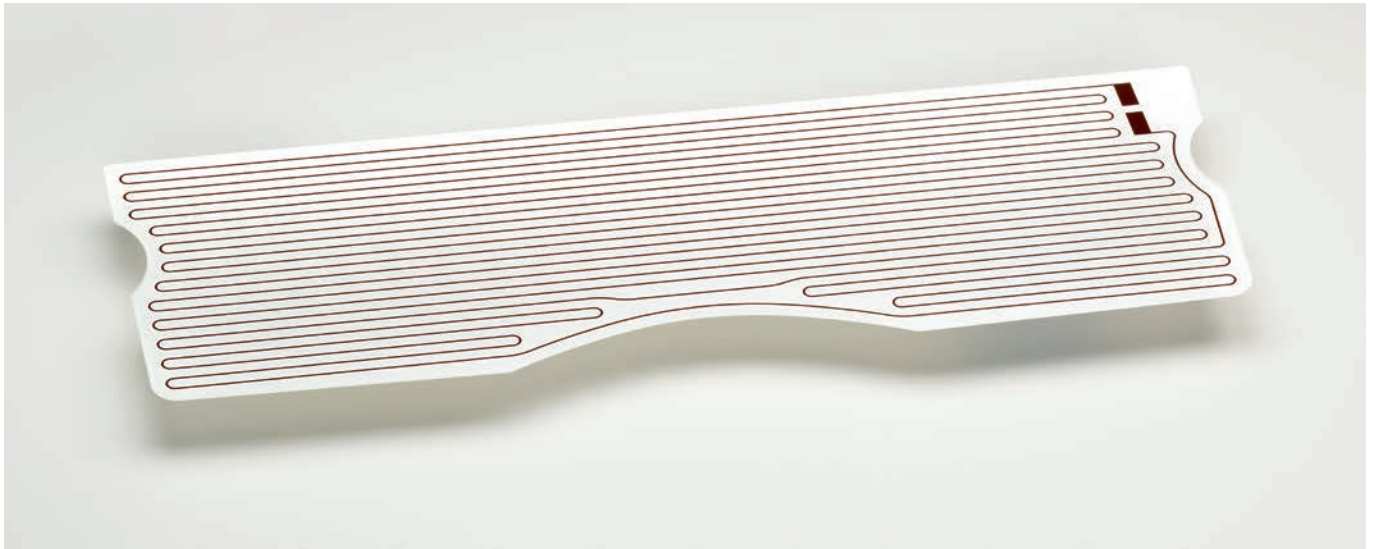


# SCHOTT Printed Heating Circuits

Upgrade your radiant heater with modern esthetics.



Glass for a warming plate with visible printed heating circuits.

## Product description

By printing heating circuits directly on glass panels, this versatile material can be used for the design of electric heaters. The addition of a conductive film on glass is no longer necessary. SCHOTT Flat Glass provides a technology for printing heating circuits directly on the glass and assembling connections pads as an interface for electronics. This technological development combines the modern look of glass with the benefits of radiant heating on a flat glass surface.

## Benefits

- Visually appealing design: heating circuits printed directly on the glass create a slim and restrained design for the radiant heaters
- Extended life time: without risk of yellowing or glue breaking
- All-in-one design: the heating circuit is integrated into the glass panel
- Comfort: glass is a good storage heater. The glass panel will continue to heat for a long time, even after the system is turned off.
- Safety: the use of toughened glass offers high security
- Easy care: the smooth surface of the glass is easy to clean
- Hygienic: with radiant heating systems, there is no movement of dust in the air.

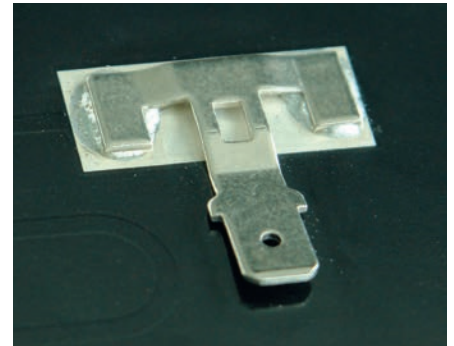
## Applications

- Heating panel
- Radiator
- Heated towel rail
- Warming drawer
- Plate warmer
- Cup warmer for catering equipment or coffee machines

# Technical Specifications



Left: visible printed heating circuit



Standard connection pad welded with the printed heating circuits on the glass.

## Color options

Visible circuit (in front side)

- Standard color for circuit lines: red or yellow
- Standard color for background layer: black, other colors available upon request

Invisible circuit (in front side)

- background layer: black, white, other colors available upon request
- graphics on black: white, yellow, red, other colors available upon request
- graphics on white: available upon request

## Technical characteristics

- Minimum distance between two circuit lines: twice the thickness of the glass
- Thickness of the circuit lines: 0.7 mm to 3 mm
- The circuit length, the maximum line thickness and the distance between two lines need to be defined in function of the required power in cold or hot state, or in function of the surface temperature of the glass.
- Minimum distance of the circuit from the edge: twice the thickness of the glass
- Standard connection pad: use of connection pad 6.35 (35 mm between the two axes)
- Circuit breaker: available upon request

## Properties

- Maximum surface temperature: 141°C
- Voltage: 12 to 400V
- Power accuracy: -10% to +5%
- Maximum allowed power in function of the heating position:

	Power in cold state (W/m <sup>2</sup> @ 20°C)	Power in hot state (W/m <sup>2</sup> )	Surface temperature of the glass (°C)
Horizontal and non-isolated circuit	4400	2900	141
Horizontal and isolated circuit	3300	2200	141.2
Vertical circuit	4600	3200	140

## General features

Printed heating circuits can be applied on glass panels with following sizes:

- Maximum size: 1219 mm x 2438 mm
- Minimum size: 225 mm x 100 mm
- Thickness: 5 mm to 10 mm (recommended thickness: 6 mm)

## Processing/processing technologies to connect with Schott Heating Circuits

All standard processing methods can be combined with printed heating circuits.

## Possible glass substrates

All glass types, except metal coated glasses, can be used as substrate. Bent glass is available upon request.

## Reach, RoHS compliance

The printed heating circuits fully comply with Reach and RoHS directives.

