

Acoustic Sails - Lighting Sails

INDUSAIL SONIC

INDUSAIL LUMINOUS



INDUSAIL LUMINOUS integrated flush with the ceiling in an open-plan office.

SagiCofim



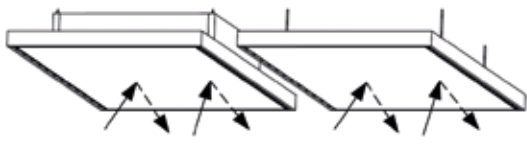
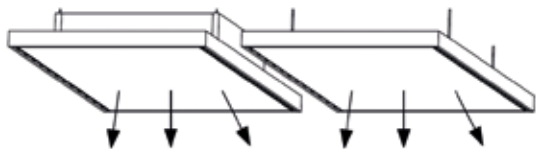
One System

Many possibilities

INDUSAIL SYSTEM

The INDUSAIL SYSTEM combines acoustics, light, cooling and ventilation. Developed for modern office spaces, the active acoustic sail system offers maximum flexibility when it comes to designing the office landscape.

In addition to the features of the INDUSAIL SONIC, the INDUSAIL LUMINOUS sail provides active, integral LED area lighting.



INDUSAIL LUMINOUS		INDUSAIL SONIC	
	LIGHT intelligent room lighting		LIGHT REFLECTANCE Supports the lighting
	AIR draught-free supply of fresh air		AIR draught-free supply of fresh air
	COOLING comfortable air conditioning		COOLING comfortable air conditioning
	ACOUSTICS high sound absorption		ACOUSTICS very high sound absorption

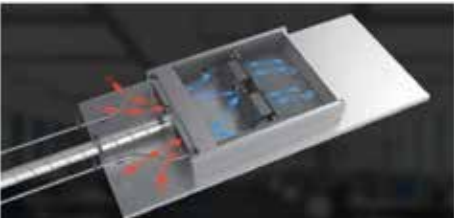
	INDUSAIL LUMINOUS			INDUSAIL SONIC		
	plus	air	silent	plus	air	silent
Lighting	● ● ●	● ● ●	● ● ●	● *	● *	● *
Ventilation	●	● ● ●	-	●	● ● ●	-
Cooling	● ● ●	●	-	● ● ●	●	-
Acoustic	●	●	● ●	● ●	● ●	● ● ●

*No lighting; very good light reflectance

THE RIGHT OPTION FOR EVERY ROOM – TWO INDUSAIL RANGES IN THREE DESIGNS

The perfect indoor environment thanks to four functions: superb lighting, draught-free fresh air supply, comfortable cooling and a high level of sound absorption for a feel-good climate to everyone's liking.

Both versions of the INDUSAIL offer flexible expansion and combination options. They can be used in isolation or throughout a space. As such, the system offers maximum flexibility when it comes to designing the office landscape.



Recirculation air cooling



Draught-free ambient air flow

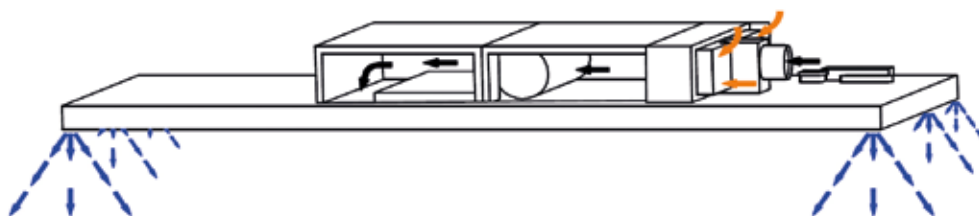


Intelligent room lighting with the INDUSAIL LUMINOUS

Function

The INDUSAIL SYSTEM is a flexible acoustic sail with integral fan coil for ambient air conditioning, factoring in lighting technology. The recirculation air or mixed air is induced via highly inductive linear diffusers, with an optional fresh air intake to improve the ambient air quality. By combining active and inactive components, the requirements of different office concepts can be fulfilled, even in the event of future changes. If planned appropriately, modifications to the partition wall situation will have no effect on the arrangement of the ceiling elements.

The integral, highly inductive linear diffusers, with their specially developed discharge geometry, create fine individual air jets. Ambient air can be effectively induced at the edges of the individual jets.



ENERGY

Low energy demand due to decentralised recirculation 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, light, cooling and ventilation, to offer maximum flexibility when designing the office landscape.



TECHNOLOGY

Acoustic elements with optional, integral LED area lighting and a decentralised fan coil system, with scope to induce supply air.

Technical Data

			INDUSAIL SONIC plus	INDUSAIL SONIC air	INDUSAIL SONIC silent
Cooling capacity		[W]	up to 1600	up to 1600	-
Dimensions	Sail	[mm]	50 x 1100 x 2500		
	Fan coil unit	[mm]	205 x 914 x 1352	-	-
	Supply air box	[mm]	200 x 900 x 125	-	-
Cold water temperature			from 16°C (non -condensing)		-
Total weight in operation		[kg]	60	36	50
Installed height		[mm]	255	250	50

			INDUSAIL LUMINOUS plus	INDUSAIL LUMINOUS air	INDUSAIL LUMINOUS silent
Cooling capacity		[W]	up to 1600	up to 1600	-
Dimensions	Sail	[mm]	85 x 1100 x 2500		
	Fan coil unit	[mm]	205 x 914 x 1352	-	-
	Supply air box	[mm]	200 x 900 x 125	-	-
Cold water temperature			from 16°C (non-condensing)		-
Total weight in operation		[kg]	74	50	30
Total installed height		[mm]	290	285	85

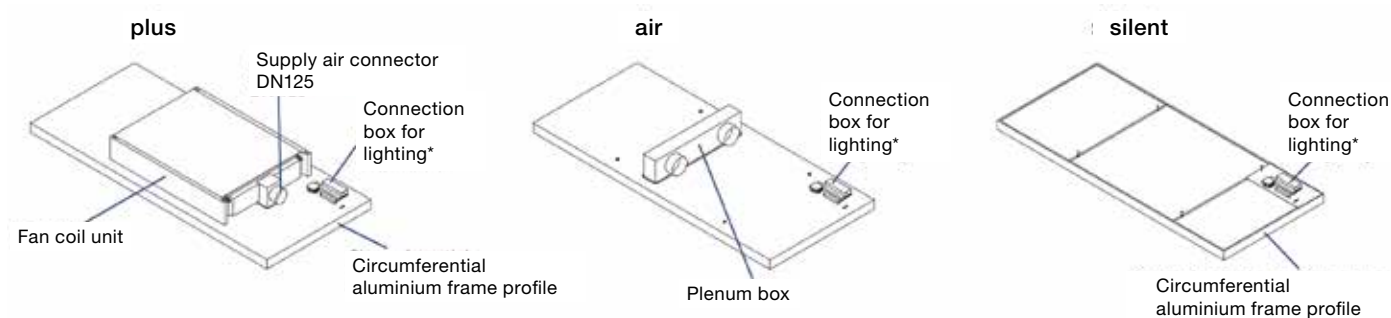
Construction and Design



INDUSAIL SYSTEM ceiling sails in the SONIC design consist of an acoustic sail for sound absorption and light reflectance. The LUMINOUS version also provides lighting. Here the sail is a lighting sail, complete with integral area lighting. Depending on the design, the sails are then supplemented by a fan coil unit and plenum box.

In the case of designs with active components, the integral, highly inductive type INDUL P18 discharge profiles introduce re-circulation air to the room around the edge of the sail. SONIC ceiling sails have a fleece-coated and open-pored substrate. The LUMINOUS lighting sails are covered with a translucent diffuser material. Both serve to improve the interior acoustics and absorb sound.

SYSTEM CONSTRUCTION OF INDUSAIL VERSIONS



* SONIC versions without connection box for lighting

One product - four functions for the perfect indoor environment



Intelligent room lighting

All versions of the INDUSAIL LUMINOUS feature integral LED area lighting. This provides near-daylight quality, glare-free illumination based on circadian light cycles, thereby reducing fatigue.

The INDUSAIL SONIC does not have active lighting but supports the most common types of lighting with a high light reflectance value of $> 90\%$.



Healthy ambient air

All versions of the INDUSAIL air have an integrated supply air connection on the ceiling sail to introduce preconditioned fresh air only, with no discernible draught. Continual exchanges of air boost comfort and the ability to concentrate.



Optimum ambient climate

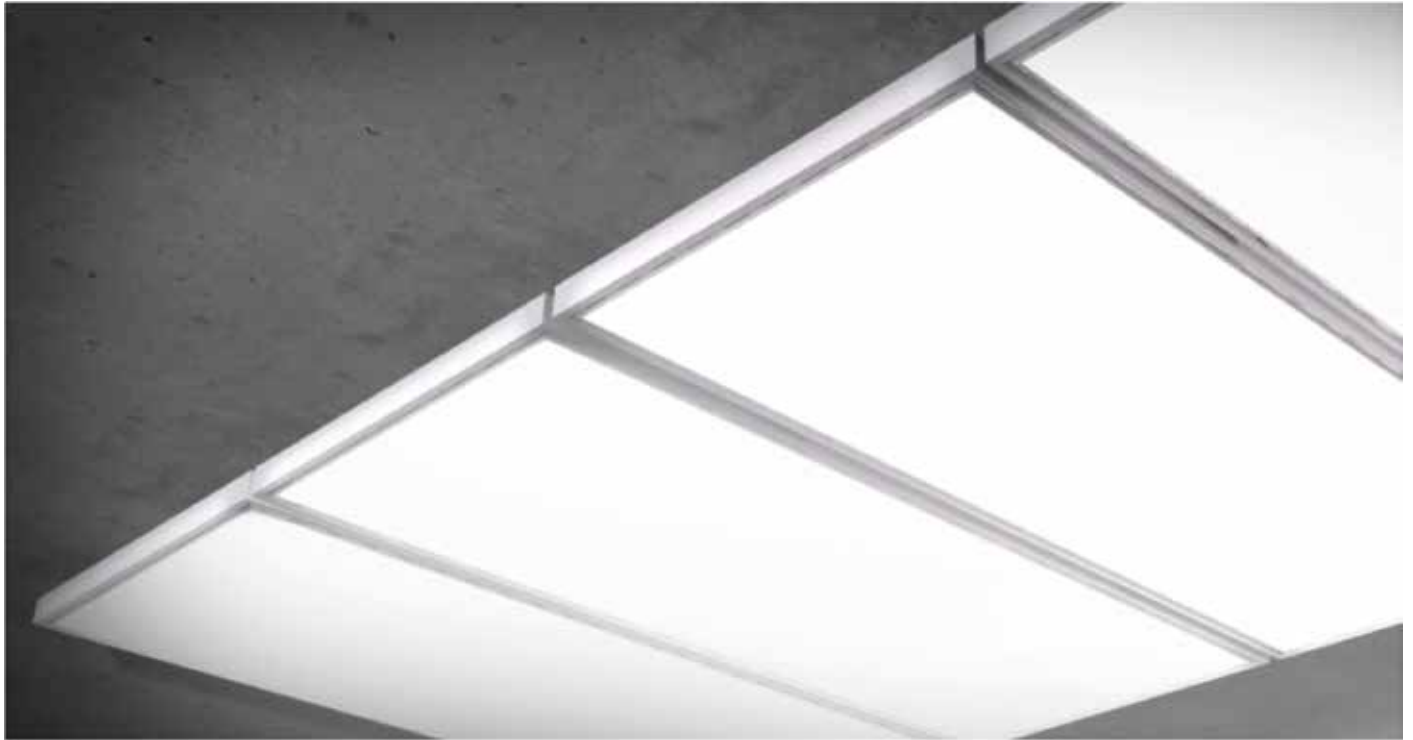
Cooling the ambient air via a fan coil unit creates pleasant temperatures for an ideal work environment. Optimum air conditioning prolongs performance and promotes concentration.



Improved ambient sound

The acoustic sails guarantee good audibility with high sound absorption for successful interior acoustics.

INDUSAIL LUMINOUS as area lighting solution



Good light for perfect ambient quality

The INDUSAIL LUMINOUS is a multifunctional lighting sail system. Pleasant acoustics are combined with comfortable cooling and ventilation, as well as integral LED area lighting.

This provides near-daylight quality, glare-free illumination based on circadian light cycles, thereby reducing fatigue. Light controls our biological rhythms and has a significant impact on our biological and emotional wellbeing.

Good light boosts performance and concentration, reduces errors and prevents fatigue.

The INDUSAIL LUMINOUS creates an optimal lighting situation for good visual function and perfect visual comfort. With the optional “tunable white” version, it is possible to freely adjust the light appearance between cool white (6500K) and warm white (2700K), and to dim the light. This enables circadian lighting control, closely aligned with natural lighting conditions by day and night. This is particularly suitable for the perfect illumination of indoor workspaces where an optimum environment is required for focused working without causing fatigue.

INDUSAIL LUMINOUS - HCL human centric lighting



Frame	Aluminium
Colour	Natural anodised
Light appearance	Warm white (2700K) Cool white (6500K) Freely adjustable
Light source	LED max 160W Dimmable, tunable white
CRI	> 80
Height	85mm (excl. electronics)
Length x Width	2500 x 1100 mm
Luminous flux (net)	Approx. 10.300 lm
Supply voltage	220 to 240V - 50/60Hz
IP rating	IP 20
Light source included	Yes

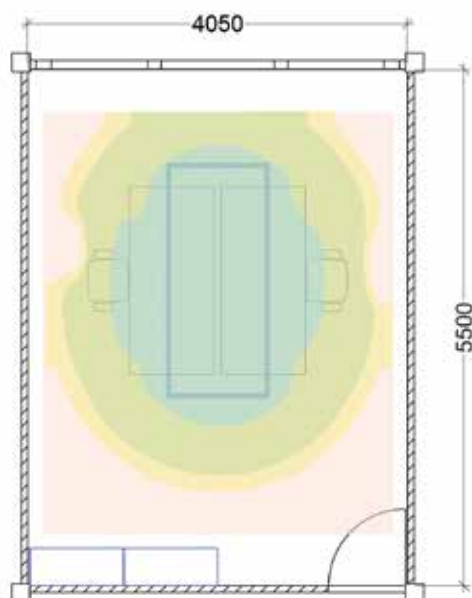
The lighting technology can be operated via DALI bus or by using optional controllers available from Kiefer.

Design example for compliance with DIN EN 12464-1 and ASR A3.4 (technical rules for German workplaces)

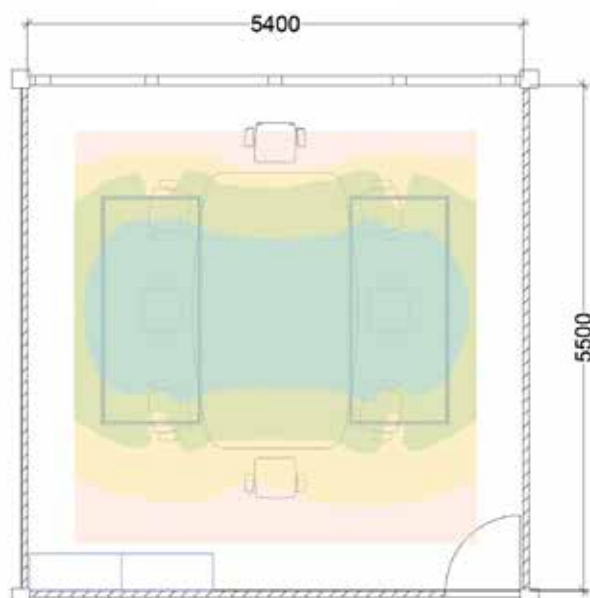
Arrangement with 1 INDUSAIL LUMINOUS plus
With one INDUSAIL LUMINOUS plus, up to 2 workstations can be provided with comfortable, compliant and circadian lighting.

Arrangement with 2 INDUSAIL LUMINOUS plus
With two INDUSAIL LUMINOUS plus, up to 8 workstations (the example shows a meeting room) can be provided with comfortable, compliant and circadian lighting.

3-axis space



4-axis space



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 qual-

ity 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 absorber material on the ceiling sails delivers optimum sound absorption levels, with a glass fleece coating on the visible side of the INDUSAIL SONIC and translucent diffuser material on the INDUSAIL LUMINOUS version.

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 INDUSAIL SONIC plus acoustic sail and the INDUSAIL LUMINOUS plus lighting sail have folding hinges that make them easy to service. This allows convenient access to all internal components for cleaning and maintenance.

In line with VDI 6022, the unit sections through which air flows are easy to clean.



Opening the acoustic/lighting sail

References



OBERMEYER CORPORATE HEADQUARTERS, MUNICH

Client	OBERMEYER Objekt Hansastraße 40 GbR
Architects	OBERMEYER internal planning
Planning Office	OBERMEYER & Kiefer Klimatechnik GmbH

References



Photo © Kiefer GmbH

HYPO INFORMATIK, BREGENZ

Client Hypo Vorarlberg Bank AG, Bregenz, AT
Architects Architekturbüro Helmut Kuess, Bregenz, AT
Planning Office Klimaplan Technisches Büro GmbH, Hohenems, AT

References



OPEN-PLAN OFFICE IN THE KIEFER KLIMATECHNIK GMBH BUILDING, STUTTGART

References



Photo © Andrea Flak

LIGHTHOUSE HOTEL & SPA, BÜSUM

Client Jens Sroka/Heimathafen Management GmbH & Co. KG
Architects Planungsgemeinschaft Ladehoff + Hannemann & Krützfeldt
Planning Office Pahl & Jacobsen Ingenieurbüro für TGA, Heide

SagiCofim S.p.A. Single Member Company

*subject to the management and coordination
of SYSTEMAIR AKTIEBOLAG*

via Firenze 1
20063 Cernusco sul Naviglio
Milan Italy
T. +39 02 92 902 1
info@sagicofim.com

www.sagicofim.com

Member of CISQ Federation



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