



▲ Full-surface combination of INDUSAIL PLUS (QUADRO) and INDUSAIL SILENT.

ACOUSTIC SAIL SYSTEM INDUSAIL SYSTEM



INDUSAIL SYSTEM combines the fields of acoustics, lighting, cooling and ventilation to offer maximum flexibility when designing the office landscape.



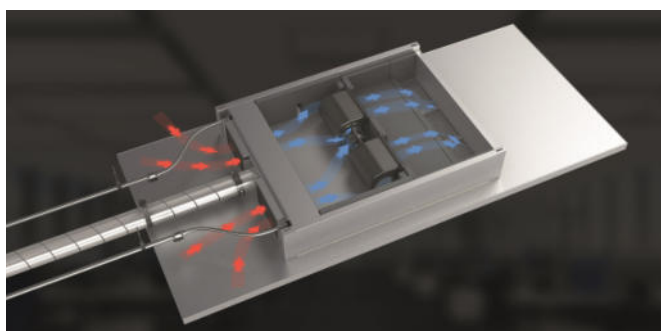
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MULTIFUNCTIONAL SYSTEM

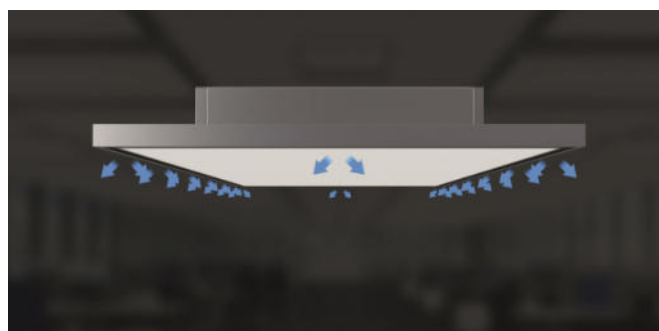
ACOUSTICS – LIGHTING – COOLING – VENTILATION

Office design reflects the needs and working habits of the respective users and change over the life cycle of a building. Even changes within an organisation often entail adjustments to the office landscape. For example, an open-plan space becomes group, combination or cellular offices. In order to successfully meet these changing requirements, a cooling/heating installation is preferable which allows for these modifications without extensive reconstruction work. This can therefore only be carried out via the ceiling or the floor and must take

account of all conceivable modifications in advance. When considering the installation of the base air conditioning system, it is therefore important during planning stage to supply all zones such that, irrespective of changes to partition walls, the base air conditioning requires minimal changes. To assure this, the requirements for ambient acoustics and the different lighting technologies must also be taken into account. This is the only way to ensure maximum flexibility over the entire life cycle of a building.



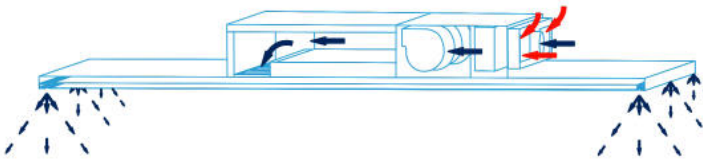
Fan coil system (Fig. INDUSAIL PLUS (QUADRO))



Draught-free ambient air flow

FUNCTION

INDUSAIL SYSTEM is a flexible acoustic ceiling sail with integrated fan coil system for ambient air conditioning taking account of illumination technology. Recirculation air and/or mixed air is introduced via highly inductive linear slot diffusers with the option to connect outdoor air to improve the quality of the ambient air. The combination of active and inactive components makes it possible to meet the requirements of various office concepts, and even future changes. Modifications to the partition wall locations have no effect on the arrangement of the ceiling elements if planned appropriately.



The integrated linear diffusers with their special developed discharges geometry produce fine individual jets. Ambient air can be induced effectively on the surfaces of the individual jets.



ENERGY

Low energy demand due to decentralised recirculating air cooling adapted to changing cooling loads and the option of using free cooling. Energy saving EC fans increase energy efficiency.



DESIGN

Multifunctional system combining the areas of acoustics, lighting, cooling and ventilation, to offer maximum flexibility when designing the office landscape.



TECHNOLOGY

Acoustic elements with a high light reflectance value and integral, decentralised recirculating air cooling system for cooling the interior, with the option of inducing supply air.

TECHNICAL DATA

		INDUSAIL PLUS (QUADRO)	INDUSAIL AIR	INDUSAIL SILENT
Cooling capacity		up to 1400 W	–	–
Dimensions	Sail	50 mm x 1100 mm x 2500 mm		
	Ceiling fan coil unit	205 mm x 914 mm x 1352 mm	–	–
	Supply air box	200 mm x 900 mm x 125 mm	–	–
Cold water temperature		from 16 °C (non-condensing)	–	–
Total weight in operation		60 kg	36 kg	16 kg
Installation height		255 mm	250 mm	50 mm

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



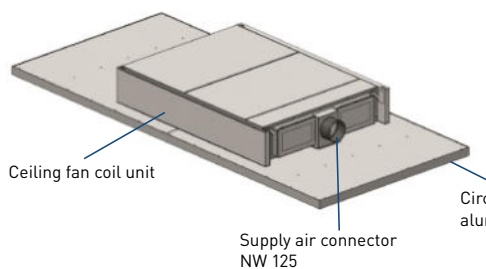
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CONSTRUCTION AND TYPES OF INDUSAIL SYSTEM

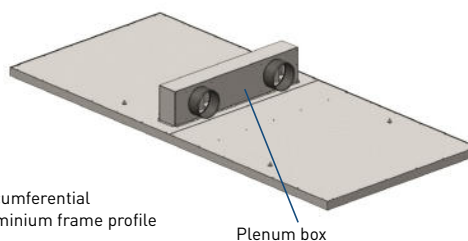
INDUSAIL SYSTEM ceiling sails consist of an acoustic sail for sound absorption and light reflectance. Depending on the design, they are then supplemented by a fan coil unit and plenum box. In the case of designs with active components, the integral, highly inductive type P18 INDUL

discharge profiles introduce recirculation air to the room. The ceiling sails' sound-absorbing supporting material is fleece laminated and open pored, and improves the acoustics of the room.

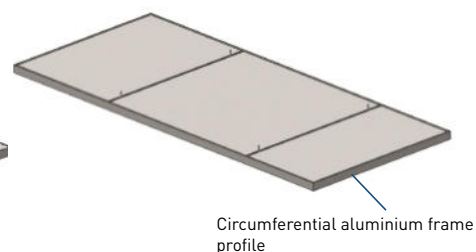
INDUSAIL PLUS (QUADRO)

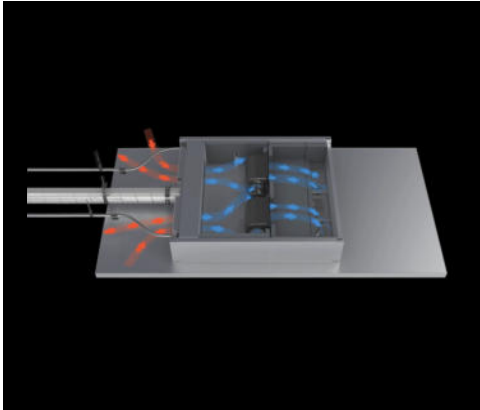


INDUSAIL AIR



INDUSAIL SILENT





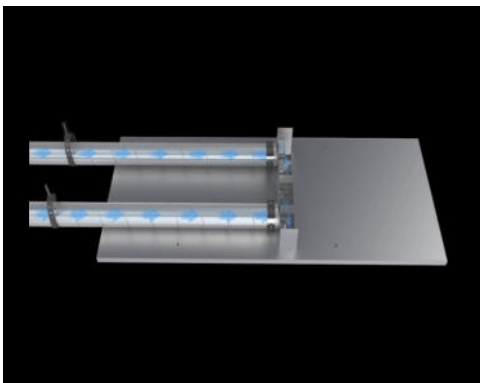
INDUSAIL PLUS (QUADRO)

Acoustics – Light reflectance – Cooling – Ventilation

Active acoustic sail consisting of an acoustic panel and a recirculating air cooling unit for cooling the ambient air and improving the acoustics of the room.

The high light reflectance value supports the most common types of lighting.

The air connection socket can optionally be used to introduce supply air.



INDUSAIL AIR

Acoustics – Light reflectance – Ventilation

Acoustic ceiling sail with fresh air supply only; no recirculating air cooling.

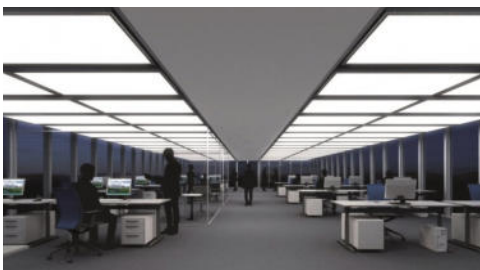
With a similar visual appearance to the INDUSAIL PLUS, it increases the supply air volume and improves the acoustics of the room.



INDUSAIL SILENT

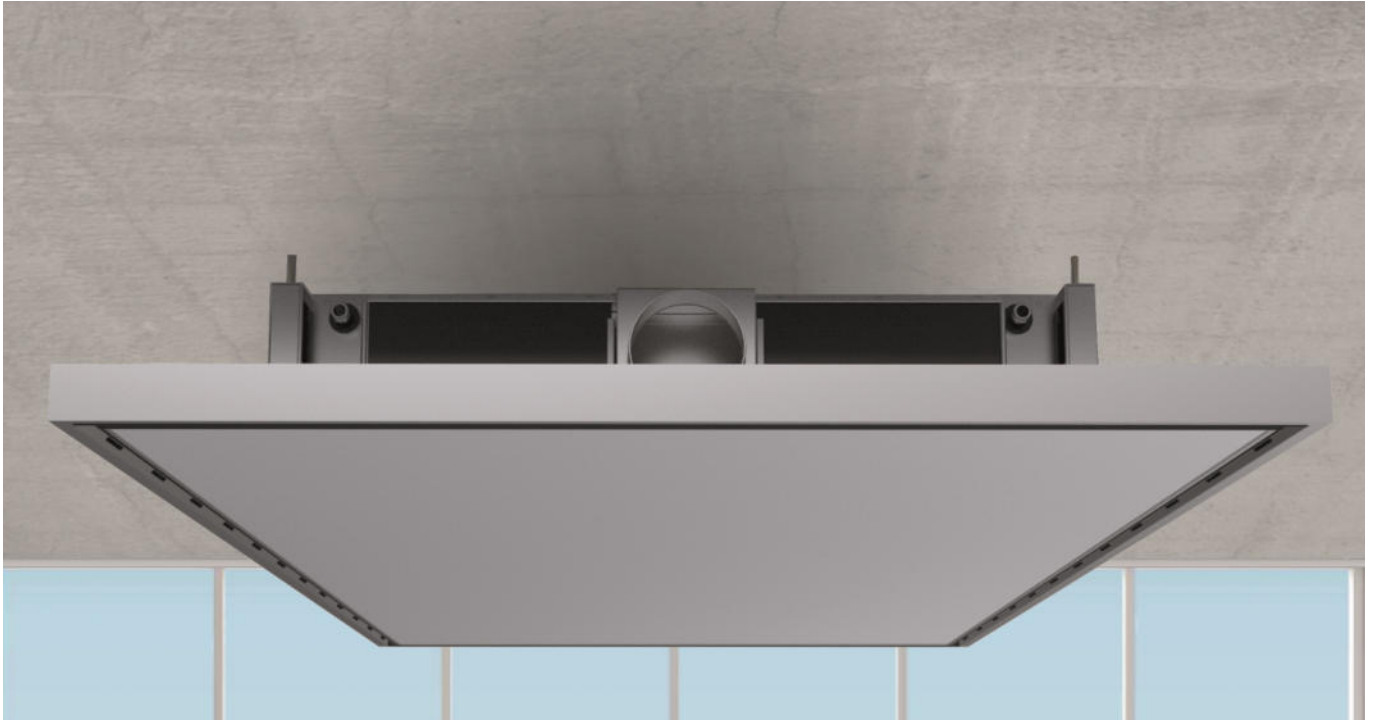
Acoustics – Light reflectance

Acoustic-only panel, similar in appearance to the INDUSAIL PLUS (QUADRO). The acoustic ceiling sail is designed for sound absorption and light reflectance only, to improve the acoustics of the room and serve as an extended design element.



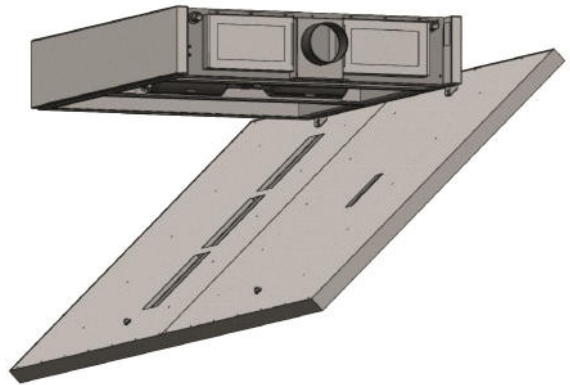
INDUSAIL LUMINOUS with lighting

The lighting unit can provide additional active lighting to all INDUSAIL components.



CLEAN INSTALLATION – EASY CLEANING AND MAINTENANCE

Dustproof installation is important to prevent soiling. In versions with a fan coil unit, the base frame is installed first. The acoustic sail should only be mounted once the construction site is dust-free and ready for occupancy. The front plate of INDUSAIL Plus (QUADRO) has two folding hinges for easy maintenance, allows easy opening and gives access to all internal components.



OPTIMISING THE INTERIOR ACOUSTICS

Acoustic sails can reduce nuisances such as noise in interiors. This improves working conditions and performance. In open-plan offices in particular, it can often be hard to concentrate when others are talking loudly. Audibility, increased intelligibility and low reverberation times are key criteria of interior acoustics that increase the acoustic

quality in a space and, with it, boost the performance of the people working there.

The ceiling is the largest continuous surface in a room and can control sound propagation with the sound-absorbing ceiling sails. This increases the wellbeing, satisfaction and performance of the people in the room.

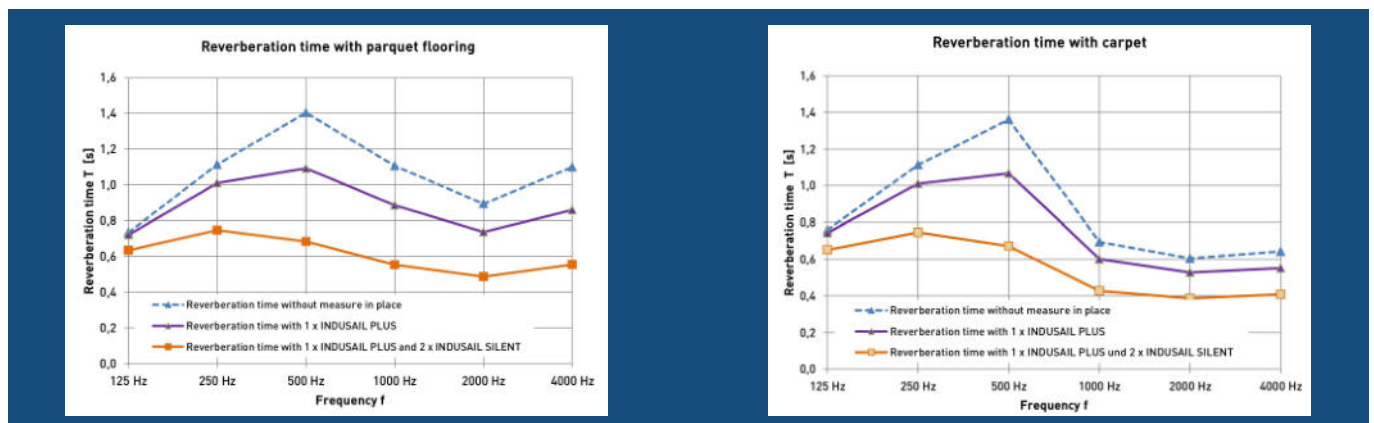


INDUSAIL SYSTEM AS AN ACOUSTIC SOLUTION:

The open pored absorbing material of the ceiling sails with visible glass fleece lamination meets optimum sound absorption levels.

Type	INDUSAIL PLUS (QUADRO)	INDUSAIL AIR	INDUSAIL SILENT
Sound absorption class according to DIN EN ISO 11654	C	C	A
Building material class to DIN 4102 (flame-retarded)	B1	B1	B1
Light reflectance value	> 90 %	> 90 %	> 90 %

Calculation example of an improved reverberation time through the acoustic effect of INDUSAIL acoustic sails. Starting point: typical three-axis room measuring 5.5 m x 4.05 m x 2.75 m, 2 people / PC workstations:



Further technical details in the installation, operating and maintenance instructions on www.kieferklima.de/en/indusail



www.kieferklima.de/en

Kiefer Klimatechnik GmbH
Heilbronner Straße 380 - 388
70469 Stuttgart

phone: +49 (0)711 / 81 09-0
email: info@kieferklima.de

