

Installation manual

A simple solution for heating in households, for dry or wet installation

Type	Width [m]	Length [m]	Area [m ²]	Power per area [W/m ²]	Power [W]	Electrical resistance [Ω]
LARX-CKH180W050S160L	0,5	1,6	0,8	180	144	367
LARX-CKH180W050S200L	0,5	2,0	1,0	180	180	294
LARX-CKH180W050S260L	0,5	2,6	1,3	180	234	226
LARX-CKH180W050S300L	0,5	3,0	1,5	180	270	196
LARX-CKH180W050S360L	0,5	3,6	1,8	180	324	163
LARX-CKH180W050S400L	0,5	4,0	2,0	180	360	147
LARX-CKH180W050S500L	0,5	5,0	2,5	180	450	118
LARX-CKH180W050S600L	0,5	6,0	3,0	180	540	98
LARX-CKH180W050S800L	0,5	8,0	4,0	180	720	73
LARX-CKH180W050S10XL	0,5	10,0	5,0	180	900	59

LARX Carbon Kit heat power tolerance is 10 %.

Package content

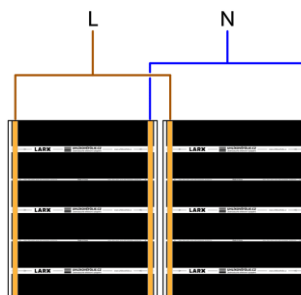
- > LARX heating film (1 stripe) with power cables
- > Installation manual and Warranty certificate
- > Switchboard sticker
- > Round insulation stickers for cutting edge after shortening

Mandatory installation conditions

- > LARX Carbon Kit heat must be installed and used according to the valid local standards and requirements in that country.
- > LARX Carbon Kit heat is designed to be installed dry or wet way. It must be fixed to the ground in a suitable way to prevent its displacement.
- > Inside the floor construction under LARX Carbon Kit heat must be a waterproofing to prevent raising humidity to LARX Carbon Kit heat. Humidity of the ground must be less than 2 %. LARX Carbon Kit heat must not be installed on constructions with excessive humidity.
- > The ground for installation of LARX Carbon Kit heat must be flat, without unevenness and dirt. LARX Carbon Kit heat can't be bent.
- > LARX Carbon Kit heat must be protected against damage during installation and after.
- > Individual LARX Carbon Kit heat strips must not cover each other. LARX Carbon Kit heat can't be installed over expansion joints and under door.
- > LARX Carbon Kit heat can be cut every 20 cm following cut markings and then insulated. It is not allowed to make holes in it.
- > It is not possible to place LARX Carbon Kit heat under non-movable furniture and bathroom equipment.
- > LARX Carbon Kit heat can't be installed in temperatures under 3 °C and exposed to temperatures over 60 °C.
- > LARX Carbon Kit heat can't be covered by flooring or a barrier with thermal resistance higher than 0,14 m²K/W.
- > LARX Carbon Kit heat must be over the entire surface covered by a PE film with minimum thickness 0,2 mm and minimum overlap 10 cm. The PE film must fulfil the local standards for electrical isolation (protection class II).
- > The installation must allow electrical disconnection of all poles of LARX Carbon Kit eco, the distance of the disconnected contacts must be at least 3 mm.
- > The power circuit must have an RCD with I_{Δn} = 30 mA.
- > Every supplier and user must be instructed to avoid drilling, digging or nailing into floor with LARX Carbon Kit heat.
- > During installation can be used only construction chemistry suitable for floor heating.

- > In the switchboard of the heating system must be placed filled and signed Warranty certificate. In the switchboard must be glued a label indicating floor heating.
- > User must be instructed how to operate LARX Carbon Kit heat.
- > Installation and use of LARX Carbon Kit heat must fulfil conditions listed in this manual. Other installation and use can be dangerous, and the warranty is void.

Connecting two LARX Carbon Kits eco



Parallel connection

Standard, full power, any number of strips up to 10 A, when connecting in parallel different strip lengths can be connected

$$\frac{1}{R} = \frac{1}{R_1} + \frac{1}{R_2} + \dots$$

Heating regulation

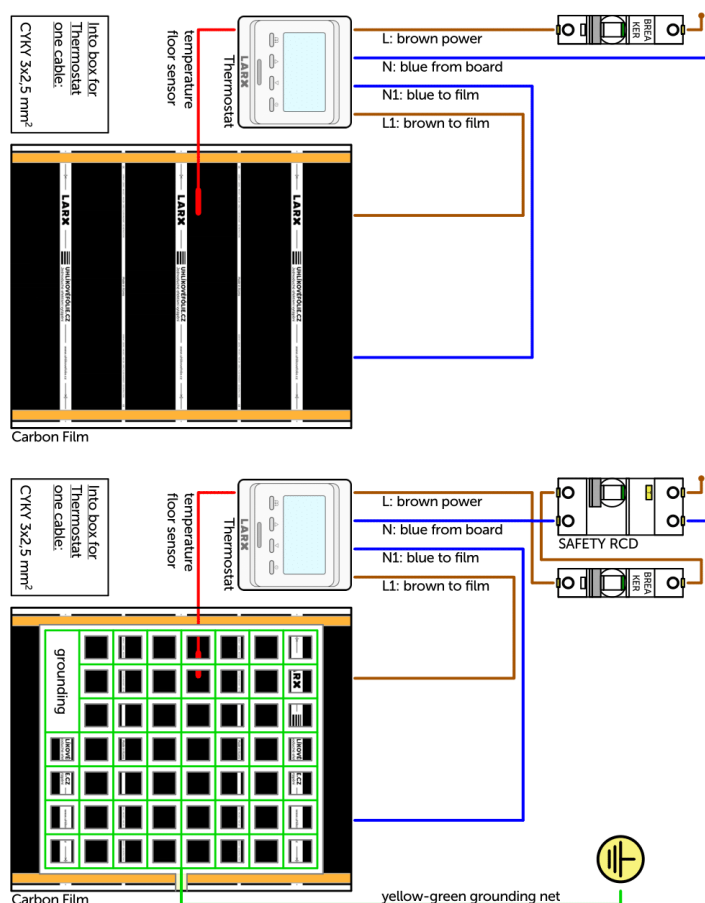
Floor heating LARX Carbon Kit heat must be controlled by a thermostat with a floor sensor. The floor sensor must limit the maximum floor temperature in living rooms according to the local standards.

The current through the thermostat must not exceed 80 % of the nominal maximum current indicated on the thermostat.

A suitable regulation is at www.carbon-film.com/regulation

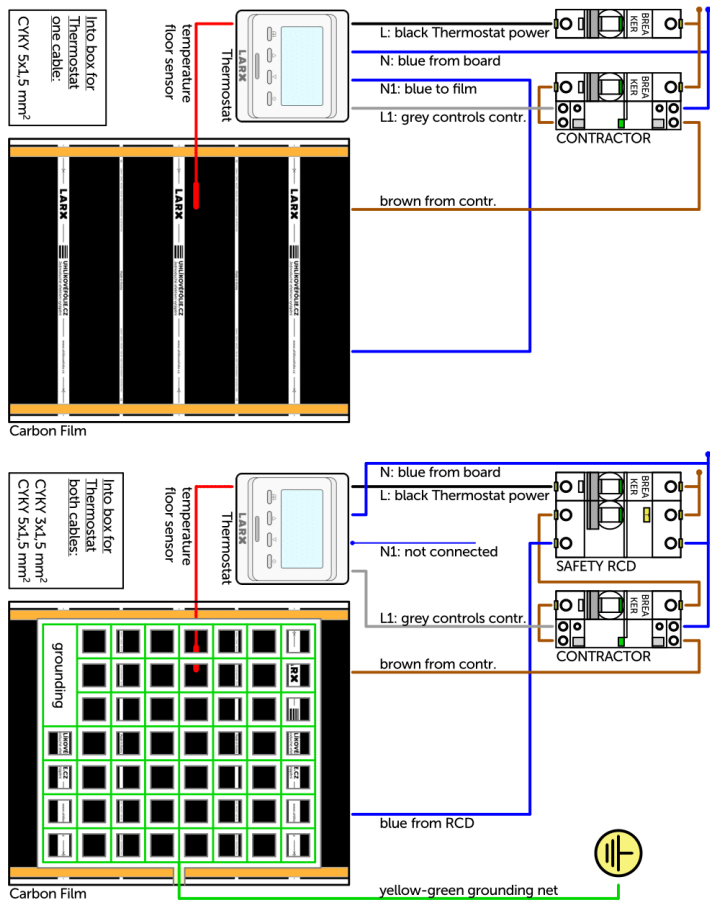
Simple way of switchboard connection

Basic variant. Thermostat directly switches carbon film power.



Recommended way of switchboard connection

More complicated but more convenient way of connection. Thermostat only controls contractor in switchboard. The contractor switches carbon film power. The advantage is extended life of the thermostat and more possibilities.

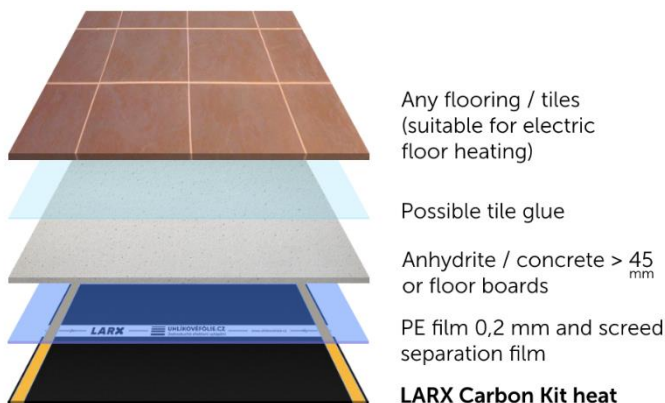


Note: Outputs marking is valid for LARX LCD Thermostat. For other thermostats check their manual.

Recommended minimal floor thermal insulation

Floor positioning	Polystyrene thickness
On terrain	60 mm
Above cellar	60 mm
Above heated space	20 mm
Above exterior	100 mm

Application under anhydrite / concrete / floor boards



Installation procedure

1. LARX Carbon Kit heat is usually laid on a thermal insulation (polystyrene).
2. Measure electrical resistance according to the Warranty certificate.
3. Lay LARX Carbon Kit heat in the designated place and fix it against displacement in a suitable way (e.g. silver tape). Never use nails or screws. Secure against displacement also the power cables.
4. In the case of more LARX Carbon Kit heat in one room it is possible to connect them in parallel up to maximum current 10 A (2 300 W). The best way to connect them is inside a wiring box using e.g. WAGO.
5. Cover all LARX Carbon Kit heat with a PE film with minimum thickness 0,2 mm and minimum overlap 10 cm.
6. For floor heating it is necessary to place a floor temperature sensor of the thermostat. It must be placed on the PE film directly above LARX Carbon Kit heat and must be secured against displacement (sensor is sold with thermostat).
7. In bathrooms LARX Carbon Kit heat must be covered by a grounding net laid on the PE film and overlapping LARX Carbon Kit heat. The grounding net must fulfil the local standards and must be grounded (PE), e.g. galvanized welded mesh, mesh 10 mm, wire diam. 1 mm.
8. Professional person with an electrician certificate connects LARX Carbon Kit heat inside a wiring box or a thermostat.
9. Measure the electrical resistance according to the Warranty certificate and draw the position of every LARX Carbon Kit heat, cable, connection and device.
10. Check everything, lay the separation film and pour the screed according to the manufacturer's technological procedure. Don't forget the separation film! The minimum thickness of anhydrite or concrete above LARX Carbon Kit heat is 45 mm. Be careful to avoid damage of LARX Carbon Kit heat.

First heating

- › On the first and second day set the floor temperature at 20 °C. From the third day add 5 °C every day up to 35 °C.
- › The next day after it has reached 35 °C start to lower the floor temperature by 5 °C per day to 20 °C.
- › If the first heating is done in winter, it is recommended to start at 15 °C on the first day and on the next day increase the floor temperature to 20 °C.

Warranty

Supplier of LARX Carbon Kit heat provides a warranty on its operation for 2 years. The warranty period starts from the date of its installation, but not later than 6 months from the date of its sale.

Also, these conditions must be fulfilled:

- › Mandatory installation conditions and installation procedures in this manual have been fulfilled without an exception.
- › Installation has been done by a professional person with the electrician certificate.
- › Filled and signed Warranty certificate is submitted.
- › LARX Carbon Kit heat delivery note or invoice is submitted.
- › LARX Carbon Kit heat has not been damaged by its user or a third person.

The Complaints procedure is at www.carbon-film.com/complaints-procedure

For more information



www.carbon-film.com/larx-carbon-kit

info@carbon-film.com

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