

*Modul is a compact-sized chilled beam suitable for integration in suspended ceilings.  
Modul is ideal for different premises such as Offices, conference rooms, hospitals etc.*



- ***Stravent technology = effective cooling capacity***
- ***Effectiv and energy-saving supply air***
- ***Draught-free air distribution***
- ***Delivered pre-adjusted for right air flow***
- ***Silent***

# STRAVENT MODUL

Chilled beam for suspended ceiling

## Quick facts – Stravent Modul

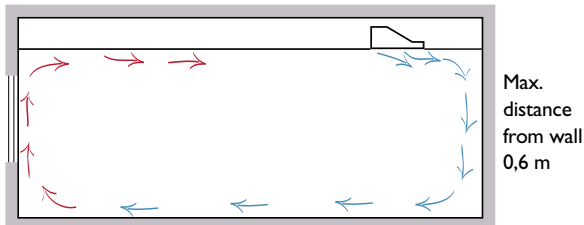
- *Supply air flow.....Optional 15–30 l/s*
- *Pressure drop.....Optional 60-150 Pa*
- *Soundlevel.....Always below 28 dB(A)*
- *Size.....Ø 125 mm.*
- *Dimensions (h x l x w).. 226 mm, 1197 mm, 595 mm*
- *Finish.....Powder coating, RAL 9010*
- *ISO 9001 and ISO 14001*

## This is how Modul works

Many Stravent nozzles inside Modul draw the supply air into silent jets. The jets "attract" a great deal of room air. In doing so they activate the room air and govern its circulation. The jets are made draught free inside the diffuser with the integrated CJV function (= Confluent Jet Ventilation).

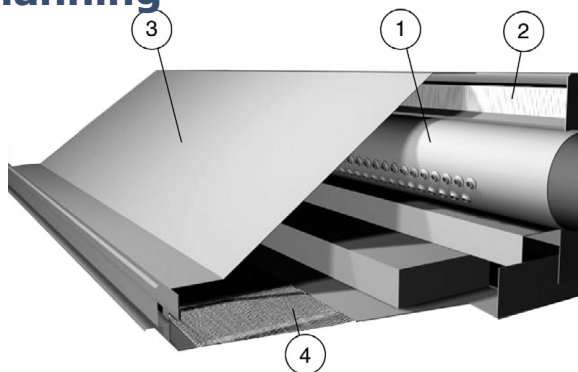
The air to the room is directed only in one direction. Consequently, the supply air will never be disturbed by the supply air from other diffusers. Instead the supply air uses the natural thermal flows. The supply air now takes precedence over other air flows in the room and creates a stratification with fresh chilled air in the occupied zone, and warmer used air close to the ceiling.

### This is Modul



1. A supply air diffuser with Stravent nozzles that draw the supply air into jets
2. Coil optimised for maximum heat transfer.
3. An outer casing of sheet steel screens the area above the suspended ceiling.
4. A removable diffuser head hides the technology from view from the room and ensures a draught-free.

## Planning



### Location of Modul

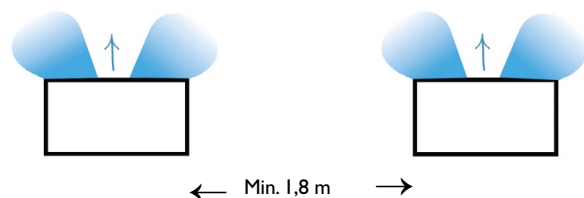
In small rooms Modul is placed 600 mm from the corridor wall, in large rooms, 600 mm from suitable inner walls.

- The air from Modul is introduced into the room down along the wall and out over the floor.

- The room air is stratified so that it is cleaner in the occupied zone while the used air remains by the ceiling.
- The stratification increases the effectiveness of the ventilation
- The stratification increases the temperature gradient of the room air. Accordingly, the entire room volume does not need to be chilled. Visualisation with CFD indicates that this process makes it possible to reduce operating costs for cooling and ventilation by 20 to 40%.

If Modul must be placed further from the wall than 600 mm the function becomes less stratified and more mixed the greater the distance to then. At a distance of approximately two metres, become fully mixed without stratification.

If two or more Modul's are mounted in the same room, the direction of the supply air shall always be in the same direction.

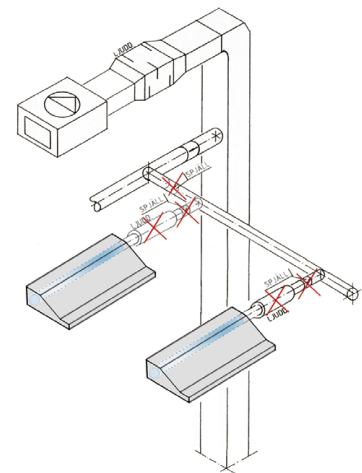


### Modul simplifies installations

The silent operation of Modul allows you to freely set the pressure on the supply air diffuser in the Modul.

Modul can then govern the system from pressures of 80 Pa and higher, which makes things easy.

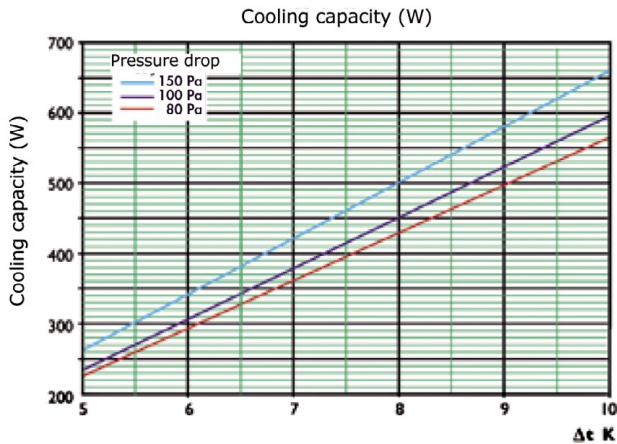
- The air flow in question can be preset at the factory.
- Adjustable dampers and silencers can be omitted in branch and connection ducts.
- Without dampers and silencers electrical efficiency is usually higher.



### Cooling capacity

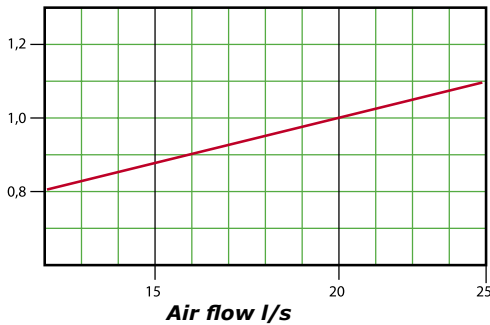
The diagram shows the minimum cooling capacity given by Modul in a manned office according to the following:

- The pressure drop in the supply air diffuser is between 80 and 150 Pa.
- At a  $\Delta t$  (= difference between the room's temperature and the water's average temperature) from 5 to 10 K.



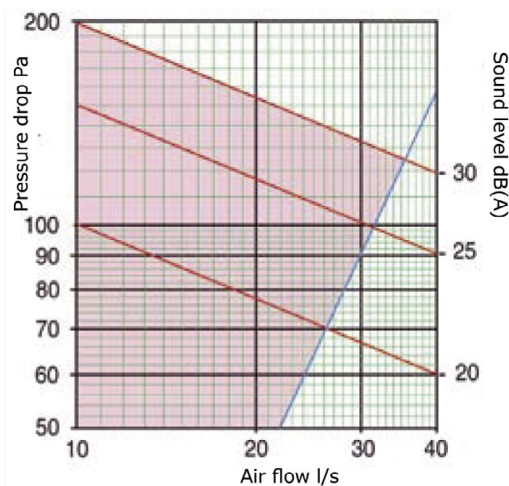
- At a supply air flow rate 20 l/s.
- Excluding the supply air's cooling effect.
- The water temperature is dimensioned so that condensation does not occur.

Corrected by the multiple with supply air flow rates other than 20 l/s.



**Airflow – Pressure drop – Soundlevel**

The soundlevel Lp are presented for rooms with normal acoustic absorption of 4 dB.



Modul is supplied with a preset air flow, if this and the pressure drop across the diffuser are stated when ordering. The preset air flow can easily be changed using the formel:

$$q_v = \sqrt{\Delta p} \times 0,030 \times n$$

$q_v$  = Air flow (optional 10–30 l/s)  
 $\sqrt{\Delta p}$  = Pressure drop, Pa  
 0,030 = Constant  
 $n$  = number of active/open nozzles

**Correction of sound levels to sound effect levels**

Sound effect levels are obtained in the different octave bands by correcting the sound level from the diagram with the figures in the table.

Hz							
63	125	250	500	1K	2K	4K	8K
-12	-8	-5	-3	-2	-2	-4	-4

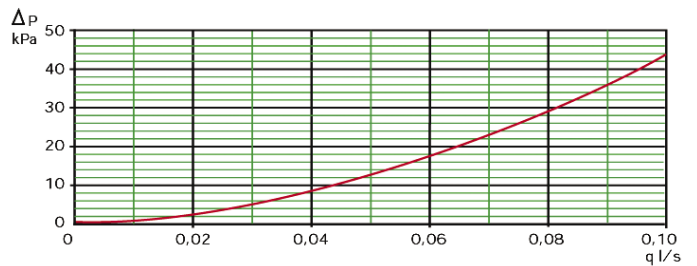
**Integrated sound attenuation**

The table shows that sound attenuation in Modul is extremely high - especially at low frequencies.

Hz							
63	125	250	500	1K	2K	4K	8K
33	27	22	16	10	6	2	1

Integrated sound attenuation (dBA) for Modul.

**Water flow - pressure drop**

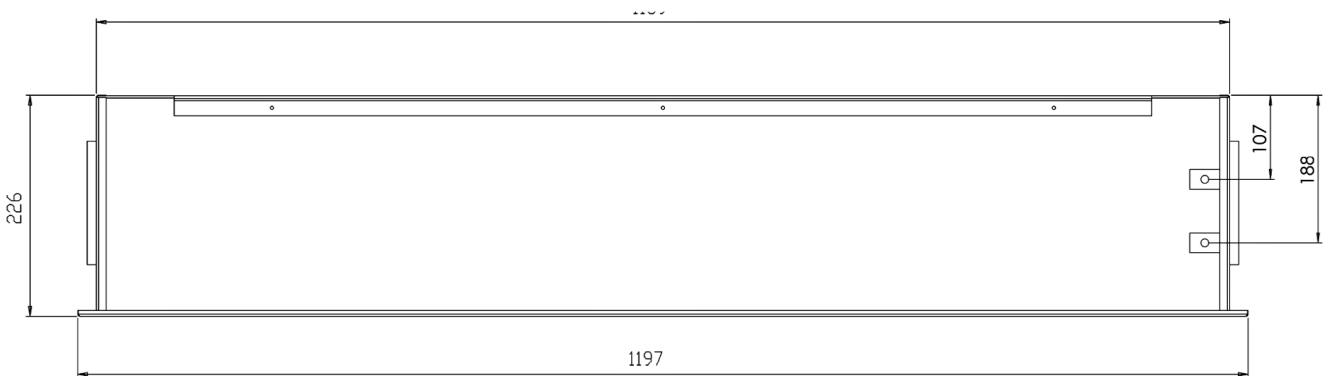
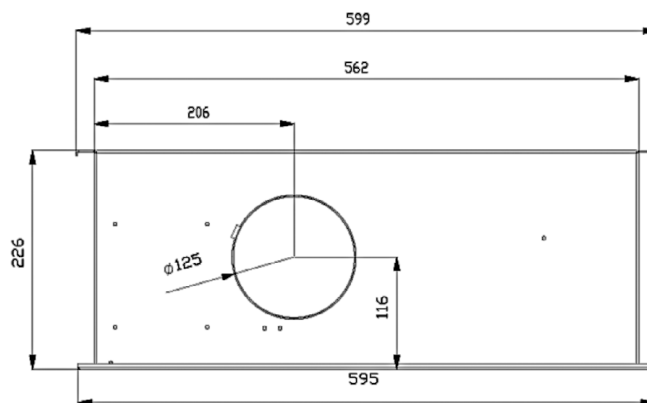
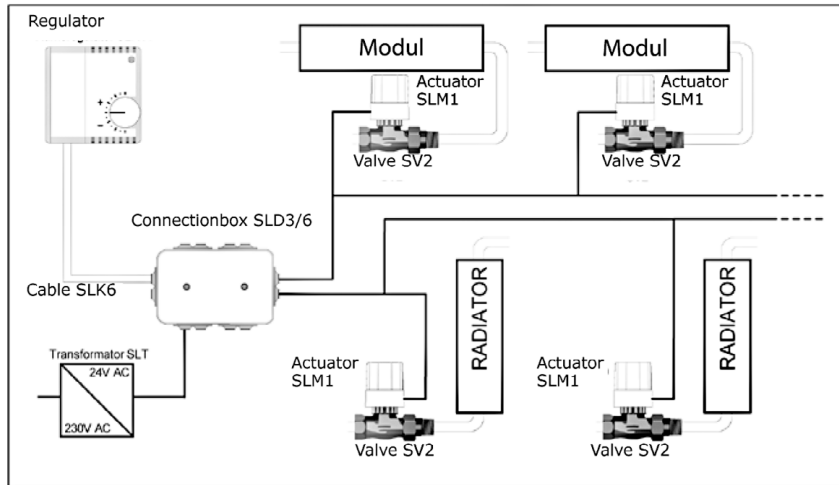


**Temperature control**

Modul can be supplied with the control equipment required for the system in question. Maximum 6 actuators per cooling respective heating output using power pack SLD3. Maximum 15 with power pack SLD6. Actuator SLM1 closes in the event of a power failure.

**Dimensions**

Modul is designed to fit most types of T-bar ceiling systems. Modul should be flush mounted.



## Specification

### Stravent Modul – a – b – c

- a. Air flow..... stated in l/s**
- b. Pressure drop..... stated in Pa**
- c. Temperarure control ..... stated in plain text**

Specification example Stravent Modul - 18 l/s - 90 Pa

We reserve the right to change the technical specification without prior notice.



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