

# OPTIPANEL 18 (PERFORATED) - CEILING

with integrated capillary tube mat OPTIMAT GB 18



System description



## SYSTEM DESCRIPTION

### Design

Clina OPTIPANEL 18 is a prefabricated gypsum board panel with an integrated capillary tube mat. The OPTIPANEL 18 are screwed onto the profiles of a substructure. On the visible side there is a seamless, perforated gypsum board ceiling for the removal or supply of sensitive heat loads. The water circulates noiselessly in the capillary tube mats and regulates the room temperature to a large extent via radiation, partly also via convection.

### Gypsum board panel & Capillary tube mat

The OPTIPANEL 18 consists of a 12,5 mm perforated gypsum board panel with the hole pattern 8/18 R (further hole patterns are available) and the Clina capillary tube mat OPTIMAT GB 18.

### Length & Width & Panel thickness

Clina manufactures the OPTIPANEL 18 in the dimensions 1.998 x 1.188 mm (standard).

Other, project-specific dimensions can also be delivered.

The panel thickness is 12,5 mm.

### Hydraulic connection

The connections between the OPTIPANEL 18 and the connection to the supply and return lines/ceiling sub-distributors are made on site using a proven push-lock system with flexible hoses. Pipes and sub-distributors are housed in the ceiling void.

Of course, the ceiling void can be used for other installations.

### Mounting

The prefabricated OPTIPANEL 18 are screwed into the holes at right angles to the profiles of a substructure using Knauf-Caps.

### Processing

According to the common rules of drywall. Processing of inactive areas with 12,5 mm standard gypsum board panels.

### Lamps & Ventilation

Openings have to be taken into account in the planning phase.

### Regulation

The system can be regulated room-by-room.

### Fields of application

Suitable for the modern interior design of rooms with special acoustic requirements, such as office buildings or public buildings, whether new construction or renovation.

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## STRUCTURE



The prefabricated OPTIPANEL 18 are screwed into the holes at right angles to the profiles of a substructure using Knauf-Caps.

The connections of the OPTIPANEL 18 to each other as well as the connection to the supply and return lines/ceiling sub-distribution are made on site using a proven push-lock system with flexible hoses.

Pipes and sub-distributors are accommodated in the void of the suspended ceiling.

The ceiling void can of course be used for further installations.

## PREFABRICATED PRODUCT

In an perforated 12,5 mm gypsum board panel, with a hole pattern 8/18 R, parallel slots are milled on the back at a distance of 18 mm.

The capillaries of the capillary tube mat OPTIMAT GB 18, consisting of a round mat distributor pipe (20 x 2,0 mm) and capillary tubes (4,3 x 0,8 mm), are inserted into these slots.

The distance between the capillary tubes (centre-to-centre distance) is 18 mm.

The OPTIPANEL 18 is covered with a full-surface acoustic fleece backing on the back.



## GENERAL INFORMATION ON CAPILLARY TUBE SYSTEMS

Clina capillary tube mats are used very successfully world-wide for heating and cooling various buildings.

The capillary tube system is extremely **comfortable**:

- noiseless temperature control
- draught-free
- even when heating, the surface temperature of the ceiling is always below the body temperature of the user (high thermal comfort)
- fast reaction

**Advantages** compared to classic single-pipe systems:

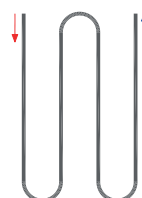
- low pressure loss
- very even temperature distribution and transmission
- larger exchange surface
- ideal for the use of environmental energy due to very small temperature differences between system and room temperature
- in combination with the heat pump, best COP values can be achieved

Capillary tube mats are **safe & durable**

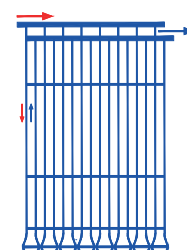
Each individual Clina capillary tube mat is subjected to a leak test before dispatch. The test pressure is 20 bar - which corresponds to approximately 10 times the operating pressure.

A 15-year extended warranty applies to all Clina mats. The expected service life is more than 50 years under normal conditions of use. All Clina capillary tube mats are produced with high-tech machines & equipment in our manufacturing plant in Berlin-Brandenburg.

Single-pipe system



Capillary tube system



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## ADVANTAGES

### Cooling and heating with one system

In most buildings, the heat requirement to be covered is so low due to the well-insulated building envelope that capillary tube mats integrated invisibly in the gypsum board ceiling not only provide excellent and silent cooling in summer, but can also be used to heat very comfortably and energy-efficient in the cold season.

### High degree of prefabrication

Factory prefabrication ensures quality, function and thermal performance.

### Good acoustics

This ceiling design enables optimised room acoustics, as the acoustic values of the perforated gypsum board panels remain unchanged.

### Easy retrofitting

Can be screwed onto an existing substructure. The hydraulic connection is made in the ceiling void.

Activation does not increase the ceiling load.

### Quick and easy installation

The hydraulic connection is made using a proven push-lock system.

This design can be installed completely in the drywall work, which ensures a smooth process on the construction site.

### Individual room control

The temperature can be regulated room-by-room.

## VALUES



### HEATING CAPACITY

according to DIN EN 14037/5

**92,0 W/m<sup>2</sup>**

$\Delta T = 15 \text{ K}$ , active mat surface

**80,7 W/m<sup>2</sup>**

$\Delta T = 15 \text{ K}$ , total panel surface



### COOLING CAPACITY

according to DIN EN 14240

**72,6 W/m<sup>2</sup>**

$\Delta T = 10 \text{ K}$ , active mat surface

**63,7 W/m<sup>2</sup>**

$\Delta T = 10 \text{ K}$ , total panel surface



### ACOUSTICS

weighted sound absorption coefficient

up to  $\alpha_w = 0,7$  (Class C)

### INSTALLATION HEIGHT:

depending on the substructure plus **12,5 mm** OPTIPANEL 18

### SYSTEM WEIGHT:

OPTIPANEL 18 (filled with water)  
**9 kg/m<sup>2</sup>** plus substructure + insulation

### PRESSURE STAGE:

PN 10

## REFERENCES

Please note the following documents for further information:

- OPTIPANEL 18 System data sheet
- OPTIPANEL 18 Product data sheet
- Gypsum board ceilings Performance values
- OPTIPANEL Installation guideline
- Website: [www.clina.de](http://www.clina.de)

## CONTACT

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