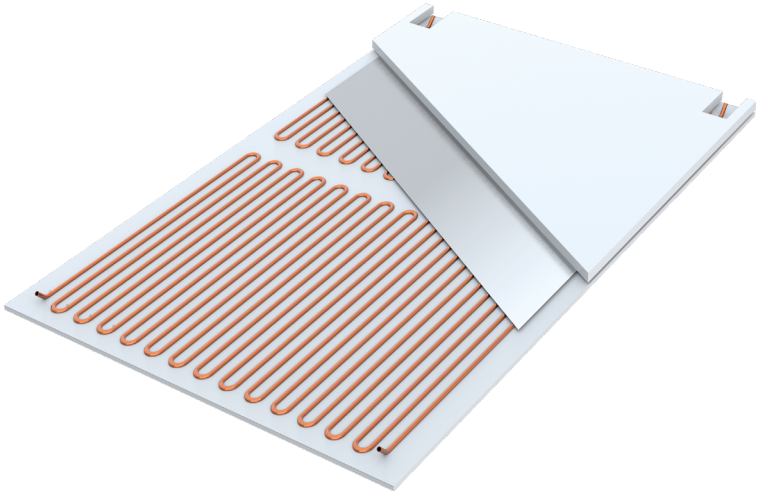
GKC Ultra-C

Radiant
Systems

Panels for radiant plasterboard ceilings

Datasheet
1040EN 10/2020



The panels of the GKC Ultra-C series, designed for the installation of heating and cooling radiant ceiling systems, consist in a plasterboard with graphite, an aluminum foil, a thermal activation composed by one circuit with 12 mm copper pipe and a sintered expanded polystyrene (EPS150) insulating layer, for a total thickness of 40 mm.
The panel's different formats ensure system modularity and flexibility; non-activated panels, without hydraulic circuits, enable completing radiant surfaces with surrounding structural elements.
The panels are connected to the distribution network with 12 mm pipes.

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Giacomini S.p.A.
Via per Alzo 39, 28017 San Maurizio d'Opaglio (NO) Italia
consulenza.prodotti@giacomini.com
+39 0322 923372 - giacomini.com

Versions and product codes

SERIES	PRODUCT CODE	TYPE	DIMENSIONS [mm]	PIPES PITCH [mm]	Kv	WEIGHT [kg]	AREA [m²]
GKC Ultra-C	KSUC120Y200	Active - 2 circuits	1200 x 2000 x 40	50	0,21	48	2,4
	KSUC60Y200	Active - 1 circuit	600 x 2000 x 40	50	0,21	24	1,2
	KSUC60Y120	Active - 1 circuit	600 x 1200 x 40	50	0,29	14,5	0,72
GKC Inactive	KSU120X300	Inactive - For compensation	1200 x 2000 x 40	-	-	30	2,4

NOTE. The 1200x1000 mm panel can be obtained by cutting the 1200x2000 mm panels into two. The two circuits are completely separate. When cutting the 1200x2000 mm panels, pay attention to the drawing traced on the plasterboard's surface.

NOTE. For panels of the GKC Ultra-P series, consult the datasheet 0353EN.

Technical data

Technical features

- Pipe dimensions: Ø 12 mm
- Total panel thickness:
  - Ultra-C: 40 mm (insulation 30 mm + plasterboard 10 mm)
- Radiant panels of B-s1,d0 fire class (EN 13501-1)

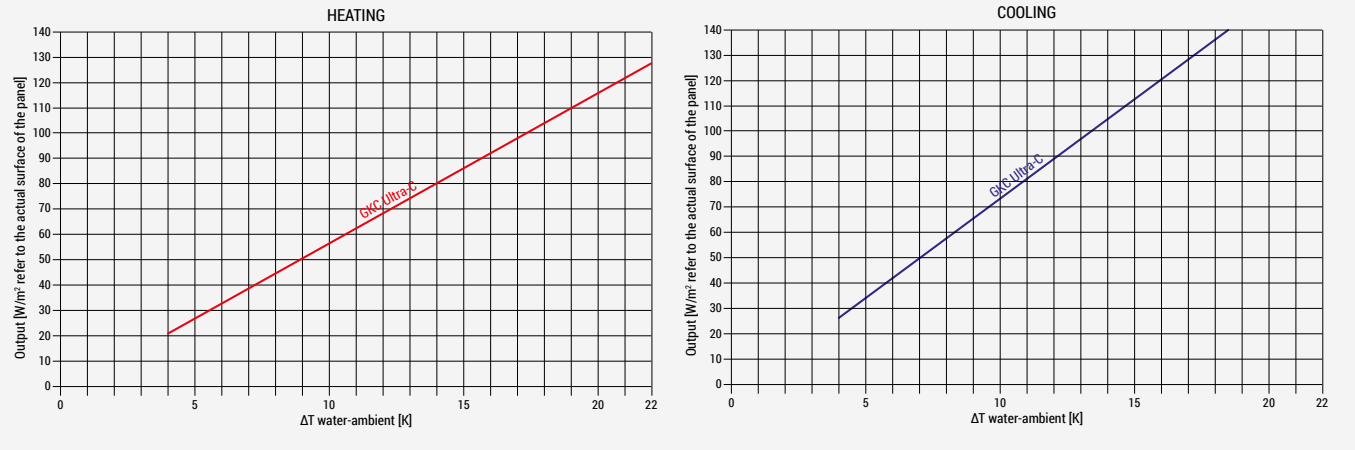
Materials

- Panel sheet:
  - Ultra-C: plasterboard with graphite
- Aluminum foil: 0,6 mm
- Insulating layer: EPS150
- Pipes: copper, Ø 12 mm
- Pipe protection caps: plastic material

Thermal outputs according to EN standards referred to active area

	FOR HEATING (ACCORDING TO EN14037)	FOR COOLING (ACCORDING TO EN14240)
Ultra-C	85 W/m² with water-ambient ΔT 15 K	60 W/m² with water-ambient ΔT 8 K

Thermal outputs referred to actual surface of the panel



NOTE. Thermal outputs according to thermostatic chamber tests. Outputs refer to actual surface of the panel.

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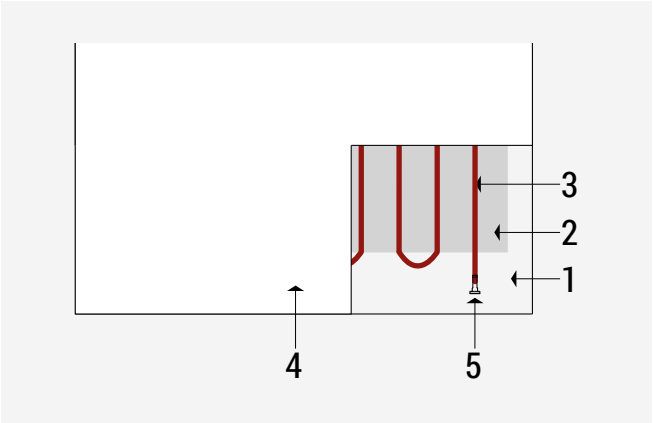
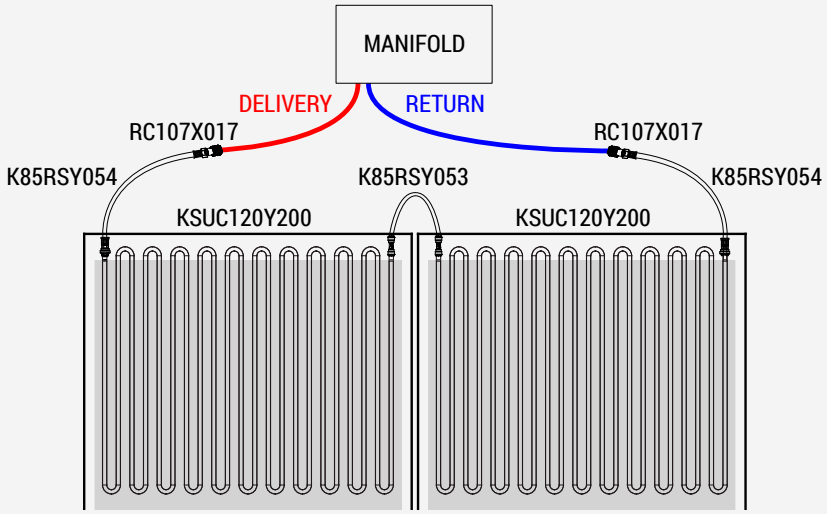
Components



1	Plasterboard sheet
2	Aluminium foil
3	Ø 12 mm copper pipe
4	EPS150 insulating layer
5	Pipe protection plugs

Connection and distribution system

The designed flow rate for each internal circuit is equal to 40÷50 l/h and determines a pressure drop of approx. 2000 mm for each circuit.
Such flow rate makes sure that water circulates in connection pipes at a greater speed that the critical one and, therefore, can push away any air bubbles that may be present in the pipes.
By connecting in parallel no.2 panels KSUC120Y200 and no.1 panel KSUC60Y200, for instance, it would be possible to achieve a pressure loss of approx. 150 mm on the distribution network, i.e. negligible compared to that calculated for each panel.



For the connection of the panels to the manifold, are used 16 mm PB pipes connected with flexible kit with quick connections of the K85RS series via RC107X017 brass fitting.
Adequate insulation will have to be provided for any non pre-insulated parts.

CONNECTION	PRODUCT CODES	SIZE	LENGTH [mm]
PANNEL-MANIFOLD	K85RSY054 + RC107X017	Ø 12 x G 1/2"F + G 1/2"M x Ø 16	900 mm -
PANNEL-PANNEL	K85RSY053	Ø 12 x Ø 12	900 mm

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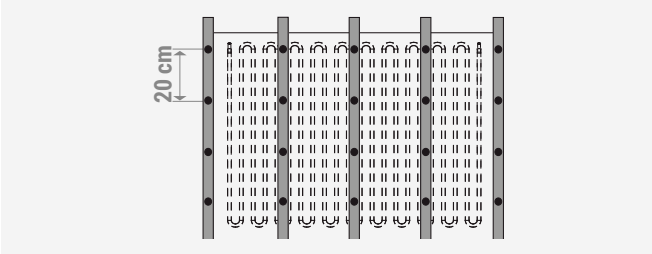
Installation guidelines

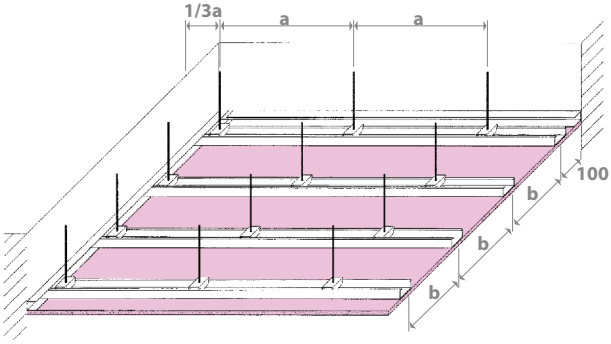
Prefabricated panels must be installed on the ceiling using carrying elements with galvanized profiles on which the modules must be fixed by means of screws with minimum length of 7 cm. The screws must be positioned in the middle of the pipe tracks traced on the panel, so as not to damage the pipes; the indicative pitch is 20 cm. Panels can be fixed to the carrying elements both longitudinally and transversally, as shown as follows.

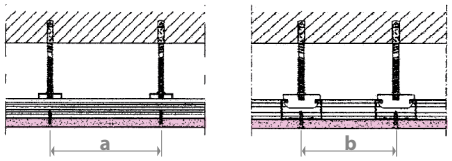


Ceiling installation of a radiant system requires the creation of a supporting structure in the false ceiling

⚠ **AVVERTENZA.** On the jobsite, store in a dry area protected from the sun and the elements and handle the panels carefully, lifting them from the longer side without bending them too suddenly.

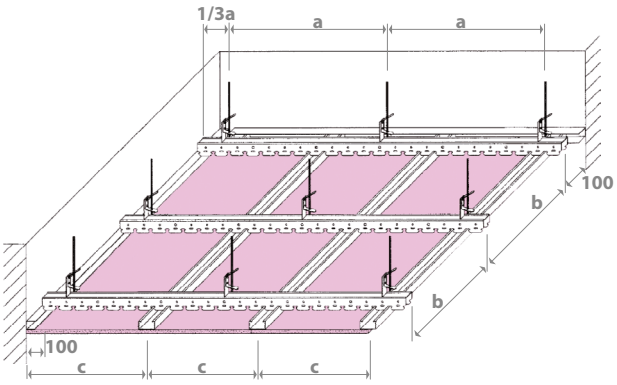
Single metal carrying element

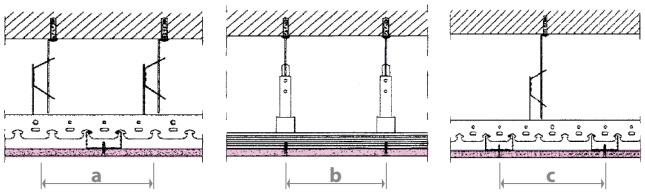




Maximum suspension distance “a” [mm]	900
Center distance between carrier profiles “b” [mm]	longitudinal installation: 300 transversal installation: 400

Double metal carrying element with snap-on profile





Maximum suspension distance “a” [mm]	900
Max. center distance primary carrying elements “b” [mm]	900
Max. center distance secondary carrying elements “c” [mm]	longitudinal installation: 300 transversal installation: 400

Especially for compact installations, a clearance of approx. 25÷50 cm can be left between panel rows to insert backbone links. Moreover, the pipes coming out of individual radiant panels should be installed over risers, to prevent crushing.
The active surface must be created leaving a distance of approx. 3÷5 mm from side walls.
As for standard false ceilings, expansion joints should be provided each 15 m2. Moreover, to enable system inspection, the distance between suspended boards and the false ceiling should be of at least 10 cm.
Once the prefabricated panels have been fixed to the metal carrying elements, radiant panel installation must be carried out with compensation (i.e. inactive) panels only after the pressure test has been completed (in compliance with datasheet 0415EN).

Radiant panels installation

After the hydraulic connection and the pressure test (in compliance with datasheet 0415EN) have been completed, the radiant surface must be finished with inactive compensation panels, and expansion joints must be provided in line with the guidelines for false ceilings.
After laying and radiant panels installation, grouting and smoothing can be completed.
Before finishing the wall with a paint layer, a layer of white primer applied to smooth out the surface and ensure the paint to be applied is evenly absorbed.

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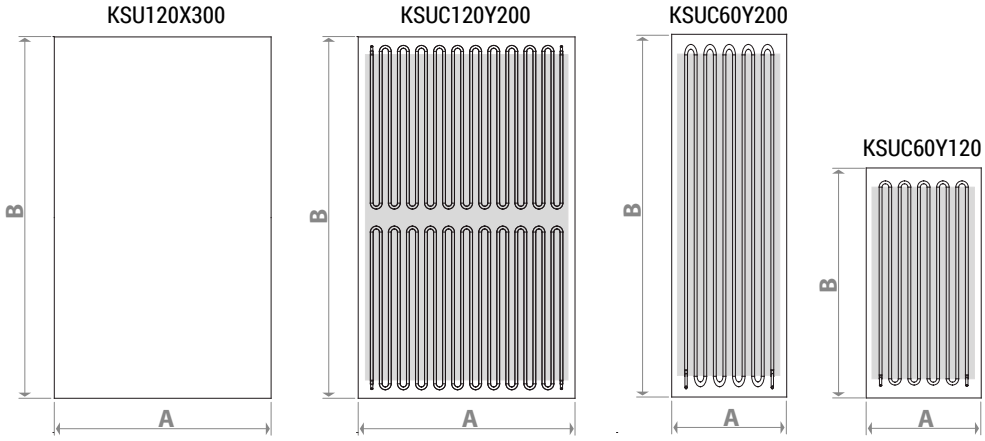
Dimensions



SERIES	PRODUCT CODE	TYPE	A [mm]	B [mm]	THICKNESS [mm]	PIPES PITCH [mm]
GKC Ultra-C	KSUC120Y200	Active - 2 circuits	1200	2000	40	50
	KSUC60Y200	Active - 1 circuit	600	2000		
	KSUC60Y120	Active - 1 circuit	600	1200		
GKC Inactive	KSU120X300	Inactive - For compensation	1200	2000	40	-

Product specifications

KSUC120Y200 (GKC ULTRA-C)
Active type plasterboard panel. Comprised of a 10 mm plasterboard sheet, an aluminium foil of 0,6 mm and a 30 mm layer of expanded polystyrene thermal insulation (EPS150). Activation consisting of two hydraulic circuits in 12 mm copper pipes, pitch 50 mm. Dimensions 1200x2000x40 mm. Surface 2,4 m^2.

KSUC60Y200 (GKC ULTRA-C)
Active type plasterboard panel. Comprised of a 10 mm plasterboard sheet, an aluminium foil of 0,6 mm and a 30 mm layer of expanded polystyrene thermal insulation (EPS150). Activation consisting of one hydraulic circuit in 12 mm copper pipe, pitch 50 mm. Dimensions 600x2000x40 mm. Surface 1,2 m^2.

KSUC60Y120 (GKC ULTRA-C)
Active type plasterboard panel. Comprised of a 10 mm plasterboard sheet, an aluminium foil of 0,6 mm and a 30 mm layer of expanded polystyrene thermal insulation (EPS150). Activation consisting of one hydraulic circuit in 12 mm copper pipe, pitch 50 mm. Dimensions 600x1200x40 mm. Surface 0,72 m^2.

KSU120X300 (GKC INACTIVE)
Inactive type plasterboard panel. Comprised of a 10 mm plasterboard sheet and a 30 mm layer of expanded polystyrene thermal insulation (EPS150). To complete the false-ceiling made with the active panels GKC. Dimensions 1200x2000x40 mm. Surface 2,4 m^2.

Safety Warning. Installation, commissioning and periodical maintenance of the product must be carried out by qualified operators in compliance with national regulations and/or local standards. A qualified installer must take all required measures, including use of Individual Protection Devices, for his and others' safety. An improper installation may damage people, animals or objects towards which Giacomini S.p.A. may not be held liable.

Package Disposal. Carton boxes: paper recycling. Plastic bags and bubble wrap: plastic recycling.

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Product Disposal. Do not dispose of product as municipal waste at the end of its life cycle. Dispose of product at a special recycling platform managed by local authorities or at retailers providing this type of service.

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