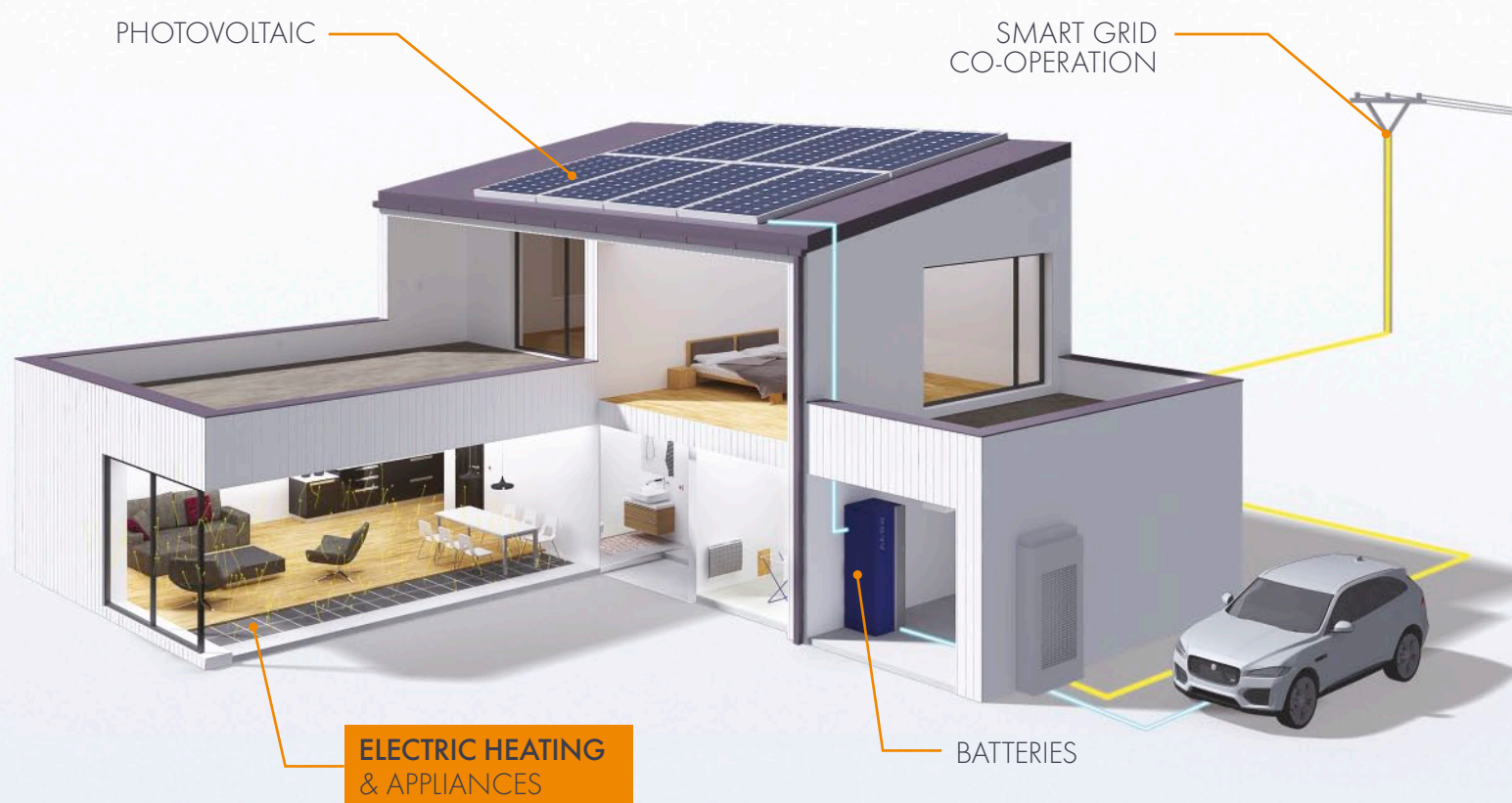
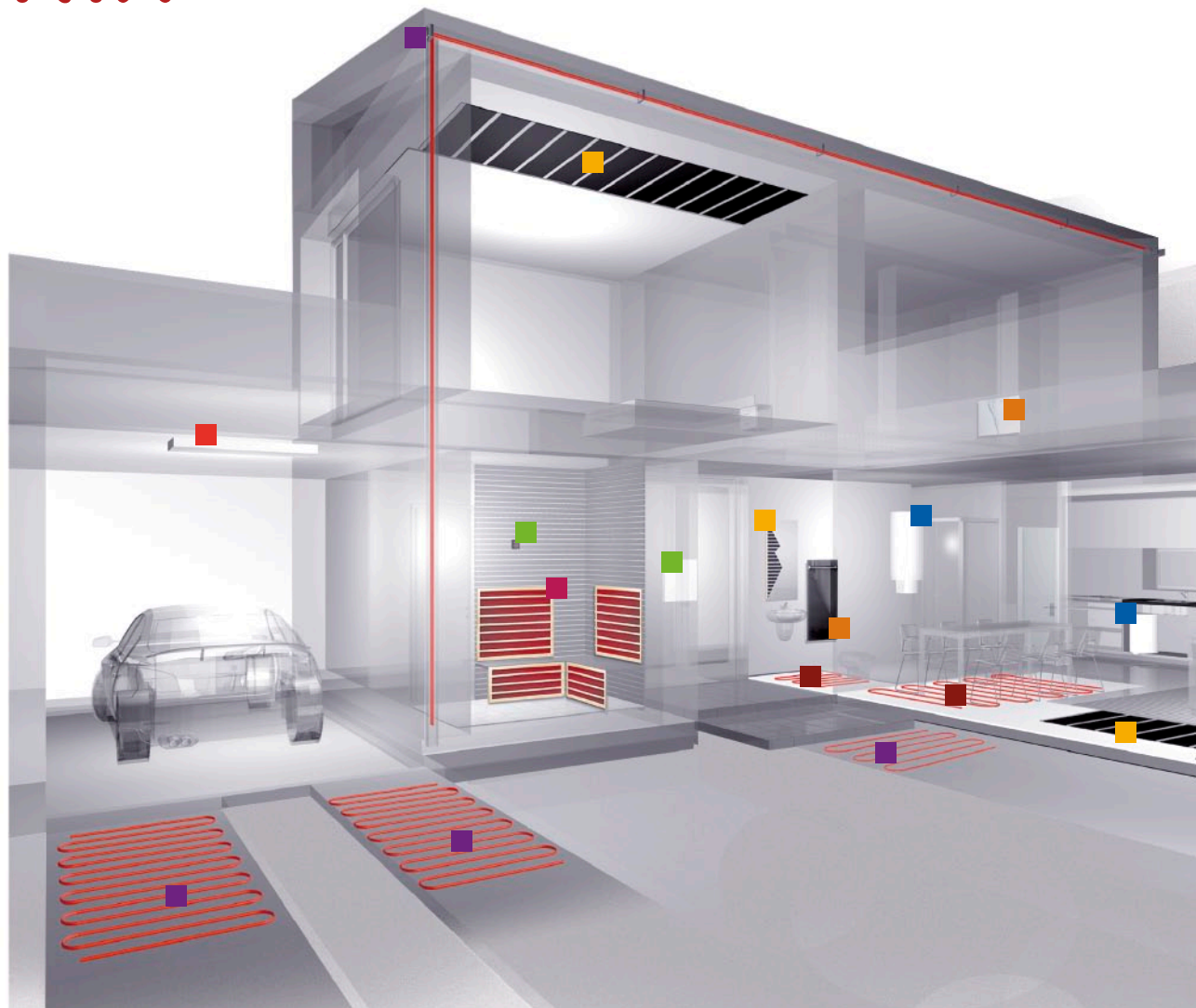


THE FUTURE IS ELECTRIC



PRODUCT CATALOGUE

ONLY THE SUN DOES IT BETTER...

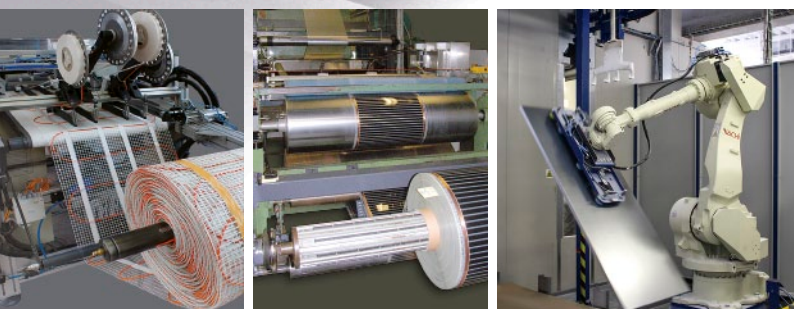
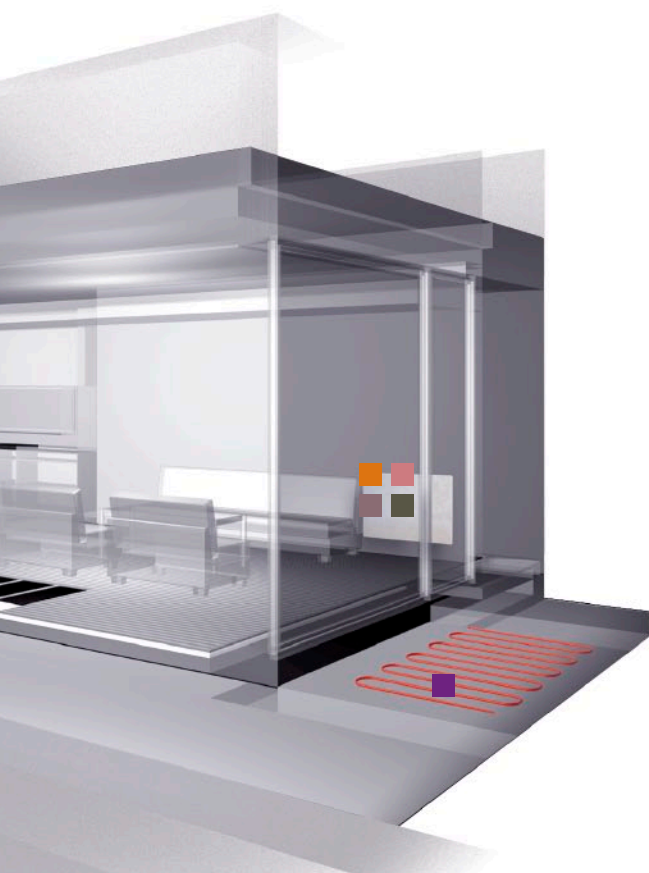


Fenix was founded in 1990 as one of the first private companies in the Czech Republic following the "Velvet" Revolution. The first items produced were the successfully marketed ECOSUN electric radiant heating panels, however, as market demand increased these products were followed by ECOFLEX electric convectors, ECOFLOOR heating cables and mats and ECOFILM heating films. The company also offers a wide range of supplementary products including heating system controls, cable kits and cable mats. With the increase in demand the structure of the company developed – for the reason of retaining maximum flexibility a holding company structure was chosen, with individual and independent members.

The following companies were incorporated successively:

- Fenix s.r.o.** – plant producing electrical heating systems;
- Fenix Trading s.r.o.** – trading company; **Fenix Slovakia s.r.o.** – production and trading company, representing FENIX in Slovakia; Fenix Group a.s. – a company which provides property management and services (strategic planning, administration of property, economic and financial services);
- Flexel International Ltd.** – manufacturing and trading company located in the United Kingdom. In 2008 FENIX Holding acquired the production and trading company **Demista Ltd.** – manufacturer of special applications, such as mirror demisting heaters, vivarium heaters, caravan and mobile home heating equipment. At the end of 2009/in early 2010 Fenix Holding acquired two other production and trading companies: **ACSO SAS.** – production and trading company with its headquarters in France; **CEILHIT S.L.U.** – producer of heating cables and trading

SPECIALISTS IN RADIANT HEATING



company with its headquarters in Spain, covering the market in Spain, Portugal and South America. **Konsulent Team A/S** – trading company with its headquarters in Norway has become the member of the Fenix Group a.s. from January 2014. **Fenix Deutschland GmbH** – new member of the Fenix Group since February 2018 – Trading company with headquarters in Germany. **Fenix Polska Sp. z o.o.** – new member of the Fenix Group since February 2019 – Trading company with its headquarters in Poland. Presently, the company **Fenix Holding s.r.o.** is one of the largest European producers of surface electric heating systems, and currently exports to 70+ countries worldwide.

ECOSUN – radiant heating panels
low and high temperature radiant ceiling panels
pages 4–9

ECOSUN NATURAL – ceramic radiant panels
MR – marble radiant panels
with perfect imitation of natural stone
for residential, commercial and individual applications
page 10

GR – glass radiant panels for residential,
commercial and individual applications
pages 11–12

ECOFLOOR – heating cable systems
heating cable circuits and cable mats,
complete floor heating installation kits,
deicing gutter and eaves trough de-icing, snow melting,
de-icing of outdoor surfaces, frost protection of pipes
pages 14–28

ECOFILM – heating film systems
E-set – underfloor heating, kit for DIY installation
F – underfloor heating films
C – radiant ceiling heating films
MHF – mirror fogging prevention
pages 30–33

ULTRATHERM – heating for vivariums
and terrariums
pages 34–35

ECOFLEX – electric convectors
classic and glass convection heaters
pages 37–38

THERMOSTATS AND CONTROLS
regulation units, control units,
room and floor sensors,
and regulators for reduction
of main circuit breaker value
pages 39–41

SUPPLEMENTARY PRODUCTS
hand dryers, tubular heating elements
page 42

Principle of infrared heating

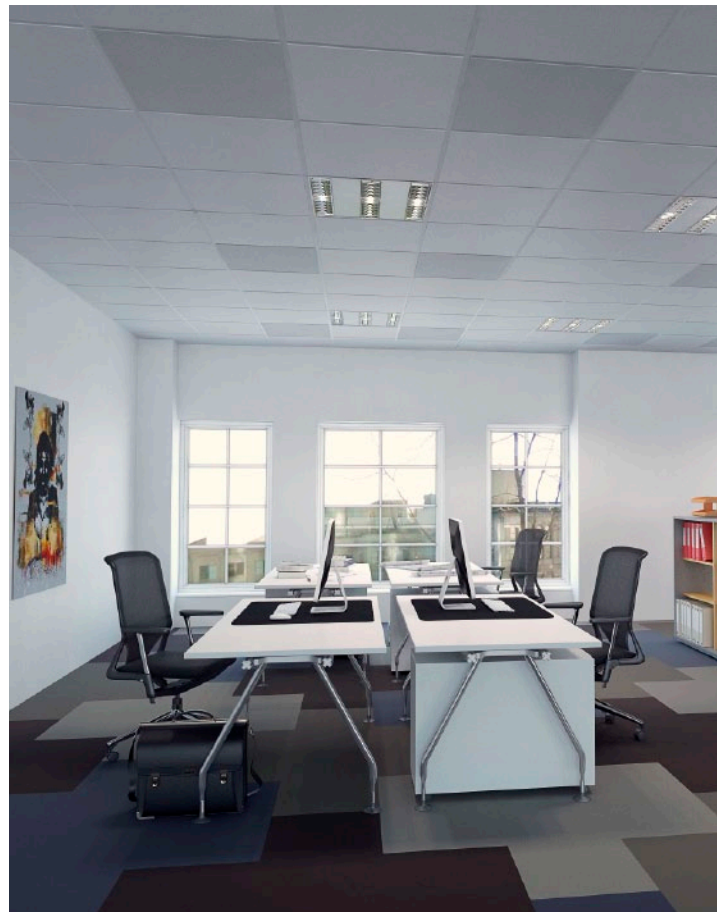
Whereas in **convection heating** the air is warmed by a convector which then transfers heat as it flows over the objects that are to be heated (walls, furniture), **Radiant heating** panels transfer heat mainly through radiant energy. Upon encountering objects (walls, furniture, floors), radiant energy is partially reflected (approx. 15%) while the majority (approx. 85%) is absorbed by the objects. This radiant energy is converted to heating energy as it raises the temperature of the objects, which then transfer heat to the cooler air by convection.

Thanks to unique Silicating technology, high temperature radiant panels reach a high emissivity of up to 0.98 μ .



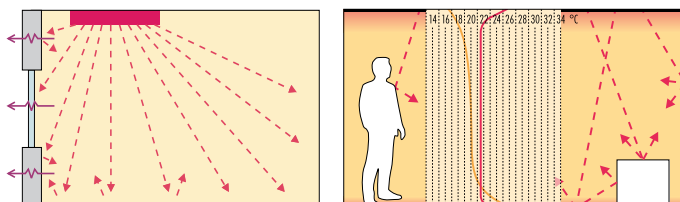
The principles mentioned create the following advantages:

- the surface of the radiant panel generates a heat flow whose spectrum is in the wavelength not greater than 5 micrometers and is thus absorbed to a large degree by the human body: people are therefore heated in a manner similar to the objects in the room.
- when the radiant heat flow increases the temperature of the objects in the room to 20–22 °C, comfort conditions are achieved even with air temperatures of 18–19 °C which can lead to energy savings of 18–24%.
- radiant panels permit the temperature distribution in a room to be more vertically balanced giving a 1–2 degree difference between the floor and the ceiling (for convection heating the difference is given as 1 °C per metre of height, 30–50 cm of height).
- there is lower circulation of dust therefore dust particles due to Brownian motion, thus reducing the risk of illnesses – asthma, mucous membrane infection, etc.
- increased wall temperatures mean a lower possibility of surface condensation, although the humidity in the room is not lowered.
- glass is not “transparent” (we might say “transthermant”) when it comes to radiation with wavelengths over 3 and thus the radiant flow is not lost through windowpanes.
- the panels do not require maintenance

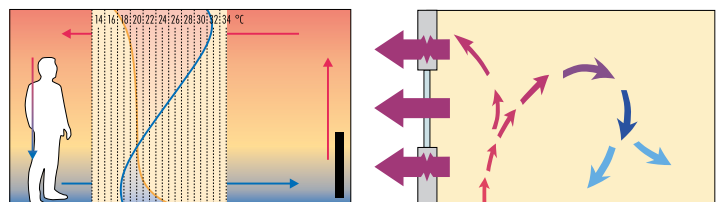


Unique technologies

Fenix utilises unique state-of-the-art technology in respect of the finished panel surfaces. (Thermoquartz and Thermocrystal for low temperature panels and Silicating for high temperature panels).




Radiant heating by ECOSUN



Convection heating


LOW TEMPERATURE RADIANT PANELS

ECOSUN G – a glass radiant panel derived from GR panels. Slim profile – just 20 mm (panel with frame). The panel is supplemented with thermal insulation, with a frame from eloxed aluminium and versatile fixtures which enable installation both on a wall (vertically) and on the ceiling (horizontally). Protection class II; length of supply cables 2 m with plug connection. Option of installing on a class C or D flammable base.

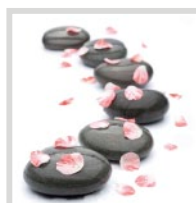
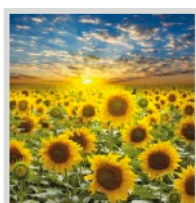
	TYPE	[W]	[V]	Rating	Dimensions [mm] *	Weight netto [kg]	Recommended installation	Quantity on pallet	Cat. No.
	ECOSUN G 300 white	300	230	IP 44	600×600×30	7.3	for ceiling min. 2.5 m, or on the wall	30	5437110
	ECOSUN G 600 white	600			1200×600×30	13.6		15	5437112
	ECOSUN G 850 white	850			1200×800×30	16.5		15	5437114
	ECOSUN G 300 black	300			600×600×30	7.3		30	5437116
	ECOSUN G 600 black	600			1200×600×30	13.6		15	5437118
	ECOSUN G 850 black	850			1200×800×30	16.5		15	5437120
	ECOSUN G 300 mirror	300			600×600×40	9.8		30	5437126
	ECOSUN G 600 mirror	600			1200×600×40	18.9		15	5437128
	Ceiling fixing frame for ECOSUN G 300								
Ceiling fixing frame for ECOSUN G 600/850									5401199

* Thickness includes mounting fixture, which is an inseparable part of the panel.

ECOSUN G glass radiant panels with printed surfaces – it is rather an innovation applied to our current ECOSUN G glass panels.


 See our web Gallery	TYPE	[W]	[V]	Rating	Dimensions [mm] *	Weight netto [kg]	Recommended installation	Quantity on pallet	Cat. No.
	ECOSUN G 300 with print	300	230	IP 20	600×600×30	7.3	for ceiling min. 2.5 m, or on the wall	30	5437471
	ECOSUN G 600 with print	600			1200×600×30	13.6		15	5437473

* Thickness includes mounting fixture, which is an inseparable part of the panel.



See our web Gallery.


ECOSUN E – an alternative version of the ECOSUN G glass radiant panel. Slim profile – just 20 mm (panel with frame). For this panel, the front glass has been substituted by a panel with a plastic powder coating; is suitable e.g. for health care applications. Protection class II; length of supply cables 2 m with plug connection. Option of installing on a class C or D flammable base.


	TYPE	[W]	[V]	Rating	Dimensions [mm] *	Weight netto [kg]	Recommended installation	Quantity on pallet	Cat. No.	
	ECOSUN E 300 white	300	230	IP 44	600×600×30	5.9	for ceiling min. 2.5 m, or on the wall	30	5437140	
	ECOSUN E 600 white	600			1200×600×30	10		15	5437142	
	ECOSUN E 850 white	850			1200×800×30	9.55		15	5437145	
	Ceiling fixing frame for ECOSUN E 300									5401195
	Ceiling fixing frame for ECOSUN E 600/850									5401199


* Thickness includes mounting fixture, which is an inseparable part of the panel.

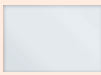



ECOSUN GS – a glass radiant panels, which combine the elegant design of frameless GR panels and the versatility of ECOSUN panels – the brackets enable the installation of the GS panel on the wall (vertically) and on the ceiling (horizontally). In rooms with limited space such as the bathroom is adapted the type of ECOSUN GS 500, which with its dimensions fits to vertical installation. The panel is fitted with a thermal fuse. Protection class II. The supply leads of the panels are fitted with plugs. Length of supply cables is 1,9 m.


		TYPE	[W]	[V]	Rating	Dimensions [mm] *	Weight netto [kg]	Recommended installation	Quantity on pallet	Cat. No.	
 White Black		ECOSUN GS 300 white	300	230	IP 44	585×585×39	9.7	for ceiling min. 2.5 m (GS 300, GS 500, GS 600)	30	5437148	
		ECOSUN GS 500 white	500			1200×400×39	14.05		15	5437180	
		ECOSUN GS 600 white	600			1185×585×39	17.6		15	5437150	
		ECOSUN GS 850 white	850			1185×785×39	21.85		15	5437152	
		ECOSUN GS 300 black	300			585×585×39	9.7		30	5437154	
		ECOSUN GS 500 black	500			1200×400×39	14.05		15	5437182	
		ECOSUN GS 600 black	600			1185×585×39	17.6		15	5437156	
		ECOSUN GS 850 black	850			1185×785×39	21.85		15	5437158	
		ECOSUN GS 300 red	300			585×585×39	9.7		for ceiling min. 3 m (GS 850)	30	5437185
		ECOSUN GS 500 red	500			1200×400×39	14.05			15	5437178
ECOSUN GS 600 red	600	1185×585×39	17.6			15	5437195				
ECOSUN GS 300 basalt	300	585×585×39	9.7			30	5437186				
ECOSUN GS 500 basalt	500	1200×400×39	14.05			15	5437179				
ECOSUN GS 600 basalt	600	1185×585×39	17.6			15	5437196				
ECOSUN GS 300 platinum gray	300	585×585×39	9.7			or on the wall	30	5437187			
ECOSUN GS 500 platinum gray	500	1200×400×39	14.05				15	5437181			
ECOSUN GS 600 platinum gray	600	1185×585×39	17.6				15	5437197			
ECOSUN GS 300 graphite	300	585×585×39	9.7				30	5437188			
ECOSUN GS 500 graphite	500	1200×400×39	14.05				15	5437183			
ECOSUN GS 600 graphite	600	1185×585×39	17.6				15	5437198			
ECOSUN GS 300 mirror	300	585×585×41	11.55				30	5437160			
ECOSUN GS 500 mirror	500	1200×400×41	16.5				15	5437184			
ECOSUN GS 600 mirror	600	1185×585×41	21.15			15	5437162				
Ceiling fixing frame for ECOSUN GS 300									5401195		
Ceiling fixing frame for ECOSUN GS 500									5401196		
Ceiling fixing frame for ECOSUN GS 600									5401197		
Ceiling fixing frame for ECOSUN GS 850									5401198		
Supports for ECOSUN GS									5401193		


Red Basalt


Platinum gray Graphite


Mirror


Supports

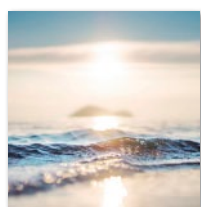


* Thickness includes mounting fixture, which is an inseparable part of the panel.

ECOSUN GS glass radiant panels with printed surfaces – it is rather an innovation applied to our current ECOSUN GS glass panels.

TYPE	[W]	[V]	Rating	Dimensions [mm] *	Weight netto [kg]	Recommended installation	Quantity on pallet	Cat. No.
ECOSUN GS 300 with print	300	230	IP 44	585×585×39	9.7	for ceiling min. 2.5 m or on the wall	30	5437494
ECOSUN GS 600 with print	600			1185×585×39	17.6		15	5437496

* Thickness includes mounting fixture, which is an inseparable part of the panel.



See our web Gallery.


STAINLESS STEEL TOWEL RAIL FOR ECOSUN GS/NATURAL

– these towel rails are designed as an accessory for GS/NATURAL radiant panels. Mostly used as an accessories for bathrooms.

TYPE	Cat. No.
stainless steel towel rail GS/NATURAL (GS500W/N400W)	single 5437850
	double 5437852
stainless steel towel rail GS (GS300W/GS600W)	single 5437842
	double 5437844




ECOSUN U, U+ – universal panel for living and non-living spaces, possibly mounted onto ceilings or into suspended ceilings. Class I. **Basic colour:** white (RAL 9016) **Connection cable:** 100 cm

	TYPE	[W]	[V]	Rating	Dimensions [mm]	Weight netto [kg]	Recommended clearance [m]	Qty on pallet	Cat. No.
	ECOSUN 300 U	300	230	IP 44	592×592×30	5.0	from 2.5 m	40	5401037
	ECOSUN 600 U	600			1192×592×30	9.4	from 2.5 m	20	5401047
	ECOSUN 700 U	700				9.4	from 2.7 m	20	5401171
	ECOSUN 300 U+	300			592×592×30	5.0	from 2.5 m	40	5401161
	ECOSUN 600 U+	600			1192×592×30	9.4	from 2.5 m	20	5401162
	ECOSUN 700 U+	700				9.4	from 2.7m	20	5401163
	ECOSUN 850 U+	850			1192×800×30	12.6	from 3 m	15	5401174

Type U+ for ceiling and wall installation, fitted with a thermal fuse. A ceiling frame for hanging is included with the product.


ECOSUN BASIC – “smooth” versions of ECOSUN U+ panels. The Basic panel type doesn't have the Thermocrystal surface finish, only a resistant white powder plastic coating with an orange peel structure. The absence of the Thermocrystal surface finish results in a partial decrease in the radiant component in favour of convection heat transfer. However, the smooth surface is considerably easier to maintain and clean. ECOSUN Basic is therefore particularly suitable for health care institutions or for users with asthma problems or allergies. Class I. **Colour:** only white (RAL 9010)

	TYPE	[W]	[V]	Rating	Dimensions [mm]	Weight netto [kg]	Recommended clearance [m]	Qty on pallet	Cat. No.
	ECOSUN 300 BASIC	300	230	IP 44	592×592×30	5.0	from 2.5 m	40	5401154
	ECOSUN 600 BASIC	600			1192×592×30	9.4	from 2.5 m	20	5401156
	ECOSUN 850 BASIC	850			1192×800×30	12.6	from 3 m	15	5401158

The panel is fitted with a supply lead for connection to a wiring box, and a ceiling mounting frame comes with the product as standard. Thanks to a thermal fuse, the panel is also suitable for wall and ceiling installation.


ECOSUN C/VT – heating panels only for mounting into suspended ceilings. Class I.

Basic colour: white (RAL 9016)

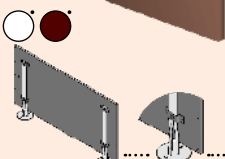
	TYPE	[W]	[V]	Rating	Dimensions [mm]	Weight netto [kg]	Recommended clearance [m]	Qty on pallet	Cat. No.
	ECOSUN 300 c 600/VT	300	230	IP 20	574×574×35	5.1	min. 2.5 m	40	5401065
	ECOSUN 600 c 600/VT	600			574×1174×35	10.2	min. 2.5 m	20	5401075

ECOSUN K+ – heating panel used for warming church pews, desks in offices and administrative buildings. They can be hung on a wall in the standard way; for installation on the ceiling it is necessary to order a ceiling frame. Class I.

Basic colour: brown (0245), white (RAL 9016) **Connection cable:** 75 cm for 100–270 K+, 120 cm for 330–400K+

	TYPE	[W]	[V]	Rating	Dimensions [mm]	Weight netto [kg]	Recommended clearance [m]	Qty on pallet	Cat. No. / colour	
	ECOSUN 100 K+	100	230	IP 44	500×320×30	2.1	vertical or horizontal position	45	5401200	5401202
	ECOSUN 200 K+	200			750×320×30	3.1		45	5401205	5401207
	ECOSUN 270 K+	270			1000×320×30	3.9		30	5401210	5401212
	ECOSUN 330 K+	330			1250×320×30	5.4		30	5401215	5401217
	ECOSUN 400 K+	400			1500×320×30	6.4		30	5401220	5401222
Ceiling fixing frame for ECOSUN 100 K+, 200 K+, 270 K+, 330 K+, 400 K+										

ECOSUN IKP, IN, IN-2 – panels for industrial and agricultural applications (i.e. in workshops, greenhouses, livestock facilities); for installation on the ceiling it is necessary to order a ceiling frame. Class I. **Colour:** brown (0245), white (RAL 9016) / IKP 750W only white (RAL 9010) smooth version **Connection cable:** 100 cm


	TYPE	[W]	[V]	Rating	Dimensions [mm]	Weight netto [kg]	Recommended clearance [m]	Qty on pallet	Cat. No. / colour		
	ECOSUN 750 IKP	750	230	IP 54	1192×592×30	8.8	2.5–3.0	20	–	5401177	
	ECOSUN 700 IN	700		IP 66	1192×592×30	8.7	2.8–3.3	20	5401181	5401180	
	ECOSUN 700 IN-2	700		IP 66, E Ex 2			3.0–3.5	20	5401186	5401185	
	Ceiling fixing frame for 700 IN, IN-2									5401190	
	Ceiling fixing frame for IKP									5401191	
	Supports for ECOSUN 750 IKP									5401193	

Colours are available to order (for an additional fee)



HIGH TEMPERATURE RADIANT PANELS


ECOSUN S+ / S+Anticor – for industrial halls, gyms, halls, workshops, with a rating that corresponds to the given environment. Suitable for drying of buildings. Class I. Rating **IP 44**. **Basic colour:** white (RAL 9002). For spaces with higher humidity – agricultural structures, washing facilities, panels are produced in a corrosion-proof version. S+Anticor (RAL 9002).

	TYPE	[W]	[V]	Weight netto [kg]	Quantity on pallet	Recommended clearance [m]	Dimensions [mm]	Cat. No.	
	ECOSUN S+ 06 short	600	230	4	68	According to individual conditions, for full area 5 – 8 m, zonal 3.4 – 4.5 m	650×250×60	5401537	S+ Anticor
	ECOSUN S+ 08 short	850						5401538	
	ECOSUN S+ 09 / Anticor	900		7.8	58		1550×150×60	5401540	5401552
	ECOSUN S+ 12 / Anticor	1200						5401542	5401554
	ECOSUN S+ 18 / Anticor	1800	230 / 400 2N	12.2	39		1550×250×60	5401544	5401556
	ECOSUN S+ 24 / Anticor	2400						5401546	5401558
	ECOSUN S+ 30 / Anticor	3000	230 / 400 3N	17	26		1550×350×60	5401548	5401560
	ECOSUN S+ 36 / Anticor	3600						5401550	5401562
	Corrective varnish for the lamellas of ECOSUN high-temperature panels								2451213


ACCESSORIES

FOR LOW TEMPERATURE PANELS


ALUMINIUM FRAME – is intended for ECOSUN panels and has a purely aesthetic function. The body of an ECOSUN panel is composed of two parts riveted together. Neither the gap formed by the connection of the front and rear parts nor the riveting itself are usually particularly visible in the case of ceiling installation. However, if required the panel can be fitted with this aluminium frame, which covers the join.

	AL frame	Cat. No.
	for ECOSUN 300 U/U+	5401228
	for ECOSUN 600/700 U/U+	5401229


FLUSH MOUNT FRAME – enables the installation of ECOSUN U into plasterboard and plaster fibreboard suspended ceilings in such a way that the panels are on the same level as the ceiling. The frame solves not only the visual aspect of the ends of the edges of the suspended ceiling, but also the necessary distance between the panel and the ceiling structure. **Basic colour:** white (RAL 9016)

	Flush mount frame	Cat. No.
	for ECOSUN 300 U/U+/BASIC	5401224
	for ECOSUN 600/700 U/U+/BASIC	5401225
	for ECOSUN 850 U+/BASIC	5401226

CABLE SUSPENSION SYSTEM – for low-temperature panels

	Cable suspension system	Cat. No.
	for ECOSUN U, U+, K+, IKP, IN, G, E, GS	5401223


ECOSUN SPACING SET – to install ECOSUN GS/G/E on a ceiling made of plasterboard/fiberboard;

	ECOSUN spacing set	Cat. No.
	for ECOSUN GS/G/E	5401227

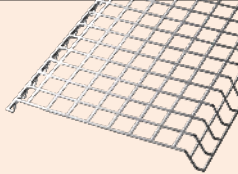


FOR HIGH TEMPERATURE PANELS


TILTABLE BRACKET – this tiltable bracket enables the installation of ECOSUN S+ / Anticor panels at an angle, and thus the aiming of the heat flow at the required area. The bracket can be used for ceiling as well as wall installation; the package contains 1 pair of brackets (two pieces).

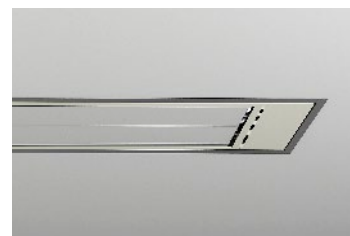
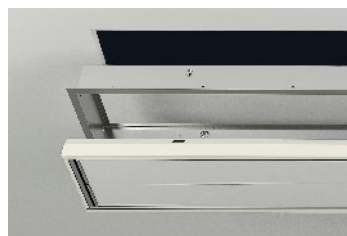
	Tiltable bracket	Cat. No.
	for ECOSUN S+	5401785
	for ECOSUN S+ Anticor	5401787

PROTECTIVE GRILLE – the protective grille protects the lamellas of ECOSUN S+ high-temperature panels against mechanical damage (for example, by a ball in a gym) and simultaneously prevents objects from coming into direct contact with the hot surface of the heating lamellas.

	Protective grille	Cat. No.
	for ECOSUN S+ 09–12	5401790
	for ECOSUN S+ 18–24	5401792
	for ECOSUN S+ 30–36	5401794

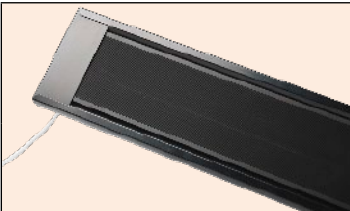
FLUSH MOUNT FRAME – the flush mount frame enables the installation of ECOSUN S+ into plasterboard and plaster fibreboard suspended ceilings in such a way that the heating lamellas are on the same level as the ceiling. The frame solves not only the visual aspect of the ends of the edges of the suspended ceiling, but also the necessary distance between the panel and the ceiling structure.

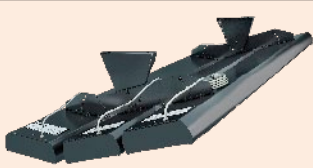
	Flush mount frame	Cat. No.
	for ECOSUN S+ 18 / S+ 24 (RAL 9002)	5401802

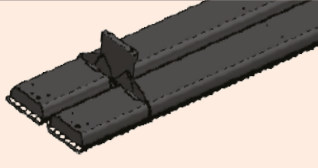


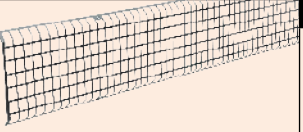
TERRACE HEATERS

ECOSUN TerraceHeaters are designed for the zonal heating of winter gardens, enclosed and roofed balconies and terraces, garden tents, churches, etc. – i.e., applications where they are protected against direct contact with the effects of the weather. The min. height at which such panels can be installed is 1.8 m above the floor (the lower edge of the panel); for panels installed on the ceiling there must be a min. gap of 30 cm between the ceiling and the upper edge of the panel. **2 m cold lead with plug.** Rating **IP 45**. Tilttable brackets are included with the product.

	TYPE	[W]	[V]	Weight netto [kg]	Quantity on pallet	Recommended clearance [m]	Dimensions [mm]	Cat. No.
	TH 1000	1000	230	4.2	68	min. 1.8 m	1080×140×45	5401350
	TH 1500	1500		6.5	68		1580×140×45	5401353

	Cat. No.
 Group bracket for TH	5401780

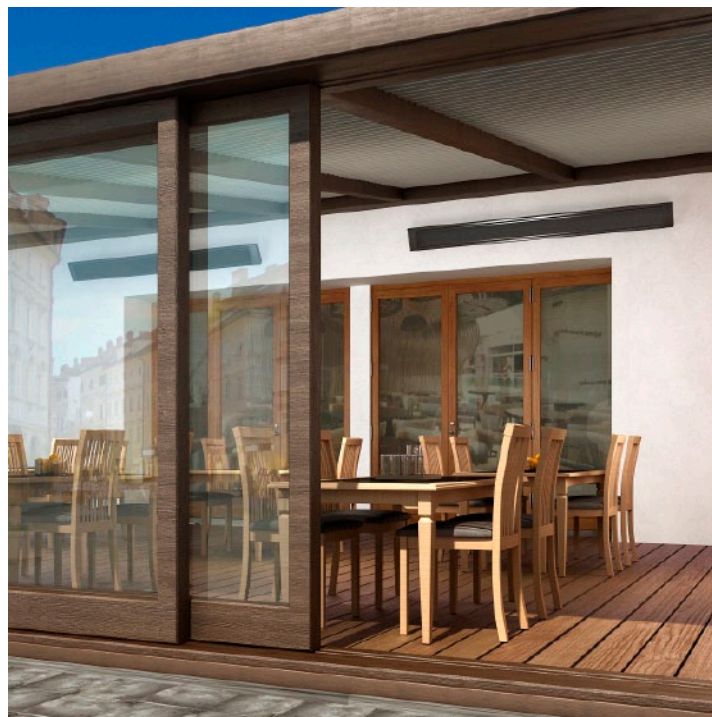
	Cat. No.
 Two-leaf hinge for TH	5401779

	Cat. No.
 Protective grille for TH 10	5401781
Protective grille for TH 15	5401782

RADIANT HEATER FOR CHURCH PEWS

ECOSUN CH (Church Heater) panels are designed for the heating of church pews with the heater placed below the pew seat. The product features a protective grille which prevents the user from coming into contact with the heating lamellas. The panel cover, protective grille and heating lamellas are **mat black**, and thus blend in very well with the dark wood of the pews without detracting from the dignity of the surrounding spiritual environment. The panels are fitted with mounting brackets for attaching them to the bottom side of the seat, and with a black two-metre connection cable in a silicone sheath. Rating **IP 44**.

TYPE	[W]	[V]	Weight netto [kg]	Quantity on pallet	Dimensions [mm]	Cat. No.
ECOSUN CH 02	260	230	3.8	84	730×155×115	5401359
ECOSUN CH 04	400		4.3	68	1096×155×115	5401360
ECOSUN CH 06	600		6.5	68	1596×155×115	5401362

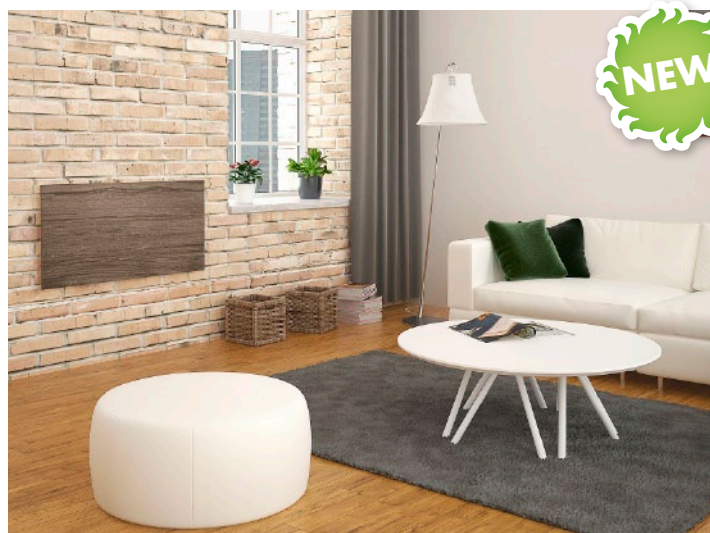


RADIANT PANELS

ECOSUN NATURAL

ECOSUN NATURAL – these ceramic radiant panels, which perfectly imitate the look of natural stone, are suitable for formal rooms, halls and bathrooms, as well as standard living rooms. The panels can be hung both length-wise and width-wise, but always only in a vertical position. The radiant panels are offered in 5 colour variants: as they imitate the look of natural stone, there can be deviations in the colour and structure of the material.

TYPE	OUTPUT [W]	1.9 m cold lead with plug 230 V; IP 44 Dimensions: 450×900×45 mm Weight netto: 14.8 kg Quantity on pallet: 15 pcs	Cat. No.
ECOSUN 400 N – Coal	400		5437130
ECOSUN 400 N – Cream			5437131
ECOSUN 400 N – Rosso			5437132
ECOSUN 400 N – Beige			5437133
ECOSUN 400 N – Marrone			5437134



Stainless steel towel rail as an accessory available – see page 6.



Coal



Cream



Rosso



Beige



Marrone

MR – marble/granite radiant panels

MR marble panels are primarily intended for heating reception rooms, halls, bathrooms and other rooms.

MR panels have an extremely aesthetic appearance and the radiant heat from this natural material is very acceptable. The MR panel consists of a robust polished marble/granite plate, a heating element, a limiting thermostat and a connection cable. This panel is intended to be installed as a fixed installation on a wall with the connection cable connected to the installation box. These panels are manufactured in various power outputs and are available in 5 marble designs.

As marble/granite is a natural material there is the possibility of small colour and texture variances.



MR PANELS – marble/granite radiant panels (thermo fuse), IP 44, class II; **Connection cable** for 300–1000: 100 cm, 1200: 150 cm;

Type of marble/granite: Madura, Kashmir, Verde;

Needed clearance: lower edge 5 cm / top and side edge 15 cm / front side 50 cm

Offer valid while stocks last

TYPE	OUTPUT [W]	Dimensions [mm]	Quantity on pallet / in crate	Madura (beige)		Kashmir (creme)		Verde (green)	
				Weight netto [kg]	Cat. No.	Weight netto [kg]	Cat. No.	Weight netto [kg]	Cat. No.
Madura (beige) Kashmir (creme) Verde (green)	300	500×500×30	10 / 22	22.2	5438282	21.7	5438292	19.2	5438250
	500	700×500×30	10 / 20	31.2	5438283	30.2	5438293	27.2	5438255
	800	900×600×30	5 / 11	48.2	5438284	47.2	5438294	42.2	5438260
	1000	1100×600×30	5 / 11	64	5438285	63	5438295	57	5438265
	1200	1300×600×30	5 / 7	76	5438286	75	5438296	68	5438270



Madura (beige)



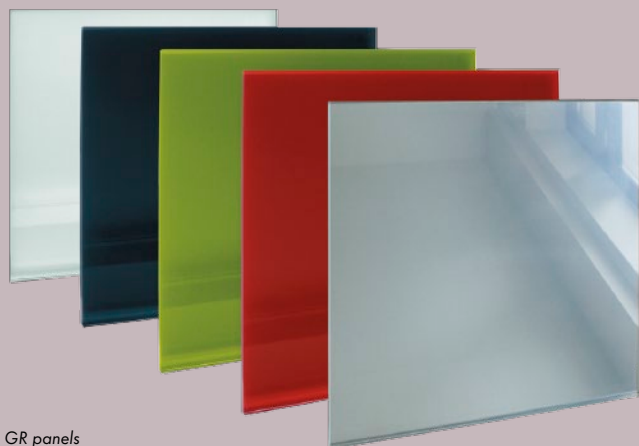
Kashmir (creme)



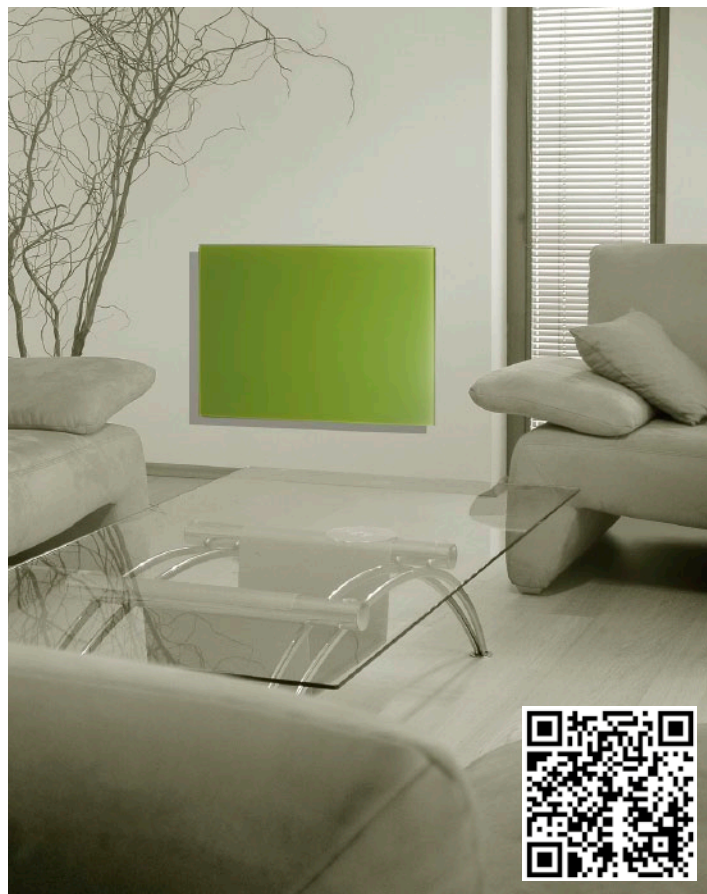
Verde (green)

GR – glass radiant panels


GR glass radiant panels feature an attractive and timeless design. Due to their aesthetic appearance these panels are primarily intended for heating reception rooms, offices and other rooms. These glass panels consist of a 12 mm toughened glass plate heating element, a thermo fuse, a connection cable. They are designed to be mounted on a wall and connected to a wiring box by the connection cable.



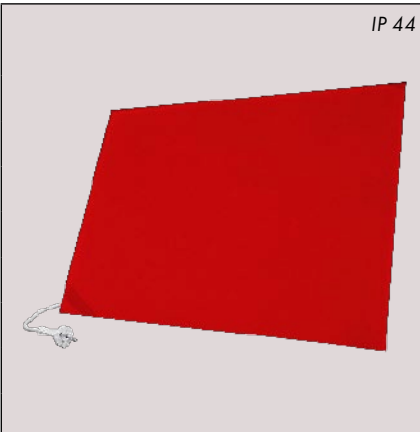
GR panels



GR PANELS – glass panels (thermo fuse), IP 44, class II; **Connection cable:** 100 cm; the panels are manufactured in 4 series with different outputs. GR panels are available in five colours: mirror, white, black, red, yellow-green;
Needed clearance: lower edge 5 cm / top and side edge 15 cm / front side 50 cm

	TYPE	Output [W]	Dimensions [mm]	Weight netto [kg]	Quantity on pallet / in crate	Glass colour	Cat. No.
	GR 300	300	700×500×12	14	10 / 22 pcs	white, black, red, yellow-green	543760x
	GR 500	500	900×600×12	22.8	5 / 11 pcs		543761x
	GR 700	700	1100×600×12	26.9	5 / 12 pcs		543762x
	GR 900	900	1200×800×12	37.3	5 / 8 pcs		543763x
	GR 300	300	700×500×8	10.6	10 / 22 pcs	mirror	5437601
	GR 500	500	900×600×8	16.4	5 / 11 pcs		5437611
	GR 700	700	1100×600×8	21.2	5 / 12 pcs		5437621
	GR 900	900	1200×800×8	27.7	5 / 8 pcs		5437631


GR+ – The GR+ panel is a standard GR glass panel but it has an integrated Watts wireless receiver. This means that a **Watts V22 wireless thermostat has to be purchased** in order to operate the panel. However, one shared V22 thermostat is sufficient to control up to 4 panels in one room, which is why it should be ordered independently. Wall brackets are included with the product, but **fasteners** (wall anchors, screws) are not, as they need to be chosen according to the type of installation.

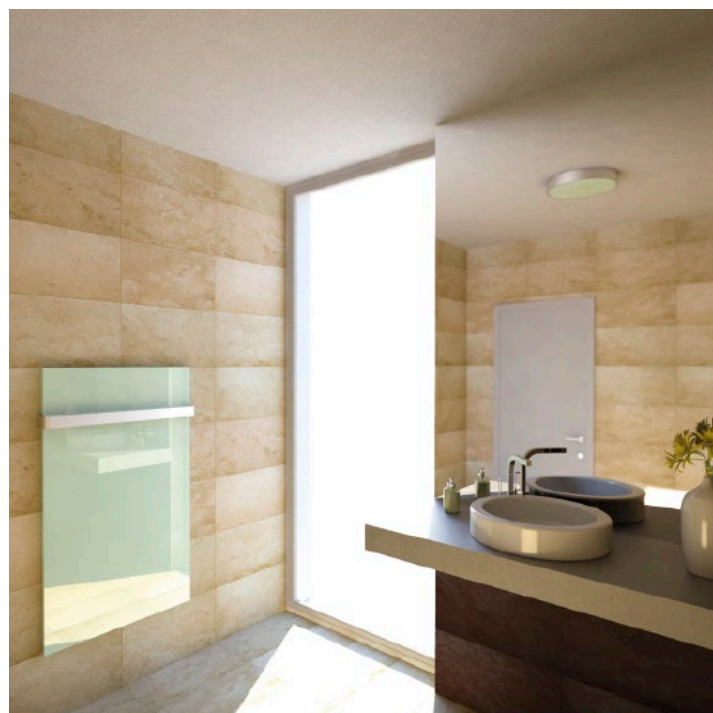
	TYPE	Output [W]	Dimensions [mm]	Weight netto [kg]	Glass colour	Cat. No.
	GR+ 300	300	700×500×12	15	white, black, red, yellow-green	543770x
	GR+ 500	500	900×600×12	23.3		543771x
	GR+ 700	700	1100×600×12	27.4		543772x
	GR+ 900	900	1200×800×12	39.3		543773x
	GR+ 300 Mirror	300	700×500×8	11	mirror	5437706
	GR+ 500 Mirror	500	900×600×8	16.8		5437716
	GR+ 700 Mirror	700	1100×600×8	21.6		5437726
	GR+ 900 Mirror	900	1200×800×8	28.3		5437736

SUPPORTS FOR GR PANELS – for applications where GR panels cannot be hung on a wall (e.g. in the case of glass surfaces), it is possible to use a set of supports for the placement of the panel on the floor.



The bracket screws in the bottom part of the panel are inserted into the notch in each support and are fixed there with nuts. The panel is stable on the supports; however, we recommend that the supports be attached to the floor in the case of permanent installation (there are two openings in the base for 6 mm bolts/screws with countersunk heads). The supports are intended for horizontal panel installation; the panel can be overturned if installed vertically (particularly in the case of GR 900 panels). Excessive pressure must not be applied to a panel that is standing on supports – if they are not attached to the floor, the panel may tip over, and if they are attached to the floor, there is a risk of damage to the panel glass at the points of attachment to the supports.

	SUPPORTS FOR GR PANELS	Cat. No.
	Contents of the set: GR panel supports (2 pcs); plastic GR panel bracket covers (2 pcs) Dimensions: diameter of the base 130 mm, height of the support 185/105 mm (the bottom edge of the panel is 50 mm above the floor), spacing of attachment openings in the base 85 mm, surface finish CHROMO metallic powder coating (silver)	8000101



STAINLESS STEEL TOWEL RAIL

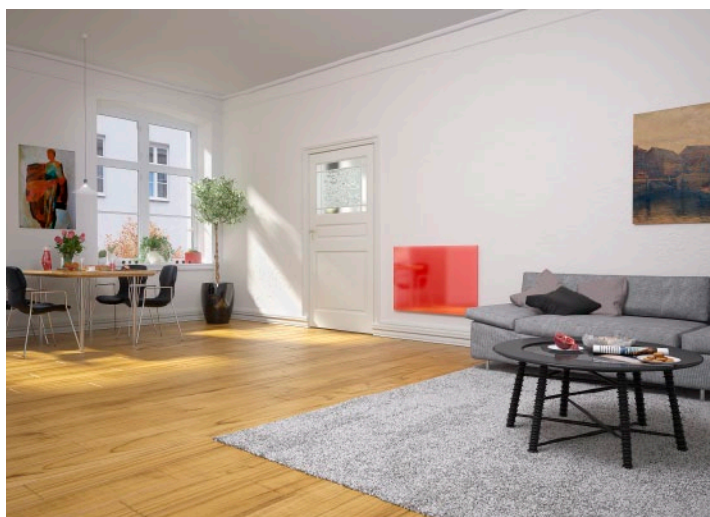
– for GR 300, 500, 700 and 900 panels

These towel rails are designed as an accessory for GR radiant glass panels in all colour versions. They are made from a 4×30 mm polished stainless steel sheet. After the installation of this rail, the standard panel is transformed into a smart bathroom heater with a rail on which a towel or bath towel can be hung.



The rail is intended only for panels installed vertically; however, the installation itself is very easy. The openings in the back part of the rail are simply placed onto the top two screws of the panel by which the heater will be attached to the wall. The panel is then placed into the prepared hanging brackets. After the attachment nuts have been tightened, the rail, which is placed between the back part of the panel and the hanging bracket, is attached firmly. The rail is in the shape of a rectangle with the dimensions 530×90 mm; the distance between the attachment openings is 260 mm.

TYPE	Description	Weight netto [kg]	Cat. No.
Simple towel rail (width 500 mm)	GR 300	0.85	5437810
Simple towel rail (width 600 mm)	GR 500 and 700	0.95	5437812
Simple towel rail (width 800 mm)	GR 900	1.15	5437818
Double towel rail (width 500 mm)	GR 300	2.1	5437820
Double towel rail (width 600 mm)	GR 500 and 700	2.3	5437822
Double towel rail (width 800 mm)	GR 900	2.65	5437824



NOTIFICATION

ECOSUN, MR and GR radiant panels are only equipped with a limiting thermostat – suitable regulation is essential for correct and economical operation; see the chapter **THERMOSTATS AND CONTROLS**. In the case of GR glass panels, the limiting thermostat switches off the panels at an average temperature of 90 °C, and therefore the real thermal output of the panels is approximately 10% lower than the wattage. For this reason and also for the improvement of the dynamics of the whole heating system, we recommend that the installed wattage is increased by 20% in contrast with the result of the heat loss calculation. GR panels can be supplemented with chromium-coated supports which enable the panel to be placed on the floor – e.g. in proximity to glass surfaces or to create a stylish portable heater.

References: ECOSUN panels



Radiant heating panels ECOSUN TH / Restaurant „Konoba Toni“, Primošten (Croatia)



Radiant heating panels ECOSUN / The swimming pool (France)



Radiant heating panels ECOSUN Anticor / Vigvam (Czech Republic)



Radiant heating panels ECOSUN / St. Nikolay Mirikliiski Chudotvorec Church (Bulgaria)



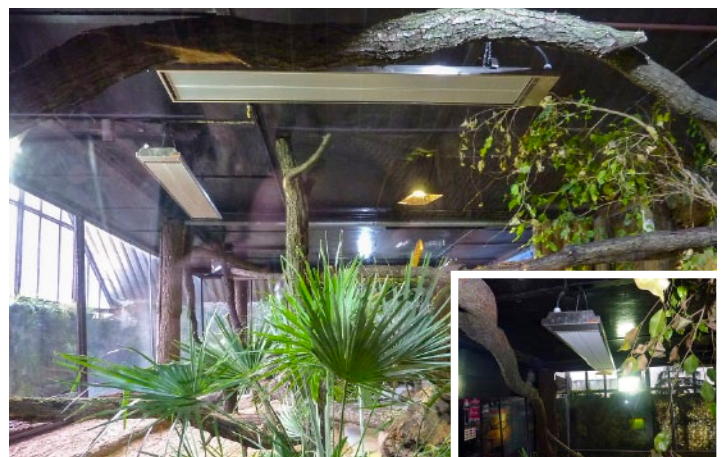
GR panels / Matyas House, Banska Bystrica (Slovakia)



High temperature radiant heating panels ECOSUN / Dunstan High school (New Zealand)



ECOSUN CH / Roman Catholic church, Banska Bystrica (Slovakia)



Stainless steel heating panels ECOSUN SBs / ZOO Brno - vivarium (Czech Republic)



Overview of ECOFLOOR heating cables and recommended usage

TYPE	Wattage [W/m]	Number of heating cores	Protective screen	Protection against UV radiation	Thermal endurance of the jacket	230 V	400 V	Supplied as circuit	Supplied as mat	Floor heating			Anti-freeze protection of		
										Direct-heating	Semi-storage	Storage	Surfaces	Roofs	Pipes
ASL1P	10	1	●		70 °C	●		●	●	●					
	15		●			●		●	●						
	18		●			●		●	●						
ADSV	10	2	●		70 °C	●		●	●	●	●				
	15		●			●		●	●	●	●				
	18		●			●		●	●	●	●				
ADSV-T	12	2	●		70 °C	●			●	●					
ADSV+	10	2	●	●	80 °C	●		●			●				
	18		●	●		●		●			●				
	20		●	●		●		●			●				
ADSA	12	2	●		70 °C	●			●	●					
ADPSV	10	2	●	●	80 °C	●		●							●
	18		●	●		●		●			●		●	●	
	20		●	●		●		●					●	●	
	30		●	●		●	●	●	●				●	●	
PSV	10	1	●		70 °C	●		●	●	●	●				
	15		●			●		●	●		●				
MAPSV	20	1	●	●	80 °C	●		●	●		●	●	●		
	30		●	●		●	●	●	●				●		
MADPSP	40	2	●	●	90 °C 240 °C*	●	●	●	●				●		
PFP	12	2	●	●	70 °C	●		●							●
PDS1P	40	2	●		70 °C	●		●					●		

*) for a short term (installation under asphalt)

ECOFLOOR electric floor heating systems ensure ideal heat distribution and, by decreasing undesirable air circulation, reduce dust levels. These systems offer great comfort, economic and reliable operation, and long lifetime. They preserve free floor space by eliminating the need for various heating elements, radiators and heat distribution systems. The principal advantage of electric floor heating is easy and separate temperature control in individual rooms. Once installed, it is completely maintenance free.

The FENIX holding company has been specializing in the production of electric heating systems since the year 1990. During that period, we asserted ourselves not only on the Czech market, but also in almost 60 countries worldwide.

The success on these markets is conditioned particularly by the high quality of products, the professional approach to customers and the ability to flexibly respond to their demands. We are prepared to prove the quality of our ECOFLOOR products by providing a **lifetime warranty**, which was selected with care and respect for tradition and the time of FENIX's activity.

The **lifetime warranty** is provided for the life of the floor covering installed with the Ecofloor heating system ('covering' is taken to mean a layer of building material into which a heating element is embedded; alternatively, the heating element is inseparably connected to this layer or material). The **lifetime warranty** is not transferable to another owner, and can be applied under the following conditions:

- All the conditions for the application of warranty have been met in accordance with the applicable warranty conditions
- The registration for the lifetime warranty has been made no later than 6 months from buying the Ecofloor heating system
- Cables for indoor applications are used in residential buildings
- The heating floor must be controlled by a thermostat with a floor probe
- The maximum linear input power of the heating circuit is 18 W/m, the maximum supply density is 200 W/m²

In the case that the conditions of the **lifetime warranty** are not fulfilled, the extended warranty is valid within the full extent of the warranty conditions offered by Fenix.



ASL1P cable

LD heating mats



ADSV-T cable

LDTS, LSDTS heating mats



ADSV cable

ADSV heating circuits



ADSA cable

CM ultrathin mats



Overview of special ECOFLOOR heating cables and recommended usage


TYPE	Wattage [W/m]	Number of heating cores	Protective screen	Protection against UV radiation	Thermal endurance of the jacket	230 V	Supplied as circuit	Supplied as mat	Floor heating			Anti-freeze protection of		
									Direct-heating	Semi-storage	Storage	Surfaces	Roofs	Pipes
ELSR-M	10	2	●	●	65 °C	●	●							●
	15		●	●		●	●							●
ELSR-N	20	2	●	●	80 °C	●	●					●	●	
	30		●	●		●	●					●	●	

Overview of ECOFLOOR heating mats and recommended usage

TYPE	Wattage [W/m]	Number of heating cores	Protective screen	Protection against UV radiation	Thermal endurance of the jacket	230 V	400 V	Floor heating			Heating of outdoor areas	Type of heating cable
								Direct-heating	Semi-storage	Storage		
CM	150	2	●		90 °C	●		●				ADSA
LDTs	80	2	●		70 °C	●		●	●			ADSV-T
	100		●			●		●	●			
	160		●			●		●	●			
LD	160	1	●		70 °C	●		●	●			ASL1P
LSDTs	100	2	●		70 °C	●		●				ADSV-T
	160		●			●		●				
LPSV	100	1	●		80 °C	●			●			PSV
MST	300	1	●	●	80 °C	●					●	MAPSV
MDT	400	2	●	●	70 °C 240 °C*	●	●				●	MADPSP
ADPSV	300	2	●	●	80 °C	●					●	ADPSV
AL-MAT	80	2	●		70 °C	●		●				A2
	140		●			●		●				

*) for a short term (installation under asphalt)

Cable composition markings



1 2 3 4 5 6

M A D P S P

Linear input of cable [W/m]
2 0 2 4 0

Total input of circuit [W]

1 Resistance (heating) wire
M multi-resistance – stranded resistance wire (to be used for higher outputs);
No letter is used for a non-stranded (simple) resistance wire

2 Core insulation
A FEP (fluoropolymer)
P XLPE (cross-linked polyethylene)

3 Number of heating cores
D double-core cable;
No letter is used for a single-core cable

4 Plastic insulation (for outdoor applications, higher mechanical ruggedness of cable)
P XLPE (cross-linked polyethylene);
No letter is used for a cable without the second plastic insulation

5 Protection screen (for wet areas)
S full screen protection (tinned copper wires and aluminium tape)
SL linear screen protection
No letter is used for a cable without screen protection

6 Jacket
P XLPE (cross-linked polyethylene)
1P PP-LDPE (mixed polypropylene & low density PE)
V PVC (polyvinyl chloride)

PSV cable

PSV heating circuits, LPSV heating mats

ADSV+ cable

ADSV+ heating circuits

ADPSV cable

ADPSV heating circuits, ADPSV heating mat

MAPSV cable

MAPSV heating circuits

MADPSP cable

MADPSP heating circuits, MDT heating mats

PDS1P cable

for curing concrete

ELSR-M cable

self-regulating cable for anti-freeze protection and technological heating (10 and 15 W/m)

ELSR-N cable

self-regulating cable for anti-freeze protection and technological heating (20 and 30 W/m EEII)

DIRECT HEATING SYSTEMS

ECOFLOOR CABLES AND MATS

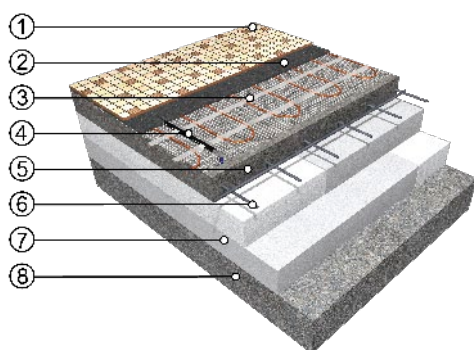


ECOFLOOR heating systems are available in two basic variants – **heating cable circuits** and **heating mats**.

In fact the two systems do not differ from one another very much. In both cases, the heating system consists of a heating cable, either separate or fixed to a supporting fibreglass cloth (heating mat). This modern floor heating system permits easy and effective regulation. The heating cable circuits or mats are placed directly beneath tiles in a thin layer of permanently flexible cement so the tiled surface heats up relatively quickly (approx. 20 min). Temperature control is sensitive and quick to react. Heating cable circuits or mats are suitable for renovated floors where the final floor height is not a constraint.

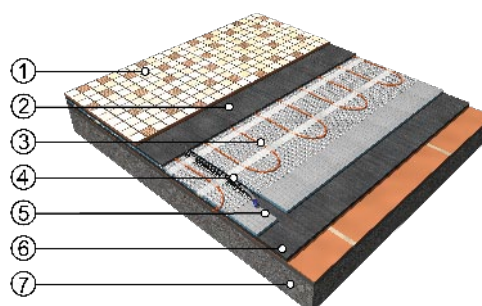
DIRECT HEATING SYSTEM

- 1 wear layer (ceramic floor tiling)
- 2 flexible bonding cement
- 3 ECOFLOOR® heating mat
- 4 floor (limitation) probe in a protective tube (so-called goose neck)
- 5 load-bearing concrete floating board
- 6 steel reinforcement (so-called Kari mesh)
- 7 thermal insulation
- 8 base (concrete board)



DIRECT HEATING SYSTEM—RECONSTRUCTION

- 1 wear layer (ceramic floor tiling)
- 2 flexible bonding cement
- 3 heating mat (cable) ECOFLOOR®
- 4 floor (limitation) probe in a protective tube (so-called goose neck)
- 5 F-BOARD supplementary thermal insulation (shortens the warming time) (**see page 27**)
- 6 flexible bonding cement
- 7 original floor (old floor tiling, concrete)



ECOFLOOR HEATING MATS

LDTS or LSDTS (self-adhesive) heating mat, twin conductor cable with a full protection screen, width 50 cm, halogen free cold lead 1×3 m. LDTS mats are provided with self-adhesive tape for affixing to the floor. LSDTS mats have a self-adhering mesh on their entire back surfaces. 230 V.



HALOGEN
FREE



LDTS / LSDTS
packing



LDTS / LSDTS
heating mat

LDTS / LSDTS 160 W/m²

OUTPUT [W]	Type 160 W/m ²	Surface [m ²]	Length [m]	Cat. No. LDTS	Cat. No. LSDTS
70	160/0.5	0.5	0.9	5530200	5531005
130	160/0.8	0.8	1.6	5530205	5531010
210	160/1.3	1.3	2.6	5530210	5531015
260	160/1.6	1.6	3.2	5530220	5531020
340	160/2.1	2.1	4.2	5530230	5531025
410	160/2.6	2.6	5.2	5530240	5531030
500	160/3.0	3.0	6.0	5530250	5531035
560	160/3.4	3.4	6.7	5530255	5531040
670	160/4.2	4.2	8.3	5530260	5531045
810	160/5.1	5.1	10.2	5530270	5531050
1000	160/6.1	6.1	12.3	5530280	5531055
1210	160/7.6	7.6	15.1	5530290	5531060
1400	160/8.8	8.8	17.6	5530190	5531080
1800	160/11.0	11.0	22.0	5530192	5531085
2150	160/13.3	13.3	26.6	5530194	5531090
2600	160/16.3	16.3	32.5	5530196	5531095

LDTS / LSDTS 100 W/m²

OUTPUT [W]	Type 100 W/m ²	Surface [m ²]	Length [m]	Cat. No. LDTS	Cat. No. LSDTS
60	100/0.6	0.6	1.2	5530401	5531105
105	100/1.0	1.0	2.1	5530403	5531110
180	100/1.8	1.8	3.6	5530405	5531115
220	100/2.2	2.2	4.4	5530410	5531120
290	100/2.9	2.9	5.8	5530415	5531125
410	100/4.1	4.1	8.2	5530420	5531130
460	100/4.7	4.7	9.4	5530425	5531135
560	100/5.6	5.6	11.2	5530430	5531140
820	100/8.2	8.2	16.5	5530440	5531145
1000	100/10.2	10.2	20.3	5530450	5531150
1200	100/11.8	11.8	23.7	5530460	5531155
1800	100/17.9	17.9	35.8	5530470	5531160

LDTS 160 W/m²

OUTPUT [W]	Type 160 W/m ²	Surface [m ²]	Length [m]	Cat. No. LDTS
80	160-0.5	0.5	1.0	5540001
160	160-1	1.0	2.0	5540002
240	160-1.5	1.5	3.0	5540003
320	160-2	2.0	4.0	5540004
400	160-2.5	2.5	5.0	5540005
480	160-3	3.0	6.0	5540006
560	160-3.5	3.5	7.0	5540007
640	160-4	4.0	8.0	5540008
800	160-5	5.0	10.0	5540009
960	160-6	6.0	12.0	5540010
1120	160-7	7.0	14.0	5540012
1280	160-8	8.0	16.0	5540014
1600	160-10	10.0	20.0	5540016
1920	160-12	12.0	24.0	5540018

LDTS 80 W/m²

OUTPUT [W]	Type 80 W/m ²	Surface [m ²]	Length [m]	Cat. No. LDTS
60	80/0.8	0.8	1.5	5531502
105	80/1.3	1.3	2.6	5531504
180	80/2.3	2.3	4.5	5531506
220	80/2.8	2.8	5.5	5531508
290	80/3.6	3.6	7.2	5531510
410	80/5.1	5.1	10.2	5531512
460	80/5.8	5.8	11.5	5531514
560	80/7.0	7.0	14.0	5531516
820	80/10.3	10.3	20.5	5531518
1000	80/12.5	12.5	25.0	5531520
1200	80/15.0	15.0	30.0	5531522
1800	80/22.5	22.5	45.0	5531524

120W/m² and 150W/m² LDTS heating mats are also available.

LD heating mat, single conductor cable with a full protection screen, width up to 3 m² – 30 cm, over 3 m² – 50 cm, cold lead 2×5 m, 230 V.



LD 160 W/m²

OUTPUT [W]	Type LD 160 W/m ²	Surface [m ²]	Width [m]	Length [m]	Cat. No.
100	160/0.6	0.6	0.3	2.0	5530005
150	160/0.9	0.9	0.3	3.0	5530007
180	160/1.1	1.1	0.3	3.6	5530010
300	160/1.8	1.8	0.3	6.1	5530020
360	160/2.3	2.3	0.3	7.6	5530030
500	160/3.0	3.0	0.3	10.0	5530040
700	160/4.3	4.3	0.5	8.6	5530050
850	160/5.3	5.3	0.5	10.6	5530060
950	160/5.9	5.9	0.5	11.8	5530070
1150	160/7.2	7.2	0.5	14.4	5530080
1700	160/10.7	10.7	0.5	21.4	5530090
2000	160/12.4	12.4	0.5	24.9	5530100
2500	160/15.7	15.7	0.5	31.3	5530110
3000	160/18.8	18.8	0.5	37.6	5530120



LD mat
Packing in PE foil.

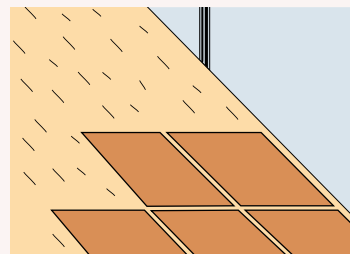
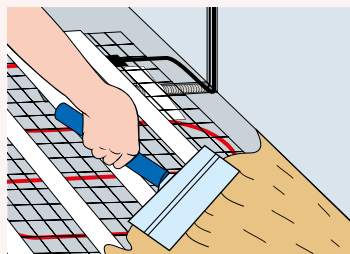
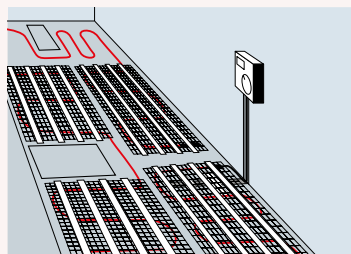
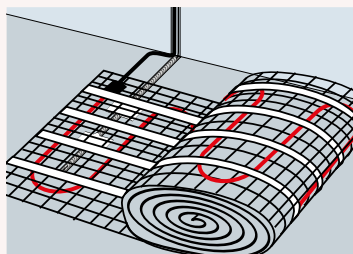
ULTRA THIN CM MATS – a very thin two conductor cable with a protective screen – suitable for damp areas (bathrooms, laundry rooms) as well as for standard rooms – ideal for placement into adhesive sealing cement directly under floor tiling; Ø of cable 2.4–2.9 mm, halogen free cold lead – 1×3 m. 230 V.

CM 150 W/m² HALOGEN FREE

OUTPUT [W]	Type	Surface [m ²]	Length [m]	Cat. No.
150	CM150/1	1.0	2.0	5540103
225	CM150/1.5	1.5	3.0	5540105
300	CM150/2	2.0	4.0	5540107
375	CM150/2.5	2.5	5.0	5540109
450	CM150/3	3.0	6.0	5540111
600	CM150/4	4.0	8.0	5540113
750	CM150/5	5.0	10.0	5540115

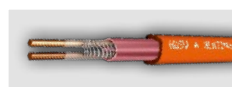
ECOFLOOR Installation – Heating Mat

- 1) Unroll the heating mat according to the layout drawing.
- 2) If you need to leave a space under fixed furniture, cut out the necessary part of the cloth and span the space with the cable (see fig. 2).
- 3) Level the layer of flexible cement with a smooth trowel.
- 4) Lay tiling on small areas (up to 4 m²) immediately, and on larger areas after 24 hours.



ECOFLOOR HEATING CABLE CIRCUITS

ADSV heating cable, a twin conductor cable with a full protection screen suitable for wet areas.



For direct floor heating or floor renovation (installation under tiles).

Cable diameter 3.4–4.2 mm. 230 V.

Halogen free Cold lead 1×3 m.

HALOGEN
FREE



Cable
on drum



Cable circuit on a
cardboard reel.
Standard packing.



Packing in
cardboard box
available

Cables on drums

TYPE (Ohm/m)	Cat. No.
122.5	2001510
38.72	2001515
14.020	2001520
8.960	2001525
5.232	2001530
3.584	2001535
2.568	2001540
2.050	2001545
1.382	2001550
0.926	2001555
0.638	2001560
0.424	2001565
0.310	2001570
0.196	2001575
0.136	2001580

Heating circuits

OUTPUT [W]	Type ADSV 5 W/m	LENGTH [m]	Cat. No.
45	5045	9.6	2232070
80	5080	17.1	2232072
140	5140	27	2232074
170	5170	34.7	2232076
220	5220	46	2232078
270	5270	54.7	2232080
320	5320	64.3	2232082
360	5360	71.7	2232084
430	5430	89.1	2232086
530	5530	107.3	2232088
640	5640	129.2	2232090
800	5800	157.4	2232092
920	5920	185.5	2232094
1150	51150	234.7	2232096
1400	51400	277.8	2232098

OUTPUT [W]	Type ADSV 10 W/m	LENGTH [m]	Cat. No.
65	10065	6.6	2232100
120	10120	11.4	2232105
200	10200	18.9	2232110
250	10250	23.6	2232115
320	10320	31.6	2232120
400	10400	36.9	2232125
450	10450	45.9	2232130
520	10520	49.6	2232135
600	10600	63.9	2232140
750	10750	75.8	2232145
950	10950	87.0	2232150
1100	101100	114.5	2232155
1300	101300	131.3	2232160
1700	101700	158.5	2232165
2000	102000	194.5	2232170

OUTPUT [W]	Type ADSV 15 W/m	LENGTH [m]	Cat. No.
80	15080	5.4	2242405
140	15140	9.8	2242407
240	15240	15.7	2242410
300	15300	19.7	2242415
400	15400	25.3	2242420
470	15470	31.4	2242425
550	15550	37.4	2242430
630	15630	41	2242435
750	15750	51.1	2242440
950	15950	59.9	2242445
1100	151100	75.1	2242450
1350	151350	93.3	2242455
1600	151600	106.7	2242460
2000	152000	135	2242462
2400	152400	162.1	2242465

OUTPUT [W]	Type ADSV 18 W/m	LENGTH [m]	Cat. No.
160	18160	8.50	2243120
260	18260	14.50	2243125
320	18320	18.50	2243130
420	18420	24.00	2243135
520	18520	28.40	2243140
600	18600	34.4	2243145
680	18680	37.9	2243150
830	18830	46.1	2243155
1000	181000	57.5	2243160
1200	181200	68.9	2243165
1500	181500	83.2	2243170
1700	181700	100.4	2243175
2200	182200	122.7	2243180
2600	182600	149.6	2243185

ASL1P heating cable, a single-conductor cable with a full protection screen suitable for wet areas.



For direct floor heating (installation under tiles).

Cold lead 2×5 m. Cable diameter 3–3.4 mm. 230 V. Packed in PE foil.

Cables on drums

TYPE (Ohm/m)	Cat. No.
61.25	2005178
27.13	2005179
19.36	2005180
7.010	2005181
4.480	2005182
2.616	2005183
1.284	2005185
0.857	2005187
0.691	2005188
0.463	2005190
0.212	2005192
0.155	2005193
0.068	2005195

Heating circuits

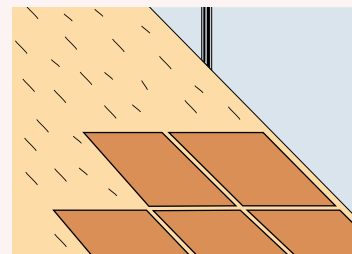
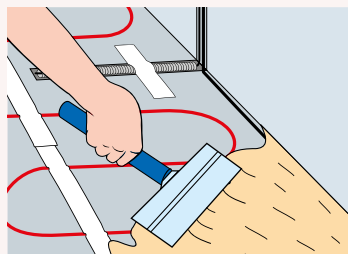
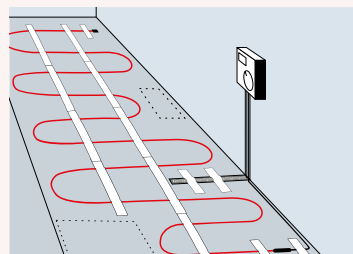
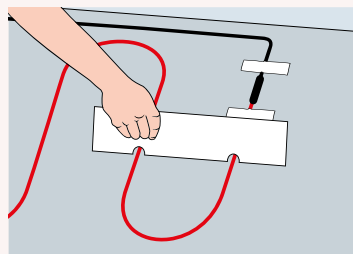
OUTPUT [W]	Type ASL1P 10 W/m	LENGTH [m]	Cat. No.
160	10160	17.0	2200160
280	10280	27.0	2200280
350	10350	33.7	2200350
450	10450	45.0	2200450
640	10640	64.0	2200640
800	10800	77.2	2200800
960	10960	80.0	2200960
1100	101100	103.9	2201100
1600	101600	156.0	2201600
1900	101900	179.6	2201900
3000	103000	259.3	2203000

OUTPUT [W]	Type ASL1P 15 W/m	LENGTH [m]	Cat. No.
200	15200	13.7	2201000
340	15340	22.2	2201005
420	15420	28.1	2201010
550	15550	36.8	2201015
800	15800	51.5	2201020
960	15960	64.3	2201025
1070	151070	71.5	2201030
1300	151300	87.9	2201035
1900	151900	131.3	2201040
2200	152200	155.1	2201045
3400	153400	228.8	2201055

OUTPUT [W]	Type ASL1P 18 W/m	LENGTH [m]	Cat. No.
210	18210	11.9	2201060
350	18350	19.7	2201062
450	18450	24	2201064
570	18570	32.5	2201066
820	18820	46	2201068
1000	181000	56.5	2201070
1100	181100	63.7	2201072
1400	181400	74.7	2201074
2000	182000	114.2	2201076
2400	182400	130.1	2201078
3000	183000	164.6	2201080
3500	183500	203.4	2201082

ECOFLOOR Installation – Heating Cable Circuit

- 1) Create loops of the heating cable across the entire base (a spacing guide may be used, as shown).
- 2) Fix the cable to the base using the self-adhesive tape or GRUFAST fastening strips.
- 3) Level the layer of flexible cement with a smooth trowel.
- 4) Lay tiling on small areas (up to 4 m²) immediately, and on larger areas after 24 hours.



KITS FOR DO-IT-YOURSELF INSTALLATION

Kits for do-it-yourself installation have been designed for those users who do not want a complete electrical heating system but a comfortable, warm floor in a specific area (e.g. bathroom or kitchen). The kits include everything needed to install the floor heating system and are very reasonably priced.

ECOFLOOR ComfortMat

230 V



OUTPUT [W]	Type 160 W/m ²	AREA [m ²]	LENGTH [m]	Cat. No.
70	12070-165	0.5	0.9	5590094
130	12130-165	0.8	1.6	5590097
210	12210-165	1.3	2.6	5590100
260	12260-165	1.6	3.2	5590105
340	12340-165	2.1	4.2	5590110
410	12410-165	2.6	5.2	5590115
500	12500-165	3.0	6.1	5590120
560	12560-165	3.4	6.7	5590122
670	12670-165	4.2	8.3	5590125
810	12810-165	5.1	10.2	5590130
1000	121000-165	6.1	12.3	5590135
1210	121210-165	7.6	15.1	5590140
1400	121400-165	8.8	17.6	5590145

OUTPUT [W]	Type 100 W/m ²	AREA [m ²]	LENGTH [m]	Cat. No.
180	8180-105	1.8	3.6	5590148
220	8220-105	2.2	4.4	5590150
290	8290-105	2.9	5.8	5590152
410	8410-105	4.1	8.2	5590155
460	8460-105	4.7	9.4	5590157
560	8560-105	5.6	11.2	5590160
820	8820-105	8.2	16.5	5590165

Comfort mat includes

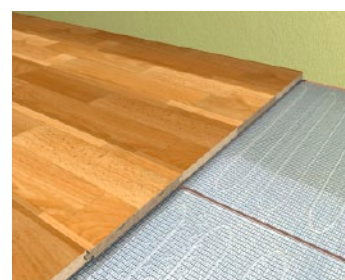
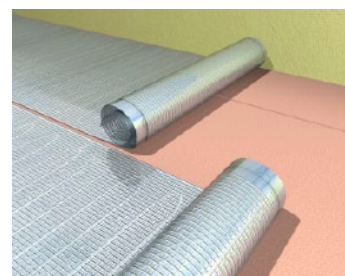
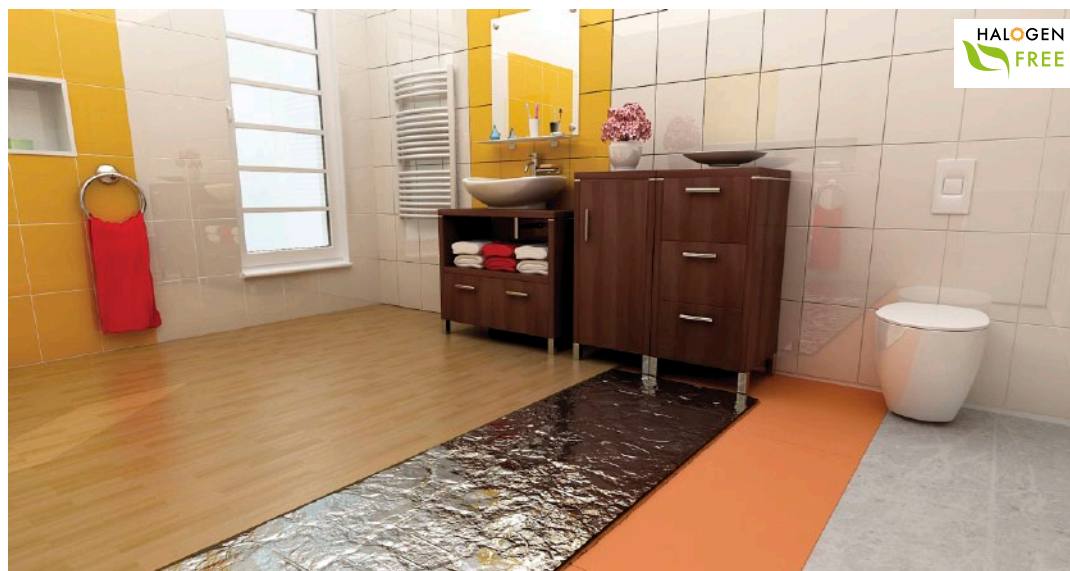
- LDTS heating mat
- TFT digital touch screen thermostat
- protective tube for floor sensor
- copper end piece
- installation manual

It is recommended that you install F-BOARD insulated tile backer board before laying ComfortMat. This will ensure quicker warm up times and reduce running costs (see page 27).

Width of the heating mat is 50 cm. Halogen free cold lead.

AL MAT

AL MAT heating mats are intended for use under laminate and wooden floating floors installed in so-called moist areas – in bathrooms, for example. They are a variant of ECOFILM heating foils designed for applications where ECOFILM foils cannot be used. The mat is of the two-core type, with one 3 m long halogen free connecting cable; the thickness of the mat is only 1.7 mm.



AL MAT 140 W/m², halogen free cold lead 3 m, 230 V

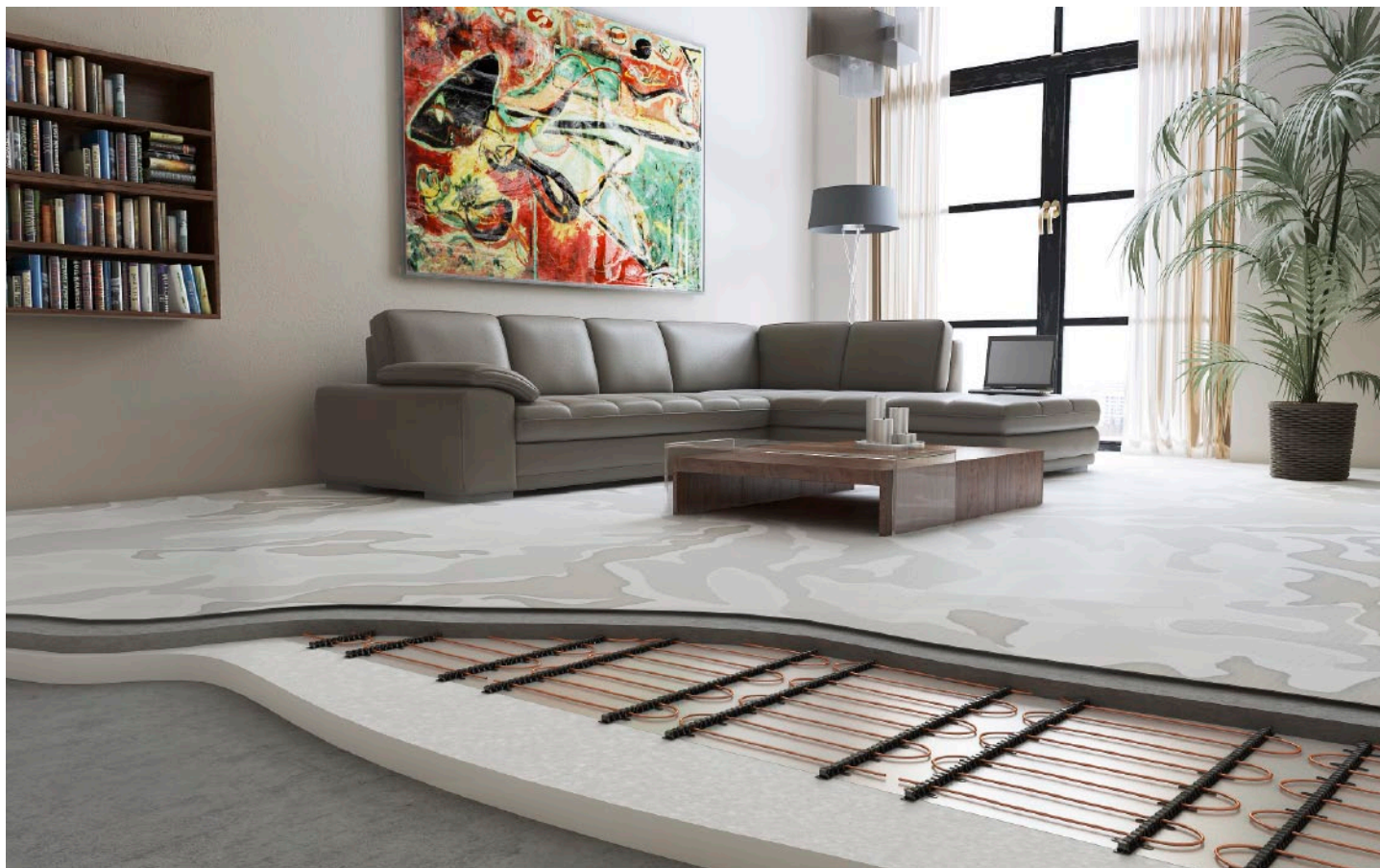
OUTPUT [W]	Type AL MAT 140 W/m ²	AREA [m ²]	LENGTH [m]	Cat. No.
140	AL MAT 140/1	1	2	5543000
210	AL MAT 140/1,5	1,5	3	5543002
280	AL MAT 140/2	2	4	5543004
420	AL MAT 140/3	3	6	5543006
560	AL MAT 140/4	4	8	5543008
700	AL MAT 140/5	5	10	5543009
840	AL MAT 140/6	6	12	5543010
1120	AL MAT 140/8	8	16	5543012
1400	AL MAT 140/10	10	20	5543014

AL MAT 80 W/m², halogen free cold lead 3 m, 230 V

OUTPUT [W]	Type AL MAT 80 W/m ²	AREA [m ²]	LENGTH [m]	Cat. No.
100	AL MAT 80/1,25	1.25	2.5	5543200
160	AL MAT 80/2	2	4	5543202
240	AL MAT 80/3	3	6	5543204
400	AL MAT 80/5	5	10	5543206
640	AL MAT 80/8	8	16	5543208
800	AL MAT 80/10	10	20	5543210
960	AL MAT 80/12	12	24	5543212

SEMI-STORAGE AND STORAGE HEATING

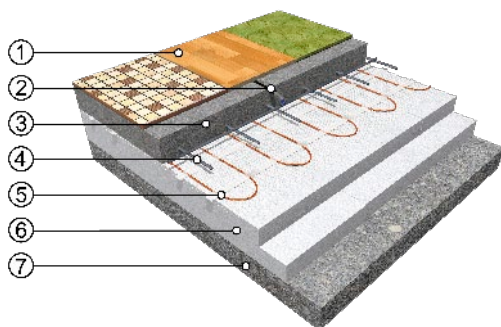
ECOFLOOR CABLES AND MATS



Heating cables or mats in semi-storage systems are placed in a layer of concrete 4–5 cm thick. The mat's recommended output wattage is 160 W/m². Heat is accumulated for 16 hours a day at a time when electricity costs are lowest. The accumulated heat is radiated from the floor surface not only during the process, but also for a further 8 hours. One efficient solution is to divide the total desired heating system 70/30 between the floor heating and another source, such as a convection heater or an ECOSUN radiant panel.

SEMI-STORAGE SYSTEM

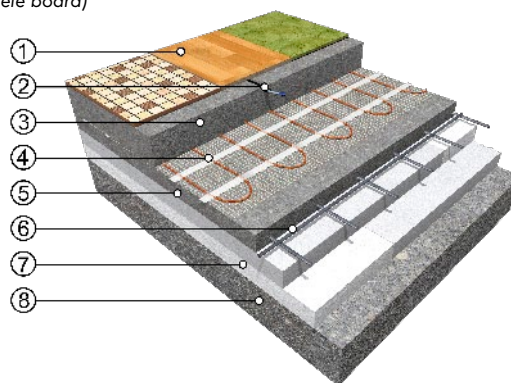
- 1 wear layer (floor tiling, carpet, PVC, laminate)
- 2 floor (limitation) probe in a protective tube (so-called goose neck)
- 3 load-bearing concrete floating board
- 4 steel reinforcement (so-called Kari mesh)
- 5 ECOFLOOR® heating mat (cable)
- 6 thermal insulation
- 7 base (concrete board)



Storage floor heating is a system that takes advantage of cheaper electricity tariffs – usually at night. During this time, heat is accumulated into the mass of the floor using ECOFLOOR electrical heating cables or mats. Throughout the rest of the day, the heat is gradually released from the floor to the room. In storage systems, heating mats or cables are placed in a layer of concrete 10 to 14 cm thick. The accumulated–stored–heat is then released during the day into the area to be heated. We recommend an output wattage of 250 to 300 W/m² for ECOFLOOR mats used in this type of system. Eight hours of low-tariff electricity should be used to accumulate the heat.

STORAGE ECOFLOOR HEATING

- 1 wear layer (floor tiles, carpet, PVC, laminate)
- 2 floor (limitation) probe in a protective tube (so-called goose neck)
- 3 concrete storage layer
- 4 ECOFLOOR® heating mat (cable)
- 5 concrete storage layer
- 6 steel reinforcement (so-called Kari mesh)
- 7 thermal insulation
- 8 base (concrete board)



ADSV+ heating cable, a two-conductor cable with a full protection screen.



The sheathing of the cable is resistant against UV radiation and is intended for floor heating and the removal of snow and ice from roofs and eaves troughs. 1×3 m halogen free cold lead. Ø 5.0 mm. 230 V.

Heating circuits

OUTPUT [W]	Type ADSV+ 10 W/m	LENGTH [m]	Cat. No.
120	10120	11.4	2253000
200	10200	18.9	2253005
250	10250	23.6	2253010
320	10320	31.6	2253015
400	10400	36.9	2253020
450	10450	45.9	2253025
520	10520	49.6	2253030
600	10600	63.9	2253035
750	10750	75.8	2253040
950	10950	87.0	2253045
1100	101100	114.5	2253050
1300	101300	131.3	2253055
1700	101700	158.5	2253060
2000	102000	194.5	2253065

OUTPUT [W]	Type ADSV+ 18 W/m	LENGTH [m]	Cat. No.
160	18160	8.5	2253100
260	18260	14.5	2253105
320	18320	18.5	2253110
420	18420	24.0	2253115
520	18520	28.4	2253120
600	18600	34.4	2253125
680	18680	37.9	2253130
830	18830	46.1	2253135
1000	181000	57.5	2253140
1200	181200	68.9	2253145
1500	181500	83.2	2253150
1700	181700	100.4	2253155
2200	182200	122.7	2253160
2600	182600	149.6	2253165

ADPSV heating cable, a twin conductor cable with a full protection screen suitable for semi-storage and storage floor heating in living areas.



Class M2. 1×5 m halogen free cold lead. Ø 5.3–5.9 mm. 230 V.

OUTPUT [W]	Type ADPSV 18 W/m	LENGTH [m]	Cat. No.
160	18160	8.5	2249960
260	18260	14.5	2249963
320	18320	18.5	2249966
420	18420	24.0	2249969
520	18520	28.4	2249972
600	18600	34.4	2249975
740	18740	41.8	2249978
830	18830	46.1	2249976
1000	181000	57.5	2249981
1200	181200	68.9	2249984
1500	181500	83.2	2249987
1700	181700	100.4	2249990
2200	182200	122.7	2249992
2600	182600	149.6	2249993



ADPSV cable circuit
a twin conductor cable



ADSV+, ADPSV packing

PSV heating cable, a single-conductor cable with a full protection screen for storage and semi-storage heating.



Cold lead 2×5 m. 230 V.
Cable diameter 4.5–4.8 mm.

Cables on drums

TYPE (Ohm/m)	Cat. No.
19.36	2001210
7.01	2001215
4.48	2001220
2.616	2001225
1.792	2001230
1.284	2001235
1.025	2001240
0.857	2001245
0.691	2001250
0.54	2001255
0.463	2001260
0.319	2001265
0.212	2001270
0.155	2001275
0.098	2001280
0.068	2001285

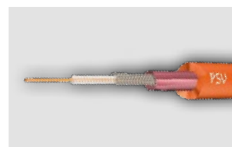
Heating circuits

OUTPUT [W]	Type PSV 5 W/m	LENGTH [m]	Cat. No.
120	5120	22.8	2319960
200	5200	37.7	2319962
250	5250	47.2	2319964
320	5320	63.2	2319966
380	5380	77.7	2319968
450	5450	91.6	2319970
500	5500	103.2	2319972
550	5550	112.2	2319974
620	5620	123.5	2319976
700	5700	139.9	2319978
750	5750	152.3	2319980
900	5900	184.3	2319982
1100	51100	226.8	2319984
1300	51300	262.5	2319986
1650	51650	327.1	2319988
2000	52000	389	2319990

OUTPUT [W]	Type PSV 10 W/m	LENGTH [m]	Cat. No.
170	10170	16.1	2320020
280	10280	28.0	2320025
350	10350	34.0	2320030
450	10450	46.0	2320035
550	10550	53.7	2320040
640	10640	64.4	2320045
720	10720	71.7	2320050
800	10800	79.1	2320055
870	10870	88.0	2320060
960	10960	100.0	2320065
1100	101100	106.8	2320070
1280	101280	129.6	2320075
1600	101600	157.9	2320080
1900	101900	189.6	2320085
2500	102500	234.7	2320090
3000	103000	277.8	2320095

OUTPUT [W]	Type PSV 15 W/m	LENGTH [m]	Cat. No.
200	15200	13.7	2320110
340	15340	22.2	2320115
420	15420	28.1	2320120
550	15550	36.7	2320125
660	15660	44.7	2320130
800	15800	52.3	2320135
880	15880	58.6	2320140
960	15960	64.1	2320145
1070	151070	71.5	2320150
1210	151210	81.0	2320155
1300	151300	84.1	2320160
1580	151580	104.6	2320165
1900	151900	128.6	2320170
2200	152200	150.3	2320175
2800	152800	189.4	2320180
3400	153400	227.5	2320185

LPSV heating mat, single conductor cable with a full protection screen, width 50 cm, cold lead 2×5 m.

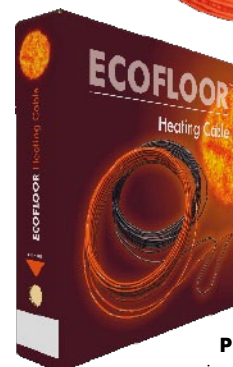


Packed on a cardboard tube and sealed in PE foil. 230 V.

OUTPUT [W]	Type LPSV 80 W/m²	Surface [m²]	Length [m]	Cat. No.
160	LPSV 80/2	2	4	5520310
240	LPSV 80/3	3	6	5520312
320	LPSV 80/4	4	8	5520314
400	LPSV 80/5	5	10	5520316
480	LPSV 80/6	6	12	5520318
560	LPSV 80/7	7	14	5520320
640	LPSV 80/8	8	16	5520322
720	LPSV 80/9	9	18	5520324
800	LPSV 80/10	10	20	5520326
960	LPSV 80/12	12	24	5520328
1040	LPSV 80/13	13	26	5520330
1200	LPSV 80/15	15	30	5520332
1440	LPSV 80/18	18	36	5520334
1680	LPSV 80/21	21	42	5520336
2240	LPSV 80/28	28	56	5520338



Packing in cardboard
box available



PSV cable circuit
a single-conductor cable
with 2×5 m cold leads.
Packed in cardboard box.

OUTDOOR APPLICATIONS



Ice and snow melting

Installing electric heating cables in outdoor areas, together with a thermostat, prevents both ice formation and snow accumulation. Once installed, the system works entirely automatically and is only operational when it is snowing or if ice is forming on roads and walkways.

De-icing gutters and eaves troughs

In all parts of Europe other than in the south, winter brings a heavy load to many buildings as ice builds up in the gutters and eaves troughs. Installing an ECOFLOOR electric heating cable (with a protective screen) into gutters and eaves troughs is a good solution for such problems. The cables are installed using special plastic clips placed inside gutters and eaves troughs. We recommend a linear wattage of 20 W/m for the de-icing cables.

Frost protection of pipes

Many homeowners and other users of piping have many troubles in the winter due to freezing pipes. This especially applies to water pipes, but other liquids used in industrial processes can also freeze or solidify. During long spells of below-freezing temperatures, even very well-insulated piping can freeze. Supplementary heating is a reliable preventive solution.



MAPSV heating cable, a single-conductor cable with a full protection screen and protection against UV radiation. Suitable for heating outdoor surfaces. Cold lead 2×5 m. Ø 5.9–6.4 mm.



30 W/m for **ice and snow melting, removing ice and snow from roofs and gutters**. A control system with an air temperature and moisture sensor must be used to prevent cables from switching on in temperatures of more than +5 °C.

TYPE	Suitability	Max. loading
Floor heating in living areas	Yes	30 W/m
Outdoor surface heating	Yes	30 W/m
Removing ice and snow from roofs and gutters	Yes	30 W/m

Cables on drums

Heating circuits 230V

TYPE (Ohm/m)	Cat. No.
9.00	2000850
6.50	2000852
3.20	2000854
1.35	2000856
1.00	2000858
0.60	2000860
0.36	2000862
0.25	2000864
0.183	2000866
0.155	2000868
0.098	2000870
0.068	2000872
0.04	2000874

OUTPUT [W]	Type MAPSV 20 W/m	LENGTH [m]	Cat. No.
340	20340	17.3	2322500
400	20400	20.3	2322502
570	20570	29.0	2322504
880	20880	44.5	2322506
1030	201030	51.4	2322508
1350	201350	65.3	2322510
1750	201750	84.0	2322512
2100	202100	100.8	2322514
2400	202400	120.4	2322516
2600	202600	131.3	2322518
3300	203300	163.6	2322520
4000	204000	194.5	2322522
5100	205100	259.3	2322524

OUTPUT [W]	Type MAPSV 30 W/m	LENGTH [m]	Cat. No.
420	30420	14.0	2322600
500	30500	16.3	2322602
700	30700	23.6	2322604
1100	301100	35.6	2322606
1250	301250	42.3	2322608
1600	301600	55.1	2322610
2100	302100	70.0	2322612
2500	302500	84.6	2322614
2950	302950	98.0	2322616
3200	303200	106.7	2322618
4000	304000	134.9	2322620
4800	304800	162.1	2322622
6300	306300	209.9	2322624

MAPSV cables 400V

OUTPUT [W]	Type MAPSV 30 W/m – 400V	LENGTH [m]	Cat. No.
730	30730	24.4	2322700
850	30850	29.0	2322702
1230	301230	40.7	2322704
1900	301900	62.4	2322706
2200	302200	72.7	2322708
2800	302800	95.2	2322710
3700	303700	120.1	2322712
4400	304400	145.5	2322714
5100	305100	171.4	2322716
5600	305600	184.3	2322718
7000	307000	233.2	2322720
8500	308500	276.8	2322722
11000	3011000	363.6	2322724

MADPSP heating cable, a two-conductor cable with a full protection screen and protection against UV radiation. Suitable for heating outdoor surfaces. Class M2. Cold lead 1×5 m. Ø 6.3–9 mm.



40 W/m for **ice and snow melting**. A control system with an air temperature and moisture sensor must be used to prevent cables from switching on in temperatures of more than +5 °C.

TYPE	Suitability	Max. loading
Outdoor surface heating	Yes	40 W/m

Cables on drums

Heating circuits 230V

TYPE (Ohm/m)	Cat. No.
18.00	2000700
6.40	2000705
2.70	2000710
2.00	2000715
1.20	2000720
0.72	2000725
0.60	2000730
0.36	2000735
0.25	2000737
0.18	2000740
0.08	2000745
0.04	2000750

OUTPUT [W]	Type MADPSP 40 W/m	LENGTH [m]	Cat. No.
340	40340	8.5	2323505
570	40570	14.5	2323510
880	40880	22	2323515
1030	401030	26	2323520
1320	401320	33	2323525
1700	401700	43	2323530
1880	401880	47	2323535
2450	402450	60	2323540
2900	402900	73	2323545
3400	403400	85	2323550
5200	405200	127	2323555
7350	407350	180	2323560

400V

OUTPUT [W]	Type MADPSP 40 W/m	LENGTH [m]	Cat. No.
600	40600	15	2323605
1000	401000	25	2323610
1520	401520	39	2323615
1800	401800	45	2323620
2300	402300	58	2323625
2970	402970	75	2323630
3300	403300	81	2323635
4250	404250	105	2323640
5100	405100	126	2323645
5900	405900	148	2323650
9000	409000	222	2323655

MDT mat, 230V, width 0.75 m

OUTPUT [W]	Type MDT 400 W/m²	AREA [m²]	LENGTH [m]	Cat. No.
340	23MDT400/0,9	0,9	1,1	5510005
570	23MDT400/1,4	1,4	1,9	5510010
880	23MDT400/2,3	2,2	2,9	5510015
1030	23MDT400/2,6	2,6	3,4	5510020
1320	23MDT400/3,3	3,3	4,4	5510025
1700	23MDT400/4,3	4,3	5,7	5510030
1880	23MDT400/4,7	4,7	6,3	5510035
2450	23MDT400/6,1	6,1	8,2	5510040
2900	23MDT400/7,3	7,3	9,7	5510045
3400	23MDT400/8,5	8,5	11,3	5510050
5200	23MDT400/13	13,0	17,3	5510055
7350	23MDT400/18,4	18,4	24,5	5510060

MDT mat, 400V, width 0.75 m

OUTPUT [W]	Type MDT 400 W/m²	AREA [m²]	LENGTH [m]	Cat. No.
600	40MDT400/1,5	1,5	2,0	5510105
1000	40MDT400/2,5	2,5	3,3	5510110
1520	40MDT400/3,8	3,8	5,1	5510115
1800	40MDT400/4,5	4,5	6,0	5510120
2300	40MDT400/5,8	5,8	7,7	5510125
2970	40MDT400/7,4	7,4	9,9	5510130
3300	40MDT400/8,3	8,3	11,0	5510135
4250	40MDT400/10,6	10,6	14,2	5510140
5100	40MDT400/12,8	12,8	17,0	5510145
5900	40MDT400/14,8	14,8	19,7	5510150
9000	40MDT400/22,5	22,5	30,0	5510155

Cables and mats are packed in PE foil. The MDT heating mat is provided with a 1×5 m cold lead

ADPSV heating cable, a twin conductor, full protection screened cable with protection against UV radiation. This multipurpose cable is suitable for indoor and outdoor applications. Class M2. 1×5 m halogen free cold lead. Ø 5.0–5.9 mm.

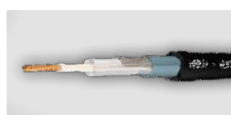


TYPE	Suitability	Max. loading
Outdoor surface heating	Yes	30 W/m
Frost protection of pipes	Yes	10 W/m
Pipe heating	Yes	10 W/m
Removing ice and snow from roofs and gutters	Yes	30 W/m

Cables on drums Heating circuits

TYPE (Ohm/m)	Cat. No.	OUTPUT [W]	ADPSV 10 W/m	LENGTH [m]	Cat. No.	OUTPUT [W]	ADPSV 20 W/m	LENGTH [m]	Cat. No.	OUTPUT [W]	ADPSV 30 W/m	LENGTH [m]	Cat. No.	OUTPUT [W]	ADPSV 30 W/m	LENGTH [m]	Cat. No.	OUTPUT [W]	ADPSV 300 W/m²	AREA [m²]	LENGTH [m]	Cat. No.
38.72	2000501	120	10120	11.4	2256010	160	20160	8.3	2252800	195	30195	7	2253505	350	30350	12	2253605	430	23ADPSV 300/1-0,5	1.0	2.0	5510505
14.02	2000506	200	10200	18.9	2256015	270	20270	14.0	2252805	340	30340	11	2253510	580	30580	20	2253610	450	23ADPSV 300/1,5-0,5	1.5	3.0	5510510
8.96	2000511	250	10250	23.6	2256020	340	20340	17.2	2252810	420	30420	14	2253515	730	30730	24	2253615	600	23ADPSV 300/2-0,5	2.0	4.0	5510515
5.232	2000516	320	10320	31.6	2256025	450	20450	22.5	2252815	560	30560	18	2253520	950	30950	32	2253620	750	23ADPSV 300/2,5-0,5	2.5	5.0	5510520
3.58	2000521	400	10400	36.9	2256030	540	20540	27.4	2252820	670	30670	22	2253525	1150	301150	39	2253625	900	23ADPSV 300/3-0,5	3.0	6.0	5510525
2.568	2000526	450	10450	45.9	2256035	640	20640	32.1	2252825	800	30800	26	2253530	1360	301360	46	2253630	1050	23ADPSV 300/3,5-0,5	3.5	7.0	5510530
1.714	2000536	550	10550	56.1	2256040	780	20780	39.3	2252830	970	30970	32	2253535	1670	301670	56	2253635	1200	23ADPSV 300/4-0,5	4.0	8.0	5510535
1.382	2000541	600	10600	63.9	2256045	870	20870	43.8	2252835	1060	301060	36	2253540	1850	301850	63	2253640	1500	23ADPSV 300/5-0,5	5.0	10.0	5510540
0.926	2000551	750	10750	75.8	2256050	1070	201070	53.5	2252840	1300	301300	44	2253545	2250	302250	76	2253645	1800	23ADPSV 300/6-0,5	6.0	12.0	5510545
0.638	2000556	950	10950	87.0	2256055	1290	201290	64.4	2252845	1600	301600	52	2253550	2720	302720	92	2253650	2100	23ADPSV 300/7-0,5	7.0	14.0	5510550
0.424	2000561	1100	101100	114.5	2256060	1580	201580	79.0	2252850	1940	301940	65	2253555	3350	303350	114	2253655	2700	23ADPSV 300/9-0,5	9.0	18.0	5510555
0.31	2000566	1300	101300	131.3	2256065	1850	201850	92.4	2252855	2250	302250	76	2253560	3900	303900	132	2253660	3000	23ADPSV 300/10-0,5	10.0	20.0	5510560
0.196	2000571	1700	101700	158.5	2256070	2300	202300	117.3	2252865	2800	302800	96	2253565	5000	305000	163	2253665					
0.136	2000576	2000	102000	194.5	2256075	2750	202750	141.4	2252870	3400	303400	114	2253570	6000	306000	196	2253670					

MST heating mat, a single-conductor cable with a full protection screen and protection against UV radiation. Suitable for heating outdoor surfaces. Ø 5.0–5.5 mm. For easy installation MST heating mats are provided with a 1×5 m cold lead and another 1×5 m cold lead + the length of the mat. Cables and mats are packed in PE foil.

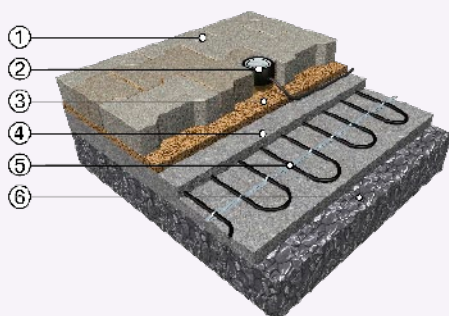


MST mats, 230 V, width 0.5 m

OUTPUT [W]	Type MST 300 W/m²	AREA [m²]	LENGTH [m]	Cat. No.
3600	23MST 300/12-0.5	12.0	24.0	5501145
4500	23MST 300/15-0.5	15.0	30.0	5501150
6000	23MST 300/20-0.5	20.0	40.0	5501155

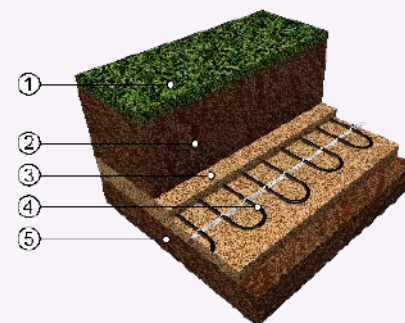
DRIVEWAY

- 1 hardened surface, e.g. interlocking pavement
- 2 humidity sensor (water, snow, ice)
- 3 sand bed of the interlocking pavement
- 4 concrete board (protects the heating cable from vehicle load)
- 5 heating cable/heating mat ECOFLOOR®
- 6 firm gravel base (macadam)



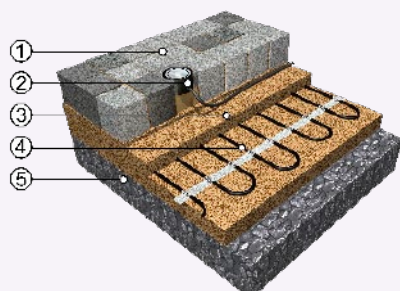
FOOTBALL PITCH

- 1 grass
- 2 soil layer, approx. 30 cm thick
- 3 sand bedding, approx. 7 cm (compacted) and approx. 3 cm thick fill
- 4 heating cable ECOFLOOR®
- 5 Levelled solid base (existing soil)



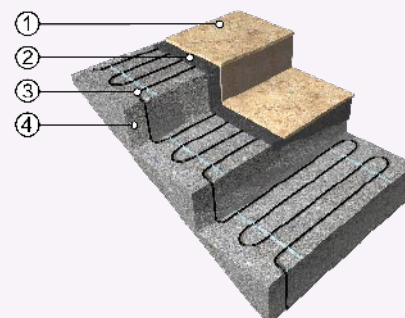
PAVEMENT

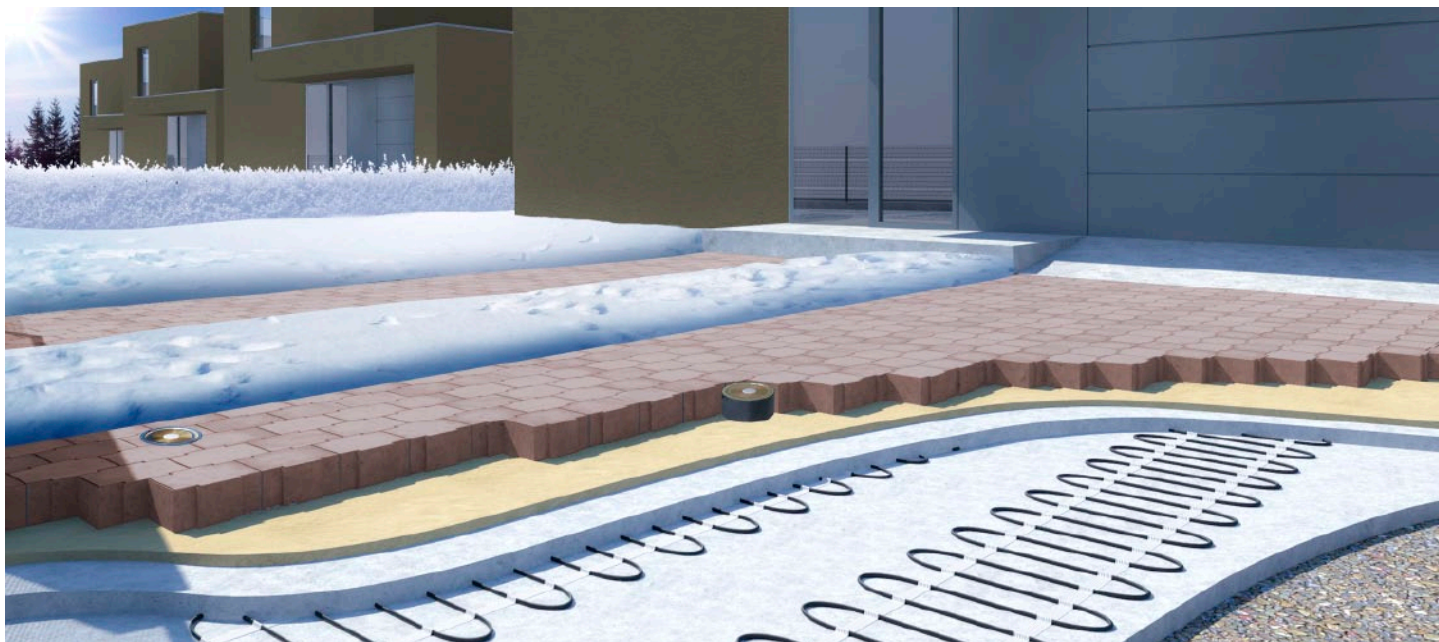
- 1 hardened surface, e.g. floor tiling
- 2 humidity sensor (water, snow, ice)
- 3 sand fill and the sub-base of the cable
- 4 heating cable/heating mat ECOFLOOR®
- 5 firm gravel base (macadam)



STAIRS

- 1 wear layer (floor tiling)
- 2 flexible bonding cement
- 3 heating cable ECOFLOOR®
- 4 stairs





ADSV+ heating cable, a two-conductor cable with a full protection screen. The sheathing of the cable is resistant against UV radiation and is intended for floor heating and the removal of snow and ice from roofs and eaves troughs. 1×3 m halogen free cold lead. Ø 5.0 mm. 230 V.



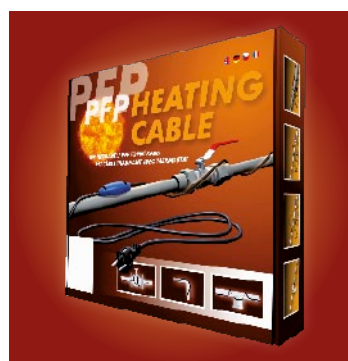
TYPE	Suitability	Max. loading
Floor heating in living areas	Yes	20 W/m
Outdoor surface heating	No	-
Frost protection of pipes	Yes	10 W/m
Pipe heating	Yes	10 W/m
Removing ice and snow from roofs and gutters	Yes	20 W/m

Heating circuits

OUTPUT [W]	Type ADSV+ 10 W/m	LENGTH [m]	Cat. No.
120	10120	11.4	2253000
200	10200	18.9	2253005
250	10250	23.6	2253010
320	10320	31.6	2253015
400	10400	36.9	2253020
450	10450	45.9	2253025
520	10520	49.6	2253030
600	10600	63.9	2253035
750	10750	75.8	2253040
950	10950	87.0	2253045
1100	101100	114.5	2253050
1300	101300	131.3	2253055
1700	101700	158.5	2253060
2000	102000	194.5	2253065

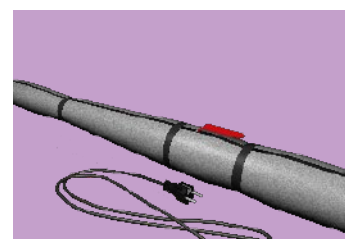
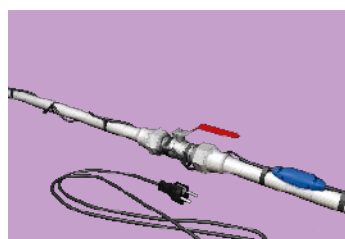
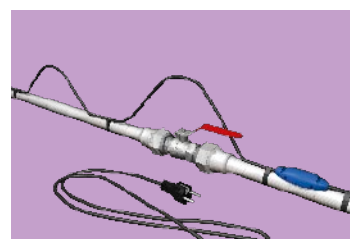
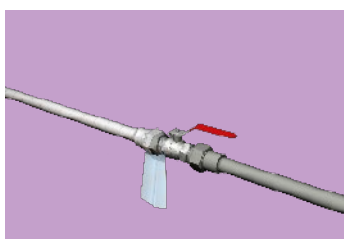
OUTPUT [W]	Type ADSV+ 18 W/m	LENGTH [m]	Cat. No.
160	18160	8.5	2253100
260	18260	14.5	2253105
320	18320	18.5	2253110
420	18420	24.0	2253115
520	18520	28.4	2253120
600	18600	34.4	2253125
680	18680	37.9	2253130
830	18830	46.1	2253135
1000	181000	57.5	2253140
1200	181200	68.9	2253145
1500	181500	83.2	2253150
1700	181700	100.4	2253155
2200	182200	122.7	2253160
2600	182600	149.6	2253165

OUTPUT [W]	Type ADSV+ 20 W/m	LENGTH [m]	Cat. No.
160	20160	8.3	2253200
270	20270	14.0	2253205
340	20340	17.2	2253210
450	20450	22.5	2253215
540	20540	27.4	2253220
640	20640	32.1	2253225
720	20720	35.8	2253230
870	20870	43.8	2253235
1070	201070	53.5	2253240
1290	201290	64.4	2253245
1580	201580	79.0	2253250
1850	201850	92.4	2253255
2300	202300	117.3	2253260
2750	202750	141.4	2253265



PFP – automatic heating cable with a thermostat, electrical socket connection, the thermostat switches on at +3 °C, 1.5m connection cable with plug, IP 66 coverage. 230 V.

OUTPUT [W]	Type PFP	LENGTH [m]	Cat. No.
12	PFP 1m/12W	1	2330150
25	PFP 2m/25W	2	2330152
36	PFP 3m/36W	3	2330154
48	PFP 4m/48W	4	2330156
72	PFP 6m/72W	6	2330158
136	PFP 10m/136W	10	2330160
152	PFP 14m/152W	14	2330162
281	PFP 21m/281W	21	2330164
337	PFP 30m/337W	30	2330166
490	PFP 42m/490W	42	2330168



SPECIAL APPLICATIONS

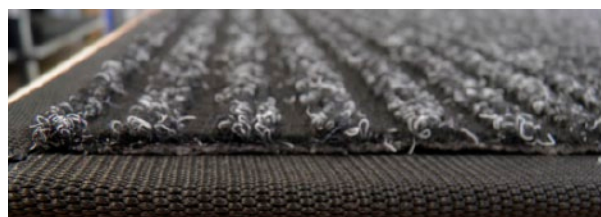
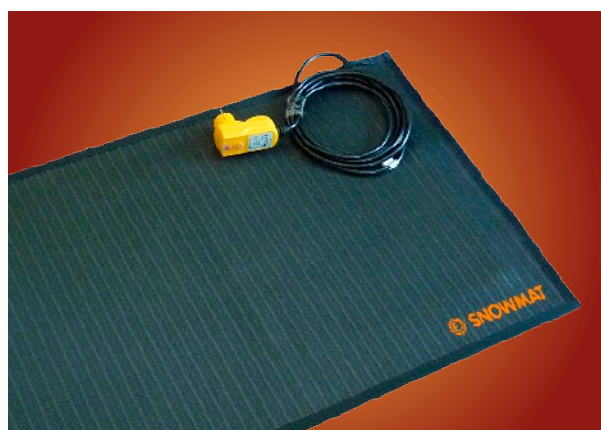
S-MAT (SNOWMAT)

Heated rubber mat is intended mainly for entry cleaning zones in shops and shopping centres but can be used anywhere where in winter periods the protection is required; 5 m supply lead with plug; mat IP: 65, plug IP: 54; 230 V / 50 Hz.

Advantages: effortless maintenance of the required areas from snow and black ice, simple installation and handling, Commercial loading – may also be loaded with lighter carts with rubber wheels.

OUTPUT [W]	Type S-MAT 390 W/m ²	HEATING AREA		TOTAL LENGTH		THICKNESS [mm]	WEIGHT NETTO [kg]	Cat. No.
		WIDTH [m]	LENGTH [m]	WIDTH [m]	LENGTH [m]			
460	SM 1.5/460	0.82	1.44	1	1.55	8	15	5504505

OUTPUT [W]	Type SM-W 390 W/m ²	HEATING AREA		TOTAL LENGTH		THICKNESS [mm]	WEIGHT NETTO [kg]	Cat. No.
		WIDTH [m]	LENGTH [m]	WIDTH [m]	LENGTH [m]			
485	SM-W 1.5/485	0.82	1.44	1	1.55	9.5	16.7	5504507



D-MAT (DE-ICING MAT)

Intended for outdoor use as anti-freeze protection in industrial applications and in the construction industry – for example, for the warming of the earth in excavation pits or of stored friable materials, the warming of cables on reels, maintenance of warmth in parts of machines or in tools, etc. The sheet is also suitable for use in extreme winter conditions.

Technical parameters: IP 56 rating; heated area 1.2×2.85 m (3.4 m²); total sheet dimensions 1.5×3.05 m; 5 m supply lead ends in a SCHUKO plug. 230 V / 50 Hz; 9.6 kg.

OUTPUT [W]	Type D-MAT 280 W/m ²	HEATING AREA		TOTAL LENGTH		THICKNESS [mm]	WEIGHT NETTO [kg]	Cat. No.
		WIDTH [m]	LENGTH [m]	WIDTH [m]	LENGTH [m]			
950	DM 3.4/950	1.2	2.85	1.5	3.05	4	9.6	5505000



W-MAT (WORKMAT)

We are now introducing a smaller version of the product – the heated rubber mat W-Mat. As its name suggests, heated mats are intended for use in protecting workers against cold emanating from floors – most often in industrial workplaces, where the character of activities taking place involves employees spending long periods in small and limited areas.

Technical parameters: IP 65 rating; 230 V / 50 Hz; Protection class I.; dimensions 1×0.6 m; 6.6 kg.

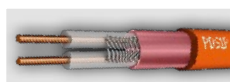
OUTPUT [W]	Type W-MAT 200 W/m ²	HEATING AREA		TOTAL LENGTH		THICKNESS [mm]	WEIGHT NETTO [kg]	Cat. No.
		WIDTH [m]	LENGTH [m]	WIDTH [m]	LENGTH [m]			
68	WM 0.6/68	0.4	0.85	0.6	1	8	5.65	5504405



CONCRETE CURING CABLE CIRCUITS

A twin conductor screened cable with a 1×2 m cold lead with plug connection. 230 V.

OUTPUT [W]	Type PDS1P 40 W/m	LENGTH [m]	Cat. No.
130	40130	3.3	2325000
380	40380	10.0	2325005
735	40735	20.0	2325008
1400	401400	35.0	2325018
1500	401500	38.0	2325020
2200	402200	55.0	2325025
3200	403200	85.0	2325028



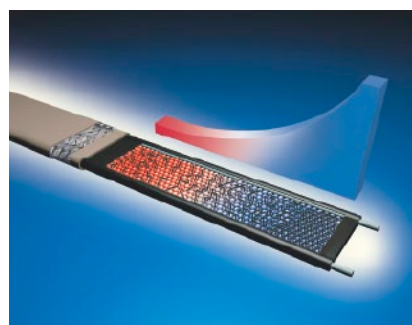
PDS1P cable for curing concrete. Packed in PE foil.



SELF-REGULATING CABLES

ELSR self-regulating cables are parallel electrical heating strips constructed from a specially finished plastic with embedded carbon particles that create an electrical path between two parallel copper bus bars.

Marking	Output W/m 10°C	Temperature tolerance [°C]	Limitation for installation		Max. length at the temperature setting			Cat. No.
			Min. temp.	Min. radius				
ELSR-M – Frost protection of pipe					6 A	10 A	16 A	
ELSR-M – 10 BO	10	65	–30°C	35 mm	65 m	95 m	105 m	2330310
ELSR-M – 15 BO	15	65	–30°C	35 mm	37 m	58 m	65 m	2330315
ELSR-N – Frost protection of trays, gutters, roofs, technological heating					16 A	20 A	25 A	
ELSR-N – 20 BO	20	80	–10°C	20 mm	94 m	116 m	146 m	2330320
ELSR-N – 30 BO	30	80	–10°C	20 mm	70 m	87 m	109 m	2330330
KIT Nr. 4	For connection and termination of self-limiting cables							5030124
Cold lead for self-regulating cables								
SK 1.5	Limitation: 12 A / 20 m							2000790
SK 2.5	Limitation: 20 A / 20 m							2000795



Industrial applications:

- Analyzer lines – prevent condensation
- Cooling water lines – anti-freeze protection
- Potable water lines – anti-freeze protection
- Caustic soda – prevents crystallization under 30 °C
- Oils and fats – maintain pumpable viscosity
- Heating oil – prevents wax dispersion
- Vessel – anti-freeze and condensation protection

F-BOARD FLOOR INSULATION

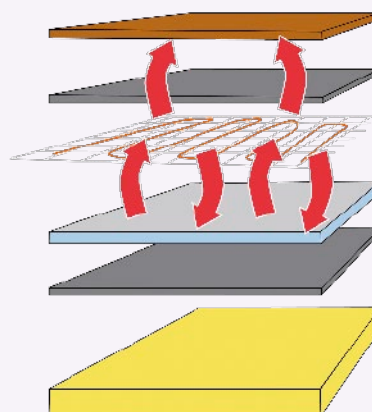
F-boards prevent heat losses to the subfloor structure. Recommended for floor reconstructions.

Type	Dimensions [mm]	Thickness [mm]	Packaging		Packets on the pallet	Cat. No.
			[boards in packet]	[m²]		
F-BOARD 6	1200×600×6	6	6	4.32	70	5442020
F-BOARD 10	1200×600×10	10	6	4.32	50	5442021



Useful information

Dimensions	600 mm × 1200 mm (0.72 m² each)
Thickness	6 mm or 10 mm
Weight netto (kg/board)	2.35 (6 mm) 2.37 (10 mm)
Material	Extruded Polystyrene core with Polymer cement outer skin
Density	35 kg/m³
Thermal Conductivity	0.033 W/mK
Compressive strenght	≥ 300 kPa
Water absorption (immersion)	≤ 1.5% vol
Water absorption (capillary)	Nil
Co-efficient of Linear Expansion	0.07 mm/mK
Flammability	B1



Floor Tiles

Tile Adhesive

ECOFLOOR Mat

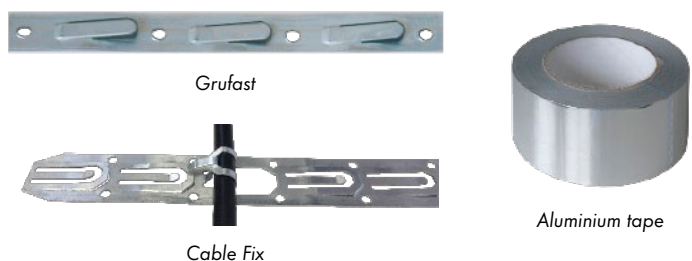
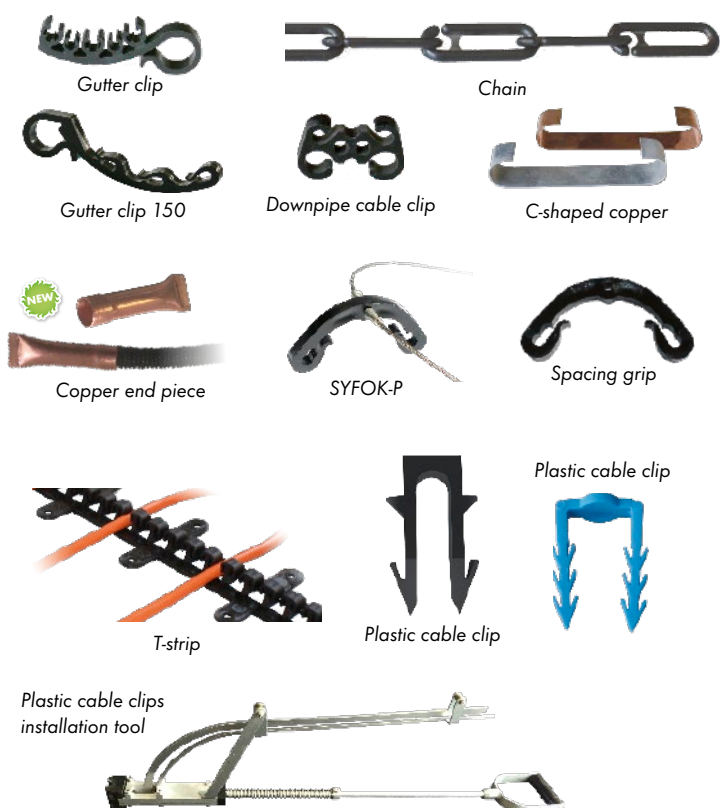
F-BOARD

Tile Adhesive

Sub-Floor – or Existing Floor
(before renovation)

ECOFLOOR ACCESSORIES

	Quantity supplied	Cat. No.
Gutter clip 100; Intended for standard 100 mm semicircular gutters - install approx. 4 pcs/1 m (spacing 25 cm). 1 package = 25 pcs	1 package	2350000
Gutter clip 150; Material: frost-resistant plastic, suitable for self-regulating cable. 1 package = 25 pcs	1 package	2350007
Downpipe cable clip; For the attachment of a cable on a chain in the downspout - install approx. 4 pcs/1 m (spacing 25 cm). 1 package = 25 pcs	1 package	2350003
Chain, 1 package = 10 m. Material: frost-resistant plastic.	1 package	2350004
Grufast - spacing of grips: 3.5 cm. Universal fixing tape for the fixation of heating cables. Consumption: approx. 1 pc/ 4 m ² . 1 unit = 10 m, NOT suitable for outdoor environments	1 unit	4200013
Cable Fix AL 25 - universal fixation strip for heating cables, suitable also for outdoor use - e.g. for roof gutters - thanks to the materials used (aluminium). DIMENSIONS: thickness 0.5 mm; width 21 mm; length 10 m; axial spacing of the grips 25 mm	1 unit	4200016
Plastic cable clip, 1 package = 60 pcs	1 package	1200002
Plastic cable clip, 1 package = 50 pcs, blue. For the manual installation of heating cables/mats. Cannot be used with the installation tool.	1 package	1200000
Installation tool for the comfortable installation of plastic cable clips	1 unit	1200010
T-strip; material: plastic; strip length 0.5 m; fixation of heating cables with a diameter of 3.5-9 mm. Axial distance of grips 1 cm, total strip height 10 mm, option of connecting the strips.	1 package = 20 pcs	2350009
REPAIR KIT		
Kit no. 1 - for PV cable repair	1	5030121
Kit no. 2 - for ADSV, ASLIP, PSV, CM Mat LD and LDTS cable repair	1	5030122
Kit no. 3 - for MADPSP, MAPSV, MST, MDT and ADPSV cable and mat repair	1	5030123
Kit no. 4 - for connection and termination of self-limiting cables	1	5030124
Kit no. 5 - for MADPSP installed under asphalt	1	5030125
Kit no. 6 - termination of PC/PC-S cables with linear wattage	1	5030126
OTHER ACCESSORIES		
Copper end piece - intended as an end piece for a flexible tube ("gooseneck"): outer diameter 11.4 mm / inner diameter 8.5mm - used to prevent sealant (anhydrite, concrete) from entering the gooseneck containing the floor probe and to improve the transfer of heat to the thermistor of the probe = more precise measurement of floor temperatures	1 unit	2350021
Self-adhesive aluminium tape - width 50 mm, length 50 m. Designed for the fixation of heating cables to pipes (temperature resistance 150 °C).	1	2832515
SYFOK-P - fixation cables for nonstandard eaves, gutters and valleys. Material: frost-resistant plastic.	P/20 (20 m)	2350012
	P/10 (10 m)	2350013
Spacing grip; material: frost-resistant plastic, package contains 25 pcs. Maintains the spacing (approx 4.5 cm) of cables running in parallel.	1 package	2350014
Roof grip C, 25 pcs per pack. For the attachment of cables in roof valleys, atypical eaves, flat roofs - attachment via soldering/riveting, glueing using 3M 46-11F acrylic tape	CU	2350005
	TiZn	2350006



References: ECOFLOOR products



Heating cables - Ice & Snow melting / Heliport (Poland)



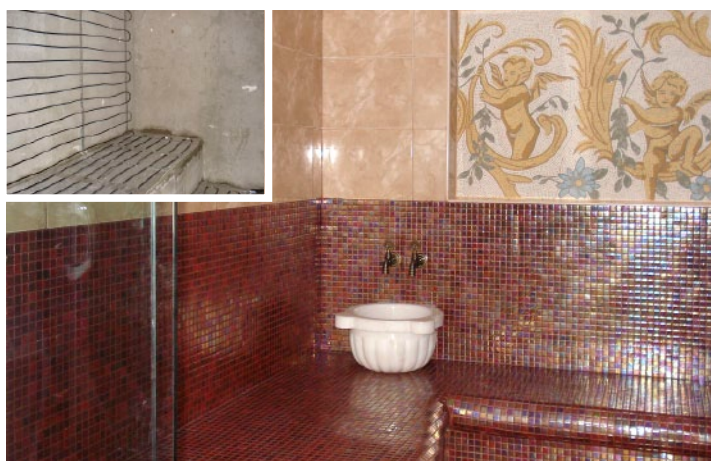
Heating cables - underfloor heating / Hrabovo Apartments & Wellness (Slovakia)



Heating cables - Ice & Snow melting / Football stadium (Turkey)



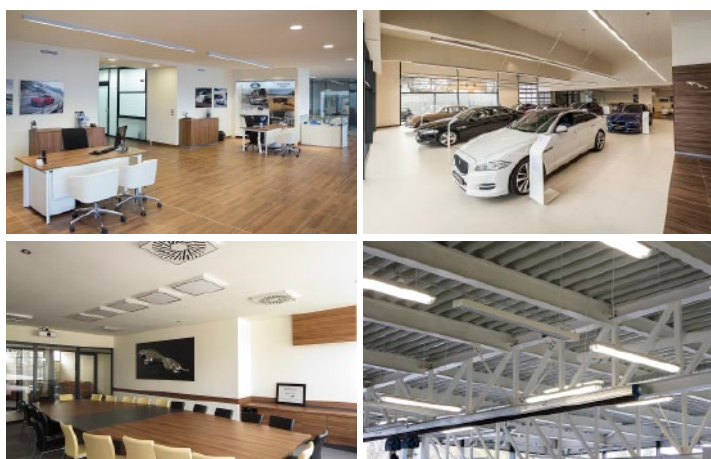
Heating cables - Gutters deicing / Mosque (Iran)



Heating cables / Turkish Bath (Turkey)



Underfloor heating ECOFLOOR / Hotel Crowne Plaza, Prague (Czech Republic)



ECOFLOOR, ECOSUN / Sales centre for Jaguar and Land Rover, Ostrava (Czech Republic)



Floor heating ECOFLOOR / Historic buildings Golden Lane in Prague (Czech Republic)

Ecofilm heating films use state of the art technology and are primarily used for heating large surfaces. These heating systems are composed of laminated polyester films with a graphite coating, supply leads, and accessories. We offer ECOFILM films in 3 versions: underfloor heating films ("F"), ceiling films ("C") and mirror heating films.

ECOFILM set

The do-it-yourself kit for underfloor heating may be installed easily and quickly by following the relevant instructions. No professional installation company required. The final electrical connection must be carried out by a qualified electrician. As the Ecofilm set comes complete for installation, no accessories are needed. We recommend 60 W/m² for a floating wooden floor and 80 W/m² for a floating laminated floor.

The Ecofilm set includes:

- Ecofilm F608/57 (F606/57, 1008) electrical heating film delivered in rolls of various lengths according to the customer's requirements and layout plan. The heating film is supplied with insulated cut edges and cold leads.
- An additional pair of insulation discs for insulating the copper electrodes of the heating film in the event that there is a requirement to shorten the length of the heating film.
- Installation manual.

The film is fitted with two SK AV1.5 cold leads 3 mm in diameter and 5 m long.

The F film is intended for use as floor heating for dry structures – directly beneath a floating, wooden floors. Due to its ultra thin profile (max 0.4 mm thick) the original construction height of the floating floor is hardly affected. This silent, unobtrusive and dry-laid underfoot heating system is highly reliable and has a long life span. We provide a 10-year warranty for ECOFILM heating films; however, their operational life can be longer (30–50 years). The product has been tested according to European standards.



Simplified Example of ECOFILM Set

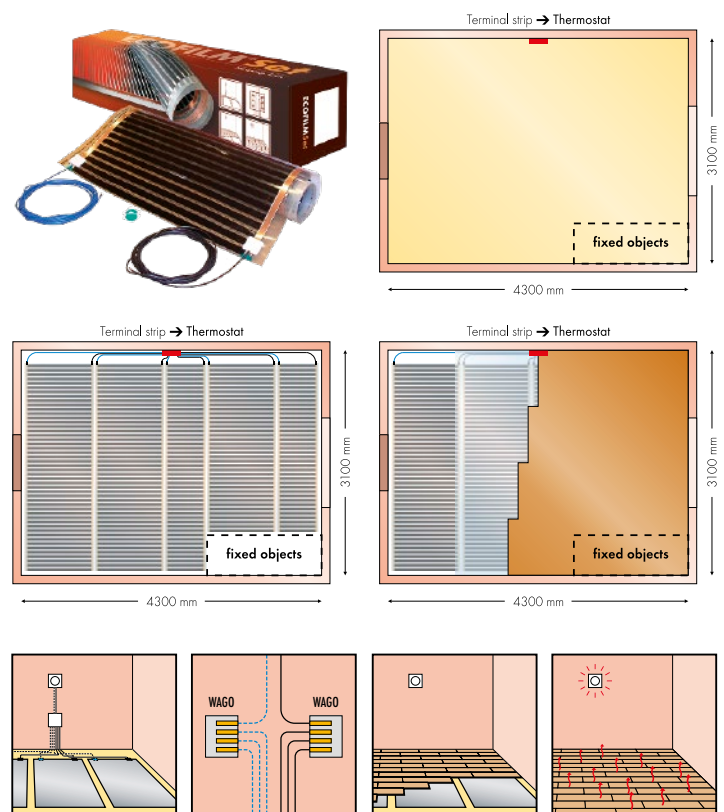
Design total surface area 4.3×3.1 m. Heating under laminated floor.

Recommended application: ECOFILM Set 80 W/m².

Note: Heating parts of the film must not overlap and their minimal distance from fixtures and wall shall be 5 cm.

Owing to the previous note, three 1000 mm-wide film strips of 3 m and 2 m in length and two 600 mm-wide film strips of 3 m and 2 m in length may be used. For the given application the use of the following is recommended: 2×Eset 80-3/234, 1×Eset 80-3/132, 1×Eset 80-2/156 and 1×Eset 80-2/88 + temperature control.

TYPE	WIDTH [mm]		Output (W/m ²)	LENGTH [m]	Total Output [W]	Cat. No.
	TOTAL	ACTIVE				
ES 60-0,6x 1,5m / 50W	600	570	60 W/m ² (230 V)	1.5	50	6652495
ES 60-0,6x 2m / 66W				2	66	6652500
ES 60-0,6x 2,5m / 83W				2.5	83	6652503
ES 60-0,6x 3m / 99W				3	99	6652505
ES 60-0,6x 4m / 132W				4	132	6652510
ES 60-0,6x 5m / 165W				5	165	6652515
ES 60-0,6x 6m / 198W				6	198	6652520
ES 60-0,6x 8m / 264W				8	264	6652525
ES 60-0,6x 10m / 330W				10	330	6652530
ES 80-0,6x 1,5m / 66W	600	570	80 W/m ² (230 V)	1.5	66	6652538
ES 80-0,6x 2m / 88W				2	88	6652540
ES 80-0,6x 2,5m / 110W				2.5	110	6652543
ES 80-0,6x 3m / 132W				3	132	6652545
ES 80-0,6x 4m / 176W				4	176	6652550
ES 80-0,6x 5m / 220W				5	220	6652555
ES 80-0,6x 6m / 264W				6	264	6652560
ES 80-0,6x 8m / 352W				8	352	6652565
ES 80-0,6x 10m / 440W				10	440	6652570
ES 80-1,0x 1,5m / 117W	1000	970	80 W/m ² (230 V)	1.5	117	6652708
ES 80-1,0x 2m / 156W				2	156	6652710
ES 80-1,0x 2,5m / 195W				2.5	195	6652713
ES 80-1,0x 3m / 234W				3	234	6652715
ES 80-1,0x 4m / 312W				4	312	6652720
ES 80-1,0x 5m / 390W				5	390	6652725
ES 80-1,0x 6m / 468W				6	468	6652730
ES 80-1,0x 8m / 624W				8	624	6652735
ES 80-1,0x 10m / 780W				10	780	6652740



ECOFILM F – underfloor heating film

Flexible Ecofilm heating film is the ideal solution for economical electric underfloor heating for laminated and wooden floating floors. ECOFILM heating foils are intended for use as floor heating for dry structures. The product is ultrathin, yet robust, and is a dry-laid system that is easy to install.

Easy, precise and fast installation

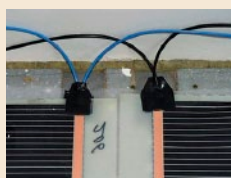
The heating film is produced in rolls 600 mm wide (570 mm heating surface, two 25 mm non-heating edges) and 1 000 mm wide (970 mm heating surface, two 15 mm non-heating edges). Thanks to its special material composition, the heating film may be cut every 10 mm to obtain exactly the required length of strips. The strips are laid side-by-side across the entire heating surface and are interconnected in parallel using cables with connectors. ECOFILM F heating components must neither overlap nor cross one another. This method of laying the film saves time and especially reduces labor costs. Installers will appreciate that the floating or wooden floor may be laid immediately after the heating film is installed and connected.

Gentle and safe heating for your comfort

Heating film makes an ideal floor heating system for laminated or wooden floating floors. The technical parameters of the heating film ensure that the materials' temperature resistance values are observed. Health and safety standards are also maintained as the maximum floor surface temperature is thermostatically limited to 27 °C. Traditional heaters, which utilise a liquid to transfer the heat, operate at (for example) significantly higher temperatures and result in a greater fluctuation in air humidity, and undesirable effects on wooden and laminated floors. It is hardly surprising that this sophisticated system has been used to safely and comfortably heat in excess of 2.5 million m² of floors throughout Europe and has been warmly endorsed by such leading floor manufacturers as PERGO, SCANDIFLOOR, ALLOC, KÄHRS and JUNCKERS.




ECOFILM F
with accessories

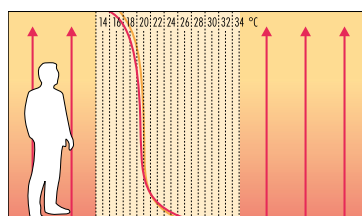


ECOFILM F connection in
parallel with Mastic



TYPE *	WIDTH [mm]		Output [W/m²]	Output [W/m]	Voltage	Cat. No.
	TOTAL	ACTIVE				
Laminate, wood or real timber floor						
ECOFILM F 608/57	600	570	80	44	 230 V	6652306
ECOFILM F 606/57	600	570	60	33		6652305
ECOFILM F 604/57	600	570	40	22		6652304
ECOFILM F 1008	1000	970	80	78		6652310
ECOFILM F 1006	1000	970	60	58		6652309
ECOFILM F 1004	1000	970	40	39		6652308

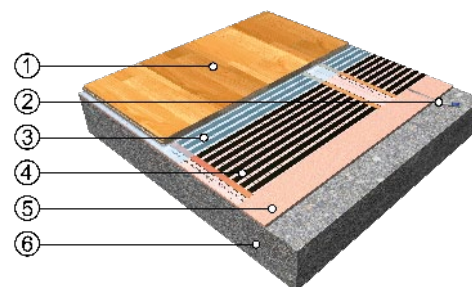
*) delivered as a roll; accessories required for installation must be ordered separately



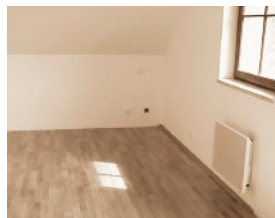
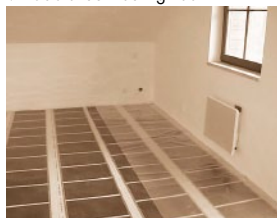
■ ideal temperature characteristic
■ under-floor heating
temperature characteristic

Sectional view of laminated (wooden) floor (reconstruction)

- 1 three-layer wooden or laminate floating floor
- 2 floor (limitation) probe in a groove
- 3 PE foil covering, 0.25 mm thick
- 4 ECOFILM® floor heating foil
- 5 insulation underlay from extruded polystyrene
- 6 base – concrete, anhydrite, original floor etc.

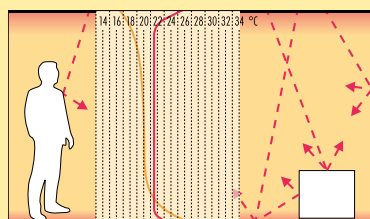


Illustrative photos—installation of ECOFILM F608 under floating floor

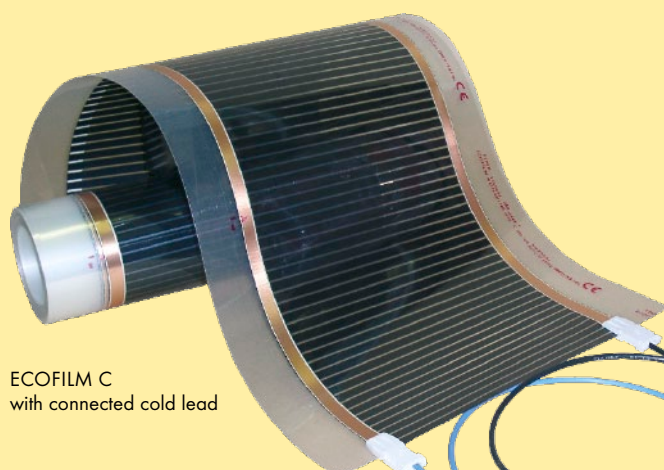


ECOFILM C – ceiling heating film

ECOFILM C heating films provide an ideal ceiling heating system with balanced heat distribution throughout the room (without temperature gradients). Control of the ECOFILM C'S temperature is achieved by the use of an electronic thermostat which controls the room temperature. As it is a radiant heating system, the same comfort level as achieved by convection heating may be obtained at lower temperatures. Generally, reducing the temperature by 1 °C lowers total heating costs by 6%.



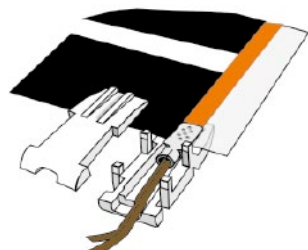
■ ideal temperature characteristic
■ ceiling radiant heating temperature characteristic



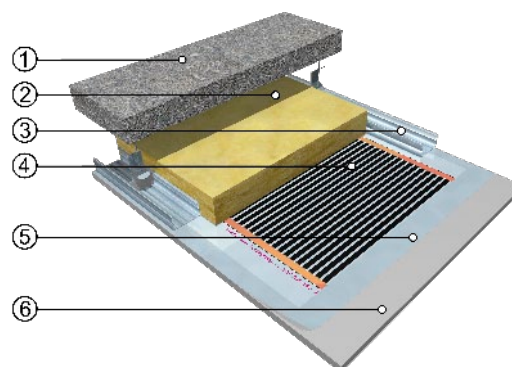
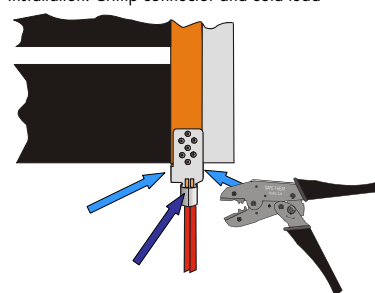
TYPE *	WIDTH [mm]		Output [W/m ²]	Output [W/m]	Cat. No.
	TOTAL	ACTIVE			
ECOFILM C 420 (MK3)	400	300	200	60	6652103
ECOFILM C 414	400	300	140	42	6652202
ECOFILM C 520 (MK3)	500	400	200	80	6652211
ECOFILM C 514	500	400	140	56	6652220
ECOFILM C 510	500	400	100	40	6652225

*) delivered as a roll; accessories required for installation must be ordered separately

Installation of connector cover



Installation: Crimp connector and cold lead



Sectional view of ceiling structure

1 load-bearing ceiling structure; 2 thermal insulation; 3 CD load-bearing sections of the plasterboard structure; 4 ECOFILM® ceiling heating foil; 5 PE foil covering, 0.25 mm thick; 6 plasterboard ceiling (floating)

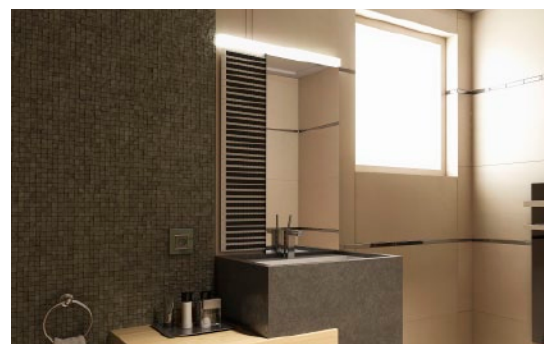
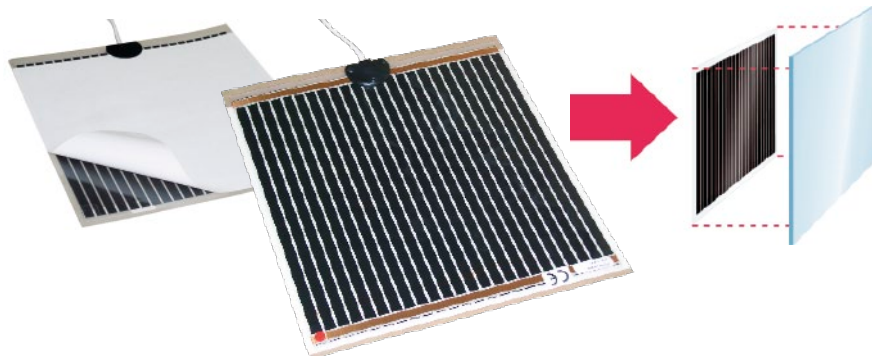
Illustrative photos of ECOFILM C installation on metal joists



ECOFILM MHF – mirror fogging prevention

MIRROR HEATING FILM – perfectly prevents mirror fogging

Safe operation. The Ecofilm MHF film operates at low temperatures and prevents overheating or damage to the mirror. Installation is simple and fast. The MHF film has an adhesive layer (with release backing) that easily sticks to the rear of a mirror. The mirror heater can be wired into the electric circuit of a lighting fixture so that it is activated whenever the light is switched on. Due to its low input, the heating film's operating costs are negligible. ECOFILM MHF heating film requires no maintenance.



TYPE	Output [W]	Dimensions [mm]	Cat. No.
MHF 12	12.5	274×252	6651850
MHF 25	25	274×574	6651860
MHF 50	50	524×519	6651870
MHF 100	100	524×1004	6651880

1 m cold lead, IP 44, class II

ECOFILM ACCESSORIES

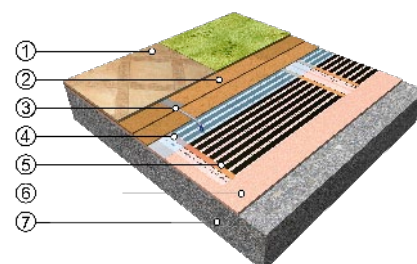
Product	Description	Amount supplied	Cat. No.
	Crimp connector for Ecofilm C and F	1 unit	6651001
	Crimp cover for Ecofilm C	1 unit	6651002
 brown blue	Cold lead 1.5 for Ecofilm C	1 m	665100x
	Cold lead AV 1.5 for Ecofilm F	1 m	66510x0
	Cold lead AV 2.5 for Ecofilm F	1 m	66510x0

Product	Description	Amount supplied	Cat. No.
	Crimp tool	1 unit	6651003
	Insulating tape for sealing cut edges of heating film 38 mm width/33 m length	1 roll	6651028
	MASTIC VM connector insulation for Ecofilm F; 38 mm width (1 connector requires 0.1 m; 6 m in packing)	1 m	6651012
	WAGO connector (terminal strip) for Ecofilm set. The number of wago connectors depends on the number of sets: up to 4 sets 2 pcs, 5–7 sets 4 pcs, 8–10 sets 6 pcs, 11–13 sets 8 pcs	1 unit	6651009

HEAT-PAK for the placement of ECOFILM F, ECOFILM SET heating foil under a carpet or PVC

This underlay with good thermal conductivity enables the installation of floor heating directly under a carpet or PVC when it isn't possible to place the heating cable into screed (for example, in the case of additional installation or reconstruction work). Completely dry installation; raises the floor by only 10 mm. The packaging contains 8 boards (4×3 mm thick base boards and 4×4 mm thick covering boards); each of them is coated in a thin layer of adhesive. Laid in two layers, the boards are glued to each other (staggering of joints is necessary – in this way, the joints don't show through on the floor covering). A rigid, 7 mm thick compact construction is created onto which PVC or carpet can be laid (freely or glued). Sold only as whole packages.

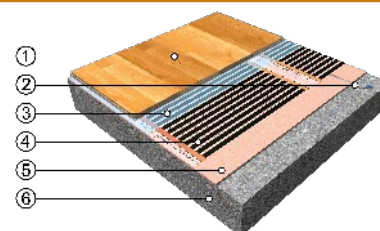
1 wear layer (PVC, carpet); **2** HEAT-PAK 7 mm two-layer glued underlay; **3** floor (limitation) probe in the groove (embedded); **4** PE foil covering, 0.25 mm thick; **5** ECOFILM® floor heating foil; **6** insulation underlay from extruded polystyrene; **7** base – original floor, concrete anhydrite, etc.



Type	Thickness [mm]	Capacity [kg/m²]	Thermal conductivity coefficient [W/mK]	Strength in flexure	Dimensions of the boards [m]	Package [m²]	Cat. No.
HEAT-PAK 7	3 and 4	770	0.15	> 40 kg/cm²	boards 0.6×1.2	2.88 m²	5442024

FLOOR INSULATION under wood/laminate floor with ECOFILM F, ECOFILM SET heating foil

1 three-layer wooden or laminate floating floor; **2** floor (limitation) probe in a groove; **3** PE foil covering, 0.25 mm thick; **4** ECOFILM® floor heating foil; **5** insulation underlay from extruded polystyrene; **6** base – concrete, anhydrite, original floor etc.



Type	Thickness [mm]	Bulk density [kg/m³]	Thermal conductivity coefficient [W/mK]	Load resistance [t/m²]	Dimensions of insulation [m]	Package [m²]	Cat. No.
STARLON 3	3	40	0.0315	5.2	0.5×1.0 boards	5.0	5442032
STARLON 6	6	33	0.0298	6.7	0.5×1.0 boards	5.0	5442034

WARNING: before choosing insulation make sure that it is possible for the chosen covering to be laid on an XPS base with a thickness >3 mm.

PE FOIL

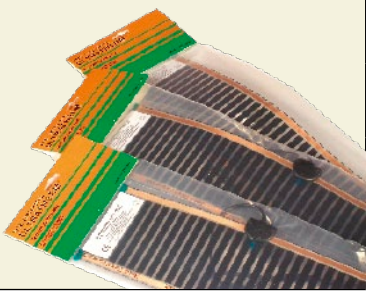
Type	Thickness [mm]	Dimensions of insulation [m]	Package [m²]	Cat. No.
PE foil 25 µm	0.25	1.2×10	12.0	6651030

In 2008 Demista Ltd. joined FENIX Holding. Demista Ltd. is based in Great Britain and focuses on the production of special purpose heating elements using mainly ECOFILM foil. These products include heating systems for vivariums and terrariums.




ULTRATHERM HEATING FILMS AND STRIPS


Viv Strip – heating strips – due to their size, Viv Strip heating strips are suitable mainly for the warming of selected areas within a vivarium or terrarium housing specific types of reptile. Cold lead 2 m. IPX4, class II.

	TYPE	Output [W]	Voltage [V]	Dimensions [mm]	Cat. No.
	Ultratherm Viv Strip 11	11	230V / 50Hz	150×410	8510051
	Ultratherm Viv Strip 15	15		150×572	8510053
	Ultratherm Viv Strip 23	23		150×868	8510055
	Ultratherm Viv Strip 32	32		150×1188	8510057

Viv Mat – heating foils – Viv Mat heating foils are larger than Viv Strip strips and so are used when it is necessary to heat the majority of the area of a vivarium or terrarium. Cold lead 2 m. IPX4, class II.

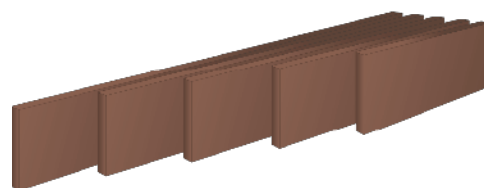
	TYPE	Output [W]	Voltage [V]	Dimensions [mm]	Cat. No.
	Ultratherm Viv Mat 7	7	230V / 50Hz	274×142	8510001
	Ultratherm Viv Mat 15	15		274×276	8510003
	Ultratherm Viv Mat 22	22		274×410	8510005
	Ultratherm Viv Mat 30	30		274×572	8510007
	Ultratherm Viv Mat 39	39		274×732	8510009
	Ultratherm Viv Mat 46	46		274×868	8510011
	Ultratherm Viv Mat 64	64		274×1188	8510013

Happy Hamster – heating foil – due to its dimensions this heating foil is suitable for breeders of various types of rodent. Although rodents are not primarily heat-loving animals, in the winter season they enter a certain form of winter hibernation and Happy Hamster heating foil is ideal to help them get through this period in comfort. Cold lead 2 m. IPX4, class II.

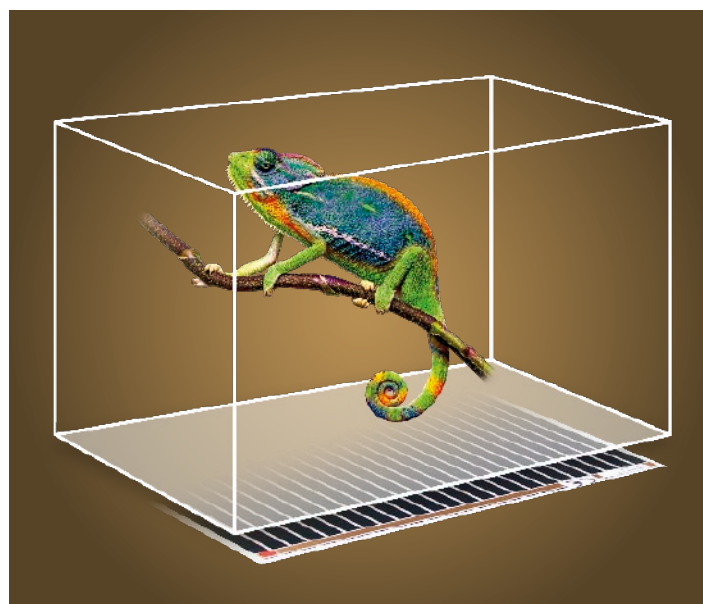
	TYPE	Output [W]	Voltage [V]	Dimensions [mm]	Cat. No.
	Ultratherm Happy Hamster	8	230V / 50Hz	178×280	8510071

ULTRATHERM RADIANT PANELS

ULTRATHERM – radiant heating panels – these panels utilise the principle of infrared radiation and are primarily intended for the localised heating and warming of breeding places, large terrariums or dog kennels. They are equipped with a thermal fuse which protects the panel from overheating. It is possible to install them in a vertical position; for horizontal installation it is necessary to order mounting frames. The standard colour is brown; white versions can be ordered and other colours are possible for an additional fee. **Connection cable:** 75 cm for 100–270 W, 120 cm for 330–400 W



TYPE	[W]	[V]	Coverage	Dimensions [mm]	Weight netto [kg]		Quantity on pallet	Cat. No.
Panel ULTRATHERM 100 h	100	230	IP 44	500×320×30	2.1	Recommended height of installation The apertures used for hanging the ULTRATHERM panel are on the rear side of the panel. For the installation of a panel in a horizontal position it is necessary to order a ceiling frame.	60	8515010
Panel ULTRATHERM 200 h	200			750×320×30	3.1		45	8515015
Panel ULTRATHERM 270 h	270			1000×320×30	3.9		30	8515020
Panel ULTRATHERM 330 h	330			1250×320×30	5.4		30	8515025
Panel ULTRATHERM 400 h	400			1500×320×30	6.4		30	8515030
Ceiling fixing frame for horizontal installation of ULTRATHERM 100 panels								5401230
Ceiling fixing frame for horizontal installation of ULTRATHERM 200 panels								5401231
Ceiling fixing frame for horizontal installation of ULTRATHERM 330 panels								5401232
Ceiling fixing frame for horizontal installation of ULTRATHERM 270 panels								5401233
Ceiling fixing frame for horizontal installation of ULTRATHERM 400 panels								5401234



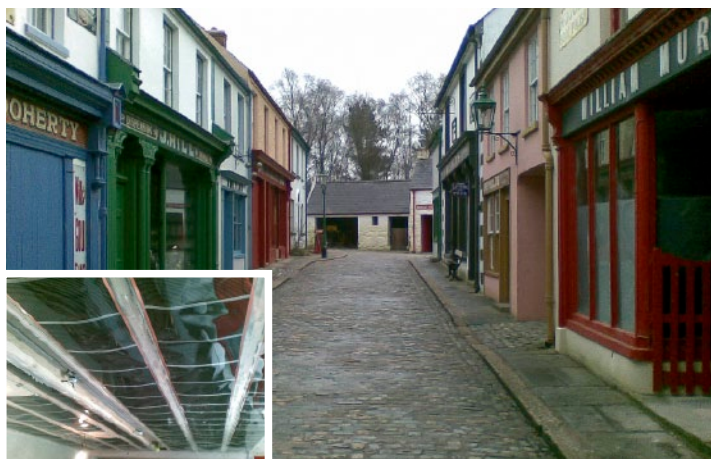
ULTRATHERM REGULATION



Plug in thermostat HT600 – programmable thermostat is equipped with an internal room temperature (air) sensor and features the option of connecting a cable probe (a 2 m long cable sensor with an IP66 rating is included with the product). Please note that the thermostat always reads only one temperature (via an internal sensor or a cable probe). Two temperatures can be set in the thermostat (comfort/attenuation) and it switches between them according to the selected programme. The programme can contain up to 23 temperature changes (every whole hour) and up to 7 programmes can be created (for the individual days of the week). The thermostat is intended for switching the following appliances on and off: radiant panels, ladder radiators, and heating foils and ULTRATHERM panels for animal keepers.

Description	Cat. No.
Technical data: switching contact: 230V / 16 A / 3600 W; optional sound signal when the set temperature interval is exceeded; programme backup in EEPROM memory (6 months); controlled temperature range: 0–60 °C, accuracy: ±0.5 °C.	8520005

References: ECOFILM products



Ceiling radiant heating foil ECOFILM / Ulster American Folk Park (Northern Ireland)



Underfloor and ceiling heating film ECOFILM / Castle Rocca di Vigola (Italy)



Thera plates with heating film ECOFILM / Tempio del Canova, Possagno (Italy)



Underfloor heating film ECOFILM / Family houses, Lisboa (Portugal)



ECOFILM ceiling heating / Family house (Czech Republic)



Heating film / Battistero nella Basilica Di San Marco (Italy)



Heating film / Palazzo Reale Turin (Italy)



Heating film / Vivarium (Czech Republic)



In convection heating, a heating body is used to warm the air which then distributes – transfers – heat as it flows over the surfaces of the objects to be heated. Most electrical convector heaters that our firm distributes come with a precise electronic thermostat as standard, with a contact variation of +0.5 °C.

Direct-heating convection heaters

Simple, undemanding heaters which have zero maintenance requirements and are easy to install. Exceptional operating parameters can be attained thanks to the use of precise electronic thermostats. FENIX ECOFLEX convection heaters are among the few such units that can be controlled via a pilot wire.



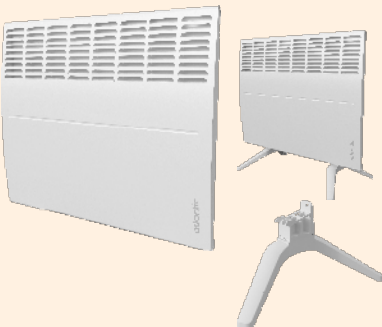
Radiant convection heaters

These products combine within themselves the advantages of two different systems – infrared radiant heating (radiant heat, more economical operation, even distribution of temperatures, pleasant microclimate) and convection heating (excellent dynamics, advantageous price/performance ratio). Radiant convection heaters can also eliminate, to a large degree, the so-called “cold floor” effect thanks to the radiation of heat and are therefore suitable mainly for flats, schools and offices.

ECOFLEX TAC – electric convector with electronic thermostat and pilot wire. This product is only suitable for well-insulated rooms or occasional use – mainly for the heating of apartments and homes, doctor's surgeries, offices, schools, etc. 3–4 °C setback control, 230V/50 Hz. Colour: white (RAL 9016) with white grid. IP 24, class II; can be installed on C and D flammable surfaces; needed clearance (cm): bottom edge, 15 / top edge, 15 / front side, 15

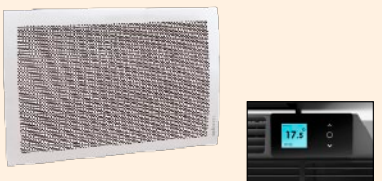
	IP 24	Type	[W]	Dimensions [mm]	Weight netto [kg]	Quantity on pallet	Cat. No.
		ECOFLEX TAC 05	500	369×451×78	3.4	44	5415330
		ECOFLEX TAC 07	750	369×451×78	3.5	44	5415332
		ECOFLEX TAC 10	1000	443×451×78	4	34	5415334
		ECOFLEX TAC 15	1500	591×451×78	5.4	24	5415338
		ECOFLEX TAC 20	2000	739×451×78	6.7	18	5415342

ATLANTIC F129-D – electric convector with LCD digital controls. Suitable for the heating of apartments, homes, weekend houses and offices, as well as non-residential premises. Colour: white (RAL 9016) with white grid. IP 24, class II; needed clearance (cm): bottom edge, 12 / top edge, 12 / front side, 15


	IP 24	Type	[W]	Dimensions [mm]	Weight netto [kg]	Quantity on pallet	Cat. No.
		ATLANTIC F129	500	391×461×114	3.1	26	5412166
		ATLANTIC F129	1000	465×461×114	3.7	24	5412168
		ATLANTIC F129	1500	613×461×114	4.6	18	5412170
		ATLANTIC F129	2000	761×461×114	5.5	13	5412172
		ATLANTIC F129	2500	910×461×114	6.8	12	5412173
Supports for Atlantic F129-D – this set of mobile supports transforms your convection heater into a portable heater.							5412128

SOLIUS II. – radiant convector with a programmable thermostat. This product is only suitable for well insulated rooms or occasional use – mainly for the heating of apartments and homes, doctor's surgeries, offices, schools, etc. Colour: white casing (RAL 9016). IP rating 24; protection class II.; option of installation on a type C or D combustible base; clearance distances: bottom edge 15cm / side and top edge 10 cm / front wall of the device 100 cm


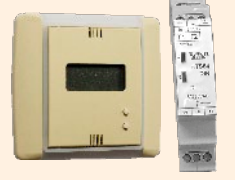


	IP 24	Type	[W]	Dimensions [mm]	Weight netto [kg]	Quantity on pallet	Cat. No.
		SOLIUS II. – 07	750	527×477×129	5.2	20	5435122
		SOLIUS II. – 10	1000	601×477×129	5.8	16	5435123
		SOLIUS II. – 15	1500	823×477×129	7.8	13	5435124
		SOLIUS II. – 20	2000	1045×477×129	9.2	11	5435125
















CH 2000 B TURBO – portable convector with electromechanical thermostat. This product is only suitable for occasional use. IP 20, class I; needed clearance (cm): bottom edge, 5 / top edge, 10 / front side, 5


	IP 20	Type	[W]	Dimensions [mm]	Weight netto [kg]	Quantity on pallet	Cat. No.
		CH 2000B - TURBO	750/1250/2000	580×375×110	4.8	20	5410010

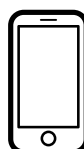
Recommended ERP regulation for electric convectors with pilot wire (ECOFLEX TAC)

Product / Description		Cat. No.
	<p>BMR HC64</p> <p>A control unit for the HC 64 system with a WEB interface, TCP, and USB connectivity. Power supply 24VDC / 2.5 A; control software for PC, USB cable.</p> <p>The control unit is designed to be used to control warm-water systems (in combination with other components). If connected to HTS64DIN_R modules, it can also be used to control electric heaters that are fitted with a pilot wire. One HC64SZ control unit can control up to 32 HTS64-DIN_R modules (32 zones).</p>	4200250
	<p>BMR HTS 64-DIN_R</p> <p>If a building is heated by heaters (convection heaters) fitted with a pilot wire, their operation can be controlled by signals sent via the pilot wires using a BMR HC64SZ control unit and BMR HTS64-DIN_R modules.</p> <p>Convection heaters with a pilot wire have a built-in thermostat with which the user sets the comfort temperature they require in a given room. As soon as the heater receives a signal via the pilot wire, it automatically (without any action being required from the user) starts to maintain the attenuation (lowered) temperature in the room. This is usually 4 °C lower than the comfort temperature. A subsequent signal acquired via the pilot wire will return the heater back to the comfort temperature. Each signal arriving via the pilot wire switches the heater between these two temperatures.</p> <p>The signals themselves are sent by the HTS64-DIN_R module, which must be subordinate to the HC64SZ control unit, whose 1-week programme sets when the room should be heated to either the comfort or the attenuation temperature. If there are more rooms in the building which should have different "comfort/attenuation" time modes (a new zone), another HTS64-DIN_R must be installed. The building can thus be divided into individual zones with their own 1-week programmes as needed. One HC64SZ control unit can control up to 32 HTS64-DIN_R (32 zones).</p>	4200253

THERMOSTATS AND CONTROLS

Product	Description			Cat. No.
DIGITAL PROGRAMMING THERMOSTATS				
  	FENIX TFT WIFI	Integrated Wi-Fi module for connection to a home network, remote control via a cloud server (iOS / Android application), colour touch screen. User-selectable temperature scanning – room only, floor only, or both values, PWM regulation or fixed temperature difference. Week programme – 4 preset programmes, 3 user programmes (up to 10 temperature changes per day), holiday mode, manual control, anti-freeze protection and complete shutdown available. Display lock, operating hour counter, open window function, sensor calibration option. 3m floor probe included with the product. For attachment to a KU 68 wiring box.	White	4200143
			Black	4200142
 	FENIX TFT	Digital touch screen thermostat; option of selecting the background colour. Operating modes 'floor only', 'room only', 'floor+room'; option of measurement with the help of two external (floor) probes, PWM (PID) regulation or fixed temperature difference. 4 preset and 3 user programmes (10 temperature changes in 15 minute steps, with the shortest time period being 1 hour). Modes: according to the programme, manual mode, holiday, party, non-freezing temperature, switched off. 16 A switching contact; range of temperature settings 5–35 °C in 0.5 °C steps; option of setting the min. and max. floor temperature; calibration of sensors. A floor probe is included with the thermostat. IP 21 rating.		4200152
   	FENIX TFT-2	Colour touch screen (optional background colour); the outer white cover is composed of two exchangeable parts (frame/cover) which enable the colour of the thermostat to be changed. Reads the temperature of the room, the floor or both values simultaneously; "intelligent start" function. Weekly programmes – 4 predefined, 3 user-determined (up to 10 temperature changes per day). Other modes: holiday, manual control, antifreeze protection, complete shutdown. Counting of operating hours, "open window" function, occupancy sensor. 16A switching contact; IP 21 rating; 3m floor probe included with the product. Placement on KU 68, programme backup using a high capacitance capacitor.		4200156
	Cover TFT-2	Coloured front cover for the TFT2 thermostat	Silver	4200157
			Black	4200158
			Red	4200159
	Frame TFT-2	Coloured body frame for the TFT2 thermostat	Silver	4200160
			Black	4200161
Red			4200162	
	EBERLE FIT 3U	Programmable thermostat with PWM regulation or fixed temperature difference. Operating modes "floor only", "room only", "floor + room". 13 programmes – 9 pre-set, 4 for users (4 temperature changes per day in 30 minute steps), holiday operation, permanent temperature or permanent attenuation modes. Temperature settable from 5–37 °C in 0.5 °C steps (floor and room). Option to set the max. and min. floor temperature. 16 A, 230 V, IP 30. Floor probe is part of the package		4065005
	VTM 3000	Selection of weekly or daily programme, selection of the modes "floor only", "room only", "floor + room". 6x daily switching between the pre-set comfort and attenuation temperatures. Option to manually change the temperature with an automatic return to the programme. Data and programme back-up in the EEPROM memory (up to 10 years), 16 A / 230 V, max. switched wattage 2 kW, IP 31. Floor probe part of the package.		4200134
ANALOG THERMOSTAT				
  	EBERLE RTR-E 3521	Bimetal thermostat with thermal feedback and high precision. Possibility of surface mounting or directly on the installation box, with fixing holes also on a DIN rail. Well arranged terminal block allows easy connection. The thermostat reads only room temperature and cannot be connected to a cable probe, so it is not suitable for floor heating. 16 A, 230 V AC 50/60 Hz, IP 30, 5–30 °C, colour RAL 9010.		4066018
	EBERLE RTR-E 6124	10 A, with temperature setback 5 K, accuracy 0.5 K, 5–30 °C, IP 30.		4066020
	FENIX-Therm 105	Analogue electronical thermostat with operation modes "floor only", "room only", "floor+room". 16 A, IP 21, 230 V, heat differential of 0,3 °C, switch, 10–45 °C floor and ambient air. Can handle an overvoltage of 2,500 VAC.		4200122

Product	Description	Cat. No.
WIRELESS REGULATION		
        	<p>Watts V22 Wireless room thermostat with 1-week programming - intended for the control of electric heating (floor or ceiling heating, radiant panels, convection heaters) which it switches on/off via V23/25 receivers (max. 4 per V22 unit, only one of which is furnished with a floor probe). Parameters: operating modes Comfort, ECO, Stop, Anti-freeze protection, Holiday, 1-Week programme - interval for setting 30 min. Placement on a wall or independently on a stand (power supply: 2x AAA), programme back-up in EEPROM memory (10 years), 868 MHz bidirectional wireless communication, display of set/real temperature, reading of room temperature with an internal or cable sensor (both sensors cannot be used simultaneously; the cable probe is not included). The thermostat is also designed for a wireless central regulation system with the V24 control unit (modular system, can be retrofitted) - when connected in this way it reads the room temperature for the V24 control unit and enables temporary changes to be made.</p>	4500410
	<p>Watts V23 Wireless receiver with optional floor probe connection - normally controlled by the V22 thermostat, it switches the connected heating on/off and can also optionally read the floor temperature using a floor probe (not included). It passes on floor temperature information to the V22 thermostat. Parameters: placement on a KU 68 wiring box, 16 A switching contact, 230V/50Hz, IP21 rating, terminals for floor probe connection, LED indicates operational status. When connected to the central regulation system it is controlled directly by the V24 control unit, which conveys floor temperature information (if a floor probe is connected). The cable probe is not included.</p>	4500413
	<p>Watts V24 central unit The V24 control unit is a superstructural element of Watts wireless regulation (V22 thermostats, 23/25 receivers). It enables central control of a heating system - i.e. the programming and control of heating throughout a whole building from one location - and is intended for all types of electric direct-heating systems (floor as well as ceiling heating, radiant panels, convection heaters, ladder radiators, etc.) The unit is fitted with a touch screen with a simple graphic interface which enables easy and intuitive control. The power supply is drawn from a 230V/50Hz mains voltage connection (placed in a wiring box); however, the V24 unit communicates with other parts of the regulation system wirelessly. One of the advantages is the modular system; a V24 central control unit can be added to a wireless system some time after that system was installed, or vice versa - other regulation units (V22/23/25) can be added to a system where a V24 unit has already been installed. The V24 central unit can control up to 24 rooms/zones, and an individual programme mode can be created for each zone. A Watts V27 GSM module can also be connected to the V24 unit, enabling basic control of the heating system via short text messages.</p>	4500408
	<p>Watts V24-WiFi central unit The V24-WiFi central unit enables the wireless central control of heating systems like the V24. The functions and intuitive, simple controls have remained, while a large display provides comfort and an easy overview of individual parameters and information about temperatures, the current status and individual zones (rooms). It's possible for users to upgrade the unit's software with the help of a Micro SD card. The central unit's Wi-Fi connection simplifies and extends the options for the remote monitoring and control of your heating system via an internet browser or mobile application (Android, iOS). The unit can be powered via a 230 V / 50 Hz power supply (placed in the junction box) or via a USB cable (optional).</p>	4500409
	<p>Watts V25 Wireless plug socket receiver - normally controlled by the V22 thermostat, it switches appliances on/off that are fitted with a plug (heating ladders, portable heaters). It does not read temperatures or enable the connection of an external sensor. Parameters: 16 A switching contact, 230V/50Hz, IP20 rating, operational status indicated by LED. When connected to the central regulation system it is controlled directly by the V24 control unit. If there is no room temperature sensor in the room (e.g. a V22 thermostat), it only works in the ON/OFF mode. The V25 wireless plug socket receiver is intended only for use with appliances supplied by Fenix Trading s.r.o. and for appliances with Schuko and Uni-Schuko plugs.</p>	4500416
	<p>Watts V20 The Watts V20 remote control allows, through the Watts V23/V25 receiver, comfortable hand turning on or off an appliance (heater usually), or starting the "TIMER" program - the heater is put into operation and turns off automatically after 2 hours. Combining the V23/25 receiver with the V20 remote control is ideal for supplementary zone heating - for example to control an ECOSUN TH terrace heater. ATTENTION: In this combination, neither the V23/25 receivers nor the V20 controller scan any temperature. If the heater is not equipped with a built-in thermostat (such as ECOFLEX convectors), it is operated only in the On/Off mode, without dependence on air temperature or design.</p>	4500424
	<p>GSM module Watts V27 The Watts V27 module enables basic control of a whole Watts central regulation system via connection to a V24 central unit. It is possible to find out current temperatures, implement temporary changes in temperature (valid until the next programme change) or change the mode of a zone completely (Auto/Manual/Non-freezing) in a selected zone (or in all of them at once) via short text messages. It is also possible to start or prematurely end the Holiday mode. Also, the V24 control unit can send information in the opposite direction about the status of individual zones or about possible error reports. The GSM module has a slot for a SIM card (not included with the product), and it can be attached to the V24 unit either via a cable or wirelessly, which allows its placement in areas with a good signal from the GSM network. The V27 module itself is powered via a network adapter. WARNING: the module can only be connected to a Watts V24 unit.</p>	4500422
	<p>Watts floor probe This floor probe is designed to read floor temperatures; however, it can also be used to read air temperatures. Parameters: length 3m, cable diameter 4mm (thermistor Ø6mm), PVC sheath, resistance 10 kΩ at 25°C, suitable for Watts V23 receivers or Watts V22, Fenix TFT or Watts 760/860 thermostats.</p>	4200129
	<p>WS-1 regulation set The WS-1 regulation set is intended for the wireless control of electric heating - floor, ceiling, radiant panels, convectors and ladder radiators. It is particularly suitable for supplementary heating installations - it isn't necessary to connect the thermostat to the receiver using wires. The set contains 1 V22 room thermostat with a 1-week program and 1 V23 wall-mounted receiver (see the individual elements for their technical description). The set can be extended to include three further Watts V23/V25 receivers (other switched heaters) and they can be linked via the wireless central regulation system to the V24 control unit (modular system). The cable probe is not included.</p>	4500419










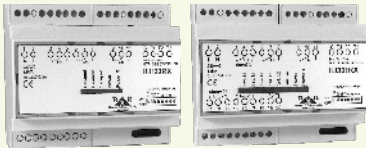
The application to control the GSM module Watts V27 via smartphone you found on Google Play (Android) or App Store (iOS).



Android



iOS

Product		Description	Cat. No.
INDUSTRIAL ROOM THERMOSTAT – ANALOG WALL-MOUNTED THERMOSTATS WITH INCREASED PROTECTION (IP 54)			
	EBERLE AZT - A 524510	Built-in space sensor and exterior scale. Ambient air sensor 5–35 °C, 10 A, accuracy 1–5 K.	4066010
	EBERLE AZT - A 524410	Built-in space sensor and exterior scale. Ambient air sensor –15–15 °C, 10 A, accuracy 1–5 K.	4066005
	EBERLE AZT - I - 524510	Built-in space sensor and interior scale. Ambient air sensor 5–35 °C, 10 A, accuracy 1–5 K.	4066012
	EBERLE AZT - I - 524410	Built-in space sensor and interior scale. Ambient air sensor –15–15 °C, 10 A, accuracy 1–5 K.	4066007
INDUSTRIAL THERMOSTATS WITH SEPARATE SENSOR			
	EBERLE UTR/60	16 A, exterior/interior control, temperature range 0–60 °C, 230 V, 1 switch, IP 65.	4066037
	EB-THERM 800	Digital thermostat with an LCD display for mounting on a DIN rail (2 modules) – 1×16 A switching contact, option of connecting a second temperature sensor (room or floor), operating hours counter, programmable (1-week programme), ventilation function (open window), settable hysteresis, option of connecting an alarm for when set temperatures are exceeded. Universal use – heating control in standard rooms (including floor heating), cooling control, use in industrial or outdoor applications, differential thermostat function. Contents of packaging: EB 800 thermostat, E 85 816 71 cable sensor (3 m; range –15 °C to +75 °C); installation manual.	4200170
LT probe for EB-Therm 800 – LT (low temperature) cable sensor for the EB-Therm 800 thermostat for the reading of temperatures within the range of –15°C to 75°C (PVC sheath, length 3 m – can be extended to up to 50 m using a 2×1.5 conductor). Please note – the LT probe is standardly supplied with the EB-Therm 800 thermostat.			4200171
HT probe for EB-Therm 800 – HT (high temperature) cable sensor for the EB-Therm 800 thermostat for the reading of temperatures within the range of 60°C to 170°C (silicone sheath, length 3 m – can be extended to max. 50m using a 2×1.5 conductor)			4200172
Room sensor for EB-Therm 800 – Room sensor for the EB-Therm 800 thermostat for the reading of air temperature. The sensor is connected to the thermostat using a 2×1.5 conductor – max. 50 m. The thermistor inside the sensor is placed in a designated area which is covered by a sealed cover – the sensor rating is IP54. The cover can be removed – the sensor will react to temperature changes faster and more accurately but the rating will be decreased to IP20.			4200173
CONTROLLERS FOR GUTTERING AND OUTSIDE SURFACE HEATING			
	EBERLE EM 524 89 (one-zone)	Regulator for the heating of eaves troughs, downpipes and outdoor surfaces – pavements and drives. In contrast with a manual or thermostatic controller it enables the achievement of operating cost savings of up to 80%. Functions: setting of temperature and humidity, operating hours counter, alarm output, delayed switching off, current temperature indicator. Placement on a DIN strip (8 modules), CZ menu. The presence of humidity (water, snow or ice) and the outdoor temperature are monitored with the help of external sensors which need to be ordered separately – for eaves troughs or free areas, depending on the application. IP 20.	4600015
	EBERLE EM 524 90 (two-zone)	A two-zone regulator for the heating of eaves troughs, downpipes and outdoor surfaces. The parameters and functions are the same as for the EM 524 89. However, the regulator enables independent monitoring and control of two applications simultaneously. Basically, these are two EM 524 89 regulators in one. Both zones require the connection of their own set of sensors – for eaves troughs or free areas, depending on the application – and these need to be ordered separately. IP 20.	4600016
	Set of EBERLE sensors for eaves troughs	Humidity (ESD 524 003) and temperature (TFD 524 004) sensor for EM 524 89 and EM 524 90 regulators for controlling the heating of eaves troughs and downpipes. IP 65.	4600051
	Set of EBERLE ground sensors	Humidity (ESF 524 001) and temperature (TFF 524 002) sensor for EM 524 89 and EM 524 90 regulators for controlling the heating of outdoor surfaces. IP 65.	4600050
	EBERLE DTR-E 3102	Differential thermostat, 230V, 1×switching off / 1×switching contact 16 A, 20–35 °C, IP 65 (can be placed e.g. on the facade). While being operated it requires careful monitoring to attain economical operation.	4066038
	EB-THERM 800	For details see above – Industrial thermostats with separate sensor	4200170
REGULATORS TO CONTROL ATTENUATION AND TIME PROGRAMMABLE SWITCHES			
	DeltaDore DRIVER 620	Two-zone attenuation regulator for appliances with pilot wires. This attenuation regulator is intended for use with appliances with pilot wires (convection heaters) or with analogue thermostats featuring an attenuation function. With the aid of the pilot wire it sends a signal to switch between comfort and attenuation temperature. The comfort temperature is the value set on the heater (analogue thermostat), while the attenuation temperature is around 3.5 °C lower (the size of the drop is permanently set in the heater/thermostat by the manufacturer and ranges between approx. 3.5 °C and 5 °C). The DRIVER 620 enables a building to be divided into two zones, each of which can have its own separate 1-week or 1-day programme. Technical parameters: dimensions 104×80×35 mm; power supply 230 V; programme backup 2 hours; rating IP 30; insulation class II; placement on KU 68; output 2×0.1 A/230 V	4100020
REGULATORS FOR REDUCTION OF MAIN CIRCUIT BREAKER VALUE			
	BMR HJ 103 RX	Three-phase current load balancer, disconnection of all three phases at one time (one control channel), three-stage, mounted on DIN rail (6 modules).	4200033
	BMR HJ 306 RX	Three-phase current load balancer, single phase disconnection (3 control channels), two-stage, mounted on DIN rail (6 modules).	4200034

SUPPLEMENTARY PRODUCTS

HAND DRYERS – electric hot-air units with fans for hand drying. Wall-mountable.

Automatic sensor switch ensures hygienic operation.

IP 21 rating. Voltage 230 V / 50 Hz.

Type	Output	Switching sensor	Air temperature	Dimensions [mm]	Weight netto [kg]	Cat. No.
ZY - 203 A (plastic)	1800 W	14–18 cm	50–70 °C	240×240×240	2.7	5440010



TUBULAR HEATING ELEMENTS – with an electric heating insert. Intended primarily for bathrooms – suitable for drying bath towels, hand towels, etc.

IP 65 rating. Voltage 230 V / 50 Hz.

White RAL 9016; filled with non-freezing mixture, 1 m coiled connection cable (extends to 3.5 m) with plug.

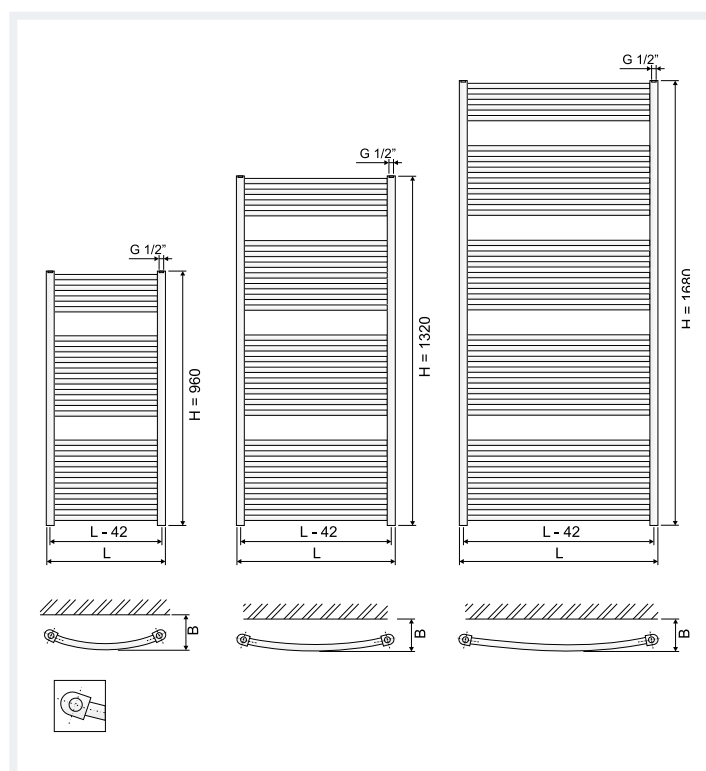
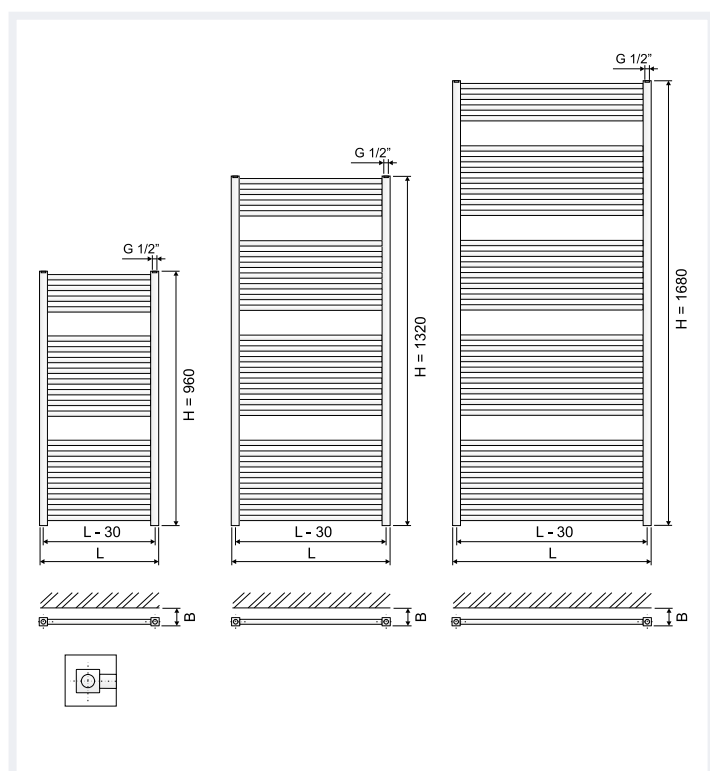
Mounting brackets are included with the product.

The heating element is without a thermostat.

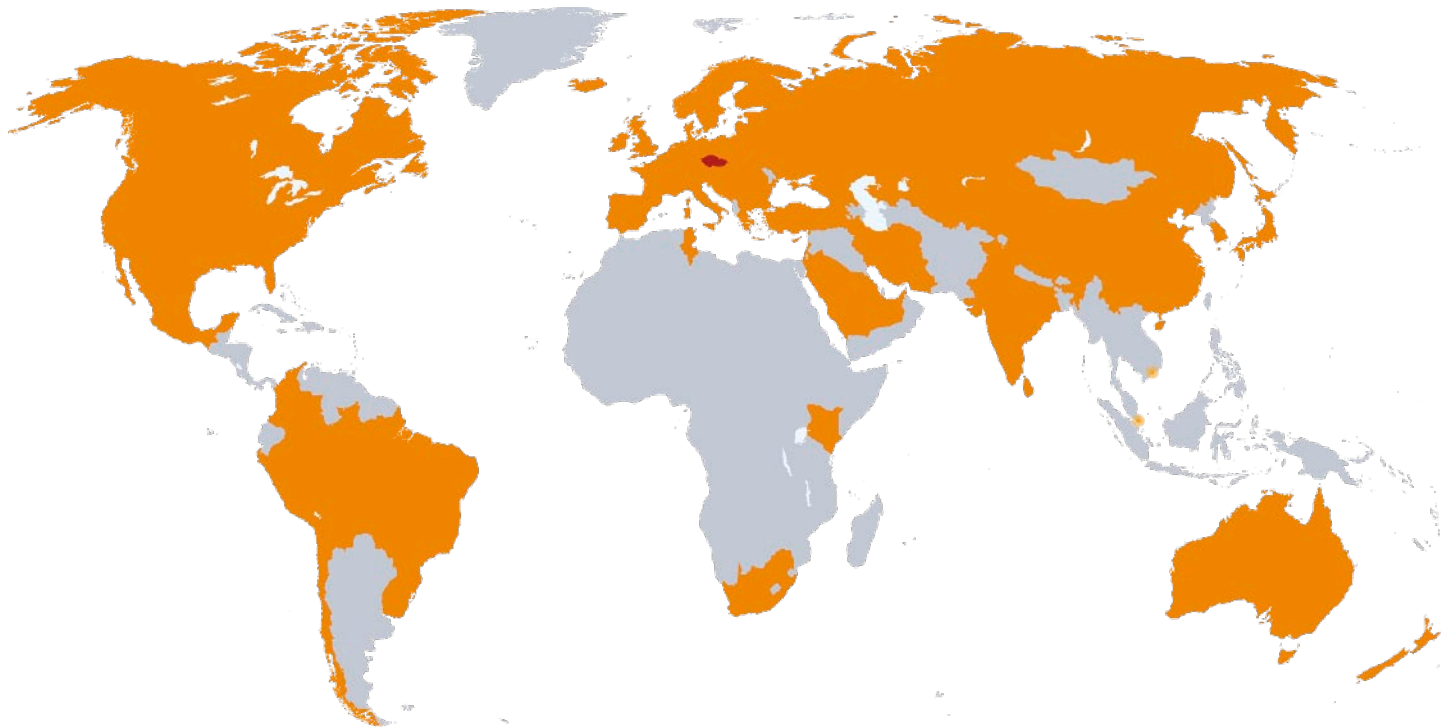


Type KD-E flat	Wattage	Width [mm]	Height [mm]	Depth [mm]	Weight netto [kg]	Cat. No.
KD-E 450×960	300	450	960	90	10.5	5441402
KD-E 600×960	400	600	960	90	13.0	5441404
KD-E 450×1320	400	450	1320	90	14.9	5441406
KD-E 600×1320	600	600	1320	90	17.3	5441408
KD-E 750×1680	900	750	1680	90	26.4	5441410

Type KDO-E rounded	Wattage	Width [mm]	Height [mm]	Depth [mm]	Weight netto [kg]	Cat. No.
KDO-E 450×960	300	450	960	120	11.5	5441412
KDO-E 600×960	400	600	960	120	13.8	5441414
KDO-E 450×1320	400	450	1320	120	15.8	5441416
KDO-E 600×1320	600	600	1320	120	18.3	5441418
KDO-E 750×1680	900	750	1680	120	27.7	5441420



EXPORT MARKETS



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Bolivia
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Herzegovina
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Cyprus
Czech Republic
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of Luxemburg
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Hong Kong
Hungary
Iceland
India
Iran
Ireland
Italy
Japan
Kazakhstan
Kenya
Kingdom of Jordan
Kingdom of
Saudi Arabia
Kyrgyz Republic
Latvia

Lebanon
Lithuania
Macedonia
Malta
Mexico
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New Zealand
Norway
People's Republic of
China
Peru
Poland
Portugal
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Republic of
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Ukraine
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Uruguay
USA

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CZECH REPUBLIC – 1990



POLAND – 2019



SLOVAK REPUBLIC – 1993



GERMANY – 2018



UNITED KINGDOM – 2003



CZECH REPUBLIC – 2016



UNITED KINGDOM – 2008



NORWAY – 2014



FRANCE – 2010



SPAIN – 2010



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IN RADIANT HEATING