



Compliant with Regulation (EU) No.  
327/2011

# Unit Heaters

Atlas / Helios  
AIX  
Atlas STP  
Jetstream

TECHNICAL MANUAL



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## INTRODUCTION

### INTRODUCTION

Since 1950 Sabiana has been manufacturing **hot water, high temperature hot water and steam unit heaters** for heating industrial and commercial environments, with proprietary manufacturing technology and a wide range of solutions.

Both in Germany and in Italy, the most involved countries in the development of European manufacturing industry, above all the mechanical one, the **most common** heating system for industrial environments uses water unit heaters connected to a central heating system.

The excellent ratio of indoor comfort to system cost, continual improvements in efficiency of hot water production, using both condensing boilers and heat pumps, the use of specific solutions such as flow optimisers on the units, as well as flexible installation and easy adaptation to new production plant layouts even after installation, mean that still today thousands of designers and businesses propose and adopt this heating solution.

All range is compliant with the **Regulation (EU) No. 327/2011** which requires **very low electric consumption ratings** in relation to performances provided.

**Sabiana** is the leading manufacturer of unit heaters, and competes worldwide providing the latest technology in environmental comfort.



## MAIN COMPONENTS

### Coil

The coil of Sabiana **Atlas** and **Helios** unit heaters with steel tubes  $\varnothing$  22 mm and aluminium fins has the following advantages compared with the copper-aluminium small diameter tube coils:

- the material used for the steel tube, which is very thick (1 mm instead of 0,3 - 0,4 mm), makes the Sabiana coil extremely sturdy and long lasting
- the tube's large diameter reduces the water pressure drop: this means that reduced power pumps are installed and a very rapid heating capacity is provided

The Sabiana coil for unit heaters uses a reduced number of tubes to give the same output: this gives a low resistance to the air flow and consequently an optimum leaving air temperature and a very long throw.

With a greater spacing between the fins as well as their thickness this facilitates cleaning and maintenance operations, which is essential to keep the unit heater efficient.

The steel tube coil is the ideal choice for installations where all tubes and equipment are made of steel because it avoids physical and chemical unbalance due to the interaction of different metals.

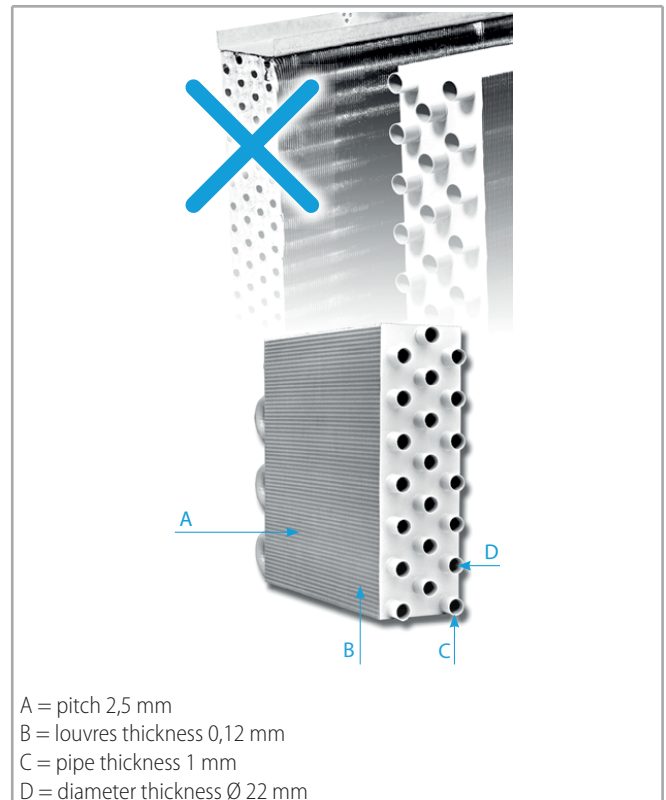
The special paint coating makes the coil long lasting and increases the thermal output.

The Sabiana coil can be used with hot water, high temperature hot water or steam, even with a high working pressure.

However, in order to meet any design or installation needs Sabiana can offer a complete set of unit heaters with copper tubes and aluminium fins.

This coil has the same features (tube diameter, fin pitch, etc.) of the steel coil but it is built with copper tube 0,7 mm thick of higher quality and with a higher mass than the coils normally used for unit heaters.

The wide range of products consists of **10 sizes** available with **1, 2 or 3 rows**.



### Electric motor

Asynchronous three phase 3Ph-400V-50Hz.

Construction of closed type, with aluminum alloy casing, self-lubricating sealed ball bearings, IP 55 protection, class B insulation.

- Two speed 1350-1000 r.p.m. (from size 1 to size 6) or 900-700 r.p.m. for all sizes with klixon thermic protection.
- On request, one speed 4 poles (1400 r.p.m.) or 6 poles (900 r.p.m.), IP44 protection, for sizes 1 to 6 only.
- On request single phase supply with capacitor supplied separately, for sizes 1 to 6 only.
- II 2 G IIB T4/T3 flameproof motors are also available (for all sizes, one speed only; not for Helios)

### Helicoidal fan

The fan has a helicoidal design with aluminium blades statically and dynamically balanced. Its rational high capacity profile provides the highest air flow with minimum noise level and electrical consumption.

The finger proof guard is painted with electroplating treatment, that ensures more protection against corrosion.

The air flow is uniformly distributed through the whole coil and consequently the unit is very quiet.

## Fan/Motor assembly support

The finger proof guard also acts as the main support and fixing frame.

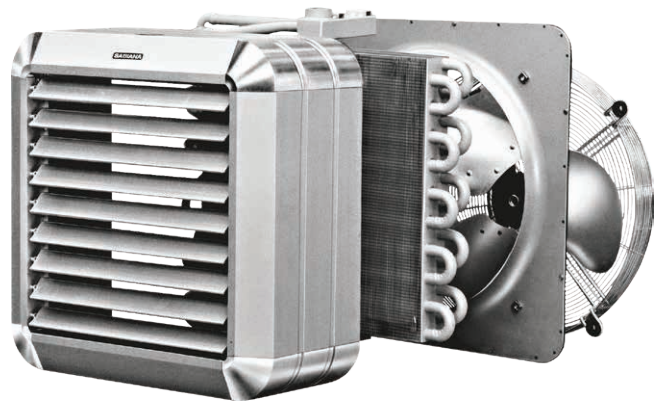
This frame, made from galvanized steel, is mounted onto the main casing via residually anti-vibration rubber mountings.

## Casing

### Atlas

The main casing is manufactured from galvanized pre-painted steel finished in a light grey colour (RAL 9002) and is assembled from three component parts. The steel is 1 mm thick and prepainted before manufacture to prevent the material being subjected to oxidation. The component parts are held together by anti vibration screws that allow easy and fast access and maintenance of the unit and coil.

The use of steel with 200 gr/mq. (according to Euronorm 142 - 79) and prepainting guarantees a perfect finish and superior protection against corrosion.

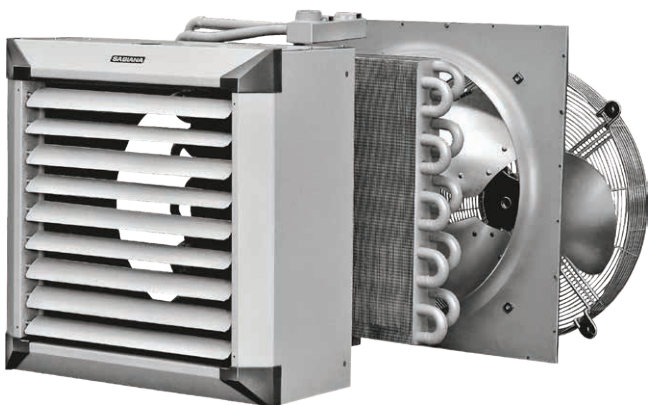


## Louvres

Louvres are made from a profiled prepainted steel sheet for the **Atlas version** or extruded aluminum for the **Helios version**, with a design that allows excellent direction of air flow.

The adjustable louvres are held in place by spring loaded pivots which allow the rotation of every single louvre in the desired position without vibrations.

Fourway distribution is achieved by the addition of a second set of louvres to the front of the unit, generally for downward application.



## Helios

With the casing manufactured of anodized aluminium, the elegance of this unit allows it to fit in environments with high aesthetic requirements, such as exhibition halls, supermarkets and conference rooms.

Even its deflectors are made of extruded aluminium and have a particularly efficient wing profile.

In all cases, Helios adds an elegant technical touch to the environment it is installed in.

In all cases, Helios adds an elegant technical touch to the environment it is installed in.

Even its deflectors are made of extruded aluminium and have a particularly efficient wing profile.



## OPERATION LIMITS AND IDENTIFICATION CODE

### Operating limits

Circuit	Description	UoM	Value
WATER	Maximum temperature of heat vector fluid	°C	170
	Maximum working pressure	kPa (bar)	1600 (16)
STEAM	Maximum working pressure	kPa (bar)	1000 (10)
	For steam we recommend the use of copper tube coils.		

### Identification code

#### Atlas

##### Example: 46A42 SX

46	A	4	2	SX	SP
	RANGE	SIZE	ROWS	COIL	COIL
MOTOR 4/6 POLE (1350/1000 r.p.m.)	ATLAS	4	2	WITH STEEL PIPES	WITH COPPER PIPES

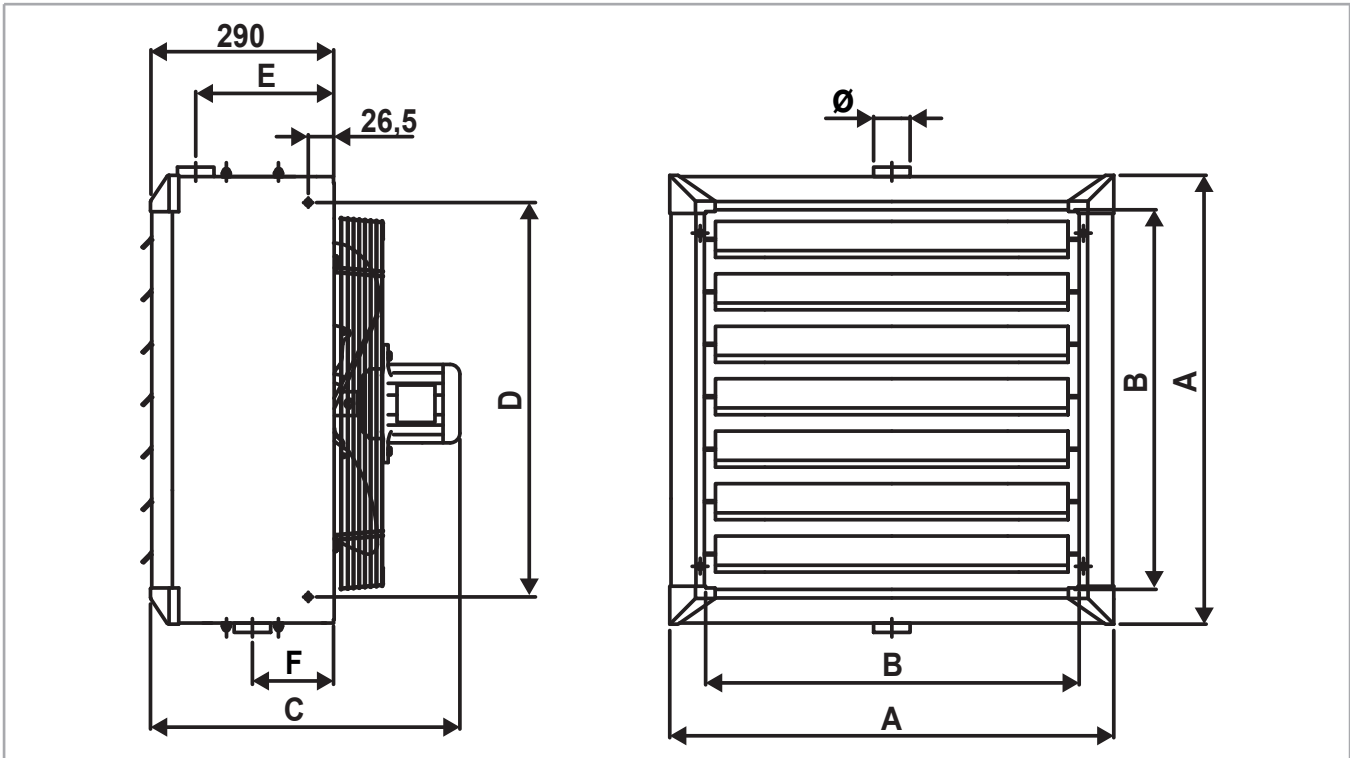
#### Helios

##### Example: 46H53 SX

46	H	5	3	SX	SP
	RANGE	SIZE	ROWS	COIL	COIL
MOTOR 4/6 POLE (1350/1000 r.p.m.)	HELIOS	5	3	WITH STEEL PIPES	WITH COPPER PIPES

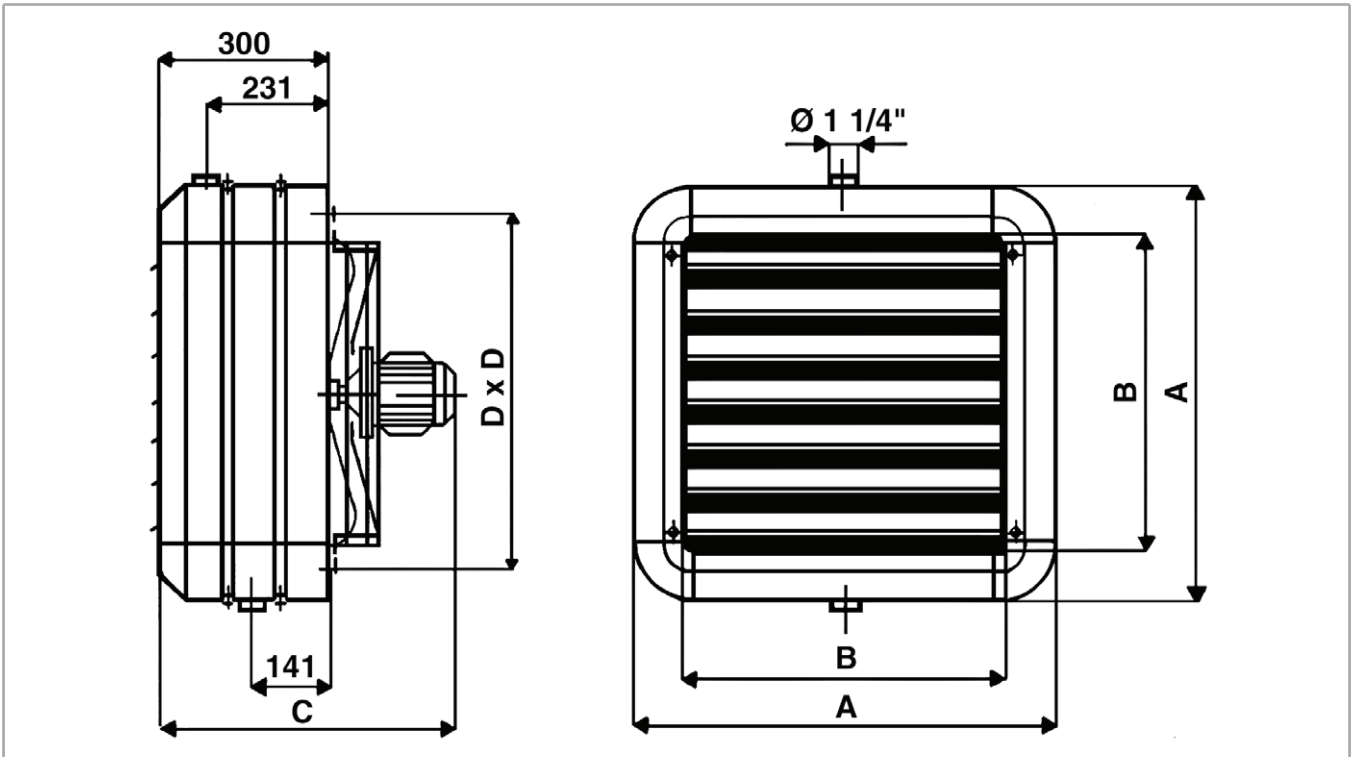
**DIMENSION, WEIGHT AND WATER CONTENT**

**Atlas**



Size	Dimensions								Weight						Water content		
	A mm	B mm	C (ATEX) mm		D mm	E mm	F mm	Ø "	1R (ATEX) kg		2R (ATEX) kg		3R (ATEX) kg		1R l	2R l	3R l
1	472	336	465	(595)	375	220	130	1 ¼	19	(32)	22	(35)	24	(37)	1,3	2,6	3,9
2	526	390	465	(595)	429	220	130	1 ¼	22	(35)	25	(37)	27	(40)	1,6	3,2	4,8
3	580	444	465	(595)	483	220	130	1 ¼	26	(38)	30	(42)	33	(45)	1,9	3,8	5,7
4	634	498	488	(618)	537	220	130	1 ¼	30	(42)	34	(46)	38	(50)	2,3	4,6	6,9
5	688	552	488	(618)	591	220	130	1 ¼	33	(47)	40	(54)	44	(58)	3,0	6,0	9,0
6	742	606	513	(643)	645	220	130	1 ¼	38	(52)	46	(60)	51	(65)	3,5	7,0	10,5
7	793	657	560	(740)	696	210	140	1 ½	46	(63)	55	(72)	61	(78)	4,3	8,2	12,3
8	900	764	575	(755)	803	210	140	1 ½	55	(71)	66	(82)	73	(89)	5,8	11,1	16,6
9	1010	874	595	(775)	913	210	140	1 ½	65	(86)	79	(100)	88	(109)	7,6	14,5	21,8
10	1117	980	640	(820)	1020	210	140	2	79	(98)	95	(114)	106	(125)	9,6	18,2	27,3

Helios



Size	Dimensions				Weight			Water content		
	A mm	B mm	C mm	D mm	1R kg	2R kg	3R kg	1R l	2R l	3R l
1	486	330	477	406	19	22	24	1,3	2,6	3,9
2	540	384	477	460	22	25	27	1,6	3,2	4,8
3	594	438	477	514	26	30	33	1,9	3,8	5,7
4	648	492	500	568	30	34	38	2,3	4,6	6,9
5	702	546	500	622	33	40	44	3,0	6,0	9,0
6	756	600	525	676	38	46	51	3,5	7,0	10,5

## TECHNICAL SPECIFICATIONS

### 4/6 Pole models - WATER temperature 85-75 °C

Drop 10 °C – Δtm 65 °C – Entering air temperature 15 °C

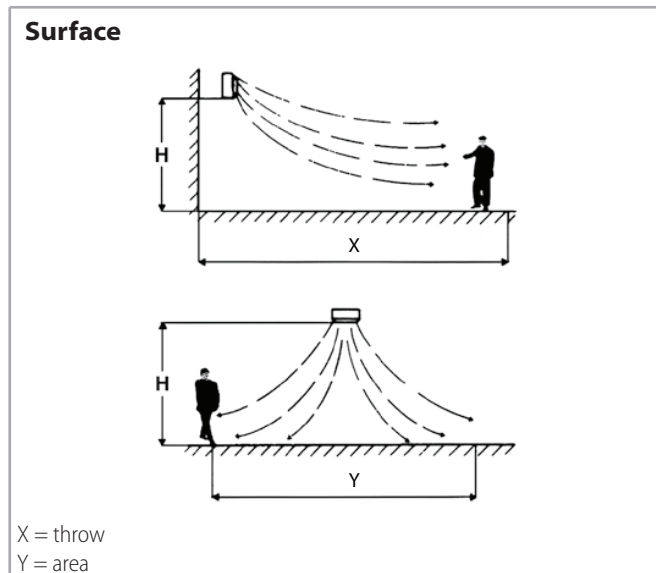
Size	Model		Speed		Air flow		Sound level at 5 m (*)		Emissions		Leaving air temperature		Mounting heights:							
			4	6	4	6	4	6	4	6	4	6	4				6			
	Poles	Atlas	Helios	RPM		m³/h		dB(A)		kW		°C		Wall	Ceiling			Wall	Ceiling	
UoM	-	-											Height H	Throw X	Max. height	Area Y	Height H	Throw X	Max. height	Area Y
1	46A11	46H11	1350	1000	1415	1055	56	50	—	—	—	—	2,5÷3,5	7,5	3,5	50	2,5÷3	5	3	36
	46A12	46H12			1340	990	56	50	10,24	8,79	37,4	41,0								
	46A13	46H13			1195	885	56	50	11,39	9,62	42,9	46,8								
2	46A21	46H21	1350	1000	2190	1680	59	53	—	—	—	—	3÷4	10	4	60	2,5÷3,5	7	3,5	45
	46A22	46H22			2010	1570	59	53	13,95	12,36	35,3	38,0								
	46A23	46H23			1875	1420	59	53	17,52	15,07	42,4	46,0								
3	46A31	46H31	1350	1000	3325	2510	61	55	—	—	—	—	3÷4	13,5	5	70	2,5÷3,5	10	4	50
	46A32	46H32			2915	2255	61	55	20,85	18,44	35,9	38,9								
	46A33	46H33			2610	2040	61	55	25,68	22,41	43,8	47,1								
4	46A41	46H41	1350	1000	4415	3305	64	57	—	—	—	—	3,5÷4,5	16	5,5	75	3÷4	12	4,5	55
	46A42	46H42			3725	2745	64	57	27,86	24,06	36,9	40,6								
	46A43	46H43			3210	2390	64	57	32,03	27,14	44,2	48,2								
5	46A51	46H51	1350	1000	5770	4250	66	59	—	—	—	—	4÷5	18	6	90	3,5÷4,5	13	5	70
	46A52	46H52			4800	3500	66	59	34,89	29,94	36,3	40,0								
	46A53	46H53			4325	3110	66	59	43,06	35,90	44,1	48,8								
6	46A61	46H61	1350	1000	6590	5065	69	62	—	—	—	—	4÷5,5	22	7	120	4÷5	16	6	100
	46A62	46H62			5515	4160	69	62	41,76	36,36	37,2	40,6								
	46A63	46H63			4900	3620	69	62	50,96	42,98	45,4	49,7								

The sound pressure levels dB(A) are measured at a distance of 5 m, directional factor Q = 2, compliant with the EN 3744 standard.

### Correction factors

Te °C	Water temperature °C								
	50/40	55/45	60/50	65/55	70/60	75/65	80/70	85/75	90/80
-10	0,85	0,92	1,00	1,08	1,15	1,23	1,31	1,38	1,46
-5	0,77	0,85	0,92	1,00	1,08	1,15	1,23	1,31	1,38
0	0,69	0,77	0,85	0,92	1,00	1,08	1,15	1,23	1,31
+5	0,62	0,69	0,77	0,85	0,92	1,00	1,08	1,15	1,23
+10	0,54	0,62	0,69	0,77	0,85	0,92	1,00	1,08	1,15
+15	0,46	0,54	0,62	0,69	0,77	0,85	0,92	1,00	1,08
+20	0,39	0,46	0,54	0,62	0,69	0,77	0,85	0,92	1,00
+25	0,31	0,39	0,46	0,54	0,62	0,69	0,77	0,85	0,92

Te °C = entering air temperature



## 6/8 Pole models - WATER temperature 85-75 °C

Drop 10 °C – Δtm 65 °C – Entering air temperature 15 °C

Size	Model		Speed		Air flow		Sound level at 5 m (*)		Emissions		Leaving air temperature		Mounting heights:							
			6	8	6	8	6	8	6	8	6	8	6				8			
	Poles	Atlas	Helios	RPM		m³/h		dB(A)		kW		°C		Wall		Ceiling		Wall		Ceiling
UoM	-	-											Height X	Throw X	Max. height	Area Y	Height H	Throw X	Max. height	Area Y
													m	m	m	m²	m	m	m	m²
1	68A11	68H11	950	800	970	860	48	44	—	—	—	—	2,5÷3	5	3	36	2,5÷3	4,5	—	—
	68A12	68H12			935	830	48	44	8,54	8,01	41,7	43,2								
	68A13	68H13			835	740	48	44	9,29	8,65	47,5	49,2								
2	68A21	68H21	950	800	1495	1170	50	46	—	—	—	—	2,5÷3,5	7	3,5	45	2,5÷3,5	5,5	—	—
	68A22	68H22			1410	1100	50	46	11,70	10,26	39,3	42,3								
	68A23	68H23			1290	1025	50	46	14,23	12,41	47,3	50,4								
3	68A31	68H31	950	750	2100	1620	52	48	—	—	—	—	2,5÷3,5	10	4	50	2,5÷3,5	7	—	—
	68A32	68H32			1880	1470	52	48	16,83	14,74	41,2	44,3								
	68A33	68H33			1735	1320	52	48	20,39	17,28	49,4	53,3								
4	68A41	68H41	950	750	2795	2195	54	50	—	—	—	—	3÷4	12	4,5	55	3÷4	8	—	—
	68A42	68H42			2345	1755	54	50	22,14	18,91	42,6	46,5								
	68A43	68H43			2010	1535	54	50	24,47	20,70	50,6	54,4								
5	68A51	68H51	950	750	3685	2865	56	51	—	—	—	—	3,5÷4,5	13	5	70	3,5÷4,5	9,5	—	—
	68A52	68H52			3050	2335	56	51	27,87	24,17	41,7	45,3								
	68A53	68H53			2785	2100	56	51	33,58	27,27	50,3	54,4								
6	68A61	68H61	950	750	4445	3550	59	54	—	—	—	—	4÷5	16	6	100	4÷5	12	—	—
	68A62	68H62			3710	2960	59	54	34,33	30,37	42,1	45,0								
	68A63	68H63			3270	2610	59	54	40,43	35,19	51,2	54,4								
7	68A71	—	950	850	5100	3960	65	59	—	—	—	—	4÷5	24	7	120	3,5÷4	18	6	100
	68A72	—			4800	3650	65	59	44,20	38,13	41,9	45,6								
	68A73	—			4600	3500	65	59	52,35	44,50	48,3	52,2								
8	68A81	—	940	770	7650	5400	67	61	—	—	—	—	4÷5,5	26	9	160	3,5÷4,5	20	7	130
	68A82	—			6900	4950	67	61	57,57	48,47	39,4	43,6								
	68A83	—			6300	4500	67	61	70,23	57,52	47,6	52,4								
9	68A91	—	900	700	10600	7600	68	62	—	—	—	—	4÷6	28	11	200	3,5÷5	21	8	150
	68A92	—			10200	7200	68	62	82,12	68,82	38,6	43,0								
	68A93	—			9400	6400	68	62	101,49	81,06	46,6	52,1								
10	68A101	—	900	750	12250	9215	71	65	—	—	—	—	4÷6	30	12	220	4÷5	22	9	160
	68A102	—			11800	8800	71	65	101,20	86,99	40,1	43,9								
	68A103	—			11000	7950	71	65	124,93	102,93	48,2	52,9								

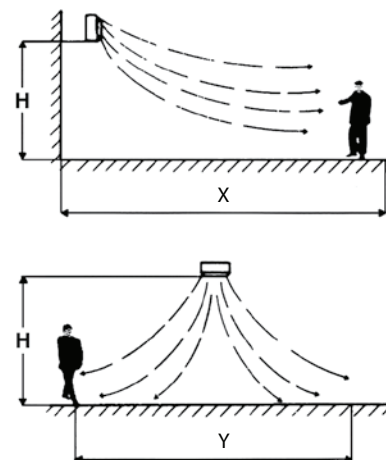
The sound pressure levels dB(A) are measured at a distance of 5 m, directional factor Q = 2, compliant with the EN 3744 standard.

### Correction factors

Te °C	Water temperature °C								
	50/40	55/45	60/50	65/55	70/60	75/65	80/70	85/75	90/80
-10	0,85	0,92	1,00	1,08	1,15	1,23	1,31	1,38	1,46
-5	0,77	0,85	0,92	1,00	1,08	1,15	1,23	1,31	1,38
0	0,69	0,77	0,85	0,92	1,00	1,08	1,15	1,23	1,31
+5	0,62	0,69	0,77	0,85	0,92	1,00	1,08	1,15	1,23
+10	0,54	0,62	0,69	0,77	0,85	0,92	1,00	1,08	1,15
+15	0,46	0,54	0,62	0,69	0,77	0,85	0,92	1,00	1,08
+20	0,39	0,46	0,54	0,62	0,69	0,77	0,85	0,92	1,00
+25	0,31	0,39	0,46	0,54	0,62	0,69	0,77	0,85	0,92

Te °C = entering air temperature

### Surface



X = throw  
Y = area

## 4/6 Pole models - WATER temperature 85-70 °C

Drop 10 °C – Δtm 62,5 °C – Entering air temperature 15 °C

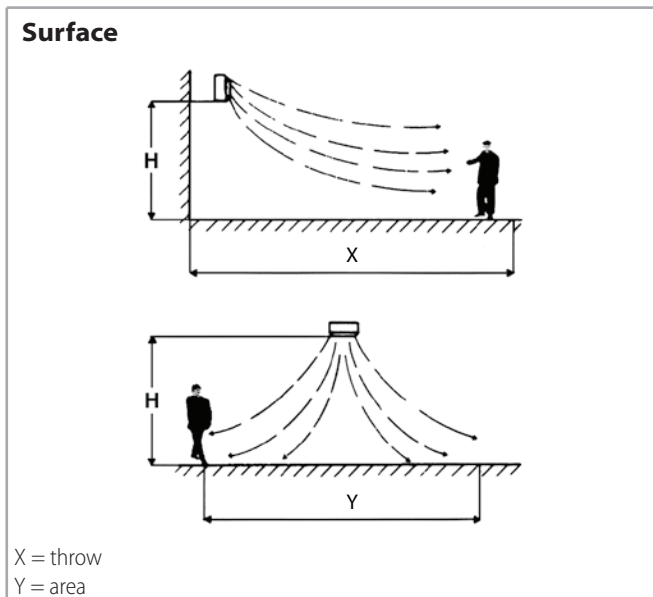
Size	Model		Speed		Air flow		Sound level at 5 m (*)		Emissions		Leaving air temperature		Mounting heights:							
			4	6	4	6	4	6	4	6	4	6	4				6			
	Poles	Atlas	Helios	RPM		m³/h		dB(A)		kW		°C		Wall		Ceiling		Wall		Ceiling
UoM	-	-	RPM		m³/h		dB(A)		kW		°C		Height H	Throw X	Max. height	Area Y	Height H	Throw X	Max. height	Area Y
1	46A11	46H11	1350	1000	1415	1055	56	50	—	—	—	—	2,5÷3,5	7,5	3,5	50	2,5÷3	5	3	36
	46A12	46H12			1340	990	56	50	8,77	7,59	34,1	37,4								
	46A13	46H13			1195	885	56	50	9,86	8,36	39,1	42,6								
2	46A21	46H21	1350	1000	2190	1680	59	53	—	—	—	—	3÷4	10	4	60	2,5÷3,5	7	3,5	45
	46A22	46H22			2010	1570	59	53	12,31	10,93	32,9	35,4								
	46A23	46H23			1875	1420	59	53	15,56	13,37	39,3	42,6								
3	46A31	46H31	1350	1000	3325	2510	61	55	—	—	—	—	3÷4	13,5	5	70	2,5÷3,5	10	4	50
	46A32	46H32			2915	2255	61	55	18,70	16,57	33,8	36,5								
	46A33	46H33			2610	2040	61	55	23,12	20,21	40,9	44,0								
4	46A41	46H41	1350	1000	4415	3305	64	57	—	—	—	—	3,5÷4,5	16	5,5	75	3÷4	12	4,5	55
	46A42	46H42			3725	2745	64	57	25,33	21,88	34,9	38,2								
	46A43	46H43			3210	2390	64	57	29,18	24,80	41,6	45,4								
5	46A51	46H51	1350	1000	5770	4250	66	59	—	—	—	—	4÷5	18	6	90	3,5÷4,5	13	5	70
	46A52	46H52			4800	3500	66	59	31,91	27,44	34,5	37,9								
	46A53	46H53			4325	3110	66	59	39,52	33,00	41,7	46,0								
6	46A61	46H61	1350	1000	6590	5065	69	62	—	—	—	—	4÷5,5	22	7	120	4÷5	16	6	100
	46A62	46H62			5515	4160	69	62	38,54	33,64	35,4	38,7								
	46A63	46H63			4900	3620	69	62	47,18	39,76	43,2	47,1								

The sound pressure levels dB(A) are measured at a distance of 5 m, directional factor Q = 2, compliant with the EN 3744 standard.

### Correction factors

Te °C	Water temperature °C								
	50/35	55/40	60/45	65/50	70/55	75/60	80/65	85/70	90/75
-10	0,84	0,92	1,00	1,08	1,16	1,24	1,32	1,40	1,48
-5	0,76	0,84	0,92	1,00	1,08	1,16	1,24	1,32	1,40
0	0,67	0,76	0,84	0,92	1,00	1,08	1,16	1,24	1,32
+5	0,60	0,68	0,76	0,84	0,92	1,00	1,08	1,16	1,24
+10	0,52	0,60	0,68	0,76	0,84	0,92	1,00	1,08	1,16
+15	0,44	0,52	0,60	0,68	0,76	0,84	0,92	1,00	1,08
+20	0,36	0,44	0,52	0,60	0,68	0,76	0,84	0,92	1,00
+25	0,28	0,36	0,44	0,52	0,60	0,68	0,76	0,84	0,92

Te °C = entering air temperature



6/8 Pole models - WATER temperature 85-70 °C

Drop 10 °C – Δtm 62,5 °C – Entering air temperature 15 °C

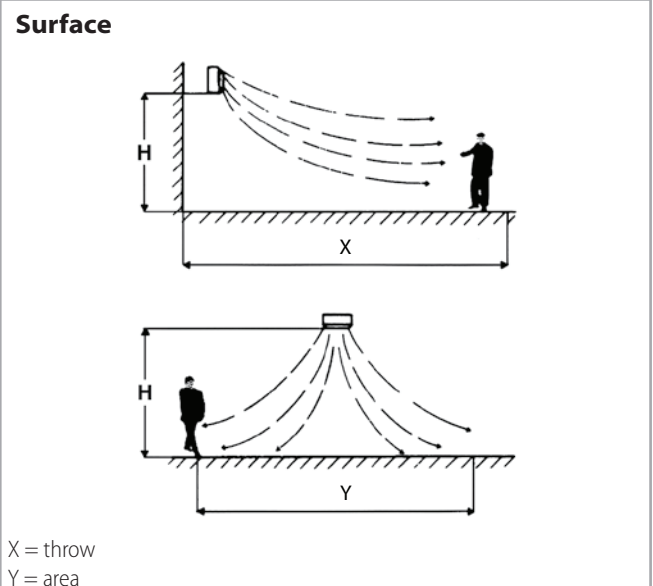
Size	Model		Speed		Air flow		Sound level at 5 m (*)		Emissions		Leaving air temperature		Mounting heights:							
			6	8	6	8	6	8	6	8	6	8	6				8			
	Poles	Atlas	Helios										Wall	Throw X	Max. height	Area Y	Wall	Throw X	Max. height	Area Y
UoM	-	-	RPM		m³/h		dB(A)		kW		°C		m	m	m	m²	m	m	m	m²
1	68A11	68H11	900	750	970	860	48	44	—	—	—	—	2,5÷3	5	3	36	2,5÷3	4,5	—	—
	68A12	68H12			935	830	48	44	7,36	6,93	38,0	39,4								
	68A13	68H13			835	740	48	44	8,08	7,54	43,3	44,8								
2	68A21	68H21	900	750	1495	1170	50	46	—	—	—	—	2,5÷3,5	7	3,5	45	2,5÷3,5	5,5	—	—
	68A22	68H22			1410	1100	50	46	10,35	9,10	36,5	39,2								
	68A23	68H23			1290	1025	50	46	12,66	11,09	43,7	46,7								
3	68A31	68H31	900	750	2100	1620	52	48	—	—	—	—	2,5÷3,5	10	4	50	2,5÷3,5	7	—	—
	68A32	68H32			1880	1470	52	48	15,11	13,29	38,5	41,5								
	68A33	68H33			1735	1320	52	48	18,41	15,67	46,0	49,7								
4	68A41	68H41	900	750	2795	2195	54	50	—	—	—	—	3÷4	12	4,5	55	3÷4	8	—	—
	68A42	68H42			2345	1755	54	50	20,17	17,27	40,2	43,8								
	68A43	68H43			2010	1535	54	50	22,41	18,98	47,6	51,2								
5	68A51	68H51	900	750	3685	2865	56	51	—	—	—	—	3,5÷4,5	13	5	70	3,5÷4,5	9,5	—	—
	68A52	68H52			3050	2335	56	51	25,59	22,21	39,5	42,8								
	68A53	68H53			2785	2100	56	51	30,98	26,11	47,5	51,4								
6	68A61	68H61	900	750	4445	3550	59	54	—	—	—	—	4÷5	16	6	100	4÷5	12	—	—
	68A62	68H62			3710	2960	59	54	31,73	28,15	40,0	42,8								
	68A63	68H63			3270	2610	59	54	37,45	32,69	48,5	51,6								
7	68A71	—	900	750	5100	3960	65	59	—	—	—	—	4÷5	24	7	120	3,5÷4	18	6	100
	68A72	—			4800	3650	65	59	41,06	35,48	40,0	43,4								
	68A73	—			4600	3500	65	59	48,70	41,47	46,0	49,7								
8	68A81	—	900	750	7650	5400	67	61	—	—	—	—	4÷5,5	26	9	160	3,5÷4,5	20	7	130
	68A82	—			6900	4950	67	61	52,57	44,42	37,3	41,3								
	68A83	—			6300	4500	67	61	64,34	52,79	44,9	49,3								
9	68A91	—	900	750	10600	7600	68	62	—	—	—	—	4÷6	28	11	200	3,5÷5	21	8	150
	68A92	—			10200	7200	68	62	75,80	63,60	36,7	40,8								
	68A93	—			9400	6400	68	62	93,80	75,08	44,2	49,3								
10	68A101	—	900	750	12250	9215	71	65	—	—	—	—	4÷6	30	12	220	4÷5	22	9	160
	68A102	—			11800	8800	71	65	94,03	80,82	38,3	41,9								
	68A103	—			11000	7950	71	65	116,19	96,05	45,9	50,3								

The sound pressure levels dB(A) are measured at a distance of 5 m, directional factor Q = 2, compliant with the EN 3744 standard.

Correction factors

Te °C	Water temperature °C								
	50/35	55/40	60/45	65/50	70/55	75/60	80/65	85/70	90/75
-10	0,84	0,92	1,00	1,08	1,16	1,24	1,32	1,40	1,48
-5	0,76	0,84	0,92	1,00	1,08	1,16	1,24	1,32	1,40
0	0,67	0,76	0,84	0,92	1,00	1,08	1,16	1,24	1,32
+5	0,60	0,68	0,76	0,84	0,92	1,00	1,08	1,16	1,24
+10	0,52	0,60	0,68	0,76	0,84	0,92	1,00	1,08	1,16
+15	0,44	0,52	0,60	0,68	0,76	0,84	0,92	1,00	1,08
+20	0,36	0,44	0,52	0,60	0,68	0,76	0,84	0,92	1,00
+25	0,28	0,36	0,44	0,52	0,60	0,68	0,76	0,84	0,92

Te °C = entering air temperature



## 4/6 Pole models - WATER temperature 90-70 °C

Drop 20 °C – Δtm 65 °C – Entering air temperature 15 °C

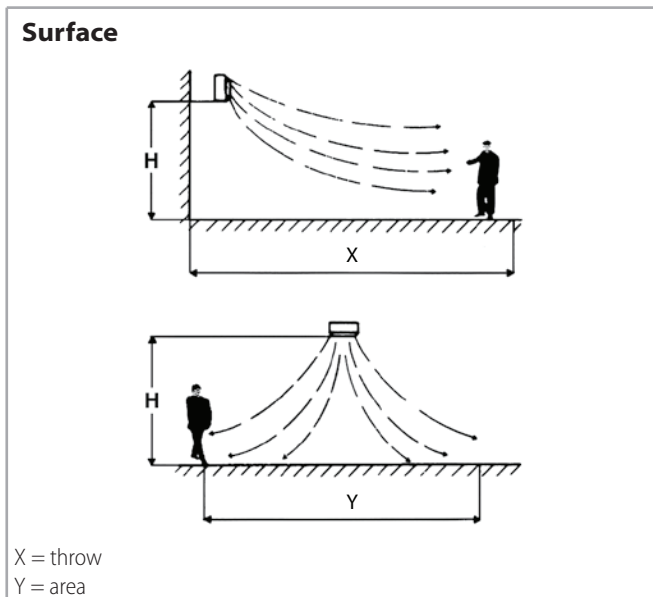
Size	Model		Speed		Air flow		Sound level at 5 m (*)		Emissions		Leaving air temperature		Mounting heights:							
			4	6	4	6	4	6	4	6	4	6	4				6			
	Poles	Atlas	Helios	RPM		m³/h		dB(A)		kW		°C		Wall	Ceiling			Wall	Ceiling	
UoM	-	-	RPM		m³/h		dB(A)		kW		°C		Height H	Throw X	Max. height	Area Y	Height H	Throw X	Max. height	Area Y
1	46A11	46H11	1350	1000	1415	1055	56	50	—	—	—	—	2,5÷3,5	7,5	3,5	50	2,5÷3	5	3	36
	46A12	46H12			1340	990	56	50	8,42	7,31	33,4	36,6								
	46A13	46H13			1195	885	56	50	9,52	8,11	38,3	41,8								
2	46A21	46H21	1350	1000	2190	1680	59	53	—	—	—	—	3÷4	10	4	60	2,5÷3,5	7	3,5	45
	46A22	46H22			2010	1570	59	53	12,05	10,73	32,5	35,0								
	46A23	46H23			1875	1420	59	53	15,31	13,19	38,9	42,2								
3	46A31	46H31	1350	1000	3325	2510	61	55	—	—	—	—	3÷4	13,5	5	70	2,5÷3,5	10	4	50
	46A32	46H32			2915	2255	61	55	18,54	16,43	33,6	36,3								
	46A33	46H33			2610	2040	61	55	22,94	20,13	40,7	43,9								
4	46A41	46H41	1350	1000	4415	3305	64	57	—	—	—	—	3,5÷4,5	16	5,5	75	3÷4	12	4,5	55
	46A42	46H42			3725	2745	64	57	25,28	21,86	34,9	38,3								
	46A43	46H43			3210	2390	64	57	29,26	24,89	41,7	45,5								
5	46A51	46H51	1350	1000	5770	4250	66	59	—	—	—	—	4÷5	18	6	90	3,5÷4,5	13	5	70
	46A52	46H52			4800	3500	66	59	32,09	27,61	34,6	38,1								
	46A53	46H53			4325	3110	66	59	39,85	33,33	42,0	46,4								
6	46A61	46H61	1350	1000	6590	5065	69	62	—	—	—	—	4÷5,5	22	7	120	4÷5	16	6,0	100
	46A62	46H62			5515	4160	69	62	38,94	34,01	35,7	38,9								
	46A63	46H63			4900	3620	69	62	47,73	40,34	43,5	47,6								

The sound pressure levels dB(A) are measured at a distance of 5 m, directional factor Q = 2, compliant with the EN 3744 standard.

### Correction factors

Te °C	Water temperature °C					
	60/40	70/50	80/60	85/65	90/70	95/75
-10	0,92	1,08	1,23	1,31	1,38	1,46
-5	0,85	1,00	1,15	1,23	1,31	1,38
0	0,77	0,92	1,08	1,15	1,23	1,31
+5	0,69	0,85	1,00	1,08	1,15	1,23
+10	0,62	0,77	0,92	1,00	1,08	1,15
+15	0,54	0,69	0,85	0,92	1,00	1,08
+20	0,46	0,62	0,77	0,85	0,92	1,00
+25	0,38	0,54	0,69	0,77	0,85	0,92

Te °C = entering air temperature



6/8 Pole models - WATER temperature 90-70 °C

Drop 20 °C – Δtm 65 °C – Entering air temperature 15 °C

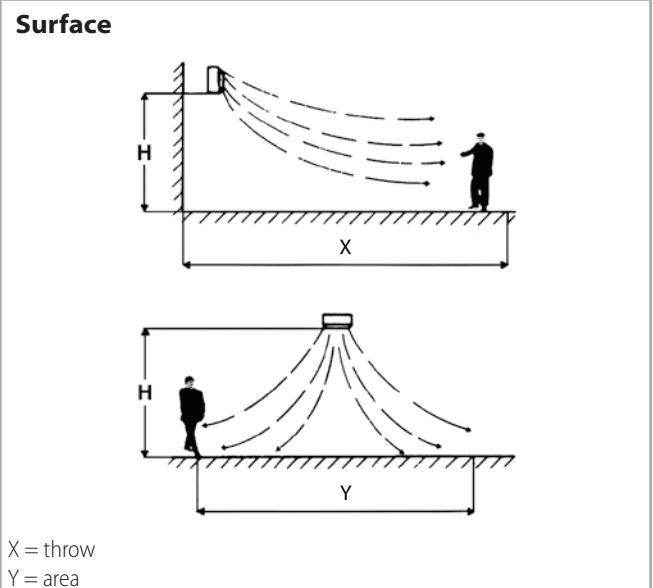
Size	Model		Speed		Air flow		Sound level at 5 m (*)		Emissions		Leaving air temperature		Mounting heights:							
			6	8	6	8	6	8	6	8	6	8	6				8			
	Poles	Atlas	Helios	RPM		m³/h		dB(A)		kW		°C		Wall		Ceiling		Wall		Ceiling
UoM	-	-											Height H	Throw X	Max. height	Area Y	Height H	Throw X	Max. height	Area Y
1	68A11	68H11	900	750	970	860	48	44	—	—	—	—	2,5÷3	5	3	36	2,5÷3	4,5	—	—
	68A12	68H12			935	830	48	44	7,12	6,69	37,3	35,6								
	68A13	68H13			835	740	48	44	7,86	7,34	42,5	44,0								
2	68A21	68H21	900	750	1495	1170	50	46	—	—	—	—	2,5÷3,5	7	3,5	45	2,5÷3,5	5,5	—	—
	68A22	68H22			1410	1100	50	46	10,17	8,98	36,1	38,9								
	68A23	68H23			1290	1025	50	46	12,50	10,96	43,3	46,3								
3	68A31	68H31	900	750	2100	1620	52	48	—	—	—	—	2,5÷3,5	10	4	50	2,5÷3,5	7	—	—
	68A32	68H32			1880	1470	52	48	15,02	13,25	38,4	41,4								
	68A33	68H33			1735	1320	52	48	18,38	15,63	46,0	49,6								
4	68A41	68H41	900	750	2795	2195	54	50	—	—	—	—	3÷4	12	4,5	55	3÷4	8	—	—
	68A42	68H42			2345	1755	54	50	20,20	17,31	40,2	43,9								
	68A43	68H43			2010	1535	54	50	22,50	19,10	47,7	51,4								
5	68A51	68H51	900	750	3685	2865	56	51	—	—	—	—	3,5÷4,5	13	5	70	3,5÷4,5	9,5	—	—
	68A52	68H52			3050	2335	56	51	25,81	22,39	39,8	43,1								
	68A53	68H53			2785	2100	56	51	31,24	26,40	47,8	51,8								
6	68A61	68H61	900	750	4445	3550	59	54	—	—	—	—	4÷5	16	6	100	4÷5	12	—	—
	68A62	68H62			3710	2960	59	54	32,05	28,46	40,3	43,1								
	68A63	68H63			3270	2610	59	54	37,99	33,13	49,0	52,1								
7	68A71	—	900	750	5100	3960	65	59	—	—	—	—	4÷5	24	7	120	3,5÷4	18	6	100
	68A72	—			4800	3650	65	59	41,64	36,01	40,4	43,9								
	68A73	—			4600	3500	65	59	49,53	42,15	46,5	50,2								
8	68A81	—	900	750	7650	5400	67	61	—	—	—	—	4÷5,5	26	9	160	3,5÷4,5	20	7	130
	68A82	—			6900	4950	67	61	52,78	44,62	37,4	41,4								
	68A83	—			6300	4500	67	61	64,68	53,18	45,0	49,6								
9	68A91	—	900	750	10600	7600	68	62	—	—	—	—	4÷6	28	11	200	3,5÷5	21	8	150
	68A92	—			10200	7200	68	62	76,62	64,36	37,0	41,2								
	68A93	—			9400	6400	68	62	94,85	76,12	44,5	49,8								
10	68A101	—	900	750	12250	9215	71	65	—	—	—	—	4÷6	30	12	220	4÷5	22	9	160
	68A102	—			11800	8800	71	65	95,43	82,19	38,7	42,3								
	68A103	—			11000	7950	71	65	118,16	97,74	46,4	51,0								

The sound pressure levels dB(A) are measured at a distance of 5 m, directional factor Q = 2, compliant with the EN 3744 standard.

Correction factors

Te °C	Water temperature °C					
	60/40	70/50	80/60	85/65	90/70	95/75
-10	0,92	1,08	1,23	1,31	1,38	1,46
-5	0,85	1,00	1,15	1,23	1,31	1,38
0	0,77	0,92	1,08	1,15	1,23	1,31
+5	0,69	0,85	1,00	1,08	1,15	1,23
+10	0,62	0,77	0,92	1,00	1,08	1,15
+15	0,54	0,69	0,85	0,92	1,00	1,08
+20	0,46	0,62	0,77	0,85	0,92	1,00
+25	0,38	0,54	0,69	0,77	0,85	0,92

Te °C = entering air temperature



## 4/6 Pole models - WATER temperature 130-100 °C

Drop 30 °C – Δtm 100 °C – Entering air temperature 15 °C

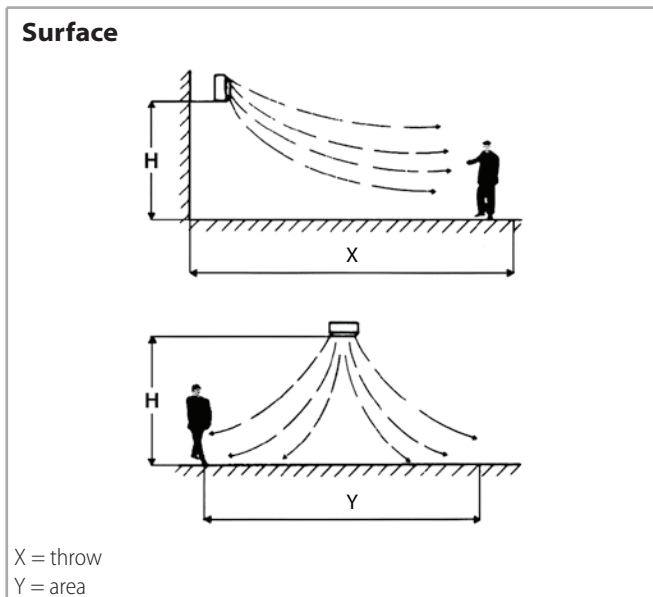
Size	Model		Speed		Air flow		Sound level at 5 m (*)		Emissions		Leaving air temperature		Mounting heights:							
			4	6	4	6	4	6	4	6	4	6	4				6			
	Poles	Atlas	Helios	RPM		m³/h		dB(A)		kW		°C		Wall	Ceiling			Wall	Ceiling	
UoM	-	-	RPM		m³/h		dB(A)		kW		°C		Height H	Throw X	Max. height	Area Y	Height H	Throw X	Max. height	Area Y
1	46A11	46H11	1350	1000	1415	1055	56	50	8,23	7,29	32,0	35,2	2,5÷3,5	7,5	3,5	50	2,5÷3	5	3	36
	46A12	46H12			1340	990	56	50	14,25	12,32	46,1	51,4								
	46A13	46H13			1195	885	56	50	-	-	-	-								
2	46A21	46H21	1350	1000	2190	1680	59	53	12,74	11,42	32,0	34,9	3÷4	10	4	60	2,5÷3,5	7	3,5	45
	46A22	46H22			2010	1570	59	53	19,87	17,66	43,9	47,9								
	46A23	46H23			1875	1420	59	53	-	-	-	-								
3	46A31	46H31	1350	1000	3325	2510	61	55	18,70	16,67	31,5	34,4	3÷4	13,5	5	70	2,5÷3,5	10	4	50
	46A32	46H32			2915	2255	61	55	30,16	26,71	45,3	49,7								
	46A33	46H33			2610	2040	61	55	-	-	-	-								
4	46A41	46H41	1350	1000	4415	3305	64	57	24,96	22,21	31,5	34,7	3,5÷4,5	16	5,5	75	3÷4	12	4,5	55
	46A42	46H42			3725	2745	64	57	40,76	35,20	47,0	52,5								
	46A43	46H43			3210	2390	64	57	-	-	-	-								
5	46A51	46H51	1350	1000	5770	4250	66	59	32,45	28,72	31,5	34,8	4÷5	18	6	90	3,5÷4,5	13	5	70
	46A52	46H52			4800	3500	66	59	51,23	44,08	46,2	51,8								
	46A53	46H53			4325	3110	66	59	-	-	-	-								
6	46A61	46H61	1350	1000	6590	5065	69	62	39,15	35,20	32,4	35,3	4÷5,5	22	7	120	4÷5	16	6	100
	46A62	46H62			5515	4160	69	62	61,83	53,98	47,8	53,0								
	46A63	46H63			4900	3620	69	62	-	-	-	-								

The sound pressure levels dB(A) are measured at a distance of 5 m, directional factor Q = 2, compliant with the EN 3744 standard.

### Correction factors

Te °C	Water temperature °C				
	110/80	120/90	130/100	140/110	150/120
-10	1,05	1,15	1,25	1,35	1,45
-5	1,00	1,10	1,20	1,30	1,40
0	0,95	1,05	1,15	1,25	1,35
+5	0,90	1,00	1,10	1,20	1,30
+10	0,85	0,95	1,05	1,15	1,25
+15	0,80	0,90	1,00	1,10	1,20
+20	0,75	0,85	0,95	1,05	1,15
+25	0,70	0,80	0,90	1,00	1,10

Te °C = entering air temperature



### 6/8 Pole models - WATER temperature 130-100 °C

Drop 30 °C – Δtm 100 °C – Entering air temperature 15 °C

Size	Model		Speed		Air flow		Sound level at 5 m (*)		Emissions		Leaving air temperature		Mounting heights:							
			6	8	6	8	6	8	6	8	6	8	6				8			
	Poles	Atlas	Helios	RPM		m³/h		dB(A)		kW		°C		Wall		Ceiling		Wall		Ceiling
UoM	-	-											Height H	Throw X	Max. height	Area Y	Height H	Throw X	Max. height	Area Y
1	68A11	68H11	900	750	970	860	48	44	7,02	6,67	36,2	37,7	2,5÷3	5	3	36	2,5÷3	4,5	-	-
	68A12	68H12			935	830	48	44	11,95	11,25	52,4	54,6								
	68A13	68H13			835	740	48	44	-	-	-	-								
2	68A21	68H21	900	750	1495	1170	50	46	10,88	9,75	36,3	39,4	2,5÷3,5	7	3,5	45	2,5÷3,5	5,5	-	-
	68A22	68H22			1410	1100	50	46	16,73	14,70	49,7	54,1								
	68A23	68H23			1290	1025	50	46	-	-	-	-								
3	68A31	68H31	900	750	2100	1620	52	48	15,44	13,75	36,5	39,8	2,5÷3,5	10	4	50	2,5÷3,5	7	-	-
	68A32	68H32			1880	1470	52	48	24,40	21,39	53,0	57,6								
	68A33	68H33			1735	1320	52	48	-	-	-	-								
4	68A41	68H41	900	750	2795	2195	54	50	20,66	18,54	36,6	39,7	3÷4	12	4,5	55	3÷4	8	-	-
	68A42	68H42			2345	1755	54	50	32,41	27,76	55,4	61,3								
	68A43	68H43			2010	1535	54	50	-	-	-	-								
5	68A51	68H51	900	750	3685	2865	56	51	27,02	24,14	36,5	39,7	3,5÷4,5	13	5	70	3,5÷4,5	9,5	-	-
	68A52	68H52			3050	2335	56	51	41,10	35,68	54,4	59,7								
	68A53	68H53			2785	2100	56	51	-	-	-	-								
6	68A61	68H61	900	750	4445	3550	59	54	33,28	30,12	36,9	39,8	4÷5	16	6	100	4÷5	12	-	-
	68A62	68H62			3710	2960	59	54	50,85	45,12	55,1	59,6								
	68A63	68H63			3270	2610	59	54	-	-	-	-								
7	68A71	-	900	750	5100	3960	65	59	40,92	36,49	38,5	42,0	4÷5	24	7	120	3,5÷4	18	6	100
	68A72	-			4800	3650	65	59	65,79	56,89	55,1	60,6								
	68A73	-			4600	3500	65	59	-	-	-	-								
8	68A81	-	900	750	7650	5400	67	61	52,87	45,40	35,2	39,6	4÷5,5	26	9	160	3,5÷4,5	20	7	130
	68A82	-			6900	4950	67	61	84,51	71,27	50,8	57,1								
	68A83	-			6300	4500	67	61	-	-	-	-								
9	68A91	-	900	750	10600	7600	68	62	73,46	63,61	35,3	39,5	4÷6	28	11	200	3,5÷5	21	8	150
	68A92	-			10200	7200	68	62	121,59	102,00	49,9	56,4								
	68A93	-			9400	6400	68	62	-	-	-	-								
10	68A101	-	900	750	12250	9215	71	65	91,95	81,02	37,0	40,7	4÷6	30	12	220	4÷5	22	9	160
	68A102	-			11800	8800	71	65	150,86	129,74	52,4	58,1								
	68A103	-			11000	7950	71	65	-	-	-	-								

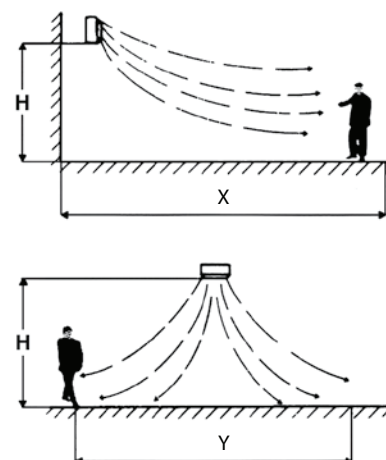
The sound pressure levels dB(A) are measured at a distance of 5 m, directional factor Q = 2, compliant with the EN 3744 standard.

#### Correction factors

Te °C	Water temperature °C				
	110/80	120/90	130/100	140/110	150/120
-10	1,05	1,15	1,25	1,35	1,45
-5	1,00	1,10	1,20	1,30	1,40
0	0,95	1,05	1,15	1,25	1,35
+5	0,90	1,00	1,10	1,20	1,30
+10	0,85	0,95	1,05	1,15	1,25
+15	0,80	0,90	1,00	1,10	1,20
+20	0,75	0,85	0,95	1,05	1,15
+25	0,70	0,80	0,90	1,00	1,10

Te °C = entering water temperature

#### Surface



X = throw  
Y = area

## 4/6 Pole models - WATER temperature 160-110 °C

Drop 50 °C – Δtm 120 °C – Entering air temperature 15 °C

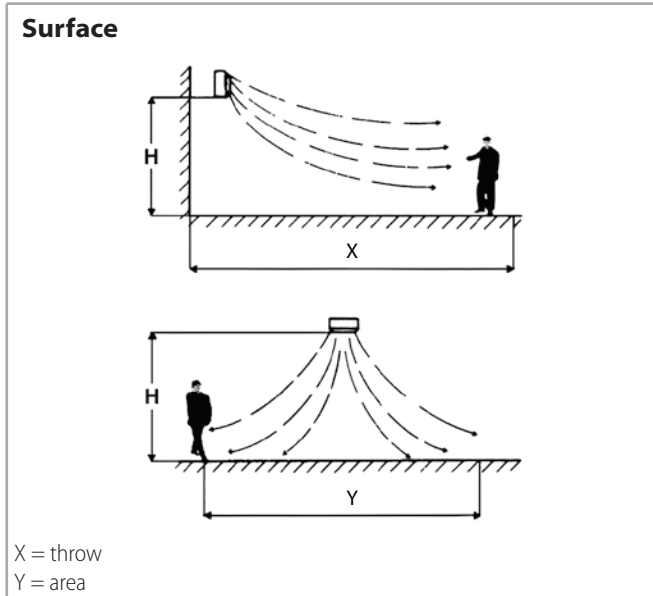
Size	Model		Speed		Air flow		Sound level at 5 m (*)		Emissions		Leaving air temperature		Mounting heights:							
			4	6	4	6	4	6	4	6	4	6	4				6			
	Poles	Atlas	Helios	RPM		m³/h		dB(A)		kW		°C		Wall		Ceiling		Wall		Ceiling
UoM	-	-	RPM		m³/h		dB(A)		kW		°C		Height H	Throw X	Max. height	Area Y	Height H	Throw X	Max. height	Area Y
1	46A11	46H11	1350	1000	1415	1055	56	50	9,72	8,15	34,0	37,6	2,5÷3,5	7,5	3,5	50	2,5÷3	5	3	36
	46A12	46H12			1340	990	56	50	-	-	-	-								
	46A13	46H13			1195	885	56	50	-	-	-	-								
2	46A21	46H21	1350	1000	2190	1680	59	53	14,47	12,97	34,3	37,6	3÷4	10	4	60	2,5÷3,5	7	3,5	45
	46A22	46H22			2010	1570	59	53	-	-	-	-								
	46A23	46H23			1875	1420	59	53	-	-	-	-								
3	46A31	46H31	1350	1000	3325	2510	61	55	21,41	19,11	33,8	37,3	3÷4	13,5	5	70	2,5÷3,5	10	4	50
	46A32	46H32			2915	2255	61	55	-	-	-	-								
	46A33	46H33			2610	2040	61	55	-	-	-	-								
4	46A41	46H41	1350	1000	4415	3305	64	57	28,80	25,68	34,1	37,7	3,5÷4,5	16	5,5	75	3÷4	12	4,5	55
	46A42	46H42			3725	2745	64	57	-	-	-	-								
	46A43	46H43			3210	2390	64	57	-	-	-	-								
5	46A51	46H51	1350	1000	5770	4250	66	59	37,57	33,33	34,1	37,9	4÷5	18	6	90	3,5÷4,5	13	5	70
	46A52	46H52			4800	3500	66	59	-	-	-	-								
	46A53	46H53			4325	3110	66	59	-	-	-	-								
6	46A61	46H61	1350	1000	6590	5065	69	62	45,62	40,95	35,3	38,7	4÷5,5	22	7	120	4÷5	16	6	100
	46A62	46H62			5515	4160	69	62	-	-	-	-								
	46A63	46H63			4900	3620	69	62	-	-	-	-								

The sound pressure levels dB(A) are measured at a distance of 5 m, directional factor Q = 2, compliant with the EN 3744 standard.

### Correction factors

Te °C	Water temperature °C			
	140/90	150/100	160/110	170/120
-10	1,04	1,13	1,21	1,29
-5	1,00	1,08	1,17	1,25
0	0,96	1,04	1,13	1,21
+5	0,92	1,00	1,08	1,17
+10	0,88	0,96	1,04	1,13
+15	0,83	0,92	1,00	1,08
+20	0,79	0,88	0,96	1,04
+25	0,75	0,83	0,92	1,00

Te °C = entering air temperature



## 6/8 Pole models - WATER temperature 160-110 °C

Drop 50 °C – Δtm 120 °C – Entering air temperature 15 °C

Size	Model		Speed		Air flow		Sound level at 5 m (*)		Emissions		Leaving air temperature		Mounting heights:							
			6	8	6	8	6	8	6	8	6	8	6				8			
	Poles	Atlas	Helios	RPM		m³/h		dB(A)		kW		°C		Wall		Ceiling		Wall		Ceiling
UoM	-	-	RPM		m³/h		dB(A)		kW		°C		Height H	Throw X	Max. height	Area Y	Height H	Throw X	Max. height	Area Y
1	68A11	68H11	900	750	970	860	48	44	7,84	7,45	38,7	40,4	2,5÷3	5	3	36	2,5÷3	4,5	-	-
	68A12	68H12			935	830	48	44	-	-	-	-								
	68A13	68H13			835	740	48	44	-	-	-	-								
2	68A21	68H21	900	750	1495	1170	50	46	12,34	11,07	39,1	42,7	2,5÷3,5	7	3,5	45	2,5÷3,5	5,5	-	-
	68A22	68H22			1410	1100	50	46	-	-	-	-								
	68A23	68H23			1290	1025	50	46	-	-	-	-								
3	68A31	68H31	900	750	2100	1620	52	48	17,74	15,80	39,7	43,5	2,5÷3,5	10	4	50	2,5÷3,5	7	-	-
	68A32	68H32			1880	1470	52	48	-	-	-	-								
	68A33	68H33			1735	1320	52	48	-	-	-	-								
4	68A41	68H41	900	750	2795	2195	54	50	23,88	21,46	40,0	43,6	3÷4	12	4,5	55	3÷4	8	-	-
	68A42	68H42			2345	1755	54	50	-	-	-	-								
	68A43	68H43			2010	1535	54	50	-	-	-	-								
5	68A51	68H51	900	750	3685	2865	56	51	31,40	28,08	39,9	43,7	3,5÷4,5	13	5	70	3,5÷4,5	9,5	-	-
	68A52	68H52			3050	2335	56	51	-	-	-	-								
	68A53	68H53			2785	2100	56	51	-	-	-	-								
6	68A61	68H61	900	750	4445	3550	59	54	38,73	35,06	40,5	43,9	4÷5	16	6	100	4÷5	12	-	-
	68A62	68H62			3710	2960	59	54	-	-	-	-								
	68A63	68H63			3270	2610	59	54	-	-	-	-								
7	68A71	-	900	750	5100	3960	65	59	47,77	42,65	42,4	46,5	4÷5	24	7	120	3,5÷4	18	6	100
	68A72	-			4800	3650	65	59	-	-	-	-								
	68A73	-			4600	3500	65	59	-	-	-	-								
8	68A81	-	900	750	7650	5400	67	61	61,10	52,54	38,4	43,5	4÷5,5	26	9	160	3,5÷4,5	20	7	130
	68A82	-			6900	4950	67	61	-	-	-	-								
	68A83	-			6300	4500	67	61	-	-	-	-								
9	68A91	-	900	750	10600	7600	68	62	85,69	74,32	38,7	43,6	4÷6	28	11	200	3,5÷5	21	8	150
	68A92	-			10200	7200	68	62	-	-	-	-								
	68A93	-			9400	6400	68	62	-	-	-	-								
10	68A101	-	900	750	12250	9215	71	65	107,63	94,79	40,7	45,1	4÷6	30	12	220	4÷5	22	9	160
	68A102	-			11800	8800	71	65	-	-	-	-								
	68A103	-			11000	7950	71	65	-	-	-	-								

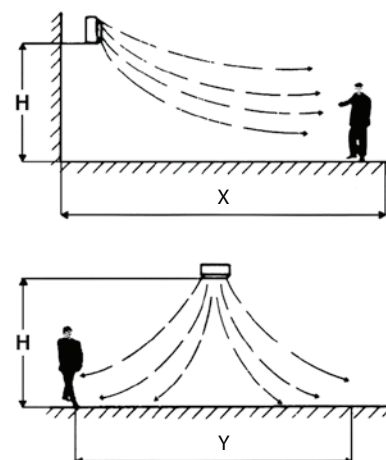
The sound pressure levels dB(A) are measured at a distance of 5 m, directional factor Q = 2, compliant with the EN 3744 standard.

### Correction factors

Te °C	Water temperature °C			
	140/90	150/100	160/110	170/120
-10	1,04	1,13	1,21	1,29
-5	1,00	1,08	1,17	1,25
0	0,96	1,04	1,13	1,21
+5	0,92	1,00	1,08	1,17
+10	0,88	0,96	1,04	1,13
+15	0,83	0,92	1,00	1,08
+20	0,79	0,88	0,96	1,04
+25	0,75	0,83	0,92	1,00

Te °C = entering air temperature

### Surface



X = throw  
Y = area

## 4/6 Pole models — STEAM 6 bar

(for steam we recommend the use of copper tube coils)

Steam temperature 164 °C – Entering air temperature 15 °C

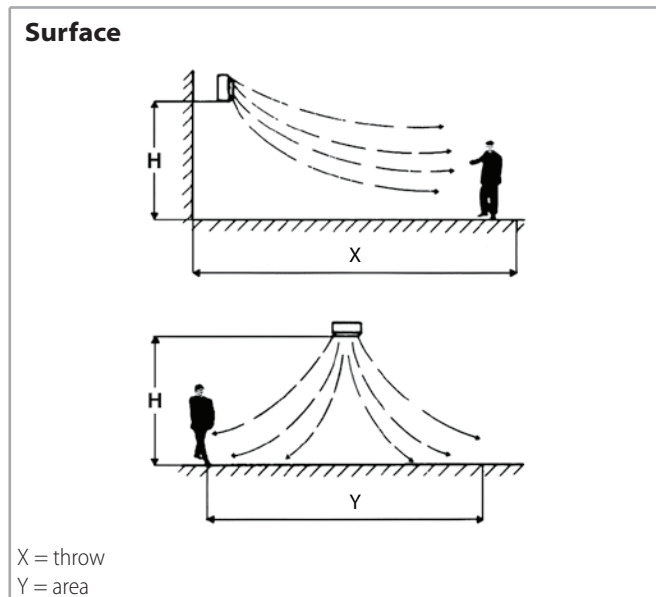
Size	Model		Speed		Air flow		Sound level at 5 m (*)		Emissions		Leaving air temperature		Mounting heights:							
			4	6	4	6	4	6	4	6	4	6	4				6			
	Poles	Atlas	Helios										Wall	Wall	Ceiling	Ceiling	Wall	Wall	Ceiling	Ceiling
UoM	-	-	RPM		m <sup>3</sup> /h		dB(A)		kW		°C	Height H m	Throw X m	Max. height m	Area Y m <sup>2</sup>	Height H m	Throw X m	Max. height m	Area Y m <sup>2</sup>	
1	46A11	46H11	1350	1000	1415	1055	56	50	14,11	12,46	44,0	49,0	2,5÷3,5	7,5	3,5	50	2,5÷3	5	3	36
	46A12	46H12			1340	990	56	50	—	—	—	—								
	46A13	46H13			1195	885	56	50	—	—	—	—								
2	46A21	46H21	1350	1000	2190	1680	59	53	20,88	18,65	42,5	47,1	3÷4	10	4	60	2,5÷3,5	7	3,5	45
	46A22	46H22			2010	1570	59	53	—	—	—	—								
	46A23	46H23			1875	1420	59	53	—	—	—	—								
3	46A31	46H31	1350	1000	3325	2510	61	55	30,38	26,78	41,5	45,9	3÷4	13,5	5	70	2,5÷3,5	10	4	50
	46A32	46H32			2915	2255	61	55	—	—	—	—								
	46A33	46H33			2610	2040	61	55	—	—	—	—								
4	46A41	46H41	1350	1000	4415	3305	64	57	40,48	35,55	41,6	46,2	3,5÷4,5	16	5,5	75	3÷4	12	4,5	55
	46A42	46H42			3725	2745	64	57	—	—	—	—								
	46A43	46H43			3210	2390	64	57	—	—	—	—								
5	46A51	46H51	1350	1000	5770	4250	66	59	52,35	45,70	41,3	46,1	4÷5	18	6	90	3,5÷4,5	13	5	70
	46A52	46H52			4800	3500	66	59	—	—	—	—								
	46A53	46H53			4325	3110	66	59	—	—	—	—								
6	46A61	46H61	1350	1000	6590	5065	69	62	63,26	56,13	42,8	47,1	4÷5,5	22	7	120	4÷5	16	6	100
	46A62	46H62			5515	4160	69	62	—	—	—	—								
	46A63	46H63			4900	3620	69	62	—	—	—	—								

The sound pressure levels dB(A) are measured at a distance of 5 m, directional factor Q = 2, compliant with the EN 3744 standard.

### Correction factors

Te °C	bars					
	4	5	6	7	8	10
-10	1,08	1,13	1,17	1,21	1,24	1,30
-5	1,05	1,09	1,13	1,17	1,21	1,26
0	1,01	1,06	1,10	1,14	1,17	1,23
+5	0,98	1,03	1,07	1,11	1,14	1,19
+10	0,95	0,99	1,03	1,07	1,11	1,16
+15	0,91	0,96	1,00	1,04	1,07	1,13
+20	0,88	0,93	0,97	1,01	1,04	1,09
+25	0,85	0,89	0,93	0,97	1,01	1,06

Te °C = entering air temperature



## 6/8 Pole models — STEAM 6 bar

(for steam we recommend the use of copper tube coils)

### Steam temperature 164 °C – Entering air temperature 15 °C

Size	Model		Speed		Air flow		Sound level at 5 m (*)		Emissions		Leaving air temperature		Mounting heights:														
			6	8	6	8	6	8	6	8	6	8	6				8										
	Poles	Atlas	Helios										Wall	Wall	Ceiling		Ceiling		Height H	Throw X	Max. height	Area Y	Height H	Throw X	Max. height	Area Y	
UoM	-	-	RPM		m <sup>3</sup> /h		dB(A)		kW		°C	m	m	m	m <sup>2</sup>	m	m	m	m <sup>2</sup>	m	m	m	m <sup>2</sup>	m	m	m	m <sup>2</sup>
1	68A11	68H11	900	750	970	860	48	44	11,99	11,36	50,9	53,3	2,5÷3	5	3	36	2,5÷3	4,5	-	-							
	68A12	68H12			935	830	48	44	-	-	-	-															
	68A13	68H13			835	740	48	44	-	-	-	-															
2	68A21	68H21	900	750	1495	1170	50	46	17,71	15,84	49,3	54,2	2,5÷3,5	7	3,5	45	2,5÷3,5	5,5	-	-							
	68A22	68H22			1410	1100	50	46	-	-	-	-															
	68A23	68H23			1290	1025	50	46	-	-	-	-															
3	68A31	68H31	900	750	2100	1620	52	48	24,62	21,70	49,0	53,8	2,5÷3,5	10	4	50	2,5÷3,5	7	-	-							
	68A32	68H32			1880	1470	52	48	-	-	-	-															
	68A33	68H33			1735	1320	52	48	-	-	-	-															
4	68A41	68H41	900	750	2795	2195	54	50	32,85	29,20	49,1	53,5	3÷4	12	4,5	55	3÷4	8	-	-							
	68A42	68H42			2345	1755	54	50	-	-	-	-															
	68A43	68H43			2010	1535	54	50	-	-	-	-															
5	68A51	68H51	900	750	3685	2865	56	51	42,74	37,82	48,6	53,2	3,5÷4,5	13	5	70	3,5÷4,5	9,5	-	-							
	68A52	68H52			3050	2335	56	51	-	-	-	-															
	68A53	68H53			2785	2100	56	51	-	-	-	-															
6	68A61	68H61	900	750	4445	3550	59	54	52,77	47,25	49,4	53,6	4÷5	16	6	100	4÷5	12	-	-							
	68A62	68H62			3710	2960	59	54	-	-	-	-															
	68A63	68H63			3270	2610	59	54	-	-	-	-															
7	68A71	-	900	750	5100	3960	65	59	59,48	52,56	48,8	53,5	4÷5	24	7	120	3,5÷4	18	6	100							
	68A72	-			4800	3650	65	59	-	-	-	-															
	68A73	-			4600	3500	65	59	-	-	-	-															
8	68A81	-	900	750	7650	5400	67	61	81,13	68,72	45,7	51,9	4÷5,5	26	9	160	3,5÷4,5	20	7	130							
	68A82	-			6900	4950	67	61	-	-	-	-															
	68A83	-			6300	4500	67	61	-	-	-	-															
9	68A91	-	900	750	10600	7600	68	62	113,33	96,70	46,0	51,9	4÷6	28	11	200	3,5÷5	21	8	150							
	68A92	-			10200	7200	68	62	-	-	-	-															
	68A93	-			9400	6400	68	62	-	-	-	-															
10	68A101	-	900	750	12250	9215	71	65	141,36	123,05	48,4	53,7	4÷6	30	12	220	4÷5	22	9	160							
	68A102	-			11800	8800	71	65	-	-	-	-															
	68A103	-			11000	7950	71	65	-	-	-	-															

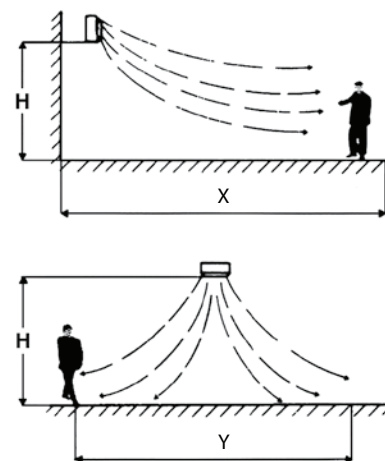
The sound pressure levels dB(A) are measured at a distance of 5 m, directional factor Q = 2, compliant with the EN 3744 standard.

### Correction factors

Te °C	bars					
	4	5	6	7	8	10
-10	1,08	1,13	1,17	1,21	1,24	1,30
-5	1,05	1,09	1,13	1,17	1,21	1,26
0	1,01	1,06	1,10	1,14	1,17	1,23
+5	0,98	1,03	1,07	1,11	1,14	1,19
+10	0,95	0,99	1,03	1,07	1,11	1,16
+15	0,91	0,96	1,00	1,04	1,07	1,13
+20	0,88	0,93	0,97	1,01	1,04	1,09
+25	0,85	0,89	0,93	0,97	1,01	1,06

Te °C = entering air temperature

### Surface



X = throw  
Y = area

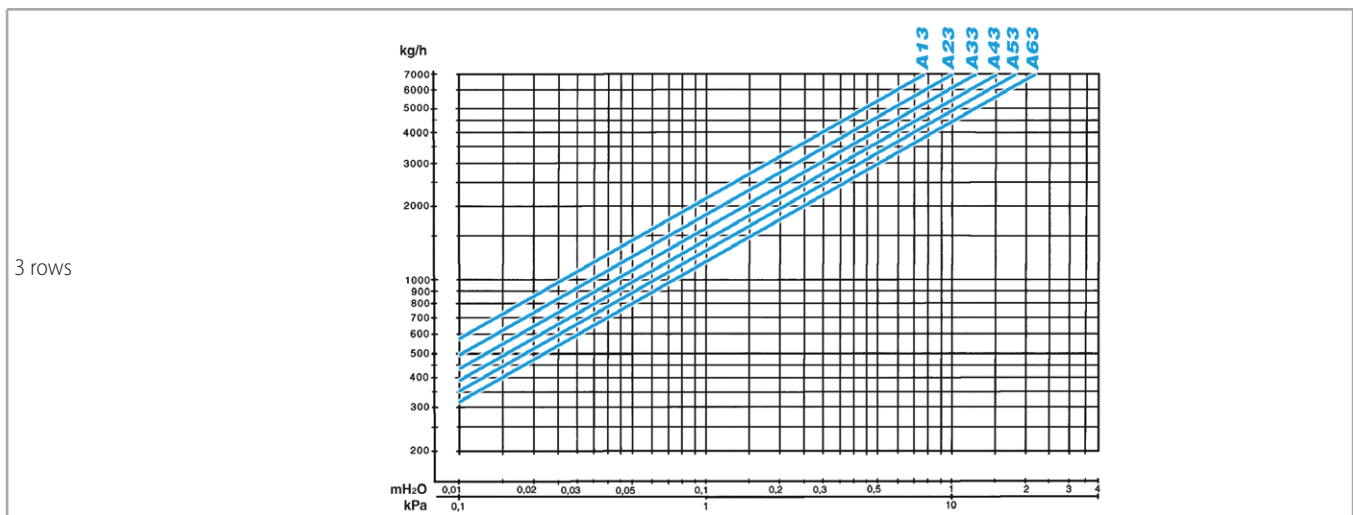
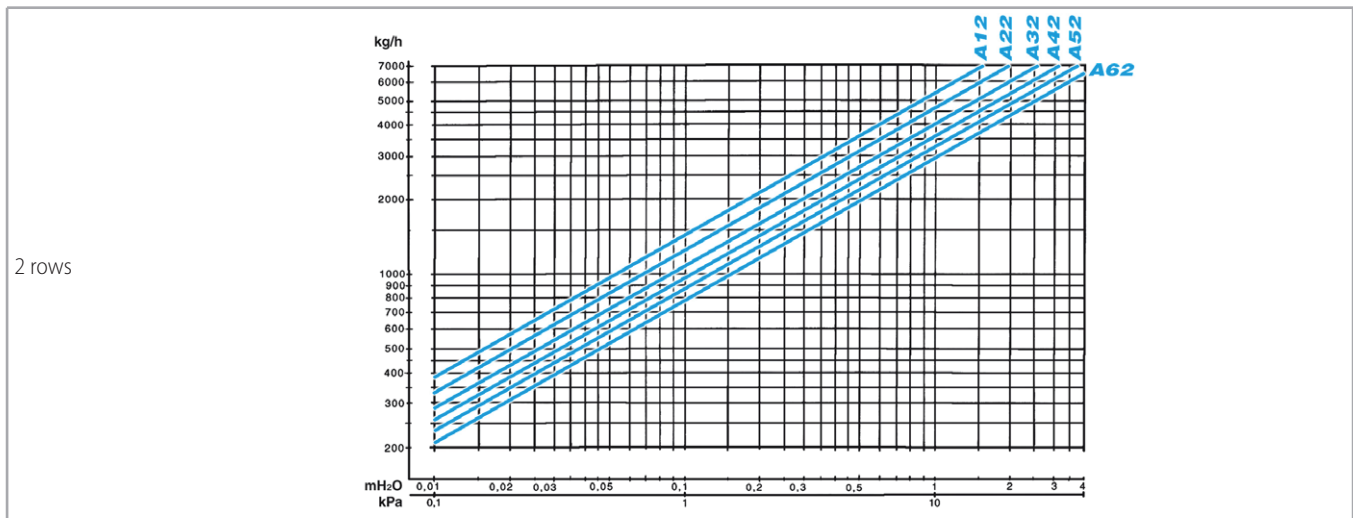
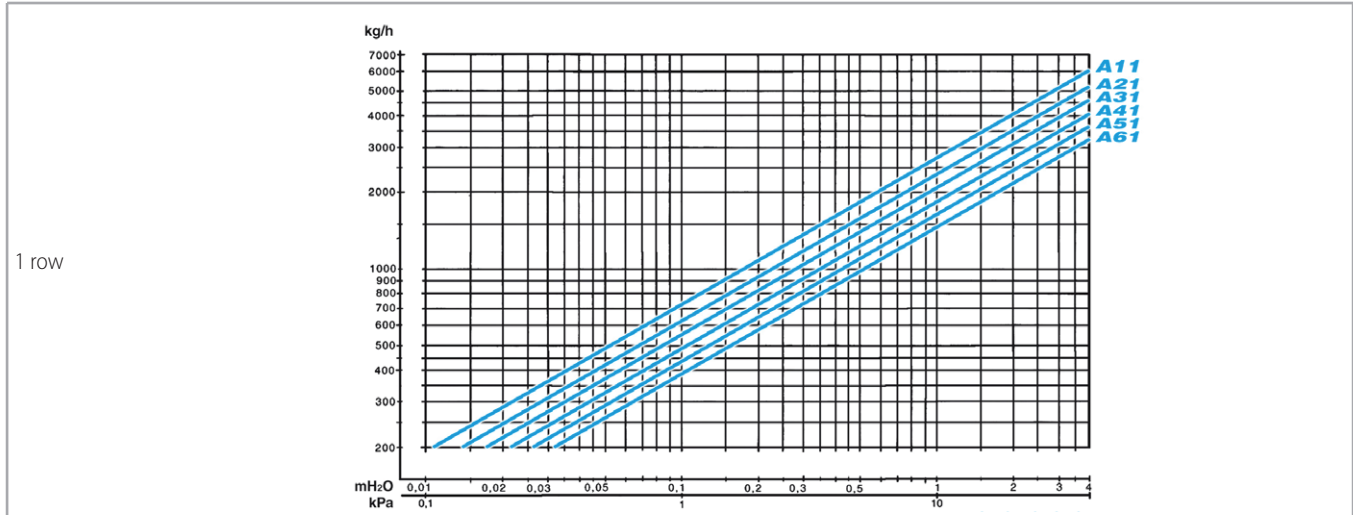
## COIL PRESSURE DROP

### Atlas - Helios - Sizes 1 ÷ 6

Pressure drops in m H<sub>2</sub>O of each **Atlas** and **Helios** unit heater model according with the water flow rate in kg/h at the medium temperature of 80 °C can be read on the diagrams.

#### Correction factors for different temperatures

°C	50	60	70	90	100	110	120	130	140	150
K	1,15	1,10	1,05	0,95	0,89	0,83	0,78	0,72	0,67	0,61

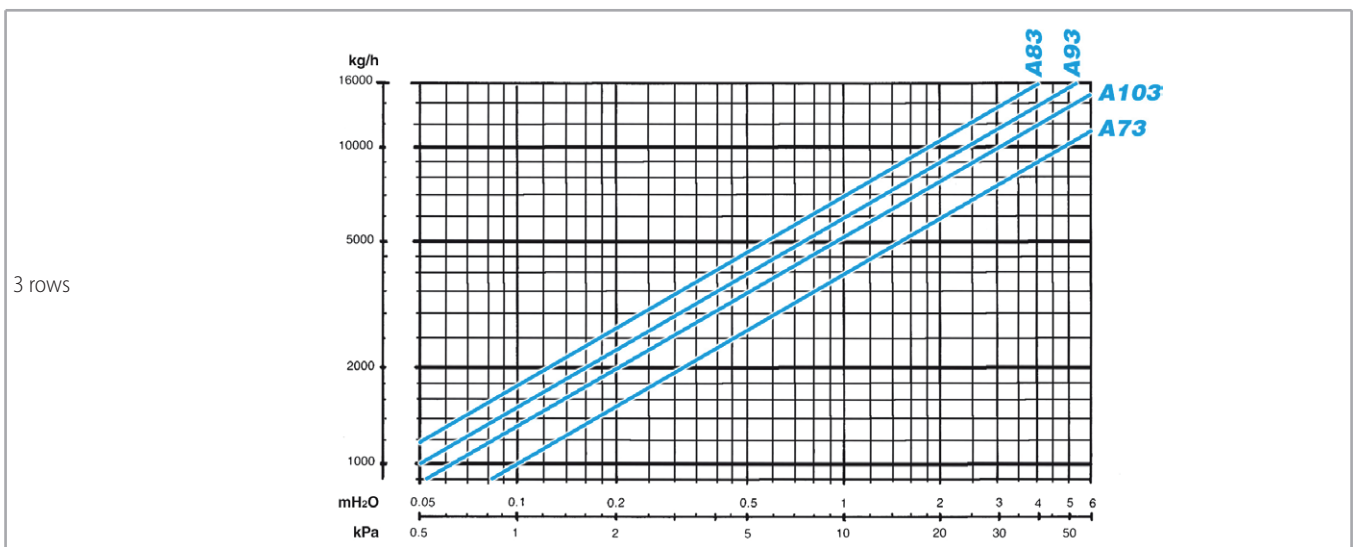
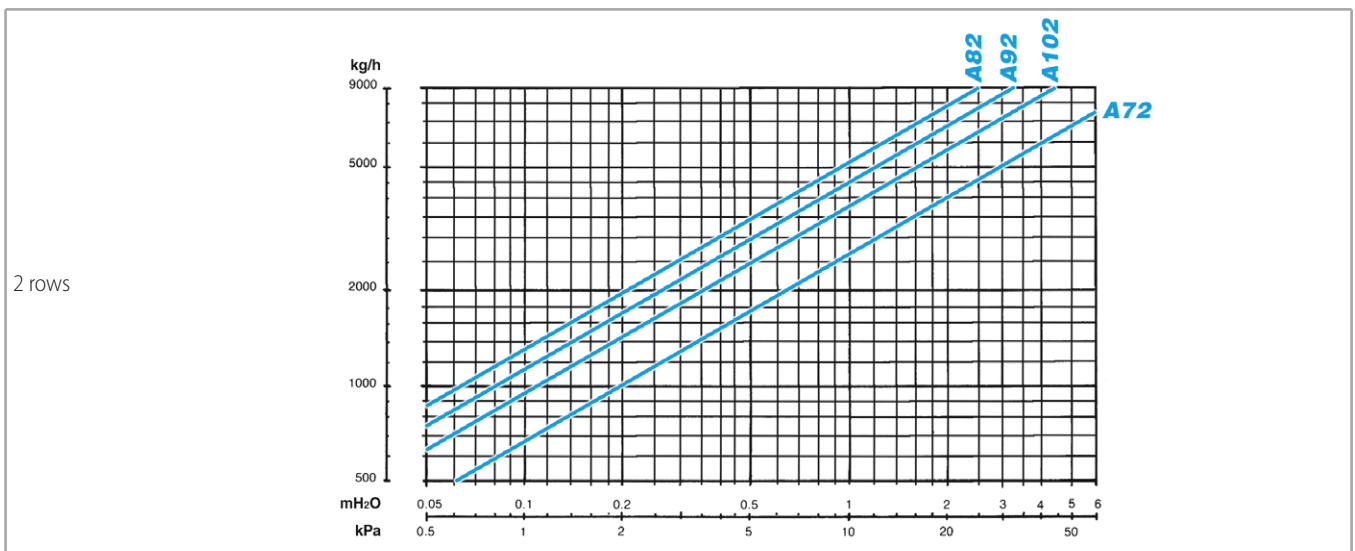
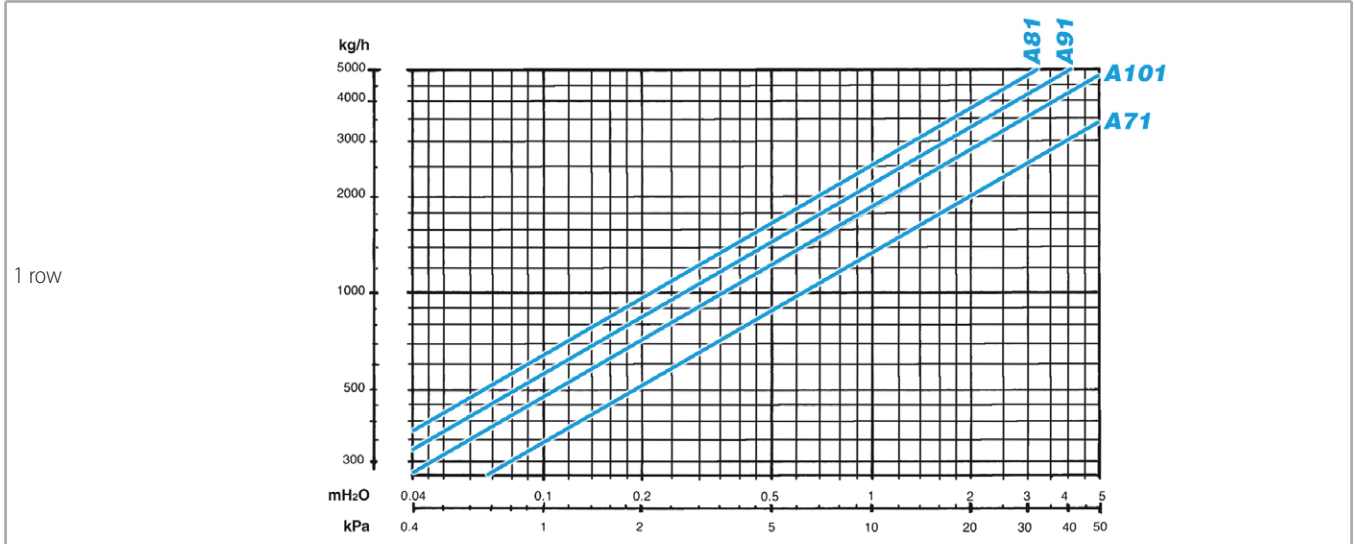


## Atlas - Sizes 7÷10

Pressure drops in m H<sub>2</sub>O of each **Atlas** unit heater model according with the water flow rate in kg/h at the medium temperature of 80 °C can be read on the diagrams.

### Correction factors for different temperatures

°C	50	60	70	90	100	110	120	130	140	150
K	1,15	1,10	1,05	0,95	0,89	0,83	0,78	0,72	0,67	0,61



## MAIN COMPONENTS



**AIX** Sabiana unit heaters are made with stainless steel casing and coil with stainless steel pipes and aluminium fins, with flanged fittings.

They are available in four sizes (total of eight models). These units are suitable for hot water, high temperature hot water or steam.

They are particularly suitable for working ambients.

### Coil

The fins are pressed from an aluminium sheet, bonded onto the AISI 304 stainless steel tubes and are supplied with flanged connections (counter flanges not included).

### Electric motor

Asynchronous three phase, single voltage 400V/50 Hz, two speeds.

Construction of closed type, IP 55 protection, class B insulation.

### Fan/Motor assembly support

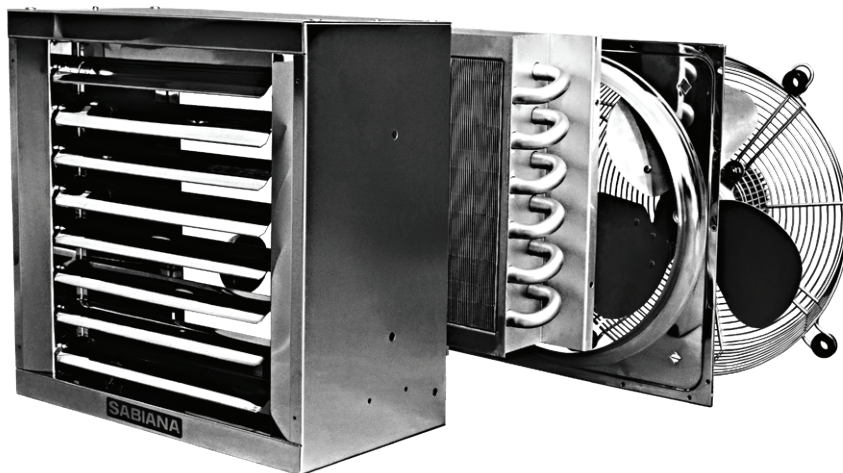
The finger proof guard also acts as the main support and fixing frame painted in RAL 9002 and satin finish obtained with epoxy paint dried in oven at 180 °C.

This frame, made from galvanized steel, is mounted onto the main casing via residually anti-vibration rubber mountings.

### Casing

Manufactured from AISI 304 stainless steel, 1 mm thick. The adjustable louvres are held in place by spring loaded pivots.

They are mounted in a horizontal position on the front of the unit.



## OPERATION LIMITS AND IDENTIFICATION CODE

### Operating limits

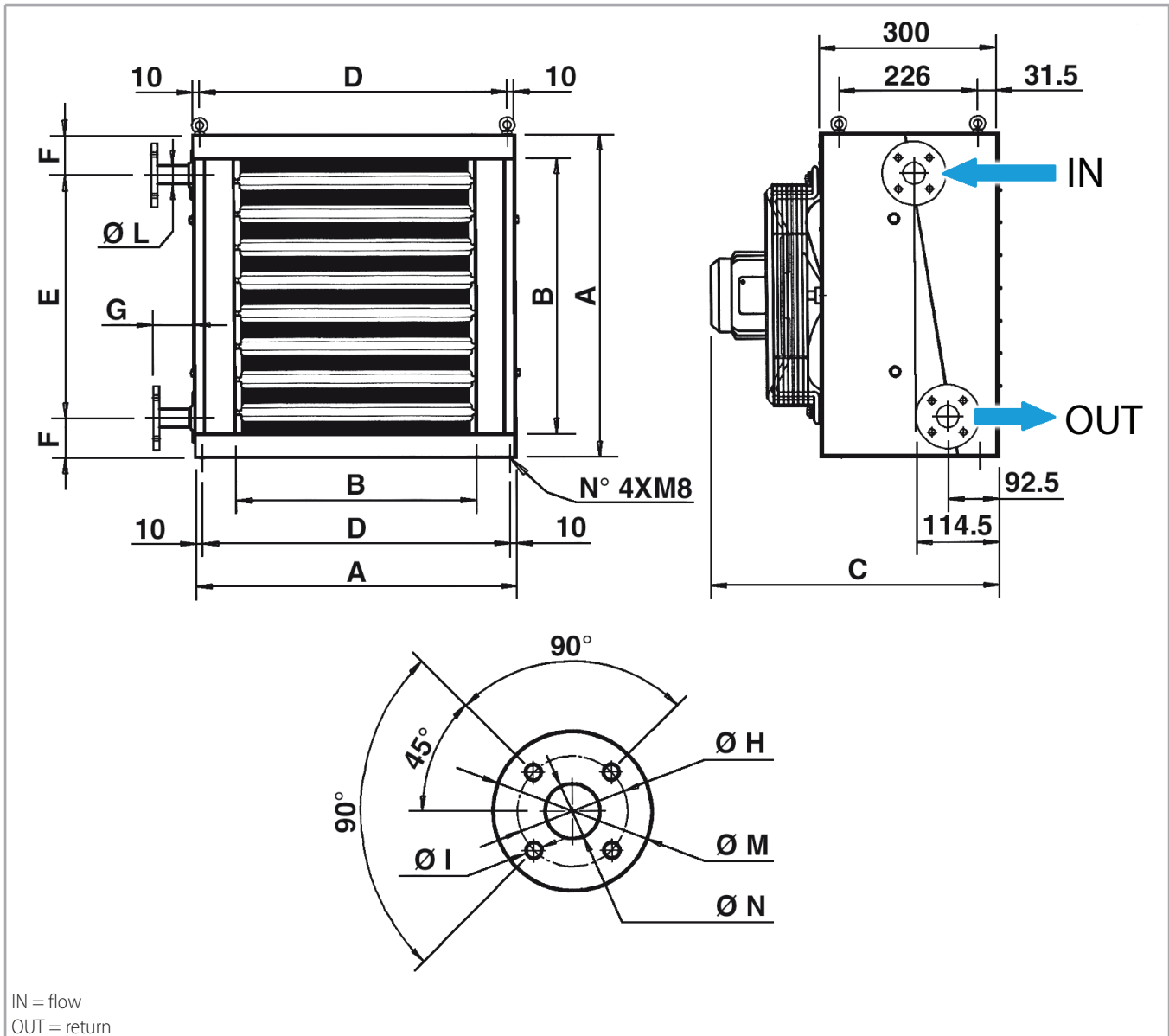
Circuit	Description	UoM	Value
WATER	Maximum temperature of heat vector fluid	°C	210
	Maximum working pressure	kPa (bar)	2000 (20)
STEAM	Maximum working pressure	kPa (bar)	2000 (20)

### Identification code

#### Example: 46I42

46	I	4	2
	RANGE	SIZE	ROWS
MOTOR 4/6 POLE (1350/1000 r.p.m.)	AIX	4	2

**DIMENSION, WEIGHT AND WATER CONTENT**



Model	Dimensions												Weight		Water content	
	A mm	B mm	C mm	D mm	E mm	F mm	G mm	ØH mm	ØI mm	ØL "	ØM mm	ØN mm	1R kg	2R kg	1R l	2R l
46121-22	526	393	468	506	330	98,0	66	65	14	½	95	15	26	30	1,7	2,5
46141-42	636	501	468	616	497	69,5	66	85	14	1	115	25	33	38	2,9	4,2
46161-62	743	609	468	723	588	77,5	56	100	18	1¼	140	32	45	51	5,3	5,9
68191-92	1011	877	576	991	832	89,5	87	110	18	1½	150	40	82	92	8,2	12,0

## THERMAL EMISSIONS

Model		46121		46141		46161		68191	
Installation height	m	2.5 ÷ 4		3 ÷ 4.5		3 ÷ 5		3.5 ÷ 5.5	
Speed	RPM	1350	1000	1350	1000	1350	1000	900	700
Air flow	m <sup>3</sup> /h	2300	1500	3900	2600	6900	4400	10200	7600
Air throw	m	11	7,5	16	12	25	18	28	21
Noise level at 5 m. (*)	dB(A)	59	51	64	54	69	60	68	62
Steam 3 bars - Entering air temperature +15 °C	kW	14,3	11,9	23,4	19,8	37	31	68,4	60,5
	Leaving air temperature °C	33,3	38,3	32,6	37,4	30,8	35,7	34,7	38,4
Steam 6 bars - Entering air temperature +15 °C	kW	16,5	13,8	27	22,9	42,7	35,9	79	70
	Leaving air temperature °C	36,1	42	35,4	40,9	33,2	39	37,8	42,1

The sound pressure levels dB(A) are measured at a distance of 5 m, directional factor Q = 2, compliant with the EN 3744 standard.

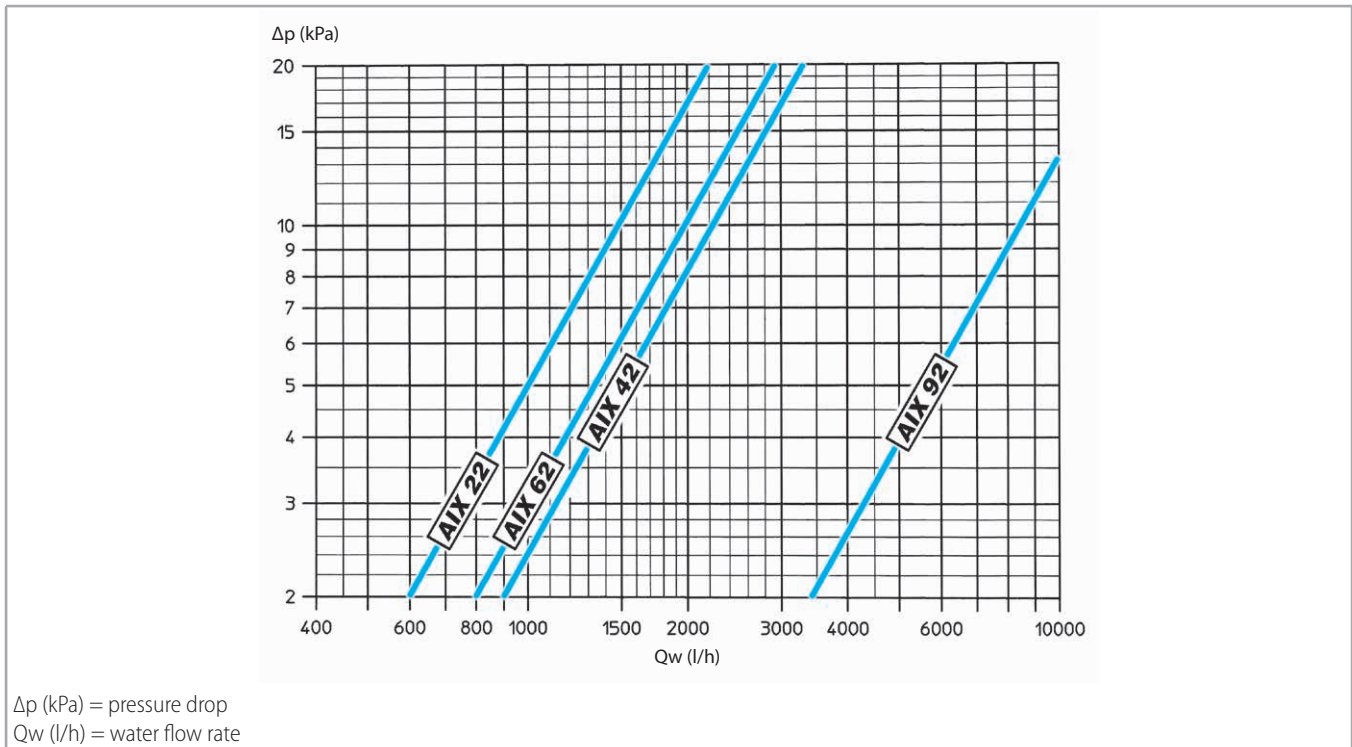
Model		46122		46142		46162		68192	
Installation height	m	2.5 ÷ 4		3 ÷ 4.5		3 ÷ 5		3.5 ÷ 5.5	
Speed	RPM	1350	1000	1350	1000	1350	1000	900	700
Air flow	m <sup>3</sup> /h	2100	1400	3600	2400	6300	4100	9200	7000
Air throw	m	11	7,5	16	12	25	18	28	21
Noise level at 5 m. (*)	dB(A)	59	51	64	54	69	60	68	62
Water temperature 85/75 °C - Entering air temperature +15 °C	kW	13	10,6	21,1	17,2	36,5	29,3	59,2	51,4
	Leaving air temperature °C	33,2	37,3	32,2	36,1	32	36	33,9	36,6
Water temperature 130/100 °C - Entering air temperature +15 °C	kW	18,9	15,4	30,2	24,7	53,3	43	84,1	74
	Leaving air temperature °C	41,5	47,3	39,7	45,3	39,9	45,8	41,9	46,1

The sound pressure levels dB(A) are measured at a distance of 5 m, directional factor Q = 2, compliant with the EN 3744 standard.

### Correction factors (for working conditions different from those shown in the table)

Entering air temperature °C	on 85/75 °C					on 130/100 °C					on 6 bar STEAM FIGURES					
	WATER TEMPERATURE °C					WATER TEMPERATURE °C					bars					
	70 60	75 65	80 70	85 75	90 80	110 80	120 90	130 100	140 110	150 120	1	2	3	4	5	6
-10	1,15	1,23	1,31	1,38	1,45	1,05	1,15	1,25	1,35	1,45	0,87	0,96	1,03	1,08	1,13	1,17
-5	1,07	1,15	1,23	1,30	1,38	1,00	1,10	1,20	1,30	1,40	0,84	0,93	1,00	1,05	1,09	1,13
0	1,00	1,07	1,15	1,23	1,30	0,95	1,05	1,15	1,25	1,35	0,81	0,90	0,96	1,01	1,06	1,10
+5	0,92	1,00	1,07	1,15	1,23	0,90	1,00	1,10	1,20	1,30	0,78	0,86	0,93	0,98	1,03	1,07
+10	0,84	0,92	1,00	1,07	1,15	0,85	0,95	1,05	1,15	1,25	0,74	0,83	0,90	0,95	0,99	1,03
+15	0,76	0,84	0,92	1,00	1,07	0,80	0,90	1,00	1,10	1,20	0,70	0,80	0,86	0,91	0,96	1,00
+20	0,69	0,76	0,84	0,92	1,00	0,75	0,85	0,95	1,05	1,15	0,67	0,76	0,81	0,88	0,93	0,97
+25	0,62	0,69	0,76	0,84	0,92	0,70	0,80	0,90	1,00	1,10	0,64	0,73	0,80	0,85	0,89	0,93

**WATER SIDE PRESSURE DROP**



The water pressure drop figures refer to a mean water temperature of **80 °C**; for different temperature, multiply the pressure drop figures by the correction factors **K**.

TMV °C	50	60	70	80	90	100	110	120	130	140	150
K	1,15	1,10	1,05	1,00	0,95	0,89	0,83	0,78	0,72	0,67	0,61

## MAIN COMPONENTS

### Induction flow optimizer for Atlas, and Helios Sabiana unit heaters



The **Jetstream** induction flow optimizer allows the reduction of the mean leaving air temperature from the unit heaters (Sabiana series Atlas and Helios) and to increase the throw of the equipment with considerable advantages both in terms of energy saving and environment comfort.

The **Jetstream** induction flow optimizers increase the air speed thanks to the special shape of its deflecting louvers which allow the creation of various streams of hot air at the unit heater outlet.

The depression created between the layers induces a lateral aspiration of ambient air that mixes with the air heated by the unit, thus reducing the leaving air temperature and increasing the throw.

The leaving air temperature from the units has a decisive influence on hot air stratification and consequently on energy saving: for each degree of decrease in ambient temperature there is a 1.5% decrease in energy consumption.

The use of Jetstream induction flow optimizer has the following advantages:

#### energy saving:

- reduced hot air stratification within the building;
- reduced operating time of the units with the same ambient temperature.

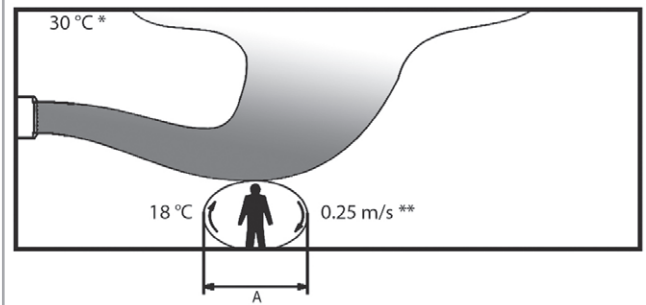
Energy saving varies between a minimum of 5% and a maximum of 15%, with maximum payback in two seasons.

#### environmental comfort advantages:

- increased floor temperature uniformity with greater comfort area;
- possibility to install smaller and quieter units, due to the increase of the throw.

### Air flow produced by a unit heater WITHOUT induction flow optimizer

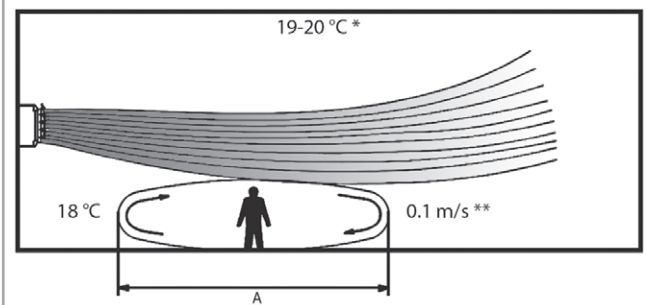
Time necessary to reach the room temperature of 18 °C = 40 minutes



A = influence area  
 \* = temperature under the ceiling  
 \*\* = air speed

### Air flow produced by a unit heater WITH induction flow optimizer

Time necessary to reach the room temperature of 18 °C = 25 minutes



A = influence area  
 \* = temperature under the ceiling  
 \*\* = air speed

## AVAILABLE VERSIONS, DIMENSIONS AND WEIGHTS

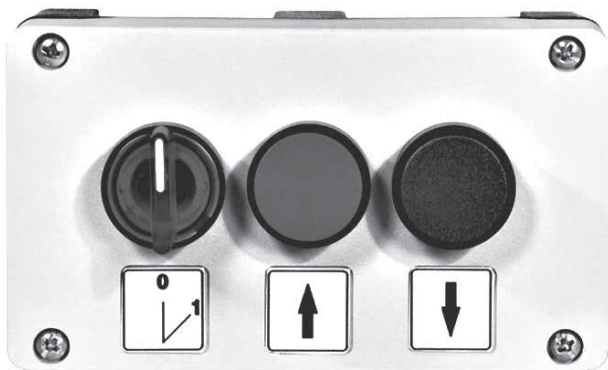
### Available versions

Four versions are available:

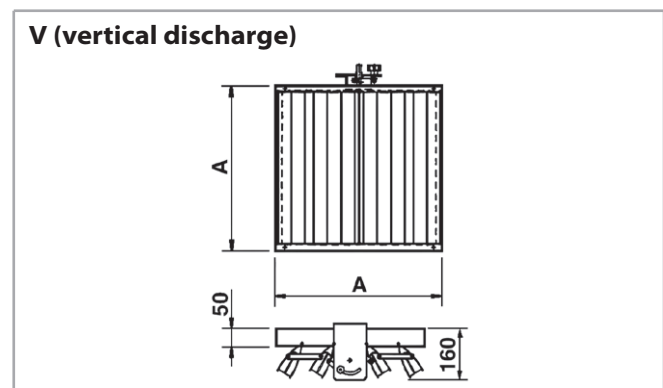
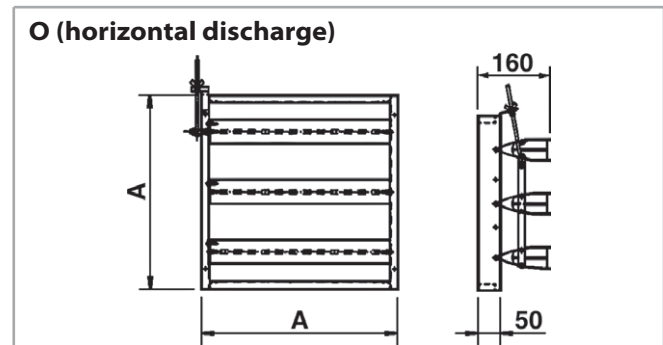
- Manual for horizontal discharge (all sizes)
- Manual for vertical discharge (all sizes)
- Motorized for horizontal discharge (sizes 1÷7 only)
- Motorized for vertical discharge (all sizes)

The **manually controlled version** calls for manual orientation of the louvres and for them to be locked using a special threaded rod.

The **motorized version** is supplied with single phase motor that can be controlled by the remote switch.



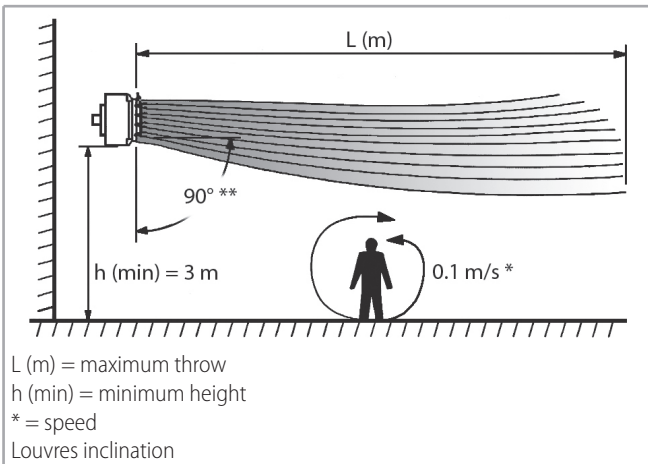
### Dimension and weight



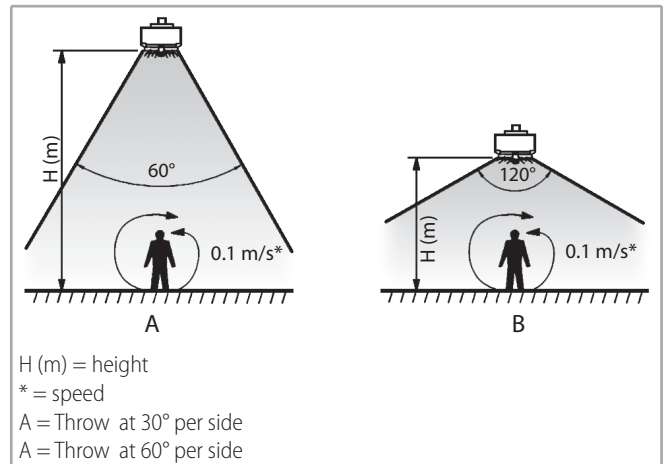
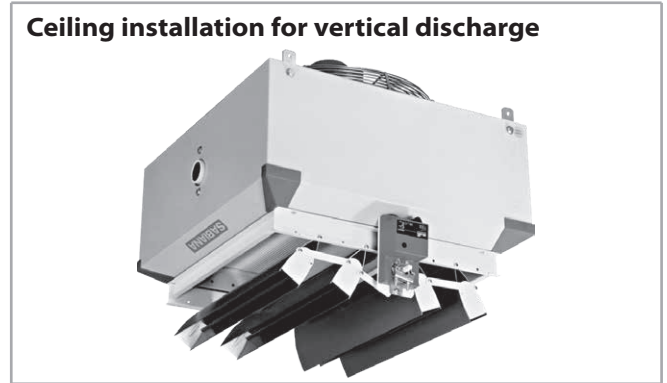
Model		A mm	Weight kg
0-1	V-1	368	1,4
0-2	V-2	422	1,7
0-3	V-3	476	1,8
0-4	V-4	530	2,0
0-5	V-5	584	2,2
0-6	V-6	638	2,4
0-7	V-7	689	2,6
0-8	V-8	796	3,0
0-9	V-9	906	3,4
0-10	V-10	1012	3,7

## MOUNTING HEIGHTS AND AIR THROW

### a) Wall installation for horizontal discharge:



### b) Ceiling installation for vertical discharge:



Size	Maximum throw L (m)					
	WITHOUT Jetstream			WITH Jetstream		
	4P	6P	8P	4P	6P	8P
1	7,5	5	4,5	12	8	-
2	10	7	5,5	16	11	-
3	13,5	10	7	18	14	-
4	16	12	8	20	15	-
5	18	13	8	23	16	-
6	22	16	12	28	20	-
7	-	24	18	-	28	22
8	-	26	20	-	32	25
9	-	28	21	-	34	26
10	-	30	22	-	37	28

Size	Installation height (m)								
	WITHOUT Jetstream			WITH Jetstream to 60°			WITH Jetstream to 120°		
	4P	6P	8P	4P	6P	8P	4P	6P	8P
1	4	3	-	5,5	4	-	4	3	-
2	4,5	3,5	-	8	6,5	-	5	4	-
3	5	4	-	11	8	-	6,5	5,5	-
4	5,5	4,5	-	12	9	-	6,5	5,5	-
5	6	5	-	13	10	-	7	6	-
6	7	6	-	14	12	-	8	7	-
7	-	7	6	-	13	11	-	8	7
8	-	9	7	-	15	12	-	10	8
9	-	11	8	-	18	13	-	13	9
10	-	12	9	-	19	14	-	14	10

## MAIN COMPONENTS

### Door curtain unit



The **Atlas STP** door curtains, supplied with hot water, are fitted with special diffusers that create a curtain of hot air.

Installed above the door, they deliver a constant vertical flow of air, representing a barrier that, by thermodynamic effect, stops the infiltration of air from the outside, and mixes the residual cold currents.

Available in three sizes, with two speed and 1, 2, 3 row coils.

### Construction

- The main casing is manufactured from galvanized prepainted steel and finished in light grey colour (RAL 9002), and is assembled from three component parts, which are assembled using self-tapping screws in order to allow quick maintenance on the coil.
- Fishtail diffuser produced from a steel sheet with manually adjustable louvres for individual requirements.

### Coil

Manufactured from high quality steel or copper tube 22 mm of diameter to reduce resistance with mechanically bonded aluminium fins for high efficient heat transfer.

### Fan/Motor assembly

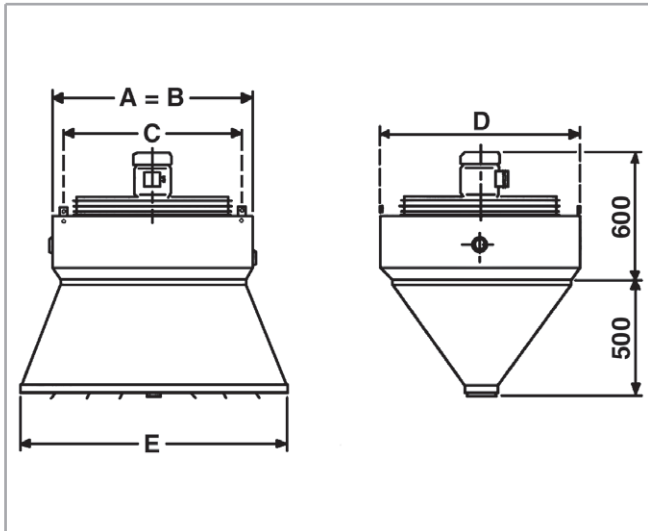
Consists of aluminium helicoidal blades statically and dynamically balanced with a cast alloy hub, installed into the motor shaft and mounted onto the casing with antivibration rubber mounting blocks. The asynchronous motor is supplied as standard for three phase, 400V 50Hz, class B insulation, IP55 protection, two speed 6/8 poles: 900 r.p.m. (6 poles) or 700 r.p.m. (8 poles).

### Installation

It is recommended to select the heaters depending on the size of the door (see table on next page) and the water temperature (see table "Technical characteristics").

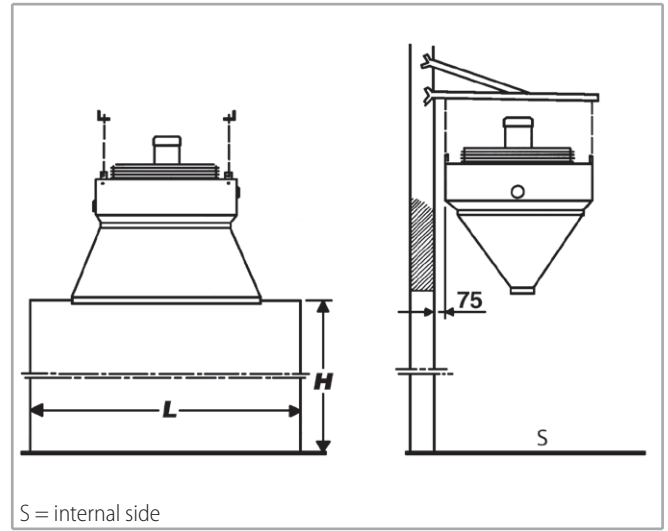
## TECHNICAL DATA AND CHARACTERISTICS

### Dimension, Weight and Water content



Size	Dimensions				Rows N°	Weight kg	Water content l
	A=B mm	C mm	D mm	E mm			
7	793	696	793	1000	1	62	4,3
					2	70	8,2
					3	76	12,3
8	900	803	900	1200	1	75	5,8
					2	86	11,1
					3	93	16,6
9	1010	913	1010	1400	1	90	7,6
					2	104	14,5
					3	113	21,8

### Tips for choosing the unit



S = internal side

Size	Motor pole	Door height H (m)	Door width L (m)
7	6	3.0 ÷ 4.0	1.5
8	6	3.5 ÷ 4.5	2.0
9	6	4.5 ÷ 5.5	2.5
7	8	2.5 ÷ 3.0	1.5
8	8	3.0 ÷ 3.5	1.8
9	8	3.5 ÷ 4.5	2.0

## Technical specifications

### Entering AIR temperature 15 °C

Size	Model	Speed RPM		Air flow m <sup>3</sup> /h		Sound level at 5 m (*) dB(A)		Emissions							
		6 Poles	8 Poles	6 Poles	8 Poles	6 Poles	8 Poles	Water temperature 85-70 °C				Water temperature 140-100 °C			
								kW		Leaving air temp. °C		kW		Leaving air temp. °C	
7	68A71/STP	900	750	4435	3440	69	63	—	—	—	—	39,42	35,03	41,0	44,8
	68A72/STP	900	750	4175	3175	69	63	38,15	32,87	41,7	45,3	62,72	54,06	59,0	64,8
	68A73/STP	900	750	4000	3045	69	63	44,87	38,06	47,8	51,5	—	—	—	—
8	68A81/STP	900	750	6655	4700	69	64	—	—	—	—	50,62	43,35	37,2	42,0
	68A82/STP	900	750	6000	4300	69	64	49,08	41,20	38,9	43,0	80,12	67,29	54,1	60,8
	68A83/STP	900	750	5480	3915	69	64	59,42	48,49	46,7	51,2	—	—	—	—
9	68A91/STP	900	750	9220	6610	70	65	—	—	—	—	70,80	61,10	37,5	42,0
	68A92/STP	900	750	8870	6260	70	65	70,79	59,10	38,3	42,6	116,23	96,92	53,3	60,3
	68A93/STP	900	750	8170	5560	70	65	86,68	69,00	46,0	51,3	—	—	—	—

The sound pressure levels dB(A) are measured at a distance of 5 m, directional factor Q = 2, compliant with the EN 3744 standard.

## ON-OFF VALVES

### 2 way water valves

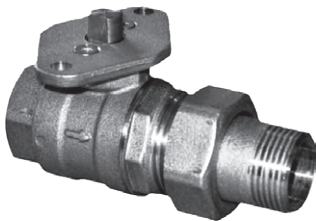
Components:

- one 2 way valve
- an ON-OFF 230 V actuator

ID	Code	Valve	
		(Ø)	Kvs
VA2V - 3/4"	9008110	3/4"	30
VA2V - 1"	9008111	1"	50

Heating	
Min. entering water temperature	15 °C
Max. entering water temperature	90 °C

**2 way valve**



**ON-OFF 230 V actuator**



### 3 way water valves

Components:

- one 3 way valve
- an ON-OFF 230 V actuator

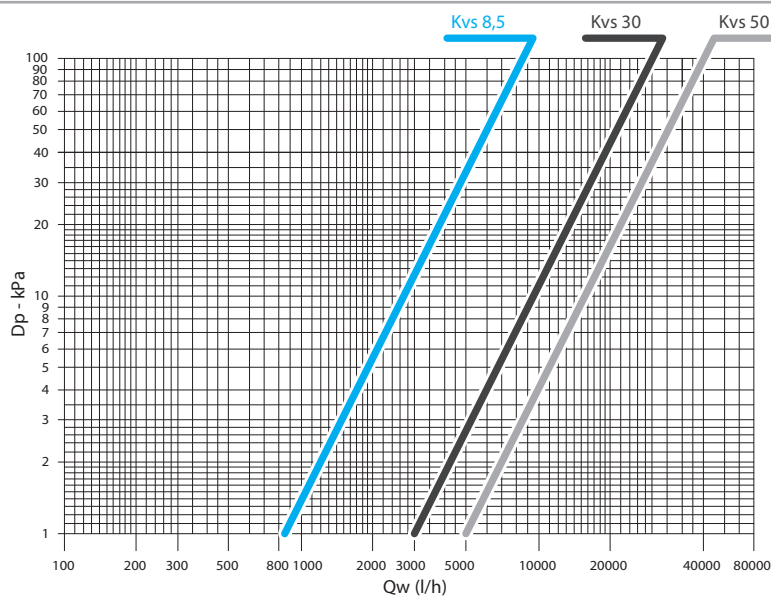
ID	Code	Valve	
		(Ø)	Kvs
VA3V - 3/4"	9008112	3/4"	8,5

Heating	
Min. entering water temperature	15 °C
Max. entering water temperature	90 °C

**3 way valve**



**ON-OFF 230 V actuator**

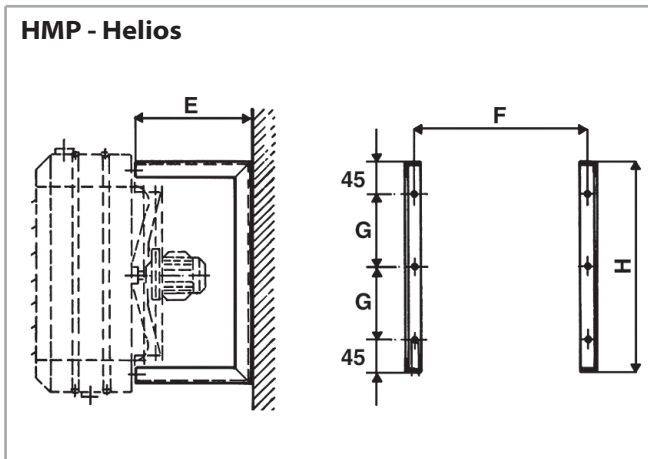
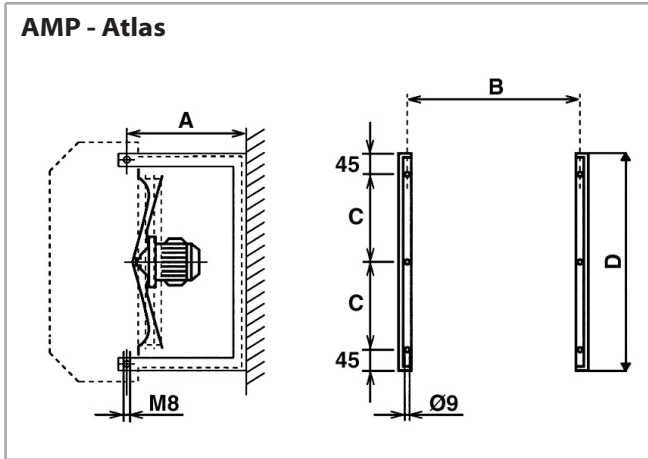


Dp = pressure drop  
Qw = water flow rate

## ACCESSORIES AND AIR BOXES

### AMP for Atlas / HMP for Helios - Wall brackets

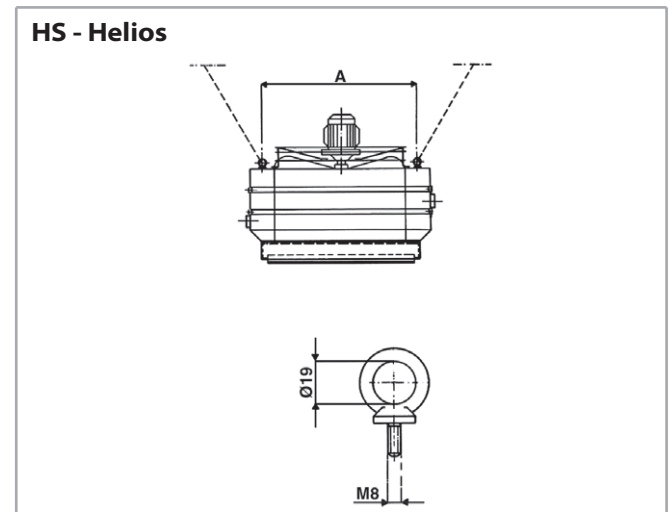
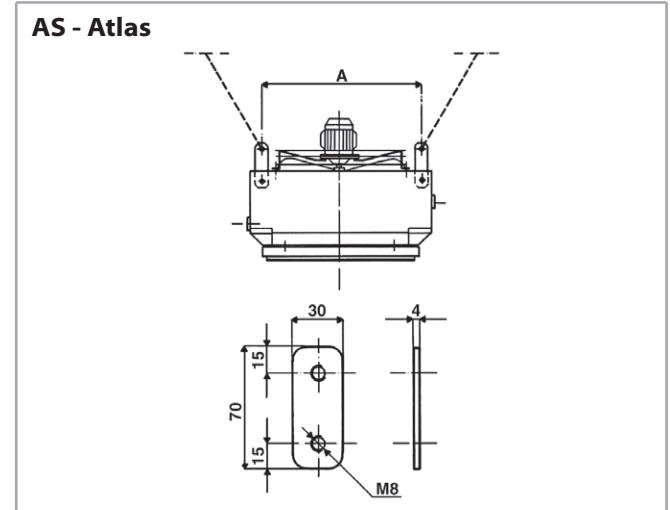
Wall brackets.  
Horizontal air discharge.



Size	Atlas				Helios				
	A (ATEX) mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm	
1	340	(490)	442	157,5	405	310	406	173	436
2	340	(490)	496	184,5	459	310	460	200	490
3	340	(490)	550	211,5	513	310	514	227	544
4	390	(540)	604	238,5	567	360	568	254	598
5	390	(540)	658	265,5	621	360	622	281	652
6	390	(540)	712	292,5	675	360	676	308	706
7	520	(710)	763	318,0	726	-	-	-	-
8	520	(710)	870	371,5	833	-	-	-	-
9	520	(710)	980	426,5	943	-	-	-	-
10	520	(710)	1087	480,0	1050	-	-	-	-

### AS for Atlas / HS for Helios - Suspension brackets

Suspension brackets (AS) / Suspension lugs (HS) for ceiling unit heater.  
Vertical air discharge.

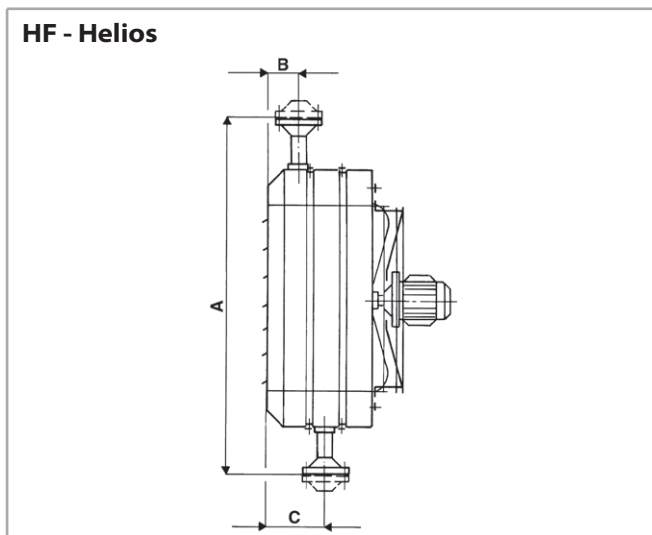
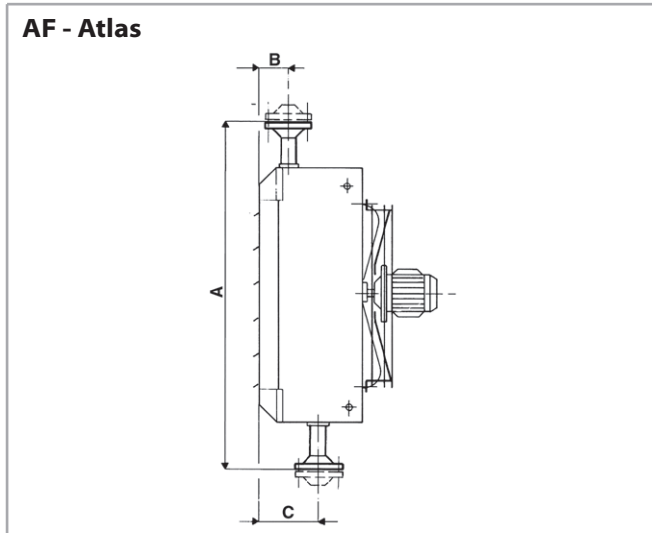


Size	Atlas	Helios
	A mm	A mm
1	375	406
2	429	460
3	483	514
4	537	568
5	591	622
6	645	676
7	696	-
8	803	-
9	913	-
10	1020	-

## AF for Atlas / HF for Helios

Water > 140 °C – Steam > 3 bar

**Flanged connections** PN 16 EN 1092-1.  
(Not to be used with ATEX versions).



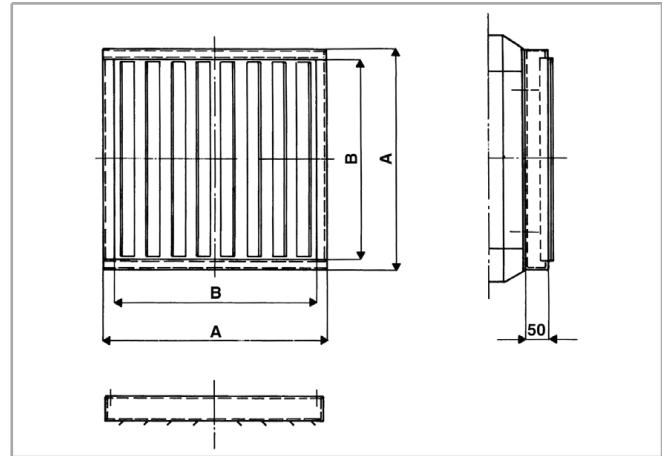
Size	DN mm	A mm	B mm	C mm
1	20	665	70	160
2	20	719	70	160
3	25	773	70	160
4	25	827	70	160
5	32	881	70	160
6	32	935	70	160
7	40	989	80	150
8	40	1097	80	150
9	40	1205	80	150
10	50	1313	80	150

## AD for Atlas and Helios - 4 way diffuser

4 way diffuser.

To be used with unit heaters for vertical discharge, placed at standard heights.

For normal heights of installation.



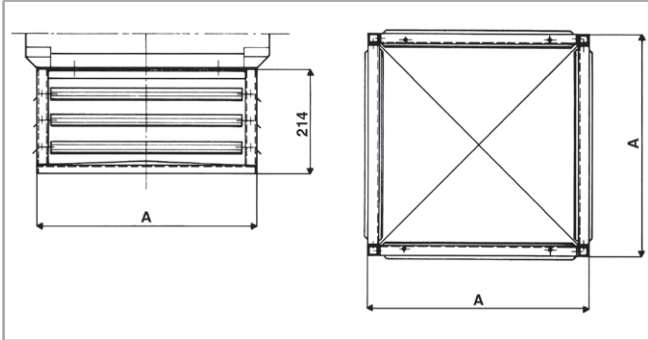
Size	A mm	B mm	Weight kg
1	372	336	1,2
2	426	390	1,3
3	480	444	1,5
4	534	498	1,8
5	588	552	1,9
6	642	606	2,1
7	693	657	2,3
8	800	764	2,8
9	910	874	3,0
10	1016	981	3,9

### AW4 for Atlas - 4 way diffuser

4 direction louvres.

To be used with unit heaters for vertical discharge, placed at low heights to direct the flux towards 4 different directions.

(Not to be used with ATEX versions).

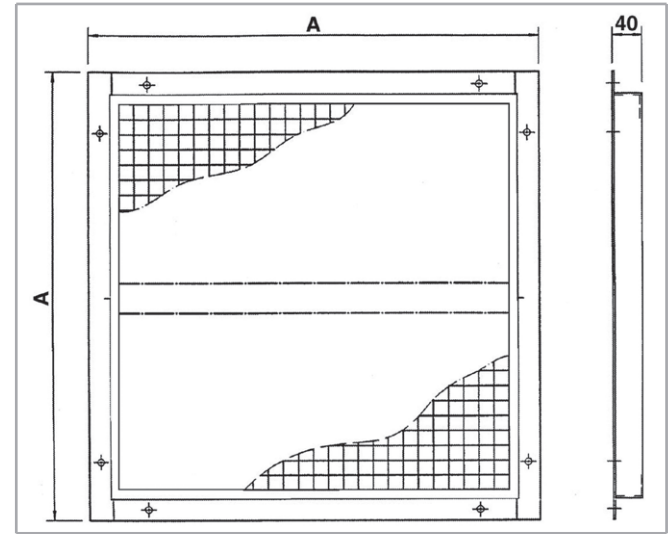


Size	A mm	Weight kg
1	376	2,4
2	430	3,0
3	484	3,4
4	538	4,1
5	592	4,6
6	646	5,3

### APP for Atlas - Ball protection grid

Ball protection grid.

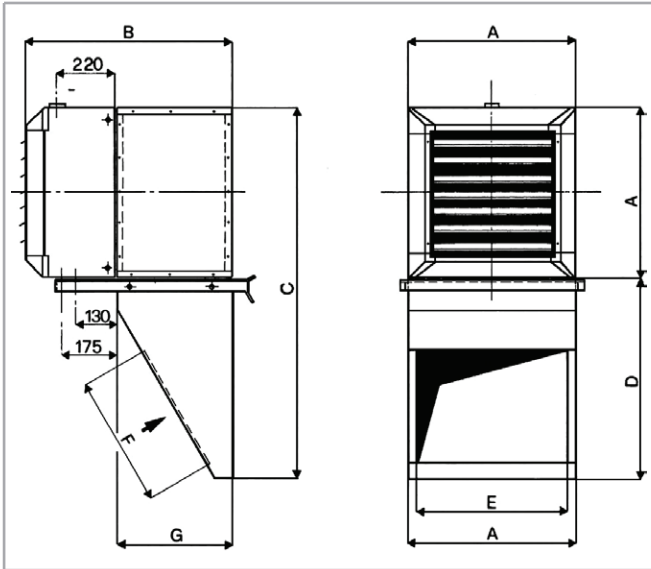
(Not to be used with ATEX versions).



Size	A mm	Weight kg
1	372	2,8
2	426	3,4
3	480	4,2
4	534	5,1
5	588	6,1
6	642	7,0
7	697	8,8
8	804	10,8
9	914	12,9
10	1021	16,0

## ARC simple intake hood fitted underneath, for Atlas

Simple intake hood fitted underneath.  
Wall bracket included.  
Prepainted steel thickness 1 mm.  
(Not to be used with ATEX versions).



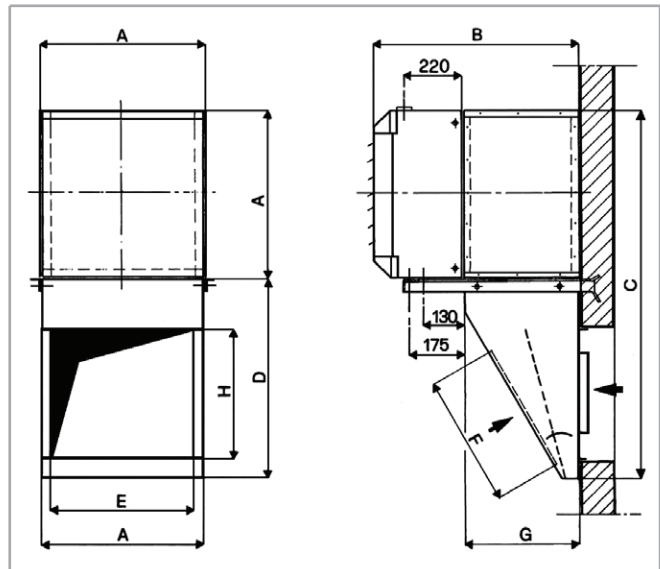
Size	A mm	B mm	C mm	D mm	E mm	F mm	G mm	Weight kg
1	472	660	1072	600	422	410	370	17,6
2	526	660	1126	600	476	410	370	18,7
3	580	660	1180	600	530	510	370	19,8
4	634	760	1534	900	584	510	470	30,8
5	688	760	1588	900	638	610	470	33,0
6	742	760	1642	900	692	610	470	35,2
7	793	860	1793	1000	710	710	570	44,0
8	900	860	1900	1000	710	710	570	50,6
9	1010	960	2210	1200	910	910	670	63,8
10	1117	960	2317	1200	910	910	670	70,4

### K correction factors

Air flow	K	0,90
Heat emission	K	0,95

## AMC double intake hood with internal/external air mixing, manually controlled damper, for Atlas

Double intake hood with internal/external air mixing,  
manually controlled damper.  
Wall bracket included.  
Prepainted steel thickness 1 mm.  
(Not to be used with ATEX versions).



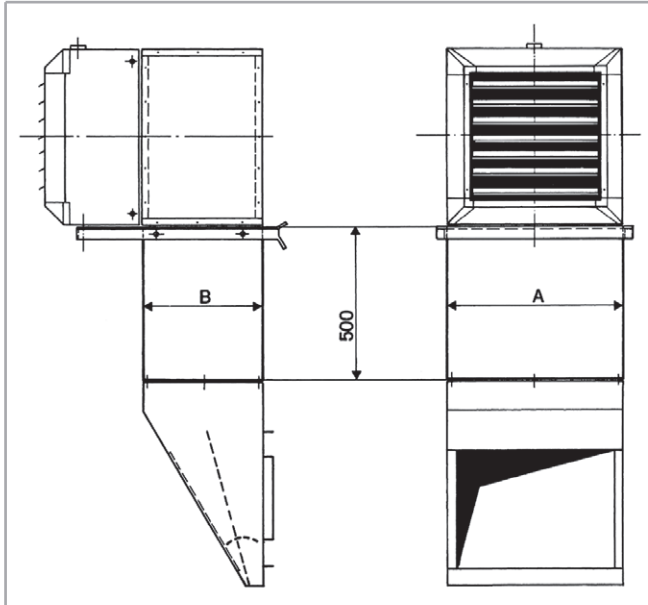
Size	A mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm	Weight kg
1	472	660	1072	600	412	410	370	410	18,7
2	526	660	1126	600	466	410	370	410	19,8
3	580	660	1180	600	520	510	370	510	20,9
4	634	760	1534	900	574	510	470	510	31,9
5	688	760	1588	900	628	610	470	610	34,1
6	742	760	1642	900	682	610	470	610	36,3
7	793	860	1793	1000	710	710	570	710	45,1
8	900	860	1900	1000	710	710	570	710	51,7
9	1010	960	2210	1200	910	910	670	910	66,0
10	1117	960	2317	1200	910	910	670	910	72,6

### K correction factors

Air flow	K	0,90
Heat emission	K	0,95

### AP accessory

Intermediate section for ARC and AMC air boxes.  
 Prepainted steel thickness 1 mm.  
 (Not to be used with ATEX versions).

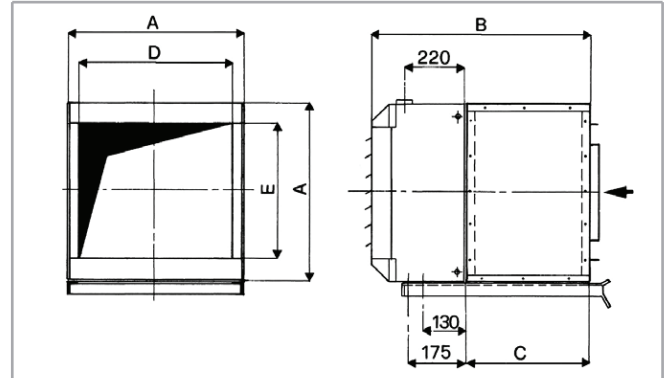


Size	A mm	B mm	Weight (500 mm) kg
1	472	370	9,9
2	526	370	9,9
3	580	370	11,0
4	634	470	12,1
5	688	470	13,2
6	742	470	13,2
7	793	570	15,4
8	900	570	16,5
9	1010	670	18,7
10	1117	670	19,8

K correction factors		
Air flow	K	0,96
Heat emission	K	0,97

### AE fresh air box, for Atlas

Fresh air box.  
 Prepainted steel thickness 1 mm.  
 (Not to be used with ATEX versions).



Size	A mm	B mm	C mm	D mm	E mm	Weight kg
1	472	660	370	412	410	8,8
2	526	660	370	466	410	9,9
3	580	660	370	520	510	11,0
4	634	760	470	574	510	14,3
5	688	760	470	628	610	15,4
6	742	760	470	682	610	16,5
7	793	860	570	710	710	20,9
8	900	860	570	710	710	25,3
9	1010	960	670	910	910	30,8
10	1117	960	670	910	910	35,2

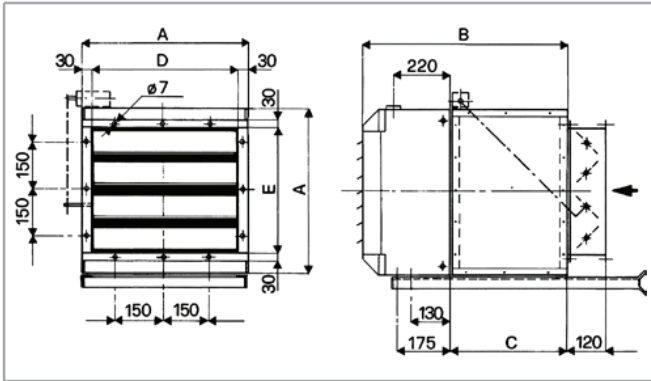
K correction factors		
Air flow	K	0,95
Heat emission	K	0,97

## AES fresh air box with manually operated damper for Atlas

Fresh air box with manually operated damper (can be motorized by the customer).

Prepainted steel thickness 1 mm.

(Not to be used with ATEX versions).



Size	A mm	B mm	C mm	D mm	E mm	Weight kg
1	472	660	370	412	410	16,5
2	526	660	370	466	410	16,5
3	580	660	370	520	510	18,7
4	634	760	470	574	510	24,2
5	688	760	470	628	610	26,4
6	742	760	470	682	610	28,6
7	793	860	570	710	710	33,0
8	900	860	570	710	710	37,4
9	1010	960	670	910	910	47,3
10	1117	960	670	910	910	51,7

### K correction factors

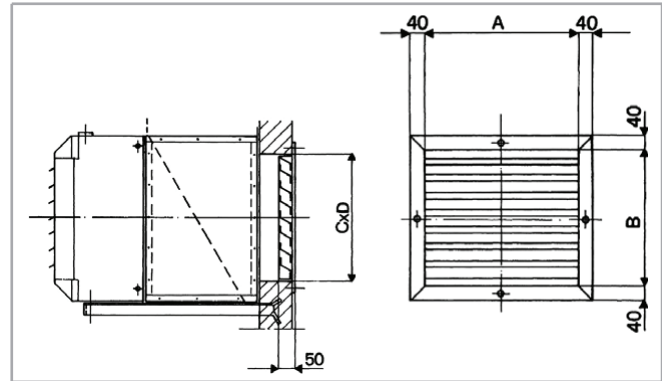
Air flow	K	0,90
Heat emission	K	0,95

## AG accessory for Atlas - Fresh air intake grille

External air intake grille suitable with air boxes.

Prepainted steel thickness 1 mm.

(Not to be used with ATEX versions).



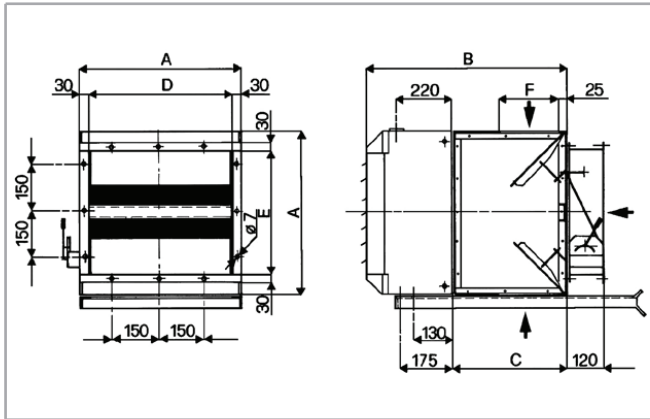
Size	A mm	B mm	C mm	D mm	Weight kg
1	402	400	410	412	3,9
2	456	400	410	466	4,6
3	510	500	510	520	5,4
4	564	500	510	574	6,2
5	618	600	610	628	6,9
6	672	600	610	682	7,7
7	702	702	712	712	8,5
8	702	702	712	712	9,2
9	902	902	912	912	13,2
10	902	902	912	912	13,2

### K correction factors

Air flow	K	0,97
Heat emission	K	0,97

### AM internal/external air mixing box manually controlled, for Atlas

Internal/external air mixing box manually controlled.  
 Prepainted steel thickness 1 mm.  
 (Not to be used with ATEX versions).



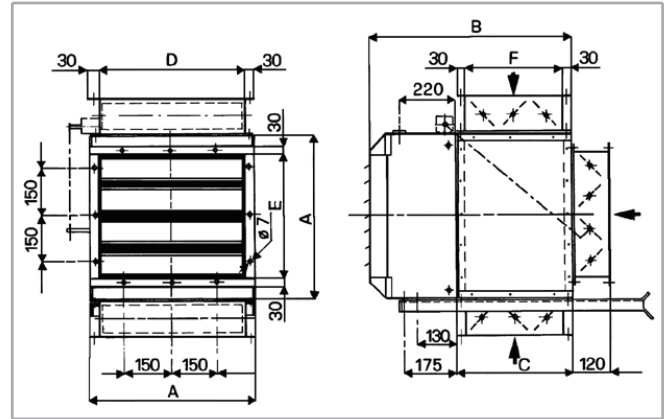
Size	A mm	B mm	C mm	D mm	E mm	F mm	Weight kg
1	472	660	370	412	410	190	12,1
2	526	660	370	466	410	190	13,2
3	580	660	370	520	510	190	15,4
4	634	760	470	574	510	270	18,7
5	688	760	470	628	610	300	19,8
6	742	760	470	682	610	300	22,0
7	793	860	570	710	710	300	26,4
8	900	860	570	710	710	300	36,3
9	1010	960	670	910	910	350	38,5
10	1117	960	670	910	910	350	45,1

**K correction factors**

Air flow	K	0,90
Heat emission	K	0,95

### AMS internal/external air mixing box manually controlled for Atlas

Internal/external air mixing box, manually controlled  
 (can be motorized by customer).  
 Prepainted steel thickness 1 mm.  
 (Not to be used with ATEX versions).



Size	A mm	B mm	C mm	D mm	E mm	F mm	Weight kg
1	472	660	370	412	410	310	22,0
2	526	660	370	466	410	310	23,1
3	580	660	370	520	510	310	25,3
4	634	760	470	574	510	410	33,0
5	688	760	470	628	610	410	35,2
6	742	760	470	682	610	410	37,4
7	793	860	570	710	710	510	45,1
8	900	860	570	710	710	510	49,5
9	1010	960	670	910	910	610	61,6
10	1117	960	670	910	910	610	66,0

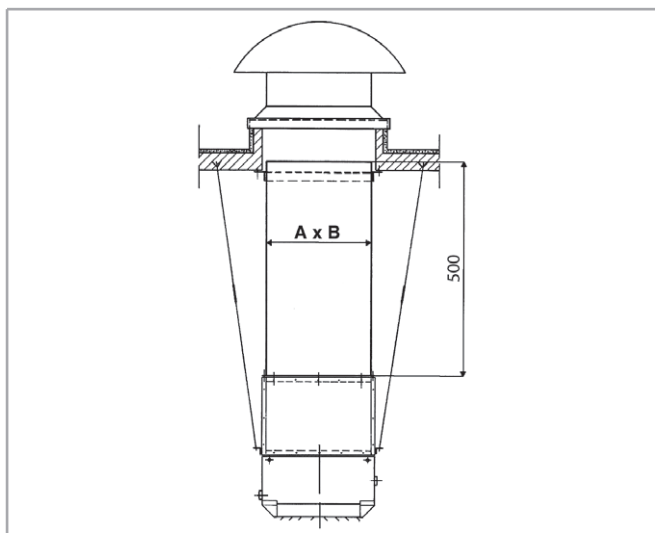
**K correction factors**

Air flow	K	0,90
Heat emission	K	0,95

## AC for Atlas

Intermediate section.

Suitable with AE - AES - AM - AMS air boxes.  
(Not to be used with ATEX versions).



Size	A mm	B mm	Weight (500 mm) kg
1	412	410	5,5
2	466	410	6,6
3	520	510	6,6
4	574	510	7,7
5	628	610	8,8
6	682	610	8,8
7	710	710	8,8
8	710	710	8,8
9	910	910	12,1
10	910	910	12,1

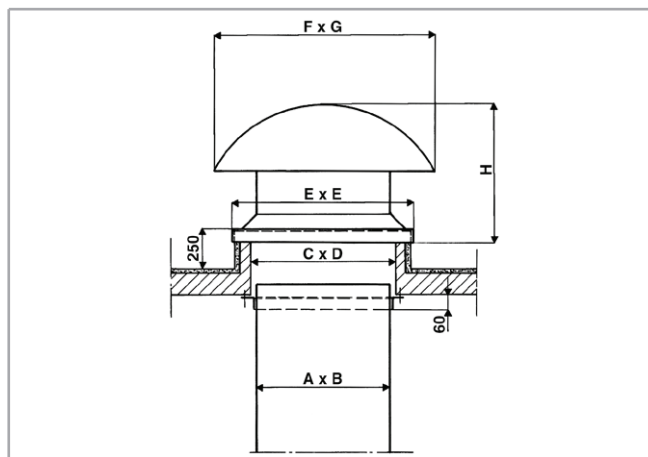
### K correction factors

Air flow	K	0,96
Heat emission	K	0,97

## AT for Atlas

Roof-mounted air intake.

Suitable with AE - AES - AM - AMS air boxes.  
(Not to be used with ATEX versions).



Size	A mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm	Weight kg
1	412	410	422	420	710	730	600	515	22,0
2	466	410	476	420	710	730	600	515	22,0
3	520	510	530	520	910	920	690	620	28,6
4	574	510	584	520	910	920	690	620	28,6
5	628	610	638	620	990	1220	920	670	39,6
6	682	610	692	620	990	1220	920	670	39,6
7	710	710	870	870	1210	1530	1170	800	57,2
8	710	710	870	870	1210	1530	1170	800	57,2
9	910	910	920	920	1210	1530	1170	800	57,2
10	910	910	920	920	1210	1530	1170	800	57,2

### K correction factors

Air flow	K	0,97
Heat emission	K	0,97

**MOTORS**

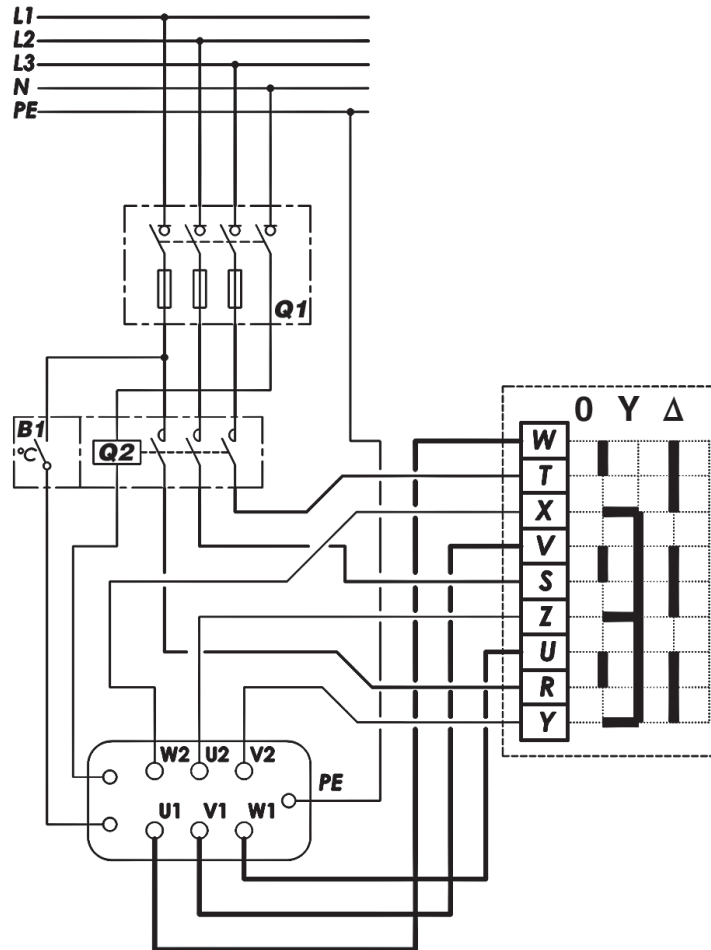
**Two speed Delta-Star motors, with klixon thermic protection**

Atlas / Helios / AIX / Atlas STP unit heaters are supplied with 4/6 pole or 6/8 pole sliding motors.

With these motors it is possible to reduce the speed changing the connection from delta to star.

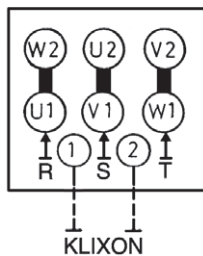
These motors are: three phase, single voltage, 400V – 50Hz, IP 55 protection, with klixon thermal protection

**Connection diagram**

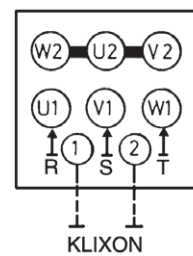


- B1 = Room thermostat
- Q1 = Four poles circuit breakers with three poles protected by fuses
- Q2 = Motor insertion power switch
- [ ] = Delta-Star switch (cod. 3021019)

**Connection Δ (HIGH SPEED)**



**Connection Y (LOW SPEED)**



## Two speed Delta-Star motors, with klixon thermic protection

### Atlas / Helios

Poles	Size	Code motor	Speed (r.p.m.)		Power (W)		Absorption (A)		Efficiency* UE 2019/1781
			Δ	Y	Δ	Y	Δ	Y	
4/6	1	3055030	1350	1000	130	85	0,28	0,15	NA
	2	3055031	1350	1000	160	110	0,40	0,22	NA
	3	3055032	1350	1000	305	218	0,73	0,38	IE2
	4	3055032	1350	1000	286	205	0,72	0,36	IE2
	5	3055033	1350	1000	530	360	1,06	0,65	IE2
	6	3055034	1350	1000	530	360	1,06	0,65	IE2
6/8	1	3054041	950	800	75	50	0,21	0,10	NA
	2	3054041	950	800	75	50	0,21	0,10	NA
	3	3054043	950	750	110	80	0,25	0,13	NA
	4	3054043	950	750	110	80	0,25	0,13	NA
	5	3054045	950	750	185	120	0,60	0,25	IE2
	6	3054046	950	750	210	135	0,60	0,27	IE2
	7	3054001	950	850	415	338	0,92	0,57	IE2
	8	3054000	940	770	670	490	1,55	1,00	IE2
	9	3054005	900	700	1030	710	2,50	1,50	IE2
	10	3054006	900	750	1255	894	3,05	1,64	IE2

\* compliant with the European Standard EU 2019/1781 (not to be used with motors with nominal power emission lower than 120 W)  
Note: not applicable Regulation

### AIX

Poles	Size	Code motor	Speed (r.p.m.)		Power (W)		Absorption (A)		Efficiency* UE 2019/1781
			Δ	Y	Δ	Y	Δ	Y	
4/6	2	3055031	1350	1000	160	110	0,40	0,22	NA
	4	3055032	1350	1000	286	205	0,72	0,36	IE2
	6	3055034	1350	1000	530	360	1,06	0,65	IE2
6/8	9	3054005	900	700	1030	710	2,50	1,50	IE2

\* compliant with the European Standard EU 2019/1781 (not to be used with motors with nominal power emission lower than 120 W)  
Note: not applicable Regulation

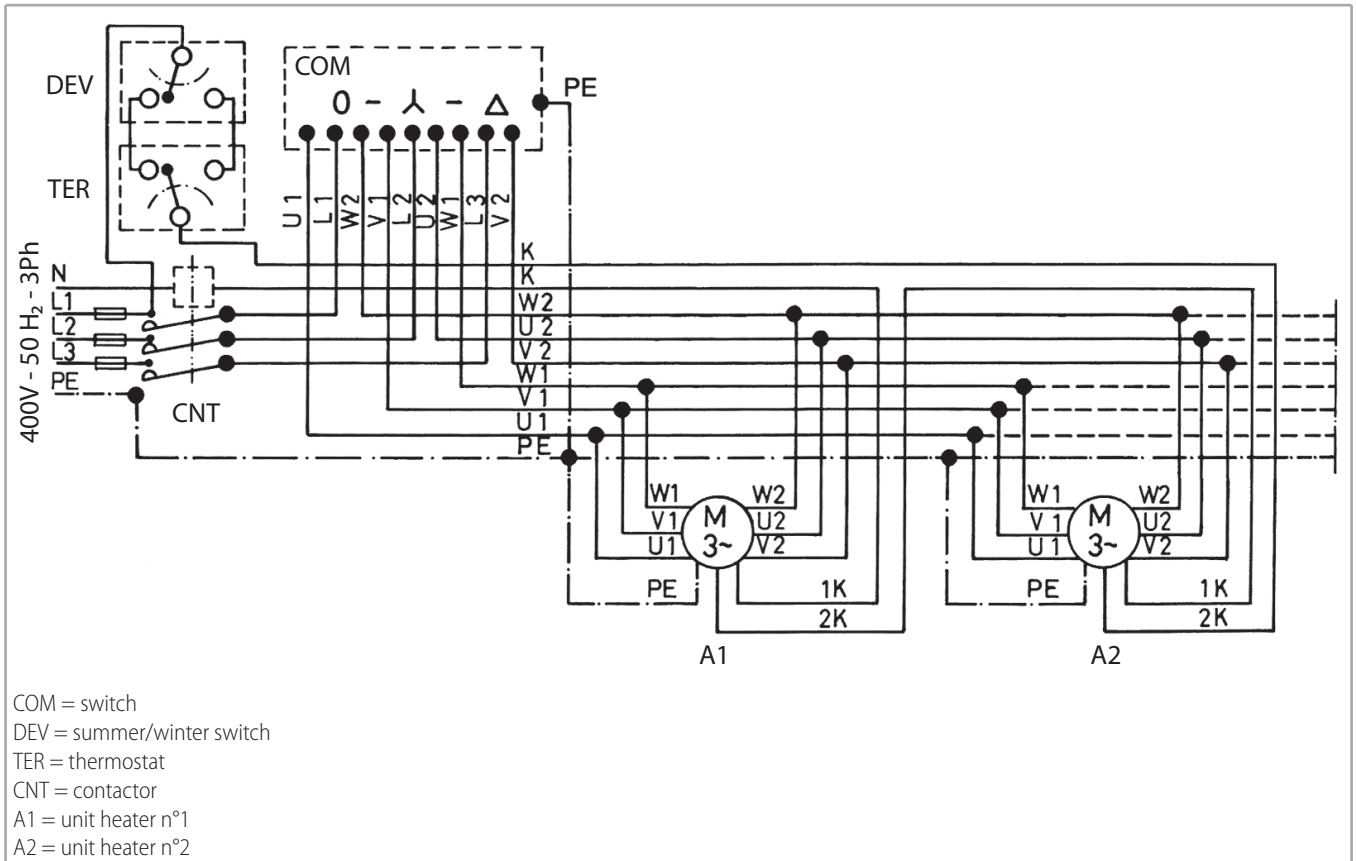
### Atlas STP

Poles	Size	Code motor	Speed (r.p.m.)		Power (W)		Absorption (A)		Efficiency* UE 2019/1781
			Δ	Y	Δ	Y	Δ	Y	
6/8	7	3054000	940	770	670	490	1,55	1,00	IE2
	8	3054000	940	770	670	490	1,55	1,00	IE2
	9	3054006	900	750	1300	900	3,10	1,70	IE2

\* compliant with the European Standard EU 2019/1781 (not to be used with motors with nominal power emission lower than 120 W)  
Note: not applicable Regulation

## Electric connection for more than one unit heater

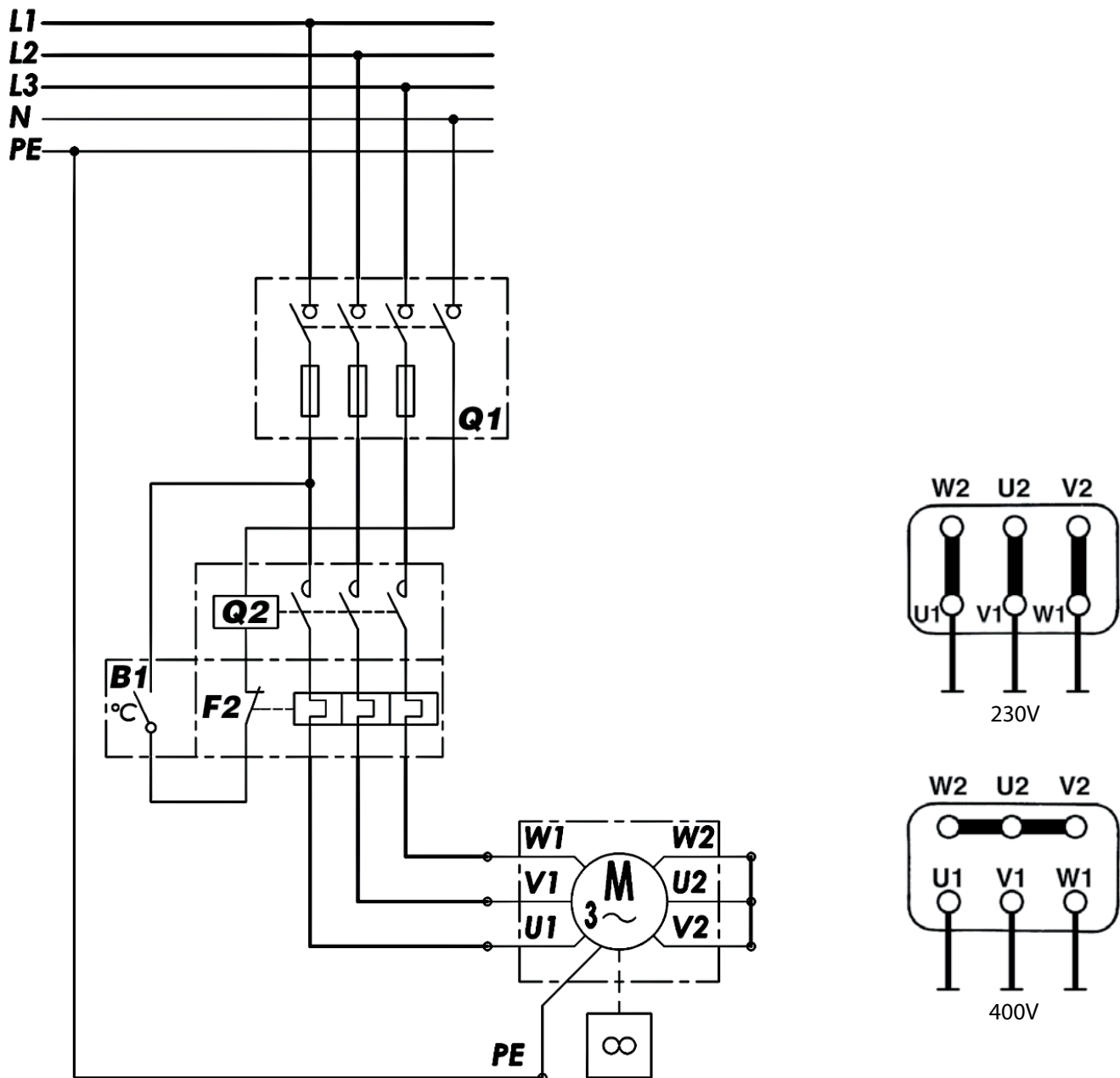
- With two speed Delta-Star motors, with Klixon thermic protection
- Parallel connection for the unit heaters
- Serial connection for the Klixon thermic protection



## Motori ad una velocità, trifase, 230 / 400V 50Hz

**Atlas / Helios** unit heaters are supplied with a hermetically sealed 4 pole or 6 pole motor which is maintenance free. The motor is supplied as standard for a three phase 230 / 400V 50Hz supply. All motors are insulated to IP 44, class B protection.

### Connection diagram



- B1 = Room thermostat
- F2 = Thermic protection (thermal relay)
- Q1 = Four poles circuit breakers with three poles protected by fuses
- Q2 = Motor insertion power switch

Every motor has to be protected with a suitable protector calibrated at a current of 1,10 ÷ 1,15 times the current indicated on the plate.

**Motori ad una velocità, trifase, 230 / 400V 50Hz**
**4-pole motor – 230/400V**

Size	Motor code	Speed (r.p.m.)	Power (W)	Absorption (A)		Efficiency* UE 2019/1781
				230V	400V	
1	3050030	1400	180	0,68	0,39	IE2
2	3050030	1400	180	0,68	0,39	IE2
3	3050031	1400	290	1,21	0,70	IE2
4	3050031	1400	290	1,21	0,70	IE2
5	3050032	1400	530	1,90	1,10	IE2
6	3050033	1400	550	1,90	1,10	IE2

\*compliant with the European Standard EU 2019/1781 (not to be used with motors with nominal power emission lower than 120W)  
 Note: not applicable Regulation

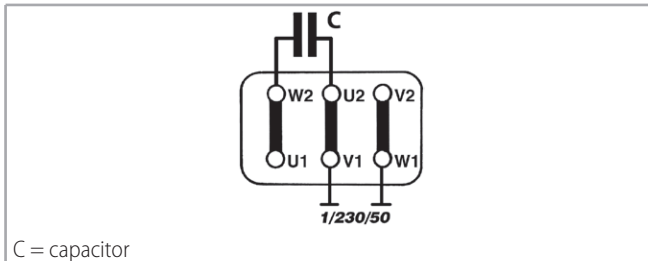
**6-pole motor – 230/400V**

Size	Motor code	Speed (r.p.m.)	Power (W)	Absorption (A)		Efficiency* UE 2019/1781
				230V	400V	
1	3051081	900	110	0,38	0,22	NA
2	3051081	900	110	0,38	0,22	NA
3	3051081	900	110	0,38	0,22	NA
4	3051081	900	110	0,38	0,22	NA
5	3051085	900	245	0,83	0,48	IE2
6	3051085	900	245	0,83	0,48	IE2

\*compliant with the European Standard EU 2019/1781 (not to be used with motors with nominal power emission lower than 120W)  
 Note: not applicable Regulation

**Single phase supply**

One speed three phase 230 – 400V motors, IP 44 protection, supplied on unit heaters Atlas / Helios unit heaters can operate on single phase 230V 50Hz supply with the introduction of a suitable sized capacitor.



To reverse rotation connect Capacitor across "W2" and "V2".

**4 pole motor**

Size	Capacitor code	Capacitor		Absorption (A)
		Capacity (µF)	Tension (VN)	
1	3021356	8,0	450	0,8
2	3021356	8,0	450	0,8
3	3021357	16,0	450	1,45
4	3021357	16,0	450	1,45
5	3021355	25,0	450	2,45
6	3021355	25,0	450	2,45

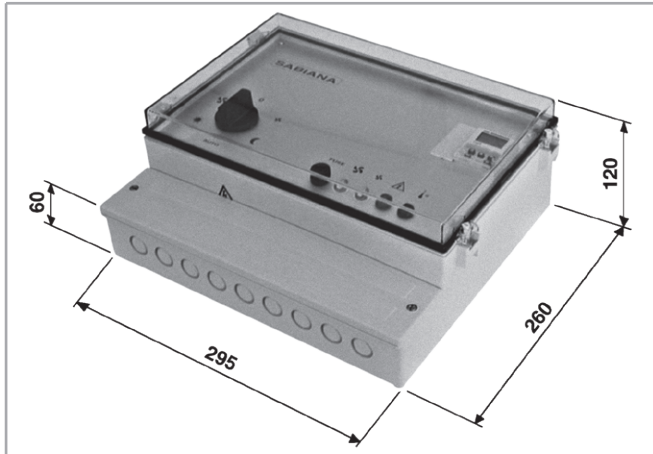
**6-pole motor**

Size	Capacitor code	Capacitor		Absorption (A)
		Capacity (µF)	Tension (VN)	
1	3021350	5,0	450	0,36
2	3021350	5,0	450	0,36
3	3021350	5,0	450	0,51
4	3021350	5,0	450	0,51
5	3021352	10,0	450	0,87
6	3021352	10,0	450	0,87

## CONTROLS

### Multi-function automatic control panel for two speed Delta-Star motors, 4/6 or 6/8 poles, three phase, 400 V, with Klixon thermic protection

IMPORTANT: This device is not suitable for Ex ambient or for the control of single-phase motors.



ID	Code
BSA-B	9007651
BSA-A	9007652
BSA-D	9007653

#### Operation

Wall mounting plastic container complete with transparent door.

The front panel includes:

- control switch;
- timer / by-pass switch;
- signal lights;
- auxiliary protection fuse carrier;
- timer compartment cover (accessory).

#### Versions

- **BSA-B** without timer (code 9007651)
- **BSA-A** with manual daily timer (code 9007652)
- **BSA-D** with digital weekly timer (code 9007653)

The basic version, BSA-B, is supplied without a timer, yet is ready to be fitted with this accessory if required.

Simply remove the timer cover, insert the timer chosen and connect it internally to the pre-installed wiring inside the control panel.

#### Technical specifications

- Wall control.
- Index of protection IP 40.
- Tensione di servizio 3 x 400V 50Hz.
- Control voltage 1 x 230V.
- Rated operating current 9 A 400V (AC3).

#### Application

Multi-position, multi-function switch for automatically controlling the speed of Sabiana unit heaters with two-speed, 400 V three-phase motors.

#### Operation

The control panel is supplied without a timer.

The timer can be fitted after installation, by inserting it in the panel and connecting it electrically using the special pre-wired connector.

Electromechanical daily timers and digital weekly timers are available.

#### Operation

- **Control switch on "0"**: disconnects power to the unit heaters and thus the unit heaters are off.
- **Control switch on "fan"**: continuous operation of the unit heater at low speed.
- **Control switch on "FAN"**: continuous operation of the unit heater at high speed.
- **Control switch on "AUTO"** (only for devices with timer, BSA-A and BSA-D): enables the automatic switching of the unit heater speed according to the status of an external 1- or 2-step thermostat. The timer can be combined with two different thermostats, with separate settings for night-time or daytime operation. **Using thermostats with changeover contacts allows automatic switching from low - high fan speed with the "day" thermostat, and low speed - fan off with the "night" thermostat.** Using two-step thermostats allows the speed of the unit heater to be switched automatically from high to low and to off when reaching the set temperature.
- **Function switch on "day"**: by-passes the timer and forces the connection to the "day" thermostat.
- **Function switch on "night"**: by-passes the timer and forces the connection to the "night" thermostat.

#### Anti-freeze function

The control is fitted for connection to an external room thermostat that is suitably set to a minimum required value.

When the thermostat with anti-freeze function is connected, the control panel switches on the unit heater at low speed, even if the Control switch is on OFF.

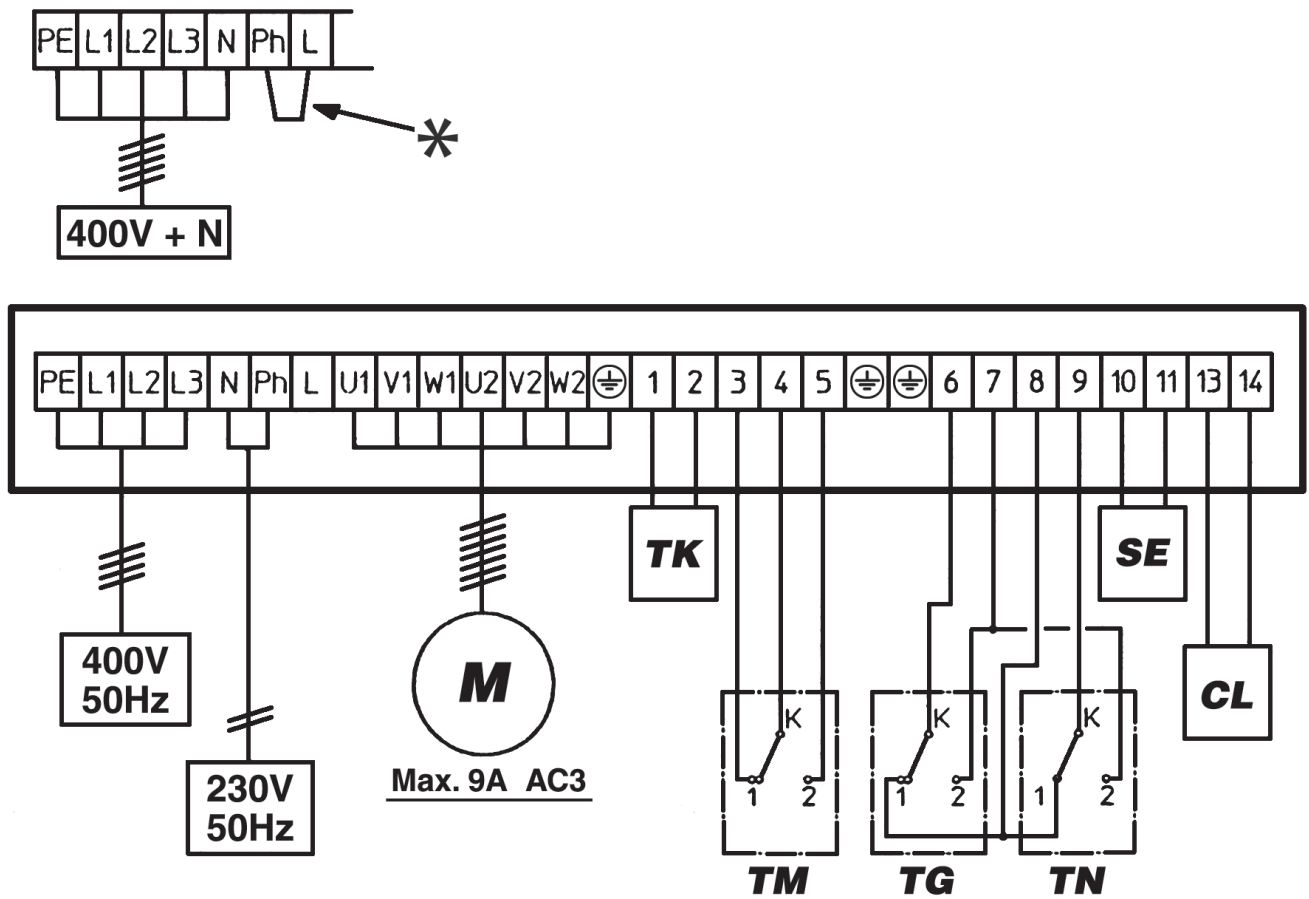
#### Motor thermal overload devices

The Sabiana unit heater motors are fitted with internal TK thermal overload devices. The thermal overload device must be connected to the control panel, so that the latter automatically cuts off power to the unit heater if

the overload is activated. If the control panel is connected to a series of unit heaters, the TK overload devices on each motor must be connected together in series, and

then connected to the corresponding terminals on the control panel.

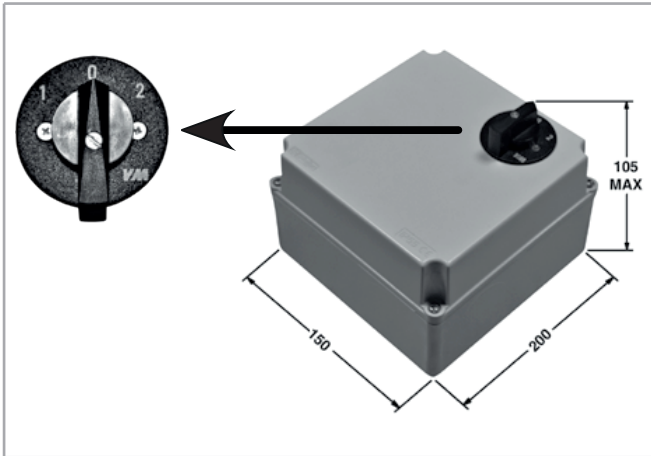
**Wiring diagram**



- \* = Jumpers for 230V supply obtained from three phase 400V + N
- M = Motor
- TK = Safety thermostat
- TM = Anti-frost thermostat
- TG = Day thermostat
- TN = Night thermostat
- SE = Possible external switch
- CL = Extra connections

## Manual two-position switch for two speed Delta-Star motors, 4/6 or 6/8 poles, three phase, 400 V, with Klixon thermic protection

IMPORTANT: This device is not suitable for Ex ambient or for the control of single-phase motors.



ID	Code
BS 2S	9007654

### Operation

Wall mounted plastic case, containing:

- 1 manual switch (1-0-2) for manually selecting the unit heater fan speed;
- 1 four pole control contactor;
- 1 voltage-free auxiliary contact used to control or lock-out of external appliances.
- Terminal block for the connection of the unit heaters, motor overload devices and external thermostat.

### Technical specifications

- Wall control.
- Index of protection IP 40.
- Tensione di servizio 3 x 400V 50Hz.
- Control voltage 1 x 230V.
- Rated operating current 9A 400V (AC3).

### Applications

Switch for controlling the fan speed on one or more Sabiana unit heaters.

The control can be connected to an external room thermostat.

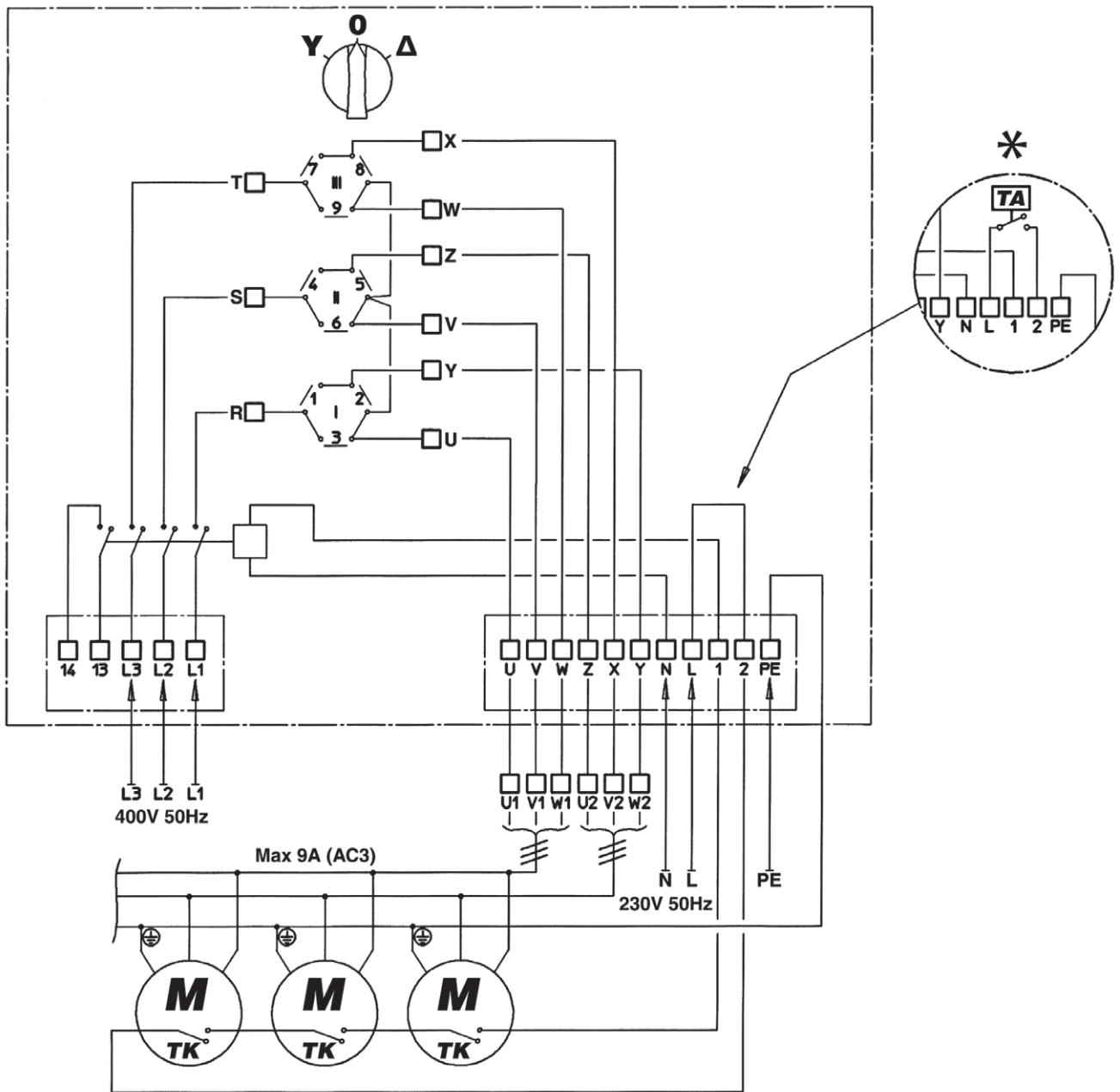
### Motor thermal overload devices

The Sabiana unit heater motors are fitted with internal TK thermal overload devices.

The thermal overload device must be connected to the control panel, so that the latter automatically cuts off power to the unit heater if the overload is activated.

If the control panel is connected to a series of unit heaters, the TK overload devices on each motor must be connected together in series, and then connected to the corresponding terminals on the control panel.

Wiring diagram

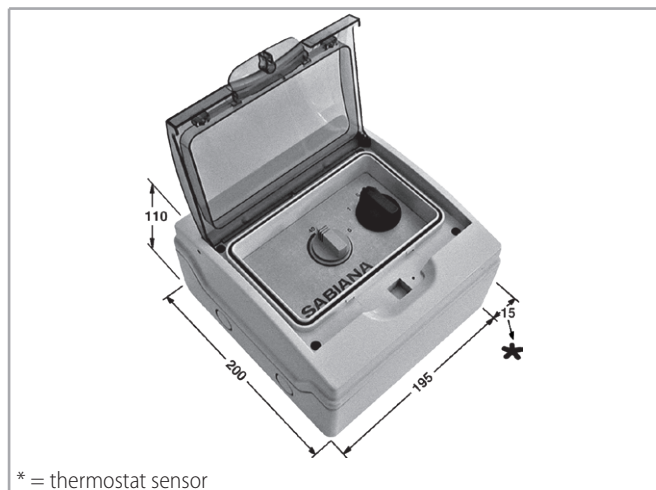


- \* = Possible external thermostat
- Y = Low speed
- Δ = High speed
- M = Motor
- TA = Room thermostat
- TK = Safety thermostat (Klixon)

## Manual two-position switch with thermostat for two speed Delta-Star motors, 4/6 or 6/8 poles, three phase, 400 V, with Klixon thermic protection

**IMPORTANT:** This device is not suitable for Ex ambient or for the control of single-phase motors.

If the control panel is connected to a series of unit heaters, the TK overload devices on each motor must be connected together in series, and then connected to the corresponding terminals on the control panel.



### Installation

Check that the position chosen for the installation of the panel does not affect the correct operation of the room thermostat

Avoid fastening the control panel to cold walls, in areas affected by cold/hot air currents or at an unusual height.

ID	Code
BS 2-ST	9007655

### Operation

Wall mounted plastic case, containing:

- 1 manual switch (1-0-2) for manually selecting the unit heater fan speed;
- 1 four pole control contactor;
- 1 voltage-free auxiliary contact used to control or lock-out of external appliances;
- 1 room thermostat;
- Terminal block for the connection of the unit heaters, motor overload devices and external thermostat.

### Technical specifications

- Wall control.
- Index of protection IP 40.
- Tensione di servizio 3 x 400V 50Hz.
- Control voltage 1 x 230V.
- Rated operating current 9A 400V (AC3).

### Applications

Switch for controlling the fan speed on one or more Sabiana unit heaters, with built-in temperature control.

Depending on the set room temperature, the control stops or starts the unit heaters at the speed selected on the speed switch.

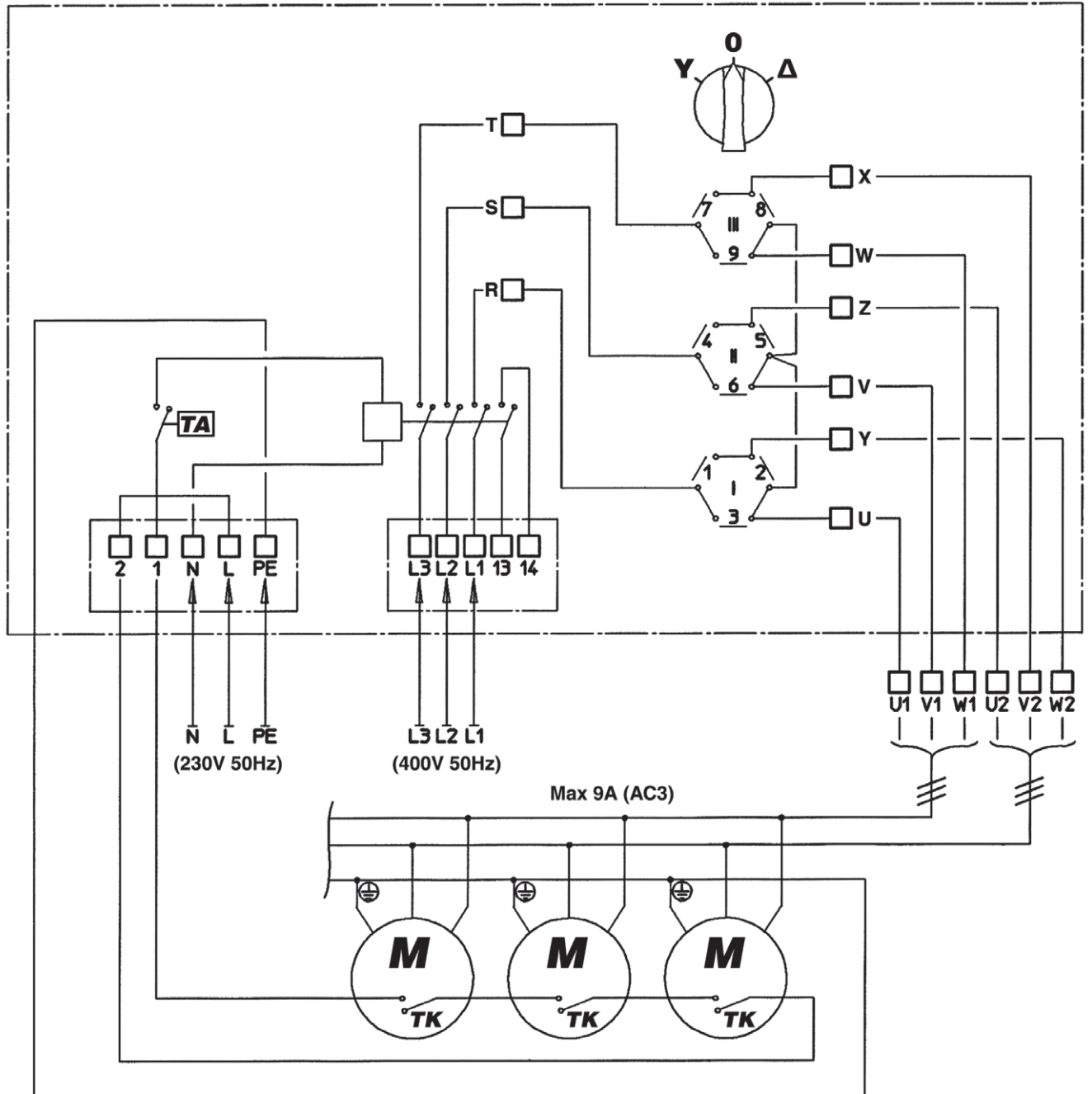
The bulb of the thermostat is positioned outside of the panel casing.

### Motor thermal overload devices

The Sabiana unit heater motors are fitted with internal TK thermal overload devices.

The thermal overload device must be connected to the control panel, so that the latter automatically cuts off power to the unit heater if the overload is activated.

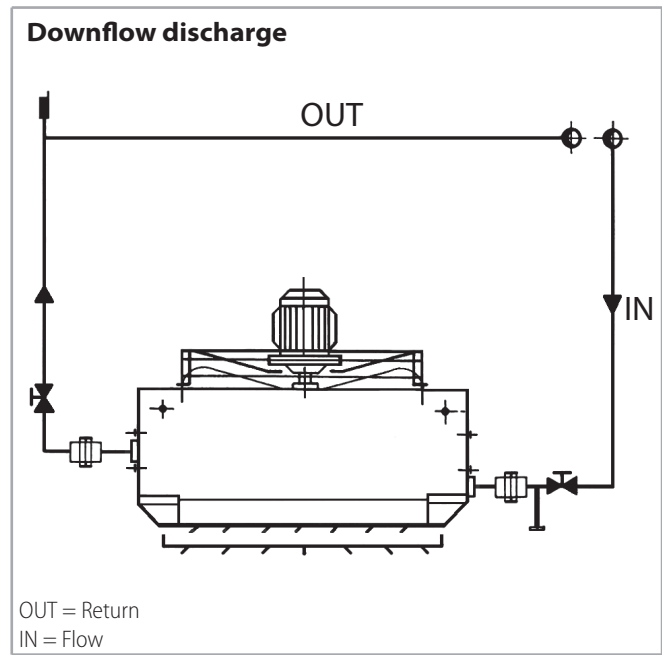
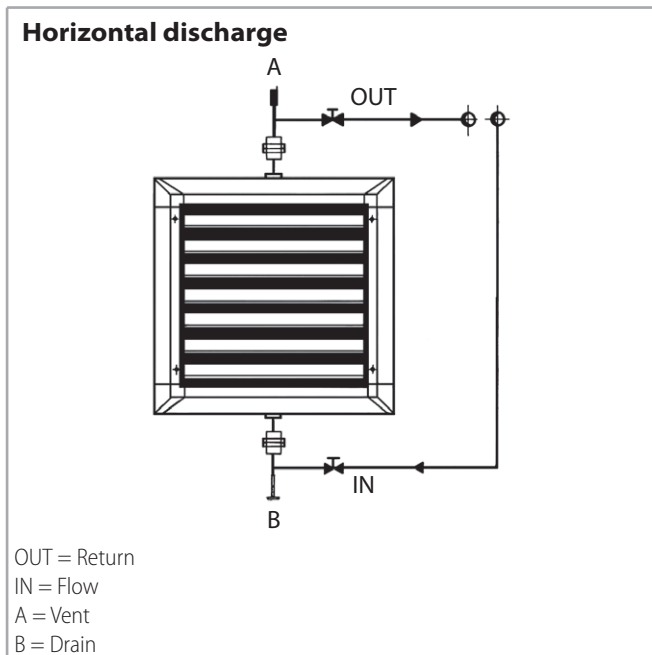
Wiring diagram



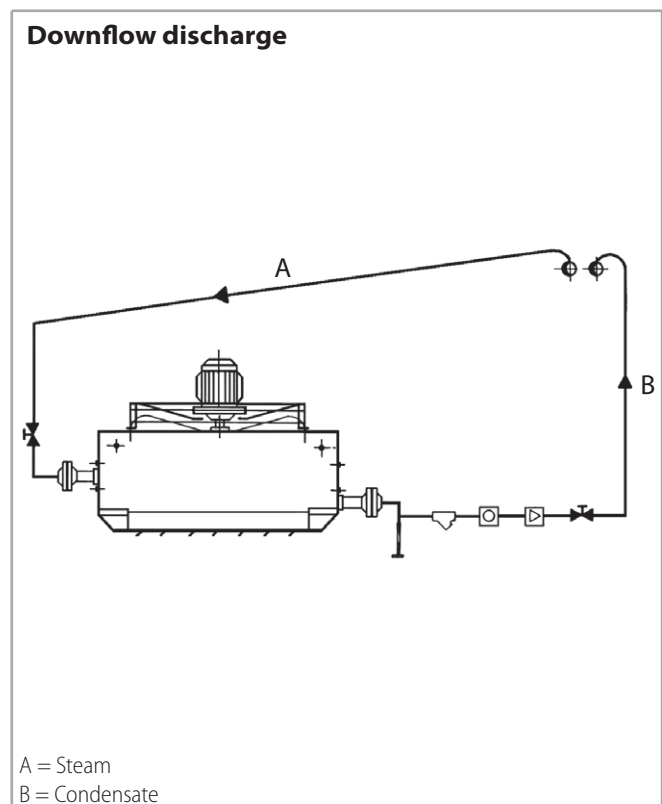
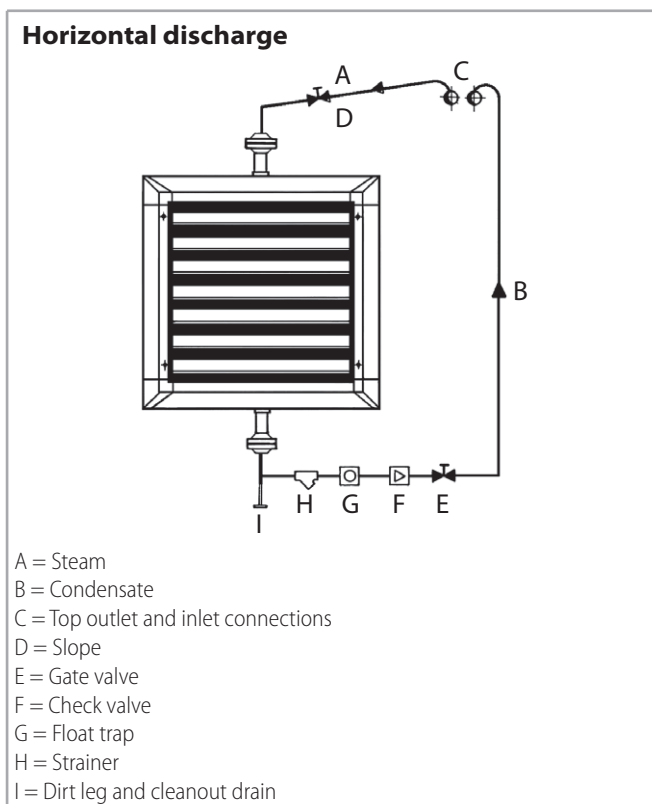
Y = Low speed  
 Δ = High speed  
 M = Motor  
 TA = Room thermostat  
 TK = Safety thermostat (Klixon)

## Hydraulic connections

### Hot water or high temperature hot water connections



### Steam connections



For steam we recommend the use of copper tube coils.

Il presente documento annulla e sostituisce il certificato di pari numero emesso in data 06/05/2022.



IQNet, the association of the world's first class certification bodies, is the largest provider of management system certification in the world. IQNet is composed of more than 30 bodies and counts over 150 subsidiaries all over the globe.

**CERTIFICATO N. 0545/8**  
**CERTIFICATE No. \_\_\_\_\_**

SI CERTIFICA CHE IL SISTEMA DI GESTIONE PER LA QUALITÀ DI  
 WE HEREBY CERTIFY THAT THE QUALITY MANAGEMENT SYSTEM OPERATED BY

## SABIANA S.P.A.

**Sede e Unità Operativa**  
 Via Piave, 53 - 20011 Corbetta (MI) - Italia  
*Processi direzionali, primari e di supporto relativamente a Progettazione, produzione e assistenza di apparecchiature per il riscaldamento e il condizionamento dell'aria (aerotermi, termostriche radianti, ventilconvettori e unità trattamento aria) e canne fumarie.*

**Unità Operative**  
 Via Virgilio, 2 - 20013 Magenta (MI) - Italia  
*Produzione di ventilconvettori. Magazzino Logistica.*  
 (Presente solo reparto produttivo, magazzino componenti e logistica: Magazzino P.F. e spedizione).

Via Zanella, 27 - 20011 Corbetta (MI) - Italia  
*Assemblaggio unità trattamento aria, lavorazioni meccaniche, saldatura, magazzino, assemblaggio recuperatori.*

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## UNI EN ISO 9001:2015

Sistema di Gestione per la Qualità / Quality Management System

PER LE SEGUENTI ATTIVITÀ / FOR THE FOLLOWING ACTIVITIES

**EA: 18**

Progettazione, produzione e assistenza di apparecchiature per il riscaldamento e il condizionamento dell'aria (aerotermi, termostriche radianti, ventilconvettori e unità trattamento aria) e canne fumarie.

*Design, production and service of heating and air conditioning equipment (unit heaters, radiant panels, fan coil units and air handling units) and chimneys.*

Riferirsi alla documentazione del Sistema di Gestione per la Qualità aziendale per l'applicabilità dei requisiti della norma di riferimento.  
 Refer to the documentation of the Quality Management System for details of application to reference standard requirements.

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Cert. n. 0545



Cert. n. 050153

Sabiana 2 and Sabiana 3  
Operative unit via Virgilio 2 - Magenta (MI)

Sabiana 4  
Operative unit via Zanella 27 - Corbetta (MI)