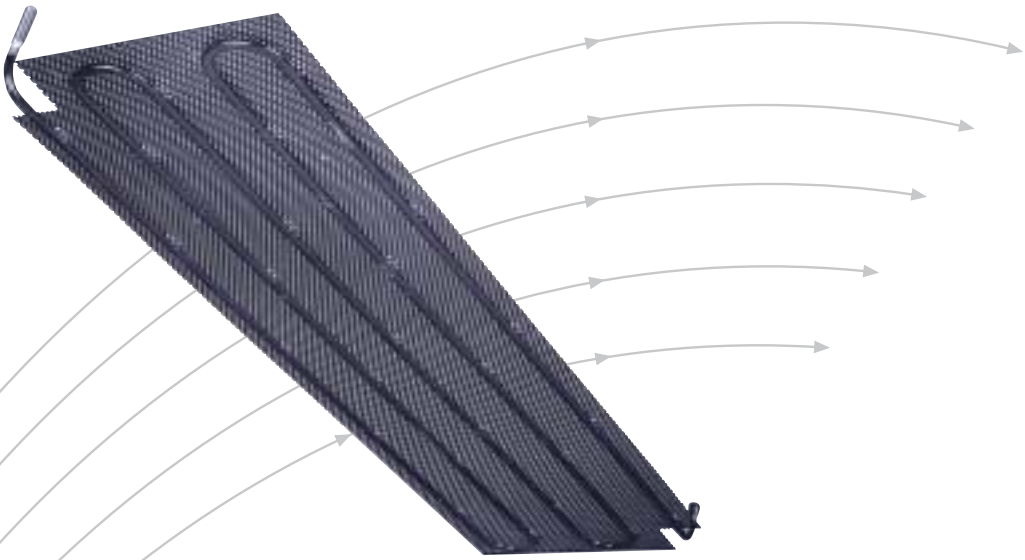
Chilled Ceiling Elements

Type WK-D-UM

A lay-in system for suspended ceilings



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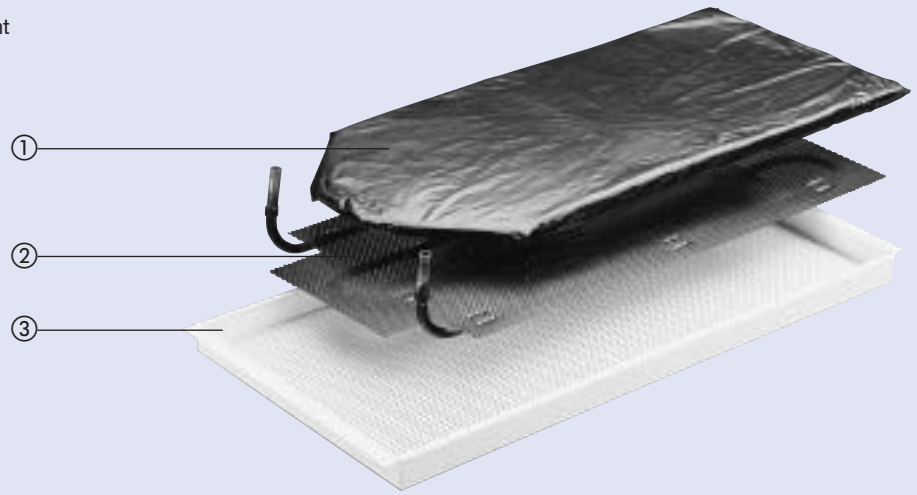
Contents · Description

① Mineral wool in PE film
② Chilled ceiling element
③ Ceiling tile



Description

Chilled Ceiling Elements, type WK-D-UM are designed for the control of internal heat loads, where the energy benefits of cooling by means of water are required. A high cooling capacity per unit area provides a low cost solution to the local indoor environment. The WK-D-UM chilled ceiling element consists of a copper tube meander which is flattened and press-clipped into a perforated support plate. The flattened copper tube provides improved contact with the rear of the metal ceiling tile.

This installation method ensures good radiant exchange between the ceiling tile and the support plate which improves thermal performance without influencing the acoustic characteristics of the suspended ceiling. Specially shaped fixing straps (2 per ceiling tile) hold the element in place in the ceiling tile.

The WK-D-UM chilled ceiling element is also suitable for use with plasterboard ceilings.

Depending on the maximum required pressure drop, an appropriate number of cooling elements are interconnected to establish a water circuit. The ends of the cooling coil are bent upwards and fitted with circular connections, diameter 10 mm.

Normally, the individual cooling elements are connected with flexible, stainless-steel overbraid hoses with push fit connectors on both ends. This type of connection is simple to perform, and therefore cost effective.

Rigid tube connections can also be used by means of soft soldering with induction solder terminals (without open flame).

The customer must test the entire system for leaks. This test can be performed with air or water using the pressure drop method.

As with all chilled ceilings, the selected chilled water flow temperature must not be lower than the room dew point.

Construction · Dimensions · Capacity

Construction

The maximum possible number of parallel copper tubes in the cooling element is a function of the ceiling tile width.

With an even number of tubes, the connections are all on the same short end (Type G). With an odd number of tubes, the connections are diagonally opposed. In the latter case, a distinction must be made between right and left construction depending on the purpose (Types R & L).

For certain ceiling systems e.g. the hinge or drop down connections must be located on one long side (Types EU and EG).

Accessories

Flexible hose – FS
Made of special plastic material with stainless steel overbraid and push fit connectors at each end.

Fixing Straps – SB
To secure and press the cooling elements to the ceiling tile, made of galvanised sheet steel.

Dimensions

The cooling elements can be supplied in all standard ceiling tile dimensions.

Maximum length	2400 mm
Maximum width	1000 mm
Weight	5 – 6 kg/m² (depending on construction)

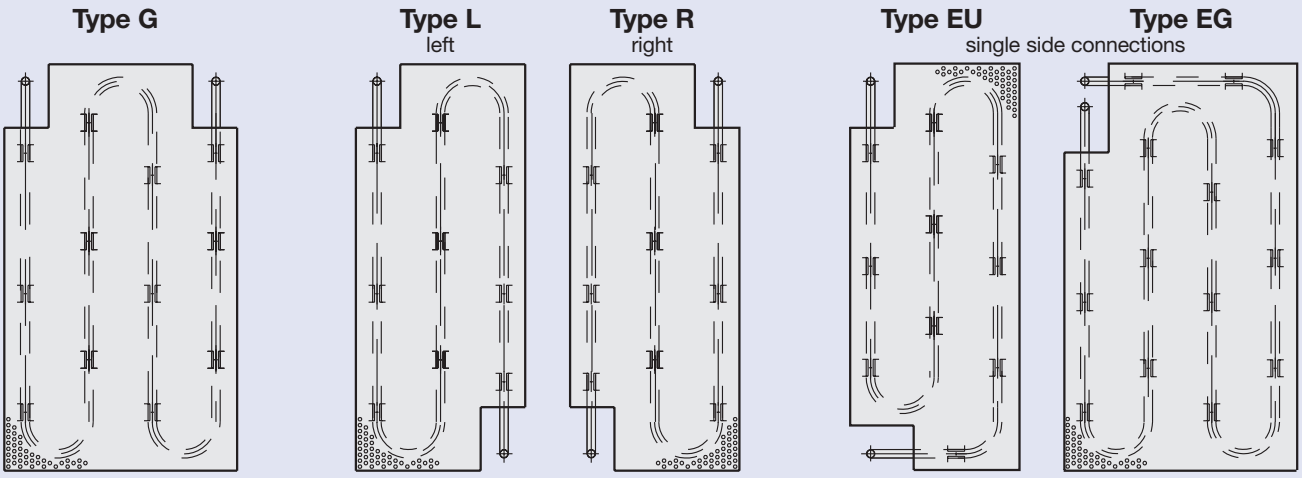
Capacity

The capacity depends on many project-specific parameters such as temperature difference, ceiling tile construction, type of ventilation system etc.

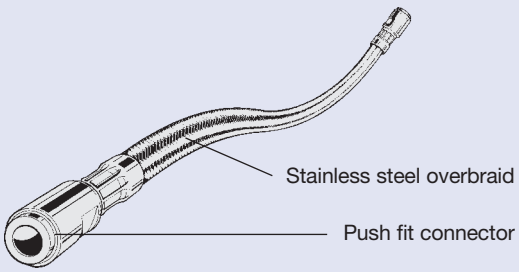
The maximum cooling capacity which can be achieved is 110 W/m² of active chilled ceiling.

Please contact Trox for further details.

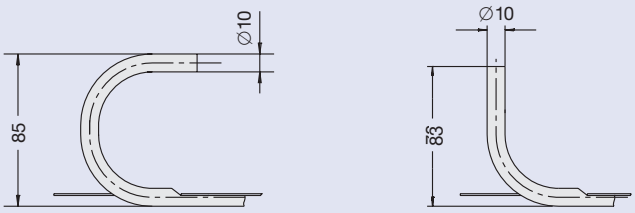
Construction



Flexible hose

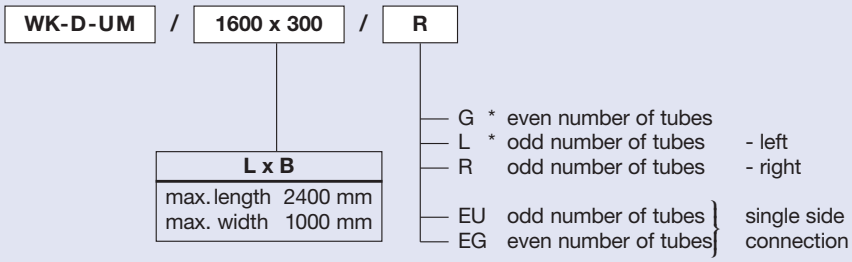


Connections



Order Details

Order Code



Accessories:
FS = Flexible hose
SB = Fixing straps

* If not specified, G or L will be supplied.

Specification Text

Chilled ceiling elements type WK-D-UM, suitable for simple laying into any metal ceiling tiles. With a closed radiant ceiling, the room load is controlled approximately 55 % by radiation and 45 % by convection.

The chilled ceiling elements consist of a tube meander pressed onto a perforated support plate and at the same time flattened to give increased contact with the ceiling tile.

The tube ends of the cooling elements are bent upwards and can be interconnected by flexible hoses or rigid tube elbows.

Materials:

Tube meander made of copper, perforated base plate of aluminium, entire surface powder-coated black (RAL 9005).

The flexible hose, available as an accessory, consists of a special plastic material with stainless steel sheathing, fixing straps of galvanised sheet steel.

Order Example

Make: TROX
Type: WK-D-UM/1600 x 300/R
Accessories: FS
SB