

JAGA AVS UNIT HEATER kr. 2024.DK



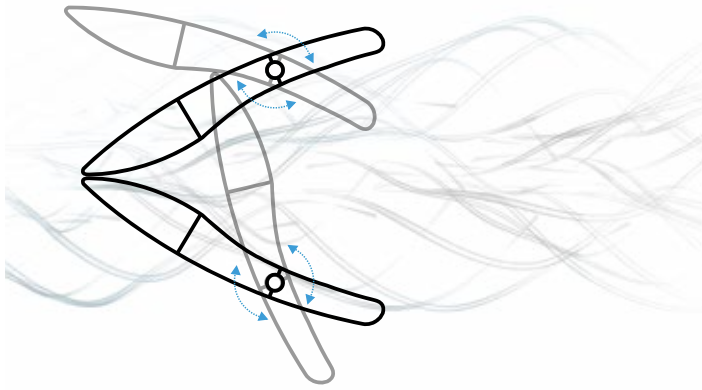
jaga

CLIMATE DESIGNERS

JAGA AVS[®] UNIT HEATER

Air Venturi System included

The Jaga unit heater is the master of air flow. Even in the biggest spaces. Its secret weapon? The Air Venturi System, which immediately blends heated air with the ambient air. The result: faster heating, better temperature distribution, lower energy consumption. Talk about great results!





JAPA AVS

AVS® UNIT HEATER 



JAGA AVS® INDIRECTLY POWERED UNIT HEATERS ARE AN ENERGY EFFICIENT AND COMFORTABLE SOLUTION FOR HEATING LARGE SPACES

THE AIR VENTURI SYSTEM (AVS®)

The Jaga AVS® unit heater is designed for heating industrial buildings, sports halls, warehouses, garages, supermarkets, exhibition halls, commercial centres, conservatories, ... and also all rooms that are not in continuous use, but need to be heated very quickly.

The Jaga unit heaters are standard equipped with the unique AVS® system (Air Venturi System). This AVS® system results in a lower exhaust temperature combined with an equal capacity which creates a significant improvement in the heat carrying capacity and the temperature distribution. The AVS® system facilitates improved temperature distribution, which means that the running times are reduced, saving energy.

GREENTECH EC-MOTORS

EC motors reduce operating costs, reduce the impact on the environment and impress with their quiet operation. Due to the higher efficiency of the EC motors, the energy consumption is directly linked to the rotation speed and thus the flow rate of the fan. The actual power consumption is determined by the (variable) speed.

- **No expensive switching box required**
- **Energy saving up to 32%**
- **Little or no maintenance (brushless)**
- **Low noise level**
- **Stepless speed control 0-10 V**
- **Long life expectancy due to low heat production**



EC=-32%



AVS® UNIT HEATER GREATER DISTRIBUTION WITH THE SAME POWER

Jaga unit heaters are equipped with our unique Air Venturi System as standard. The result is a lower exhaust temperature combined for an equivalent heat output which create a significant improvement in the heat carrying capacity and the temperature distribution. The result: faster heating, better temperature distribution, lower energy consumption. Talk about great results!

FASTER HEATING UP

The unique Air Venturi System results in a lower exhaust temperature combined with an equal capacity which creates a significant improvement in the heat carrying capacity and the temperature distribution. This system offers a number of additional and innovative control options.

LOWER ENERGY CONSUMPTION

The AVS® system facilitates improved temperature distribution, which means that the running times are reduced, saving energy.

HEATED INDIRECTLY

Higher efficiency, better control.
No exhaust fumes, safer.

LOW-H₂O HEAT EXCHANGER

Heat exchanger made from aluminium fins placed on mechanically expanded copper tubes, which are connected to steel collectors. The ideal combination of these materials guarantees optimum heat conductivity. 5 Sizes of heat exchangers with 2 or 3 rows of pipes. Heat output from 4.5 up to 78.6 kiloWatts at ΔT 50.

ELECTRICITY CONSUMPTION UP TO 32% LOWER

Due to the single unit HyBlade® fan combined with the EC motor technology, the noise level drops by 6 dB(A) and the energy consumption with 32%.

SIMPLE INSTALLATION AND CONTROL

Variable control 0-10 VDC.
No expensive switching box for power supply control and/or frequency control required.
Virtually maintenance free because the absence of carbon brushes

ATTRACTIVE FINISH

A totally new construction with no visible screws or rivets. A high quality sand-blasted grey lacquered (001) scratch resistant and dirt repellent finish. Aerodynamic exhaust made of satin black lacquered aluminium.

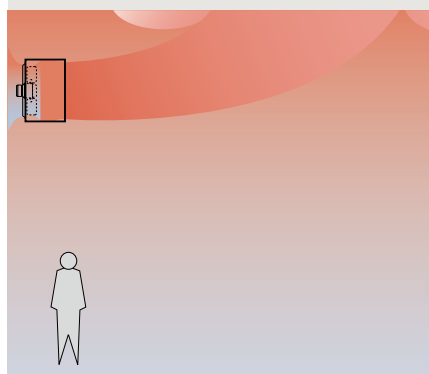


WHY AVS®?

The main problem with unit heaters in general is the heat accumulation at the roof or ceiling level especially in high level roof spaces. The temperature difference between the floor and the ceiling increases in proportion to the exhaust temperature of the unit heater. The higher the exhaust temperature the faster the heated air rises, pushing the cooler down to floor level. Consequently more energy will be required to heat up the floor area in order to create a comfortable temperature. Higher air flow, lower exhaust temperature or additional fans can soften up the problem, but result in a considerable increase in cost or more noise.

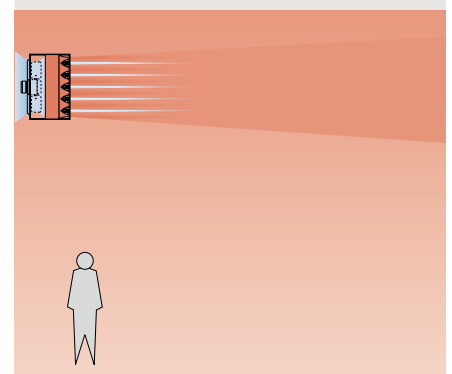
STANDARD UNIT HEATERS

Due to the higher air exhaust temperature the hot air will rise too quickly and the cooler air will consequently be pushed downwards.



THE JAGA SOLUTION: AIR VENTURI SYSTEM

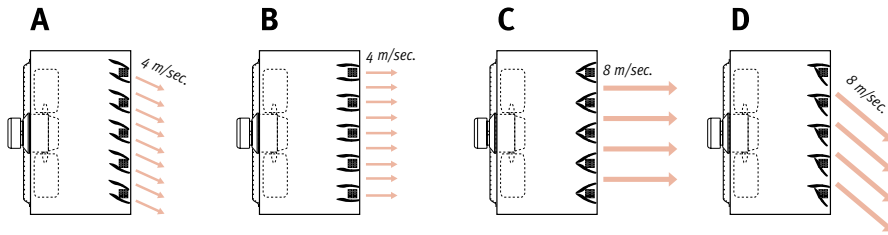
With the Air Venturi System the air exhaust temperature is lower, which greatly reduces the up-draught giving you an even temperature, faster heating up and better energy efficiency.



AVS® UNIT HEATER - AIR VENTURI SYSTEM®

POSITIONING

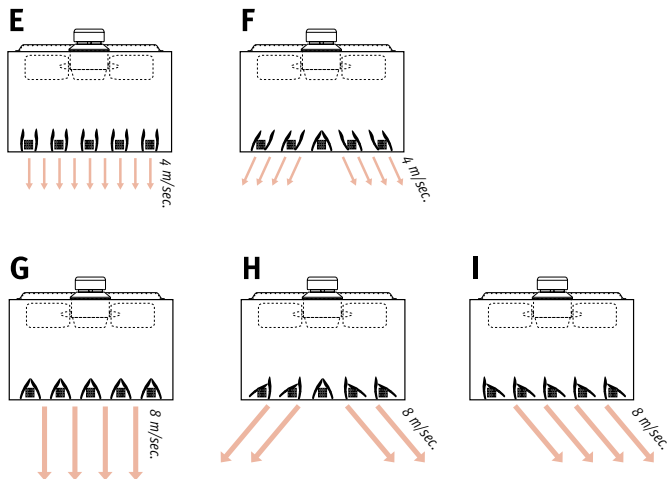
Wall mounting



HEIGHT	POSITION
2.5 to 3 m	B or C
3 to 4 m	A
> 4 m	D

Tested with unit heater 221.
For other types contact the Jaga technical department.

Ceiling design



HEIGHT	POSITION
H < Table	E or F
H = Table	G, H or I

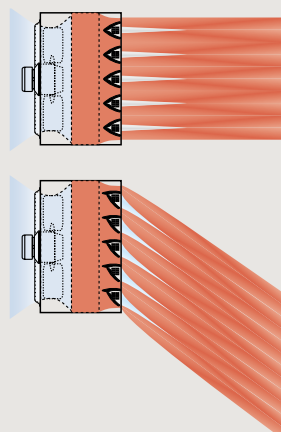
THE MODULATING AVS® VERSION

With the modulating AVS® version the exhaust louvres are linked in pairs and connected to a servo motor. This motor produces a continuous back and forth movement of the adjustable louvres. This creates turbulence and created provides an even better temperature distribution. The angle of movement can easily be adjusted from 0 to 90°. A complete cycle takes around 150 seconds.

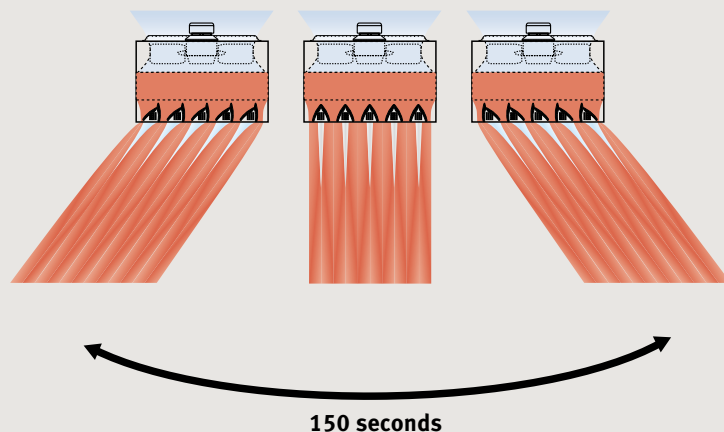
The modulating operation is integrated into the equipment and therefore cannot be delivered as an accessory.

Mini unit heater (code 021 and 031) are not available as a modulating version.

Wall mounting: position 45°



Ceiling mounting: position 90°

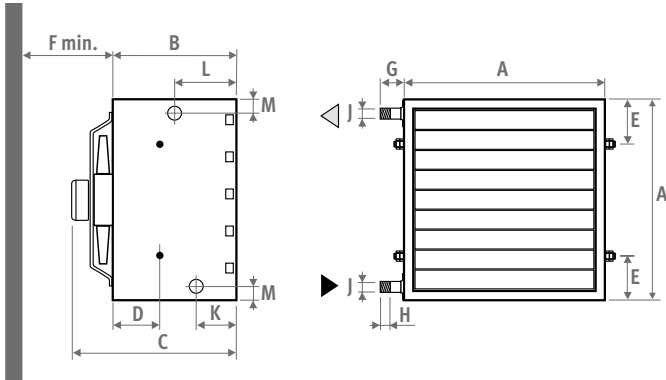


75 seconds

150 seconds

DIMENSIONS - AVS® UNIT HEATER

DIMENSIONS (in cm)



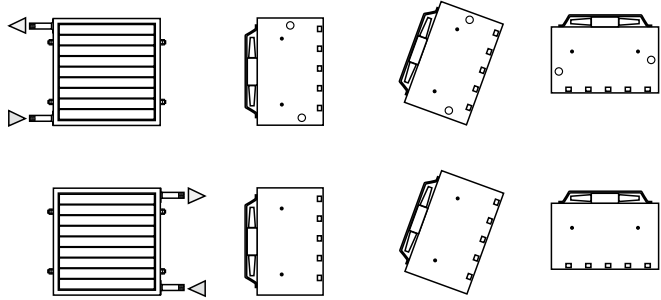
Mini unit heater

Type	021	031	121	131	221	231	321	331	421	431
A	41	41	53	53	65	65	77	77	89	89
B	40	40	40	40	40	40	40	40	40	40
C	43	43	48	48	49.8	49.8	57.2	57.2	55.1	55.1
D	15.1	15.1	15.1	15.1	15.1	15.1	15.1	15.1	15.1	15.1
E	10.5	10.5	11.5	11.5	12.5	12.5	13.5	13.5	14.5	14.5
F	30	30	35	35	45	45	56	56	65	65
G	4.8	4.8	4.8	4.8	4.8	4.8	5.1	5.1	5.1	5.1
H	2.2	2.2	2.2	2.2	2.2	2.2	2.5	2.5	2.5	2.5
øJ*	G3/4"	G3/4"	G1"	G1"	G1"	G1"	G6/4"	G6/4"	G6/4"	G6/4"
K	12.9	12.9	12.9	12.9	12.9	12.9	12.9	12.9	12.9	12.9
L	19.8	19.8	19.8	19.8	19.8	19.8	19.8	19.8	19.8	19.8
M	4.5	4.5	4.5	4.5	4.5	4.5	5.2	5.2	5.2	5.2
kg	20	22	30	32	43	46	56	59	71	75

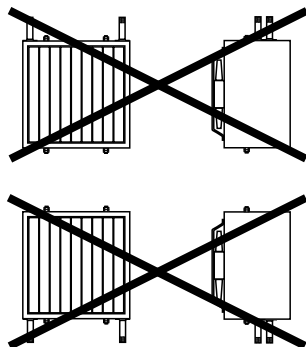
* BSP Male

HYDRAULIC CONNECTION

Correct

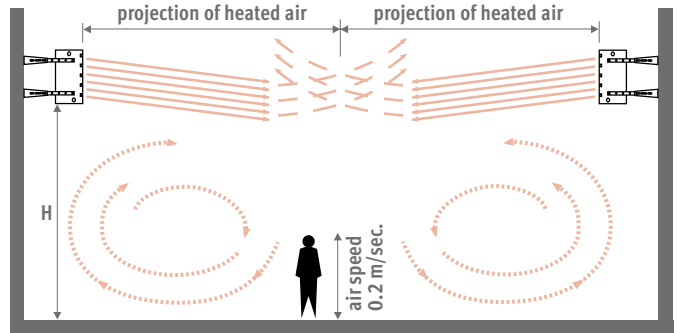


Incorrect

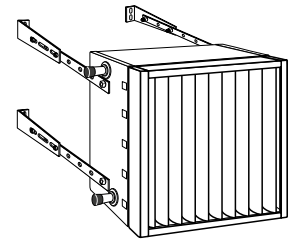
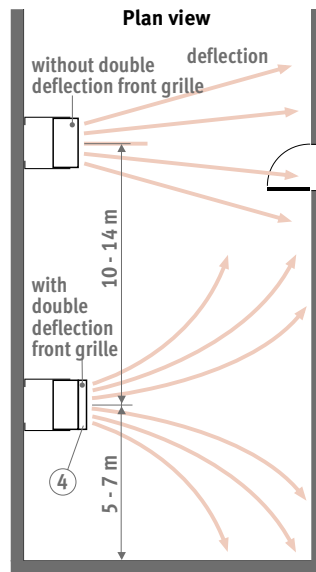


MOUNTING

Wall mounting

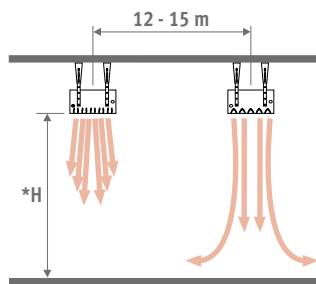


In order to maintain comfort, please avoid blowing heated air directly at people..

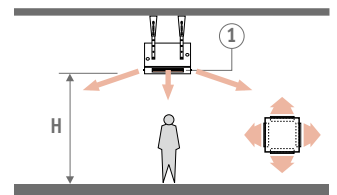


In small rooms a front grille must be fitted for double deflection to prevent too a high temperature at the opposite wall. The louvres are assembled both vertically and horizontally.

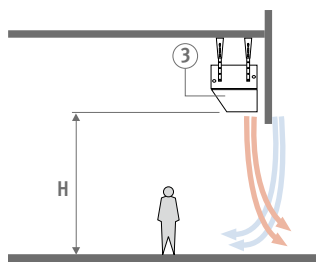
Ceiling design



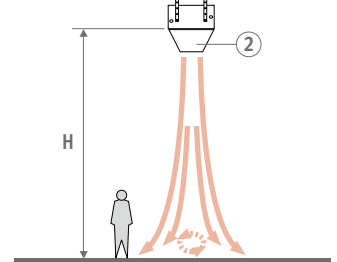
AVS® Position: see p. 188
*H see output table



In case of low ceilings a better horizontal diffusion should be obtained by using a 4 sided air diffuser.



In order to prevent cold air entering the room via openings, a mouth piece is available.



With ceilings higher than 6 metres an exhaust cone must be fitted on the appliance.

AVS® UNIT HEATER WITH EC MOTOR

Type	Output			Air exhaust temperature ⁽¹⁾			Revolutions	Air flow	Sound power level ⁽²⁾	Sound pressure ⁽³⁾	Rated input	Hot air projection horizontal ⁽⁴⁾			Hot air projection vertical ⁽⁴⁾							
	control voltage	Tv 75 Tr 65 Tl 20	Tv 55 Tr 45 Tl 20	Tv 35 Tr 30 Tl 20	ΔT=50	ΔT=30						ΔT=12.5	H min.	with AVS®	with-out AVS®	H max.	H max.	H max.	H max.	H max.	4 sides open	2 sides open
CODE	V	kWatts	kWatts	kWatts	°C	°C	°C	RPM	m³/h	dB(A)	dB(A)	Watts	m	m	m	m	m	m	m	m	m	
UNIT.021/EC 11010 Kr.	10	7.3	4.4	1.8	35	21	21	1559	1422	71.4	55.4	76	21.0	16.0								
	8	7.1	4.2	1.8	36	22	22	1469	1325	69.9	53.9	63	19.0	14.0								
	6	6.4	3.8	1.6	38	23	22	1286	1144	66.1	50.1	43	2.5	15.0	12.0							
	4	5.5	3.3	1.4	41	25	23	984	847	58.4	42.4	20										
	2	4.5	2.7	1.1	44	26	23	731	594	50.0	34.0	10										
UNIT.031/EC 12060 Kr.	10	9.6	5.8	2.4	42	25	23	1559	1342	69.1	53.1	79	19.0	14.0								
	8	9.0	5.4	2.3	43	26	23	1469	1251	68.0	52.0	65	17.0	12.0								
	6	8.1	4.8	2.0	45	27	24	1286	1080	65.0	49.0	45	2.5	14.0	10.0							
	4	6.5	3.9	1.6	49	28	24	984	799	57.4	41.4	21										
	2	5.3	3.2	1.3	54	32	25	731	561	49.0	33.0	11										
UNIT.121/EC 14400 Kr.	10	15.7	9.4	3.9	41	25	23	1413	2422	71.2	55.2	115	23.0	18.0								
	8	14.6	8.8	3.7	44	26	23	1143	1984	65.5	49.5	80	19.0	14.0								
	6	13.0	7.8	3.2	48	28	24	857	1438	57.9	41.9	35	2.5	15.0	11.0							
UNIM.121/EC 26108 Kr.	4	10.7	6.4	2.7	51	30	25	614	997	49.3	33.3	14										
	2	8.0	4.8	2.0	56	32	26	458	699	41.2	25.2	8										
UNIT.131/EC 16380 Kr.	10	20.1	12.0	5.0	50	29	25	1413	2286	71.2	55.2	118	22.0	16.0								
	8	19.3	11.6	4.8	53	31	25	1143	1872	63.1	47.1	82	19.0	14.0								
	6	16.7	10.0	4.2	58	34	26	857	1357	56.3	40.3	37	2.5	14.0	11.0							
UNIM.131/EC 28110 Kr.	4	12.2	7.3	3.1	63	37	27	614	941	48.2	32.2	15										
	2	9.2	5.5	2.3	66	38	28	458	660	40.2	24.2	9										
UNIT.221/EC 18585 Kr.	10	30.4	18.2	7.6	39	23	22	1232	4643	75.2	59.2	248	37.0	28.0								
	8	28.6	17.2	7.2	41	25	23	1117	4153	71.5	55.5	187	33.0	25.0								
	6	26.4	15.8	6.6	43	25	23	936	3467	67.6	51.6	115	2.5	27.0	21.0							
UNIM.221/EC 30345 Kr.	4	21.7	13.0	5.4	48	28	24	703	2517	59.3	43.3	54										
	2	18.0	10.8	4.5	53	31	25	515	1773	57.8	41.8	27										
UNIT.231/EC 20430 Kr.	10	36.7	22.0	9.2	44	26	23	1232	4382	75.8	59.8	251	35.0	27.0								
	8	34.6	20.8	8.6	47	28	24	1117	3920	69.6	53.6	189	30.0	23.0								
	6	31.1	18.7	7.8	51	30	25	936	3272	69.1	53.1	117	2.5	24.0	18.0							
UNIM.231/EC 32235 Kr.	4	25.9	15.6	6.5	56	33	26	703	2375	58.2	42.2	55										
	2	21.2	12.7	5.3	62	36	27	515	1673	56.8	40.8	28										
UNIT.321/EC 25785 Kr.	10	40.2	24.1	10.0	40	24	23	826	4915	71.1	55.1	232	40.0	30.0								
	8	39.2	23.5	9.8	40	24	23	722	4254	67.7	51.7	158	37.0	28.0								
	6	36.0	21.6	9.0	43	26	23	515	2998	59.1	43.1	69	3.0	30.0	23.0							
UNIM.321/EC 37680 Kr.	4	29.1	17.5	7.3	48	28	24	378	2036	51.6	35.6	34										
	2	22.5	13.5	5.6	54	32	25	274	1403	43.3	27.3	20										
UNIT.331/EC 28560 Kr.	10	51.7	31.0	12.9	48	28	24	826	4639	72.3	56.3	235	36.0	27.0								
	8	44.8	26.9	11.2	52	30	25	722	4015	65.9	49.9	160	27.0	21.0								
	6	35.6	21.4	8.9	56	33	26	515	2829	57.9	41.9	71	3.0	19.0	14.0							
UNIM.331/EC 40485 Kr.	4	27.9	16.8	7.0	61	35	27	378	1922	50.3	34.3	35										
	2	24.8	14.9	6.2	63	36	27	274	1324	42.3	26.3	21										
UNIT.421/EC 33233 Kr.	10	65.2	39.1	16.3	41	25	23	972	8147	78.3	62.3	569	54.0	41.0								
	8	53.6	32.1	13.4	43	26	23	731	6004	70.6	54.6	249	40.0	31.0								
	6	44.2	26.5	11.1	46	27	24	539	4344	62.2	46.2	113	3.0	30.0	23.0							
UNIM.421/EC 45240 Kr.	4	35.1	21.1	8.8	50	30	25	399	3107	53.8	37.8	54										
	2	29.7	17.8	7.4	56	32	26	291	2207	46.2	30.2	30										
UNIT.431/EC 37590 Kr.	10	78.6	47.2	19.7	48	28	24	972	7689	76.4	60.4	572	49.0	37.0								
	8	65.4	39.2	16.4	52	30	25	731	5666	68.9	52.9	251	36.0	27.0								
	6	53.6	32.2	13.4	55	32	26	539	4100	60.9	44.9	115	3.0	27.0	20.0							
UNIM.431/EC 49658 Kr.	4	41.6	24.9	10.4	60	35	27	399	2932	52.7	36.7	55										
	2	32.3	19.4	8.1	66	38	28	291	2083	45.2	29.2	31										

⁽¹⁾ At the heat exchanger, before the AVS®-effect reduces the temperature.

⁽²⁾ Sound measurements according to DIN 45635 / ISO 5801, DIN EN ISO 3744 / 3745, ISO 13347-3

⁽³⁾ Measured at 5 m from the appliance / content of the room 3000 m³ / reverberation time 2 sec. (VDI 2081)

⁽⁴⁾ Hot air projection is an approximative value for free drawing and exhausting air. ΔTl ca. 15 to 20 K over the room temperature.

OPTIONS - AVS® UNIT HEATER

DELIVERY

Completely preassembled apparatus for mounting against wall or ceiling, supplied in sturdy cardboard packaging:

- standard with Air Venturi System
- 2 row or 3 row heat exchanger
- casing in sandblast grey (001), fine texture metallic lacquer

ORDERING CODE

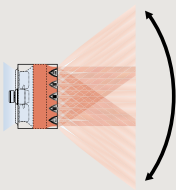
code type

UNIT . 021 /EC (standard AVS®)
 ↳ fill in type (2 = 2 rows of pipes)
 (3 = 3 rows of pipes)

ORDERING CODE MODULATING

code type

UNIM . 021 /EC (modulating AVS®) see p. 330
 ↳ fill in type (2 = 2 rows of pipes)
 (3 = 3 rows of pipes)



The modulating operation is integrated into the equipment and therefore cannot be delivered as an accessory. Mini unit heater (code 021 and 031) not available as a modulating version.

Wiring diagram available on request:

CODE

27200.20060001

CLOCK THERMOSTATS HEATING

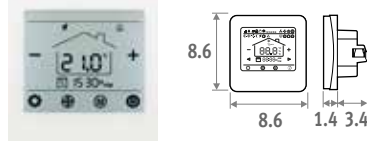
The general characteristics in bold below are valid for the thermostats 8751.050013 - 8751.050012 - 8751.050009 - 8751.050017

- **automatic thermostat for 2-pipe: heating/cooling or auto**
- **ventilator speed: min./med./max. or auto**
- **power supply 24 VDC**
- **output control(s) 0-10 VDC**
- **1 clock thermostat per room**
- **programmable zones**
- **LCD display with background lighting**
- **protection category IP30**

FOR RECESSED MOUNTING

NEW

Jaga clock thermostat for recessed/panel mounting JRT-100TW



Touchscreen



Wi-Fi

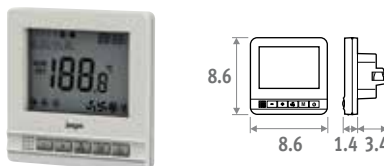


App

- LCD touchscreen with background lighting
- control via WIFI (smartphone app)
- programmable time zones 7 days (1-7)
- control valves 24 VDC heating/cooling
- thermostat to be mounted in a junction box
 - spacing holes at 6 cm
 - minimum depth 4.5 cm
 - inner dimension 5 x 5 cm or Ø 6 cm

CODE	Kr.
8751.050017 recessed/panel mounted	1328

Jaga clock thermostat for recessed/panel mounting JRT-100

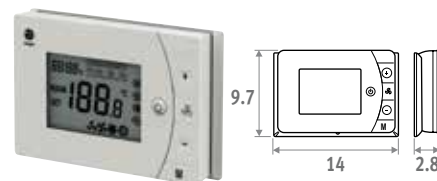


- control valves 24 VDC heating/cooling
- thermostat to be mounted in a junction box
 - spacing holes at 6 cm
 - minimum depth 4.5 cm
 - inner dimension 5 x 5 cm or Ø 6 cm

CODE	Kr.
8751.050012 recessed/panel mounted	795

FOR WALL MOUNTING

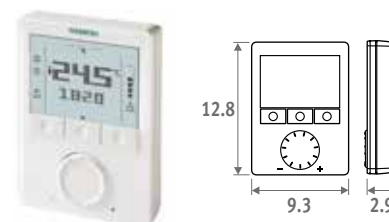
Jaga clock thermostat for wall mounting JRT-200



- 2 potential-free contacts heating/cooling (f.e. valve control 24 VDC or 230 VAC)
- with key card contact / window contact
- can be mounted on a junction box with screw holes at 6 cm

CODE	Kr.
8751.050013 wall mounted	750

Siemens clock thermostat for wall mounting



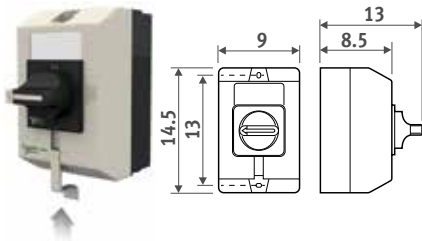
- unlimited adjustment possibilities: 74 features and diagnostic test
- For more information contact Jaga:
 ☎ +32 11 29 41 12 - ✉ export@jaga.be

CODE	Kr.
8751.050009 wall mounted	2363

AVS® UNIT HEATER - OPTIONS

ISOLATION SWITCH

- For use with all unit heater models.
Pre-mounted to the side when ordered together with the unit heater
- application: safe isolation of power during maintenance or replacement of parts
 - 1 switch per unit heater
 - ON/OFF function
 - lockable in off position for safety



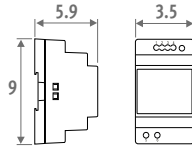
Add to the code of the unit heater /LS
Ex. UNIT.021/EC/LS

	Surcharge Kr.
Isolation switch	923

POWER SUPPLY FOR THERMOSTATIC



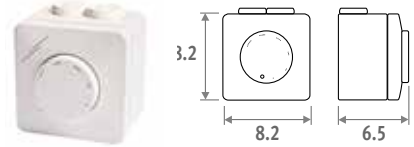
The guarantee is only valid if the original Jaga power supply is used.



- for DIN-rail or wall mounting
- conformity UL60950 / UL508 / IEC 60950-1 / TUV EN61558-2-16 / Class 2
- output voltage 24 VDC
- input voltage 100 - 240 VAC
- screw connection
- LED indicator

CODE	Output Watts	Output current A	Kr.
7990.054	36	1.5	353

POTENTIOMETER



- continuously variable speed control for max. 10 EC motors & modulating servo motor 230V
- synthetic housing ASA, RAL 9010
- for wall-mounting or built-in
- splash-proof IP44
- power supply 230 VAC
- output voltage 0..10 VDC (max. 8 mA)

CODE	Kr.
8751.050008	1170

OTHER OPTIONS

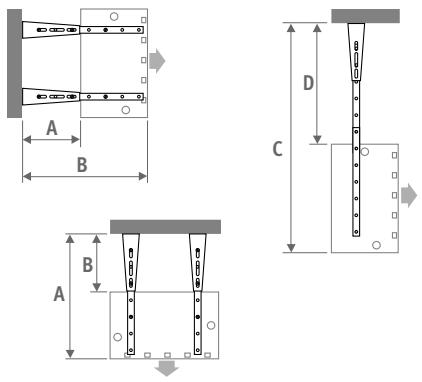
- Bracket and Fixing set p. 193
- Air exhaust options p. 194
- Air inlet options p. 196
- Servo motor p. 197

AVS® UNIT HEATER - BRACKET AND FIXING SET

WITH BRACKETS AND FIXING SETS TO USE?

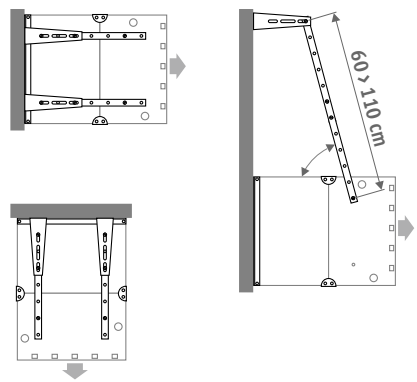
Without air inlet options

Set of brackets A



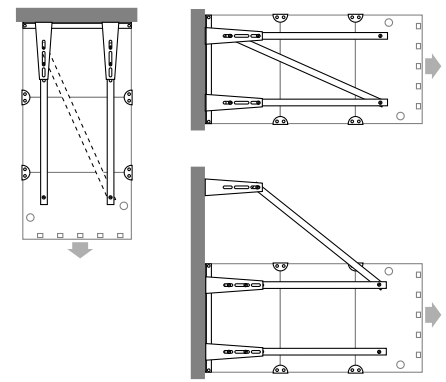
With 1 air inlet option

(not available with Mini unit heater)
Set of brackets A + fixing set A



With 2 air inlet options

(not available with Mini unit heater)
set of brackets B + fixing set B



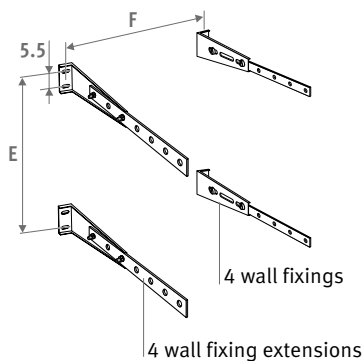
TYPE	A		B		C		D		E	F	G
	min.	max.	min.	max.	min.	max.	min.	max.			
000 (Mini)	36	67	77	107	72.5	132.5	31.5	101.5	--	--	--
100	36	67	77	107	83.5	143.5	30.5	90.5	35.5	53	63.5
200	36	67	77	107	94.5	144.5	29.5	79.5	45.5	65	75.5
300	36	67	77	107	105.5	145.5	28.5	68.5	55.5	77	87.5
400	36	67	77	107	116.5	146.5	27.5	57.5	65.5	89	99.5

BRACKET AND FIXING SET - AVS® UNIT HEATER

SET OF BRACKETS A

For unit heater without or with one air inlet option

- carrying capacity: 150 kg
- finish in the same colour as the unit heater (sandblast grey metallic, colour 001).
- includes screw bolts

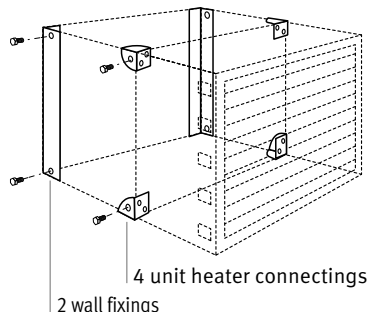


CODE	Kr.
8376.010100	578

FIXING SET A

For mounting of 1 air inlet option

- finish in the same colour as the unit heater (sandblast grey metallic, colour 001).
- includes bolts M 8 x 16 Din 933
- includes spring washers M8 Din 127



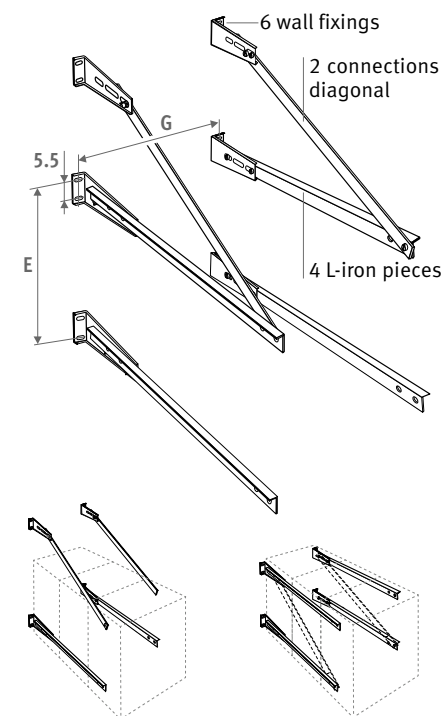
CODE	Type	Kr.
8376.040001	100	660
8376.040002	200	660
8376.040003	300	660
8376.040004	400	660

to use together with set of brackets A

SET OF BRACKETS B

For unit heater with two air inlet options

- finish in the same colour as the unit heater (sandblast grey metallic, colour 001).
- includes screw bolts

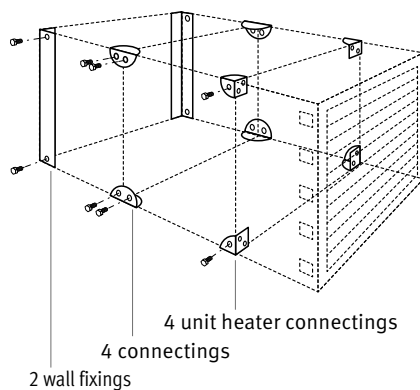


CODE	Type	Kr.
8376.030101	100	990
8376.030102	200	1050
8376.030103	300	1178
8376.030104	400	1230

FIXING SET B

For mounting of 2 air inlet options

- finish in the same colour as the unit heater (sandblast grey metallic, colour 001).
- includes bolts M 8 x 16 Din 933
- includes spring washers M8 Din 127

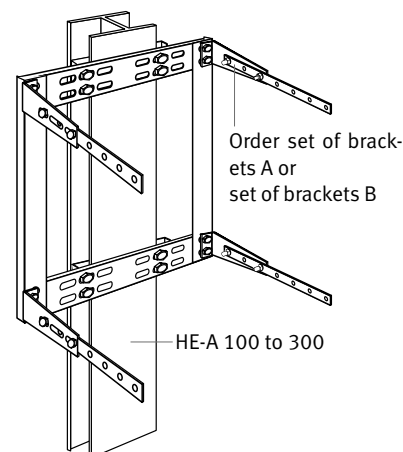


CODE	Type	Kr.
8376.040101	100	870
8376.040102	200	870
8376.040103	300	870
8376.040104	400	870

To use together with set of brackets B

FIXING ON METAL CONSTRUCTION

- finish in the same colour as the unit heater (sandblast grey metallic, colour 001).
- includes screw bolts



CODE	Type	Kr.
8376.050101	100	555
8376.050102	200	555
8376.050103	300	555
8376.050104	400	555

To use together with set of brackets A or B

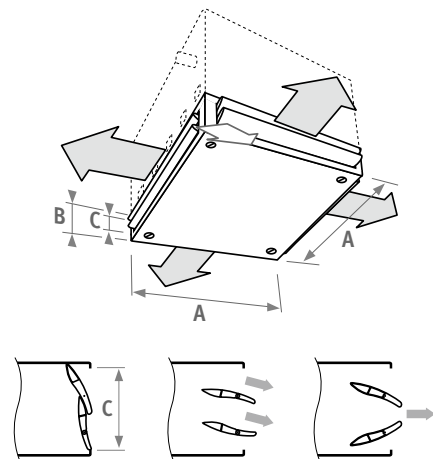
AVS® UNIT HEATER - AIR EXHAUST OPTIONS

4- SIDED AVS® AIR DIFFUSER

- for better horizontal air diffusion in case of low ceilings
- order together with the unit heater. The unit heater needs to be adjusted
- with this option the unit heater has no air exhaust grille
- will be delivered separately. Easy to mount and disassemble through quick-acting connection
- finish identical to the unit heater (sandblast grey, colour 001)
- aerodynamic angled louvres in satin black lacquered aluminium
- maximum height = 2.5 m bottom end of the appliance.



CODE	Type	Kr.
8375.060100	(Mini) 000	2018
8375.060101	100	2445
8375.060102	200	2535
8375.060103	300	2753
8375.060104	400	3060



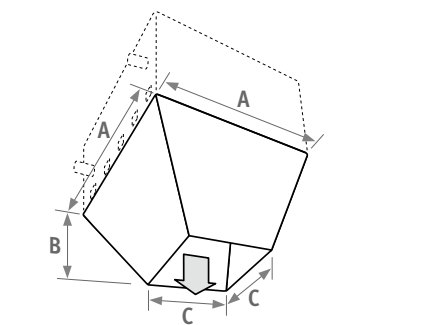
Type	A	B	C	kg
000 (Mini)	41.0	18.8	13.8	7.2
100	53.0	18.8	13.8	9.2
200	65.0	18.8	13.8	11.8
300	77.0	18.8	13.8	14.6
400	89.0	18.8	13.8	17.7

EXHAUST CONE

- to obtain higher exhaust speed, which enables fixing at a high level
- order together with the unit heater. The unit heater needs to be adjusted
- will be delivered separately. Easy to mount and disassemble through quick-acting connection
- finish identical to the unit heater (sandblast grey, colour 001)



CODE	Type	Kr.
8375.080101	100	1965
8375.080102	200	2040
8375.080103	300	2318
8375.080104	400	2468



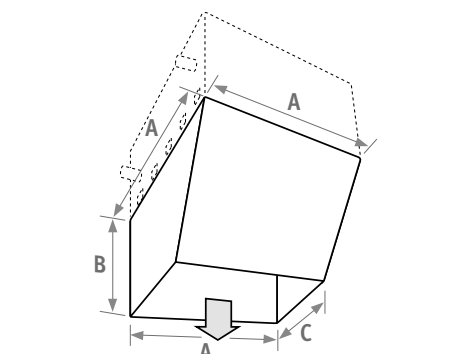
Type	A	B	C	kg
100	53.0	43.3	22.0	8.2
200	65.0	46.1	32.0	10.7
300	77.0	55.8	37.0	14.8
400	89.0	64.2	43.0	18.9

EXHAUST MOUTH PIECE

- prevent cold air entering the room door spaces etc...
- order together with the unit heater. The unit heater needs to be adjusted
- will be delivered separately. Easy to mount and disassemble through quick-acting connection
- finish identical to the unit heater (sandblast grey, colour 001)



CODE	Type	Kr.
8375.070101	100	1950
8375.070102	200	2040
8375.070103	300	2318
8375.070104	400	2483



Type	A	B	C	kg
100	53.0	54.5	10.5	9.7
200	65.0	60.0	18.0	17.3
300	77.0	72.5	19.0	24.0
400	89.0	103.5	25.0	36.7

AIR EXHAUST OPTIONS - AVS® UNIT HEATER

DOUBLE DEFLECTION FRONT GRILLE

- prevents too high a temperature developing at the opposite wall
- not suitable for use with the modulating version
- easy to mount through quick-acting connection at the top
- finish identical to the unit heater (sandblast grey, colour 001)
- aerodynamic angled louvres in satin black lacquered aluminium

PROTECTION GRILLE FOR SPORT CENTERS

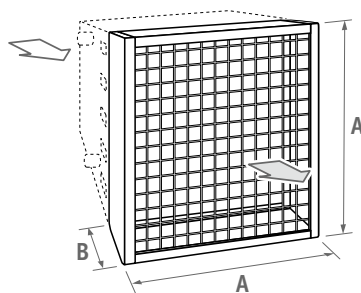
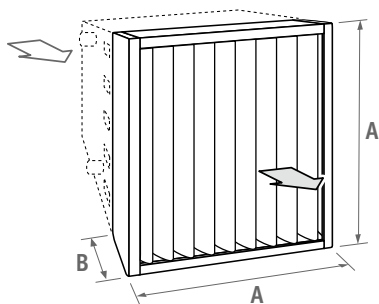
- easy to mount through quick-acting connection at the top
- not suitable for use with the modulating version
- finish identical to the unit heater (sandblast grey, colour 001)

For losses of air flow and/or capacity when using air exhaust options: see www.jaga.com



CODE	Type	Kr.
8375.110100	(Mini) 000	1808
8375.110101	100	1950
8375.110102	200	2040
8375.110103	300	2355
8375.110104	400	2453

CODE	Type	Kr.
8375.100101	100	1905
8375.100102	200	1988
8375.100103	300	2265
8375.100104	400	2423



Type	A	B	kg
000 (Mini)	41.0	10.1	5.0
100	53.0	10.1	6.1
200	65.0	10.1	8.1
300	77.0	10.1	10.4
400	89.0	10.1	13.0

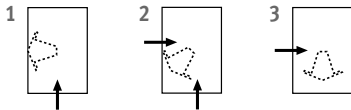
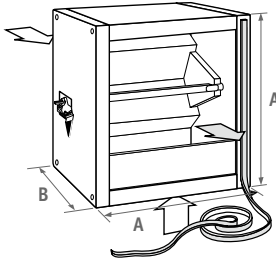
Type	A	B	kg
100	53.0	10.1	5.7
200	65.0	10.1	6.7
300	77.0	10.1	8.4
400	89.0	10.1	8.8

AVS® UNIT HEATER - AIR INLET OPTIONS

! Air inlet options are not possible with unit heater 021 / 031!

For losses of air flow and/or capacity when using air exhaust options: see www.jaga.com

AIR MIXING BOX



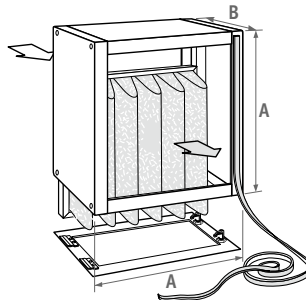
- unlaquered galvanized steel, or lacquered in the same colour as the unit heater (sand-blast grey, colour 001)
- manually adjusted

CODE	Type	Kr. galvanized
83750.010101	100	3405
83750.010102	200	3795
83750.010103	300	4358
83750.010104	400	5093

CODE	Type	Kr. lacquered
83751.010101	100	4095
83751.010102	200	4493
83751.010103	300	5048
83751.010104	400	5798

Type	A	B	kg
100	53.0	45.0	13.6
200	65.0	55.0	19.3
300	77.0	65.0	25.9
400	89.0	76.5	33.1

FILTER BOX WITH FILTER ELEMENT



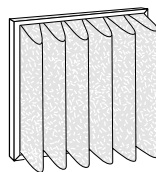
- unlaquered galvanized steel, or lacquered in the same colour as the unit heater (sand-blast grey, colour 001)
- when ordering a filter box it is recommended that a spare filter element is also ordered

CODE	Type	Kr. galvanized
8375.140101	100	3495
8375.140102	200	4028
8375.140103	300	4890
8375.140104	400	6353

CODE	Type	Kr. lacquered
83751.140101	100	4200
83751.140102	200	4718
83751.140103	300	5588
83751.140104	400	7058

Type	A	B	kg
100	53.0	35.0	18.1
200	65.0	45.0	22.4
300	77.0	55.0	26.7
400	89.0	66.5	31.9

FILTER ELEMENT



Caution! A dirty filter will reduce the output and the air flow of the unit heater.

- partly recyclable (dependent on the application of room)
- efficiency: Ashrae-tissue 90 %
- self-extinguishable in accordance to DIN 53438-1
- heat resistant up to 100 °C
- complies to classification G4 in accordance DIN EN 779

CODE	Type	Kr.
8375.150101	100	1193
8375.150102	200	1463
8375.150103	300	1988
8375.150104	400	3263

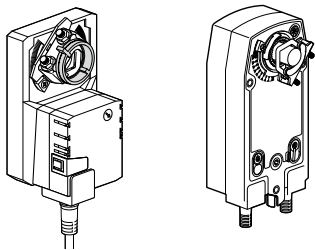
Other air inlet options: see www.jaga.com

- shutter box 180°
- shutter box 90°
- angular box
- extension box
- wall channel box
- extension channel
- 2-sided air inlet box
- air inlet mouth piece with grille for connection on wall channel box
- roof rain protection piece for connection on wall channel box
- roof rain protection piece for connection on extension channel

AIR INLET ACCESSORIES - AVS® UNIT HEATER

! Servo motor or thermostat for frost protection are assembled on the device. The servo motor has to be ordered together with the air mixing box. The frost protection thermostat has to be ordered together with the unit heater.

SERVO MOTORS "ON/OFF"

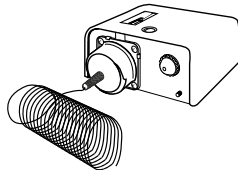


with return spring

- one size
- return spring: the mixing box or the shutter box will be closed automatically in case of a power cut (frost protection).

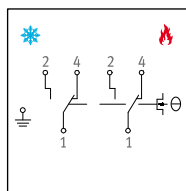
CODE	Kr.
8383.2301 "on/off-230 V"	2655
8383.2302 "on/off-230 V" with return spring	5460
8383.2303 Modulating servo motor 230V	5738

THERMOSTAT FOR FROST PROTECTION

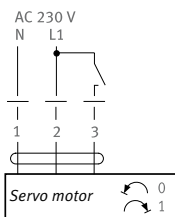


- Thermostat for frost protection (from -10° up to +12°C)

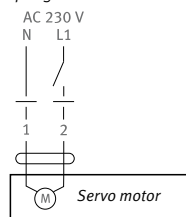
CODE	Kr.
8384.0001	1995



"on/off-230 V"



"on/off-230 V" with return spring



AVS® UNIT HEATER - CORRECTION FACTORS

CORRECTION FACTORS (CF) AS A FUNCTION OF ΔT

(ΔT = average water temperature - room temperature)

ΔT	Factor	ΔT	Factor	ΔT	Factor
30	0.60	49	0.98	68	1.36
31	0.62	50	1.00	69	1.38
32	0.64	51	1.02	70	1.40
33	0.66	52	1.04	71	1.42
34	0.68	53	1.06	72	1.44
35	0.70	54	1.08	73	1.46
36	0.72	55	1.10	74	1.48
37	0.74	56	1.12	75	1.50
38	0.76	57	1.14	76	1.52
39	0.78	58	1.16	77	1.54
40	0.80	59	1.18	78	1.56
41	0.82	60	1.20	79	1.58
42	0.84	61	1.22	80	1.60
43	0.86	62	1.24	81	1.62
44	0.88	63	1.26	82	1.64
45	0.90	64	1.28	83	1.66
46	0.92	65	1.30	84	1.68
47	0.94	66	1.32	85	1.70
48	0.96	67	1.34	86	1.72

CALCULATION FOR OTHER TEMPERATURES

T_v = flow temperature
 T_r = return temperature
 T_l = room temperature
 Q_v = requested capacities

1. ΔT Calculation

$$\Delta T = \frac{T_v + T_r}{2} - T_l$$

↓
 correction factor Cf

Calculation example

70 °C
 50 °C
 18 °C
 25 kWatts

$$\Delta T = \frac{70^\circ\text{C} + 50^\circ\text{C}}{2} - 18^\circ\text{C} = 42$$

↓
 0.84

2. Calculation theoretical output (Qf)

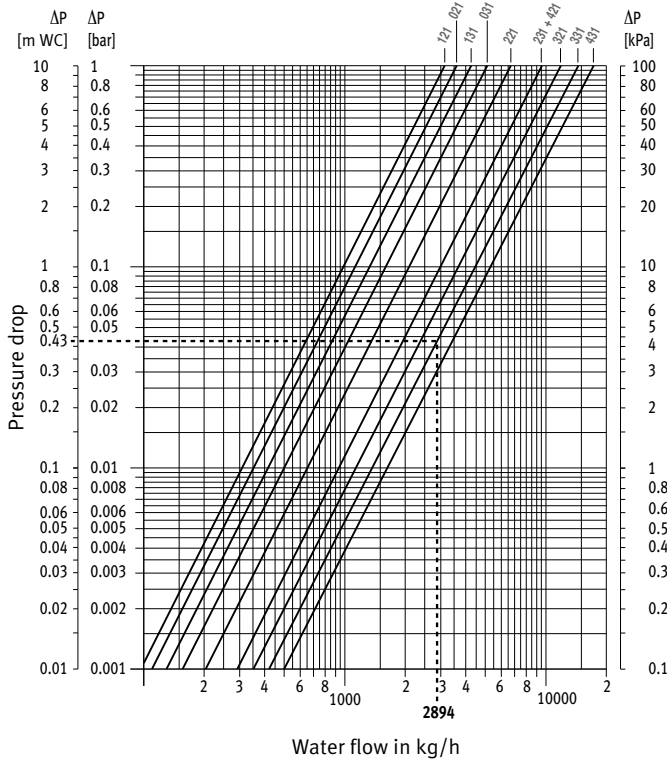
$$Q_f = \frac{Q_v}{C_f}$$

$$Q_f = \frac{25 \text{ kWatts}}{0.84} = 29.76 \text{ kWatts}$$

3. Choice unit heater

Select in table ΔT=50 a unit heater with an imaginary output of 29.76 kWatts (Qf). This unit heater will provide the requested output (Qv) of 25 kWatts at a water temperature $T_v - T_r$ (70°C/50°C) and a room temperature T_l (18°C).

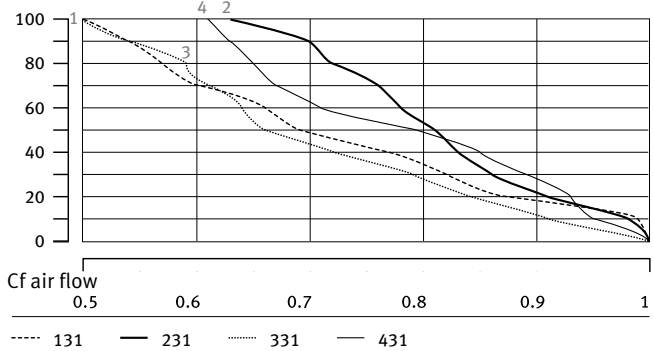
HYDRAULIC PRESSURE DROP



AIR FLOW / CORRECTION FACTOR FOR THE AIR FLOW

(Pressure drop with air inlet options)

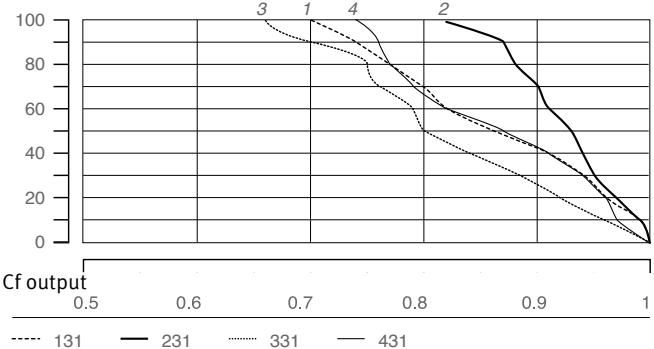
Δp (PA)



THERMAL OUTPUT / CORRECTION FACTORS FOR THE HEATING LOSS OF OUTPUT

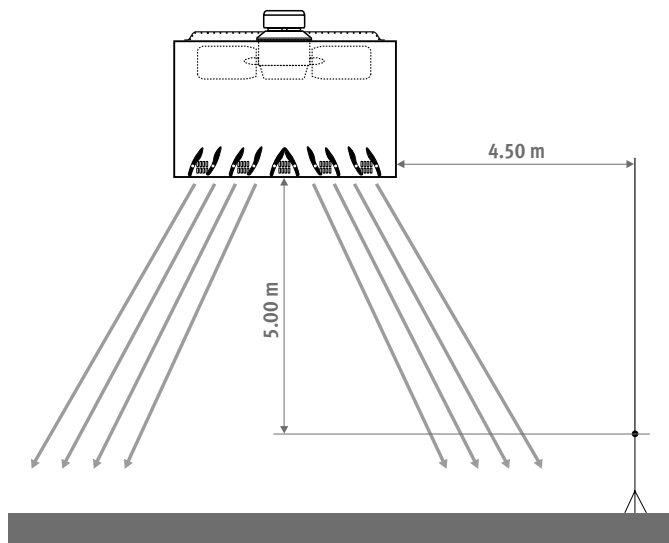
(Pressure drop with air inlet options)

Δp (PA)



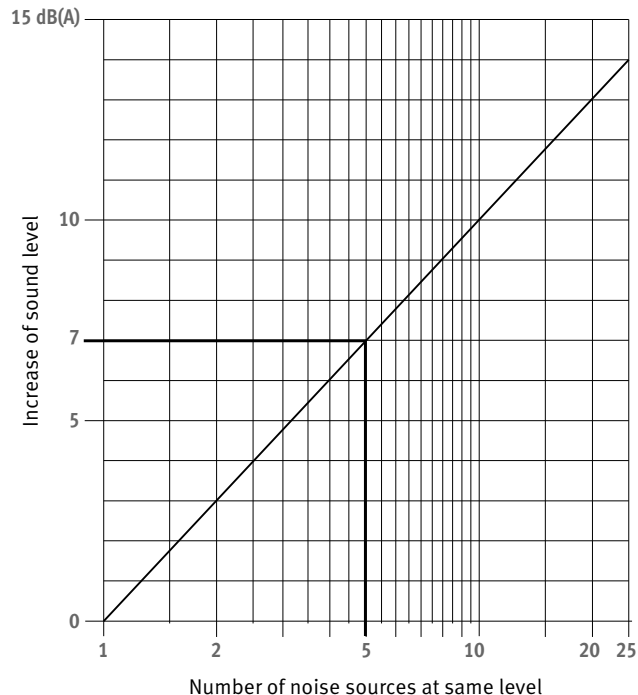
CORRECTION FACTORS SOUND - AVS® UNIT HEATER

SOUND PRESSURE



Sound measuring in a room in accordance with (DIN) EN 23741 and 23742

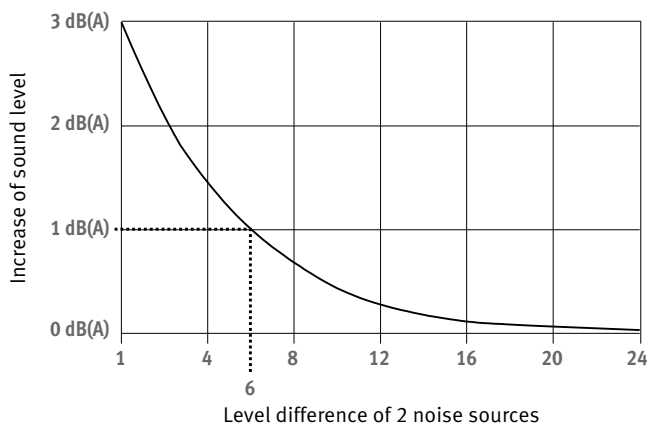
COMBINATION OF DIFFERENT NOISE SOURCES AT THE SAME SOUND LEVEL



Example:

- given: 5 sound sources of each 53 dB(A)
- asked: the total sound intensity
- the total sound intensity: 53 dB(A) + 7 dB(A) = 60 dB(A)

COMBINATION OF DIFFERENT NOISE SOURCES WITH DIFFERENT SOUND LEVELS



Example:

- given: 2 sound sources 53 dB(A) and 59 dB(A)
- difference = 6 dB(A)
- asked: the total sound intensity
- the total sound intensity : 59 dB(A) plus 1 dB(A) = 60 dB(A)

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