



## Multifunction sail AVACS by Krantz Components

### Reference project

#### John Deere GmbH & Co. KG

- World's leading manufacturer of agricultural machinery; established in 1837 (USA)
- Installation of multifunction sails AVACS in the office spaces (ground floor, 1st and 2nd floors) of its administrative building 'European Parts Distribution Center' in Bruchsal, Germany



**Krantz is a leading manufacturer of customized air distribution and cooling/heating systems for commercial and industrial applications. Its portfolio also includes high-quality cleanroom systems.**

Krantz Components has supplied about **150 multifunction sails AVACS** to John Deere in Bruchsal for its office spaces; the sail features are as follows:

- Cooling output: up to 130 W/m<sup>2</sup> of sail area
- Heating output: up to 200 W/m<sup>2</sup> of sail area
- Supply air volume flow rate: up to 28 l/s [100 m<sup>3</sup>/h]
- Dimensions, L x W: up to 5 000 mm x 1 150 mm
- Each sail incorporates a supply air outlet at its end next to the facade; this outlet generates a controlled air flow both above and below the sail. Its special discharge pattern virtually prevents the ceiling sail from dirtying.
- At the opposite sail end next to the corridor wall is a return air inlet; this is to ensure air changes.



### Our asset for your thermal comfort with the multifunction sail AVACS:

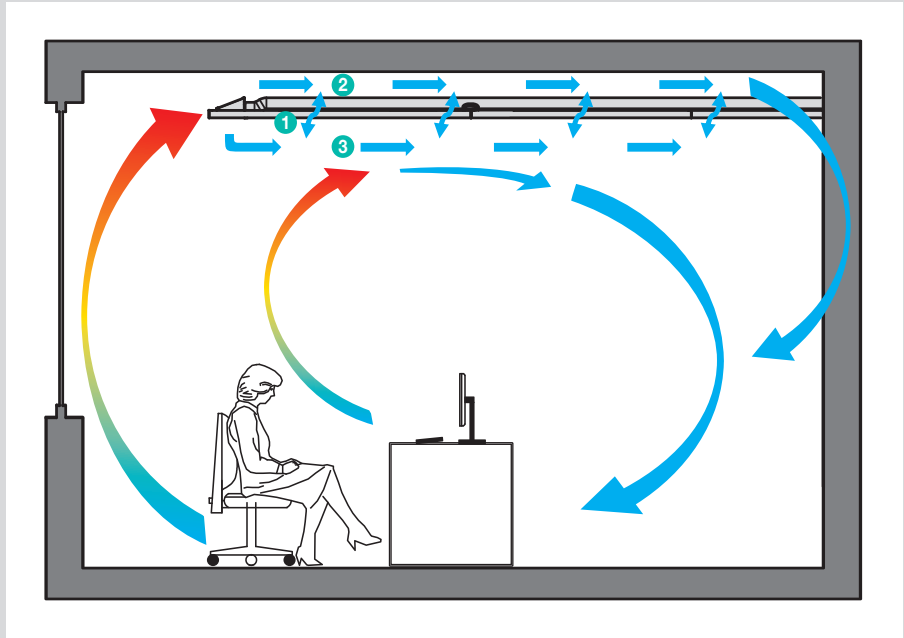
- Flat shape and attractive design
- High output thanks to integrated active fresh air supply
- Enhanced room acoustics when fitted with sound absorbers
- Comfortable and draught-free thermal environment thanks to invisible supply air outlet
- Optimum exchange between fresh and stale air ensured by the combination of supply air outlet and return air inlet



Multifunction sail AVACS

**Key**

- 1 Multifunction sail AVACS
- 2 Air distribution above sail
- 3 Air distribution below sail



Air distribution with multifunction sail AVACS

## Fulfilling multiple functions in any area...

In modern office spaces the onerous demands placed on the cooling and heating system as well as the requirements for design harmony call for a high level of innovation.

It is to meet these requirements that Krantz Components has developed the AVACS cooling and heating ceiling sail. **AVACS** stands for **Air Ventilation And Cooling System**. The AVACS cooling and heating sail combines a high capacity with the draught-free distribution of supply air – taking account of the specified comfort criteria – as well as with the enhancement of the room acoustics. The office space design can be additionally customized with the AVACS multifunction sail by integrating optional ceiling services such as fire sprinklers, presence detectors, smoke detectors, lighting, etc.

The AVACS multifunction sail can be used both for cooling and heating spaces. These two functions work on the principle of radiation and convection.

In cooling mode the internal heat to be removed is absorbed by the AVACS sail which functions as a radiation absorber just as a chilled ceiling. Additionally, the rising warm indoor air is cooled by

convection at the sail surface. The supply air outlet, which is positioned on the sail and is thus not visible from the room, discharges 70% of the cooled air volume flow rate above and 30% below the sail; the resulting mixing ventilation causes a large amount of indoor air to be circulated and ensures a continuously comfortable thermal environment. The supply air outlet has been engineered such that the cooler supply air from outside does not drop as is the case with displacement air outlets, but rather flows horizontally along the underside of the AVACS cooling and heating sail as a result of the Coanda effect.

In heating mode the radiant heat is effective from the whole surface of the ceiling sail, thus ensuring a uniform and comfortable warming of the space.

By incorporating an optional return air inlet, the stale air can be extracted from the office space via the AVACS sail. This enables to achieve optimum proportions of fresh air being supplied and stale air being extracted.

More information on the product [here](#).

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