VENTAMIC

Concealed air supply with building mass connection

QUICK FACTS

- Thermal comfort according to EN ISO 7730
- Very high heating and cooling capacity: heating up to 104 w/m² (15 K), cooling up to 105 w/m² (8 K)
- Active concrete management
- Free of draught air according to EN ISO 7730, classes A/B
- Superior acoustic properties: α_w up to 0,90
- Sound power level L_w: < 25 dB (A)
- Functions
  - Cooling
  - Heating
  - Mass connection
  - Acoustics
  - Supply and exhaust air
  - Integral components

BARCOL-AIR by Swegon

zent-frenger by Swegon

Technical description

General

The radiant metal ceiling A11 + Ventamic is a powerful climate ceiling system with integrated supply air and superior acoustic effectiveness. The Ventamic supply air element with slot diffuser leads to high ventilation effectiveness. The air speed in the occupied area remains extremely low due to the Coanda effect. At the same time, the supply air jet in the ceiling cavity increases the convective performance, which supports the heating and cooling effect of the water-based climate ceiling. According to the principle of the thermoactive component system, it also includes the storage mass for the dissipation of heat loads in the overall room thermal concept.

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 A11 consists of meandering copper pipes (outside diameter 12 mm) and aluminum heat-conducting rails (width 80 mm), which are connected by laser spot welding and glued into the ceiling panels.

Functions

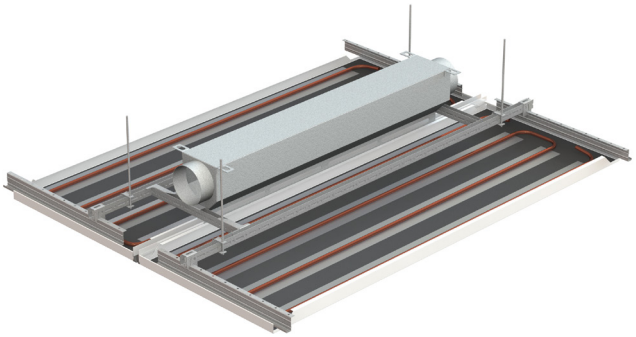
The radiant metal ceiling A11 + Ventamic is multifunctional. In addition to the thermal functions of cooling/heating and the active concrete management, there is the possibility of further integration: acoustically effective inserts or baffles (Archisonic®), various built-in components (e.g. smoke detectors, lighting).

Combinations

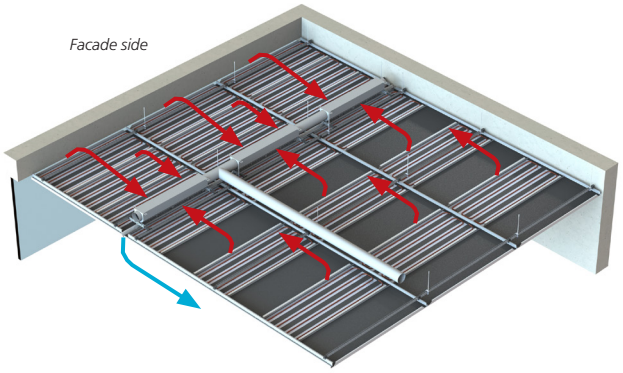
- Radiant Metal Ceiling System A11 + Archisonic®

Hygiene conformity

- Hygiene conform to VDI 6022 / SWKI VA104-01



Ceiling cutout with a ventamic between two ceiling panels.



Flow characteristics of the supply air: The supply air jet creates a negative pressure in the ceiling cavity, which draws in warm air from the room through the joints on the facade and between the ceiling panels and returns it to the room cooled by the circulating air effect.

We reserve the right to alter specifications. 18.07.2023

Technical data

Capacity

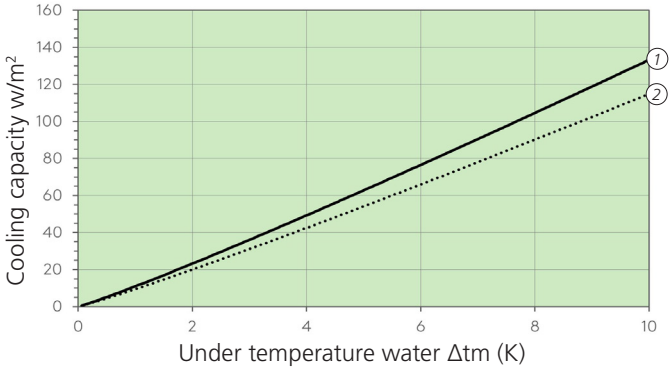
Water

Initial data is presented below.

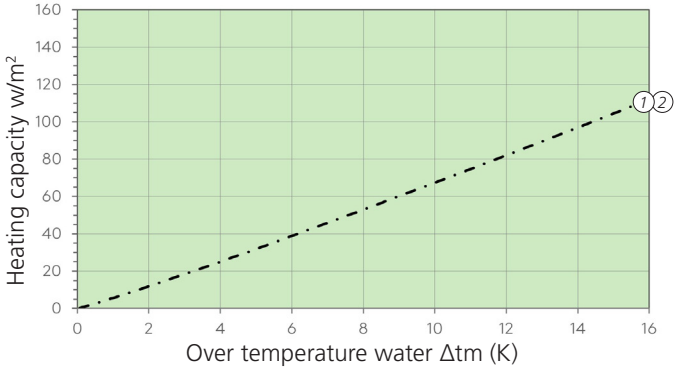
Systems in comparison (with edge joints and panel joints)	Radiant metal ceiling A11 + Ventamic ——①	Radiant metal ceiling A11 - - - -②
Material	Steel	Steel
Perforation	Rg 1,5 – 11 %	Rg 1,5 – 11 %
Activation method	on metal	on metal
Acoustic inlay	Fleece	Fleece
Additional inlay	Strip insulation between heat conduction rails	Strip insulation between heat conduction rails

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

EN 14240:2004



EN 14037:2016



Version	[1] Cooling 8 K	[1] Cooling 10 K	Heating 15 K
① Radiant metal ceiling A11 + Ventamic	up to 105 w/m²	up to 130 w/m²	up to 104 w/m² (–·–·–)
② Radiant metal ceiling A11	up to 90 w/m²	up to 112 w/m²	up to 104 w/m² (–·–·–)

[1] Depending on the configuration, an additional output of 10 w/m² of panel area is achieved through concrete management.

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.

Water (recommendations)

- Temperature
  - Cooling 16 – 18 °C
  - Heating 28 – 37 °C
- 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

Air

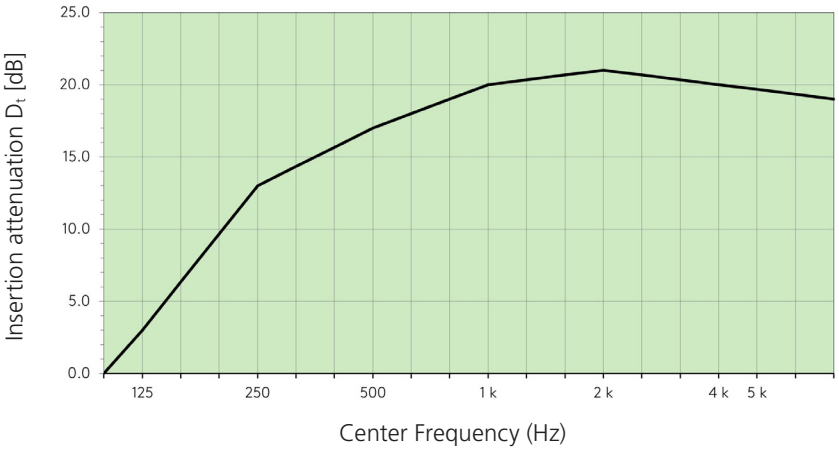
Situation	Volume flow per linear meter Ventamic	4 K	6 K	8 K
Office	60 m³/h*lm	77 W	115 W	153 W
Meeting room	80 m³/h*lm	102 W	153 W	204 W

Base: ρ_L = 1,15 kg/m³ / c_L = 1,006 KJ/kgK

Acoustic

Insertion attenuation D_t in octave band

EN ISO 7235



Centre frequency f in [Hz]	125	250	500	1000	2000	4000	8000
Air connection box insulated inside D_t in [dB]	3	13	17	20	21	20	19

Sound power level

Situation	Volume flow per linear meter Ventamic	Sound power level
Office	60 m³/h*lm	< 35 db(A)
Meeting room	80 m³/h*lm	< 40 dB(A)

Sound absorption according to EN ISO 11654

Ceiling panel	Soundabsorption value a_w	Sound absorption class
with acoustic fleece without acoustic strips	0,65	C
with acoustic fleece with acoustic strips version 1	0,80	B
with acoustic fleece with acoustic strips version 2	0,85	B
with acoustic fleece with acoustic strips version 3	0,90	A

Initial data: values at installation high 200 mm.

We reserve the right to alter specifications. 18.07.2023

System

Ceiling system

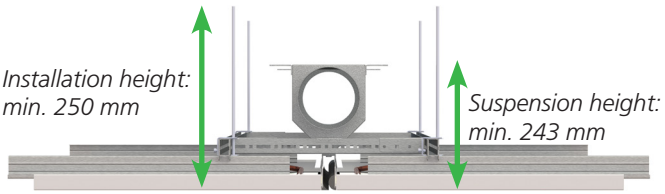
- Ceiling closed (with edge joint and panel joints)
  - Rectangular panels

System components

- Ventamic with slot diffuser
- Air connection box for access in the corridor

Installation systems

- Installation height: min. 250 mm
  - Lay-in system
  - Hook-on system
  - C-channel systems



Materials, weight and dimensions

Materials and weight

Material ceiling panel	Weight ceiling panel (incl. activation, water)	Weight supply air element Ventamic (Steel sheet)
Aluminium 1,00 mm	4,0 – 6,5 kg/m²	5,0 kg/piece
Steel 0,70 mm	6,5 – 9,0 kg/m²	

Building material class: A2-s1, d0, EN 13501-1 (depending on the acoustic solution).

Dimensions

Panel lenght	Panel width	Panel height
min. 1000 mm	min. 310 mm	40 mm
max. 2500 mm	max. 1200 mm	

Special dimensions on request.

Surface

Versions

- Powder coating
- Digital printing on request

Colors

- Standard RAL 9010

Other RAL / NCS colors on request

Perforations

- Standard Perforations
  - Rd 1,5 – 11 %
  - Rg 1,5 – 11 %
  - Rd 1,5 – 22 %
  - Rg 2,5 – 16 %
- Other perforations on request

Swegon Klimadecken GmbH
Scharzwaldstrasse 2
64646 Heppenheim

T: +49 6252 7907-0
F: +49 6252 7907-31
klimadecken@swegon.de
swegon.de/klimadecken

BARCOL-AIR by Swegon

zent-frenger by Swegon