

ORION II IQHA

BULKHEAD CHILLED BEAM
TECHNICAL GUIDE

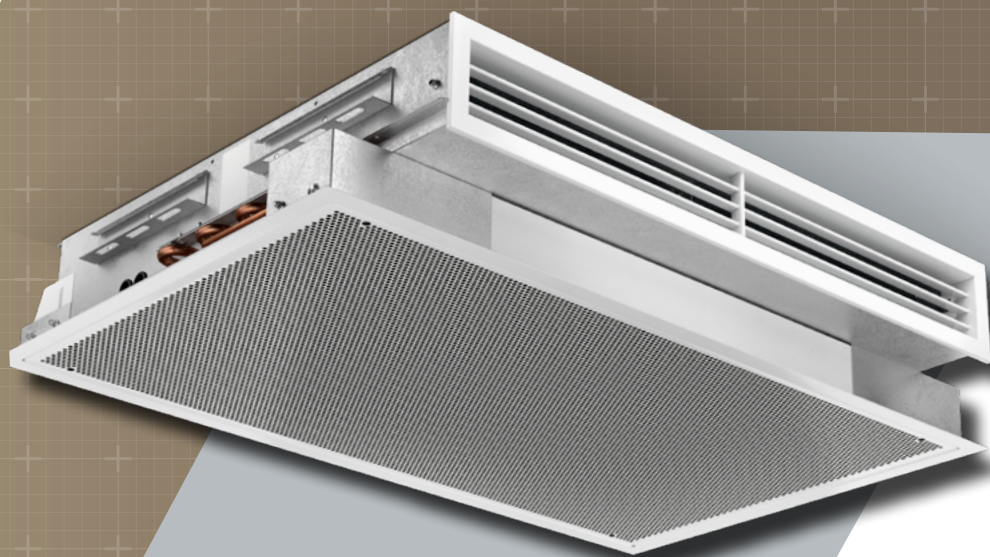


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THE ORION II IQHA

The Orion II IQHA is an active, bulkhead mounted chilled beam used for ventilation, heating and cooling. Inconspicuous with sound pressure less than 20 dB, the Orion II IQHA, is perfect for hotel rooms, hospital rooms and offices.

With three diffusion grille options, and adjustable induction grille height, the ORION II IQHA can easily be adapted to suit various room geometries. In addition to its fluidity, the ORION II IQHA also offers unequaled comfort control, with options such as single or double deflection diffusers with adjustable blades.

Adding a Pi® actuator to the Orion II IQHA increases its flexibility and makes it more efficient, because it adds demand-controlled ventilation, which allows chilled beams to adjust primary ventilation air volume to match occupancy demands. The Pi® actuator also permits the Orion II IQHA to be pressure independent, allowing the beam to work with any duct system or to be retrofitted.

KEY FEATURES

- Length 23.6" and width 39.4" — 63"
- Available in four widths
- Ventilation, heating and cooling
- High airflow per width
- Adjustable primary airflow with 36 nozzle settings
- Easy installation — fastening brackets, with all controls fitting in the chilled beam tray and adjustable installation height.
- Low installation height
- Bulkhead mount
- Energy efficient, saving money on operating and life-cycle costs
- Perforated swing down bottom panel for easy access
- Beam is available without a discharge grille for applications with grilles by others, or with optional grilles with spring clamp installation with fixed blades, horizontally adjustable blades, or horizontally and vertically adjustable blades.
- Easy to clean and maintain

OPTIONS

- Pressure independent (Pi®) actuator
- Demand control ventilation with Pi® actuator
- Controls

LENGTHS AND WEIGHTS

	OVERALL LENGTH	WEIGHT	
	ACTUAL LENGTH (IN)	DRY (LB)	WET (LB)
ORION II - 100	39.1	51	53
ORION II - 120	47.0	60	67
ORION II - 140	54.9	68	73
ORION II - 160	62.8	77	82

FIGURE 1. ORION II IQHA dimensions and weight

QUICK SELECTION

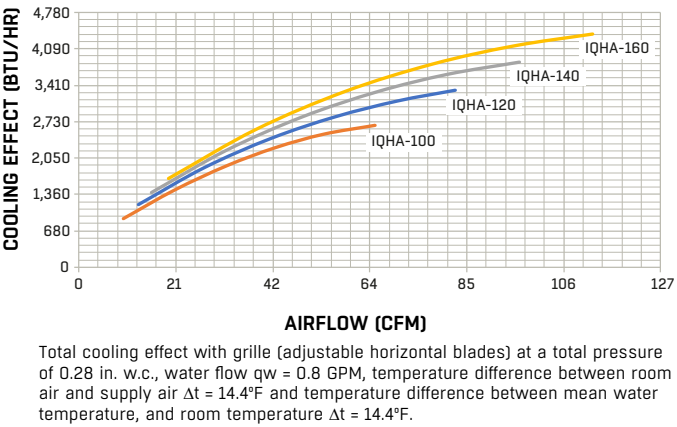


FIGURE 2

SPECIFICATIONS

GENERAL

Chilled beam to be an integrated system for ventilation, cooling and heating. The beams shall consist of galvanized steel housing encasing the integral water coil(s), a plenum feeding a series of adjustable induction slots, and optionally a grille and diffusers. Chilled beam to be active with primary ventilation introduced through the back connection. End duct connection shall be located at the same end of the beam as the coil connections. Chilled beam shall be designed to be integrated into gypsum board or sheetrock bulkheads. Beam to have adjustable air flow and cooling effect.

QUALITY ASSURANCE

Hydronic cooling capacities shall be established by testing accordance with European standard EN-15116.

CASING

Casing shall be manufactured of galvanized steel. The bottom grille and front diffuser are powder coated standard RAL 9003 white, 30% gloss.

Bottom grille of chilled beam shall be removable without tools for coil access.

Beam openings shall consist of a room air induction bottom section of perforated steel and a discharge front. The entire visible face section shall be finished in white paint.

The overall height of the beam shall not exceed 9.1".

COILS

The heat exchanger coil is made of aluminum fins, mechanically bonded to copper pipes with 15 mm connections factory leak tested, with 95 PSI maximum working pressure.

DUCT CONNECTION

A 4.9" diameter primary supply air duct connection to the IQHA beam is located at the back.

INDUCTION SLOTS

The chilled beam shall be complete with primary air volume control.

Slots will be adjustable without the need for tools or removal of the beam from its installation.

Each beam shall be provided with a pressure tap that may be used to measure the pressure differential between the primary air plenum and the room. An airflow calibration calculation which relates this pressure differential reading with the primary airflow rate shall also be provided by the beam manufacturer.

Slots will be shipped from the factory fully open.

GRILLES

Optional grilles shall provide the possibility to adjust the airflow pattern at different angles, from -30° to 30°, adjusting the horizontal or horizontal and vertical blades of the diffuser.

ENERGY CONTROL NOZZLES

By adjusting the nozzle settings on the rail of the beam the nozzles can be aligned by an indicator inside the beam. With 36 nozzle positions, airflow can easily be adjusted to meet immediate and future needs, by using a screwdriver to push the rails forward and backward.

CONTROLS

Automatic temperature controls shall be provided by others.

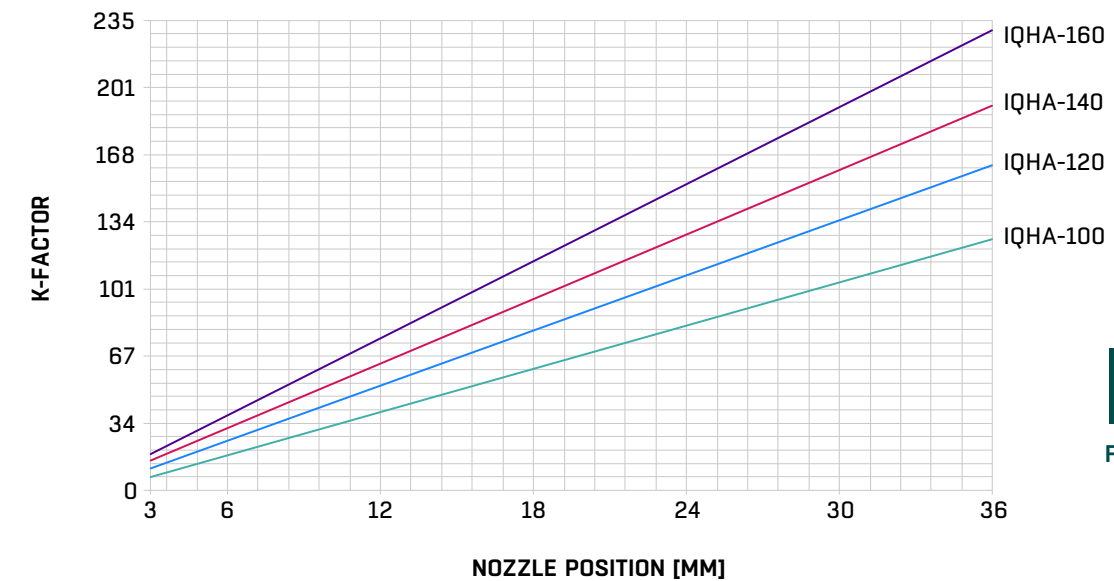
Chilled beams can be supplied with optional temperature controls (water control valves by others) with condensate sensor and/or passive infrared (PIR) occupancy sensor.

INSTALLATION

Chilled beams are mounted into bulkheads, suspended from threaded rods.

All specifications are subject of alteration without further notice.

COMMISSIONING



$$q(\text{CFM}) = k \sqrt{\Delta p (\text{in. w.c.})}$$

FIGURE 4

FIGURE 3

Approximate beam airflow can be calculated by using **FIGURES 3** and **4**, and the pressure drop (measured from the pressure tap).

SELECTION TOOL EXAMPLE

FläktGroup SEMCO product selection tool, Select. To access the selection tool visit www.semcohvac.com or contact your local FläktGroup SEMCO sales representative.

FläktGroup / SELECT

START PROJECT CALCULATE PRODUCT QUICK SELECT FAVORITES

Product Catalogue / Chilled Beams / IQ STAR ORION II Chilled beam

IQ STAR ORION II Chilled beam IQHA-120-1-01-01-1

Properties

- Length: 120 cm
- Coil function: Cooling
- Coil: Cooling left
- PI Function: With
- Flexible hoses: With
- Grille: Fixed blades

ADVANCED PRODUCT PROPERTIES

Parameters

- Number of units: 1
- Air pressure drop: 0.2 inWG
- Air flow: 45.2, 52.2, 60.6 cfm
- Air flow (all units): 45.2, 52.2, 60.6 cfm
- Air temp: 60, 60, 60 °F
- Inlet water temp: 60 °F
- Inlet water flow: 0.5 gpm
- Ceiling temp: 76 °F
- Room temp: 74 °F
- Relative humidity: 45 %

Calculate Export Print

RESULT	VISUALIZATION	DESCRIPTION	DOCUMENTS	ACCESSORIES (1)
Power	656	2019	2553	btu/h
Coil power	629	1726	2001	btu/h
Supply air power	28	293	553	btu/h
Power (all units)	656	2019	2553	btu/h
Sound Lp10A dBA	< 20	< 20	26	dB(A)
Air flow	3.2	33.7	63.6	cfm
Air flow (all units)	3.2	33.7	63.6	cfm
Total air pressure drop	0.27	0.27	0.27	inWG
Outlet water temp	58.8	61.6	62.2	°F
Throw length L02	5.4	13.8	20.7	ft
Water pressure drop	2.77	2.77	2.77	ftWG

ADDITIONAL RESULT

VO Vmin Vmax

ENERGY CONTROL

Mounted on the rail of the ORION IQHA, the patented energy control feature has the ability to adjust the settings of the variable slot settings to a symmetrical flow. The energy control function, allows flow to be adjusted to suit immediate and future requirements. Slot setting adjustment requires only a screwdriver to push the rails to the desired position.

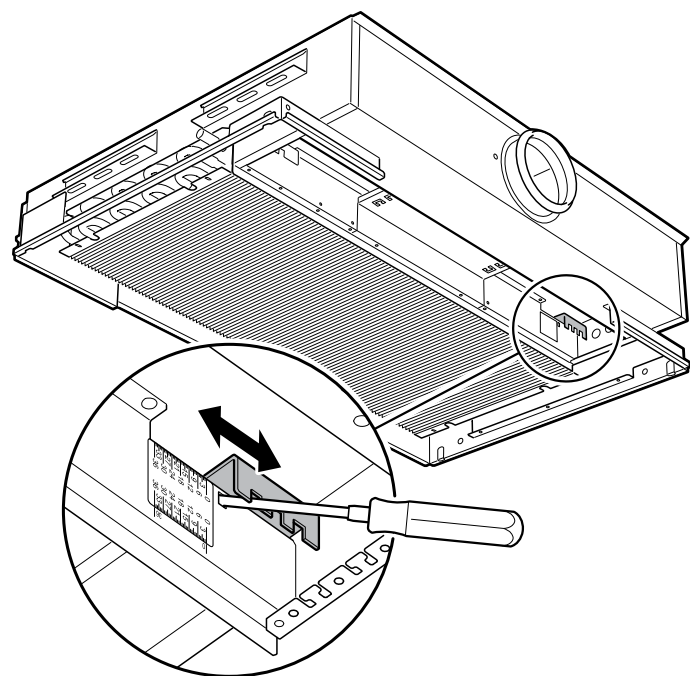


FIGURE 5. ORION II IQHA nozzle adjustment

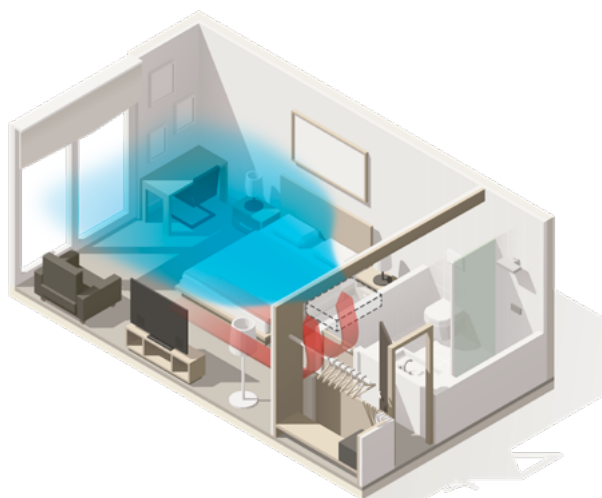
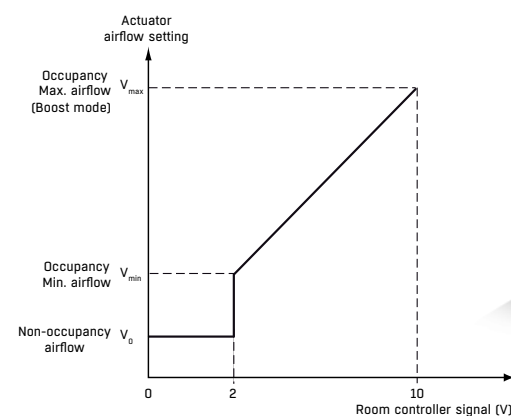


FIGURE 6.

PRESSURE INDEPENDENT ACTUATOR (OPTIONAL)

The Pi actuator is an optional flow control device, that can be mounted directly to the ORION II IQHA allowing ventilation flow to adjust in response to changes in demand or upstream pressure. Attaching a Pi[®] actuator to a chilled beam, allows the chilled beam to be even more flexible in terms of its ability to quickly adapt to changing space conditions. The Pi[®] actuator adjusts the nozzles to allow only the amount of ventilation flow needed for current occupancy levels, regardless of the pressure changes occurring in the ductwork system. Air quality can also be controlled, when a CO₂ sensor is connected to the controller. Unlike competitors' pressure independent controls, which can only be used with larger static pressure regain duct systems, the Pi[®] actuator can be used with any duct system. Making it easy for engineers to incorporate the ORION II IQHA with Pi[®] into their designs. The Pi[®] actuator can be quickly removed and installed on another beam, making it incredibly versatile. In cases of redesigns or remodels, the Pi[®] actuator may be retrofitted to meet updated needs.

The demand control ventilation feature of the Pi[®] actuator allows chilled beams to be even more energy efficient due to its three modes: unoccupied, standard occupancy and high occupancy. These modes control how much air is delivered in a given zone and modulate the air nozzles in response to changes in occupancy. Unoccupied mode, provides a minimum primary air flow for the induction required to allow the beam's coil to satisfy the zone's sensible demand. While occupied mode provides the required primary air flow for the zone.



NOTE: When using a Pi[®] actuator, PIR or CO₂ sensor (or both) must provide occupancy feedback. Duct pressure must be maintained between .02-.06 in w.c..

CAUTION: If a Pi[®] actuator is installed on a ORION II IQHA as a part of a retrofit, a damper before the chilled beam is not necessary and any previously installed dampers should be set to a fully open position or removed.

HEATING WITH THE Pi[®] ACTUATOR

Typically, when chilled beams are set to heating mode, air being heated by the beam remains at ceiling level, due to the fact that warm air naturally rises, creating a temperature imbalance. Using the Pi[®] Actuator can remedy this, by increasing supply airflow amounts when there is a demand for heating. Increasing airflow increases throw and mixing with existing airstreams, directing the mixed downward to the occupied zone.

SUPPLY AIR

The Orion II IQHA has four supply air grille options. All options are telescopic and cover a range of 0-2.4".

GRILLE BY OTHERS

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

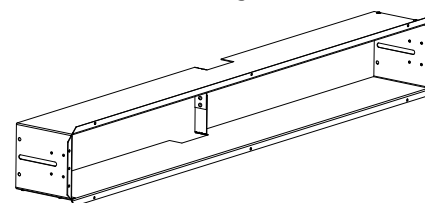


FIGURE 7. ORION II IQHA spigot without a grille

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. The grille will be painted white.

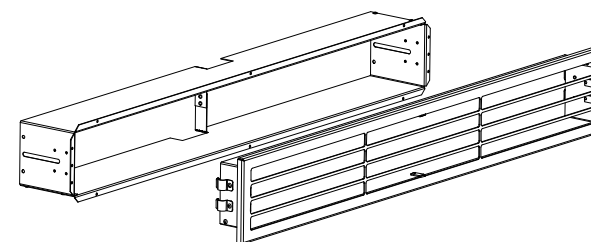


FIGURE 8. ORION II IQHA with a fixed grille

ADJUSTABLE HORIZONTAL BLADES

The horizontal blade grille enables easy adjustment of the air direction from -30° to 30°. 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 will be painted white.

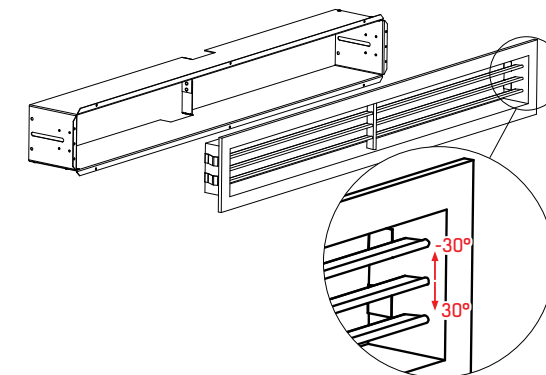


FIGURE 9. ORION II IQHA with an adjustable horizontal blade grille

ADJUSTABLE HORIZONTAL AND VERTICAL BLADES

The adjustable horizontal and vertical blade grille enables easy adjustment of the air direction from -30° to 30° in two planes. The horizontal and vertical blades can be adjusted independent of each other. The grille is aluminum and is supplied with clamp springs for direct installation into the chilled beam, without any visible fasteners. The grille will be painted white.

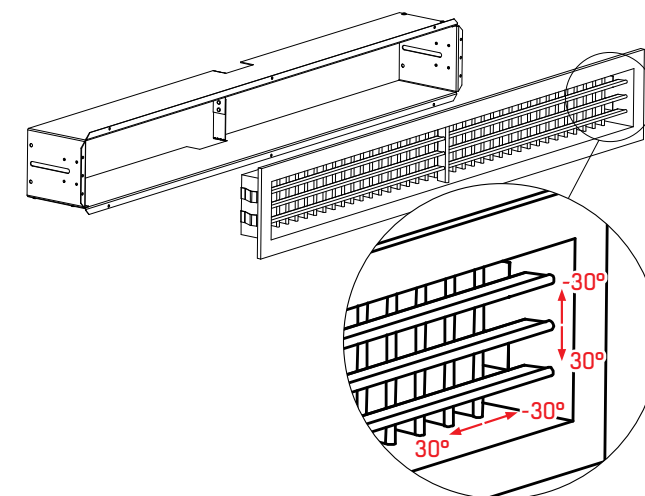


FIGURE 10. ORION II IQHA with an adjustable horizontal and vertical blade grille

TECHNICAL COOLING DATA

CONDITIONS FOR COOLING PERFORMANCE TABLES

Total cooling effect of the beam, P_{TOT} = cooling effect of coil P_{COIL} + cooling effect of supply air, P_{AIR} .

- Air side total pressure drop of 0.28 in. w.c.
- Water flow rate of 0.8 GPM per circuit
- Δt = 14.4°F between room temperature and mean water temperature
- Δt = 14.4°F between room temperature and supply air temperature

Performance for air and water flows and/or pressure drops other than those listed, can be found in the FläktGroup® SEMCO® product selection tool, Select. To access the selection tool visit www.semcohvac.com or contact your local FläktGroup® SEMCO® sales representative.

All cooling tables are based on tests done in accordance with EN 15116. The purpose of EN 15116 is to be able to compare the performance of different chilled beams using the same criteria. 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 43.3" above floor level (seated at head height).

In actual conditions, the temperature "t" should be increasing 1.8°F to avoid over dimensioning the beam. This means that the table value concerned can be increased by 10%. As a result it is not uncommon for selections made in Select, to have a 1.8°F increase between ceiling and room temperature.

q_{AIR}	Supply airflow, CFM
P_{TOT}	Total cooling effect, BTU/HR
P_{COIL}	Cooling effect of the coil, BTU/HR
$P_{COIL\ HEAT}$	Heating effect of the coil, BTU/HR
Δt	Difference between room air temperature and average water and air temperature
ΔP_w	Pressure drop water ft. H ₂ O
L_{P10A}	Sound pressure level in a room with 107 ft² room absorption, dB(A)

TECHNICAL COOLING DATA

COOLING POWER WITH GRILLE (HORIZONTAL WITH ADJUSTABLE BLADES) AT 0.28 IN. W.C. TOTAL PRESSURE DROP ON THE AIR SIDE

BEAM LENGTH = 39.4"

NOZZLE (mm)	q_{AIR} CFM	P_{TOT} (BTU/HR) FOR Δt (°F)			P_{COIL} (BTU/HR) FOR t (°F)			L_{P10A} dB
		10.8°F	14.4°F	18°F	10.8°F	14.4°F	18°F	
6	11	424	911	1,140	570	760	952	<20
12	21	674	1,450	1,812	843	1,123	1,402	<20
18	32	886	1,901	2,375	1,048	1,396	1,744	<20
24	42	1,045	2,242	2,801	1,177	1,570	1,962	<20
30	53	1,161	2,494	3,115	1,242	1,655	2,071	21
36	66	1,237	2,658	3,320	1,235	1,645	2,058	27

FIGURE 11. Water pressure drop ΔP_w = 2.8 FT H₂O

BEAM LENGTH = 47.2"

NOZZLE (mm)	q_{AIR} CFM	P_{TOT} (BTU/HR) FOR Δt (°F)			P_{COIL} (BTU/HR) FOR t (°F)			L_{P10A} dB
		10.8°F	14.4°F	18°F	10.8°F	14.4°F	18°F	
6	13	880	1,174	1,467	727	969	1,211	<20
12	28	1,399	1,866	2,334	1,078	1,437	1,798	<20
18	42	1,808	2,412	3,016	1,317	1,757	2,194	<20
24	55	2,112	2,815	3,518	1,454	1,938	2,426	20
30	70	2,330	3,105	3,883	1,515	2,020	2,525	26
36	83	2,477	3,303	4,132	1,515	2,020	2,525	31

FIGURE 12. Water ΔP_w = 3.3 FT H₂O

BEAM LENGTH = 55.1"

NOZZLE (mm)	q_{AIR} CFM	P_{TOT} (BTU/HR) FOR Δt (°F)			P_{COIL} (BTU/HR) FOR t (°F)			L_{P10A} dB
		10.8°F	14.4°F	18°F	10.8°F	14.4°F	18°F	
6	15	1,044	1,392	1,740	860	1,146	1,433	<20
12	32	1,641	2,187	2,733	1,262	1,685	2,105	<20
18	49	2,116	2,818	3,525	1,542	2,058	2,569	<20
24	66	2,467	3,286	4,108	1,703	2,272	2,839	23
30	81	2,712	3,616	4,521	1,771	2,361	2,952	30
36	95	2,883	3,845	4,808	1,757	2,344	2,931	34

FIGURE 13. Water pressure drop ΔP_w = 3.6 FT H₂O

BEAM LENGTH = 63.1"

NOZZLE (mm)	q_{AIR} CFM	P_{TOT} (BTU/HR) FOR Δt (°F)			P_{COIL} (BTU/HR) FOR t (°F)			L_{P10A} dB
		10.8°F	14.4°F	18°F	10.8°F	14.4°F	18°F	
6	19	1,245	1,662	2,078	1,017	1,358	1,696	<20
12	38	1,935	2,580	3,224	1,484	1,976	2,470	<20
18	57	2,467	3,293	4,115	1,788	2,385	2,979	<20
24	76	2,853	3,805	4,757	1,948	2,597	3,248	27
30	95	3,105	4,142	5,176	1,996	2,661	3,323	33
36	112	3,276	4,368	5,459	1,959	2,614	3,265	36

FIGURE 14. Water pressure drop ΔP_w = 4.1 FT H₂O

TECHNICAL HEATING DATA

HEATING POWER WITH GRILLE (HORIZONTAL WITH ADJUSTABLE BLADES) AT 0.28 IN. W.C. TOTAL PRESSURE DROP ON THE AIR SIDE

BEAM LENGTH = 39.4"

NOZZLE (mm)	q_{AIR} CFM	P_{TOT} (BTU/HR) FOR Δt (°F)			P_{HEAT} (BTU/HR) FOR t (°F)			L_{P10A} dB
		10.8°F	14.4°F	18°F	10.8°F	14.4°F	18°F	
6	11	420	560	699	307	409	512	<20
12	21	604	809	1,010	362	481	601	<20
18	32	775	1,034	1,290	396	529	662	<20
24	42	918	1,225	1,532	416	553	693	<20
30	53	1,051	1,399	1,750	423	563	703	21
36	66	1,177	1,570	1,965	420	560	699	27

FIGURE 15. Water pressure drop ΔP_w = 1.7 FT H₂O

BEAM LENGTH = 47.2"

NOZZLE (mm)	q_{AIR} CFM	P_{TOT} (BTU/HR) FOR Δt (°F)			P_{HEAT} (BTU/HR) FOR t (°F)			L_{P10A} dB
		10.8°F	14.4°F	18°F	10.8°F	14.4°F	18°F	
6	13	549	730	914	396	969	659	<20
12	28	795	1,061	1,324	474	1,437	768	<20
18	42	1,010	1,348	1,686	519	1,757	863	<20
24	55	1,194	1,593	1,993	539	1,938	897	20
30	70	1,365	1,819	2,272	549	2,020	914	26
36	83	1,522	2,030	2,539	560	2,020	935	31

FIGURE 16. Water pressure drop ΔP_w = 1.8 FT H₂O

BEAM LENGTH = 55.1"

NOZZLE (mm)	q_{AIR} CFM	P_{TOT} (BTU/HR) FOR Δt (°F)			P_{HEAT} (BTU/HR) FOR t (°F)			L_{P10A} dB
		10.8°F	14.4°F	18°F	10.8°F	14.4°F	18°F	
6	15	635	846	1,058	450	601	747	<20
12	32	921	1,228	1,532	543	723	904	<20
18	49	1,170	1,559	1,948	597	795	996	<20
24	66	1,382	1,843	2,307	621	829	1,034	23
30	81	1,573	2,095	2,621	631	839	1,051	30
36	95	1,764	2,351	2,941	638	850	1,065	34

FIGURE 17. Water pressure drop ΔP_w = 1.9 FT H₂O

BEAM LENGTH = 55.1"

NOZZLE (mm)	q_{AIR} CFM	P_{TOT} (BTU/HR) FOR Δt (°F)			P_{HEAT} (BTU/HR) FOR t (°F)			L_{P10A} dB
		10.8°F	14.4°F	18°F	10.8°F	14.4°F	18°F	
6	19	747	996	1,245	519	693	863	<20
12	38	1,078	1,440	1,798	628	836	1,048	<20
18	57	1,368	1,822	2,279	686	914	1,143	<20
24	76	1,614	2,150	2,689	706	945	1,181	27
30	95	1,822	2,429	3,037	710	949	1,184	33
36	112	2,030	2,706	3,381	717	952	1,191	36

FIGURE 18. Water flow q_w = 0.8 GPM pressure drop ΔP_w = 2.0 FT H₂O

TECHNICAL SOUND DATA

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.

BEAM LENGTH = 39.4"

NOZZLE (mm)	CORRECTION K dB OCTAVE BAND, MIDDLE FREQUENCY, HZ							
	63	125	250	500	1,000	2,000	4,000	8,000
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

FIGURE 19

BEAM LENGTH = 47.2"

NOZZLE (mm)	CORRECTION K dB OCTAVE BAND, MIDDLE FREQUENCY, HZ							
	63	125	250	500	1,000	2,000	4,000	8,000
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

FIGURE 20

BEAM LENGTH = 55.1"

NOZZLE (mm)	CORRECTION K dB OCTAVE BAND, MIDDLE FREQUENCY, HZ							
	63	125	250	500	1,000	2,000	4,000	8,000
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

FIGURE 21

BEAM LENGTH = 63.1"

NOZZLE (mm)	CORRECTION K dB OCTAVE BAND, MIDDLE FREQUENCY, HZ							
	63	125	250	500	1,000	2,000	4,000	8,000
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

FIGURE 22

SOUND ATTENUATION

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

IQHA	SOUND ATTENUATION IN SUPPLY AIR DUCT OF THE BEAM ΔL , dB OCTAVE BAND, MIDDLE FREQUENCY, HZ							
	63	125	250	500	1,000	2,000	4,000	8,000
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

FIGURE 23

DIMENSIONS AND WEIGHTS

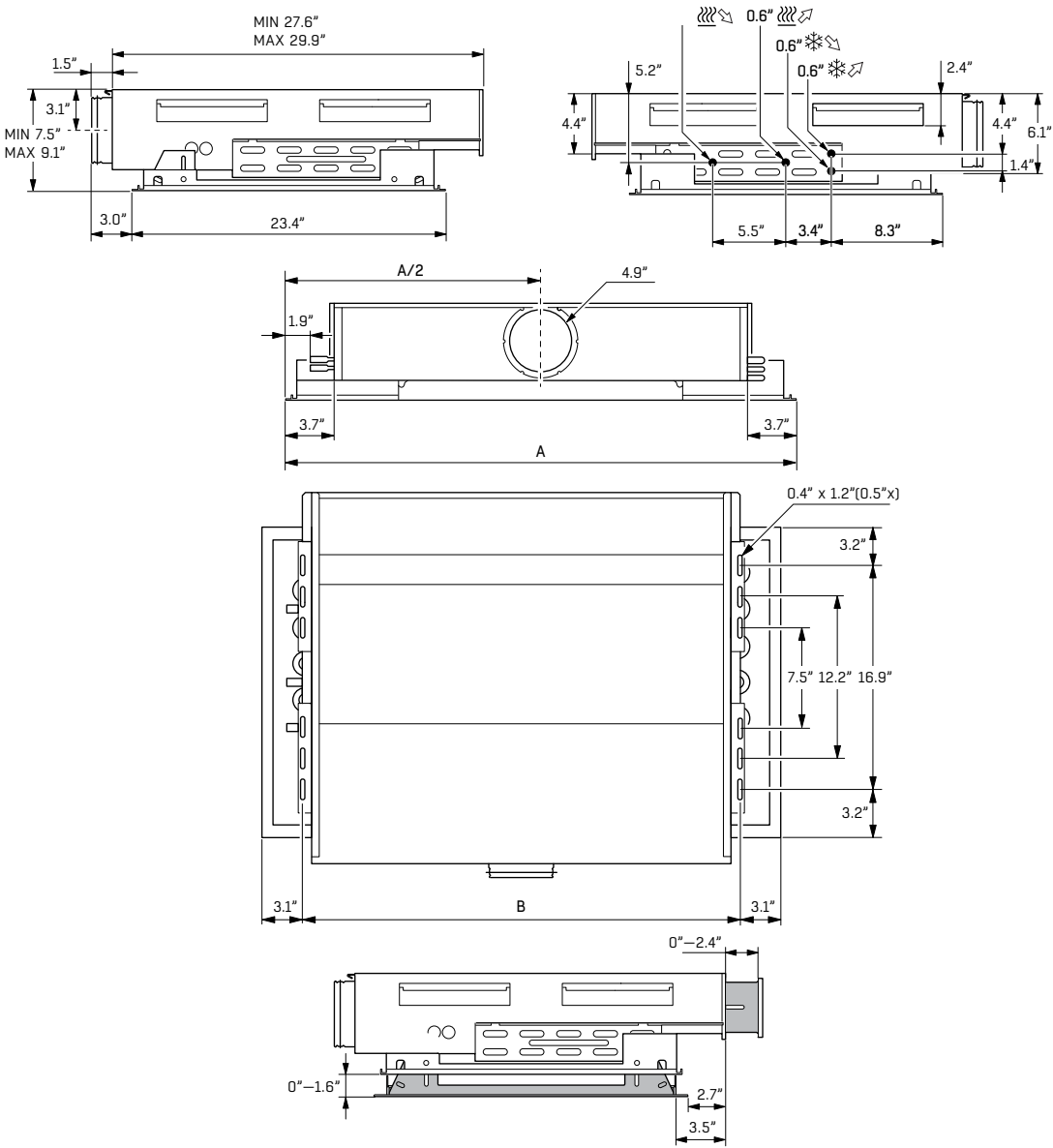
IQHA-aaa-b-cc-dd-1

LENGTH, AAA	39.4"	47.2"	55.1"	63.1"
A	39.1"	47.0"	54.9"	62.8"
B	33.1"	40.9"	48.7"	56.6"

FIGURE 24

AIR AND WATER CONNECTIONS ARE MALE

 = Cooling water in  = Heating water in
 = Cooling water out  = Heating water out



WATER CAPACITY

WATER VOLUME	COIL ROWS	WATER CONTENT PER LENGTH COIL (GALLONS)
COOLING	20	0.5
HEATING	2	0.1

FIGURE 25

WEIGHT

LENGTH, AAA	39.4"	47.2"	55.1"	63.1"
DRY, LB	51	60	68	77
WATER FILLED, LB	53	62	73	82

FIGURE 26

ACCESSORIES

INSTALLATION WITH SUSPENSION RODS

If there is a need to adjust the vertical installation height, suspension rods can be ordered.

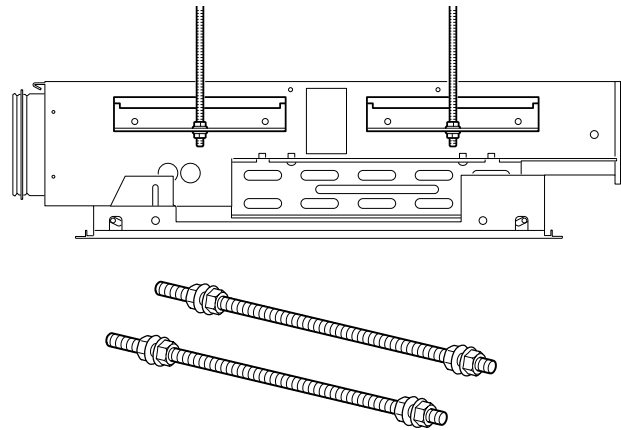


FIGURE 27. ORION II IQHA with suspension rods

FLEXIBLE HOSE KIT

Optional flexible hoses with threaded connections for easy installation are available, with valve or without.

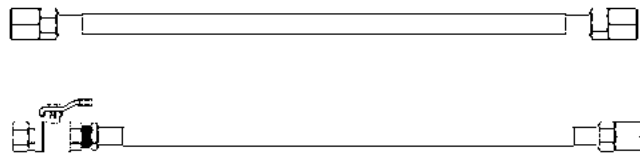


FIGURE 28. Flexible hose with thread-on connection.

FLEXIBLE HOSES, WITH BACK CONNECTION

The ORION II IQHA comes with factory mounted, internal flexible hoses. The hoses make for an easier installation, because they allow the installer to have both the duct and water connections on the same side. This is especially beneficial when installing in tight spaces.

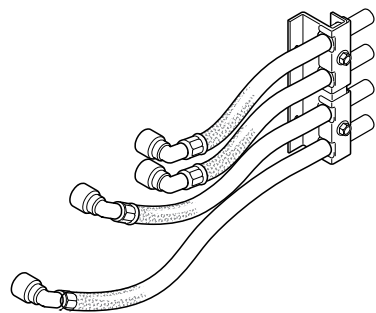


FIGURE 29. Flexible hoses with connection from the back

PURGING NIPPLE

The purging nipple is an optional accessory, that can be added in the selection tool.

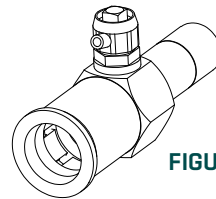


FIGURE 30. Purging nipple

CONDENSATION CONTROL

To be connected to the cooling water inlet

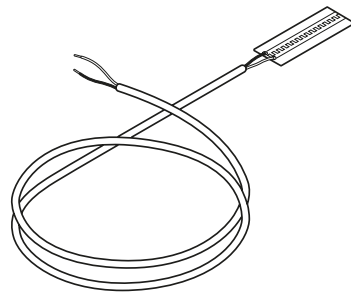


FIGURE 31. Condensate Sensor

PI ACTUATOR NOZZLE

This chilled beam can be ordered with pressure independent airflow control function which requires installation of a 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 dimensions of the chilled beam. It can be accessed for installation and maintenance through the front plate.

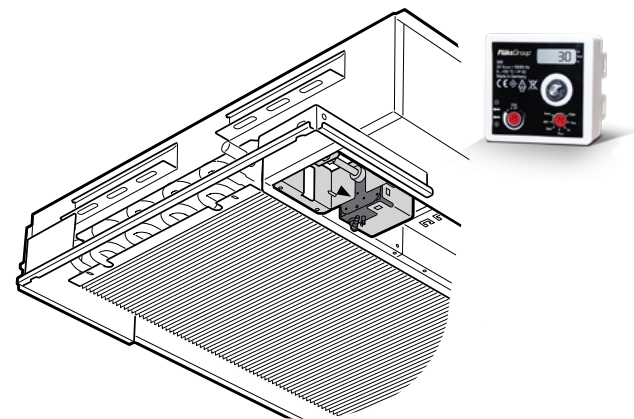


FIGURE 32. Pi actuator

ROOM CONTROLLER STRA-24

The STRA-24 is a pre-programmed room controller intended to control the temperature and, if the Pi® actuator is installed, the CO₂ level in rooms. It operates the control valves (by others) and the Pi® actuator. It is pre-programmed with communication and is intended for use in premises with high comfort and low energy demands.

The STRA-24 is able to optimize energy consumption in rooms depending on different parameters: occupancy, CO₂ level and timetable.

Different modes are offered: OFF, standby, occupied, and boost. For each mode different sequences between water and air are possible.



FIGURE 31. Room Controller

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

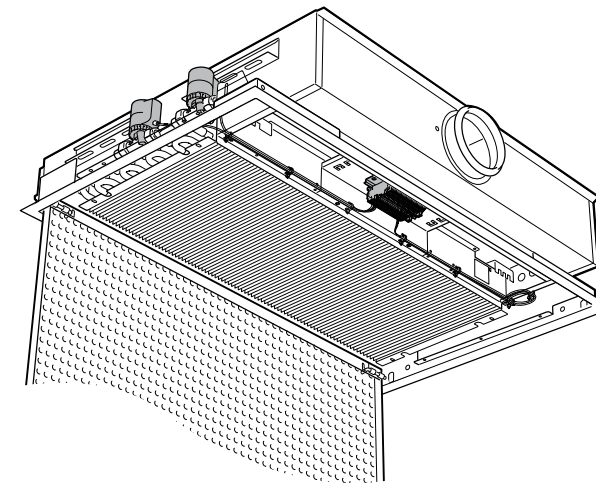


FIGURE 32. Installed STRA-24 room controller

INTEGRATED CONTROL

ORION II IQHA is available with an integrated control option, (modulating control valves by others) by ordering the STRZ-76 accessory. The room controller can be positioned in three different locations, depending on the desired level of accessibility.

All actuators are installed on the ORION II IQHA, before it leaves the factory. The condensate sensor and/or passive infrared presence detector (PIR) are factory wired to a terminal block, which is mounted behind the front plate of the unit. The PIR is mounted and integrated into the front plate. If a Pi actuator (IQAZ-35) is chosen, it will be wired to the terminal block as well.

All integrated controls offer Modbus® or BACnet® communication as standard.

From the room controller, it is possible to make the commissioning, increase and decrease temperature and display main information. For more information regarding this product and related accessories, please see the STRA-24 technical guide and STRA accessories guide.

FOLLOWER

For parallel control, the STRA-24 room controller of the leader beam can be connected to the terminal block of other ORION II IQHA chilled beams within a zone. This allows all of the beams to have the same settings.

For more information on installation please see the ORION II IQHA installation and owner's manual.

PRODUCT CODES

Production code induction unit

Length [aaa] cm _____
100 (39.4"), 120 (47.2"), 140 (55.1"), 160 (63.1")

Connection Alternative (b) _____
1 = 4.9" diameter

Coil Construction (cc)

01 = Cooling left
02 = Cooling right
03 = Cooling/heating left
04 = Cooling/heating right

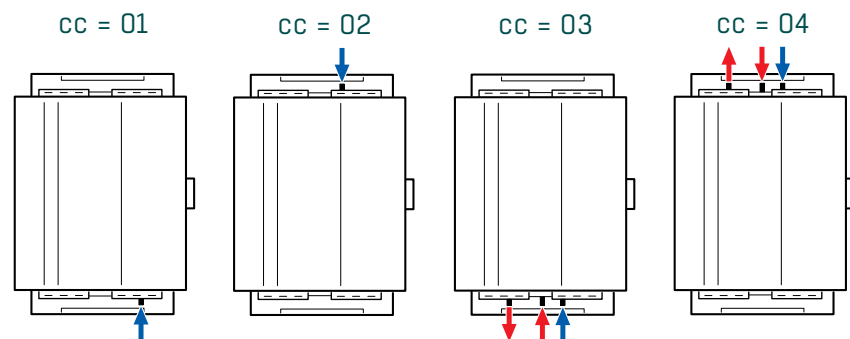


FIGURE 33. Interpreting the product code

Grille (dd)

00 = Without
01 = No adjustment
02 = Adjustable horizontal blades
03 = Adjustable horizontal/vertical blades

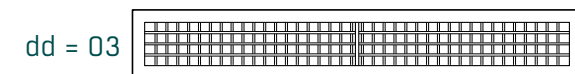
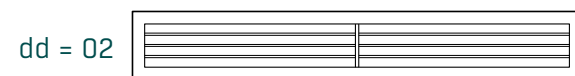


FIGURE 34. Grille configurations

IQHA-aaa-b-cc-dd-1

ACCESSORY CODES

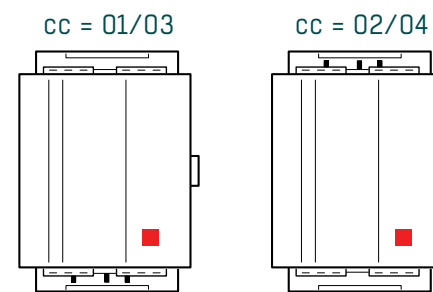
Pi® function actuator
(with Modbus communication)

IQAZ-35-bb-c-1-e

Beam type (bb) _____
05 = ORION II IQHA

Cable Execution (c) _____
1 = Cable 1m (39.4") without contact

Installation (e) _____
1 = Installed on chilled beam, see FIGURE 35
2 = Supplied loose



■ IQAZ-35

FIGURE 35. IQAZ-35 location

Pre-set Pi® actuator

IQAZ-36-bbb-cccccc

K100% (bbb) preset from factory

BEAM SIZE (aaa)	K100% (bbb)
100 (39.4")	370
120 (47.2")	480
140 (55.1")	570
160 (63.1")	680

Airflow V_0 , V_{MIN} , V_{MAX} in l/s (cccccc)*

cc ---- = V_0

--CC-- = V_{MIN}

----CC = V_{MAX}

*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

$$cc \text{ (L/S)} = 0.47 \times q \text{ (CFM)}$$

Integrated controls

STRZ-76-bb-cc-1-ee

Placement of controller (bb)

00 = Without room controller (follower)
01 = Supplied separately

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

00 = Without sensor, valve by others
01 = Cooling only, valve by others
05 = Cooling and heating, valves by others
12 = Cooling only, valve by others and condensate sensor
16 = Cooling and heating, valves by others and condensate sensor

NOTE: Valves provided by contractor MUST BE of 24V NC type

ORION II IQHA (ee)

08 = iQ STAR ORION II (IQHA)

Suspension rods M8

QFAZ-12

Set with two pieces. Length 19.7," two sets per beam

Flexible hose, supplied loose

IQCB-HK-D

24" hose with 1/2" NPT female one end G 1/2" other end

Flexible hose, supplied loose

IQCB-HK-E

24" hose with 1/2" NPT female one end G 1/2" other end and shut off valve

Flexible 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 = Comes factory installed

Purging nipple

IQAZ-32-bb-0

Connection diameter mm (bb)

15 = Ø15

Condensation sensor

STRZ-16-1-cc

Installation (cc)

00 = Supplied separately
06 = Comes factory installed

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FläktGroup® SEMCO®

Corporate Headquarters
1800 East Pointe Drive
Columbia, Missouri 65201 USA

573.443.1481

sales.semco@flaktgroup.com

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