

SPECTRA M-C

Radiant metal ceiling



QUICK FACTS

- Thermal comfort according to EN ISO 7730
- Very high heating and cooling capacity: heating up to 87 w/m^2 (15 K), cooling up to 71 w/m^2 (8 K)
- Advanced acoustic properties: α_w up to 0,85
- Ceiling panels and activation registers are connected with magnet technology
- Easy to install
- Functions
 - Cooling
 - Heating
 - Acoustics
 - Supply and exhaust air
 - Integral components

Technical description

General

The closed radiant metal ceiling Spectra M is a water-based climate ceiling system with high thermal and advanced acoustic effectiveness. The magnetic connection between the activation register and the ceiling panel allows parallel prefabrication and separate delivery of the two components to the construction site, where they are assembled. This noticeably reduces the completion time of the entire ceiling. In addition, the registers can be fixed and hydraulically connected independently of the ceiling panels, which allows the ceiling to be fitted at the end of the installation work, thus minimizing the risk of contamination. In the event that only partial occupancy is implemented initially, additional registers can easily be retrofitted at a later point in time. Another advantage of the system is that the magnet technology together with the U-mounting rails, which fix the activation registers, prevent the panels from sagging, even with larger panel formats.

Activation

Water system: The radiant ceiling is a passive system that in the case of cooling absorbs heat from the room via the ceiling surface, transfers it to the water, which is conducted in activation registers, and dissipates it, respectively emits heat in the case of heating.

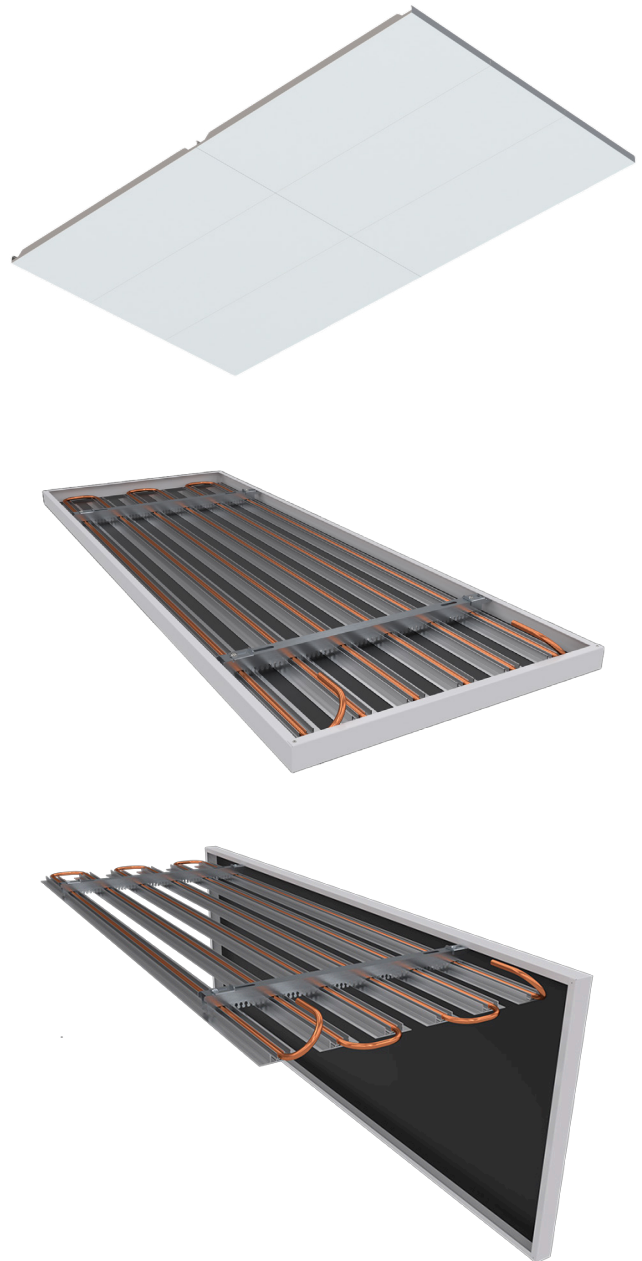
The activation of the radiant metal ceiling system Spectra M consists of meandering copper pipes (outside diameter 10 mm), which are pressed into aluminum heat-conducting profiles. The connection between the activation register and the ceiling panel is made with magnet technology.

Functions

The radiant metal ceiling Spectra M is multifunctional. In addition to the thermal functions of cooling/heating, there is the possibility of further integration: acoustically effective inserts, use of the special supply air box Quello, various built-in components (e.g. smoke detectors, lighting).

Combination

- Radiant Metal Ceiling Spectra M + Quello



Technical data

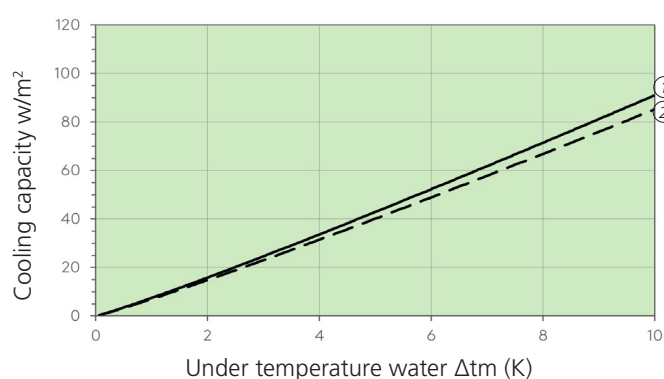
Capacity

Initial data is presented below.

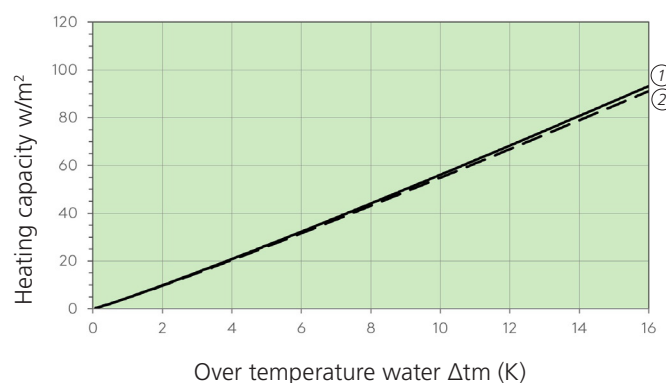
Material ceiling panel	Steel	Steel
Perforation	Rg 1,5 – 11 %	Rg 1,5 – 11 %
Distance heat conducting rails (hcr)	100 mm — ①	120 mm — ②
Acoustic inlay	Fleece	Fleece
Activation method	magnetic	magnetic

(Capacity information without project-specific performance-influencing factors.)

EN 14240:2004



EN 14037:2016



Version	Cooling 8 K	Cooling 10 K	Heating 15 K
① Steel 100 mm	up to 71 w/m ²	up to 91 w/m ²	up to 87 w/m ²
② Steel 120 mm	up to 67 w/m ²	up to 85 w/m ²	up to 85 w/m ²

Notice

- SN EN 14240: The cooling capacity is related to the active area according to SN EN 14240:2004. The active area is calculated according to SN EN 14240 from the number of heat-conducting rails x length of heat conducting rail x distance between heat conducting rails.
- SN EN 14037: The heating capacity is related to the active area according to SN EN 14037:2016. The active area is calculated according to SN EN 14037 from the length of the ceiling panel x the width of the ceiling panel.

Recommendations for operation

Water

- Temperature
 - Cooling 16 – 18 °C
 - Heating 28 – 37 °C
- Temperature distance Δt (VL-RL): 2 – 3 K
- Pressure drop: 20 – 25 kPa
- Water flow: 80 – 150 l/h
- Max. operating pressure up to 9 bar
- Water quality according to: SWKI BT 102-01, BTGA 3.003, VDI 2035

Surrounding

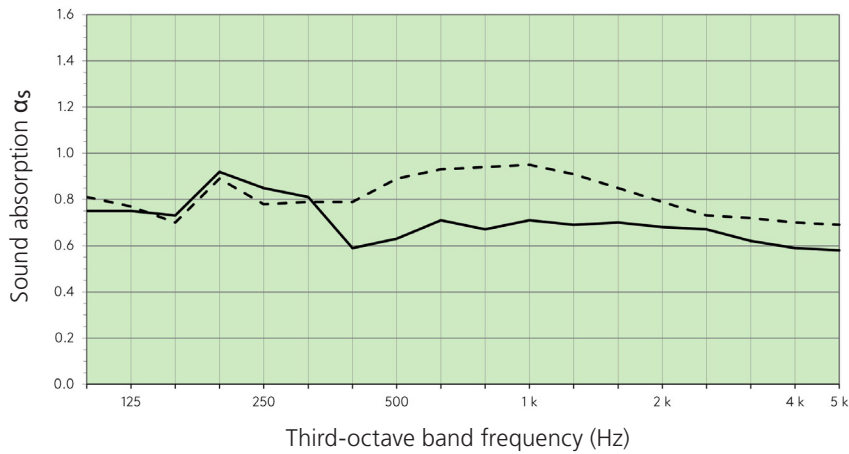
- Ambient temperatures: +5 – 50 °C
- Humidity: up to 90 % relative humidity

Acoustics

Initial data is presented below.

Perforation	Rg 1,5 – 11 %	Rg 1,5 – 11 %
Distance heat conducting rails (hcr)	150 mm	150 mm
Installation height	200 mm	200 mm
Acoustic inlay	Fleece	Fleece
Additional inlay (mineral wool)	without ———	with - - - -
Sound absorption α_p	250: 0,85 500: 0,65 1k: 0,70 2k: 0,70 4k: 0,60	250: 0,80 500: 0,85 1k: 0,95 2k: 0,80 4k: 0,70
Sound absorption α_w	α_w : 0,70 (L)	α_w : 0,85
Sound absorption class (EN ISO 11654)	C	B

EN ISO 11654



without additional inlay ——— with additional inlay - - - -

System

Ceiling system

- Closed ceiling
 - Rectangular panels

Installation systems

- Installation height: min. 80 mm
 - Lay-in system
 - Hook-on system
 - Clip-in system
 - C-channel systems

Materials, weight and dimensions

Materials and weight

Material	Weight (incl. activation, water)
Steel 0,70 mm	10,0 – 13,3 kg/m ²

Building material class: B-s2, d0, EN 13501-1 (depending on the acoustic solution).

Dimensions

Length	Width	Height
min. 500 mm	min. 200 mm	min. 30 mm
max. 2200 mm	max. 1200 mm	max. 40 mm

Surface

Versions

- Powder coating
- Digital printing on request

Colors

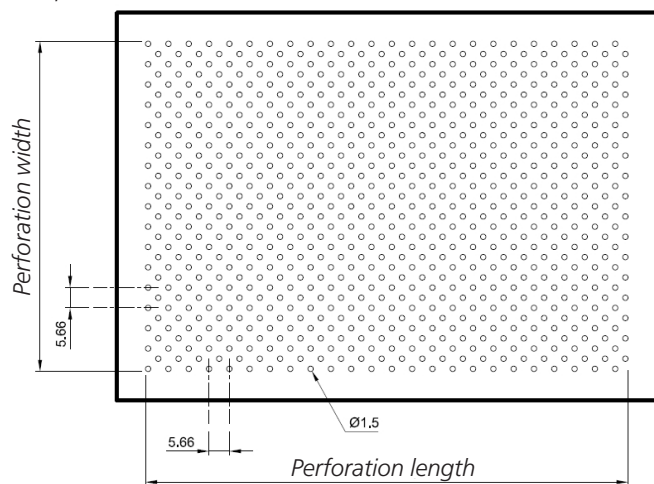
- Standard RAL 9010
- Other RAL / NCS colors on request

Perforations

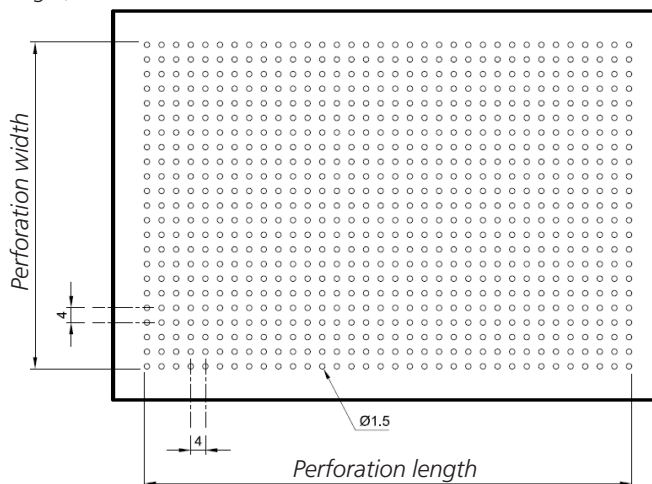
- Standard perforations
- Other perforations on request

Standard perforations:

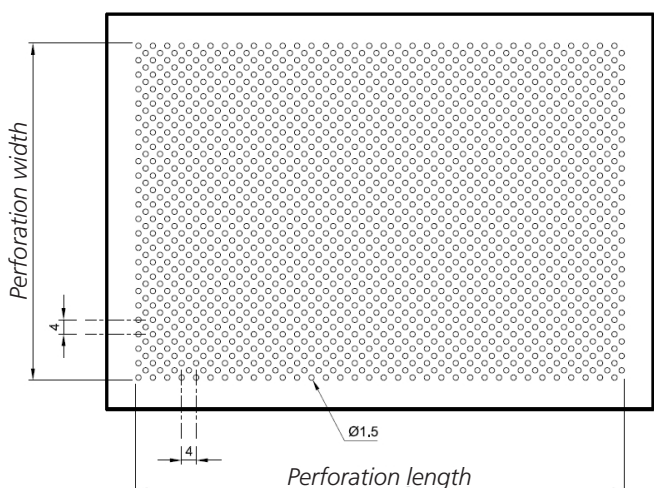
Rd 1,5 – 11 %



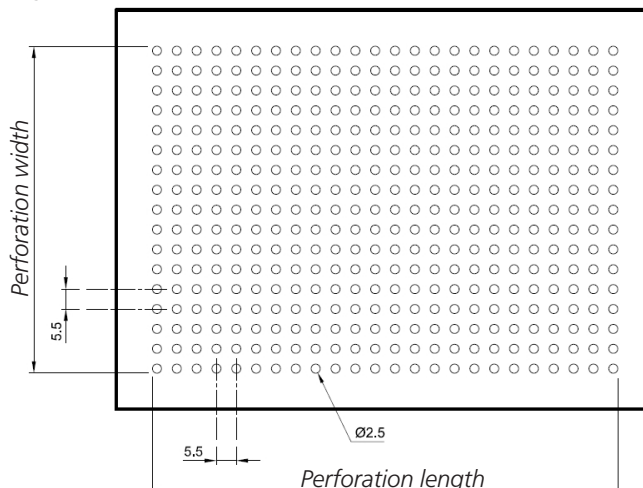
Rg 1,5 – 11 %



Rd 1,5 – 22 %



Rg 2,5 – 16 %



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