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Silicone rubber heating pads bonded on aluminium boards

Update 2019/11/03

Safety instructions for all industrial flat silicone rubber heaters described in this catalogue section

- Read the user manual before any use
- Protect the power supply circuit by a differential circuit breaker of 20mA sensitivity, with rating adapted to the model that must be connected to it.
- This supply circuit must be carried out by a qualified electrician and according to the local standards in force.
- The earth circuit must be compliant and connected.
- The heater must be disconnected when not used
- The heater must be disconnected during installation or de-installation.
-The heater must be stored in a dry place and protected from rodents and other animals during periods when it is not used.
- Connect the aluminum board to a grounding conductor.
- Do not cut or punch the surface.
- These appliances are not suitable for permanent outdoor use, and, upon their ingress protection rating (IP), must be protected from rain, dust and condensation.
- Do not operate above the rated safety temperature.
- Silicone heaters are not suitable for prolonged exposure to oils.
- The aluminum board must be in perfect contact with the surface to heat for all application with a surface power higher than 0.5W/cm². Use a thermal contact grease between both boards surface.
- These devices are not suitable for use in flammable or explosive areas.

NT3000SPH038A

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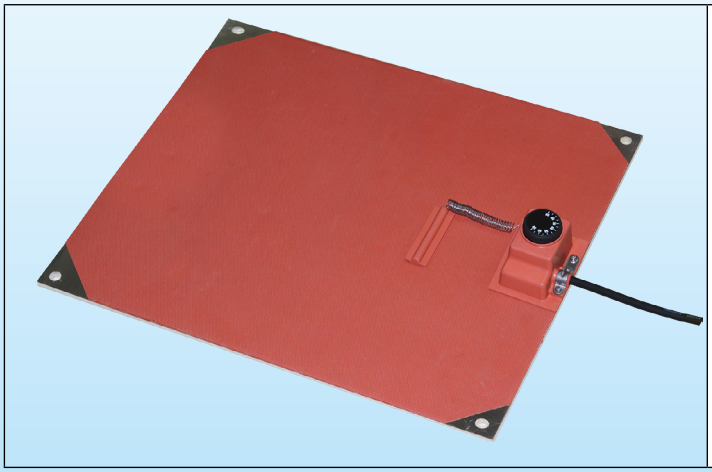
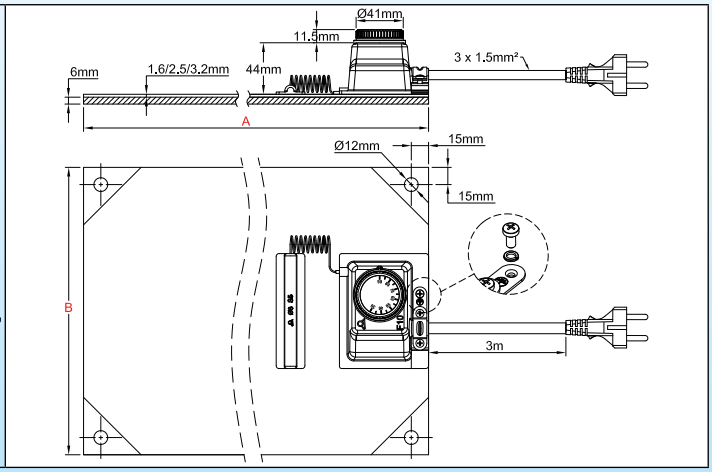
Contact us Web: www.ultimheat.co.th

Non flexible silicone heaters vulcanized on aluminium board, surface mounted adjustable thermostat.

Temperature limiters	Maximum temperature	Mounting	Temperature control	Silicone + aluminum thickness (mm)	Type
Optional	200°C	4 holes	Surface mounted thermostat	2.5 + 6	**9AK**





Main features

Non-flexible silicone rubber heaters are made of fiberglass reinforced laminated silicone rubber sheets, vulcanized together through heat and high pressure on both sides of an embedded specially formed heating wire element. Fiberglass-reinforced silicone rubber gives the heater dimensional stability.

The intimate bonding of the heater on a thick aluminum plate allows to increases the power surface load, and eases the mounting on flat surfaces in industrial applications

Silicone is used because of its high temperature resistance (Permanent temperature up to 200°C (390°F), high thermal conductivity (~7 10^{-4} W/cm.K) and good electrical insulation properties (~12KV/mm).

This series is distinguished by the use of a conventional thermostat mounted on the surface of the heating part, in a compact and economical design.

Other general particularities of these heaters are:
- Not affected by vibration or flexing,
- Lightweight,
- Comply with UL94-VO (flame retardant) and ROHS,
- Low smoke and low toxicity,
- Silicone is non-toxic, and moisture and chemical resistant.
- Very thin profile

Main applications

Silicone heating elements on aluminum plates are a simple and industrial solution for heating flat surfaces. They are sturdy, easy to install and heat quickly and evenly.

Some typical examples of applications are:

Heating of hoppers, electrical cabinets, hot plates for the food industry, reheating tank bottoms.
In addition to their temperature control system, they can receive temperature sensors, temperature limiters, thermal fuses.

Technical features

Mounting: By 4 holes dia. 12mm located at the 4 corners, at 15mm from edges.
Length (Dimension A): Upon customer request (minimum 300mm).
Width (dimension B): Upon customer request (minimum 100mm).
Ingress protection: IP54.
Minimum ambient temperature: -10°C (+15°F).
Voltage: 220-240VAC.
Power tolerance: ±10% at 20°C
Temperature control: Single pole bulb and capillary thermostat, adjustable from 20°C to 110°C (+50~230°F) or from 50 to 200°C (120-390°F). Rating 16A 230V (3600W).
Power density:
- 0.2 w/cm² (1.3W/in²) for plastic materials
- 0.75 w/cm² (4.8 w/inch²), for usual applications.
- 1 w/cm² (6.5 w/inch²) for fast heating applications.
- 1.4 w/cm² (9.1 w/inch²) for huge power applications

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Non flexible silicone heaters vulcanized on aluminium board, surface mounted adjustable thermostat.

Other values on request.
Thickness of the flexible silicone foil: 2.5mm
Thickness of the aluminum board: 6 mm (other values on request).
Quality control routine tests: Each element is 100% tested for continuity, resistance and insulation. Tests are made according to EN 60335-1 and EN 50106 standards. See technical introduction.
Dielectric Strength: 1750V AC.
Insulation resistance: ≥ 10 Megohms.
Operating temperature:
See in the technical introduction examples of the temperatures reached by these heaters. They represent the temperature that they may reach if they are not correctly installed.
Connection cable:
Insulated rubber power supply cable, for industrial environments, 3 x 1.5mm² (3xAWG15) length 3m, Euro plug. UL plug on request.
Options:
- Power supply 110/115V
- Power cord with industrial plug 2-pole + earth 16A CEE (IEC60309).
- Surface mounted temperature limiter.
- Surface mounted temperature sensor (Pt100, NTC, thermocouple).
- Grounded mesh wire shield layer.
- Silicone foam insulation layer vulcanized on the external surface.

Safety standards:

The heaters have been designed in compliance with EEC Low Voltage Directive (LVD) 2006/95/EC and EMC directive 2004/108/EC. They must be installed in accordance with all local applicable instructions, codes, and regulations.

Main parts numbers in 220/240V

Thermostat setting range	W/cm² (W/in²)	300x350mm	Power (Watts, 230V)	350x400mm	Power (Watts, 230V)	400x 450mm	Power (Watts, 230V)	500x600mm	Power (Watts, 230V)
20~110°C** (+50~230°F)	0.2 (1.3)	9AKB2GAB6A814F30	140	9AKB2GBC6A820F30	200	9AKB2GCD6A828F30	280	9AKB2GEG6A850F30	500
	0.75 (4.8)	9AKB8GAB6A832F30	320	9AKB8GBC6A845F30	450	9AKB8GCD6A862F30	620	9AKB8GEG6A8--F30	1100
	1 (6.5)	9AKBBGAB6A870F30	700	9AKBBGBC6A8A0F30	1000	9AKBBGCD6A8A4F30	1400	9AKBBGEG6A8B5F30	2500
	1.4 (9.1)	9AKBFGAB6A8A0F30	1000	9AKBFGBC6A8A4F30	1400	9AKBFGCD6A8A9F30	1900	9AKBFGEG6A8C5F30	3500
50 ~ 200°C** (120~390°F)	0.2 (1.3)	9AKB2LAB6A814F30	140	9AKB2LBC6A820F30	200	9AKB2LCD6A828F30	280	9AKB2LEG6A850F30	500
	0.75 (4.8)	9AKB8LAB6A832F30	320	9AKB8LBC6A845F30	450	9AKB8LCD6A862F30	620	9AKB8LEG6A8A1F30	1100
	1 (6.5)	9AKBBLAB6A870F30	700	9AKBBLBC6A8A0F30	1000	9AKBBLCD6A8A4F30	1400	9AKBBLEG6A8B5F30	2500
	1.4 (9.1)	9AKBFLAB6A8A0F30	1000	9AKBFLBC6A8A4F30	1400	9AKBFLCD6A8A9F30	1900	9AKBFLEG6A8C5F30	3500

* For UL plug instead of Euro plug, replace F3 with E3 in the part number.
** For knob printed in °F instead of °C, replace G with F or L with K in the reference.

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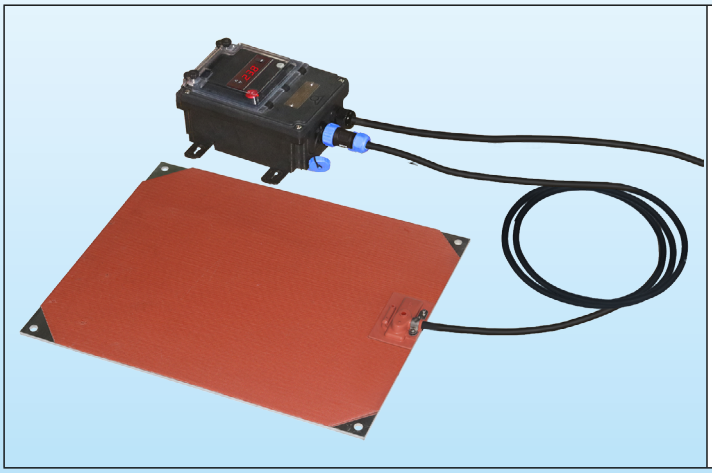
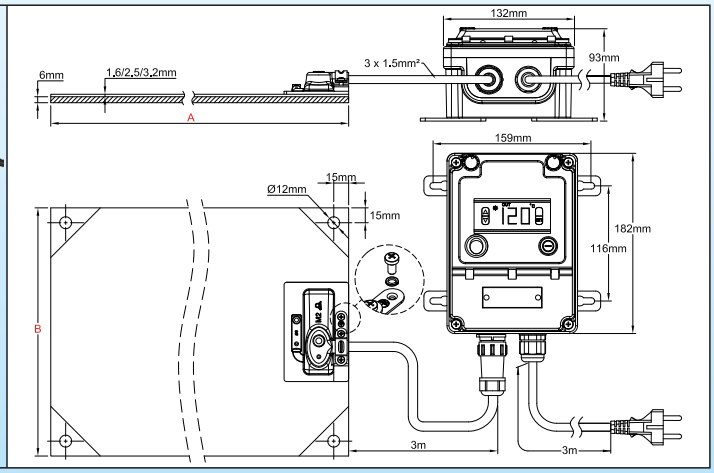
Non flexible silicone heaters vulcanized on aluminium board, with remote electronic temperature control, on-off action.

Temperature limiters	Maximum temperature	Mounting	Temperature control	Silicone + aluminum thickness (mm)	Type
Optional	200°C	4 holes	Electronic temperature controller, on-off action	2,5 + 6	**9AL**





Main features

Non-flexible silicone rubber heaters are made of fiberglass reinforced laminated silicone rubber sheets, vulcanized together through heat and high pressure on both sides of an embedded specially formed heating wire element. Fiberglass-reinforced silicone rubber gives the heater dimensional stability.

The intimate bonding of the heater on a thick aluminum plate allows to increases the power surface load, and eases the mounting on flat surfaces in industrial applications

Silicone is used because of its high temperature resistance (Permanent temperature up to 200°C (390°F), high thermal conductivity (~7 10^{-4} W/cm.K) and good electrical insulation properties (~12KV/mm)

This series is distinguished by the use of a remote electronic control system, on-off action, simple to use, with digital display of the measured value, connection by waterproof connector for easy disconnection of the heater, and IP65 ingress protection class for the whole assembly. This allows its use in most of industrial applications

Other general particularities of these heaters are:

- Not affected by vibration or flexing,
- Lightweight,
- Comply with UL94-VO (flame retardant) and ROHS,
- Low smoke and low Toxicity,
- Silicone is non-toxic, and moisture and chemical resistant.

Main applications

Silicone heating elements on aluminum plates are a simple and industrial solution for heating flat surfaces. They are sturdy, easy to install and heat quickly and evenly.

Some typical examples of applications are:

Heating of hoppers, electrical cabinets, hot plates for the food industry, reheating tank bottoms.
In addition to their temperature control system, they can receive temperature sensors, temperature limiters, thermal fuses.

Technical features

Mounting: By 4 holes dia. 12mm located at the 4 corners, at 15mm from edges.
Length (Dimension A): Upon customer request (minimum 300mm).
Width (dimension B): Upon customer request (minimum 100mm).
Ingress protection: IP65.
Minimum ambient temperature: -10°C (+15°F)
Voltage: 220-240VAC.
Power tolerance: ±10% at 20°C
Temperature control:
By electronic controller with digital display, On-Off action, set point adjustment range up to 120°C (NTC sensor), or 200°C (Pt100 sensor), relay output, located in an independent waterproof housing, designed for wall mounting. It is connected to the flexible silicone rubber heater by a cable equipped with a 5-pin waterproof quick connector, facilitating the connection and disconnection with the heater. It controls the temperature by means of a probe placed under a silicone boot on the outer surface of the heater.

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Panneaux chauffants non flexibles, vulcanisés sur plaque aluminium, avec régulation électronique à distance, action tout ou rien.

Maximum rating: 16A 230V (3600W).
Power density:
- 0.2 w/cm² (1.3W/in²) for plastic materials
- 0.75 w/cm² (4.8 w/inch²), for usual applications.
- 1 w/cm² (6.5 w/inch²) for fast heating applications.
- 1.4 w/cm² (9.1 w/inch²) for huge power applications

Other values on request.
Thickness of the flexible silicone foil: 2.5mm
Thickness of the aluminum board: 6 mm (other values on request).
Quality control routine tests: Each element is 100% tested for continuity, resistance and insulation. Tests are made according to EN 60335-1 and EN 50106 standards. See technical introduction.
Dielectric Strength: 1750V AC.
Insulation resistance: ≥ 10 Megohms.
Operating temperature:
See in the technical introduction examples of the temperatures reached by these heaters. They represent the temperature that they may reach if they are not correctly installed.
Connection cable:
Insulated rubber power supply cable, for industrial environments, 3 x 1.5mm² (3xAWG15) length 3m, Euro plug. UL plug on request.
Options:
- Power supply 110/115V
- Power cord with industrial plug 2-pole + earth 16A CEE (IEC60309).
- Surface mounted temperature limiter.
- Grounded mesh wire shield layer
- Silicone foam insulation layer vulcanized on the external surface.

Safety standards:

The heaters have been designed in compliance with EEC Low Voltage Directive (LVD) 2006/95/EC and EMC directive 2004/108/EC. They must be installed in accordance with all local applicable instructions, codes, and regulations.

Main parts numbers in 220/240V

Temperature setting range	W/cm² (W/in²)	300x350mm	Power (Watts, 230V)	350x400mm	Power (Watts, 230V)	400x 450mm	Power (Watts, 230V)	500x600mm	Power (Watts, 230V)
Part number with temperature controller adjustable up to 120°C (250°F)	0.2 (1.3)	9ALB2AAB6A814F30	140	9ALB2ABC6A820F30	200	9ALB2ACD6A828F30	280	9ALB2AEA6A850F30	500
	0.75 (4.8)	9ALB8AAB6A832F30	320	9ALB8ABC6A845F30	450	9ALB8ACD6A862F30	620	9ALB8AEA6A8--F30	1100
	1 (6.5)	9ALBBAAB6A870F30	700	9ALBBABC6A8A0F30	1000	9ALBBACD6A8A4F30	1400	9ALBBAEA6A8B5F30	2500
	1.4 (9.1)	9ALBFAAB6A8A0F30	1000	9ALBFABC6A8A4F30	1400	9ALBFACD6A8A9F30	1900	9ALBFAEA6A8C5F30	3500
Part number with temperature controller adjustable up to 200°C (390°F)	0.2 (1.3)	9ALB2BAB6A814F30	140	9ALB2BBC6A820F30	200	9ALB2BCD6A828F30	280	9ALB2BEG6A850F30	500
	0.75 (4.8)	9ALB8BAB6A832F30	320	9ALB8BBC6A845F30	450	9ALB8BCD6A862F30	620	9ALB8BEG6A8A1F30	1100
	1 (6.5)	9ALBBBAB6A870F30	700	9ALBBBBC6A8A0F30	1000	9ALBBBCD6A8A4F30	1400	9ALBBBEG6A8B5F30	2500
	1.4 (9.1)	9ALBBLAB6A8A0F30	1000	9ALBBLBC6A8A4F30	1400	9ALBBLCD6A8A9F30	1900	9ALBBLEG6A8C5F30	3500

* For UL plug instead of Euro plug, replace F3 with E3 in the part number.

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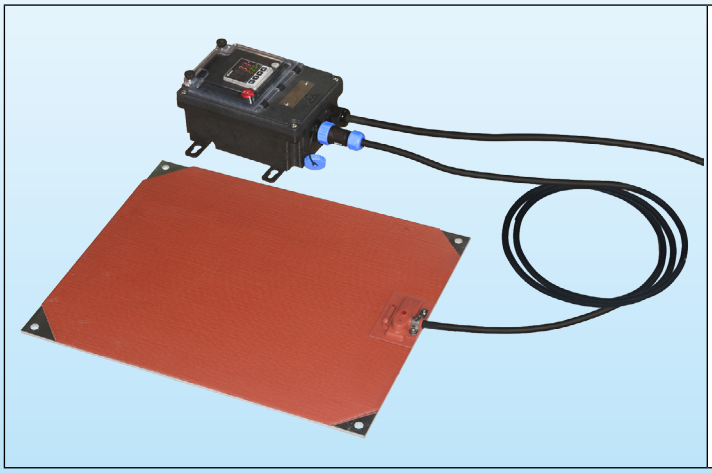
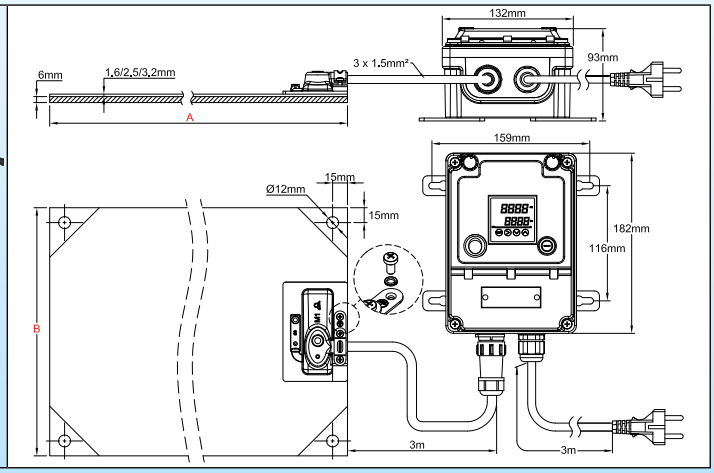
Non flexible silicone heaters vulcanized on aluminium board, with remote electronic temperature control, double display, PID action.

Temperature limiters	Maximum temperature	Mounting	Temperature control	Silicone + aluminum thickness (mm)	Type
Optional	200°C	4 holes	Electronic temperature control, PID action	2.5 + 6	**9AM**





Main features

Non-flexible silicone rubber heaters are made of fiberglass reinforced laminated silicone rubber sheets, vulcanized together through heat and high pressure on both sides of an embedded specially formed heating wire element. Fiberglass-reinforced silicone rubber gives the heater dimensional stability.
The intimate bonding of the heater on a thick aluminum plate allows to increases the power surface load, and eases the mounting on flat surfaces in industrial applications.
Silicone is used because of its high temperature resistance (Permanent temperature up to 200°C (390°F), high thermal conductivity (~7 10^{-4} W/cm.K) and good electrical insulation properties (~12KV/mm).
This series is distinguished by the use of a remote electronic control system, with PID action and automatic adjustment of parameters, with digital display of the measured value and digital display of the set point, connection by waterproof connector for easy disconnection of the heater, and IP65 ingress protection class for the whole assembly. This allows its use in most of industrial applications.
Other general particularities of these heaters are:
- Not affected by vibration or flexing,
- Lightweight,
- Comply with UL94-VO (flame retardant) and ROHS,
- Low smoke and low Toxicity,
- Silicone is non-toxic, and moisture and chemical resistant.

Main applications

Silicone heating elements on aluminum plates are a simple and industrial solution for heating flat surfaces. They are sturdy, easy to install and heat quickly and evenly.

Some typical examples of applications are:

Heating of hoppers, electrical cabinets, hot plates for the food industry, reheating tank bottoms.
In addition to their temperature control system, they can receive temperature sensors, temperature limiters, thermal fuses.

Technical features

Mounting: By 4 holes dia. 12mm located at the 4 corners, at 15mm from edges.
Length (Dimension A): Upon customer request (minimum 300mm).
Width (dimension B): Upon customer request (minimum 100mm).
Ingress protection: IP65.
Minimum ambient temperature: -10°C (+15°F)
Voltage: 220-240VAC.
Power tolerance: ±10% at 20°C.
Temperature control: Controller with double display, of process value and of set-point, located in an independent waterproof housing, designed for wall mounting. It is connected to the flexible silicone rubber heater by a cable equipped with a 5-pin waterproof quick connector, facilitating the connection and disconnection with the heater. It controls the temperature by means of a probe placed under a silicone boot on the outer surface of the heater.
Action: PID with automatic parameters adjustment by auto-tune function.

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Non flexible silicone heaters vulcanized on aluminium board, with remote electronic temperature control, double display, PID action.

Sensor input: Pt100
Power output: solid state relay, maximum 16A 230V.
Alarm: 3A 230V relay.
Display: 4 digits display configurable in °C or °F
Power supply: AC 220-230V 50-60Hz.
Accuracy: ±1°C (±2°F) or 0.3% ES± one digit.
Self-testing: open sensor circuit.
Ambient temperature: -10 to 60°C, 20 to 85% relative, humidity, non-condensing.
Temperature display range: Configurable
Resolution: 0.1°
Read instruction manual before the setting of this temperature controller.
Power density:
- 0.2 w/cm^2 (1.3W/in²) for plastic materials
- 0.75 w/cm^2 (4.8 w/inch^2), for usual applications.
- 1 w/cm² (6.5 w/inch^2) for fast heating applications.
- 1.4 w/cm² (9.1 w/inch^2) for huge power applications

Other values on request.
Thickness of the flexible silicone foil: 2.5mm
Thickness of the aluminum board: 6 mm (other values on request).
Quality control routine tests: Each element is 100% tested for continuity, resistance and insulation. Tests are made according to EN 60335-1 and EN 50106 standards. See technical introduction.
Dielectric Strength: 1750V AC.
Insulation resistance: ≥ 10 Megohms.
Operating temperature:
See in the technical introduction examples of the temperatures reached by these heaters. They represent the temperature that they may reach if they are not correctly installed.
Connection cable:
Insulated rubber power supply cable, for industrial environments, 3 x 1.5mm² (3xAWG15) length 3m, Euro plug. UL plug on request.
Options:
- Power supply 110/115V
- Power cord with industrial plug 2-pole + earth 16A CEE (IEC60309).
- Surface mounted temperature limiter.
- Grounded mesh wire shield layer
- Silicone foam insulation layer vulcanized on the external surface

Safety standards:

The heaters have been designed in compliance with EEC Low Voltage Directive (LVD) 2006/95/EC and EMC directive 2004/108/EC. They must be installed in accordance with all local applicable instructions, codes, and regulations.

Main parts numbers in 220/240V

W/cm² (W/in²)	300x350mm	Power (Watts, 230V)	350x400mm	Power (Watts, 230V)	400x 450mm	Power (Watts, 230V)	500x600mm	Power (Watts, 230V)
0.2 (1.3)	9AMB2CAB6A814F30	140	9AMB2CBC6A820F30	200	9AMB2CCD6A828F30	280	9AMB2CEG6A850F30	500
0.75 (4.8)	9AMB8CB6A832F30	320	9AMB8CBC6A845F30	450	9AMB8CCD6A862F30	620	9AMB8CEG6A8A1F30	1100
1 (6.5)	9AMBBCAB6A870F30	700	9AMBBCBC6A8A0F30	1000	9AMBBCCD6A8A4F30	1400	9AMBBCEG6A8B5F30	2500
1.4 (9.1)	9AMBBCCB6A8A0F30	1000	9AMBBCBC6A8A4F30	1400	9AMBBCCD6A8A9F30	1900	9AMBBCEG6A8C5F30	3500

* For UL plug instead of Euro plug, replace F3 with E3 in the part number.

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