▲ INDULVENT – Lighthouse Hotel & Spa, Büsum. Photo © Rainer Taepper

FAN COIL SYSTEM INDULVENTec

Kiefer Klimatechnik

Decentralised fan coil system which sets new benchmarks in terms of dimensions, cooling capacity, acoustics and comfort. INDULVENT ec was developed as a clear alternative to current ceiling fan coil systems and the associated disadvantages. INDULVENT ec offers 3D ambient air conditioning: maximum cooling capacity + good acoustics + highly comfortable inflow behaviour = above average user satisfaction.

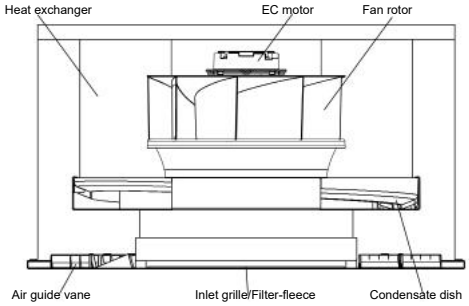
INDULVENT – Mercedes-Benz-Museum, Stuttgart. Photo © Kiefer GmbH

FAN COIL SYSTEM INDULVENTec

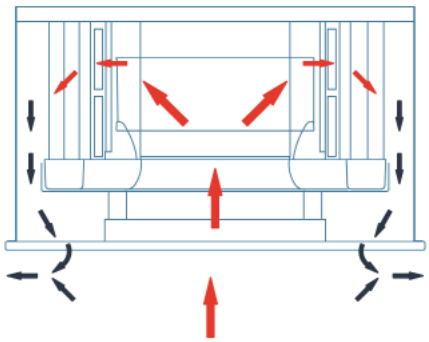
High cooling capacity and comfortable ambient air flow

A decentralised fan coil system offers high flexibility, as the room where it is installed can be used for different purposes. INDULVENT ec combines the high cooling capacity of a fan coil system with the comfortable ambient air flow of a highly inductive ceiling air diffuser. INDULVENT ec is suitable for almost all applications where high cooling loads need to be transferred and a comfortable indoor environment is a priority. The reference projects shown range from typical offices and conference rooms, to halls, hospitals, workshops and laboratories, and on to control centres and control rooms. INDULVENT ec is equally suitable for both new and renovated buildings.

Construction



Air flow path



FUNCTION

The energy-saving, acoustically optimised EC fan draws the ambient air into the interior of the housing and cools it by means of the integrated ring cooler. The cooled ambient air is then fed back into the room via the front plate with highly inductive air guide vanes. The major advantage which results from combining a fan coil system with inductive introduction of air is reflected in the significantly greater comfort. In contrast to current systems, which blow the supply air into the room without extensive mixing with ambient air, here Kiefer's own comfortable, draught-free ambient air flow is formed.

By continually adjusting the recirculation air flow rate, the integral control unit ensures optimum transfer of the cooling loads at all times, thereby meeting user requirements. A condensate dish with float module and a low noise condensate pump are integrated in the interior of the housing to ensure operational reliability. This means that any condensate that arises can be carried away easily and safely via a condensate line. The supply air flow rate and the associated cooling capacity are regulated according to the requirements of the user and of the space. The integrated Vent-BUS technology enables master/slave operation without further outlay on control technology. In conjunction with a remote switch, it is even possible to achieve single-room control.

ENERGY

Decentralised fan coil system which reacts only to the actual cooling requirement within the room, thus avoiding energy losses.
EC technology that saves energy each time it is used and variable volume flow rates matched to the cooling load ensure high energy efficiency with low operating costs.

DESIGN

Dimensions no larger than those of standard air diffusers allow the INDULVENT ec to be integrated into all commonly used ceiling systems.
Various different designs and numerous special solutions give architects much greater creative freedom than is usually the case with fan coil systems.

TECHNOLOGY

Decentralised fan coil system developed for the highest demands on comfort, with a cooling capacity of up to 2600 watts.
The hinged front plate allows maintenance and cleaning tasks to be carried out quickly and trouble-free from within the room. The integrated Vent-BUS technology enables efficient, user-oriented operation.

TECHNICAL DATA

Cooling capacity	up to 2.400 W
Size	600 x 600 mm / 625 x 625 mm
Installation length	335 mm
Cold water temperatures	6 – 14 °C
Accessories	Straight-through valve with ½" thermal actuator for cold water shut-off during downtimes; remote switch

Further information can be found on www.kieferklima.de/en/indulvent

INSTALLATION SITUATION INDULVENTec

The INDULVENT ec housing is no larger than that of a standard air diffuser and can be easily integrated into all common ceiling systems. Various different designs and numerous special solutions give architects much greater creative freedom than is usually the case with fan coil systems. With the RQF version, suspended installations without false ceilings are possible, without any impairment to comfort levels.

COMBINATION INDULVENTec / INDULCLIP Z/A

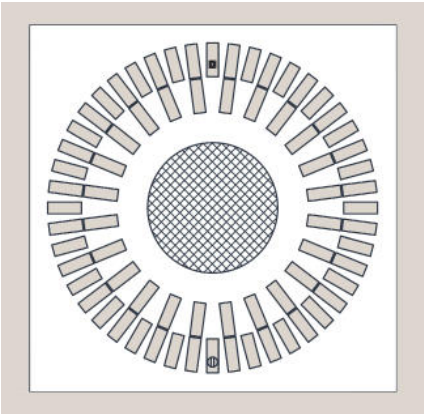
INDULVENT ec has been designed as a standalone system. The integral control unit keeps the cooling capacity adjusted to current requirements at all times. This enables straightforward installation of INDULVENT units in the case of retrofits and renovations in particular, without the need for complex building management services (BMS).
The INDULVENT controller is not necessary in larger construction projects which usually have BMS installed anyway. In such cases, the INDULVENT ec units are controlled via an analogue 0-10 V signal from the BMS.

In rooms where the cooling load is transferred wholly or partially via the preconditioned supply air, the use of INDULCLIP Z/A is ideal. The air diffuser is visually almost identical with the INDULVENT ec front plate. The components can be combined in a project as follows:

- INDULVENTec for rooms without supply air provision.
- INDULVENTec and INDULCLIP Z/A for rooms with average and high cooling loads, which also have supply air provision for hygiene reasons.
- INDULCLIP Z/A for rooms with a high supply air demand, where the cooling loads can only be transferred via the supply air.

EASY TO CLEAN (VDI 6022)

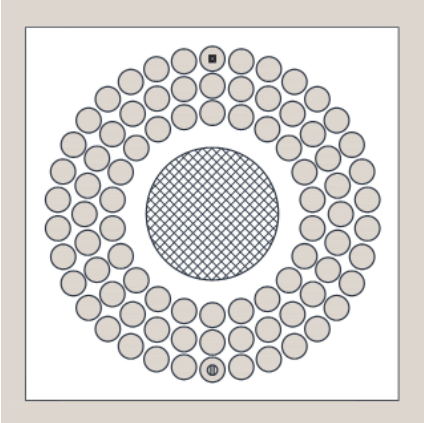
The INDULVENT ec has a special feature in the form of a folding hinge, which comes as standard. The front plate can be opened without the need for tools, and pivoted downwards. This makes the housing, filter, fan, heat exchanger, condensate dish, etc. easily accessible for cleaning.



View of front plate of INDULVENT ec RQD
Suitable for ceiling installation

Square front plate 600 x 600 mm or 625 x 625 mm with INDULCLIP air flow path elements

Matt black or Light grey (similar to RAL 7035)



View of front plate of INDULVENT ec RQF
Suitable for ceiling installation and mounting without a suspended ceiling

Square front plate 625 x 625 mm with INDUDRALL air flow path elements

Matt black or Light grey (similar RAL 7035)

Cooling capacity[1]

Control voltage [V(DC)]	Sound power level [dB(A)]	Total cooling capacity [W]					Electrical power [W]
		Cold water supply temperature					
		6 °C	8 °C	10 °C	12 °C	14 °C	
3,2	29	1305	1150	990	820	640	10
4,2	33	1565	1370	1175	965	750	11
5,3	37	1775	1560	1335	1095	845	13
6,4	41	1950	1700	1455	1195	925	16
7,5	45	2095	1835	1560	1275	985	20
8,5	48	2220	1940	1645	1345	1035	23
9,7	51	2365	2055	1745	1420	1090	29
10,0	52	2390	2090	1770	1440	1105	30

[1] Ambient air conditions: 26 °C / 60 % rel. humidity, dew point: 17,6 °C, $\dot{m}$ = 250 kg/h

Photo © Kiefer GmbH

MARKENRAUM MERCEDES-BENZ MUSEUM, STUTTGART

PROPRIETOR	Mercedes-Benz-Museum GmbH, Stuttgart
ARCHITECTS	dan pearlman Markenarchitektur GmbH, Berlin
PLANNING OFFICE	Drees & Sommer Advanced Building Technologies, Stuttgart

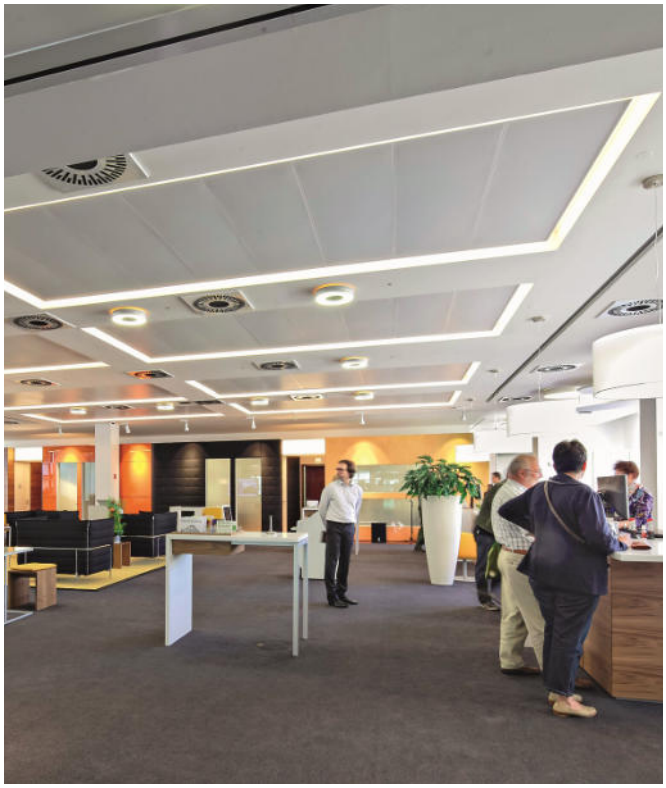


Photo © Volksbank Lahr eG

VOLKSBANK LAHR

PROPRIETOR	Volksbank Lahr eG, Lahr
ARCHITECTS	Schaible Freie Architects, Lahr
PLANNING OFFICE	Planungsbüro Eichhorn & Engler, Friesenheim

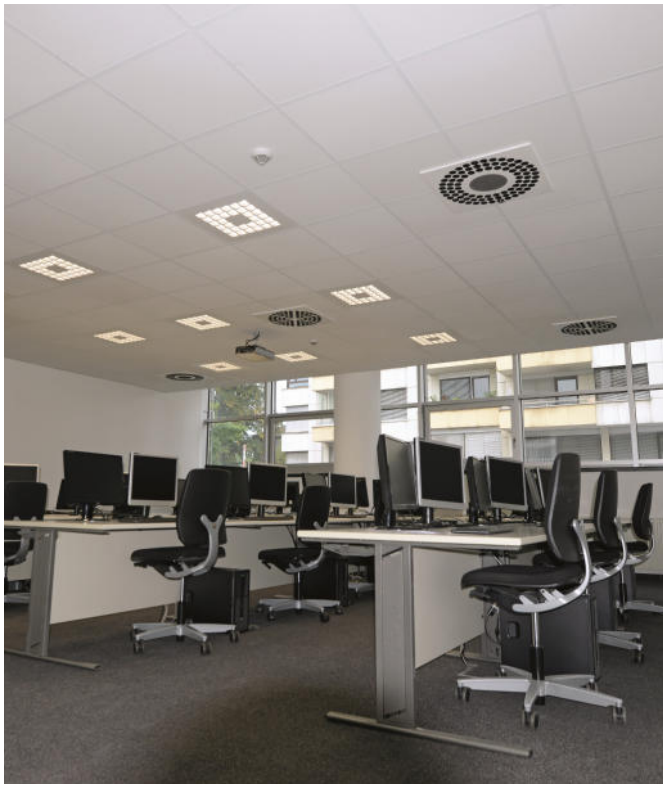


Photo © Hörburger GmbH & Co KG

WIFI VORARLBERG, DORNBIRN

PROPRIETOR	WIFI Vorarlberg, Dornbirn. AT
ARCHITECTS	Atelier Ender, Nüziders. AT
PLANNING OFFICE	Klimaplan GmbH, Hohenems. AT

Photo © Kiefer GmbH

SPARKASSE BAYREUTH

PROPRIETOR	Sparkasse Bayreuth
ARCHITECTS	BAURCONSULT Architects, Haßfurt
PLANNING OFFICE	Rabenstein, Bischofsgrün

Photo © Kiefer GmbH

LANDESKRANKENHAUS FELDKIRCH

PROPRIETOR	Vorarlberger Krankenhaus-Betriebsgesell-schaft. m.b.h.
ARCHITECTS	Erich Gutmorgeth, Innsbruck. AT
PLANNING OFFICE	Klimaplan GmbH, Hohenems. AT

Photo © Thomann GmbH

MUSIKHAUS THOMANN, TREPPENDORF

PROPRIETOR	Musikhaus Thomann e.K., Treppendorf
ARCHITECTS	Blum Diez GmbH, Kitzingen
PLANNING OFFICE	Ingenieurbüro HPM, Stegaurach

Photo © Kistler GmbH

KISTLER, SINDELFINGEN

PROPRIETOR	Kistler Instrumente GmbH, Sindelfingen
PLANNING OFFICE	Schatz Projectplan GmbH, Schorndorf

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Kiefer
Klimatechnik

Qualitäts-management-system
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