



Chilled Ceiling Panel INDUCOOL



Seit 1877

Kiefer

Luft- und Klimatechnik

Neue Wege mit Luft

Altes Schloss Stuttgart



Photo: © LMZ

This ancient castle lies in the heart of Stuttgart. The first castle was built about 950 AD to defend the Stutengraben from which Stuttgart derives its name. Conversion of the moated castle to a renaissance palace was completed by 1570. Following a major fire in 1931 and damage during the Second World War, the entire complex was rebuilt and today houses the Württemberg State Museum.

The visiting-exhibition area on the third floor of the Altes Schloss in Stuttgart has been equipped with new security and air-conditioning systems. Predominant concerns were the stringent requirements relating to the preservation and structure of the historic building in addition to functionality and efficiency. The objective was to condition an 1,100 m² exhibition area with a room height of 3.7 m and an anticipated cooling load of 70 kW (64 W/m²) by means of a 6,000 m³/h primary air volume flow (5.5 m³/hm²). The cooling panels were to be freely suspended in the room on visible mountings. Eight parallel lighting strips are installed, spaced 2,500 mm apart and integrated into the cooling panels.



Details of visible installation
Individual INDUCOOL-Compact elements with cable trays
on both sides and strip luminaires.

Features:

Air conditioning for a museum presents special challenges. Works of art are displayed whose preservation in sound condition demands unconditional protective measures whether for permanent or for visiting exhibits.

From the conservation viewpoint the most important criteria are maintaining a specific, constant temperature, adequate humidity suitable for the absorption characteristics of the material exhibited, and an appropriate intensity of illumination. Whereas, in museums with permanent exhibitions, the conditions in the rooms can be adjusted to suit the exhibits, for temporary exhibitions, it is frequently necessary to develop specific air-conditioning concepts for particular spaces.





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Function chilled ceiling panel INDUCOOL:

INDUCOOL cools with air and water. Most of the thermal energy is removed quickly and economically by cooling water. High-quality air diffusers ensure a high degree of comfort and optimum air distribution.

System advantages INDUCOOL:

- Greater thermal comfort with low air velocity
- Chilled ceiling panels require only 5-10 % of the ceiling area
- Reduced energy costs by exploiting the cooling potential of outdoor air
- High cooling capacity up to 500 W/m
- Integration of cooling panels in all common ceiling systems
- A full-surface cooling-water system is not required

Building:	Altes Schloss (Ancient castle) Visiting-exhibition area Stuttgart
Proprietor:	Staatliches Vermögens- und Hochbauamt Stuttgart
Consultant:	Krebs Ingenieure Ditzingen
Ventilations system:	Chilled ceiling panel INDUCOOL
Type of installation:	Visible mountings
Scope:	1,100 m ² conditioned area
Active ceiling area:	< 10 %
Specific cooling load:	60-120 W/m ²
Specific air flow rate:	10-15 m ³ /hm ²

