Flexicool® Chilled Beams

SEMCO®
A FLÄKT WOODS COMPANY

Chilled beams - designed for optimum comfort

Indoor air quality is something we all take for granted. A building with an ineffective air management system can seriously reduce air quality. Air temperature, humidity, CO_2 level, draft and noise all influence our comfort, well-being and efficiency.

SEMCO's Flexicool® chilled beam cooling products are designed for use in non-residential applications where there is a high cooling load and/or rooms that require individual temperature control.

Flexicool is a complete chilled beam system that combines various solutions for cooling/heating with highly efficient ventilation. Lighting and control equipment are available as accessories.

Choose between active beams or passive beams in various shapes and sizes suitable for integration in false ceilings or for exposed applications.

Chilled beams combine radiant cooling with conventional overhead ventilation to reduce energy usage, improve comfort levels, and reduce the architectural impact of ductwork and other mechanical systems.

Chilled beams are ideal for classrooms, auditoriums, hotels, office spaces, laboratories, or any space that has an open floor plan, for either new or retrofit construction projects.

Flexicool chilled beams are designed to ensure a draft-free and quiet indoor climate, with even greater cooling effects.

»Flexicool is a complete range of chilled beams and accessories. A system with chilled beams is suitable for ventilation and cooling for high cooling demands and/or where there is a requirement for individual regulation of the temperature at the lowest noise levels.«

Active chilled beams

Flexicool IQ Series chilled beams are integrated systems for ventilation, cooling and heating.

The IQ Series is designed to manage high cooling capacity by using a primary air supply, typically outdoor air, to increase airflow over the element. The primary air is then supplied to the room through diffusers built into the beam.

The beams have a patented system for adjusting airflow, cooling effect and airflow pattern and can be adapted to suit the changing conditions of any given space.

Passive chilled beams

Flexicool QP Series passive chilled beams cool a room by way of natural convection. The air is supplied to the room via a separate supply air system.

Chilled beams from SEMCO

- Extremely flexible — easily adaptable to meet requirements.
- Can be adjusted as required — facilitates installation as you do not need to choose which room a chilled beam is to be used in before hand.
- Simple adjustment — no need for replacement when the conditions in a room change (for example, floor space reconfiguration).
- Easy to install and maintain — low installation and service costs.
- Easy to dimension correctly — ExSelAir calculates chilled beams and valves. Different models can be simulated.
- High quality components.
- Our chilled beams have low water pressure drop, which means low operation costs.
- Made in the USA.

REFERENCES

- **Furman University, South Carolina, U.S.**
- **Geschäftshaus Fortis, Dietlikon, Switzerland**
- **Aker Kvaerner Office, Oslo, Norway**
- **Swisscom, Ostemundigen, Switzerland**
- **Chiari Hospital, Italy**
- **Lidl´s head office in Helsinki, Finland**
- **Hermia Technology Center in Tampere, Finland**
- **Karlstad University, Sweden**
- **University Tammerfors, Finland**
- **Office building Budejovicka alej, Czech Republic**
- **Ricoh Centre Frankfurt, Germany**
- **Hospital, Malta**
- **Scandic Hotel, Helsinki, Finland**
- **Via Bergognone, Milano, Italy**
- **Visteon, Kerpen, Germany**
- **Le Gauguin, Paris, France**
- **Skärholmen Shoppingcenter, Stockholm, Sweden**
- **Millenium Art Centre, Brisbane, Australia**
- **242 George Street, Sydney, Australia**

Chilled beams with Comfort Control

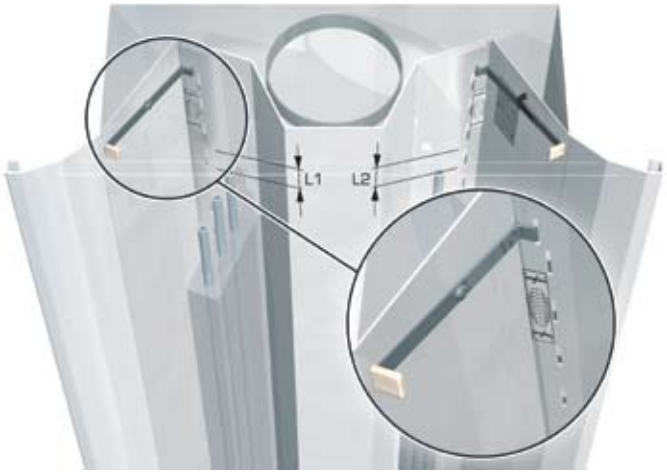
SEMCO's unique comfort control makes it easy to adjust the airflow also allows for simplified system balancing and installation since all the nozzle sizes and capacities are built into every beam!

The key to every chilled beam selection is choosing the proper nozzle size. The nozzle size determines the air pressure, velocity, throw, noise level and induction rate of the chilled beam. Controlling these variables in turn determines the cooling power delivered to the space.

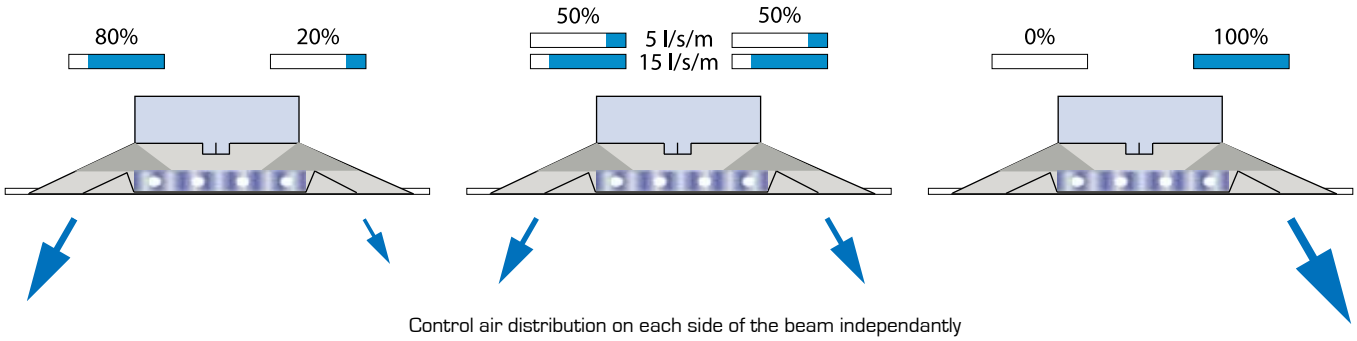
SEMCO's Comfort Control feature makes it possible to adjust the nozzle size on any active chilled beam, even after installation. The easy regulation of the capacity and air diffusion make it possible to adjust the beam to deliver optimum comfort to the space and then adapt to future changes in the space.

Using the patented control rails, the nozzle size can be adjusted by varying the size of the slot opening along the length of the supply air channel. The adjustable slot size permits different cooling performances from the same beam, as well as different air diffusion (four-way, two-way, one-way, or intermediate balance). Not only does this allow for simple adjustment to deliver the proper cooling power to the space, it also allows the discharge pattern to be balanced to direct the majority of the cooling power toward the load source, or the majority of the ventilation air toward the larger floor space to ensure proper cooling and ventilation comfort.

In addition, Comfort Control ensures the beam's performance can be changed to match new space conditions without having to manipulate the primary airflow or the water loop.



High airflow (2 hole rows) and Comfort Control



Control air distribution on each side of the beam independantly

Chilled beams with FPC (Flow Pattern Control)

Our IQ Series Chilled Beam is totally unique with its patented FPC (Flow Pattern Control) function that provides high flexibility in new buildings or retrofits. The combination of FPC and comfort control gives the IQ beam its unique characteristics.

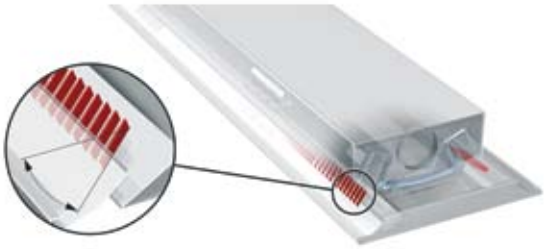
Consultants and customers have long since asked for a chilled beam that can be adjusted almost like a ceiling diffuser.

Now, the solution is here. The IQ Series chilled beams with the unique Flow Pattern Control (FPC) where the airflow can be directed up to 45 degrees through integrated vanes.

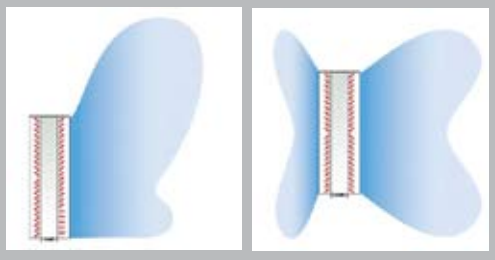
Different directions can be set at sections of 12″ in the beam.

The flow pattern is easily and safely adjusted by a simple operation. Flow Pattern Control (FPC) is available for induction air beams only.

IQ Beams with FPC function
- Adjustable air vanes in the outlet
- Optimized for minimal noise and pressure drop
- Sections of 12"



- Adjustable air vanes: 0° + 15° + 30° + 45°
- Unique combination with comfort control



IQ Beams with FPC function

Highest possible efficiency can be maintained by adjusting the comfort control and air vanes.

A combination of different angles on one side is possible.

When increased air flow is required, the flow pattern can be adapted to maintain optimal comfort in the room.

Research & Development

As part of the Fläkt Woods Group, we have the most extensive laboratories for testing ventilation products, which enables us to continually test new and existing products.

Our laboratories are unique in that they are equipped with all the components required for an entire ventilation system. The products are tested in rooms designed to simulate "real life" environments, for example, an office or conference room.

We are able to study sound levels, airflow/ balancing, exhaust risks, comfort and control strategies within the laboratory. We are also able to see how the products perform in real life situations.

In our laboratory in Europe, there is a robot that measures temperatures and airflow speeds, which enables us to determine throw lengths and comfort zones, as well as, measure cooling effects.

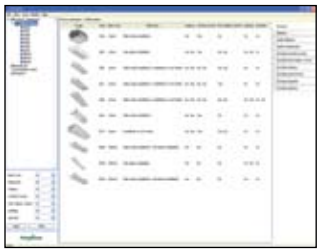
Additional calculations can be done with Computer Fluid Dynamics calculations. CFD is a sophisticated computationally-based design and analysis technique that can be used to determine air movements in a room, for example.

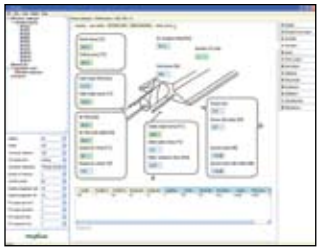
ExSelAir

ExSelAir is our new web based selection software that offers effective support for fast selections in both metric and imperial units. The program provides dimensional drawings, product weights, flow pattern analysis, installation and maintenance instructions, and all the technical details required to support any chilled beam selection.

Simulations
In ExSelAir, the flow pattern in a room can be simulated for mixing as well as displacement ventilation. Each relevant operation can be displayed on screen, for both a vertical section, as well as, horizontal. Cooling requirement calculations can also be made in the program.

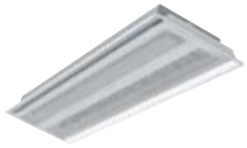
High quality
With ExSelAir it is easy to make fast and accurate product selections that are well supported with all the related documentation and performance details. It is easy to toggle between metric and imperial units of measure for our entire portfolio of active and passive chilled beams.



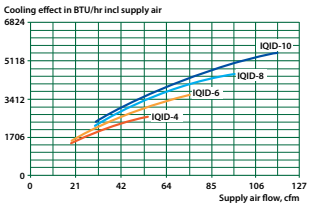


Fast selection

IQID
Active chilled beam

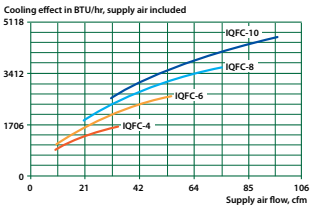


• IQID chilled beam for flush mounting in false ceilings • Very flexible – available in a wide range of styles from basic to multifunctional • Suitable for standard 24" false ceiling modules • Fastening brackets for rapid and simple installation – lift up – snap in place • Available with the following functions: Comfort control, function for high airflow (2 hole rows), Flow Pattern Control (FPC air deflector), heat, control and regulation equipment, lighting and provision for a sprinkler system



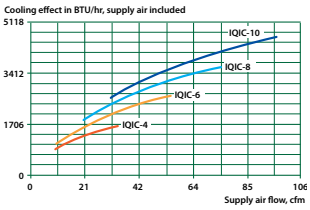
IQFC
Active chilled beam

• IQFC chilled beam for exposed installation • Airflow through beam is directed diagonally upwards • Capacity and flow directions are easily set • The bottom plate can be pushed aside to enable adjustment of airflow and capacity for inspection and cleaning • Patent pending sound attenuator • Enclosures for connections available as accessories • Mounting brackets for quick and easy mounting — lift up — snap on

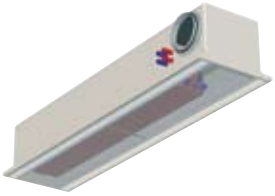


IQIC
Active chilled beam

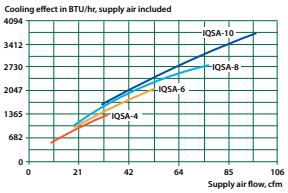
• Chilled beam IQIC for ceiling mounting • Suited for standard 24" ceiling module • Capacity and flow directions easily adjustable • Multiple coil options provide a wide range of performance • Bottom plate can be pushed aside to enable adjustments of capacity as well as cleaning • Patent pending sound attenuator • Fastening brackets for quick and easy mounting - lift up - snap on



IQSA
Active chilled beam

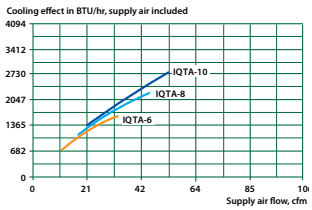


• IQSA chilled beam for integration in false ceilings • Suitable for standard 12" false ceiling modules • Capacity and flow directions are easily set • The bottom plate can be pushed aside to enable inspection and cleaning • Patent pending sound attenuator • Mounting brackets for quick and easy mounting — lift up — snap on



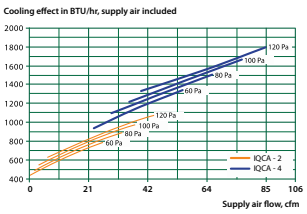
IQTA
Active chilled beam

• IQTA chilled beam for exposed installation • Air and water connection within extended casing (12"/24") • Installed using special brackets attached to the wall or ceiling • The bottom plate can be pushed aside to enable inspection and cleaning



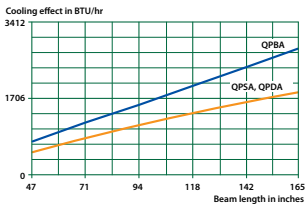
IQCA
Active chilled beam

• IQCA chilled beam for flush mounting in false ceilings • Suitable for standard 24" false ceiling modules • Unique air distribution with 4-way throw • Available with Comfort control, heat and control equipment • Fastening brackets for rapid and simple installation – lift up – snap in place



QP(S, B, D)A
Passive chilled beams

• QP (S, B) A chilled beams for integration in false ceilings or for exposed installation • QPDA customized beam with designer casing for exposed installation • The coil and casing are easy to clean and the side plates easy to remove • Adaptive control and adjustment equipment available as an option • Quick and easy installation with attachments or directly onto the ceiling's support brackets



Designed for Life™

SEMCO is committed to enhancing our customers' success worldwide with products, services and responsiveness that set industry standards for innovation, quality and value.

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