

# OPTIPANEL 15 (UNPERFORATED) - CEILING

with integrated capillary tube mat OPTIMAT GB 15



System description



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## SYSTEM DESCRIPTION

### Design

Clima OPTIPANEL 15 is a prefabricated gypsum board panel with an integrated capillary tube mat. The OPTIPANEL 15 are screwed onto the profiles of a substructure. On the visible side there is a seamless 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 15 consists of a 12,5 mm unperforated gypsum board panel and the Clima capillary tube mat OPTIMAT GB 15.

### Length & Width & Panel thickness

Clima manufactures the OPTIPANEL 15 in the dimensions 2.000 x 625 mm or 2.000 x 1.250 mm (standard).

Other, project-specific dimensions can also be delivered.

The panel thickness is 12,5 mm.

### Hydraulic Connection

The connections between the OPTIPANEL 15 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 cavity.

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

### Mounting

The prefabricated OPTIPANEL 15 are screwed onto the profiles of the substructure.

The screws are screwed in through holes drilled in the factory.

### Processing

According to the common rules of dry-wall. 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



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The connections between the OPTIPANEL 15 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 cavity. Of course, the cavity can be used for other installations.

## PREFABRICATED PRODUCT

In an unperforated 12,5 mm gypsum board panel, parallel slots are milled on the back at a distance of 15 mm.

The capillaries of the capillary tube mat OPTIMAT GB 15, 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 15 mm.

The OPTIPANEL 15 is covered with a full-surface cover paper on the back.



## GENERAL INFORMATION ON CAPILLARY TUBE SYSTEMS

Clina capillary tube mats are used very successfully worldwide 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:

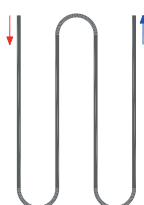
- low pressure loss
- very even temperature distribution and transmission
- larger exchange surface
- ideal for the use of environmental energy due to very small temperature differences between system and room temperature
- in combination with the heat pump, best COP values can be achieved

Capillary tube mats are **safe & durable**

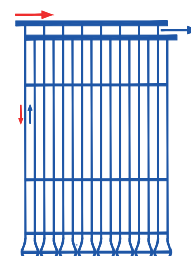
Each individual Clina capillary tube mat is subjected to a leak test before dispatch. The test pressure is 20 bar - which corresponds to approximately 10 times the operating pressure.

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.

### Easy retrofitting

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

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** (ceiling)  
according to DIN EN 14037/5

**91,0 W/m<sup>2</sup>**

$\Delta T = 15$  K, active mat area

**77,3 W/m<sup>2</sup>**

$\Delta T = 15$  K, total panel surface



**COOLING CAPACITY** (ceiling)  
according to DIN EN 14240

**74,4 W/m<sup>2</sup>**

$\Delta T = 10$  K, active mat area

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

$\Delta T = 10$  K, total panel surface



**ACOUSTICS** (ceiling)  
(only applies to perforated version)

perforated version:  
see OPTIPANEL 18

### INSTALLATION HEIGHT:

depending on substructure  
plus **12,5 mm** OPTIPANEL 15

### SYSTEM WEIGHT:

OPTIPANEL 15 (filled with water)  
**11 kg/m<sup>2</sup>** plus substructure + insulation

### PRESSURE STAGE:

PN 10

## REFERENCES

Please note the following documents for further information

- OPTIPANEL 15-ceiling System data sheet
- OPTIPANEL 15 Product data sheet
- Gypsum board ceilings Performance values
- OPTIPANEL Installation guideline
- Website: [www.clina.de](http://www.clina.de)

Data sheets regarding other application possibilities with OPTIPANEL:

- OPTIPANEL 15-wall System description
- OPTIPANEL 15-wall System data sheet
- OPTIPANEL 18-ceiling System description
- OPTIPANEL 18-ceiling System data sheet
- OPTIPANEL 18 Product data sheet

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