



GAS HEATING



**ELECTRICAL HEATING AND COOLING
SOLUTIONS
FOR THE INDUSTRY**



VULCANIC

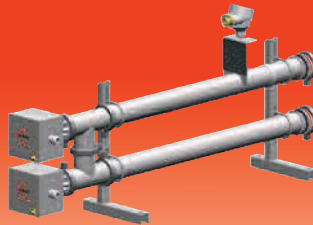
The Vulcanic group has been designing and manufacturing electrical process heating and temperature control solutions since 1973. Employing 550 people across 8 manufacturing locations, Vulcanic currently services 30 000 customers in 100 different countries across the globe and is an ISO 9001 v 2008 accredited company.



**You have an issue... let us solve it !
Vulcanic your worldwide local partner !**



Advice

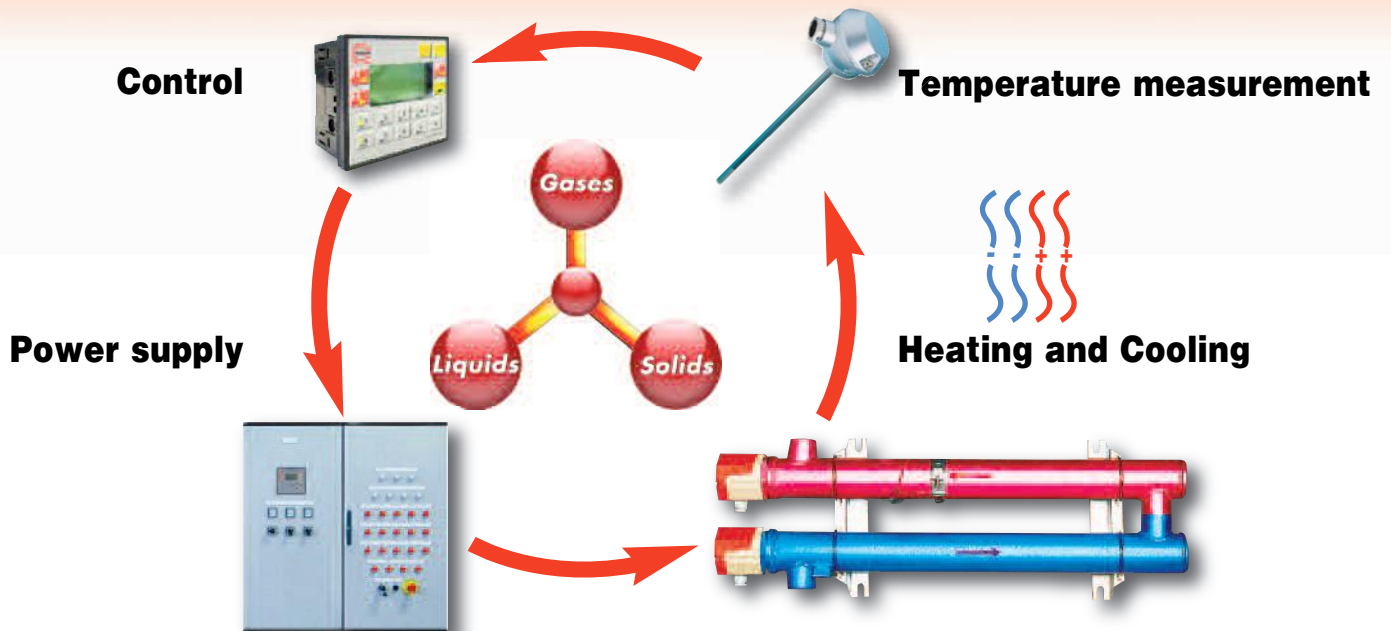


Design



Manufacturing

All in One Solutions





SERVED MARKETS



DESIGN EXPERTISE AND CODES

Vulcanic design teams support our partners from conceptual design and feasibility study throughout the life of the equipment. Our design capabilities include:

- Electrical design
- Mechanical design
- Thermal design
- Electronic design (hardware and software)
- Hydraulic design
- Automation
- Communication protocols
- Hazardous area certification



- AD 2000
- ASME
- CODAP
- EN 286

- PD 5500
- RCC-M / RCC-E
- STOOMWEZEN
- GOST



MANUFACTURING

Vulcanic offers the benefits of integrated "in house" manufacturing processes, using "state of the art" equipment to manufacture almost all components utilised within our product ranges. With only minimal dependance upon subcontractors, we remain in full control of Quality and Production schedules while maintaining a high level of know how in house.



Heating element manufacturing



CNC machining



Sensor manufacturing



Welding



Wiring

CERTIFICATION



- ISO 9001: 2008
- PED 97/23/EC cat I-IV
- ATEX 94/9/EC
- IECEx
- TR CU
- CCOE
- VDE
- UL
- DNV
- INMETRO





VULCANIC GROUP

VULCANIC SAS
ZI des Chanoux
48, rue Louis Ampère
F-93330 Neuilly sur Marne
France
Tel. : +33 1 49 44 49 20



VULCANIC SAS
ZI la Saunière
F-89600 Saint Florentin
France
Tel. : +33 1 49 44 49 20



VULCANIC UK Ltd
South Green Park
Entreprise Centre, Mattishall
NR20 3JY, Dereham Norfolk
United Kingdom
Tel. : +44 1603 340015



LOREME SAS
12, rue des Potiers d'Etain
Actipôle Borny
F-57071 Metz
France
Tel. : +33 3 87 76 32 51



VULCANIC SA
Heilig Hartstraat, 14
B-2600 Berchem
Belgium
Tel. : +32 3 286 70 30



RS ISOLSEC SAS
45, avenue des acacias
F-45120 Cepoy
France
Tel. : +33 2 38 85 62 62



VULCANIC TERMOELÉCTRICA SLU
Ctra. a Viérnoles, 32
E-39300 Torrelavega
Spain
Tel. : +34 942 80 35 35



VULCANIC GmbH
Donaustraße 21
D-63542 Hanau
Germany
Tel. : +49 6181 9503 0



RS ISOLSEC SLU
Ave Riu Mogent, 5
E-08170 Montornès del Valles
Spain
Tel. : +34 93 568 73 10



VULCANIC Russia
105005 Moscow
radio street
house 24 building 1
Russia
Tel. : + 7 (903) 967-95-68

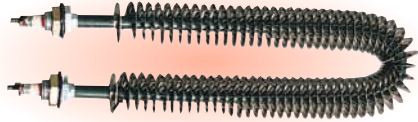


VULCANIC TRIATHERM GmbH
Flurstraße 9
D-96515 Sonneberg
Germany
Tel. : +49 3675 4083-0

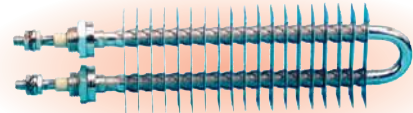


AIR HEATING

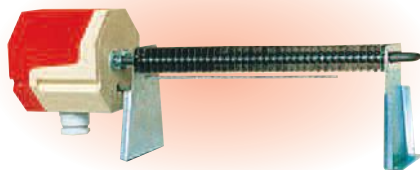
Twisted finned elements



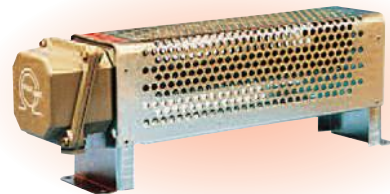
Finned elements



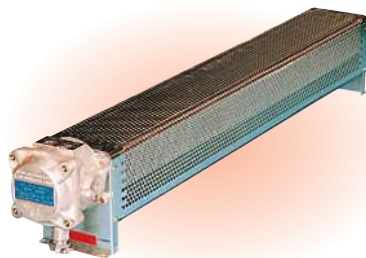
Anti-condensation cabinet heaters



Radiators



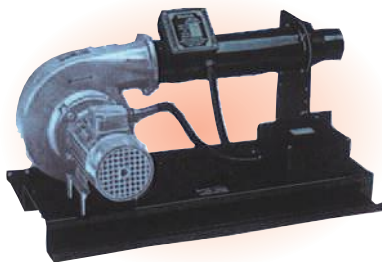
ATEX radiators



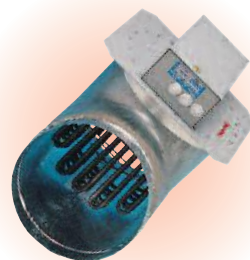
Wall-mounted air heaters



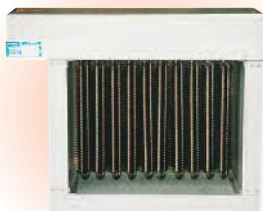
High temperature generators



Circular air duct heaters



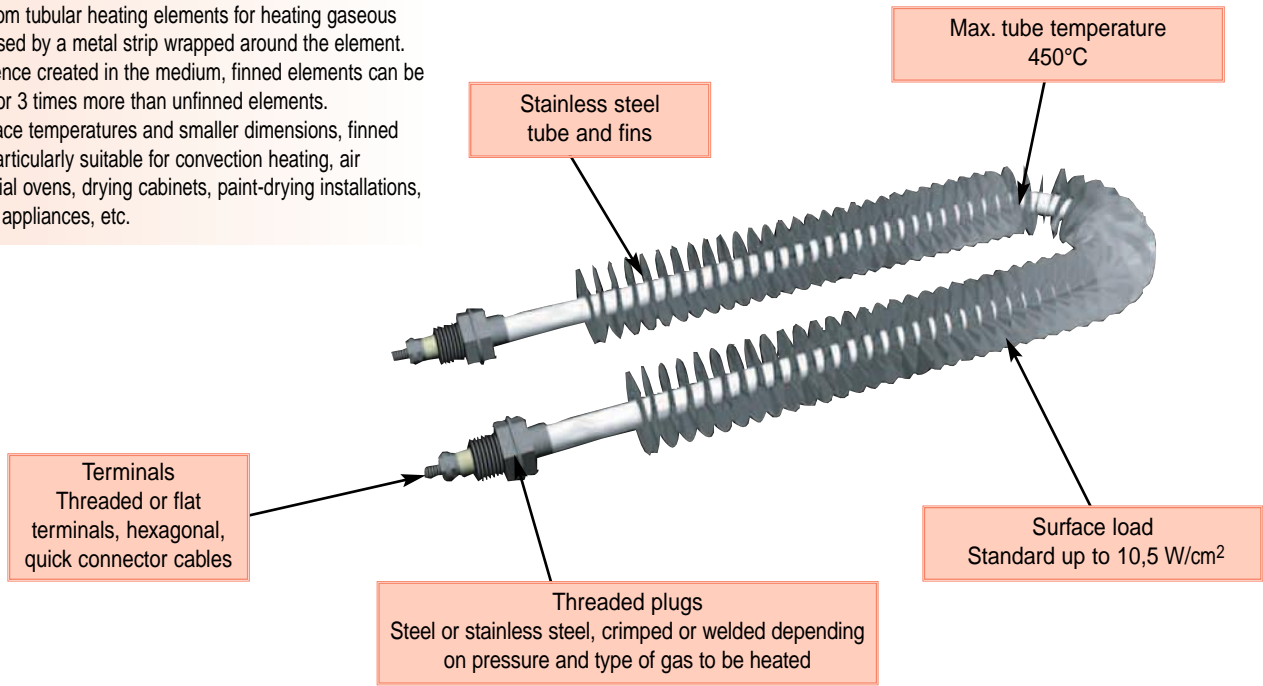
Industrial air duct heaters



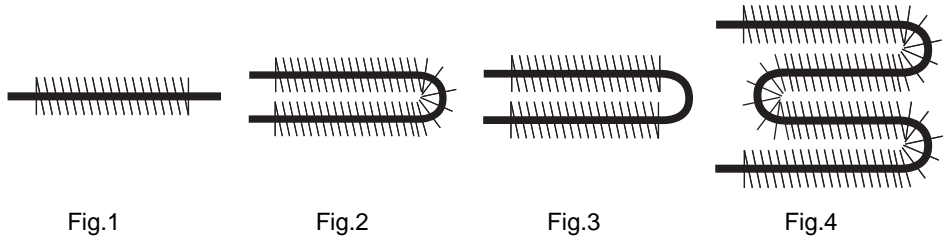
Flange air heaters



To heat air or gases by natural or forced convection, one possible solution are finned elements.
 Heat transfer from tubular heating elements for heating gaseous media is increased by a metal strip wrapped around the element. Through turbulence created in the medium, finned elements can be loaded up to 2 or 3 times more than unfinned elements. With lower surface temperatures and smaller dimensions, finned elements are particularly suitable for convection heating, air heaters, industrial ovens, drying cabinets, paint-drying installations, air-conditioning appliances, etc.

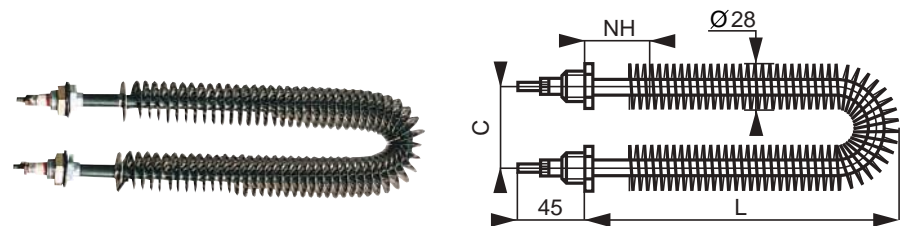


AVAILABLE SHAPES :
 Fig.1 – straight, completely finned
 Fig.2 - U-shaped, completely finned
 Fig.3 - U-form, bent area not finned
 Fig.4 - W-shaped, completely finned



STAINLESS STEEL FINNED ELEMENTS

Temperatures up to 300°C, min.air speed 5 m/s.
 Supply voltage: 230 V single phase.
 Supplied bent, with crimped M 14 x 1,5 x 12 mm threaded plugs.
 AISI 321/Din 1.4541 tube,
 AISI 304L/Din 1.4306 fins,
 Crimped M14 x 150 threaded plugs in protected carbon steel (max. pressure : 100 mm WC) + sealing rings,
 M6 threaded terminals in protected carbon steel,
 TM seals (max. connection temperature : 200 °C).



NH = Non-heating length
 V = 230 V 1P

P/N.-	Power +5 -10% (W/cm ²)	Load (mm)	L (mm)	NH (mm)	Weight (kg)
6094-51	1000 W	9,5	280	70	0,45
6094-52	2000 W	8,5	530	70	0,65
6094-53	3000 W	8,5	780	90	0,9
6094-54	4000 W	9,5	920	90	1,1
6094-55	5000 W	9,0	1180	90	1,2
6094-56	6000 W	10,5	1230	90	1,3

c = 70

P/N.-	Power +5 -10% (W/cm ²)	Load (mm)	L (mm)	NH (mm)	Weight (kg)
6094-01	400 W	4	240	50	0,3
6094-02	1000 W	4	490	50	0,58
6094-03	1500 W	4	740	50	0,8
6094-04	2000 W	4	990	50	1,1
6094-05	2500 W	4	1240	50	1,3
6094-06	3000 W	4	1490	50	1,5
6094-10	650 W	6	240	50	0,3
6094-11	1400 W	6	490	50	0,58
6094-12	2250 W	6	740	50	0,8

c = 40

P/N.-	Power +5 -10% (W/cm ²)	Load (mm)	NH (mm)	L (mm)	Weight (kg)
6094-13	3000 W	6	990	50	1,1
6094-14	3750 W	6	1240	50	1,3
6094-15	4500 W	6	1490	50	1,5
6094-20	850 W	8	240	50	0,3
6094-21	2000 W	8	490	50	0,58
6094-22	3000 W	8	740	50	0,8
6094-23	4000 W	8	990	50	1,1
6094-24	5000 W	8	1240	50	1,3
6094-25	6000 W	8	1490	50	1,5

c = 40

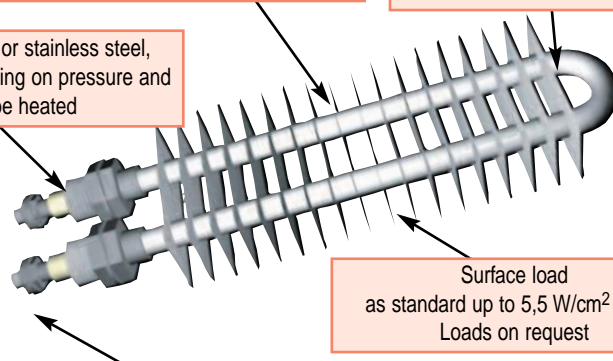
To heat air or gases by natural or forced convection, one possible solution are finned element. The required power, operating temperature, and flow speed of the gas to be heated will guide you in choosing your specific item.

VULCANIC finned elements are based on sheathed heating elements to which fins are attached. These square-finned elements are available in U-shaped form.

Fins in ferric or austenitic stainless steel

Protected carbon steel max. tube temperature 400°C
stainless steel max. tube temperature 650°C

Threaded plugs in steel or stainless steel, crimped or brazed depending on pressure and type of gas to be heated



Surface load as standard up to 5,5 W/cm² higher Loads on request

Terminals : threaded, flat, hexagonal, Faston or cables

Application :

Natural convection

Ambient air temp. maxi	Load maxi.
80°C	5W/Cm ²
140°C	4W/Cm ²
200°C	2,7W/Cm ²

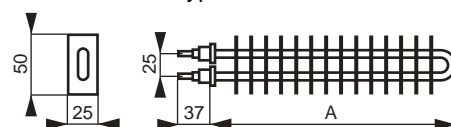
Forced convection for ambient air at 200°C Maxi

Low flow	Load maxi.
2m/s	4W/Cm ²
3m/s	5W/Cm ²

STAINLESS STEEL 25 x 50 FINNED STRIP HEATERS

AISI 321/Din 1.4541 tube, 25x50 fins in AISI 430, crimped M14 x 150 threaded plugs in protected steel (max. pressure : 100 mm WC + sealing rings, M6 threaded terminals in protected carbon steel, WP⁺ "waterproof" sealing (max. temperature at terminals : 160 °C).

Type 6024



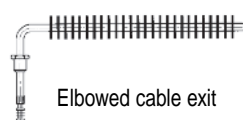
P/N.	Power +5 -10%	Voltage 1P	A (mm)	Load (W/cm ²)	Weight (kg)
6024-01	235 W	127 V	170	4	0,225
6024-00	235 W	230 V	170	4	0,225
6024-11	525 W	127 V	320	4	0,400
6024-10	525 W	230 V	320	4	0,400
6024-13	450 W	230 V	395	2,7	0,500
6024-90	450 W	230 V	226	5	0,290
6024-12	525 W	400 V	320	4	0,400
6024-73	550 W	230 V	470	2,7	0,560

P/N.	Power +5 -10%	Voltage 1P	A (mm)	Load (W/cm ²)	Weight (kg)
6024-20	725 W	230 V	420	4	0,510
6024-91	650 W	230 V	326	5	0,405
6024-30	950 W	230 V	520	4	0,610
6024-33	950 W	230 V	760	2,7	0,850
6024-92	950 W	230 V	426	5	0,515
6024-32	950 W	400 V	520	4	0,610
6024-40	1450 W	230 V	770	4	0,900

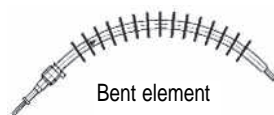
P/N.	Power +5 -10%	Voltage 1P	A (mm)	Load (W/cm ²)	Weight (kg)
6024-43	1325 W	230 V	1045	2,7	1,300
6024-42	1450 W	400 V	770	4	0,900
6024-50	1950 W	230 V	1020	4	1,200
6024-93	1950 W	230 V	816	5	0,950
6024-52	1950 W	400 V	1020	4	1,200
6024-60	2950 W	230 V	1520	4	1,900
6024-62	2950 W	400 V	1520	4	1,900

OTHER MANUFACTURING OPTIONS WITH SHORT DELIVERY TIMES : power, voltage, length of element (Dimension A), tube material (AISI 316L/Din 1.4404), fin material (stainless steel AISI 304L/Din 1.4306), threaded plug material (stainless steel) and their means of fastening to the tube (brazed for 50 bar max. pressure), seals (HT "high temperature" or TM "moderated temperature" and terminals (cables, flat terminals, hexagonal terminals, Faston terminals or threaded stainless steel terminals).

OTHER POSSIBLE SHAPES

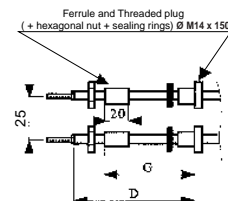


Elbowed cable exit



Bent element

Type 6114 : same as 6024 but with ferrules



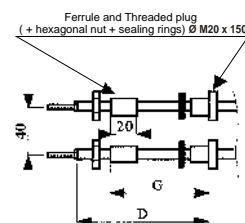
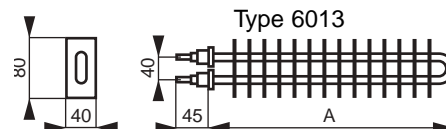
STAINLESS STEEL 40 X 80 FINNED STRIP HEATERS

AISI 321/Din 1.4541 tube, 40x80 fins in AISI 430 stainless steel, crimped M20 x 150 threaded plugs in protected steel (max. pressure :100 mm WC) + sealing rings, M6 threaded terminals in protected carbon steel, TM seals (max. temperature at terminals : 200 °C).

P/N.	Power +5 -10%	Voltage 1P	A (mm)	Load (W/cm ²)	Weight (kg)
6033-00	1250 W	230 V	420	4,5	1,15
6033-03	1500 W	230 V	470	5	1,15
6033-20	2000 W	230 V	610	4,5	1,65

P/N.	Power +5 -10%	Voltage 1P	A (mm)	Load (W/cm ²)	Weight (kg)
6033-30	2500 W	230 V	783	4,5	2,40
6033-50	4000 W	230 V	1162	4,5	3,20
6033-90	6000 W	230 V	1570	4,5	4,70

Type 6123 : same as 6013 but with ferrules

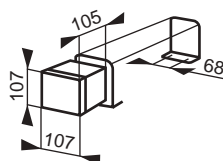


OTHER MANUFACTURING OPTIONS WITH SHORT DELIVERY TIMES : power, voltage, length of element (Dimension A), tube material (AISI 316L/Din 1.4404), fin material (stainless steel AISI 304L/Din 1.4306), threaded plug material (stainless steel) and their means of fastening to the tube (brazed for 50 bar max. pressure), seals (HT "high temperature" or TM "moderated temperature" and terminals (cables, flat terminals, hexagonal terminals, Faston terminals or threaded stainless steel terminals).

ACCESSORIES

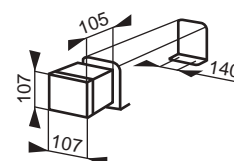
For Finned strip heaters 25 x 50

- IP 55 IK5 polyamid connection box equipped with sealing gland ISO 20 - Max using temperature: 120°C - P/N. 6004-99 (Weight 0.4 kg).
- Pair of protected steel brackets for horizontal use P/N : 6004-81 . (Weight 0.22 kg).



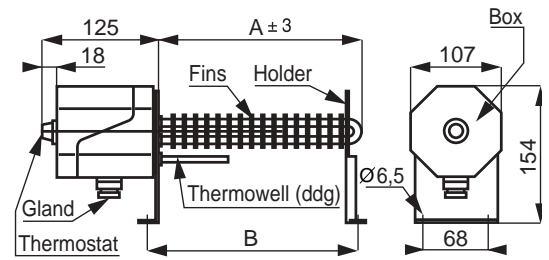
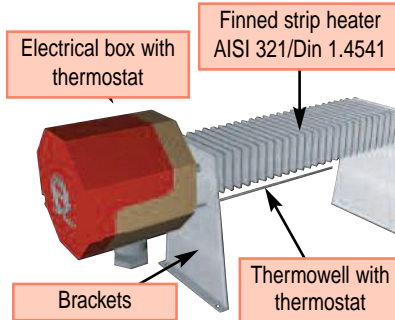
For Finned strip heaters 40 x 80

- IP 55 IK5 polyamid connection box equipped with sealing gland ISO 20 BIS - Max using temperature: 120°C P/N 6013-99 (Weight 0.4 kg).
- Pair of protected steel brackets for horizontal use P/N 6002-81 (Weight 0.22 kg).



SWITCH CABINET HEATERS

Heaters with integral thermostat for warming electrical switch cabinets. Made of one or two finned strip heaters mounted in a polyamide 6/6 box, with IP42 cover, 0/120°C thermostat in a thermowell, mounted on two brackets, with ISO 25 gland. Same characteristics as stainless steel 25x50 finned strip heaters type 6004.



Version with 1 finned strip heater

P/N.	Power	Voltage	A	B	Load	Spare finned	Weight
	+5 -10%	1P	(mm)	(mm)	(W/cm ²)	element	(kg)
6108-01	115 W	110 V	395	399	0,6	6004-13	3,15
6108-02	150 W	110 V	470	474	0,6	6004-73	3,21
6108-03	230 W	110 V	760	764	0,6	6004-33	3,50
6108-04	340 W	110 V	1045	1049	0,6	6004-43	3,95
6108-05	150 W	127 V	395	399	0,8	6004-13	3,15
6108-06	220 W	127 V	470	474	0,8	6004-73	3,21
6108-07	300 W	127 V	760	764	0,8	6004-33	3,50
6108-08	450 W	127 V	1045	1049	0,8	6004-43	3,95
6108-09	500 W	230 V	395	399	2,7	6004-13	3,15
6108-10	670 W	230 V	470	474	2,7	6004-73	3,21
6108-11	1000 W	230 V	760	764	2,7	6004-33	3,50
6108-12	1500 W	230 V	1045	1049	2,7	6004-43	3,95

Version with 2 finned strip heaters

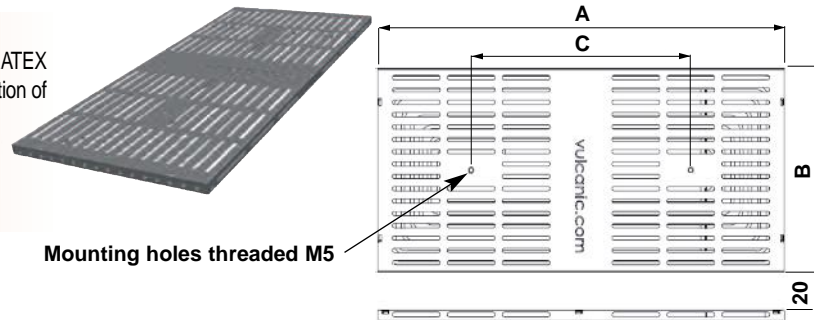
P/N.	Power	Voltage	A	B	Load	Spare finned	Weight
	+5 -10%	1P	(mm)	(mm)	(W/cm ²)	element	(kg)
6108-51	230 W	110 V	395	399	0,6	6004-13	3,65
6108-52	300 W	110 V	470	474	0,6	6004-73	3,77
6108-53	460 W	110 V	760	764	0,6	6004-33	4,35
6108-54	680 W	110 V	1045	1049	0,6	6004-43	5,25
6108-55	300 W	127 V	395	399	0,8	6004-13	3,65
6108-56	440 W	127 V	470	474	0,8	6004-73	3,77
6108-57	610 W	127 V	760	764	0,8	6004-33	4,35
6108-58	900 W	127 V	1045	1049	0,8	6004-43	5,25
6108-59	1000 W	230 V	395	399	2,7	6004-13	3,65
6108-60	1340 W	230 V	470	474	2,7	6004-73	3,77
6108-61	2000 W	230 V	760	764	2,7	6004-33	4,35
6108-62	3000W	230 V	1045	1049	2,7	6004-43	5,25

ATEX ENCLOSURES HEATERS - Ex e

These extra flat heaters (20 mm) are designed for electrical cabinets. Consist in stainless steel (316L) frames containing a self regulating cable, ATEX certified, allows a high level of frost protection and prevents the condensation of moisture. They can be fitted in all positions and are vibration resistant. ATEX marking: 2 GD Ex e II CT 3 Gb and II 2 GD Ex e II CT 6 Gb

Certificate: **LCIE 13 ATEX 3091**

Hygrostat or ATEX thermostat controlled (option)



Ref. 9014-98 page 98



Ref. 6023-02/04 page 98

Temperature class T3

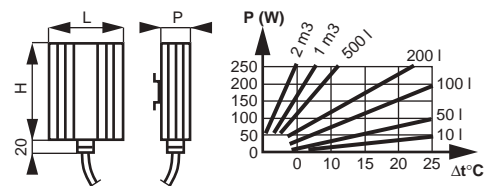
P/N.	Power	Tension	A	B	C	Marking
	+5 -10%	mono	(mm)	(mm)	(mm)	Temp.
6032-01	50 W	110 V	220	140	90	T3
6032-02	100 W	110 V	330	170	180	T3
6032-03	200W	110 V	660	170	360	T3
6032-04	500 W	110 V	740	330	450	T3
6032-05	50 W	230 V	220	140	90	T3
6032-06	100 W	230 V	330	170	180	T3
6032-07	200W	230 V	660	170	360	T3
6032-08	500 W	230 V	740	330	450	T3

Temperature class T6

P/N.	Power	voltage	A	B	C	Marking
	+5 -10%	mono	(mm)	(mm)	(mm)	Temp.
6032-10	50 W	110 V	220	140	90	T6
6032-11	100 W	110 V	330	170	180	T6
6032-12	200W	110 V	660	170	360	T6
6032-13	500 W	110 V	740	330	450	T6
6032-14	50 W	230 V	220	140	90	T6
6032-15	100 W	230 V	330	170	180	T6
6032-16	200W	230 V	660	170	360	T6
6032-17	500 W	230 V	740	330	450	T6

ANTI-CONDENSATION CABINET HEATERS

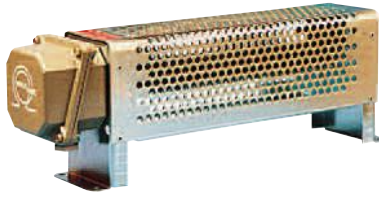
Heaters to keep wiring or switch cabinets free of frost, or to prevent condensation from forming in electric cabinet. Finned aluminium elements with safety thermostat to limit the surface temperature to 70°C. Fitted with 3-cores 0,75m² supply cable, length 0.3m. Can be mounted on 35mm DIN rails. Voltage : 230 V single phase.



P/N.	P/N.	Power	H x L x P	Weight
IP 30	IP 55	+5 -10%	(mm)	(kg)
6006-00	6006-90	20 W	110x88x37	0,60
6006-01	6006-91	50 W	110x88x37	0,60
6006-02	6006-92	100 W	165x120x64	0,95
6006-03	6006-93	250 W	200x120x64	1,30

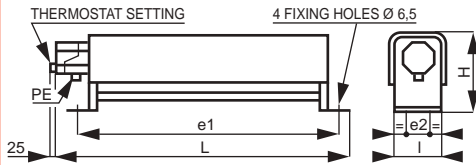


RADIATORS



These particularly robust appliances have been designed to provide reliable heating for industrial and technical premises, control rooms and mobile site cabins. Connection via gland to a IP55 IK7 aluminium terminal box. Available with an integral control thermostat, adjustable from 0 to 50°C. Horizontal fitting.

The thermostat setting knob is located on the outside of the unit.



Steel radiator : Stainless steel heating element, F17 stainless steel fins, housing and support in protected steel, painted aluminium terminal box.

Stainless steel radiator : AISI 321/Din 1.4541 stainless steel heating element, stainless steel fins AISI 304L/Din 1.4305 stainless steel housing and brackets, painted aluminium terminal box.

IP 55 IK 7 connection box for radiators without thermostat and IP 42 IK 7 for radiators with thermostat.
Models 6007.xx and 6103.xx H = 150, l = 90, e 2 = 68, e1=L - 70 (without thermostat), e1=L - 105 (with thermostat)

Spare thermostat : **P/N. 6099-01**

Models 6008.xx and 6104.xx H = 200, l = 165, e 1 = L - 85, e 2 = 136 Spare thermostat: **P/N. 6099-02**

Steel models					Stainless steel models						
P/N. without thermostat (mm)	P/N. with thermostat (mm)	L (mm)	Power +5 -10%	Spare element (kg)	P/N. without thermostat (mm)	P/N. with thermostat (mm)	L (mm)	Power +5 -10%	Spare element (kg)		
6007-01	430	6007-21	465	500 W	6004-10	3,0	6103-21	500 W	465	6004-15	3,0
6007-02	530	6007-22	565	750 W	6004-20	3,5	6103-22	750 W	565	6004-25	3,5
6007-03	630	6007-23	665	1000 W	6004-30	4,0	6103-23	1000 W	665	6004-35	4,0
6008-01	520	6008-21	520	1500 W	6004-13	6,0	6104-21	1500 W	520	6004-18	6,0
6008-02	595	6008-22	595	2000 W	6004-73	6,5	6104-22	2000 W	595	6004-28	6,5
6008-03	886	6008-23	886	3000 W	6004-33	9,0	6104-23	3000 W	885	6004-38	9,0
6008-04	1171	6008-24	1171	4500 W	6004-43	12,0	6104-24	4500 W	1170	6004-48	12,0

Power supply : Type 6007-xx and 6103-xx : 230V 1P

Type 6008-xx and 6104-xx : supplied coupled 400V 3P - possibility of coupling 230V 1P (except 4500W) and 230V 3P.

Other manufacturing options : special powers and voltages

RADIATORS FOR PUBLIC PREMISES

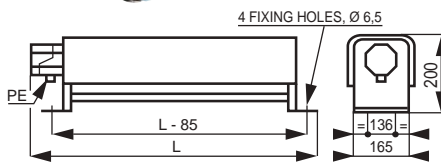


Low surface temperature suitable for public premises (reception halls, shops, waiting rooms, etc.)

Certified Class A by VERITAS (provided the appliances are wall-mounted) for use in merchant navy ships.

Include a safety thermostat with manual reset and no control thermostat. Connection via gland to a IP 55 IK7 box in black anodised aluminium. Supplied with a set of brackets 6008-20 (see accessories for radiators).

Supply voltage : 230 V 1P. Max. surface temperature on the housing : 85°C at an ambient temperature of 25°C.



P/N.	Power +5 -10%	L (mm)	Spare element	Weight (kg)
6021-01	500 W	520	6004-21	6,8
6021-02	1000 W	886	6004-22	9,6
6021-03	1500 W	1171	6004-23	12,2

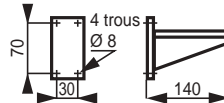
Spare thermostat **P/N.6099-03**

ACCESSORIES FOR RADIATORS

Accessories for radiator type 6007 :

Pair of protected steel brackets for wall mounting

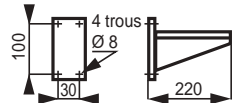
P/N. 6006-20 (weight 0,47 kg).



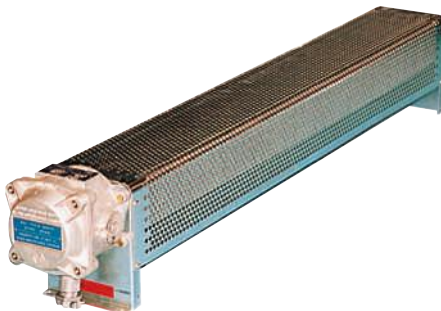
Accessories for radiator type 6008, 6010, 6021

Pair of protected steel brackets for wall mounting.

P/N. 6008-20 (weight 0,9 kg).



ATEX RADIATORS FOR DUSTY ENVIRONMENT - Ex d



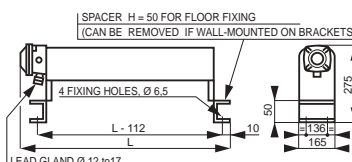
These particularly robust appliances have been designed to provide reliable heating at 40°C in explosive ambient with conductive dust. and max. skin temperature of heating element located inside the vessel 195°C, at an ambient temperature from - 20°C up to 40°C.

Connection via gland to an Ex t IIIC box IP66 equipped with ground terminal for equipotential connection; protected steel brackets and housing. Horizontal fixing.

Marking II 2 D Ex t IIIC T₅ 195°C Db IP 66
Certificate : LCIE 11 ATEX 3059X

Particular precautions must be taken to secure the operation of this product. Consult us or read the instruction manual.

Others possibilities : -20 up to +60 °C



Supply voltage: 230 V 1P

P/N.	Power +0 -10%	L (mm)	Weight (kg)
6110-42	465 W	612	12
6110-43	790 W	902	18
6110-45	1110 W	1187	24
6110-47	1675 W	1687	27

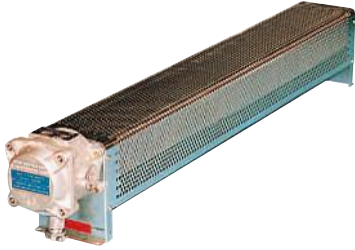
Supply voltage: 230 V 3P

P/N.	Power +0 -10%	L (mm)	Weight (kg)
6110-52	465 W	612	12
6110-53	790 W	902	18
6110-55	1110 W	1187	24
6110-57	1675 W	1687	27

Supply voltage : 400V 3P

P/N.	Power +0 -10%	Lt (mm)	Weight (kg)
6110-02	465 W	612	12
6110-03	790 W	902	18
6110-05	1110 W	1187	24
6110-07	1675 W	1687	27

ATEX RADIATORS WITHOUT CONTROL THERMOSTAT - Ex d



Room radiator ATEX 94/9/CE certified, for heating of ATEX hazardous atmospheres (ambient temperature from -20°C up to 40°C, maximum humidity 95%)- Built with a set of **heating pins ø 16 mm** mounted in a coated steel housing.

- Aluminium junction box IP 55 IK 7 with cable gland .
- **Explosion-proof equipment** of category 2 for surface industries usable in risk areas 1 and 2, in gas environment of the group IIC whose temperature of self ignition is higher than 200°C.

We recommend the use of a thermostat allowing an optimal control of ambient temperature in the room :

Atex control thermostat Ex de IIC T6 reference 6023-02.

Special precautions must be taken to ensure a safe and appropriate use of this equipment. Please consult us or read the instruction manual previously.

Atex marking : II 2 G Ex d IIC T3 Gb.
EC type examination certificate :
INERIS 11 ATEX0046



IECEX EPS 13.0046
EPS 11ATEX1354

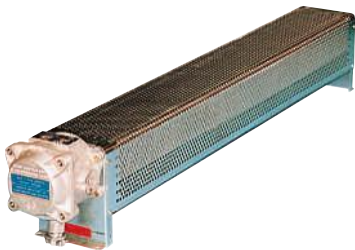
Model Ex d IIC T3 (skin temperature of maxi 200°C on the heating element inside the steel casing with an ambient temperature from -20°C up to +40°C).

Temperature class T3

Power. +5 -10%	L (mm)	Weight (kg)	Voltage	P/N.	Voltage	P/N.	Voltage	P/N.
600 W	902	13	230V Mono	6410-43	230V Tri	6410-53	400V Tri	6410-03
800 W	1187	16	230V Mono	6410-45	230V Tri	6410-55	400V Tri	6410-05
1200 W	1687	24	230V Mono	6410-47	230V Tri	6410-57	400V Tri	6410-07

Ambient thermostat ATEX -20/+40°C - Protection : Ex de IIC T6 junction box IP64 - 10A/230VAC - Réf. 6023-02.

ATEX RADIATORS WITH CONTROL THERMOSTAT - Ex d

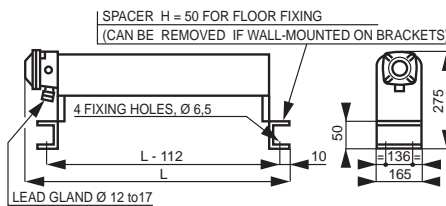


Room radiator type 6010 ATEX 94/9/CE certified, for heating of ATEX hazardous atmospheres (ambient temperature from -20°C up to 40°C, maximum humidity 95%). Built with a set of **heating monotubes mounted in a pocket** mounted in a coated steel housing.

- Control thermostat from 0 up to 50°C.
- Aluminium junction box IP 55 IK 7 with cable gland .
- **Explosion-proof equipment** of category 2 for surface industries usable in risk areas 1 and 2, in gas environment of the group IIC whose temperature of self ignition is higher than 135°C (T4) or 200°C.

Special precautions must be taken to ensure a safe and appropriate use of this equipment.

Please consult us or read the instruction manual previously.



Atex marking II 2 G Ex d IIC T3 and T4
EC type examination certificate : : LCIE 03 ATEX 6282X

Model Ex d IIC T3 (skin temperature of maxi 200°C on the heating element inside the steel casing with an ambient temperature from -20°C up to +40°C).

Model Ex d IIC T4 (skin temperature of maxi 135°C on the heating element inside the steel casing with an ambient temperature from -20°C up to +40°C).

Temperature class T3

Power. +5 -10%	L (mm)	Weight (kg)	Voltage	P/N.	Voltage	P/N.	Voltage	P/N.
500 W	612	10	230V Mono	6010-55				
750 W	612	12	230V Mono	6010-65	230V Tri	6010-68	400V Tri	6010-62
1250 W	902	18	230V Mono	6010-66	230V Tri	6010-69	400V Tri	6010-63
2000 W	1187	24	230V Mono	6010-67	230V tri	6010-70	400V Tri	6010-64

Temperature class T4

Power +5 -10%	L (mm)	Weight (kg)	Voltage	P/N.	Voltage	P/N.	Voltage	P/N
375 W	612	12	230V Mono	6010-35	230V Tri	6010-38	400V Tri	6010-42
650 W	902	18	230V Mono	6010-36	230V Tri	6010-39	400V Tri	6010-43
900 W	1187	24	230V Mono	6010-37	230V tri	6010-40	400V Tri	6010-44

ATEX RADIATORS WITH CONTROL THERMOSTAT AND SAFETY CUT OUT - Ex de



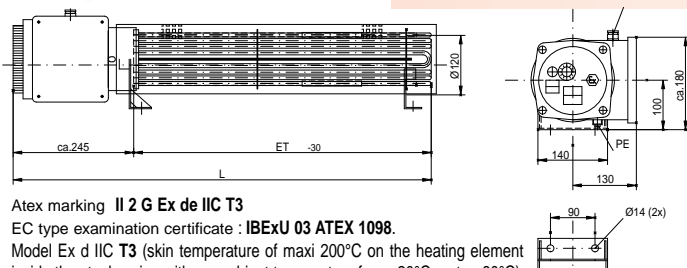
Room radiator type 6022 ATEX 94/9/CE certified, for heating of ATEX hazardous atmospheres (ambient temperature from -20°C up to 60°C, maximum humidity 95%). Built with a set of **heating pins ø 8,5 mm** mounted in a coated steel housing.

- Junction box IP 66 in painted cast-iron with cable gland.
- Control thermostat from 0 up to 50°C and safety cut-out.

Explosion-proof and increased safety equipment of category 2 for surface industries usable in risk areas 1 and 2, in gas environment of the group IIC whose temperature of self ignition is higher than 200°C(T3).

On request, this range of Atex radiators is also available in compliance with temperature class from T1 up to T6.

Special precautions must be taken to ensure a safe and appropriate use of this equipment. Please consult us or read the instruction manual previously.



Atex marking II 2 G Ex de IIC T3

EC type examination certificate : **IBExU 03 ATEX 1098.**

Model Ex d IIC T3 (skin temperature of maxi 200°C on the heating element inside the steel casing with an ambient temperature from -20°C up to +60°C).

Temperature class T3

Power. +5 -10%	L (mm)	ET (mm)	Voltage	P/N.	Voltage	P/N.
500 W	510	250	230V Mono	6022-01	400V Tri	
1000 W	660	400	230V Mono	6022-02	400V Tri	
1500 W	860	600	230V Mono	6022-03	400V Tri	
2000 W	960	700	230V Mono	6022-04	400V Tri	
3000 W	1260	1000	230V Mono		400V Tri	6022-05
4000 W	1760	1500	230V Mono		400V Tri	6022-06

FAN HEATERS

Fan heaters for wall mounting, or mounted on castors to heat premises with recirculated air (case in electro-galvanised steel, painted and stove-dried – double layer of thermal insulation).

Thermal safety device. protective grille and air deflector. Switch and thermostat on front panel with power on/off switch. Sound level at 1 m = 55 db(A).

IP 33.

Delivered with pair of wall brackets.



Dimensions : H = 480 mm - L = 400 mm

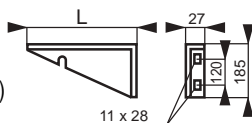
P = 400 mm (6 kW), 535 mm (12 kW), 670 mm (18 kW).

Accessories :

• Pair of wall brackets in painted sheet steel

P/N. 6046-98 L = 622 (6 -12 kW)

P/N. 6046-99 L = 690 (18 kW)



Mobile wheeled support P/N. 6041-98 (weight 9 kg)



Supply voltage : 400 V 3P.

P/N.	Power +5 -10%	Stages	Max. output (m ³ /h)	Weight (kg)
6046-06	6 kW	1/1	950	24
6046-12	12 kW	1/2 + 1/2	950	29
6046-18	18 kW	1/3 + 2/3	1750	34

Standard model to order.

Supply voltage : 230/400 V3P

P/N.	Power +5 -10%	Stages	Max. output (m ³ /h)	Weight (kg)
6046-56	6 kW	1/1	950	24
6046-62	12 kW	1/2 + 1/2	950	29
6046-68	18 kW	1/3 + 2/3	1750	34

Ambient thermostat for remote control of temperature :

P/N. 9014-20 • (see 'thermostats' section)

PORTABLE FAN HEATERS 2 to 15 kW

Portable floor-level fan heaters. Ideal top-up heating for industrial or agricultural sites.

Quick to set up (simply plug in), they can be moved quickly as the need arises.

This range of robust appliances at a competitive price meets the needs of many users while offering a quality technical specification.

2 switchable speeds on all modules : half/ full power switch, and integral blind ambient thermostat adjustable between 0° to 40°C without range.

IP 54.



P/N.	Max. power +5 -10%	Voltage (V)	Air output (m ³ /h)	Weight (kg)
6120-22	2 kW	230 1P	300	5,0
6120-25	5 kW	400 3P	400	8,0
6120-29	9 kW	400 3P	1300	13,5
6120-35	15 kW	400 3P	1300	15,5

Dimensions

6120-22	230 x 200 x 330
6120-25	250 x 250 x 420
6120-29	350 x 380 x 600
6120-35	350 x 440 x 600

WALL-MOUNTED FAN HEATERS 6 to 15 kW

Perfectly suited for the industrial environment, these fan heaters are designed to heat thermally insulated areas with little air change. In epoxy-coated steel sheet protected by a coat of lacquer, front panel in matt anodised aluminium.

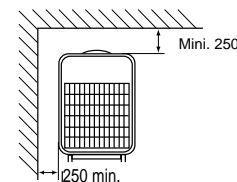
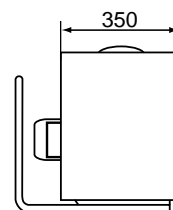
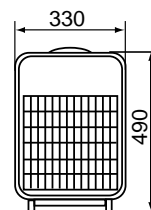
These fan heaters are fitted with an ingenious wall mounting device which allows a choice of three fixing angles.

A 'quick fit' plug allows easy connection to a remote control (see accessories).

6 kW models : 1 heating speed + ventilation only.

9 to 15 kW models : 2 heating speeds + ventilation only.

Protection level : IP34.



Installation :
Minimum distance (mm)

Reference P/N. follows Voltage

Power +5 -10%	230 V 3P	400 V 3P + N	400 V 3 P	440 V 3 P	Air output (m ³ /h)	Weight (kg)
6 kW	6129-11	6129-01	6129-21	6129-31	840	14,5
9 kW	6129-12	6129-02	6129-22	6129-32	840	14,5
12 kW	6129-13	6129-03	6129-23	6129-33	1050	16,5
15 kW	-	6129-04	6129-24	6129-34	1050	16,5

Accessories :

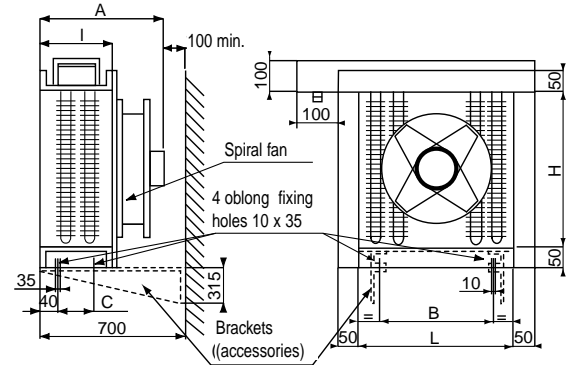
P/N : 6129-97

Remote digital electronic control allows the connection of a maximum of 6 air-blow heaters to select and see the temperature room (35 °C max), to start up the fan only or to start up the power with the fan together (2 speeds) and select the operating time from 1h to 9 hours.



INDUSTRIAL FAN HEATERS WITHOUT REGULATION

Fan heaters of simple and robust design for heating recirculated air in areas such as workshops, factory shopfloors, warehouses, refectories, sports halls, garages, shops, greenhouse... These appliances are not fitted with any control system. Max. working temperature : 45°C.



Specification of listed models with short delivery time :

Body in protected steel sheet. Stainless steel finned strip heaters (tube in AISI 312/Din 1.4541, fins in Z8 C17). Spiral fan with large blades, and motor (1000 or 1500 rpm, depending on model) with IP55 connection box. Safety thermostat set at 110°C, automatic reset. Connection of two power stages and safety thermostat in an IP30 box with 3 glands (2 for the power stages and 1 for the safety device).

P/N.	Power +5 -10%	Voltage (V Tri)	over heating (°C)	L (mm)	H (mm)	I (mm)	A (mm)	B (mm)	C (mm)	Stages (kW)	ØFan (mm)	Speed (t/mn)	run. output (m³/h)	Weight (kg)
6016-01	4,5	400	8	355	440	284	500	280	150	2,25+2,25	300	1000	1250	24
6016-02	6,75	400	12	355	440	334	550	280	200	2,25+4,50	300	1000	1200	27
6016-03	9	400	16	355	440	334	550	280	200	2,25+6,75	300	1000	1150	30
6016-04	11,25	400	20	355	440	334	550	280	200	4,50+6,75	300	1000	1100	32
6016-05	15,75	400	28	355	440	384	600	280	250	4,50+11,25	300	1000	1050	36
6016-06	18	400	32	355	540	384	600	280	250	6 +12	300	1000	1000	38
6016-07	21	400	26	395	540	384	605	280	250	6 +15	350	1500	1500	49
6016-08	24	400	30	395	540	384	605	280	250	9 +15	350	1500	1300	52
6016-09	27	400	12	435	540	384	605	350	250	9 +15	400	1500	2750	56
6016-10	30	400	13	435	540	384	615	350	250	12 +18	400	1500	2500	58
6016-11	33	400	14	435	540	434	665	350	300	12 +21	400	1500	2250	61
6016-12	36	400	16	435	540	434	665	350	300	12 +24	400	1500	2000	66
6016-13	40,5	400	13	515	790	384	675	350	250	13,50+27	450	1500	4000	74
6016-14	45	400	14	515	790	384	675	350	250	13,50+31,50	450	1500	3800	79
6016-15	49,5	400	16	515	790	384	675	350	250	18 +31,50	450	1500	3600	83
6016-16	54	400	17	515	790	384	675	350	250	18 +36	450	1500	3400	87
6016-17	58,5	400	15	555	790	384	695	350	250	22,50+36	500	1500	5200	99
6016-18	63	400	16	555	790	434	695	350	300	22,50+40,50	500	1500	5000	104
6016-19	67,5	400	17	555	790	434	695	350	300	22,50+45	500	1500	4800	109

Accessory : Pair of wall fixing brackets : P/N. 6059-01 for 30kW max.power models (Weight : 9 kg).

Other manufacturing options : Power, Voltage, number of stages, body material (stainless steel), sealing of the IP55 terminal box, etc.

CONVECTOR HEATERS

Convector heaters designed for heating houses, offices or technical sites open to the public. They are robust, pleasant to look at, and comply with European standards. Fitted with an on/off switch and an electronic ambient thermostat measuring the temperature at the air entry point, with the option of mechanical locking to a temperature range or to one set temperature. 'Frost guard' position set to approx. 7°C. Supply voltage: 230 V single phase.



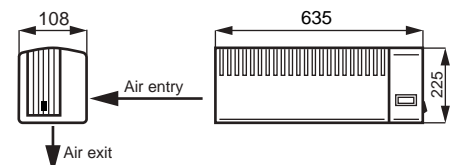
P/N.	Power +5 -10%	L (mm)	H (mm)	D (mm)	Weight (kg)
6045-10	1000 W	420	430	83	4,6
6045-15	1500 W	580	430	83	6
6045-20	2000 W	740	430	83	7,6

All these convector heaters are double insulated (class 2) , and can be installed near water draw-off points as defined in regulations.

Electronic ambient air control : see 'thermostats' section.

HOT AIR CURTAINS 3kW

Economical hot air curtains suitable for single doorways. The heater can be wall - or ceiling -mounted at a height between 1,8m and 3m above floor level and a minimum of 300mm from adjacent walls . Hot air curtains set up a thermal barrier between two places of very different temperature. They help to save heating and air-conditioning in the protected area. Mounting kit included.



P/N.	Power +5 -10%	Voltage V	No of stages	LOutput m³/h	Weight (kg)
6122-01	3 kW	230	1	250	7
6122-02	as 6122-01 but with electronic thermostat.				

HIGH TEMPERATURE HOT AIR GENERATORS

Bare-wire hot air generator. A method of heating dry air. A bare heating wire is in direct contact with the air. This reduces the start-up time of the heater considerably (working temperature is reached in a few seconds) and allows high temperatures to be achieved from a small appliance.

Supplied with or without a suitable blower, the appliance reliably produces the desired result.

Generators can be used in

- an open circuit (sending out hot air) or in a closed circuit (to heat another system via a heat exchanger or a double-skinned casing).
- Closed-circuit models are fitted with fans and an offset motor, so as to withstand a high return temperature. In open-circuit use, we recommend an air filter at the turbine entry, to prolong the life of the heater (by reducing accumulation of dirt, and corrosion of the heater).

Maximum output air temperature for generators : 250°C

Suction fans are designed to operate in open or closed circuit with an air inlet temperature of 160 ° C max

SUCTION FAN



HEATERS



GENERATOR



HEATERS

SUCTION FAN (50Hz)

P/N.	Power +5 -10%	Voltage (V)	Ø int (mm)	Length (mm)	P/N.	Power (kW)	Voltage (V)	Run. output (m ³ /h)
10755-01	1,5 kW	230 -1P	50	271	10746-01	0,4	220/380	360
10755-02	3 kW	230 -1P	50	271	10746-01	0,4	220/380	360
10756-01	3 kW	230 -1P	100	368	10747-01	0,75	220/380	900
10756-02	6 kW	230 -1P	100	368	10747-01	0,75	220/380	900
10756-03	3 kW	400 -3P	100	368	10747-01	0,75	220/380	900
10756-04	6 kW	400 -3P	100	368	10747-01	0,75	220/380	900
10756-05	9 kW	400 -3P	100	368	10747-01	0,75	220/380	900
10756-06	12 kW	400 -3P	100	368	10747-01	0,75	220/380	900
10757-01	18 kW	400 -3P	195	489	10748-01	3,7	220/380	2100
10757-02	24 kW	400 -3P	195	489	10748-01	3,7	220/380	2100
10757-03	36 kW	400 -3P	195	489	10748-01	3,7	220/380	2100

Accessories :

P/N.: 10748-02

Adapters to connect the motor fan type 10748 to "high power" heater type 10757

HOT AIR GENERATORS

These hot air generators are ideal for heating, drying, heat-shrinking or polymerisation.

Designed for industrial use, the AISI 321/Din 1.4541 stainless steel heating element heats air to a maximum of 90°C, propelled by the fan.

The heating part of these appliances is completely insulated.

Two models are available :

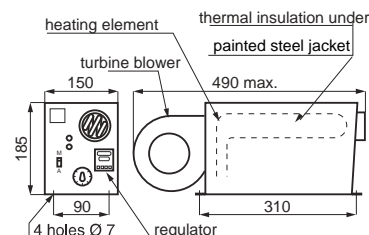
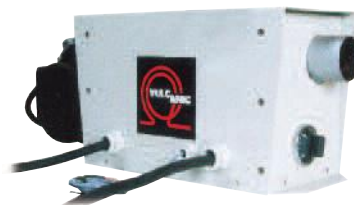
- fully equipped model, ready for use with temperature control and safety systems.

The PID controller drives a power unit, allowing a steady, precise output air temperature.

- unregulated model with safety system. A Pt100 ohms probe and a safety thermostat measure the output air temperature. The installer has to add an external control system (controller with Pt 100 input + power unit).

Minimum inlet temperature: 10°C.

Maximum outlet temperature: 90°C.



P/N.	Power +5 -10%	Voltage (V)	Regulator
10712-01	700 W	230 1P	Yes
10712-51	700 W	230 1P	No

Ø of outlet pipework : 50 mm (about)

Temperature rise is inversely proportional to output, which depends upon pressure loss in the receiver (tube + nozzle installed by the user).

Temperature rise inlet / outlet (°C)	80	70	60	50	45	40
Air output (m ³ /h)	23	26	30	37	41	46
Pressure loss in receiver (mm of CE)	90	85	70	50	25	0

To increase the air outlet temperature, it is therefore sometimes necessary to reduce the diameter of the outlet pipework.

PORTABLE HOT AIR GENERATORS

Portable equipment for heating and drying various parts, treatment of heat shrink to achieve bonding and welding of plastics.

Continuous adjustment using an electronic mounted in the handle

Supply voltage: 230 V 1P.

Power wire length = 3 m.

P/N 6042-02



P/N 6042-03



P/N.	Power. +5 -10%	Length (mm)	Air output (l/min)	Temp. (°C)	Weight (kg)
6042-02	3400 W	320	500 maxi	+20/+650	1,5
6042-03	1600 W	340	230 maxi	+20/+700	1,3

Blowing accessories:
Consult us



AIR HEATERS FOR CIRCULAR DUCTS

Electric duct heaters, for heating air to approx. 40°C in round air-conditioning ducts (diameter from 125 to 630mm) to a maximum pressure of 100mm WC and a minimum air speed of 2 m/s. Tubular sheathed elements stainless steel tube AISI 321/Din1.4541 in flat panel shape, mounted on an IP 30 cover in galvanised steel sheet.

2 sealing glands ISO 16 and ISO 20 Bis.

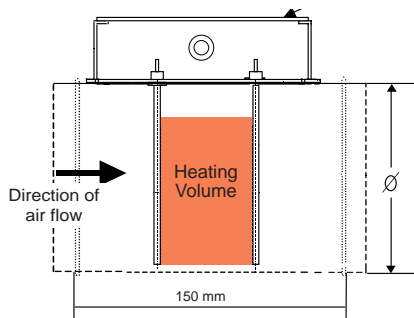
Supply voltage : 230 V 1P, 230 V 3P, 400 V 3Pi

In accordance with coupling and power selected.

Equipped with temperature limiter, bimetallic expansion type, with automatic reset preset to 90°C

Options :

- Stainless steel vessel.
 - Temperature limiter, bimetallic expansion type, with manual reset preset to 120°C
 - 2 temperature limiters, bimetallic expansion type, for air temperature alarms with 1 manual reset preset to 120°C and other one automatic reset preset to 90°C
- Diameter up to 600 mm-Power up to 27 kW with Longer length



Standard models (supplied with **connecting clips**) :

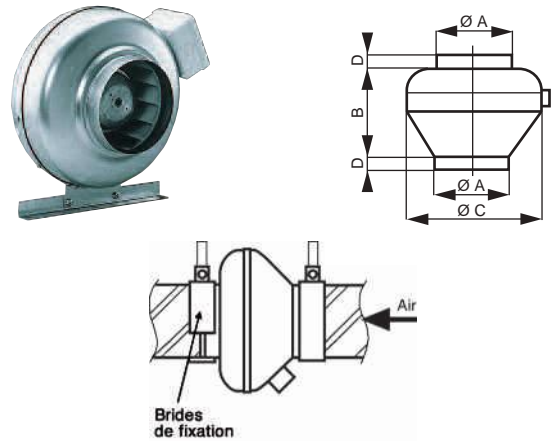
Power +5/-10 % (kW)	Duct diameter Ø (mm)								
	125	160	200	250	315	355	400	450	500
0,5	60155-01	60255-01	60355-01	<input type="checkbox"/>	<input type="checkbox"/>				
0,75	60155-02	60255-02	60355-02	60455-02	60555-02				
1,00		60255-03	60355-03	60455-03	60555-03	60655-03	<input type="checkbox"/>		
1,25				60455-04	60555-04	60655-04	<input type="checkbox"/>		
1,50		60255-05 60255-06	60355-05 60355-06	60455-05	60555-05 <input type="checkbox"/>	60655-05	60755-05	60855-05	
1,75					60555-07	60655-07	60755-07	60855-07	<input type="checkbox"/>
2,00				60455-08	60555-08	60655-08	60755-08	60855-08	60955-08
2,25			60355-09	60455-09	60555-09				
2,50				60455-10	60555-10	60655-10	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2,66							60755-11	60855-11	60955-11
3,00			60355-13	60455-13	60555-13	60655-13	<input type="checkbox"/>	60855-12	<input type="checkbox"/>
3,50				60455-14	<input type="checkbox"/>	<input type="checkbox"/>	60755-14	60855-14	60955-14
3,75				60455-15	60555-15	60655-15	<input type="checkbox"/>		
4,00					60555-16	60655-16	60755-16	60855-16	60955-16
4,50					60555-17	60655-17	60755-17	60855-17	60955-17
5,30					60555-18	60655-18	60755-18	60855-18	<input type="checkbox"/>
6,00					60555-19	60655-19	60755-19	60855-19	60955-19
7,50						60655-20			<input type="checkbox"/>
8,00							60755-21	60855-21	60955-21
9,00						60655-22	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10,50								60855-23	60955-23
12,00								60855-24	60955-24
13,50									60955-25

Available on request

Single phase : Main power in single phase, Duct heater with 1, 2 or 3 heating elements in 230V.
3 phases : Main power in 3 phases, Duct heater with 3 heating elements in 230V..

CENTRIFUGAL FANS FOR CIRCULAR DUCTS

Range of very compact fans (in galvanised steel) for round ducts. They can be installed at any point along a duct. IP 44.
They connect directly to standard ducting. Easy assembly and dismantling by means of fixing clamps.
Supply voltage : 230 V 1P 50 Hz.



P/N	ØA (mm)	Output* (m³/h)	Output under Δp (m³/h)	Max. (Pa)	Max. (°C)	Dimensions (mm)	Power (W)	Weight (kg)
60541-99	200	820	600	150	60°C	172 344 25	100	4,1
60541-98	200	960	500	300	60°C	172 344 25	146	4,8
60542-99	250	1100	580	300	55°C	172 344 25	210	5,0
60543-99	315	1115	680	300	50°C	172 402 30	224	5,7
60540-99	125	350	200	150	60°C	146 242 20	73	2,5
60540-98	160	490	300	150	60°C	130 272 25	75	2,8
60540-97	160	700	400	200	60°C	172 344 25	95	3,9

*Output to free air, with zero pressure loss

AIR DUCT HEATERS FOR RECTANGULAR DUCTS

Electric duct heater, for heating air to approx. 40 °C in rectangular ventilation ducts, with a maximum pressure of 100 mm WC and a minimum air flow speed of 2 m/s. These appliances are made of stainless steel finned strip heaters type 6004 (25 x 50) for model 6051 or type 6013 (40 x 80) for model 6052, mounted on a base plate with an IP 30 IK 7 cover in galvanised steel.

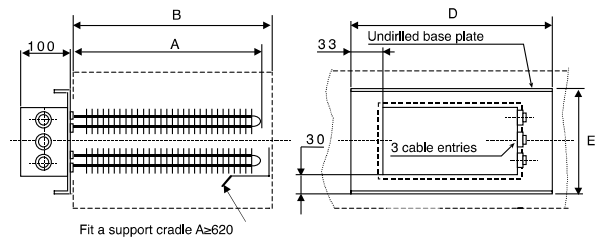
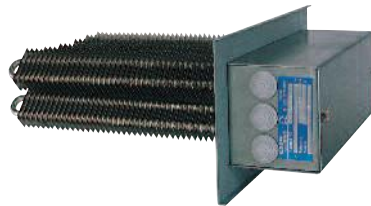
- a 90/100 °C safety thermostat with automatic reset.
- 3 entry points for cable, diameter 5 to 20 mm.

Wiring for 1 or 2 heating stages depending on model.
Supply voltage : 230 V 1P, 230 V 3P or 400 V 3P depending on connection and power required.

For large heaters, reinforce the internal edges with metal strips.

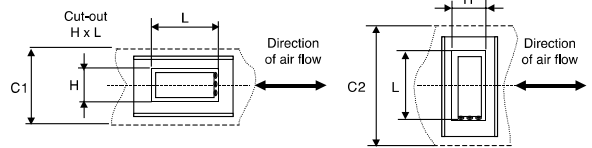
Model with 25 x 50 fins
Type 6051

Model with 40 x 80 fins :
Type 6052



Shallow duct fixing

Tall duct fixing



Appliances in stock :

Supplied unwired with instruction sheet and connection device allowing various combinations of power and voltage. Element voltage 230V 1P.

P/N	Max. power	Unitary. power of pins	A (mm)	Weigh (kg)
60512-08	2,25 kW	250 W	170	4,8
60512-19	6,00 kW	500 W	320	7,4
60513-28	11,25 kW	750 W	420	11
60513-39	18,00 kW	1000 W	520	14,4

ther manufacturing options :
power, voltage, IP55 connection box, vessel in stainless steel...

Short delivery time :

Supplied wired.

Réf.	ExD	HxL	C1	C2
60511-xx	170x235	120x140	150	250
60512-xx	170x395	120x300	150	400
60513-xx	220x395	170x300	200	400
60521-xx	170x373	110x290	150	400
60522-xx	220x373	160x290	200	400
60523-xx	285x373	225x290	265	400

P/N.	Puissance (kW)													
	Pins P. unit	Duct P. maxi	Pins P. unit	Duct P. maxi	Pins P. unit	Duct P. maxi	Pins P. unit	Duct P. maxi	Pins P. unit	Duct P. maxi	Pins P. unit	Duct P. maxi		
60511-xx	0,25	1	0,5	2	0,75	3	-	-	1	4	-	-		
60512-xx	0,25	3	0,5	6	0,75	9	-	-	1	12	-	1,5 18		
60513-xx	0,25	4,5	0,5	9	0,75	13,5	-	-	1	18	-	1,5 27		
60521-xx	-	-	1,25	3,75	-	-	2	6	-	-	2,5	7,5		
60522-xx	-	-	1,25	7,5	-	-	2	12	-	-	2,5	15		
60523-xx	-	-	1,25	11,25	-	-	2	18	-	-	2,5	22,5		
B mm	200		350		450		500		550		650		800	

These heaters are mounted on a duct of minimum depth B through a rectangular cut-out H x L (drawer method).

Spare parts :

Spare heating elements : see page finned strip heaters.

Safety thermostat, automatic resetting air limiter for temperature alarm 90°C, breaking capacity 10 A / 250 VAC, switch hysteresis 12°C. P/N. 53691-01.

PT 100 SENSORS WITH IP54 ALUMINIUM HEAD AND FLANGE

PT 100 ohm at 0°C class B sensing element, inside a AISI 316L /Din 1.4404 stainless steel sheath. Electrical connection by a 3 poles terminal block inside an IP 54 offset aluminium head, epoxy painted

Temperature range : - 50 to + 500°C (element)

The fitting flange is sliding.



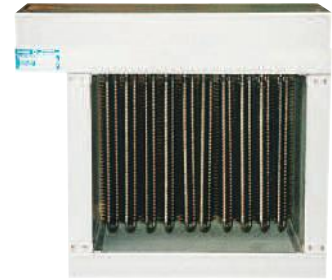
P/N.	Ø D (mm)	L (mm)	Weight (kg)
31118-01	6	250	0,1
31118-02	6	500	0,15

RECTANGULAR AIR DUCT HEATERS APPLICATIONS

Rectangular duct heaters offer a means of raising the temperature of air duct in circulation and are used in industrial processes or in building air-conditioning applications.

When the circuit is closed (recycled air), the temperature rise generated by the rectangular duct heater is limited to a few degrees.

When the circuit is open (lost air), this rise can be up to 400°C.



DEFINING YOUR RECTANGULAR AIR DUCT HEATER

Our standardised duct heaters are designed for heating dry or slightly humid, clean or slightly polluted air at a maximum pressure of 100 mm head. If our standardised duct heaters do not have all the criteria required for your application, we will build one specially for you.

List of main parameters needed to define a duct heater

- 1 – Rectangular duct heater model case drawer
- 2 – Quality of air to be heated dry air slightly damp there air not polluted
 air slightly polluted
- 3 – Air circulation : lost air recycled air
 recycled air with fresh air inlet temperature
- 4 – Min. air inlet temperature : _____ Maxi air outlet temperature : _____
- 5 – Nominal air flow (specifying the unit, m³/h, Nm³/h, kg/h...) : _____
- 6 – Duct heater power (W) : _____

If you do not know the power to be installed, the following formula will help you to determine it, mainly for open circuit (lost air) applications :

$$P = 0,349 \times Mq \times \Delta t$$

P = Power to be installed in W (allowing for a safety factor of 1,2)

Mq = Mass flowrate (kg/h) = flow volume (m³/h)x mass volume at desired temperature (kg/m³)

Δt = temperature rise between inlet and outlet of rectangular duct heater in °C

In case of closed circuit operation (lost air), although the same formula applies identically, the temperature rise is gradual and not in one go. When Δt is not known, to estimate the power to be installed, it is necessary to take the following parameters into consideration : specific calorific losses of enclosure, volume of air and mass of rooms to be heated, temperature rise time etc. ...

- 7 – Number of power stages : _____
- 8 – Power supply voltage (specify single phase or three phase) : _____
- 9 – Air passage section (Width in mm x height in mm) : _____
depth if required (mm) : _____
- 10 – Maximum operating pressure (while specifying the unit : mm de WC, Pa, mBar...) :
- 11 – Maximum permissible load losses in battery :
- 12 – Material of housing : protected steel
 304L Stainless steel
- 13 – Tightness of the battery case : IP 55 IP 30

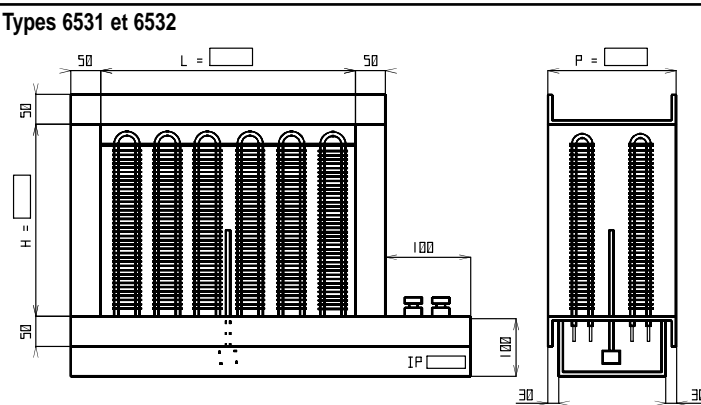
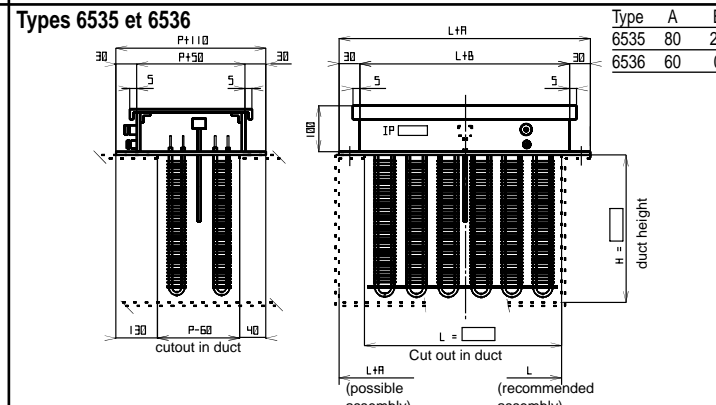
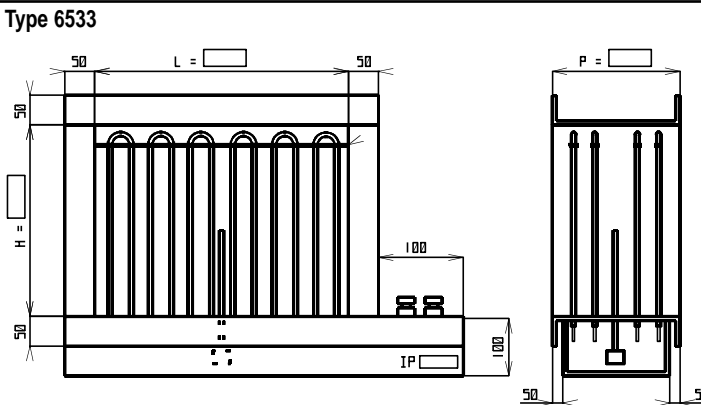
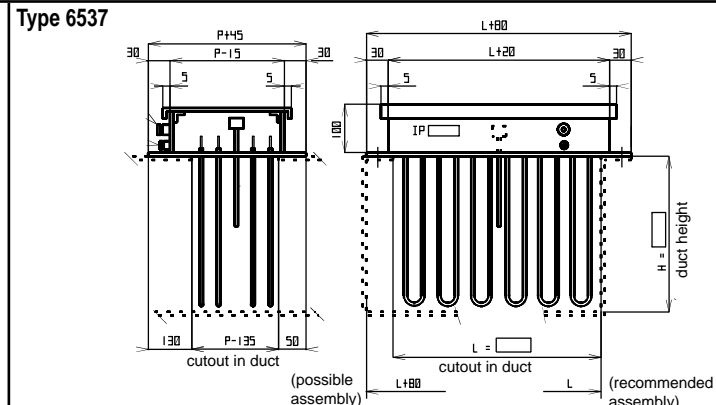
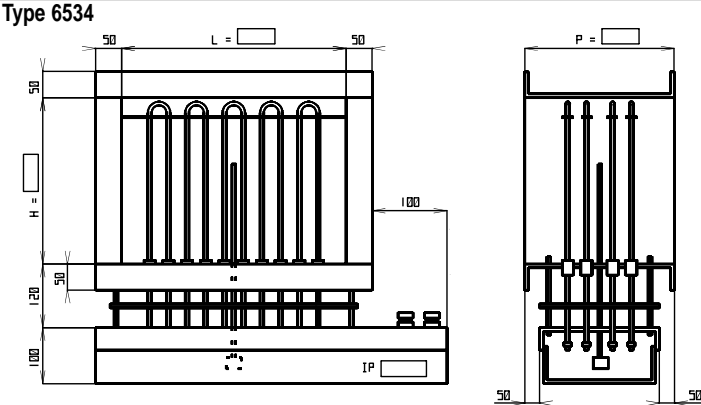
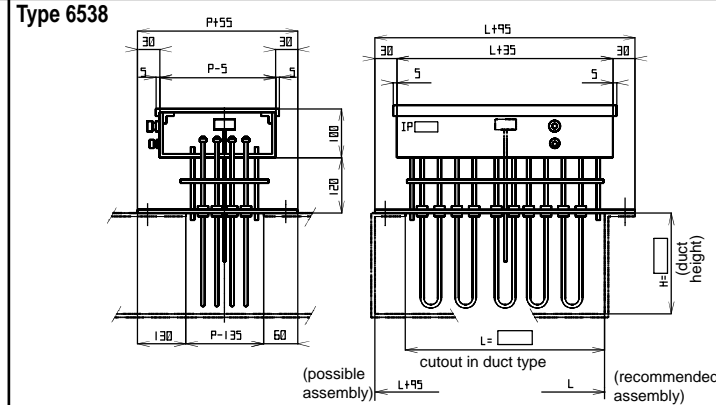
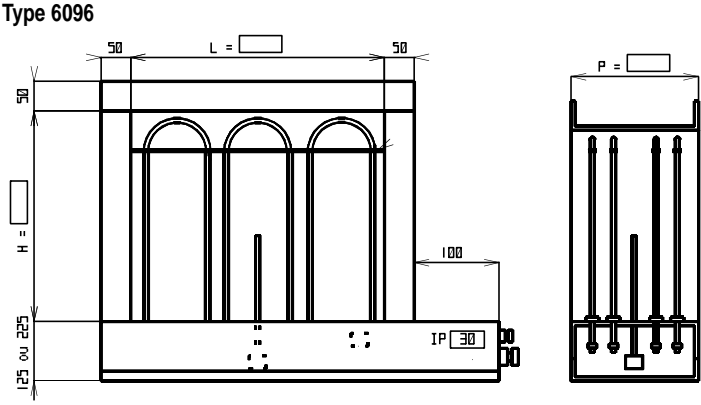
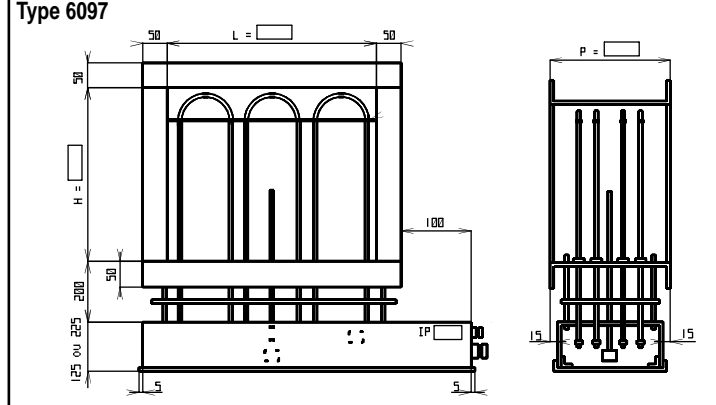
IDENTIFICATION OF THE RECTANGULAR DUCT HEATER MODELS BY TYPE NUMBER

Operating temperature	dry air	slightly damp or polluted air
temp. ≤ 110°C	6531/6532	6533/6096
110°C < temp. ≤ 200°C	6534	6534
110°C < temp. ≤ 300°C	6097	6097
Temp. > 300°C	consult us	consult us

Note : Compact rectangular duct heater type 6096 and 6097 have a high-power/ volume ratio. The particular positioning of the heating elements considerably improves thermal exchanges.

Type P/N. of case model	Pwr min (kW)	Pwr maxi (kW)	heated by	Type P/N. of drawer model	L (mm)	H (mm)	P (mm)	Min. air vessel (m/s)	Max. air vessel (m/s)	Geometry	Tightness IP of terminal box
6531	0,25	171	Finned strip heaters 25 X 50	6535	75 to 1635	190 to 1540	195 to 645	1,5	7	Rectangular	30 or 55
6532	1,25	285	Finned strip heaters 40 X 80	6536	130 to 1755	350 to 1510	225 to 810	2	7	Rectangular	30 or 55
6533	0,25	228	tubular elements Ø 10,2	6537	75 to 1795	210 to 1300	245 to 895	3	7	Rectangular	30 or 55
6534	0,25	228	tubular elements Ø 10,2	6538	75 to 1795	250 to 1620	245 to 895	2	7	Rectangular	20 or 55
6096	1,35	368	tubular elements Ø 16	-	125 to 1725	500 to 1500	120 to 900	3	7	Rectangular	30
6097	1,125	368	tubular elements Ø 16	-	125 to 1725	500 to 1500	120 to 900	2,5	7	Rectangular	20 or 55

All our standard rectangular duct heaters have a safety thermostat with automatic reset in a thermowell, a stuffing box per power stage and a stuffing box for the safety thermostat. Customer electric connection is directly to the coupling bars of the heating elements except for the 6096 and 6097 models of high-power levels where connection is to a terminal block. Boxed models can be mounted in a horizontal or vertical airflow duct. The drawer type rectangular duct heater can be assembled preferably with the heating elements in the vertical position. The attaching flanges of the boxed rectangular duct heater and drawers rectangular duct heater on supporting plate are not drilled. Counter drilling will be performed on site. All our models have a protected steel or stainless steel carcass.

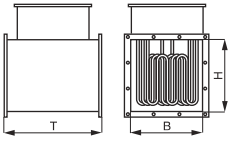
<p>Types 6531 et 6532</p> 	<p>Types 6535 et 6536</p>  <table border="1" style="float: right; margin-top: 10px;"> <thead> <tr> <th>Type</th> <th>A</th> <th>B</th> </tr> </thead> <tbody> <tr> <td>6535</td> <td>80</td> <td>20</td> </tr> <tr> <td>6536</td> <td>60</td> <td>0</td> </tr> </tbody> </table>	Type	A	B	6535	80	20	6536	60	0
Type	A	B								
6535	80	20								
6536	60	0								
<p>Type 6533</p> 	<p>Type 6537</p> 									
<p>Type 6534</p> 	<p>Type 6538</p> 									
<p>Type 6096</p> 	<p>Type 6097</p> 									

RECTANGULAR AIR DUCT HEATERS

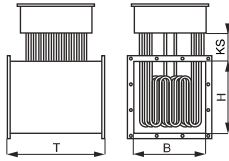
KS = 0 mm, T < 80°C

KS = 150 mm, 80°C < T < 150 °C

KS = 300 mm, T > 150 °C



Type 6545



Tubular heating elements, diameter 10,2 mm, material AISI 316 L / DIN 1.4404

Inlet / Outlet flange : circumferential flange, width 40 mm

Metric threaded cable entry glands, Cover : IP 52

Supply voltage 230/400 V

2 sensor thermowells, diameter 7,5 x 0,5 mm (material AISI 316 L/ DIN 1.4435), one connected to a heating element by a heat-transfer bridge

Max. working pressure 0,02 bar

All materials without certificate

Max. output temperature without cooling stretch (KS), 80 °C. (T> 80 °C with cooling stretch installed KS = 0 up to 80°C max.) ; KS = 150 mm 80°< T <150 °C KS= 300 mm,T >150 °C.

FLANGE AIR HEATERS

Designed for heating air or gas up to 150°C, depending on the selected material and the cooling stretch, minimum speed 3m/s, maxi operating pressure 0,2 bar. Duct heaters made in stainless steel AISI 304/DIN1.

4301 as EN 1092 standard flanges form F, DN 100 or 150, PN 10. Designed for horizontal mounting.

IP52 connection box fitted with a 30 / 300 °C adjustable thermostat and a safety cut out preset to 500°C.

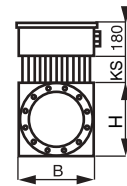
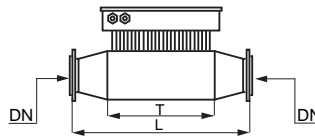
Voltage : 400V 3P



KS = 0 mm, T < 80°C

KS = 150 mm, 80°C < T < 150 °C

KS = 300 mm, T > 150 °C



CLR 210 x 210 DN 150

Type 6546

H x B: 210 x 210				Load n (W/cm ²)			
T (mm)	L (mm)	Rows of elements	Nbr. of elements	1	1,5	3	6
				Power (kW)			
300	900	3	3	0,7	1,0	2,0	4,0
300	900	6	6	1,4	2,0	4,0	8,0
300	900	9	9	2,1	3,0	6,0	12,0
500	1100	12	12	2,8	4,0	8,0	16,0
500	1100	15	15	3,8	5,0	10,0	20,0
500	1100	18	18	4,2	6,0	12,0	24,0
750	1350	24	24	5,6	8,0	16,0	32,0
750	1350	30	30	7,6	10,0	16,0	40,0
750	1350	36	36	8,4	12,0	24,0	48,0
1000	1600	39	39	8,8	13,0	26,0	52,0
1000	1600	42	42	9,5	14,0	28,0	56,0
1000	1600	48	48	11,2	16,0	32,0	64,0

CLR 285 x 285 DN150

Type 6547

H x B: 285 x 285				Load n (W/cm ²)			
T (mm)	L (mm)	Rows of elements	Nbr. of elements	1	1,5	3	6
				Power (kW)			
300	900	3	3	1,5	2,2	2,5	9,0
300	900	6	6	3,0	4,5	9,0	18,0
300	900	9	9	4,5	6,7	13,5	27,0
500	1100	12	12	6,0	9,0	18,0	36,0
500	1100	15	15	7,5	11,2	22,5	45,0
500	1100	18	18	9,0	13,4	27,0	54,0
750	1350	24	24	12,0	18,0	36,0	72,0
750	1350	30	30	15,0	22,4	45,0	90,0
750	1350	36	36	18,0	27,0	54,0	108,0
1000	1600	39	39	19,5	29,0	58,0	117,0
1000	1600	42	42	21,0	31,5	63,0	126,0
1000	1600	48	48	24,0	36,0	72,0	144,0

CLR 400 x 400 DN 250

Type 6548

H x B: 400 x 400				Load n (W/cm ²)			
T (mm)	L (mm)	Rows of elements	Nbr. of elements	1	1,5	3	6
				Power (kW)			
300	900	3	3	3,0	4,5	9,0	18,0
300	900	6	6	6,0	9,0	18,0	36,0
300	900	9	9	9,0	13,5	27,0	54,0
500	1100	12	12	12,0	18,0	36,0	72,0
500	1100	15	15	15,0	22,5	45,0	90,0
500	1100	18	18	18,0	27,0	54,0	108,0
750	1350	24	24	24,0	35,0	72,0	144,0
750	1350	30	30	30,0	45,0	90,0	180,0
750	1350	36	36	36,0	54,0	108,0	216,0
1000	1600	39	39	39,0	59,0	117,0	234,0
1000	1600	42	42	42,0	63,0	126,0	252,0
1000	1600	48	48	48,0	70,0	144,0	288,0

CLR 550 x 550 DN 400

Type 6549

H x B: 550 x 550				Load n (W/cm ²)			
T (mm)	L (mm)	Rows of elements	Nbr. of elements	1	1,5	3	6
				Power (kW)			
300	900	3	6	6,0	9,0	18,0	36,0
300	900	6	12	12,0	18,0	36,0	72,0
300	900	9	18	18,0	27,0	54,0	108,0
500	1100	12	24	24,0	36,0	72,0	144,0
500	1100	15	30	30,0	45,0	90,0	180,0
500	1100	18	36	36,0	54,0	108,0	216,0
750	1350	24	48	48,0	72,0	144,0	288,0
750	1350	30	60	60,0	90,0	180,0	360,0
750	1350	36	72	72,0	108,0	216,0	432,0
1000	1600	39	78	78,0	117,0	234,0	468,0
1000	1600	42	84	84,0	126,0	252,0	504,0
1000	1600	48	96	96,0	144,0	288,0	576,0

Tubular heating elements diameter 10,2 mm, material AISI 316 L / DIN 1.4404

Inlet / Outlet flange : Form F flanges, DN 100 or 150, PN 10

Metric threaded cable entry glands.

Cover : IP 52

Supply voltage 230/400 V

2 sensor thermowells, diameter 7,5 x 0,5 mm (material 1.4435), one connected to the heating element by a heat-transfer bridge

Max. working pressure 0,02 bar

All materials without certificate

Max. output temperature without cooling stretch(KS), 80 °C (T> 80 °C only with cooling stretch).



**ELECTRICAL HEATING AND COOLING
SOLUTIONS
FOR THE INDUSTRY**

VULCANIC SAS
ZI des Chanoux
48, rue Louis Ampère
F-93330 Neuilly sur Marne
France
Tel. : +33 1 49 44 49 20



VULCANIC SAS
ZI la Saunière
F-89600 Saint Florentin
France
Tel. : +33 1 49 44 49 20



VULCANIC UK Ltd
South Green Park Entreprise
Centre, Mattishall
NR20 3JY, Dereham Norfolk
United Kingdom
Tel. : +44 1603 340015



LOREME SAS
12, rue des Potiers d'Étain
Actipôle Borny
F-57071 Metz
France
Tel. : +33 3 87 76 32 51



VULCANIC SA
Heilig Hartstraat, 14
B-2600 Berchem
Belgium
Tel. : +32 3 286 70 30



RS ISOLSEC SAS
45, avenue des acacias
F-45120 Cepoy
France
Tel. : +33 2 38 85 62 62



VULCANIC TERMOELÉCTRICA SLU
Ctra. a Viérnoles, 32
E-39300 Torrelavega
Spain
Tel. : +34 942 80 35 35



VULCANIC GmbH
Donaustraße 21
D-63542 Hanau
Germany
Tel. : +49 6181 9503 0



RS ISOLSEC SLU
Ave Riu Mogent, 5
E-08170 Montornes del valles
Spain
Tel. : +34 93 568 73 10



VULCANIC Russia
105005 Moscow
radio street
house 24 building 1
Russia
Tel. : + 7 (903) 967-95-68



VULCANIC TRIATHERM GmbH
Flurstraße 9
D-96515 Sonneberg
Germany
Tel. : +49 3675 4083-0



www.vulcanic.com

