10460	15	87.0	34	159.0	37	173.0	53	233.0	-	-	-	-	-	-	-	-
	701	15260	-	-	8	85.4	9	92.4	15	125.0	20	154.0	15	124.0	18	142.0	22	167.0
	702	14400	9	85.7	22	157.0	25	171.0	36	230.0	46	284.0	35	226.0	41	259.0	50	303.0
	703	13780	15	115.0	34	210.0	38	231.0	53	308.0	-	-	-	-	-	-	-	-
1101	17880	-	-	8	98.2	9	107.0	15	143.0	20	177.0	13	136.0	16	156.0	21	183.0	
1102	16580	8	95.3	21	174.0	24	190.0	34	255.0	44	315.0	33	249.0	39	286.0	47	334.0	
1103	15520	16	132.0	35	241.0	39	266.0	54	353.0	-	-	-	-	-	-	-	-	

Ts : outlet air temperature (°C) P : thermal capacity (kW)

Air volume (D) and thermal capacity (P) correction factors

	Standard arrangements (see pages 16 and 17)											Diffusers	Filters
	2	3	4	5	6	7	8	9	10	11	12	O.P.R.	1 and E
D	0.98	0.95	0.95	0.92	0.92	0.92	0.90	0.93	0.93	0.90	0.90	0.91	0.85
P	0.99	0.98	0.98	0.96	0.96	0.96	0.95	0.97	0.97	0.95	0.95	0.95	0.85

Performance Data (cont'd)

Thermal capacities for an inlet air temperature of : 0 °C

	Sizes	Air volume m ³ /h	Water temperature (°C)										Steam pressure (bar)					
			45/37		90/70		105/75		140/100		180/120		2		4		6	
			Ts	P	Ts	P	Ts	P	Ts	P	Ts	P	Ts	P	Ts	P	Ts	P
Low speed	351	1300	10	4.6	20	9.3	21	10.0	30	14.1	37	17.6	34	15.8	39	18.2	45	21.4
	352	1140	20	8.4	40	16.6	44	18.3	61	25.1	-	-	62	25.6	-	-	-	-
	353	1030	28	10.5	56	20.8	62	23.2	-	-	-	-	-	-	-	-	-	-
	451	3160	9	10.7	19	21.3	20	23.2	28	32.0	35	39.9	29	32.7	33	37.7	39	44.3
	452	2880	17	17.9	34	35.6	37	39.0	52	53.8	-	-	53	55.5	61	63.8	-	-
	453	2620	24	22.4	47	44.5	52	49.0	-	-	-	-	-	-	-	-	-	-
	501	4420	9	14.6	18	29.0	20	31.8	27	42.6	33	53.2	27	43.0	31	49.6	36	58.4
	502	4080	17	24.8	33	49.3	37	54.4	49	72.6	61	90.9	50	74.2	58	85.3	-	-
	503	3820	23	31.8	46	63.2	50	70.1	-	-	-	-	-	-	-	-	-	-
	551	5800	9	19.2	18	37.8	20	41.6	27	56.8	34	70.7	26	54.9	30	63.3	35	74.6
	552	5280	17	32.4	33	63.9	37	70.5	50	96.2	63	120.0	49	94.4	57	109.0	-	-
	553	4950	23	41.4	46	82.0	51	90.9	-	-	-	-	-	-	-	-	-	-
	651	7890	9	25.9	18	51.1	19	55.8	28	76.8	33	95.7	27	77.1	31	88.9	37	105.0
	652	7320	17	45.5	34	89.8	37	99.0	51	135.0	-	-	50	133.0	58	153.0	-	-
	653	6980	22	56.7	45	113.0	49	124.0	-	-	-	-	-	-	-	-	-	-
	701	11830	8	35.2	16	70.0	18	76.4	24	104.0	30	130.0	25	107.0	29	123.0	34	145.0
	702	11160	15	62.6	31	124.0	34	137.0	46	185.0	57	231.0	46	188.0	53	216.0	63	254.0
	703	10660	21	82.6	42	164.0	47	182.0	-	-	-	-	-	-	-	-	-	-
1101	11600	9	38.6	18	76.3	20	84.3	27	112.0	33	140.0	26	111.0	30	128.0	36	151.0	
1102	10560	17	63.9	33	127.0	37	140.0	49	187.0	61	234.0	50	190.0	57	219.0	-	-	
1103	9900	24	84.7	47	168.0	52	187.0	-	-	-	-	-	-	-	-	-	-	
High speed	351	1840	8	5.5	16	11.0	18	11.7	25	16.6	31	20.7	28	18.7	32	21.5	38	25.3
	352	1650	17	10.4	34	20.6	38	22.5	52	31.0	-	-	53	31.5	61	36.3	-	-
	353	1530	25	13.7	49	27.0	54	30.0	-	-	-	-	-	-	-	-	-	-
	451	4820	7	13.0	15	25.9	16	28.0	22	38.8	28	48.3	22	39.3	26	45.4	31	53.6
	452	4380	14	22.4	28	44.5	31	48.5	42	67.1	53	83.7	43	68.7	50	79.3	59	93.1
	453	4120	20	29.3	39	58.3	43	63.9	59	88.2	-	-	-	-	-	-	-	-
	501	6750	7	17.3	14	34.3	15	37.6	21	51.6	26	64.3	21	50.5	24	58.4	28	68.9
	502	6240	14	30.9	27	61.3	30	67.5	41	92.3	51	115.0	40	91.4	47	105.0	55	124.0
	503	5830	19	40.6	38	80.6	42	89.1	57	121.3	-	-	-	-	-	-	-	-
	551	8940	7	22.4	14	44.1	15	48.4	20	66.2	25	82.4	19	63.1	23	73.3	27	86.5
	552	8290	13	40.4	26	79.7	29	87.7	40	120.0	50	149.0	39	116.0	45	134.0	52	158.0
	553	7760	19	53.9	38	106.0	42	118.0	57	160.0	-	-	-	-	-	-	-	-
	651	11960	7	30.8	14	60.8	15	66.1	21	91.2	26	114.0	21	90.7	24	105.0	29	124.0
	652	11040	14	56.4	28	111.0	31	122.0	42	167.0	52	209.0	41	163.0	47	188.0	55	222.0
	653	10460	19	71.9	38	143.0	41	156.0	57	215.0	-	-	-	-	-	-	-	-
	701	15260	7	39.0	14	77.5	15	84.5	21	117.0	26	146.0	21	117.0	25	136.0	29	160.0
	702	14400	14	71.1	27	141.0	30	155.0	41	213.0	51	266.0	41	212.0	47	245.0	55	288.0
	703	13780	19	95.5	38	190.0	42	209.0	57	286.0	-	-	-	-	-	-	-	-
1101	17880	7	45.3	14	89.4	15	98.5	21	134.0	26	168.0	20	128.0	23	149.0	27	176.0	
1102	16580	13	79.8	26	158.0	29	174.0	40	239.0	50	298.0	39	235.0	45	272.0	53	320.0	
1103	15520	20	110.0	39	217.0	43	242.0	58	328.0	-	-	-	-	-	-	-	-	

Ts : outlet air temperature (°C)

P : thermal capacity (kW)

Air volume (D) and thermal capacity (P) correction factors

	Standard arrangements (see pages 16 and 17)											Diffusers	Filters
	2	3	4	5	6	7	8	9	10	11	12	O.P.R.	1 and E
D	0.98	0.95	0.95	0.92	0.92	0.92	0.90	0.93	0.93	0.90	0.90	0.91	0.85
P	0.99	0.98	0.98	0.96	0.96	0.96	0.95	0.97	0.97	0.95	0.95	0.95	0.85

Performance Data (cont'd)

Thermal capacities for an inlet air temperature of : +12 °C

	Sizes	Air volume m ³ /h	Water temperature (°C)										Steam pressure (bar)					
			45/37		90/70		105/75		140/100		180/120		2		4		6	
			Ts	P	Ts	P	Ts	P	Ts	P	Ts	P	Ts	P	Ts	P	Ts	P
Low speed	351	1300	18	2.9	29	7.5	30	8.2	39	12.2	48	15.6	43	14.1	48	16.4	55	19.5
	352	1140	26	5.5	46	13.5	50	15.2	-	-	-	-	-	-	-	-	-	-
	353	1030	32	7.0	60	17.0	-	-	-	-	-	-	-	-	-	-	-	-
	451	3160	18	7.0	28	17.3	29	19.1	37	27.8	44	35.5	39	29.1	43	33.9	49	40.4
	452	2880	24	11.7	41	28.9	44	32.3	59	46.7	-	-	61	49.3	-	-	-	-
	453	2620	28	14.7	52	36.2	57	40.6	-	-	-	-	-	-	-	-	-	-
	501	4420	18	9.7	27	23.7	29	26.5	36	37.1	43	47.4	37	38.3	41	44.8	47	53.3
	502	4080	24	16.5	40	40.3	44	45.3	57	63.1	-	-	58	65.9	-	-	-	-
	503	3820	28	21.2	51	51.7	56	58.4	-	-	-	-	-	-	-	-	-	-
	551	5800	18	12.7	27	31.0	29	34.6	37	49.5	43	63.2	36	49.1	40	57.2	46	68.1
	552	5280	24	21.5	40	52.3	44	58.7	58	83.8	-	-	58	83.9	-	-	-	-
	553	4950	28	27.6	51	67.1	56	75.7	-	-	-	-	-	-	-	-	-	-
	651	7890	18	16.9	27	41.6	29	46.2	36	66.8	43	85.2	37	68.7	41	80.3	47	95.5
	652	7320	24	30.2	41	73.4	44	82.5	58	118.0	-	-	59	118.0	-	-	-	-
	653	6980	27	37.3	50	91.8	55	103.0	-	-	-	-	-	-	-	-	-	-
	701	11830	18	23.1	26	57.0	27	63.4	34	90.2	40	115.0	35	95.1	39	111.0	44	132.0
	702	11160	23	41.4	38	102.0	41	114.0	53	160.0	-	-	55	167.0	62	194.0	-	-
	703	10660	27	54.9	48	134.0	53	151.0	-	-	-	-	-	-	-	-	-	-
1101	11600	18	25.8	28	62.7	29	70.5	36	98.0	43	125.0	37	98.8	41	115.0	46	137.0	
1102	10560	24	42.5	40	104.0	44	117.0	56	162.0	-	-	58	169.0	-	-	-	-	
1103	9900	29	57.1	52	138.0	58	157.0	-	-	-	-	-	-	-	-	-	-	
High speed	351	1840	18	3.4	26	8.8	28	9.6	34	14.3	41	18.4	38	16.6	42	19.4	48	23.1
	352	1650	24	6.8	41	16.7	45	18.7	59	26.9	-	-	61	28.0	-	-	-	-
	353	1530	29	9.1	54	22.1	59	25.0	-	-	-	-	-	-	-	-	-	-
	451	4820	17	8.4	25	21.0	26	23.2	32	33.7	38	43.0	33	35.1	36	41.0	41	49.0
	452	4380	22	14.6	36	36.2	38	40.1	50	58.2	61	74.5	52	61.2	59	71.4	-	-
	453	4120	25	19.1	45	47.4	49	52.9	-	-	-	-	-	-	-	-	-	-
	501	6750	17	11.6	24	28.5	26	31.8	31	45.7	37	58.4	31	45.4	35	53.5	39	63.9
	502	6240	21	20.5	35	50.2	38	56.2	49	80.3	59	103.0	50	81.4	56	95.0	-	-
	503	5830	25	27.0	45	66.0	49	74.3	-	-	-	-	-	-	-	-	-	-
	551	8940	17	15.1	24	36.7	25	40.9	31	58.6	36	74.7	30	57.1	34	67.2	38	80.2
	552	8290	21	27.2	35	66.1	38	74.0	49	106.0	59	135.0	48	105.0	54	122.0	63	146.0
	553	7760	25	35.8	44	87.1	48	97.9	-	-	-	-	-	-	-	-	-	-
	651	11960	17	20.3	24	50.2	25	55.6	31	80.5	37	103.0	32	81.9	35	96.2	40	115.0
	652	11040	22	37.4	36	91.1	39	102.0	50	146.0	61	187.0	50	145.0	56	170.0	-	-
	653	10460	25	47.1	44	116.0	48	130.0	-	-	-	-	-	-	-	-	-	-
	701	15260	17	25.7	24	63.8	25	70.8	31	102.0	37	131.0	32	106.0	35	124.0	40	148.0
	702	14400	21	47.1	35	115.0	38	129.0	49	185.0	59	237.0	50	189.0	56	221.0	-	-
	703	13780	25	63.4	44	155.0	48	174.0	-	-	-	-	-	-	-	-	-	-
1101	17880	17	30.6	24	74.6	25	83.6	31	119.0	36	152.0	31	116.0	34	136.0	38	163.0	
1102	16580	21	53.3	35	131.0	37	146.0	48	210.0	59	268.0	49	211.0	55	247.0	63	294.0	
1103	15520	26	74.1	45	179.0	50	203.0	-	-	-	-	-	-	-	-	-	-	

Ts : outlet air temperature (°C) P : thermal capacity (kW)

Air volume (D) and thermal capacity (P) correction factors

	Standard arrangements (see pages 16 and 17)											Diffusers O.P.R.	Filters 1 and E
	2	3	4	5	6	7	8	9	10	11	12		
D	0.98	0.95	0.95	0.92	0.92	0.92	0.90	0.93	0.93	0.90	0.90	0.91	0.85
P	0.99	0.98	0.98	0.96	0.96	0.96	0.95	0.97	0.97	0.95	0.95	0.95	0.85

Performance Data (cont'd)

Thermal capacities for an inlet air temperature of : +18 °C

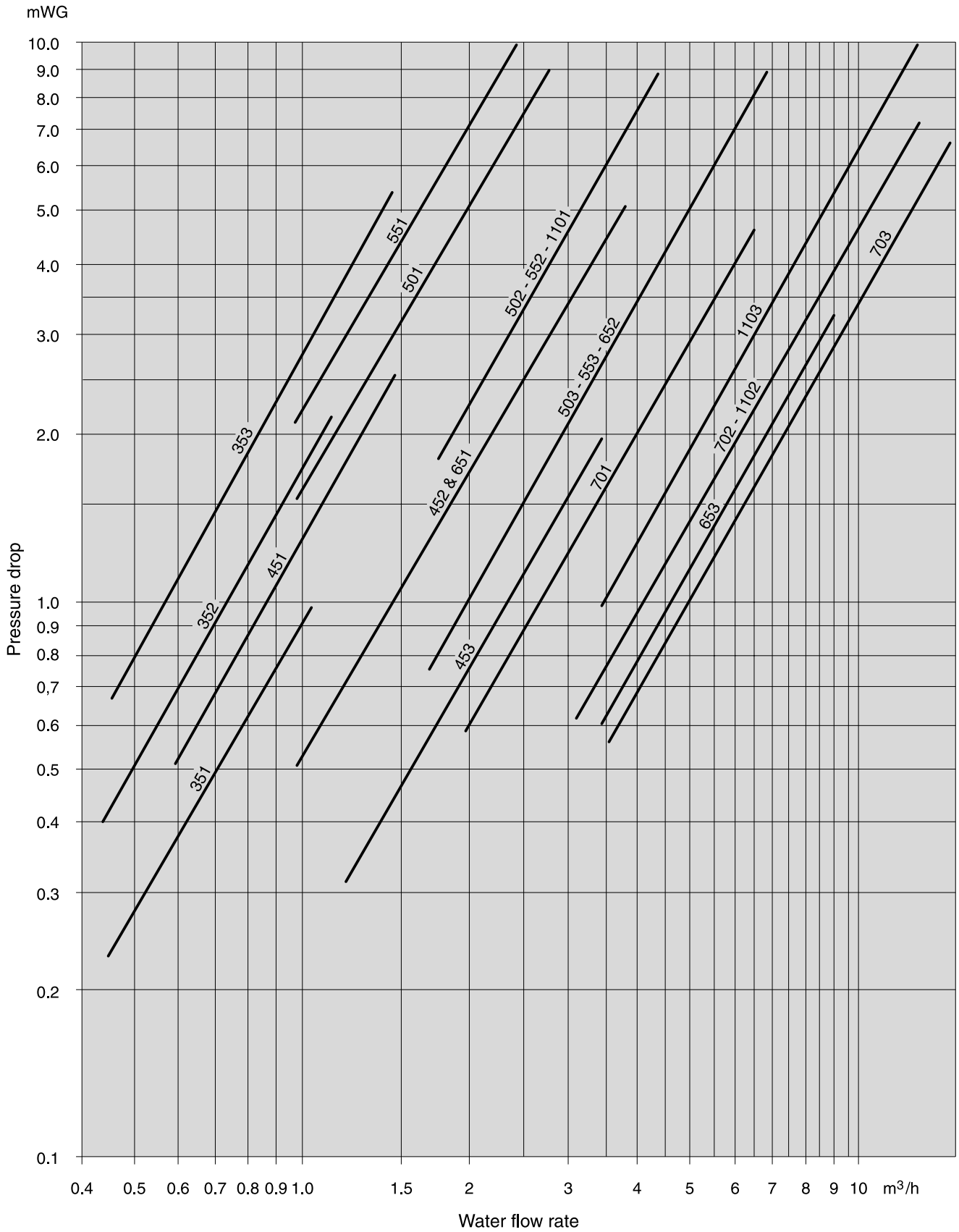
	Sizes	Air volume m ³ /h	Water temperature (°C)										Steam pressure (bar)					
			45/37		90/70		105/75		140/100		180/120		2		4		6	
			Ts	P	Ts	P	Ts	P	Ts	P	Ts	P	Ts	P	Ts	P	Ts	P
Low speed	351	1300	23	2.1	33	6.6	35	7.4	43	11.2	51	14.7	48	13.3	53	15.5	60	18.6
	352	1140	29	4.1	49	12.0	53	13.7	-	-	-	-	-	-	-	-	-	-
	353	1030	33	5.4	61	15.2	-	-	-	-	-	-	-	-	-	-	-	-
	451	3160	23	5.2	32	15.4	34	17.2	42	25.7	49	33.4	43	27.4	48	32.2	54	38.5
	452	2880	27	8.7	44	25.7	48	29.1	62	43.2	-	-	-	-	-	-	-	-
	453	2620	30	11.0	54	32.2	59	36.6	-	-	-	-	-	-	-	-	-	-
	501	4420	23	7.3	32	21.2	34	23.9	41	34.4	48	44.6	42	36.1	46	42.4	52	50.8
	502	4080	27	12.5	44	36.0	47	40.9	60	58.6	-	-	63	61.9	-	-	-	-
	503	3820	30	16.1	54	46.2	59	52.8	-	-	-	-	-	-	-	-	-	-
	551	5800	23	9.6	32	27.7	34	31.3	41	46.0	48	59.5	41	46.1	45	54.2	51	64.9
	552	5280	27	16.3	44	46.7	48	53.1	61	77.9	-	-	62	78.8	-	-	-	-
	553	4950	30	21.0	54	59.9	59	68.5	-	-	-	-	-	-	-	-	-	-
	651	7890	23	12.6	32	37.0	33	41.6	41	61.9	48	80.2	42	64.8	46	76.0	52	91.0
	652	7320	27	22.8	44	65.5	48	74.6	62	109.0	-	-	63	111.0	-	-	-	-
	653	6980	30	28.1	52	81.8	57	92.9	-	-	-	-	-	-	-	-	-	-
	701	11830	22	17.2	31	50.8	32	57.1	39	83.6	45	108.0	40	89.5	44	105.0	49	126.0
	702	11160	26	31.2	42	90.6	45	103.0	57	149.0	-	-	59	157.0	-	-	-	-
	703	10660	29	41.7	51	120.0	56	137.0	-	-	-	-	-	-	-	-	-	-
1101	11600	23	19.6	32	56.1	34	63.7	41	91.0	48	118.0	42	93.1	46	109.0	51	131.0	
1102	10560	27	32.1	44	92.6	47	105.0	60	151.0	-	-	62	159.0	-	-	-	-	
1103	9900	31	43.9	55	123.0	60	142.0	-	-	-	-	-	-	-	-	-	-	
High speed	351	1840	22	2.5	30	7.8	32	8.6	39	13.2	46	17.3	43	15.7	47	18.4	53	22.0
	352	1650	27	5.1	45	14.9	48	16.8	62	24.9	-	-	-	-	-	-	-	-
	353	1530	31	7.0	56	19.8	61	22.7	-	-	-	-	-	-	-	-	-	-
	451	4820	22	6.2	29	18.6	31	20.8	37	31.2	43	40.4	38	33.0	42	38.9	47	46.8
	452	4380	25	10.8	40	32.1	42	36.1	54	53.9	-	-	57	57.5	63	67.5	-	-
	453	4120	28	14.3	48	42.1	52	47.6	-	-	-	-	-	-	-	-	-	-
	501	6750	22	8.8	29	25.6	31	28.9	37	42.7	42	55.3	37	43.1	40	51.0	45	61.3
	502	6240	25	15.5	39	44.8	42	50.8	53	74.5	-	-	54	76.5	60	90.0	-	-
	503	5830	28	20.5	48	58.9	52	67.1	-	-	-	-	-	-	-	-	-	-
	551	8940	22	11.4	29	33.0	30	37.2	36	54.9	41	70.9	36	54.2	39	64.1	43	77.1
	552	8290	25	20.5	39	59.0	42	66.8	53	98.3	63	127.0	53	98.4	59	116.0	-	-
	553	7760	28	27.1	47	77.8	52	88.5	-	-	-	-	-	-	-	-	-	-
	651	11960	22	15.1	29	44.7	30	50.0	36	74.7	42	96.7	37	77.1	40	91.2	45	110.0
	652	11040	25	28.2	40	81.3	42	92.1	54	136.0	-	-	54	137.0	61	161.0	-	-
	653	10460	28	35.3	47	103.0	51	117.0	-	-	-	-	-	-	-	-	-	-
	701	15260	22	19.2	29	56.8	30	63.7	36	95.0	42	123.0	37	99.0	41	117.0	45	141.0
	702	14400	25	35.5	39	103.0	42	117.0	53	172.0	-	-	54	178.0	61	209.0	-	-
	703	13780	28	48.0	48	139.0	52	158.0	-	-	-	-	-	-	-	-	-	-
1101	17880	22	23.5	29	67.1	30	76.2	36	112.0	42	145.0	36	110.0	39	130.0	44	157.0	
1102	16580	25	40.3	39	117.0	41	132.0	52	194.0	63	252.0	53	199.0	59	234.0	-	-	
1103	15520	29	56.7	48	160.0	53	184.0	-	-	-	-	-	-	-	-	-	-	

Ts : outlet air temperature (°C) P : thermal capacity(kW)

Air volume (D) and thermal capacity (P) correction factors

	Standard arrangements (see pages 16 and 17)											Diffusers O.P.R.	Filters 1 and E
	2	3	4	5	6	7	8	9	10	11	12		
D	0.98	0.95	0.95	0.92	0.92	0.92	0.90	0.93	0.93	0.90	0.90	0.91	0.85
P	0.99	0.98	0.98	0.96	0.96	0.96	0.95	0.97	0.97	0.95	0.95	0.95	0.85

Water Pressure Drop Curves



Versions

Vertical arrangement



Diffuser VM
Horizontal discharge

Horizontal arrangement



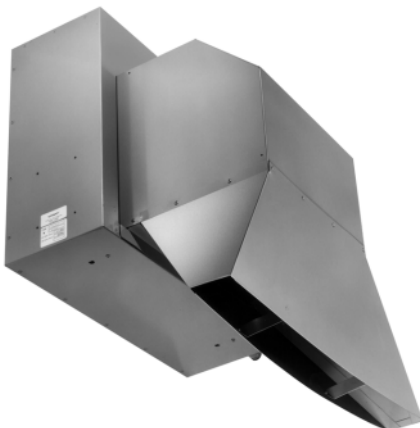
Diffuser HN
Air curtain discharge



Diffuser VN
Horizontal discharge



Diffuser HO
Horizontal discharge



Diffuser VR
Air curtain discharge



Diffuser HP
Vertical discharge

Unit Locations

WESTHERM units can be installed in many buildings, so as :

- commercial or public buildings,
- workshops,
- stockage rooms,
- shops,
- warehouses,
- greenhouses,
- gymnasiums,
- halls,
- supermarkets,
- canteens,
- underground parkings,
- etc.

Lots of installation possibilities are conceivable according to the building type and its use.

In accordance with the number of units which are to be installed and for a maximum comfort, the air stream will be pointed to maximum heat loss area (small sales area) - fig.1 - or oriented in order to obtain a total homogeneity of temperatures - fig.2 - (tertiary buildings and large volumes).

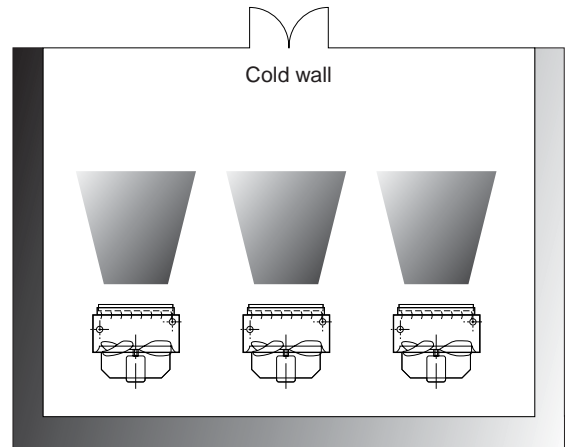
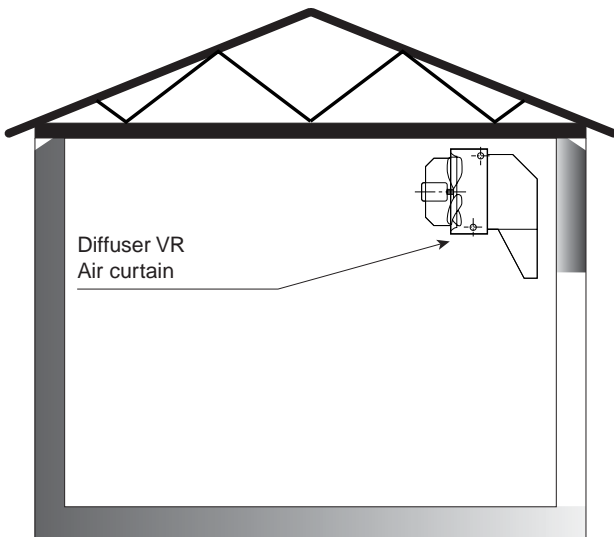


Figure 1

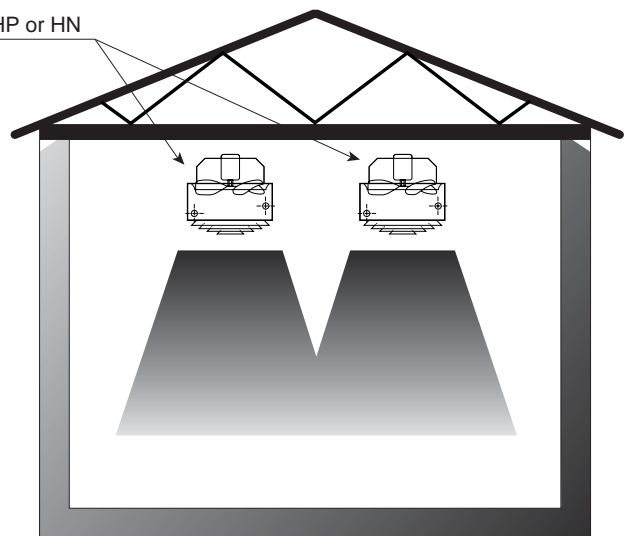
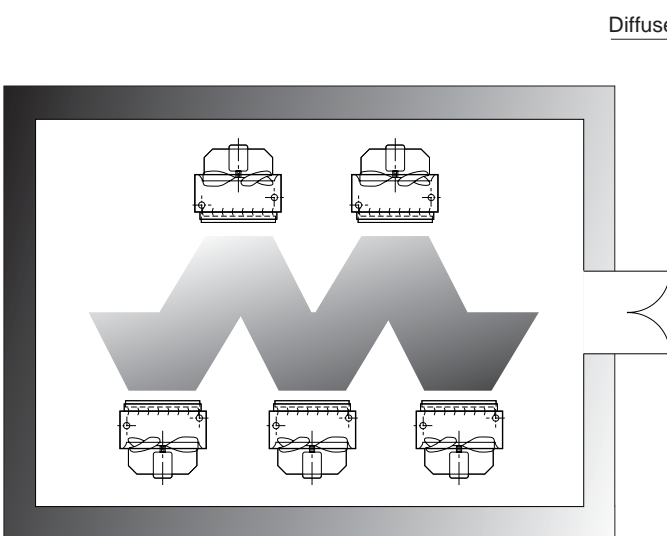
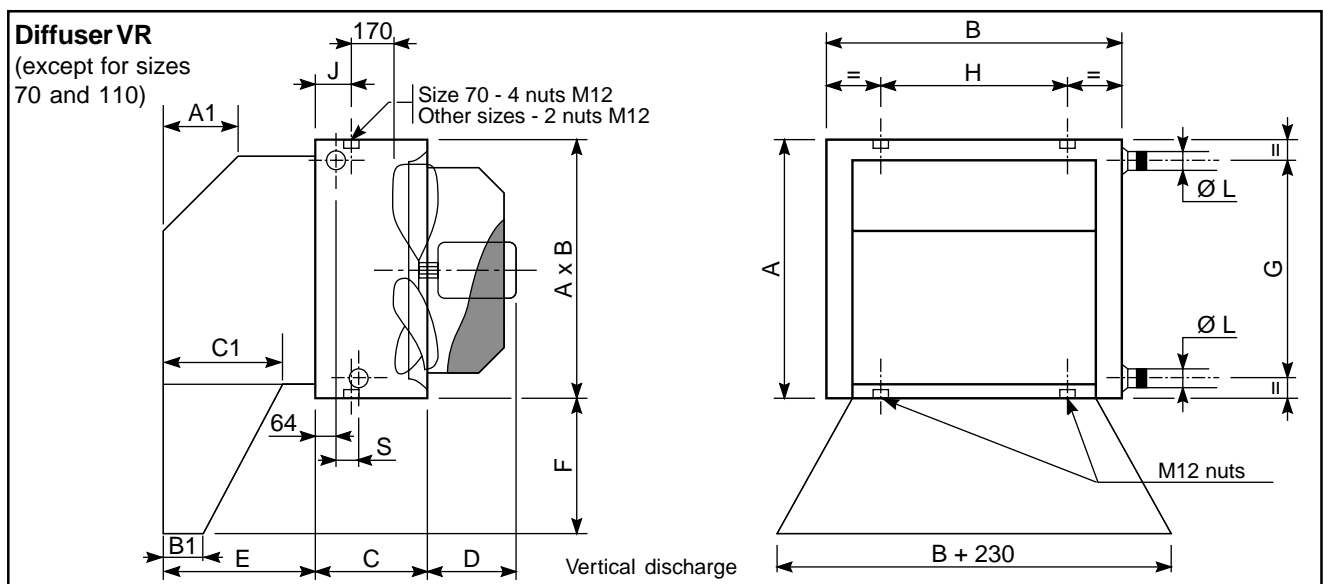
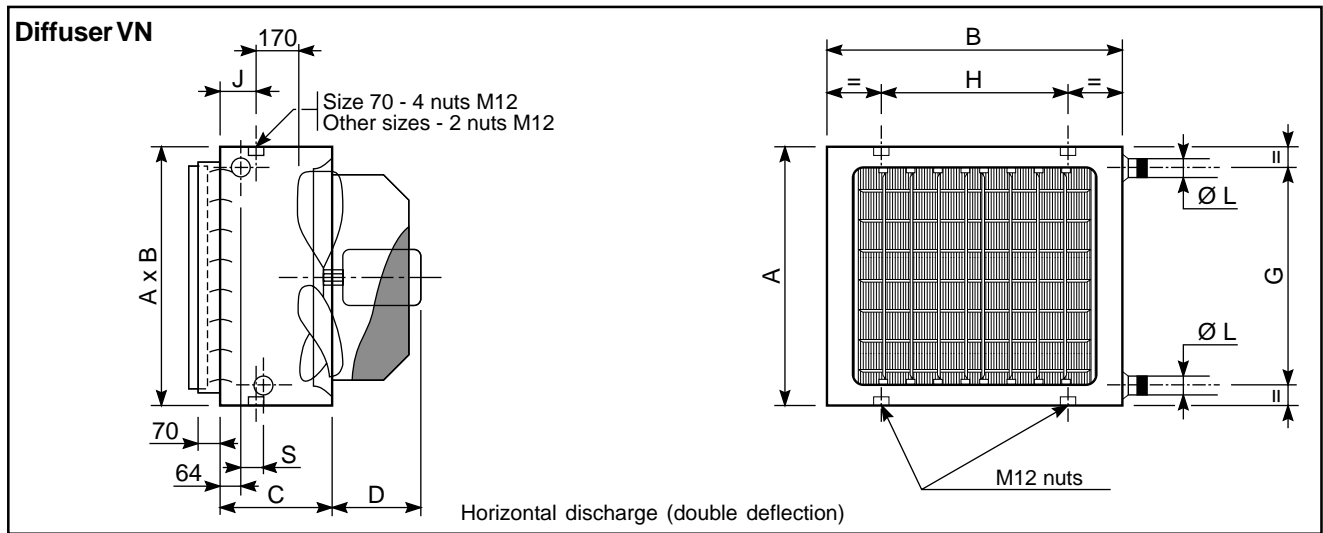
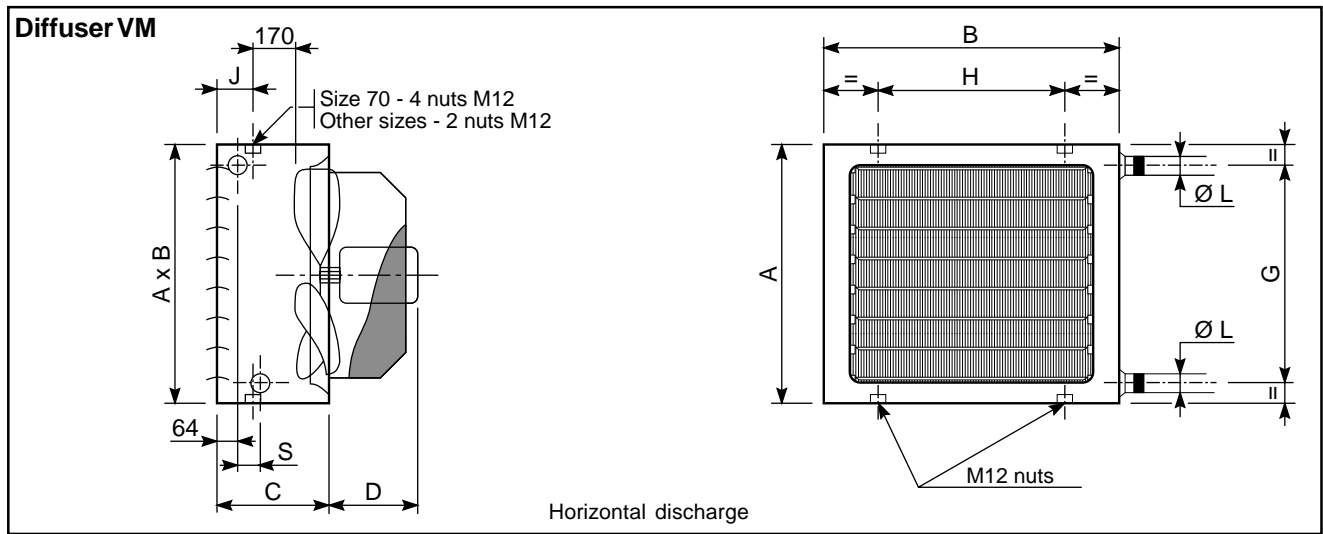


Figure 2

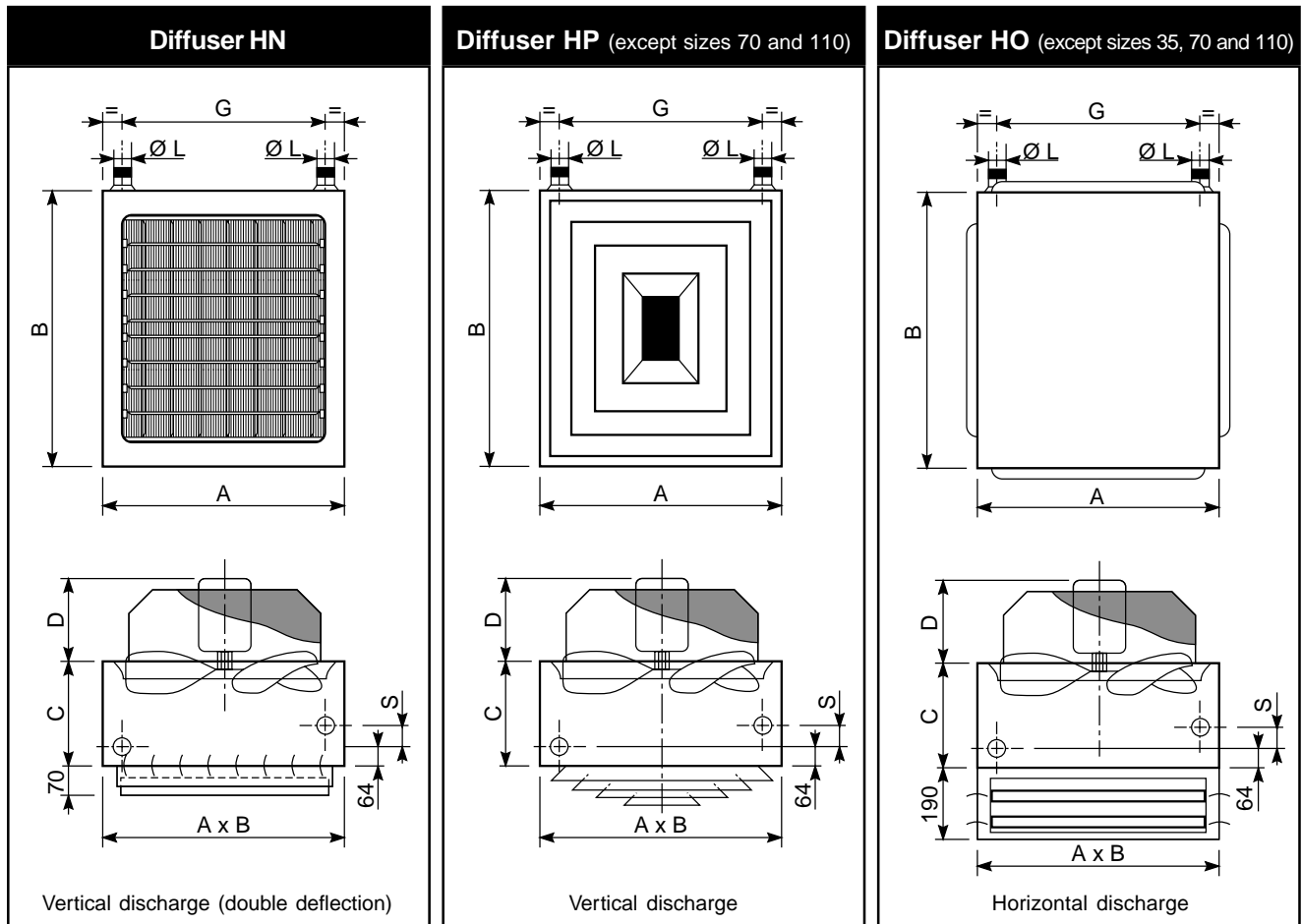
Dimensions and Weight

Vertical arrangement



Dimensions and Weight

Horizontal arrangement



Dimensions (mm)

Sizes	35	45	50	55	65	70	110
A	440	560	560	680	800	920	680
B	550	670	790	790	910	990	1580
C	300	300	300	300	300	440	300
D	245	275	275	275	295	295	275
E	300	400	400	400	400	-	-
F	270	370	370	370	370	-	-
G	330	450	450	570	690	810	570
H	320	440	560	560	680	700	1350
J	124	124	124	124	124	45	124
L	See the below table						
S	30	60	60	60	60	60	60
A1	175	175	175	175	175	-	-
B1	98	160	200	249	249	-	-
C1	260	360	360	347	347	-	-

Coil header sizes (Ø L)

Sizes	Cu/Alu coil Number of Rows			Cupro-nickel/Alu coil Number of Rows		
	1	2	3	1	2	3
35	20/27	20/27	20/27	15/21	15/21	15/21
45	20/27	26/34	26/34	15/21	33/42	33/42
50	20/27	26/34	26/34	15/21	33/42	33/42
55	20/27	26/34	26/34	15/21	33/42	33/42
65	26/34	26/34	33/42	40/49	40/49	40/49
70	33/42	33/42	33/42	40/49	40/49	40/49
110	26/34	33/42	33/42	40/49	40/49	40/49

Weight (kg)

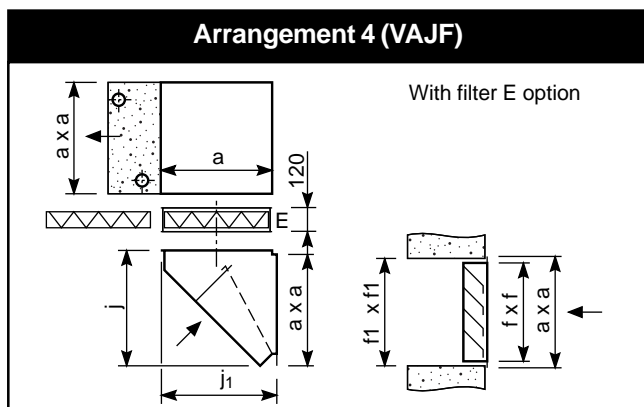
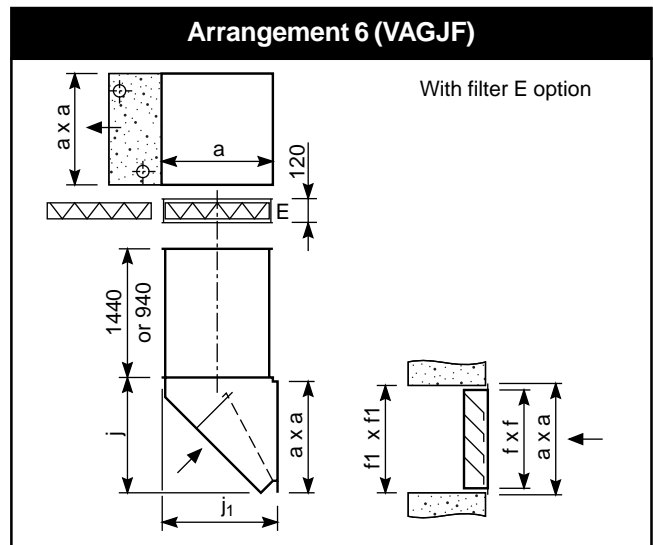
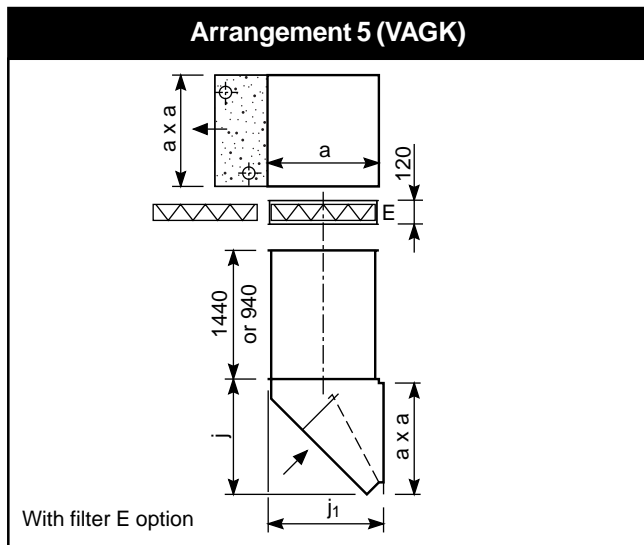
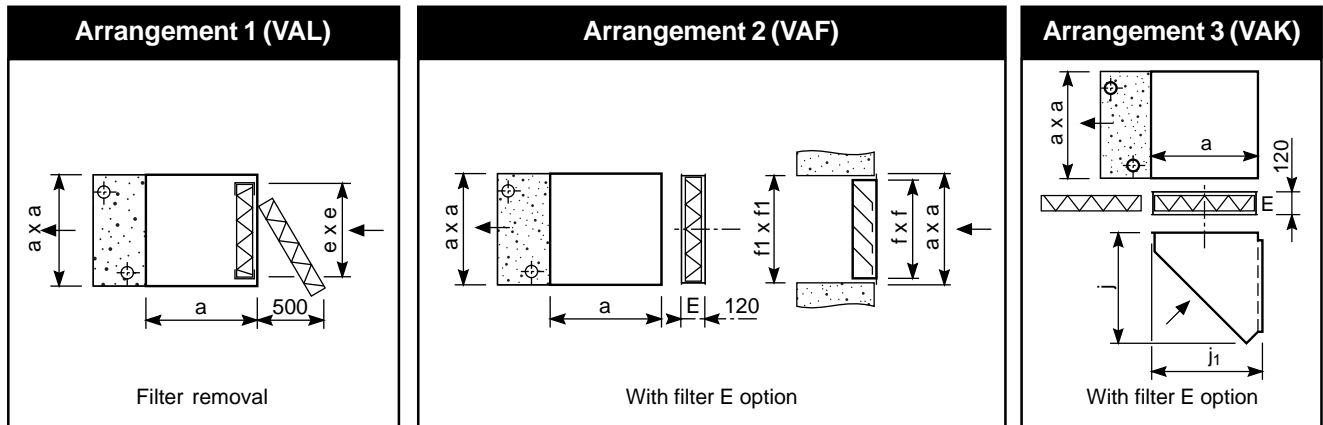
Sizes	Water volume (dm ³)	Operating weight
351	1.8	20.0
352	3.9	22.5
353	5.8	25.0
451	3.0	32.5
452	6.5	37.5
453	9.5	42.0
501	3.6	41.0
502	7.7	47.0
503	11.3	54.0
551	4.2	45.5
552	9.0	52.0
553	13.2	58.5
651	8.0	56.0
652	14.0	65.0
653	20.0	74.0
701	10.4	82.0
702	18.4	92.0
703	27.2	103.0
1101	11.0	91.0
1102	20.0	104.0
1103	29.0	117.0

Optional Arrangements

Component description

- V : Westerm vertical version.
- H : Westerm horizontal version.
- A : Cubic inlet casing for matching other accessories on 3 faces.
- B : Mixing dampers.
- C : Horizontal non-return shutter.
- D : Vertical non-return shutter.
- E : Flat-bank filter box.
- F : External weatherproof louvre with bird guard.
- G : Duct.
- J : Mixing box with adjustable shutter and wire mesh guard.
- K : Return air plenum with wire mesh guard.
- L : Flat-bank filter for casing A.
- Z : Roof air inlet with bird guard and seal ring, to be mounted.

Standard arrangements



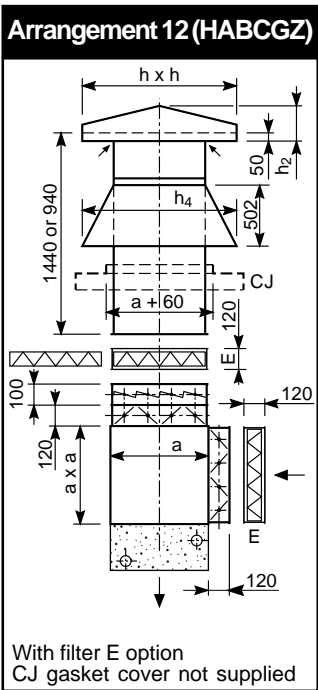
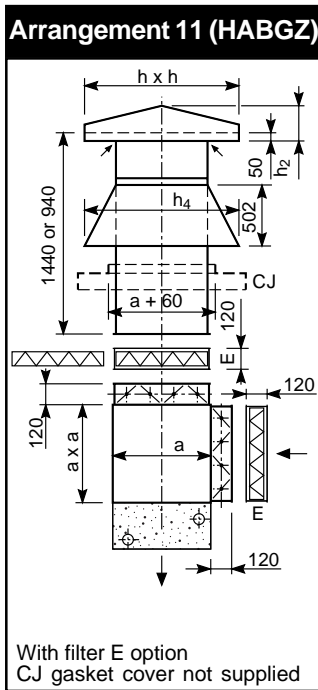
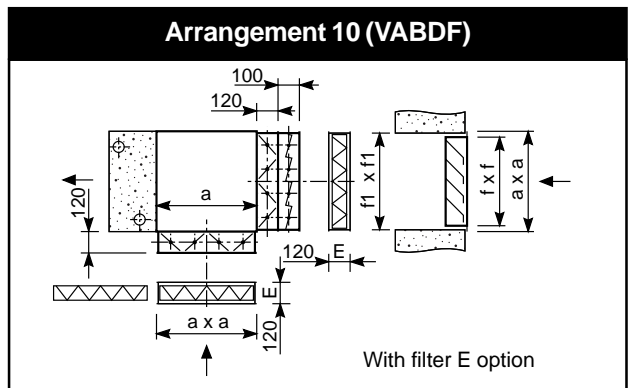
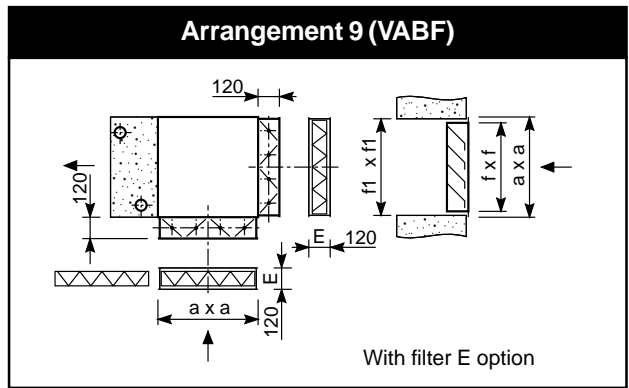
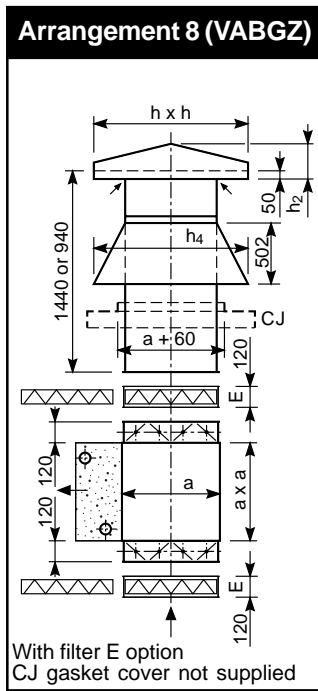
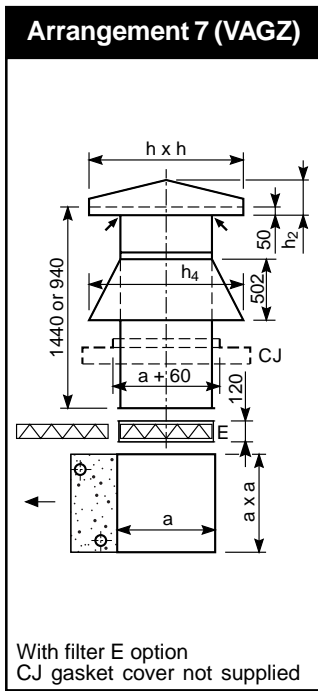
Dimensions (mm)

Sizes	35	45	50	55	65	70	110
a	440	560	560	680	800	800	680
d	100	100	100	100	100	100	100
e	370	490	490	610	730	730	610
f	382	502	502	622	742	742	622
f ₁	392	512	512	632	752	752	632
h	720	900	900	1080	1280	1280	1080 *
h ₂	190	230	230	275	310	310	275
h ₄	960	1080	1080	1200	1320	1320	1200
j	480	600	600	720	840	840	720
j ₁	460	580	580	700	820	820	700

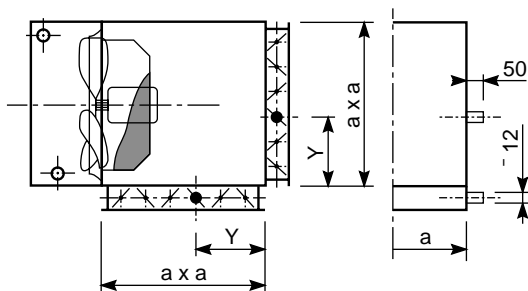
Note : The size 110 is equipped with 2 accessory sets of the size 55. (* 1080 x 1870).

Optional Arrangements (cont'd)

Standard arrangements



Damper shaft position



Weight (kg)

Sizes	35	45	50	55	65	70	110	
Optional arrangements	1	10.0	15.0	15.0	22.0	29.0	29.0	44.0
	2	11.0	17.0	17.0	24.0	31.5	31.5	48.0
	3	17.0	25.5	25.5	35.0	46.5	46.5	70.0
	4	20.0	30.0	30.0	41.0	54.0	54.0	82.0
	5	37.0	51.5	51.5	67.0	84.5	84.5	134.0
	6	40.0	56.0	56.0	73.0	92.0	92.0	146.0
	7	57.0	75.5	75.5	95.0	117.0	117.0	190.0
	8	67.0	88.0	88.0	111.0	137.0	137.0	222.0
	9	21.0	29.5	29.5	40.0	51.5	51.5	80.0
	10	25.0	34.5	34.5	47.0	59.5	59.5	94.0
	11	67.0	88.0	88.0	111.0	137.0	137.0	222.0
	12	71.0	93.0	93.0	118.0	145.0	145.0	236.0
Diffusers	N	3.0	4.5	5.5	6.5	7.5	13.0	13.0
	O	-	10.0	11.0	12.5	16.0	-	-
	P	1.5	2.5	3.0	3.5	5.0	-	-
	R	12.0	17.0	18.5	20.0	23.0	-	-

Note : The size 110 is equipped with 2 accessory sets of the size 55.

Sizes	35	45	50	55	65	70	110
Y	173.5	280.0	280.0	292.5	400.0	400.0	292.5

Technical Data

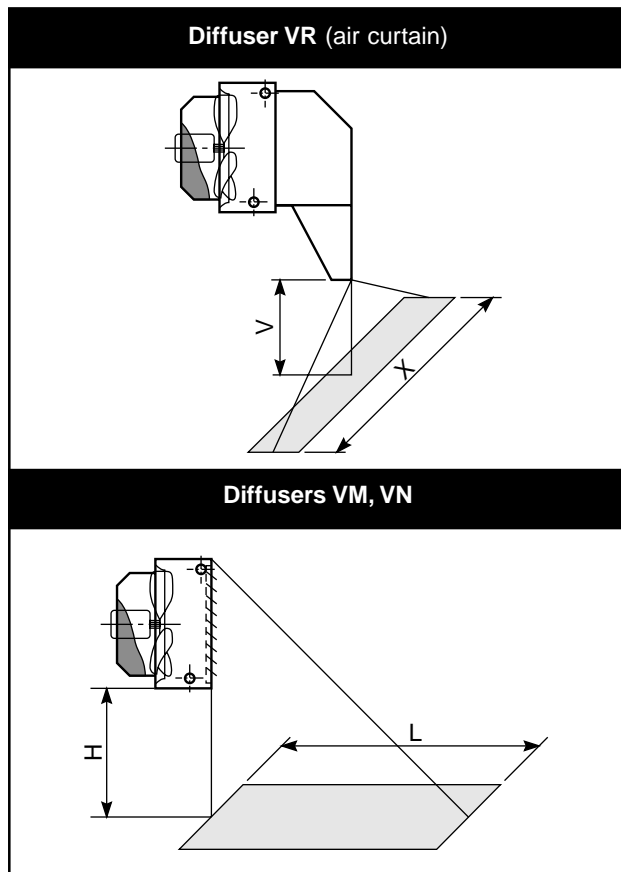
Air throw (m)

Values given for a temperature difference between ambient air and discharged air of 15 °C.
(For other Δt , see table on page 5)

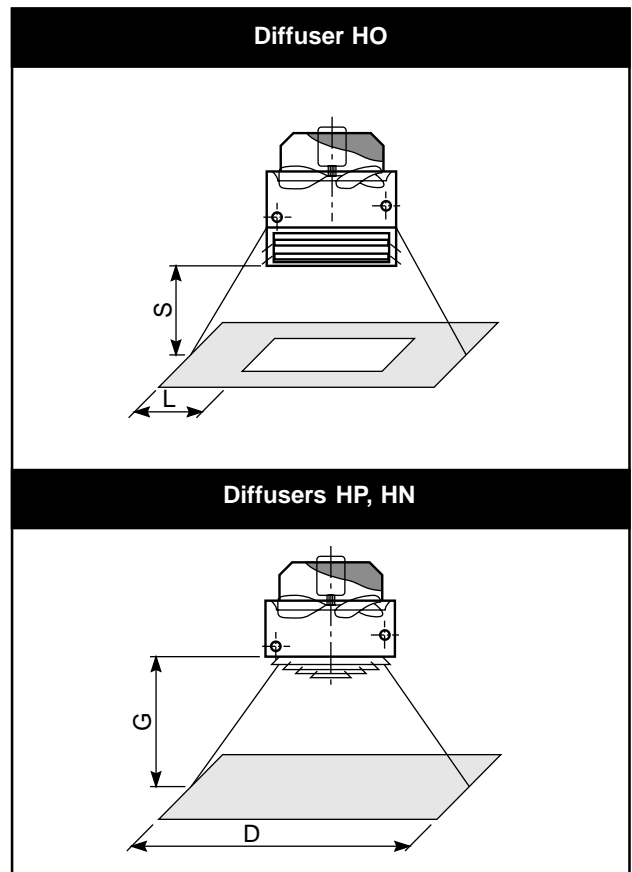
Sizes		35		45		50		55		65		70		110	
Fan speed		900	1400	900	1400	900	1400	900	1400	900	1400	700	900	900	1400
VM	L	8.0	12.0	10.0	14.0	12.0	16.0	14.0	18.0	16.0	20.0	16.0	20.0	14.0	18.0
	H	3.0	3.0	4.0	5.0	4.0	5.0	4.0	5.0	4.0	5.0	4.0	5.0	4.0	5.0
VN	L	8.0	12.0	10.0	14.0	12.0	16.0	14.0	18.0	16.0	20.0	16.0	20.0	14.0	18.0
	H	3.0	3.0	4.0	5.0	4.0	5.0	4.0	5.0	4.0	5.0	4.0	5.0	4.0	5.0
HN	D	7.0	10.0	9.0	12.0	11.0	14.0	12.0	16.0	14.0	18.0	14.0	18.0	12.0	16.0
	G*	4.0	4.5	4.5	5.0	4.5	5.5	5.0	6.0	5.5	6.5	5.5	6.5	5.0	6.0
HO	S	-	-	2.5 to 4.0		2.5 to 4.0		2.5 to 4.0		2.5 to 4.0		-	-	-	-
	L	-	-	6.0	8.0	6.5 to 8.5		7.0	9.0	7.5	9.0	-	-	-	-
HP	G	4.0	4.5	4.5	5.0	4.5	5.5	5.0	6.0	5.5	6.5	-	-	-	-
	D	7.0	10.0	9.0	12.0	11.0	14.0	12.0	16.0	14.0	18.0	-	-	-	-
VR	V	3.0	4.0	3.5	4.5	3.5	5.0	4.0	5.0	3.0	4.0	-	-	-	-
	X	3.0	4.0	4.0	5.0	4.5	5.5	5.0	6.0	5.5	6.5	-	-	-	-

* : Air throw of diffuser HN can be increased by changing shutter position.

Vertical arrangement



Horizontal arrangement



Sound levels

Sound levels at 5 m (dBA)

Sizes	35	45	50	55	65	70	110
Motor speed (rpm)	700	-	-	-	-	54	-
	900	39	46	49	52	63	55
	1400	46	53	57	61	63	64

Average sound levels (dBA)

Type of building	Sound levels
Gymnasium	50 - 55
Supermarkets, dining halls, small workshops, semi-industrial buildings	55 - 60
Machine shop, production shop assembly rooms	60 - 65
Foundries, boiler rooms	65 - 70

Mounting and Installation

Receipt of equipment

Upon receipt of the unit, all equipment should be thoroughly inspected for damages that may have occurred during transportation. Any reserve shall be immediately specified on the dispatch note and notified by registered letter.

Handling and lifting

Do not lift the unit by the coil headers or motor base. Care should be taken when handling the unit.

Connections

Water piping :

Air vent and drain plug shall be provided. Shut-off valves shall also be fitted.

Water connections could be damaged by an important stress when screwing them. Use a second spanner to compensate the stress of tightening.

Ductwork :

The unit should never take the load of the duct.

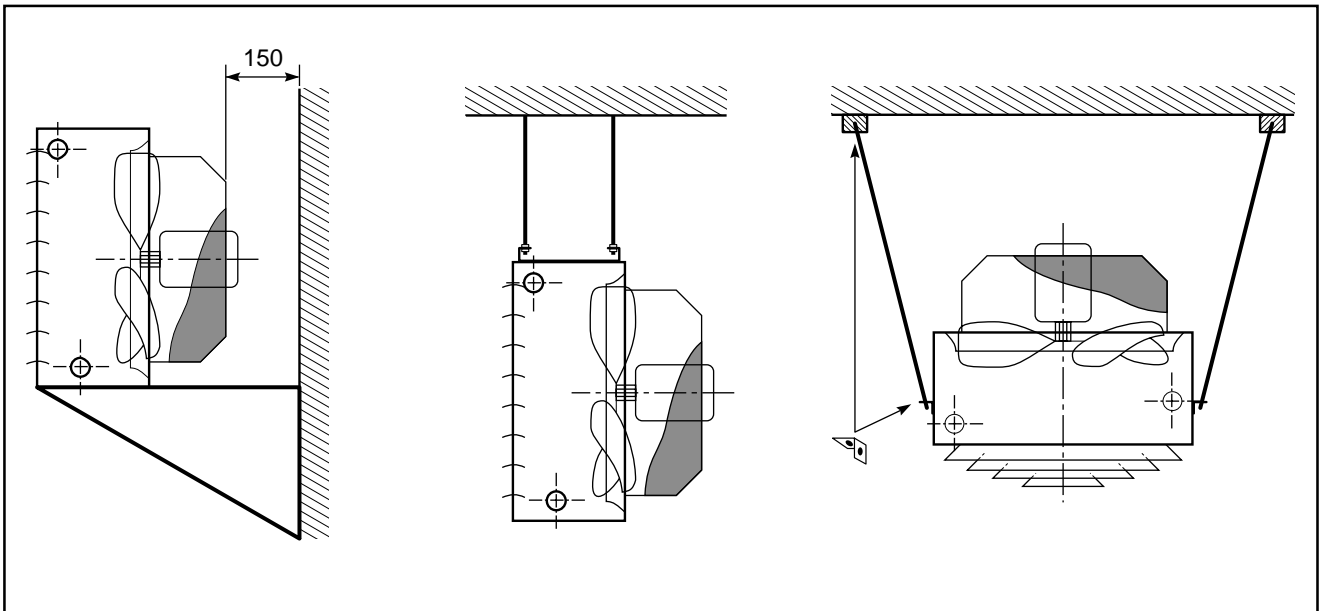
Power supply :

Connect the unit to earth. Wiring must be performed in accordance with all applicable codes and regulations. The unit shall be controlled via a circuit-breaker with inherent thermal protection, protecting motor against accidental overloads and excess current. If the electric heater is used, connect its safety thermostat.

Installation

- The unit must be installed with a minimum distance of 150 mm between motor and wall, so that air flow is not impeded and removal of fan motor assembly can be easily realized.
- The ceiling units with down flow air discharge must be suspended via 4 hangers fixed onto 4 nos M12 holes located on unit casing.

The fixing accessories shown such as supports, rods or brackets are not supplied by manufacturer.



Maintenance

Before servicing, **switch the unit off**. Routine maintenance shall consist in following operations :

- Coil : clean it by compressed air,
- Air filter : check as frequently as possible the clogging.

Recommandations

- Water must be treated and the pH value regularly checked.
- Make certain that absorbed current will not exceed the rated one.
- Do not climb on the unit.

Warranty

All turning parts are guaranteed for 6 months; other parts are guaranteed for 1 year.

Exclusive of warranty are all eventual damages caused by incorrect wiring or/and inadequate protection against accidental overloads, in particular, incorrect rating of circuit breakers and non-observation of instructions and so on... For details, please refer to our general conditions of sale.

Westerm Electrical Heaters

Coding

WESTHERM

Size of casing : 355 or 455

Performance (kW)

Electrical heating

Heater battery supply voltage : 230 or 400

Fan speed : 9 (900 rpm) - 14 (1400 rpm)

Air diffuser : **VM, VN**

355 6 R 400 9 VM

Using limits

Power supply : 230 V/3/50 Hz or 400 V/3/50 Hz.

Voltage limits : $\pm 10\%$.

Technical features

Frame / Casing

All parts are constructed from heavy gauge steel sheet with an oven-baked epoxy paint finish for an excellent protection against corrosion.

Electric heater

Consists of sheathed type heating elements. Designed for :

- a 3-phase/230 V or 400 V power supply,
- standard wiring : 400 Volts/3/50 Hz.

Fan motor assembly

With wide aluminium blades.

Impeller special profile provides optimum air volume/pressure performance and assures a low noise level.

Statically and dynamically balanced.

The air inlet is designed for minimum pressure drop and noise level.

Terminal block

All components (electric resistances, safety) are supplied via an external terminal box including :

- High temperature cut out (140 °C).
- Capacity stages.

Options

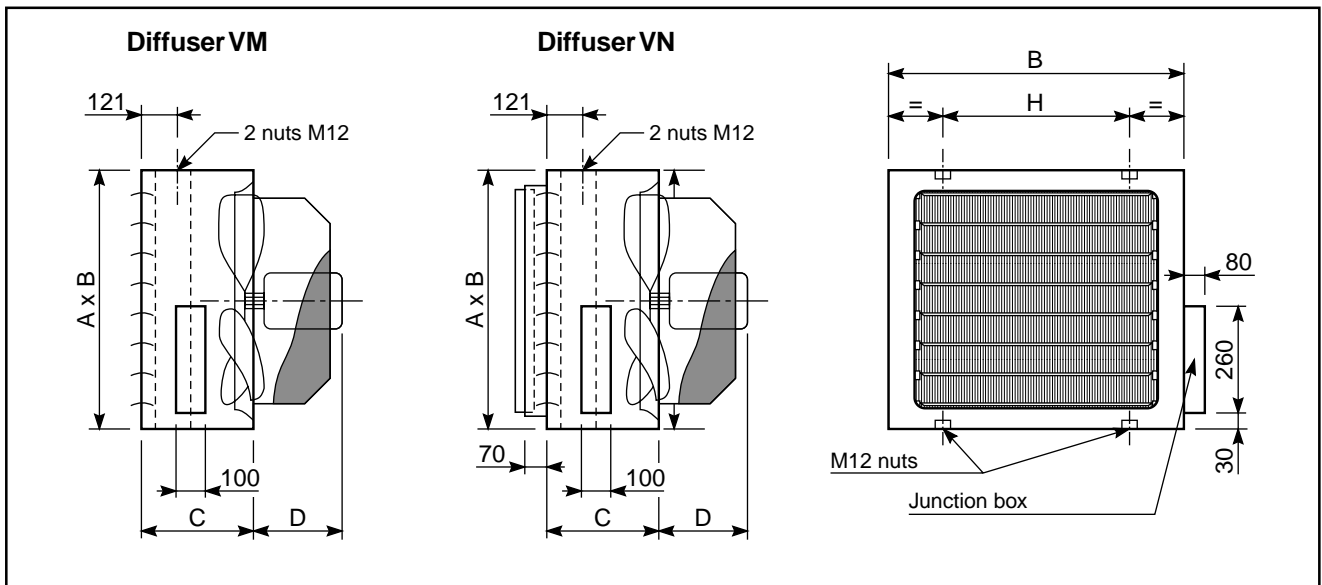
Motor side wire guard.



Technical Data

Sizes	Heating capacity		Fan speed				Capacity steps (kW)
	kW	kcal/h	900 rpm		1400 rpm		
			Air volume m ³ /h	Δt °C	Air volume m ³ /h	Δt °C	
355	6	5 160	1 300	14	1 840	10	3 + 3
	9	7 740	1 140	22	1 650	16	3 + 6
	12	10 320	1 030	33	1 530	22	6 + 6
455	18	15 480	3 160	17	4 820	11	9 + 9
	27	23 220	2 880	27	4 380	17	9 + 9 + 9
	36	30 960	2 620	39	4 120	25	18 + 9 + 9

Dimensions and weight



Dimensions (mm)

Sizes	A	B	C	D	H
355	440	550	300	200	320
455	560	670	300	220	440

Weight (kg)

Sizes	Capacity		
	mini	medium	maxi
355	21	22	23
455	30	32	34

Sound levels

Sound levels at 5 m (dBA)

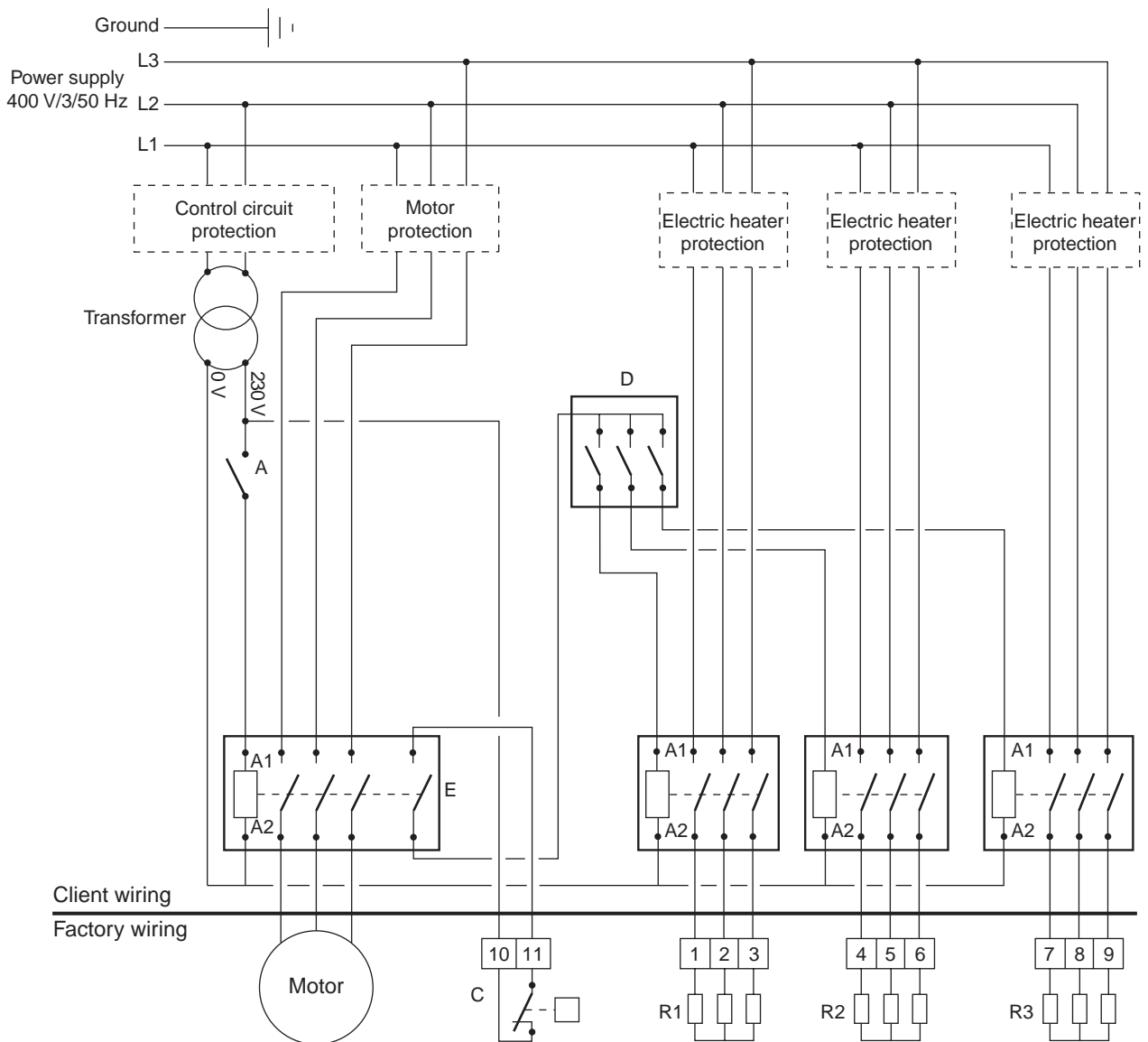
Sizes	355	455
Fan speed	900	48
	1400	55

Average sound levels (dBA)

Rooms	Levels
Gymnasium	50 - 55
Supermarkets, dining rooms small workshops, semi-industrial areas	55 - 60
Machine shop, production shop, assembly rooms	60 - 65
Foundries, boiler rooms	67 - 70

Electrical Wiring and Connections

Example of wiring diagram



Legend :

A : Fan on/off switch.

In case of intermittent ventilation, keep the fan running during 3 mn minimum after switching off the electric heating coils.

C : Manual reset high temperature cut-out switch.

D : Step controller.

E : Fan relay contact electrically interlocking the operation of electric heating coils to that of fan.

R1, R2, R3 : Electric heating coils step 1, 2 and 3.

Start-up, Shutdown and Safety

Start-up

Engage the electric heater disconnect switch. The fan start-up will be time-delayed until the electric heater is warmed up.

In other case, start the fan first.

Shut-down

Disconnect the electric heater switch, then that of fan if it is not time-delayed.

Safety

A high temperature cut-out switch turns automatically the electric heater off in case of abnormal rise in temperature (due to a bad handling, accidental fan shut-down, etc.).

Ensure electric heater interlocking with fan start-up.

Centrifugal Fan Unit Heaters

WESTHERM range is also available in centrifugal fan version with CWU, WESPAK or CDC models suitable for ceiling installation. These units operate noiselessly and can be used in :

- large volume halls,
- commercial buildings (post offices, railway stations, Justice halls, Town halls, etc.).



Unit heater computer selection program

To provide optimal unit heater selection, Wesper provides computer selection capability.

The computer program will select the most economical unit size to meet the specification.

To operate the Wesper software, the user needs a microcomputer using Windows 95 or 98.

Contact your nearest Wesper representative for a copy of Wesper software or for a unit selection that meets the most exacting specifications.

With a concern for a constant improvement, our products can be modified without notice. Photos non contractual.



Your distributor :