

TECHNISCHE HANDLEIDING

IQHA | INDUCTIE-UNITS



IQ STAR ORION II CHILLED BEAM



Figure 1 : IQ Star Orion II



The ORION II chilled beam is an active chilled beam system for ventilation, cooling, and heating. This diffusion system offers comfort and flexibility thanks to flexible blades. It is especially designed for usage in hotel bedrooms, individual hospital wards, and cellular offices.

The Pi advanced function provides even more flexibility, adding a demand-controlled ventilation function to the system. The air diffusion follows building occupancy and makes the HVAC system highly efficient.

ORION II with Pi function is pressure independent and makes the system suitable for many types of ductwork systems.

QUICK SELECTION

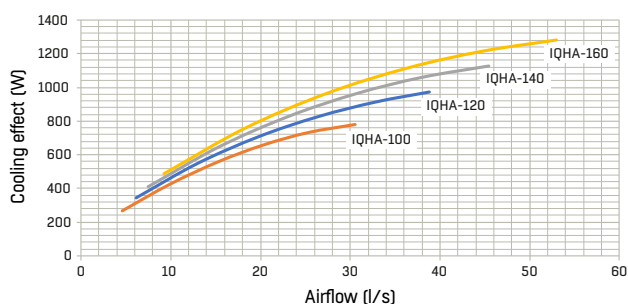


Figure 2

Total cooling effect with grille (adjustable horizontal blades) at a total pressure of 70 Pa, water flow $q_w = 0.05$ l/s, temperature difference between room air and supply air $\Delta t = 8$ °C and temperature difference between mean water temperature, and room temperature $\Delta t = 8$ °C

KEY FEATURES

- Adjustable induction
- High airflow per active meter
- Easy installation and commissioning
- Low installation height
- Optionally: Demand-controlled ventilation (inside the chilled beam), water connection in back, and controls

SPECIFICATIONS

- Active chilled beam for bulk head installation
- Water heating and cooling
- Comfort with low temperature gradient and no draught risk as well as energy control
- Four different grille solutions available (without, fixed, adjustable horizontal blades, and adjustable horizontal/vertical blades)
- Flexible for diffusion enabling layout modification grille - plus energy control
- Optionally: Demand-controlled ventilation function inside the chilled beam (available as retrofit, independent from system pressure - Pi)
- Boost function (enabled by the Pi function)
- All controls fit inside the chilled beam cable tray enabling easy commissioning and installation
- Easy to flip coil (left-right or right-left) for rapid and simple modification
- Ability to swing down the front plate from either side.
- Telescopic solutions for installations

PRODUCT CODE EXAMPLE

Hotel chilled beam IQHA-100-1-03-02-1, standard.

CONSTRUCTION AND FUNCTION

CONSTRUCTION

The iQ Star Orion II chilled beam is available in 100, 120, 140, and 160 cm standard lengths and all are 60 cm wide for integration into T-24 suspended and plaster ceiling ¹⁾.

The nominal height is 190 mm and due to telescopic front plate the maximum height could be adjusted to 230 mm. The chilled beam has standard Ø125 mm air spigot connection. The width can also be adjusted from nominal 700 mm to 760 mm. This feature will ensure easy installation into different ceiling and wall configurations.

MATERIAL AND SURFACE FINISH

The chilled beam casing is mainly made of galvanized sheet steel. The front plate is powder coated standard RAL 9003 white, 30% gloss, which corresponds to NCS 0500-N. The heat exchanger coil is made of aluminum fins mechanically bonded to copper pipes with Ø out = 15 mm end connections and 1.6 MPa maximum working pressure.

FUNCTION

The chilled beam is designed for flexibility with a number of optional features. The optional feature are flexible blades in two of the grilles and control and regulation equipment.

ENERGY CONTROL (STANDARD)

Airflow for the chilled beam is easily adjustable using the patented Energy Control with variable nozzle settings mounted on the rail that can be set by adjustment of the nozzle in alignment with indicator inside the chilled beam. A wide choice of airflow settings are available for immediate and future requirements using 36 nozzle positions. Nozzle adjustment requires only a screwdriver to push the rail forward or backward to the desired position as shown below.

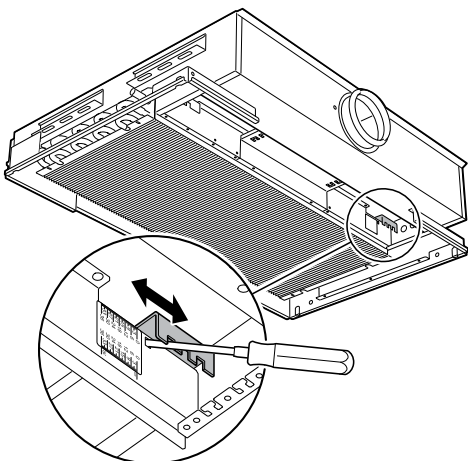


Figure 3: Nozzle adjustment

¹⁾ Nominal values. For exact dimensions, see Section Dimensions.

PI FUNCTION (OPTIONAL)

For Demand Controlled Ventilation operation, the Pi Function accessory must be mounted on the chilled beam. The Pi function enables an actuator to change the nozzle position automatically to change primary airflow.

The chilled beam system can follow different operation sequences depending on the controller chosen. It is possible to set different airflows according to occupancy level or to manage air quality using a CO₂ sensor connected to the controller. Three parameters can be set in the actuator: V₀ for non-occupancy, V_{min} for standard occupancy, and V_{max} (boost) for high occupancy level.

Different modes are offered in combination with the STRA-24 room controller: OFF, Standby, unoccupied, occupied, and boost. Different sequences between water and air are possible for each mode: Cooling without free cooling, cooling with free cooling, and airflow depending on CO₂.

The Pi function keeps airflow at setpoint value despite pressure fluctuations in the duct. The Pi function is easy to retrofit and applicable to any ductwork system owing to its pressure-independent functionality.

A room controller linked to an occupancy sensor is required to operate the Pi function. Duct pressure must be maintained between 40 and 140 Pa. The K100 Pi actuator is preset at the factory and the L_{p10A} 30sec is less than 20 dB.



Figure 4: Pi function actuator

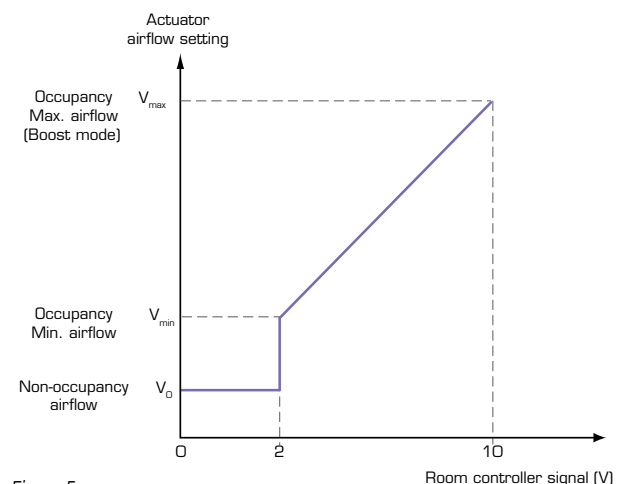


Figure 5

CONSTRUCTION AND FUNCTION

HEATING FUNCTION WITH PI

Naturally, warm air rises and remains at ceiling level when the heating function of a chilled beam is used and can therefore result in an unbalanced temperature gradient within the room. However, using a chilled beam with Pi function means that you can create stable ventilation while in heating mode. This is achieved by increasing the airflow when the demand for heating grows. When there is a demand for more heating, the airflow is increased causing it to collide with walls or other airstreams in the room and is then directed downwards to the occupied zone. The level of increased airflow in heating mode is an adjustable parameter in the STRA-24 (parameter 49).

VAV control (demand-controlled ventilation) with Pi actuator (IQAZ-35) is not available with change-over mode (heating or cooling with two-pipe system).

CAUTION! If the Pi function is installed as a retrofit, there is no need for a damper before the chilled beam. Any previously installed damper should be set to the fully open position or removed.

SUPPLY AIR

There are four different options to choose when selecting supply air grille type for the IQ Star Orion II chilled beam. All variants are telescopic and cover a range of 0 - 60 mm.

Without grille

The spigot can be ordered without a grille when using a non-FläktGroup grille. The spigot is unpainted and made from galvanized sheet steel.

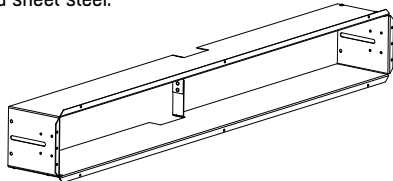


Figure 6: Without grille

Fixed grille

The fixed grille is not adjustable and is made of sheet steel. The grille is supplied with clamp springs for direct installation into the chilled beam, without any visible fasteners. The grille is powder coated in RAL 9003 30% gloss. Non-standard colours are available on request.

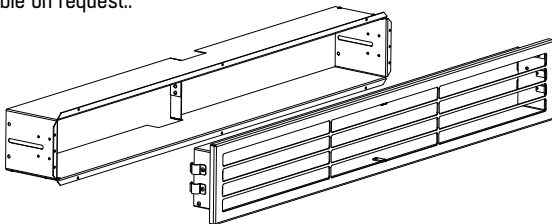


Figure 7: Fixed grille

Adjustable horizontal blades

This adjustable horizontal blade grille enables easy adjustment of the air direction -30° to $+30^\circ$. The grille is made of aluminum and is supplied with clamp springs for direct installation into the chilled beam, without any visible fasteners. The grille is powder coated in RAL 9003 70% gloss. Non-standard colours are available on request.

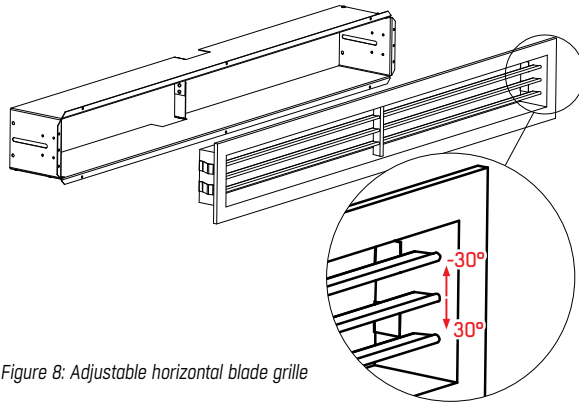


Figure 8: Adjustable horizontal blade grille

Adjustable horizontal and vertical blades

This adjustable horizontal and vertical blade grille enables easy adjustment of the air direction -30° to $+30^\circ$. The horizontal and vertical blades can be adjusted independently from each other. The grille is made of aluminum and is supplied with clamp springs for direct installation into the chilled beam, without any visible fasteners. The grille is powder coated in RAL 9003 70% gloss. Non-standard colours are available on request.

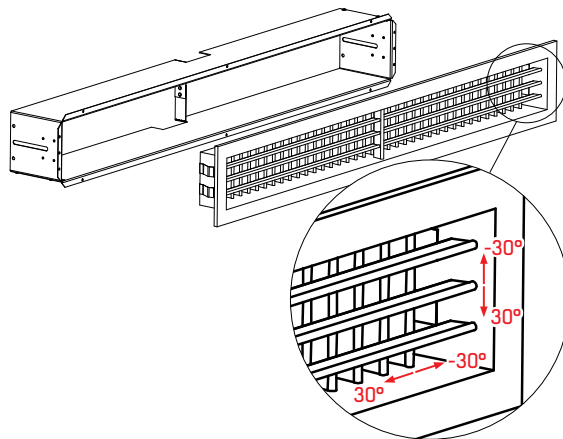


Figure 9: Adjustable horizontal and vertical blade grille

TECHNICAL DATA FOR COOLING

CONDITIONS FOR COOLING PERFORMANCE TABLES

Total cooling effect of beam, P_{tot} = cooling effect of coil, P_{coil} + cooling effect of supply air, P_{air} .

- Air side total pressure drop of 70 Pa
- Water flow rate of 0.05 l/s per circuit
- $\Delta t = 8^\circ \text{C}$ between room temperature and mean water temperature
- $\Delta t = 8^\circ \text{C}$ between room temperature and supply air temperature

Performance for water flows other than 0.05 l/s can be found in the FläktGroup product selection tool Select (select.flaktgroup.com)

The tables here are based on tests done in accordance with EN 15116. The purpose of EN 15116 is to be able to compare performances of different chilled beams on the same terms. The external heat supply method has been used where heating has been supplied evenly over the floors and walls such that the on-coil temperature is the same as the temperature at 1.1 m above floor level (seated head height).

In actual conditions, the temperature difference is normally 1°C . This is why the temperature Δt should be increased by 1°C to avoid overdimensioning of the beam. This means that the table value concerned can be increased by 10%. As such it is not uncommon for selections in Select to have a 1°C increase between ceiling temperature and room temperature.

DEFINITIONS

q_l	Supply airflow, l/s
P_{tot}	Total cooling effect, W
P_{coil}	Cooling effect of the coil, W
$P_{coil \text{ heat}}$	Heating effect of the coil, W
Δt	Difference between room air temperature and average water temperature, $^\circ \text{C}$
Δp_w	Pressure drop water, kPa
Δt_w	$(^\circ \text{C}) = P_{coil} (\text{W}) / 208$
Δt_w	$(\text{US imperial}) - \Delta t_w (^\circ \text{F}) = P_{coil} (\text{BTU/h}) / 81177$
L_{A10}	Sound pressure level in a room with 10 m^2 room absorption, dB(A)

COOLING POWER WITH GRILLE (HORIZONTAL ADJUSTABLE BLADES) AT 70 PA TOTAL PRESSURE DROP ON THE AIR SIDE Ø125 MM

Beam length = 1.0 m (coil length = 0.8 m)

Table 1: Water flow, $q_w = 0.05 \text{ l/s}$, Pressure drop $\Delta p_w = 8.3 \text{ kPa}$

Nozzle [mm]	q_{air} [l/s]	P_{tot} W at $\Delta t, ^\circ \text{K}$			P_{coil} W at $\Delta t, ^\circ \text{K}$			L_{p10A} [dB]
		6	8	10	6	8	10	
6	5	200	267	334	167	223	279	<20
12	10	318	425	531	247	329	411	<20
18	15	418	557	696	307	409	511	<20
24	20	493	657	821	345	460	575	<20
30	25	548	731	913	364	485	607	21
36	31	584	779	973	362	482	603	27

Beam length = 1.2 m (coil length = 1.0 m)

Table 2: Water flow, $q_w = 0.05 \text{ l/s}$, Pressure drop $\Delta p_w = 9.8 \text{ kPa}$

Nozzle [mm]	q_{air} [l/s]	P_{tot} W at $\Delta t, ^\circ \text{K}$			P_{coil} W at $\Delta t, ^\circ \text{K}$			L_{p10A} [dB]
		6	8	10	6	8	10	
6	6	258	344	430	213	284	355	<20
12	13	410	547	684	316	421	527	<20
18	20	530	707	884	386	515	643	<20
24	26	619	825	1031	426	568	711	20
30	33	683	910	1138	444	592	740	26
36	39	726	968	1211	444	592	740	31

Beam length = 1.4 m (coil length = 1.2 m)

Table 3: Water flow, $q_w = 0.05 \text{ l/s}$, Pressure drop $\Delta p_w = 10.7 \text{ kPa}$

Nozzle [mm]	q_{air} [l/s]	P_{tot} W at $\Delta t, ^\circ \text{K}$			P_{coil} W at $\Delta t, ^\circ \text{K}$			L_{p10A} [dB]
		6	8	10	6	8	10	
6	7	306	408	510	252	336	420	<20
12	15	481	641	801	370	494	617	<20
18	23	620	826	1033	452	603	753	<20
24	31	723	963	1204	499	666	832	23
30	38	795	1060	1325	519	692	865	30
36	45	845	1127	1409	515	687	859	34

Beam length = 1.6 m (coil length = 1.4 m)

Table 4: Water flow, $q_w = 0.05 \text{ l/s}$, Pressure drop $\Delta p_w = 12.3 \text{ kPa}$

Nozzle [mm]	q_{air} [l/s]	P_{tot} W at $\Delta t, ^\circ \text{K}$			P_{coil} W at $\Delta t, ^\circ \text{K}$			L_{p10A} [dB]
		6	8	10	6	8	10	
6	9	365	487	609	298	398	497	<20
12	18	567	756	945	435	579	724	<20
18	27	723	965	1206	524	699	873	<20
24	36	836	1115	1394	571	761	952	27
30	45	910	1214	1517	585	780	974	33
36	53	960	1280	1600	574	766	957	36

TECHNICAL DATA FOR HEATING

HEATING POWER WITH GRILLE (HORIZONTAL ADJUSTABLE BLADES) AT 70 PA TOTAL PRESSURE DROP ON THE AIR SIDE Ø125 MM

Beam length = 1.0 m (coil length = 0.8 m)

Table 5: Water flow, $q_w = 0.05$ l/s, Pressure drop $\Delta p_w = 5.1$ kPa

Nozzle [mm]	q_{air} [l/s]	P_{tot} W at Δt , °K			P_{coil} W at Δt , °K			L_{p10A} [dB]
		6	8	10	6	8	10	
6	5	123	164	205	90	120	150	<20
12	10	177	237	296	106	141	176	<20
18	15	227	303	378	116	155	194	<20
24	20	269	359	449	122	162	203	<20
30	25	308	410	513	124	165	206	21
36	31	345	460	576	123	164	205	27

Beam length = 1.2 m (coil length = 1.0 m)

Table 6: Water flow, $q_w = 0.05$ l/s, Pressure drop $\Delta p_w = 5.4$ kPa

Nozzle [mm]	q_{air} [l/s]	P_{tot} W at Δt , °K			P_{coil} W at Δt , °K			L_{p10A} [dB]
		6	8	10	6	8	10	
6	6	161	214	268	116	155	193	<20
12	13	233	311	388	139	185	231	<20
18	20	296	395	494	152	202	253	<20
24	26	350	467	584	158	211	263	20
30	33	400	533	666	161	215	268	26
36	39	446	595	744	164	219	274	31

Beam length = 1.4 m (coil length = 1.2 m)

Table 7: Water flow, $q_w = 0.05$ l/s, Pressure drop $\Delta p_w = 5.6$ kPa

Nozzle [mm]	q_{air} [l/s]	P_{tot} W at Δt , °K			P_{coil} W at Δt , °K			L_{p10A} [dB]
		6	8	10	6	8	10	
6	7	186	248	310	132	176	219	<20
12	15	270	360	449	159	212	265	<20
18	23	343	457	571	175	233	292	<20
24	31	405	540	676	182	243	303	23
30	38	461	614	768	185	246	308	30
36	45	517	689	862	187	249	312	34

Beam length = 1.6 m (coil length = 1.4 m)

Table 8: Water flow, $q_w = 0.05$ l/s, Pressure drop $\Delta p_w = 6.1$ kPa

Nozzle [mm]	q_{air} [l/s]	P_{tot} W at Δt , °K			P_{coil} W at Δt , °K			L_{p10A} [dB]
		6	8	10	6	8	10	
6	9	219	292	365	152	203	253	<20
12	18	316	422	527	184	245	307	<20
18	27	401	534	668	201	268	335	<20
24	36	473	630	788	207	277	346	27
30	45	534	712	890	208	278	347	33
36	53	595	793	991	210	279	349	36

TECHNICAL DATA FOR SOUND

SOUND POWER LEVEL

The sound power levels for every octave band are obtained by adding together the sound pressure level L_{p10A} , dB(A), and the corrections K_{oct} given in the table underneath, according to the following formula:

$$L_W = L_{p10A} + K_{oct}$$

Correction K_{oct} is the average in the area of application of the chilled beam.

Table 9: Beam length 1.0 m

Nozzle [mm]	Correction K dB octave band, middle frequency, Hz							
	63	125	250	500	1000	2000	4000	8000
36	4	8	10	1	-5	-15	-14	-18
30	8	9	10	1	-5	-14	-15	-11
24	16	7	7	0	-2	-10	-9	-6
18	10	0	1	0	1	-6	-10	-6
12	15	-4	-4	-1	1	-5	-10	-8
6	13	-1	-8	-2	1	-5	-8	-5
Tol +/-	5	2	1	1	1	2	4	4

Table 10: Beam length 1.2 m

Nozzle [mm]	Correction K dB octave band, middle frequency, Hz							
	63	125	250	500	1000	2000	4000	8000
36	1	5	9	2	-3	-15	-16	-22
30	4	7	10	2	-5	-16	-19	-16
24	9	8	10	1	-4	-13	-14	-10
18	10	4	5	1	0	-7	-12	-10
12	9	-2	-3	-1	2	-5	-11	-9
6	14	-4	-7	-2	1	-5	-8	-5
Tol +/-	3	1	1	1	2	2	3	3

Table 11: Beam length 1.4 m

Nozzle [mm]	Correction K dB octave band, middle frequency, Hz							
	63	125	250	500	1000	2000	4000	8000
36	-1	4	8	3	-2	-16	-22	-27
30	1	5	9	4	-4	-18	-24	-22
24	5	7	10	3	-6	-17	-19	-16
18	15	6	7	2	-2	-10	-10	-7
12	15	-1	-1	0	1	-8	-8	-4
6	13	-4	-8	-3	1	-5	-6	-7
Tol +/-	4	4	3	2	2	2	3	4

Table 12: Beam length 1.6 m

Nozzle [mm]	Correction K dB octave band, middle frequency, Hz							
	63	125	250	500	1000	2000	4000	8000
36	-3	2	7	3	-1	-14	-21	-30
30	-1	4	8	4	-3	-17	-26	-25
24	3	6	9	4	-5	-19	-23	-20
18	9	8	9	3	-4	-13	-14	-10
12	17	-1	-1	0	1	-8	-8	-5
6	15	0	-5	-1	-1	-6	-5	-2
Tol +/-	6	3	1	1	2	2	3	3

SOUND ATTENUATION

The average sound attenuation (ΔL) of the chilled beam from duct to room includes the end reflection of the connecting duct.

Table 13





IQHA	Sound attenuation in supply air duct of the beam ΔL , dB octave band, middle frequency, Hz							
	63	125	250	500	1000	2000	4000	8000
100	20	14	10	9	7	9	11	1
120	19	12	11	7	4	9	10	1
140	20	12	9	8	5	8	7	1
160	19	12	9	8	5	8	9	1
Tol +/-	2	3	4	4	4	5	3	1

DIMENSIONS AND WEIGHT

IQHA-aaa-b-cc-dd-1

Table 14

Length, aaa	100 cm	120 cm	140 cm	160 cm
A (mm)	994	1194	1394	1594
B (mm)	838	1038	1238	1438

 = Cooling water in
  = Heating water in
 = Cooling water out
  = Heating water out
 Air connections are male. Water connections are male.

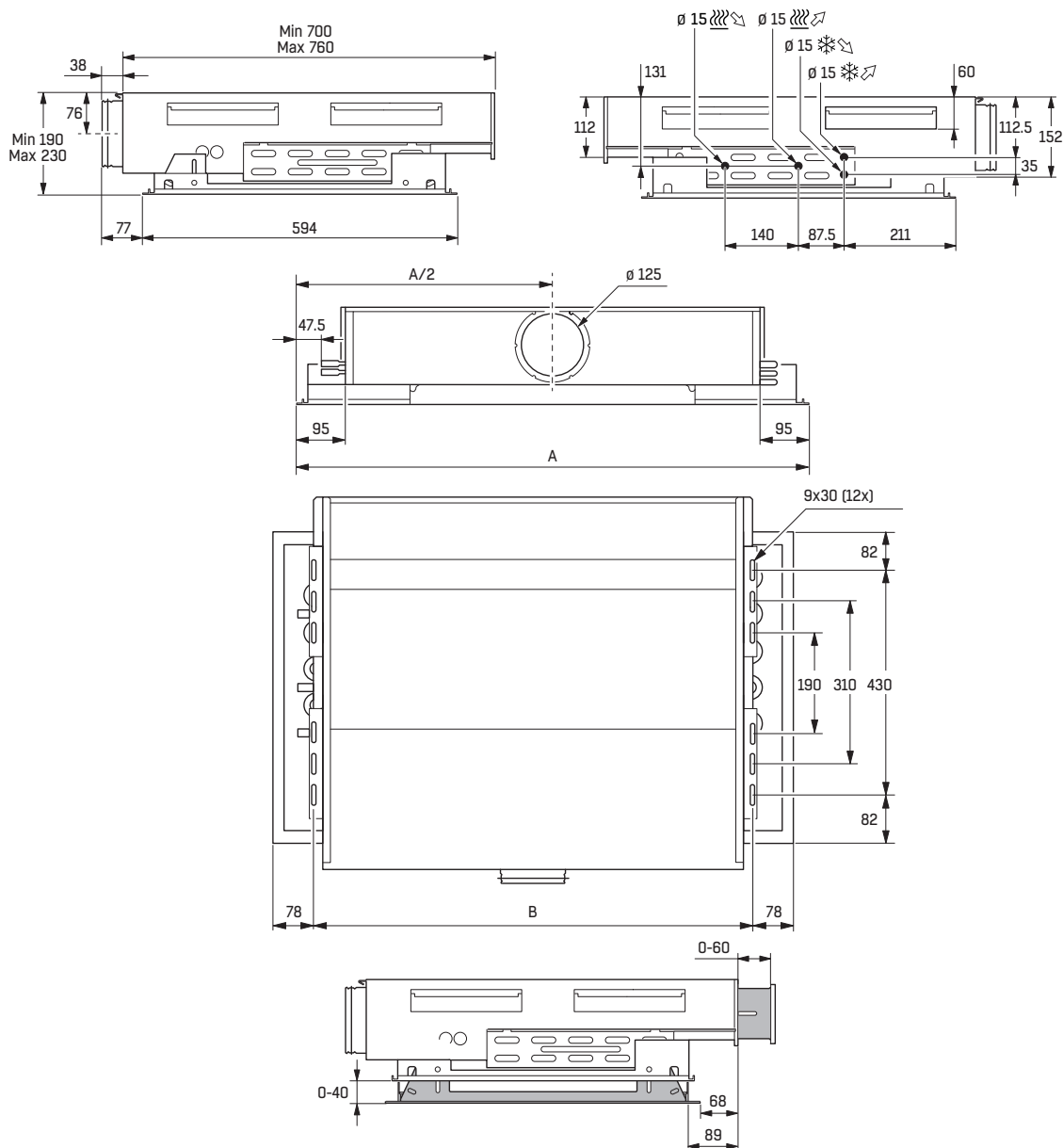


Figure 10: Dimensions

WATER CAPACITY

Table 16: Water capacity

Water volume	Coil rows	Water content per length coil l/m
Cooling	20 rows	2,0
Heating	2 rows	0,2

WEIGHT

Table 15: Weight

Length, aaa	100 cm	120 cm	140 cm	160 cm
Dry, kg	23	27	31	35
Water filled, kg	24	28	33	37

ACCESSORIES

INSTALLATION WITH FASTENING QFAZ-12

If there is a need for adjusting the vertical installation height, suspension rods M8 (QFAZ-12) can be ordered.

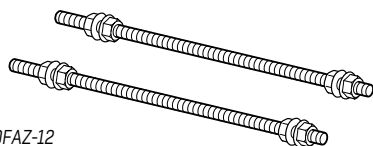
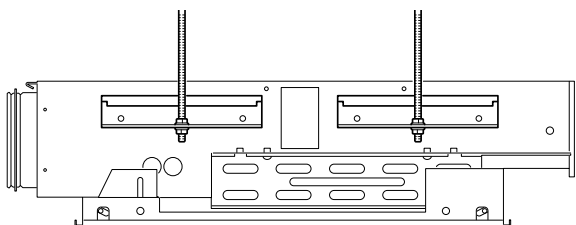


Figure 11: QFAZ-12

FLEXIBLE HOSES, CONNECTION FROM BACK IQAZ-37

Standard water side connection is on the left- or right-hand side of the chilled beam. When void space is limited or to ease installation, accessories are available for placing the water side connection could be selected in where the on the back right- or left-hand side of the chilled beam. The flexible hoses can be factory mounted (QAZ-37-bb-1-1) or supplied separately (QAZ-37-bb-2-1) for post installation (suitable for the following pressure and temperature ranges: 10 bar/+ 23 °C, 7 bar/+ 65 °C).

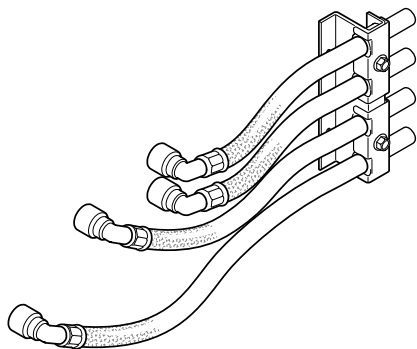


Figure 12: IQAZ-37

PURGING NIPPLE IQAZ-32

A purging nipple is available on demand and can be purchased as an accessories.

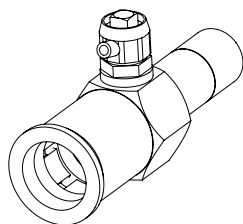


Figure 13: IQAZ-32

FLEXIBLE HOSES IQAZ-19

Flexible hoses are available with push-on connections for easy installation (suitable for the following pressure and temperature ranges: 10 bar/+ 23 °C, 7 bar/+ 65 °C).

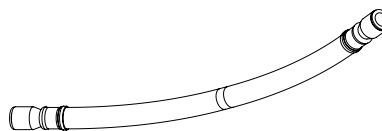


Figure 14: IQAZ-19

CONDENSATION STRZ-16

To be connected to the cooling water inlet.

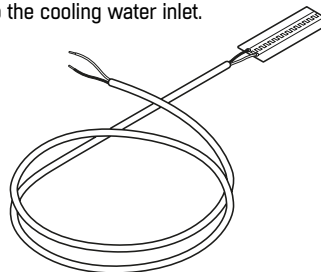


Figure 15: STRZ-16

NOZZLE ACTUATOR FOR Pi FUNCTION IQAZ-35

The chilled beam can be ordered with pressure independent air-flow control function, which requires installation of IQAZ-35 nozzle actuator. The actuator comes with Modbus communication and can be supplied separately for post installation.

The actuator is always positioned inside the chilled beam, which means that the actuator does not affect the overall dimension of the chilled beam. It can be accessed for installation and maintenance through the front plate.

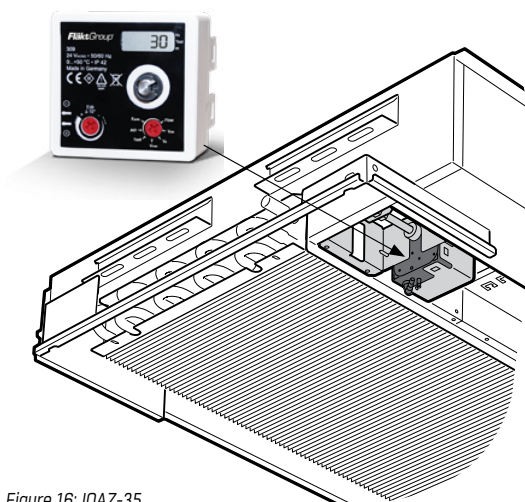


Figure 16: IQAZ-35

For more information regarding the installation procedures, see the installation manual for this chilled beam.

ROOM CONTROLLER STRA-24

The STRA-24 is a pre-programmed room controller intended to control the temperature and the CO₂ level in rooms. It manages the water coil actuator and the actuator of the Pi function. It is pre-programmed with communication and is intended for use in premises with high comfort and low energy demands. The STRA-24 can optimise energy consumption in rooms depending on different parameters: Occupancy, CO₂ level, outside conditions (free cooling feature), and timetable. Different modes are offered: OFF, standby, occupied, and boost. For each mode, different sequences between water and air are possible: Cooling without free cooling, cooling with free cooling, and airflow depending on CO₂ level. For more information regarding this product and related accessories, see the STRA-24 technical catalogue.



Figure 17: STRA-24

VALVES AND ACTUATORS STRZ-70

For a full description and technical data for the valve kit, see the STRA accessories catalogue.



Figure 18: STRZ-70

INTEGRATED CONTROL STRZ-76

The IQ Star Orion II chilled beam is available with integrated control by ordering the accessory STRZ-76. The room controller is supplied separately. On site, the installer must connect the room controller to the terminal block placed inside the chilled beam.

Actuators and valves are attached to the chilled beam in the factory for compression fitting and assemble on site. It is delivered with valves from Siemens. The valves and optional condensate sensor are factory wired to a terminal block that is mounted inside the unit. If the Pi actuator (IQAZ-35) is chosen, it will also be

wired to the terminal block. An occupancy sensor, for example, a card holder must be wired to the terminal block by the installer.

The integrated control offers Modbus or Bacnet communication as standard and it allows you to connect directly to the IPSUM system without using the IPSUM connection unit.

From the room controller, it is possible to commission, increase, and decrease the temperature and display main information.

For more information regarding this product and related accessories, see the STRA-24 technical catalogue and the STRA Accessories catalogue.

CONTROLLER SUPPLIED SEPARATELY

The room controller is supplied separately. On site, the installer must the room controller to the terminal block placed inside the chilled beam. This configuration uses the integrated temperature sensor in the room controller.

A condensation sensor is available as an additional option. It will be factory wired to the terminal block.

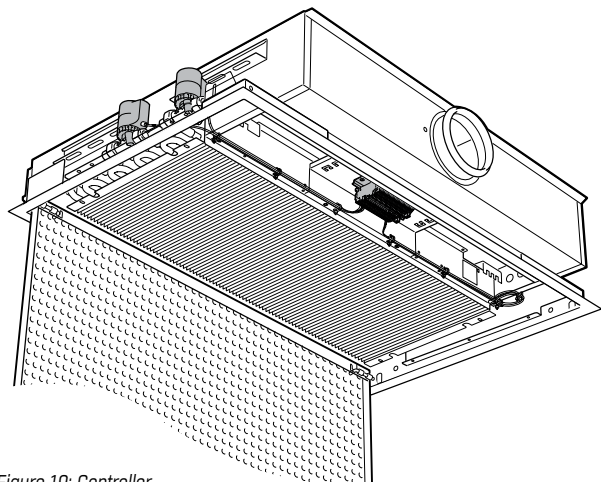


Figure 19: Controller

SLAVE

For parallel control. As an additional option a connect the room controller from the master beam to the terminal block placed inside the chilled beam.

PRODUCT CODE

Production code induction unit

IQHA-aaa-b-cc-dd-1

Length (aaa) cm
100,120,140,160

Connection alternative (b)
1 = Ø125

Coil construction (cc)
01 = Cooling left
02 = Cooling right
03 = Cooling/Heating left
04 = Cooling/Heating right

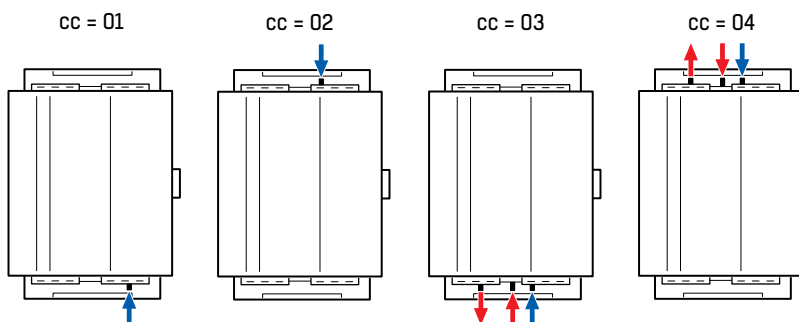


Figure 20: Interpreting the product code

Grille (dd)
00 = Without
01 = No adjustment
02 = Adjustable horizontal blades
03 = Adjustable horizontal/vertical blades

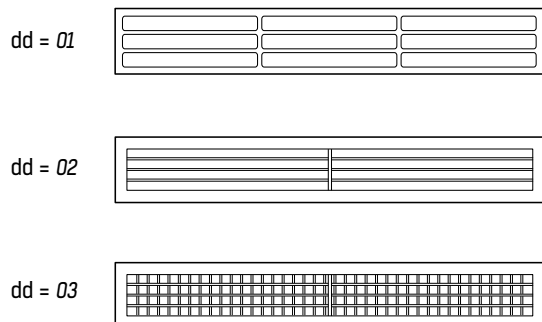


Figure 21: Grille configurations

ACCESSORIES CODES

Pi function actuator

(with Modbus communication)

IQAZ-35-bb-c-1-e

Beam type (bb)

05 = ORION II

Cable execution (c)

1 = Cable 1 m without contact

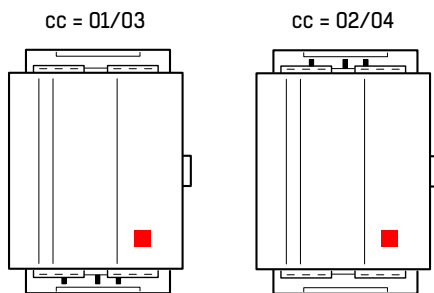
2 = Cable 80 mm with RJ45 connector (female) for use with IPSUM connection unit and is not compatible in combination with STRZ-76¹⁾

¹⁾ Note: The RJ45-contact has a extended delivery time.

Installation (e)

1 = Installed on chilled beam, see figure 22

2 = Supplied loose



■ IQAZ-35

Figure 22: IQAZ-35 location

Pre-set Pi actuator

IQAZ-36-bbb-ccccc

k100% (bbb) Presetted from factory

aaa k100%

100 3.7

120 4.8

140 5.7

160 6.8

Airflow V_0 , V_{min} , V_{max} in l/s (ccccc)³⁾

cc---- = V_0

--CC-- = V_{min}

----CC = V_{max}

³⁾ Ordering example below

Eg: IQAZ-36-370-020420

• k100% = 3.7

• V_0 = 2 l/s

• V_{min} = 4 l/s

• V_{max} = 20 l/s

Actuator and valve Siemens

STRZ-70-bb-cc-0-1

Valve (bb)

00 = Without

01 = DN15 (kvs 0.25-1.9) female 1/2" valve inlet

02 = DN20 (kvs 0.25-2.6) female 3/4" valve inlet

03 = DN25 (kvs 0.25-2.6) female 1" valve inlet

11 = DN15 (kvs 0.25-1.9) compression ring valve inlet

21 = DN15 (kvs 0.25-1.9) push-on valve inlet

41 = DN15 pressure-independent (100-575 l/h) female 1/2" valve inlet

42 = DN20 pressure-independent (220-1330 l/h) female 3/4" valve inlet

43 = DN25 pressure-independent (280-1800 l/h) female 1" valve inlet

51 = DN15 pressure-independent (100-575 l/h) Compression ring valve inlet

61 = DN15 pressure-independent (100-575 l/h) Push on valve inlet

Valve actuator (cc)

00 = Without

01 = 24 V NC cable 1 m

11 = 24 V NO cable 1 m

21 = 230 V NC cable 1 m

31 = 230 V NO cable 1 m

Integrated controls

STRZ-76-bb-cc-1-ee

Placement of controller (bb)

00 = Without room controller (slave)

01 = Supplied separately

Sensors and valve kit (valve and actuator) (cc)

00 = Without sensor, valve and actuator cooling

01 = Cooling valve kit

02 = Cooling valve kit, condensate sensor

05 = Cooling and heating valve kit

06 = Cooling and heating valve kit, condensate sensor

09 = Without sensor, valve and actuator cooling/heating

ORION II (ee)

08 = iQ STAR ORION II (IQHA)

Suspension rods M8

QFAZ-12

Set with two pieces. Length 500 mm, two sets per beam

Flexible hose, supplied loose

IQAZ-19-550-010010

Length = 550 mm

Push-on 15 mm connection

Flexibel hoses, back connection

IQAZ-37-bb-c-1

Coil construction (bb)

01 = Cooling left

02 = Cooling right

03 = Cooling/Heating left

04 = Cooling/Heating right

Installation (c)

1 = Installed on chilled beam

2 = Supplied separately

Purging nipple

IQAZ-32-bb-0

Connection diameter mm (bb)

15 = Ø15

Condensation sensor

STRZ-16-1-cc

Installation (cc)

00 = Supplied separately

06 = Installed on chilled beam

ORDER EXAMPLE

ORDER EXAMPLE

Here is an example to demonstrate an order complete with typical accessories. For more information about orders or specific requirements for special units, contact your nearest FläktGroup sales office.

An order example for a room with five chilled beams. The beams are calculated as 100 cm length for required airflow and cooling capacity in product selection tool Select (<http://select.FlaktGroup.com>).

CHILLED BEAMS

Table 17: Example order

Product codes	Description	Quantity
IQHA-100-1-03-02-1	iQ Star Orion II chilled beam, water cooling and heating left side, adjustable grill horizontally	5

OPTION FOR DEMAND CONTROLLED VENTILATION

Product codes	Description	Quantity
IQAZ-35-05-1-1-1	Pi function, nozzle actuator, one per chilled beam	5

CONTROLS

Product codes ¹⁾	Description	Quantity
STRA-24-00-0-00	Room controller	1
STRZ-05-1	Internal temperature sensor	1
STRZ-16-1-00	Condensation sensor	1
STRZ-24-1	Transformer ¹⁾	1

CONTROLS OPTIONS FOR DEMAND CONTROLLED VENTILATION

Product codes ¹⁾	Description	Quantity
STRZ-09-2	Occupancy detector (for single office application)	1
STRZ-18-1-2	CO ₂ sensor (for meeting room)	1

VALVES, ACTUATORS AND FLEXIBLE HOSES

Product codes ¹⁾	Description	Quantity
STRZ-70-11-01-0-1 ¹⁾	Valve + valve actuator	10
IQAZ-19-550-010010	Flexible hose push-on (five chilled beams times four pipe connections)	20
IQAZ-37-03-1-1	Flexible hose kit back connection, water cooling and heating left-hand side, one kit per chilled beam	5

INTEGRATED CONTROLS

Product codes	Description	Quantity
IQHA-100-1-03-02-1	iQ Star Orion II chilled beam, water cooling and heating left-hand side adjustable grill horizontally	1
STRZ-76-01-06-1-08	Separately delivered regulator, incl. valve kit (valve and actuator) and condensate sensor	1

¹⁾ For more information, see the STRA-24 technical manual and STRA accessories catalogue.

DUCTED SPACE COOLING APPLIANCES

The FläktGroup iQ Star Orion chilled beam for integrated installation in suspended ceilings has the following requirements/ functions: (the size, variant etc., are indicated in the product code).

- Eurovent certified
- Ventilation, water and air cooling/water and air heating
- Pi motorised continuously variable VAV function, including an unoccupied flow mode or Energy Control for the simple continuously variable adjustment of airflows, and the potential for installing a VAV (Pi) motor at a later stage
- Heating function in which heating is delivered by the water coil and circulation in the space is controlled by the VAV function (Pi)
- Four different grille solutions are available (without, fixed, adjustable horizontal blades, and adjustable horizontal/vertical blades)
- RAL 9003 gloss value 30
- Installation space with strain relief connections that enables easy installation
- Factory fitted controls (All electrical components are connected to terminal blocks for the straightforward connection of a 24 V power supply.)
- Water actuator with valves with compression fittings
- Controller supplied separately for fitting in an optional location
- Variant according to the order code for iQ Star Orion (IQHA)
- Accessories as specified
- STRA-24 controls as specified
- Easy to flip coil (left-right or right-left) for rapid and simple installation
- Adjustable induction
- Ability to swing down the front plate from either side
- Adjustable height due to telescopic front cover 190 - 230 mm
- Adjustable telescopic transition piece for adapting regarding the wall through place 0 - 60 mm

INATHERM

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