

# METAL FLOATING CEILING

with capillary tube mat OVAMAT U 10 / UM 10 / G 10 / GM 10



System description



E & B DRUCKEREI © ILKAZELL ISOLIERTECHNIK

## SYSTEM DESCRIPTION

### Design

The capillary tube mat is fixed on the inside of the metal canopy, usually with glue. The metal canopies are suspended freely in the room from the ceiling. On the visible side, there are perforated or unperforated metal canopies floating freely in the room, revealing views of the concrete ceiling. The system is used for the dissipation or supply of sensitive heat loads. The water circulates noiselessly in the capillary tube mats and regulates the room temperature largely by radiation, partly by convection.

### Capillary tube mat

All standard metal canopies, usually made of sheet steel or aluminium, with or without perforation, can be used. The Clina capillary tube mats type OVAMAT U 10/UM 10 or OVAMAT G 10/GM 10 are recommended for this design.

### Length & Width

The capillary tube mats are custom-made in length and width for each project, the dimensions are 10-20 mm smaller than the inner dimension of the metal canopies.

### Hydraulic connection

The connections of the capillary tube mats or metal canopies to each other as well as the connection to the supply and return lines/ceiling sub-distributors are usually made on site using a proven push-lock system with flexible hoses.

### Mounting

The capillary tube mat is fixed directly to the metal in the case of unperforated metal canopies and to the fleece in the case of perforated metal canopies, which are usually covered on the inside with an acoustic fleece, mostly with adhesive.

### Processing

According to the common rules of dry-wall construction. Active and inactive surfaces can be easily combined.

### Lamps & Ventilation

Lamps can be perfectly integrated.

### Regulation

The system can be regulated room-by-room.

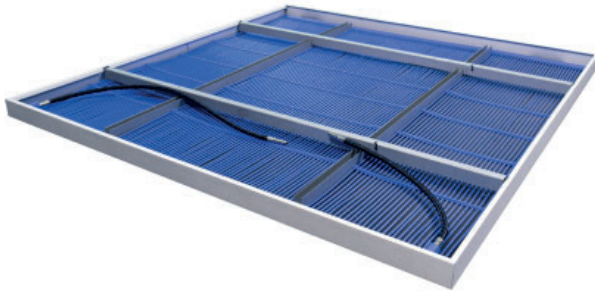
### Fields of application

Suitable for modern interior finishing of rooms with special architectural, acoustic and aesthetic requirements, such as office buildings, residential buildings, public buildings, whether new construction or renovation.

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## STRUCTURE



In the case of unperforated metal canopies the capillary tube mat is fixed directly on the metal and in the case of perforated metal canopies, which are usually covered on the inside with an acoustic fleece, it is fixed on the fleece, mostly with adhesive.

The metal canopies are suspended freely in the room from the ceiling.

The connections of the capillary tube mats or metal canopies to each other and the connection to the supply and return lines/ceiling sub-distributors are made on site usually via a proven push-lock system with flexible hoses.

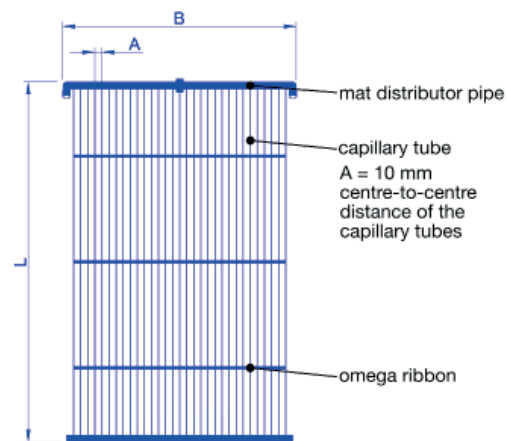
## RECOMMENDED CAPILLARY TUBE

The capillary tube mat OVAMAT U 10/UM 10 or G 10/GM 10 consists of an **oval** mat distributor pipe (20 x 12 x 2,0 mm) and capillary tubes (3,4 x 0,55 mm).

The constant distance between the capillary tubes (centre-to-centre distance) is 10 mm and is guaranteed by the omega ribbons.

### Special features

- more exchange surface due to the oval mat distributor pipe
- lower installation height of the connections



OVAMAT GM 10 with 2 connections and 1 middle end cap

## 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 impresses with its exceptionally high level of **comfort**:

- noiseless tempering
- draught-free
- high thermal comfort, because even in heating mode the surface temperature of the ceiling is always below the body temperature of the user
- prompt response

### Advantages over classic single-pipe systems:

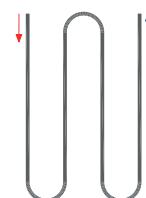
- low pressure loss
- very even temperature distribution & transmission
- larger exchange surface
- ideal for the use of environmental energy due to very small temperature differences between system and room temperature
- best COP values can be achieved in combination with the heat pump

Capillary tube mats are **safe & durable**

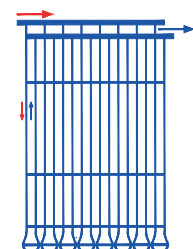
Each individual Clina capillary tube mat is subjected to a leak test before dispatch. The test pressure is 20 bar - which corresponds to approximately 10 times the operating pressure.

All Clina mats are covered by a 15-year extended warranty. 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 invisibly integrated into metal canopies not only provide excellent cooling in summer, but can also heat very comfortably and energy-efficiently in the cold season

### High performance

The open design allows more convection and the specially developed capillary tube mat with an oval mat distributor pipe results in a larger contact surface.

### Good acoustics - perforated version

The capillary tube mat does not require any heat-conducting profiles that would cover the perforation and thus reflect the sound. The open construction helps to improve the acoustics in the room. The sound absorption values of the metal canopies specified by the manufacturers are maintained without restriction.

### Optimized room comfort

Perforated metal canopies noticeably and efficiently improve room comfort both thermally and acoustically.

### Free design possibility

The application with metal canopies is an excellent solution for spaces with special architectural requirements, such as conference rooms, cinemas or open-plan offices. The metal canopies can be freely adapted in shape and colour as well as in the arrangement according to the requirements.

### Easy retrofitting

Clina capillary tube mats turn any metal floating ceiling into a heating and cooling floating ceiling, quickly and economically.

### Individual room control

The temperature can be regulated room-by-room.

### Maximum degree of activation

The dimensions of the capillary tube mat are individually adapted to the size of the metal canopies.

## VALUES



### HEATING CAPACITY

according to DIN EN 14037/5

depending on the design



### COOLING CAPACITY

according to DIN EN 14240

depending on the design



### ACOUSTICS

(applies only to perforated version)

weighted sound absorption coefficient as specified by the manufacturer of the metal canopies

### INSTALLATION HEIGHT:

depending on the kind of metal canopy

### SYSTEM WEIGHT (filled with water):

**1 kg/m<sup>2</sup>** plus metal canopies

### PRESSURE STAGE:

PN 10

## REFERENCES

Please note the following documents for further information:

- Metal floating ceiling System data sheet
- OVAMAT Product data sheet
- Website: [www.clina.de](http://www.clina.de)

## CONTACT

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