Chilled beam iQ Star WEGA II

Key features

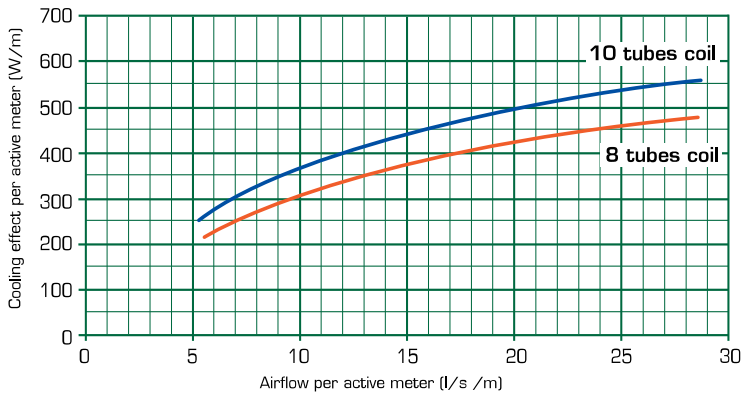
- Ventilation
- Water Heating and cooling
- Adjustable induction
- Flow Pattern Control
- In option: Demand Controlled Ventilation, Pressure independent, Electrical heating, X-Flow and Controls

The WEGA II chilled beam is an active chilled beam system for ventilation, cooling and heating. This diffusion system offers comfort and flexibility thanks to the Flow Pattern Control combined with adjustable induction.

The Pi advanced function gives 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.

WEGA II with Pi function is pressure independent and makes the system suitable for many duct work system types.

Quick Selection



The diagram shows the total cooling effect per active metre at a total pressure of 70 Pa, water flow q_w=0.05 l/s , temperature difference between room air and supply air Δt=8 °C and temperature difference between mean water temperature and room temperature Δt=8 °C.

Specifications

- An active chilled beam for flush mounting installation
- Ensures comfort with low temperature gradient and no draught - FPC + EC
- Gives flexibility to the diffusion enabling lay out modification - FPC + EC
- Has in option a Demand Controlled Ventilation function, available as retrofit, independent from system pressure - Pi
- Has in option X-Flow function that supplies a wide airflow range suitable for conference rooms
- Includes fastening brackets for rapid and simple installation

Product code example

Covered chilled beam
IQII-180-11-1-01-01, standard.

Specifications are subject of alteration without further notice.

Construction and functions

Construction

This chilled beam is available in 120 cm, 180 cm, 240 cm and 300 cm standard lengths, is 60 cm wide for integration into T-24 suspended ceiling system with options available for integration into other ceiling systems [1].

Height options are the standard 250 mm height, intermediate 190 mm height and 152 mm low-build option. Standard and intermediate height versions have Ø125 mm spigot connections. Spigot connections in standard height versions can be placed on gable ends or mid plenum position. Low-build versions have Ø100 mm spigot connections. Spigot connections in intermediate height and low-build versions are only available at gable ends.

Material and surface finish

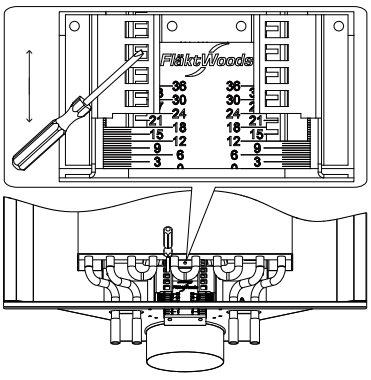
The chilled beam casing is mainly made of galvanized steel sheet. The front plate is powder coated standard RAL 9010 white, 30% gloss which corresponds to NCS 0502-Y. Heat exchanger coil made of aluminium fins mechanically bonded to copper pipes with $Ø_{out}$15 mm end connections and 1.6 MPa maximum working pressure.

Functions

This chilled beam is designed for flexibility with a number of features optional to the basic standard model. Electric heating, Pi Function, Flow Pattern Control (FPC air deflector), control and regulation equipment are the additional features available.

Energy Control (Standard)

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



[1] Nominal values. For exact dimensions, see Section **Dimensions** , page 10.

Pi Function (Option)

For Demand Controlled Ventilation operation, the Pi Function accessory must be mounted on the chilled beam. Thanks to this function, an actuator will then change automatically the nozzle position in order to change primary airflow.

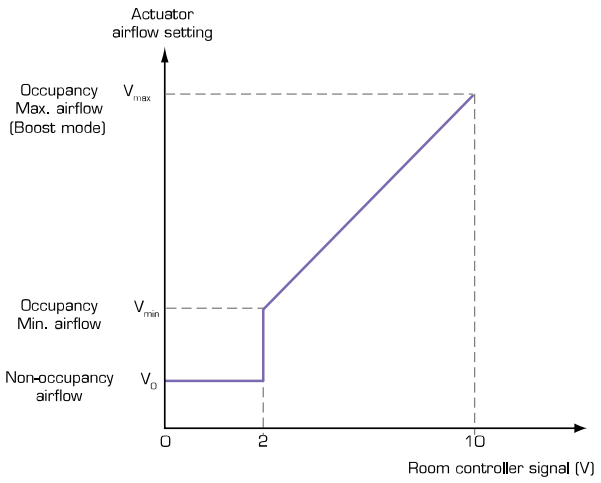
The chilled beam system will be able to follow different operation sequences depending on the controller chosen. It is possible to set different airflows according to occupancy level or to manage air quality thanks to a CO_2 sensor connected to the controller. Three parameters can be set in the actuator : V_0 for non-occupancy, V_{min} for standard occupancy and V_{max} (boost) for high occupancy level.

Combined with the STRA-24 room controller, different modes are offered : OFF, Standby, unoccupied, occupied and boost. For each modes, different sequences between water and air are possible: cooling without free cooling, cooling with free cooling and airflow depending on CO_2.

The Pi function keeps airflow at set point 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.

Note when using Pi Function, induction is always symmetrical and a room controller is required to operate Pi Function with link to occupancy sensor. Duct pressure has to be maintained between 40 and 140 Pa.

Figure 1: Pi Function actuator



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 whilst in heating mode. This is achieved by increasing the airflow when the demand for heating grows along with the level of occupancy inside the room. When there is an demand for more heating the airflow is increased causing it 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 STRA-24 (parameter 49).

CAUTION! If 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 fully open position or removed.

Flow Pattern Control (FPC)

The FPC (Flow Pattern Control) function provides high flexibility. The combination of Flow Pattern Control (FPC) and the patented Comfort Control gives unique characteristics to this chilled beam.

Fläkt Woods FPC air deflector enables easy adjustment of the air direction simply by repositioning the plastic blades as shown in illustration below.

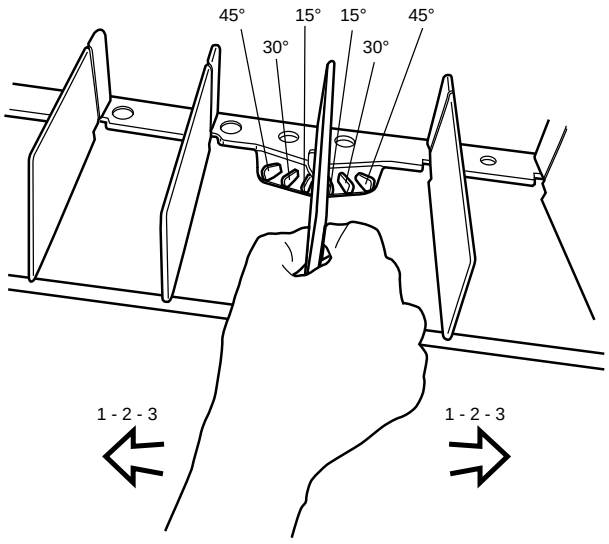
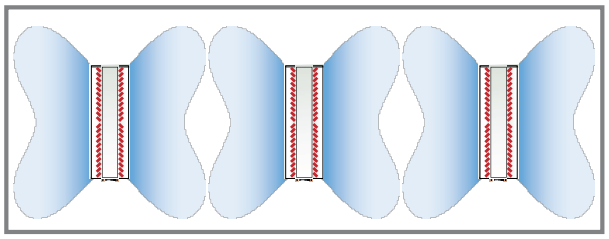
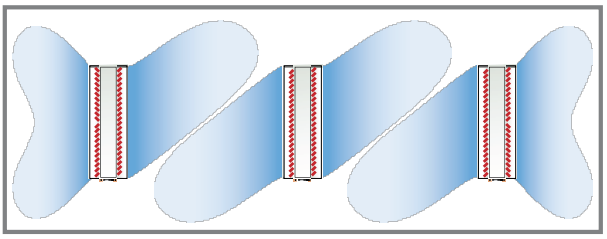


Illustration below shows FPC blades set at opposing 30° angle settings and with comfort control in symmetrical setting.



For high airflow applications as illustrated below, comfort control is in symmetrical setting, while FPC blades set at 30° angle settings on opposing units to avoid colliding air streams.



X-Flow

X-flow version of WEGA II is a chilled beam which can supply a very wide range of air flow suitable for conference rooms. A three meter WEGA II (IQII-300) with X-flow can supply up to 100 l/s which make it possible to use it without any extra supply air device for conference rooms for up to 12 persons. Together with Pi-actuator, the chilled beam becomes an energy efficient VAV-solution where airflow level can be adapted based on demand from 0-100 l/s independent from duct pressure and always with good comfort.

X-flow version of WEGA II has same design seen from below as standard version of WEGA II and it is optimized to give low sound level and high air volume. Thanks to its wide range of air flow, it is a flexible solution for conference rooms which can be combined with standard version of WEGA II for e.g. office rooms.

WEGA II with X-Flow	Airflow (l/s)	Pressure (Pa)	Sound Lp(A)10
IQII-240	75	70	35
IQII-300	97	70	36

Instructions

For installation, maintenance and commissioning instructions, please refer to specific manuals available on the Internet at www.flaktwoods.com.

Specifications are subject of alteration without further notice.

Technical Data for cooling effect

Two-way chilled beam 10 rows (2-pipe system) at pressure drop 70 Pa on the air side Ø125 mm.

Beam length=1.20 m (Coil length=1.04 m)

Table 1: Water flow, q_w=0.05 l/s, Pressure drop, Δp_w=3.7 kPa

Nozzle opening	q_{air}	P_{tot}, W			P_{coil}, W			L_{A10}
mm	l/s	Δt, °C			Δt, °C			dB(A)
		6	8	10	6	8	10	
06	5.5	246	310	374	193	257	321	<20
12	10.4	374	466	557	275	366	458	<20
18	15.0	475	585	695	331	441	551	<20
24	19.6	556	679	802	368	491	614	<20
30	24.0	626	758	890	396	528	660	<20
36	28.5	687	825	962	413	551	689	21

Beam length=1.80 m (Coil length=1.64 m)

Table 2: Water flow, q_w=0.05 l/s, Pressure drop, Δp_w=4.5 kPa

Nozzle opening	q_{air}	P_{tot}, W			P_{coil}, W			L_{A10}
mm	l/s	Δt, °C			Δt, °C			dB(A)
		6	8	10	6	8	10	
06	9.0	390	491	593	304	405	506	<20
12	16.4	589	732	876	431	575	719	<20
18	23.5	738	909	1079	512	683	854	<20
24	30.5	863	1053	1243	570	760	950	<20
30	37.5	973	1177	1381	613	817	1021	25
36	43.6	1055	1267	1479	636	848	1060	29

Beam length=2.40 m (Coil length=2.24 m)

Table 3: Water flow, q_w=0.05 l/s, Pressure drop, Δp_w=6 kPa

Nozzle opening	q_{air}	P_{tot}, W			P_{coil}, W			L_{A10}
mm	l/s	Δt, °C			Δt, °C			dB(A)
		6	8	10	6	8	10	
06	10.7	510	646	781	407	543	679	<20
12	21.0	789	985	1180	587	783	979	<20
18	30.4	986	1218	1449	695	926	1158	<20
24	39.9	1146	1400	1654	763	1017	1271	20
30	49.0	1283	1553	1824	812	1083	1354	25
36	57.0	1392	1674	1956	845	1127	1409	29

Beam length=2.40 m (Coil length=2.24 m) (Parallel flow coil - 2 circuits)

Table 4: Water flow, q_w=0.1 l/s, Pressure drop, Δp_w=4.5 kPa

Nozzle opening	q_{air}	P_{tot}, W			P_{coil}, W			L_{A10}
mm	l/s	Δt, °C			Δt, °C			dB(A)
		6	8	10	6	8	10	
06	10.7	472	595	718	369	492	615	<20
12	21.0	745	927	1108	544	725	906	<20
18	30.4	938	1153	1368	646	861	1076	<20
24	39.9	1097	1335	1573	714	952	1190	20
30	49.0	1231	1484	1738	761	1014	1268	25
36	57.0	1342	1607	1872	795	1060	1325	29

Beam length=3 m (Coil length=2.84 m)

Table 5: Water flow, q_w=0.05 l/s, Pressure drop, Δp_w=7.3 kPa

Nozzle opening	q_{air}	P_{tot}, W			P_{coil}, W			L_{A10}
mm	l/s	Δt, °C			Δt, °C			dB(A)
		6	8	10	6	8	10	
06	14.2	660	834	1009	524	698	873	<20
12	26.3	984	1227	1471	731	975	1219	<20
18	38.2	1239	1530	1820	872	1163	1454	<20
24	49.8	1426	1742	2058	948	1264	1580	24
30	60.4	1576	1908	2240	996	1328	1660	30
36	69.4	1685	2025	2365	1019	1359	1699	36

Beam length=3 m (Coil length=2.84 m) (Parallel flow coil - 2 circuits)

Table 6: Water flow, q_w=0.1 l/s, Pressure drop, Δp_w=5.5 kPa

Nozzle opening	q_{air}	P_{tot}, W			P_{coil}, W			L_{A10}
mm	l/s	Δt, °C			Δt, °C			dB(A)
		6	8	10	6	8	10	
06	14.2	612	770	929	476	634	793	<20
12	26.3	933	1160	1387	681	908	1135	<20
18	38.2	1177	1448	1718	811	1081	1351	<20
24	49.8	1364	1659	1954	886	1181	1476	24
30	60.4	1510	1820	2130	930	1240	1550	30
36	69.4	1622	1940	2259	956	1274	1593	36

Two-way chilled beam 8 rows (2-pipe system) at pressure drop 70 Pa on the air side Ø125 mm.

Beam length=1.20 m (Coil length = 1.04 m)

Table 7: Water flow, q_w=0.05 l/s, Pressure drop, Δp_w=3.4 kPa

Nozzle opening	q_{air}	P_{tot}, W			P_{coil}, W			L_{A10}
mm	l/s	Δt, °C			Δt, °C			dB(A)
		6	8	10	6	8	10	
06	5.5	219	274	329	166	221	276	<20
12	10.4	335	413	491	235	313	391	<20
18	15.0	428	522	617	284	378	473	<20
24	19.6	504	609	714	316	421	526	<20
30	24.0	570	683	797	340	453	566	<20
36	28.5	628	746	864	354	472	590	21

Beam length=180 m (Coil length=1.64 m)

Table 8: Water flow, q_w=0.05 l/s, Pressure drop, Δp_w=4.5 kPa

Nozzle opening	q_{air}	P_{tot}, W			P_{coil}, W			L_{A10}
mm	l/s	Δt, °C			Δt, °C			dB(A)
		6	8	10	6	8	10	
06	9.0	346	432	519	260	346	433	<20
12	16.4	529	652	776	371	495	619	<20
18	23.5	669	817	964	443	591	739	<20
24	30.5	786	951	1115	494	658	823	<20
30	37.5	887	1062	1238	527	702	878	25
36	43.6	970	1154	1337	551	735	919	29

Specifications are subject of alteration without further notice.

Beam length=2.40 m (Coil length=2.24 m)

Table 9: Water flow, q_w=0.05 l/s, Pressure drop, Δp_w=5.5 kPa

Nozzle opening	q_{air}	P_{tot}, W			P_{coil}, W			L_{A10}
mm	l/s	Δt, °C			Δt, °C			dB(A)
		6	8	10	6	8	10	
06	10.7	452	569	685	350	466	583	<20
12	21.0	707	876	1044	506	674	843	<20
18	30.4	893	1093	1293	601	801	1001	<20
24	39.9	1045	1266	1487	662	883	1104	20
30	49.0	1170	1403	1637	700	933	1166	25
36	57.0	1275	1518	1761	728	971	1214	29

Beam length=2.40 m (Coil length=2.24 m) (Parallel flow coil - 2 circuits)

Table 10: Water flow, q_w=0.1 l/s, Pressure drop, Δp_w=3.9 kPa

Nozzle opening	q_{air}	P_{tot}, W			P_{coil}, W			L_{A10}
mm	l/s	Δt, °C			Δt, °C			dB(A)
		6	8	10	6	8	10	
06	10.7	460	580	699	358	477	596	<20
12	21.0	720	893	1065	518	691	864	<20
18	30.4	913	1120	1327	621	828	1035	<20
24	39.9	1068	1296	1524	685	913	1141	20
30	49.0	1188	1427	1667	718	957	1196	25
36	57.0	1294	1543	1792	747	996	1245	29

Beam length = 3 m (Coil length = 2.84 m)

Table 11: Water flow, q_w=0.05 l/s, Pressure drop, Δp_w=6.7 kPa

Nozzle opening	q_{air}	P_{tot}, W			P_{coil}, W			L_{A10}
mm	l/s	Δt, °C			Δt, °C			dB(A)
		6	8	10	6	8	10	
06	14.2	583	732	881	447	596	745	<20
12	26.3	885	1095	1306	632	843	1054	<20
18	38.2	1118	1369	1619	752	1002	1253	<20
24	49.8	1298	1571	1844	820	1093	1366	24
30	60.4	1444	1732	2020	864	1152	1440	30
36	69.4	1552	1847	2142	886	1181	1476	36

Beam length=3 m (Coil length=2.84 m) (Parallel flow coil - 2 circuits)

Table 12: Water flow, q_w=0.1 l/s, Pressure drop, Δp_w=4.7 kPa

Nozzle opening	q_{air}	P_{tot}, W			P_{coil}, W			L_{A10}
mm	l/s	Δt, °C			Δt, °C			dB(A)
		6	8	10	6	8	10	
06	14.2	582	730	879	446	594	743	<20
12	26.3	897	1112	1327	645	860	1075	<20
18	38.2	1138	1396	1653	772	1029	1286	<20
24	49.8	1331	1615	1899	853	1137	1421	24
30	60.4	1463	1758	2052	884	1178	1473	30
36	69.4	1577	1881	2185	911	1215	1519	36

Two-way chilled beam 6 rows (2-pipe system) at pressure drop 70 Pa on the air side Ø125 mm.

Beam length=1.20 m (Coil length=1.04 m)

Table 13: Water flow, q_w=0.05 l/s, Pressure drop, Δp_w=2.6 kPa

Nozzle opening	q_{air}	P_{tot}, W			P_{coil}, W			L_{A10}
mm	l/s	Δt, °C			Δt, °C			dB(A)
		6	8	10	6	8	10	
06	5.5	205	256	307	152	203	254	<20
12	10.4	311	381	451	211	281	351	<20
18	15.0	394	477	560	250	333	416	<20
24	19.6	466	558	651	278	370	463	<20
30	24.0	524	622	720	294	392	490	<20
36	28.5	581	684	786	308	410	513	21

Beam length=180 m (Coil length=1.64 m)

Table 14: Water flow, q_w=0.05 l/s, Pressure drop, Δp_w=3.4 kPa

Nozzle opening	q_{air}	P_{tot}, W			P_{coil}, W			L_{A10}
mm	l/s	Δt, °C			Δt, °C			dB(A)
		6	8	10	6	8	10	
06	9.0	326	406	486	240	320	400	<20
12	16.4	485	594	704	328	437	546	<20
18	23.5	615	745	874	389	519	649	<20
24	30.5	726	870	1014	433	577	721	<20
30	37.5	815	966	1118	455	606	758	25
36	43.6	893	1051	1209	478	632	790	29

Beam length=2.40 m (Coil length=2.24 m)

Table 15: Water flow, q_w=0.05 l/s, Pressure drop, Δp_w=4 kPa

Nozzle opening	q_{air}	P_{tot}, W			P_{coil}, W			L_{A10}
mm	l/s	Δt, °C			Δt, °C			dB(A)
		6	8	10	6	8	10	
06	10.7	423	530	636	320	427	534	<20
12	21.0	652	802	952	450	600	750	<20
18	30.4	824	1002	1179	533	710	888	<20
24	39.9	963	1156	1349	580	773	966	20
30	49.0	1081	1284	1488	611	814	1018	25
36	57.0	1179	1389	1600	632	842	1053	29

Beam length=3 m (Coil length=2.84 m)

Table 16: Water flow, q_w=0.05 l/s, Pressure drop, Δp_w=5 kPa

Nozzle opening	q_{air}	P_{tot}, W			P_{coil}, W			L_{A10}
mm	l/s	Δt, °C			Δt, °C			dB(A)
		6	8	10	6	8	10	
06	14.2	547	683	820	410	547	684	<20
12	26.3	816	1004	1192	564	752	940	<20
18	38.2	1028	1249	1469	662	882	1103	<20
24	49.8	1200	1440	1681	722	962	1203	24
30	60.4	1331	1582	1832	752	1002	1253	30
36	69.4	1433	1688	1944	767	1022	1278	36

Specifications are subject of alteration without further notice.

Two-way chilled beam 8+2 rows (4-pipe system - Cooling/Heating) at pressure drop 70 Pa on the air side Ø125 mm.

Beam length=1.20 m (Coil length=1.04 m)

Table 17: Water flow, q_w=0.05 l/s, Pressure drop, Δp_w=3.4 kPa

Nozzle opening	q_{air}	P_{tot}, W			P_{coil}, W			L_{A10}
mm	l/s	Δt, °C			Δt, °C			dB(A)
		6	8	10	6	8	10	
06	5.5	234	295	355	182	242	303	<20
12	10.4	356	441	526	256	341	426	<20
18	15.0	452	554	657	308	410	513	<20
24	19.6	530	644	758	342	456	570	<20
30	24.0	596	717	839	365	487	609	<20
36	28.5	652	778	904	378	504	630	21

Beam length=180 m (Coil length=1.64 m)

Table 18: Water flow, q_w=0.05 l/s, Pressure drop, Δp_w=4.5 kPa

Nozzle opening	q_{air}	P_{tot}, W			P_{coil}, W			L_{A10}
mm	l/s	Δt, °C			Δt, °C			dB(A)
		6	8	10	6	8	10	
06	9.0	371	465	560	284	379	474	<20
12	16.4	561	695	830	404	538	673	<20
18	23.5	705	865	1024	479	639	799	<20
24	30.5	824	1001	1178	531	708	885	<20
30	37.5	923	1111	1299	563	751	939	25
36	43.6	1006	1202	1397	587	783	979	29

Beam length=2.40 m (Coil length=2.24 m)

Table 19: Water flow, q_w=0.05 l/s, Pressure drop, Δp_w=5.5 kPa

Nozzle opening	q_{air}	P_{tot}, W			P_{coil}, W			L_{A10}
mm	l/s	Δt, °C			Δt, °C			dB(A)
		6	8	10	6	8	10	
06	10.7	484	611	738	381	508	635	<20
12	21.0	754	938	1122	552	736	920	<20
18	30.4	944	1162	1379	653	870	1088	<20
24	39.9	1099	1338	1577	716	955	1194	20
30	49.0	1223	1474	1725	753	1004	1255	25
36	57.0	1327	1587	1847	780	1040	1300	29

Beam length=3 m (Coil length=2.84 m)

Table 20: Water flow, q_w=0.05 l/s, Pressure drop, Δp_w=6.7 kPa

Nozzle opening	q_{air}	P_{tot}, W			P_{coil}, W			L_{A10}
mm	l/s	Δt, °C			Δt, °C			dB(A)
		6	8	10	6	8	10	
06	14.2	628	792	956	492	656	820	<20
12	26.3	941	1170	1400	689	918	1148	<20
18	38.2	1180	1452	1723	814	1085	1356	<20
24	49.8	1362	1657	1952	884	1179	1474	24
30	60.4	1499	1806	2112	920	1226	1533	30
36	69.4	1613	1928	2244	947	1262	1578	36

Two-way chilled beam 6+2 rows (4-pipe system - Cooling/Heating) at pressure drop 70 Pa on the air side Ø125 mm.

Beam length=1.20 m (Coil length=1.04 m)

Table 21: Water flow, q_w=0.05 l/s, Pressure drop, Δp_w=2.6 kPa

Nozzle opening	q_{air}	P_{tot}, W			P_{coil}, W			L_{A10}
mm	l/s	Δt, °C			Δt, °C			dB(A)
		6	8	10	6	8	10	
06	5.5	205	256	307	152	203	254	<20
12	10.4	311	381	451	211	281	351	<20
18	15.0	394	477	560	250	333	416	<20
24	19.6	466	558	651	278	370	463	<20
30	24.0	524	622	720	294	392	490	<20
36	28.5	581	684	786	308	410	513	21

Beam length=180 m (Coil length=1.64 m)

Table 22: Water flow, q_w=0.05 l/s, Pressure drop, Δp_w=3.4 kPa

Nozzle opening	q_{air}	P_{tot}, W			P_{coil}, W			L_{A10}
mm	l/s	Δt, °C			Δt, °C			dB(A)
		6	8	10	6	8	10	
06	9.0	326	406	486	240	320	400	<20
12	16.4	485	594	704	328	437	546	<20
18	23.5	615	745	874	389	519	649	<20
24	30.5	726	870	1014	433	577	721	<20
30	37.5	815	966	1118	455	606	758	25
36	43.6	893	1051	1209	478	632	790	29

Beam length=2.40 m (Coil length=2.24 m)

Table 23: Water flow, q_w=0.05 l/s, Pressure drop, Δp_w=4 kPa

Nozzle opening	q_{air}	P_{tot}, W			P_{coil}, W			L_{A10}
mm	l/s	Δt, °C			Δt, °C			dB(A)
		6	8	10	6	8	10	
06	10.7	423	530	636	320	427	534	<20
12	21.1	652	802	952	450	600	750	<20
18	30.4	824	1002	1179	533	710	888	<20
24	39.9	963	1156	1349	580	773	966	20
30	49.0	1081	1284	1488	611	814	1018	25
36	57.0	1179	1389	1600	632	842	1053	29

Beam length=3 m (Coil length=2.84 m)

Table 24: Water flow, q_w=0.05 l/s, Pressure drop, Δp_w=5 kPa

Nozzle opening	q_{air}	P_{tot}, W			P_{coil}, W			L_{A10}
mm	l/s	Δt, °C			Δt, °C			dB(A)
		6	8	10	6	8	10	
06	14.2	547	683	820	410	547	684	<20
12	26.3	816	1004	1192	564	752	940	<20
18	38.2	1028	1249	1469	662	882	1103	<20
24	49.8	1200	1440	1681	722	962	1203	24
30	60.4	1331	1582	1832	752	1002	1253	30
36	69.4	1433	1688	1944	767	1022	1278	36

Specifications are subject of alteration without further notice.

Technical data for heating

Two-way chilled beam 8+2 rows (4-pipe system - Cooling/Heating) at pressure drop 70 Pa on the air side Ø125 mm.

Beam length=1.20 m (Coil length=1.04 m)

Table 25: Water flow, q_w=0.05 l/s, Pressure drop, Δp_w=2 kPa

Nozzle opening mm	q_{air} l/s	P_{coil}, W t, °C 10	15	20	L_{A10} dB(A)
06	5.5	132	198	264	<20
12	10.4	166	249	332	<20
18	15.0	187	280	373	<20
24	19.6	198	297	396	<20
30	24.0	203	305	407	<20
36	28.5	206	309	412	21

Beam length=180 m (Coil length=1.64 m)

Table 26: Water flow, q_w=0.05 l/s, Pressure drop, Δp_w=2.5 kPa

Nozzle opening mm	q_{air} l/s	P_{coil}, W t, °C 10	15	20	L_{A10} dB(A)
06	9.0	206	309	412	<20
12	16.4	261	391	521	<20
18	23.5	294	441	588	<20
24	30.5	309	464	619	<20
30	37.5	315	473	631	25
36	43.6	319	479	639	29

Beam length=2.40 m (Coil length=2.24 m)

Table 27: Water flow, q_w=0.05 l/s, Pressure drop, Δp_w=2.8 kPa

Nozzle opening mm	q_{air} l/s	P_{coil}, W t, °C 10	15	20	L_{A10} dB(A)
06	10.7	279	418	557	<20
12	21.0	356	534	712	<20
18	30.4	396	594	792	<20
24	39.9	417	626	835	20
30	49.0	424	636	848	25
36	57.0	360	540	720	29

Beam length=3 m (Coil length=2.84 m)

Table 28: Water flow, q_w=0.05 l/s, Pressure drop, Δp_w=3.5 kPa

Nozzle opening mm	q_{air} l/s	P_{coil}, W t, °C 10	15	20	L_{A10} dB(A)
06	14.2	357	536	715	<20
12	26.3	448	672	896	<20
18	38.2	500	750	1000	<20
24	49.8	525	787	1049	24
30	60.4	529	794	1059	30
36	69.4	531	797	1063	36

Two-way chilled beam 6+2 rows (4-pipe system - Cooling/Heating) at pressure drop 70 Pa on the air side Ø125 mm.

Beam length=1.20 m (Coil length=1.04 m)

Table 29: Water flow, q_w=0.05 l/s, Pressure drop, Δp_w=2 kPa

Nozzle opening mm	q_{air} l/s	P_{coil}, W t, °C 10	15	20	L_{A10} dB(A)
06	5.5	149	223	297	<20
12	10.4	190	285	380	<20
18	15.0	215	322	429	<20
24	19.6	229	343	457	<20
30	24.0	239	359	479	<20
36	28.5	249	373	497	21

Beam length=180 m (Coil length=1.64 m)

Table 30: Water flow, q_w=0.05 l/s, Pressure drop, Δp_w=2.5 kPa

Nozzle opening mm	q_{air} l/s	P_{coil}, W t, °C 10	15	20	L_{A10} dB(A)
06	9.0	234	351	468	<20
12	16.4	300	450	600	<20
18	23.5	337	505	673	<20
24	30.5	359	538	717	<20
30	37.5	371	557	743	25
36	43.6	389	583	777	29

Beam length=2.40 m (Coil length=2.24 m)

Table 31: Water flow, q_w=0.05 l/s, Pressure drop, Δp_w=2.8 kPa

Nozzle opening mm	q_{air} l/s	P_{coil}, W t, °C 10	15	20	L_{A10} dB(A)
06	10.7	317	475	633	<20
12	21.0	410	615	820	<20
18	30.4	457	685	913	<20
24	39.9	483	725	967	20
30	49.0	502	753	1004	25
36	57.0	526	789	1052	29

Beam length=3 m (Coil length=2.84 m)

Table 32: Water flow, q_w=0.05 l/s, Pressure drop, Δp_w=3.5 kPa

Nozzle opening mm	q_{air} l/s	P_{coil}, W t, °C 10	15	20	L_{A10} dB(A)
06	14.2	404	606	808	<20
12	26.3	513	769	1025	<20
18	38.2	576	864	1152	<20
24	49.8	605	908	1211	24
30	60.4	619	929	1239	30
36	69.4	645	968	1291	36

Specifications are subject of alteration without further notice.

Technical and sound data

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.
- Δt=8 °C between room temperature and mean water temperature.
- Δt=8 °C between room temperature and supply air temperature.

Performance for water flows other than 0.05 l/s can be found in the Fläkt Woods product selection tool, ExSelAir (exselair.flaktwoods.com).

The tables here are based on tests done according to the EN 15116 standard. The purpose of this standard 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 over dimensioning of the beam.

This means that the table value concerned can be increased by 10%. As such it is not uncommon for selections in ExSelAir to have 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
$P_{coil\ heat}$	Heating effect of the coil, W
Δt	Difference between room air temperature and average water temperature, °C
Δp_w	Pressure drop water, kPa
Δt_w	Δt_w (°C) = P_{coil} (W) / 208 (US imperial) - Δt_w(°F) = P_{coil} (BTU/h) / 81177
L_{A10}	Sound pressure level in a room with 10 m² room absorption, dB(A)

Sound power level

WEGA II	Correction K dB |Octave band, middle frequency, Hz							
	63	125	250	500	1000	2000	4000	8000
120	4	3	4	3	0	-8	-17	-18
180	4	3	4	3	0	-8	-17	-18
240	4	3	4	3	0	-8	-17	-18
300	4	3	4	3	0	-8	-17	-18
Tol ±	4	2	2	1	1	2	3	8

The sound power levels for every octave band are obtained by adding together the sound pressure level L_{A10} , dB(A), and the corrections K_{oct} given in the table above, according to the following formula:

$L_W = L_{A10} + K_{oct}$

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

Sound attenuation

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

WEGA II	Sound attenuation in supply air duct of the beam ΔL, dB |Octave band, middle frequency, Hz							
	63	125	250	500	1000	2000	4000	8000
120	26	17	16	20	19	19	24	20
180	26	17	16	20	19	19	24	20
240	26	17	16	20	19	19	24	20
300	26	17	16	20	19	19	24	20

Specifications are subject of alteration without further notice.

Technical data for unequal air diffusion

A chilled beam with two-way air distribution utilizes the coil in full capacity, which is not the case in one-way distribution or middle positions.

Table 33: Cooling capacity (W) for the coil with 10 rows at Δt=8 °C, Total pressure 70 Pa and water flow 0.05 l/s.

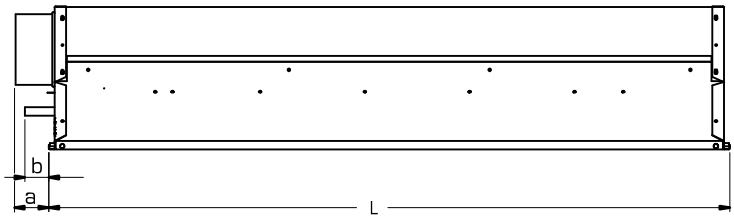
Beam length, cm	120		180		240		300	
Nozzle setting, mm	l/s	10 rows	l/s	10 rows	l/s	10 rows	l/s	10 rows
36 - 06	17.3	404	27.3	627	36.2	835	46.4	1029
36 - 12	19.7	573	31.0	889	41.4	1194	52.7	1459
30 - 06	14.9	393	23.9	611	31.3	813	40.2	1013
30 - 12	17.4	447	27.6	696	36.5	933	46.4	1152
24 - 06	12.6	374	20.1	583	26.0	780	33.5	981
24 - 12	15.1	536	23.8	834	31.3	1125	39.7	1399
18 - 06	10.3	349	16.4	544	20.9	735	26.9	931
18 - 12	12.7	404	20.1	629	26.1	855	33.1	1069

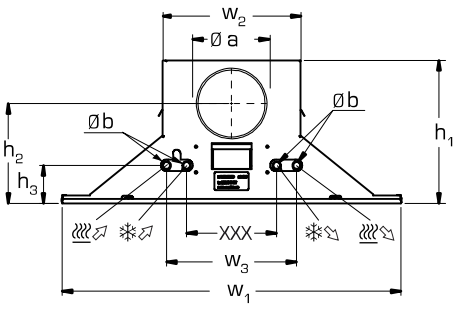
Specifications are subject of alteration without further notice.

Dimensions and weight

Dimensions

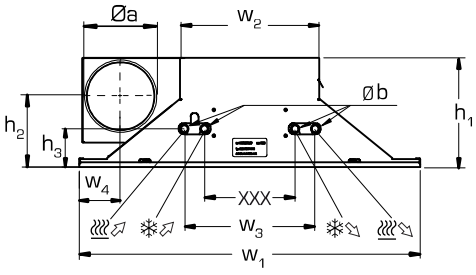
IQII-aaa-11/13-cc-dd-e





Øa	Øb	a	b	w_1	w_2	w_3	h_1	h_2	h_3
125	15	44	42	594	242	228	250	175	67

IQII-aaa-61/63-cc-dd-e



Øa	Øb	a	b	w_1	w_2	w_3	w_4	h_1	h_2	h_3
125	15	29	42	594	242	228	70	190	121	67

Air connection is female for bb=11, 13.

Air connection is male for bb=61, 63.

Water connections are male.

❄⇗ = Cooling water in

❄⇘ = Cooling water out

⇗ = Heating water in

⇘ = Heating water out

Length, aaa	120 cm	180 cm	240 cm	300 cm
L, mm	1194	1794	2394	2994

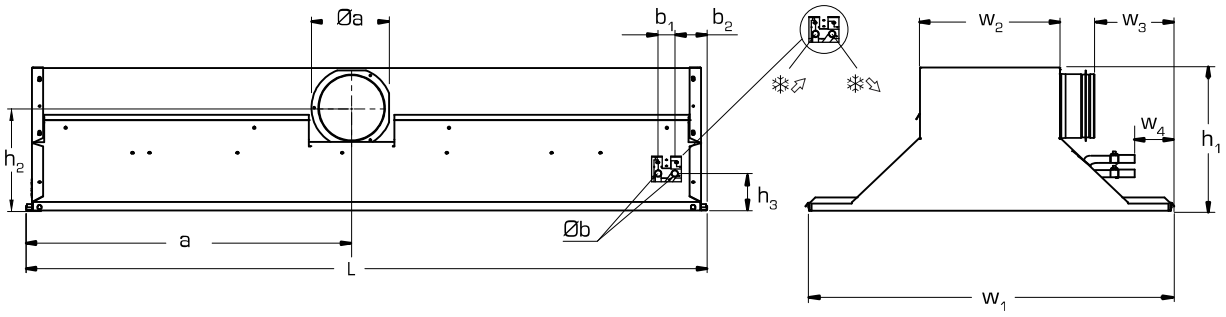
cc	Coil rows	xxx (mm)	cc	Coil rows	xxx (mm)
01, 02 03, 04 07, 08	6 8 10	228	05, 06 09, 10	6+2 8+2	158

Specifications are subject of alteration without further notice.

Dimensions and weight

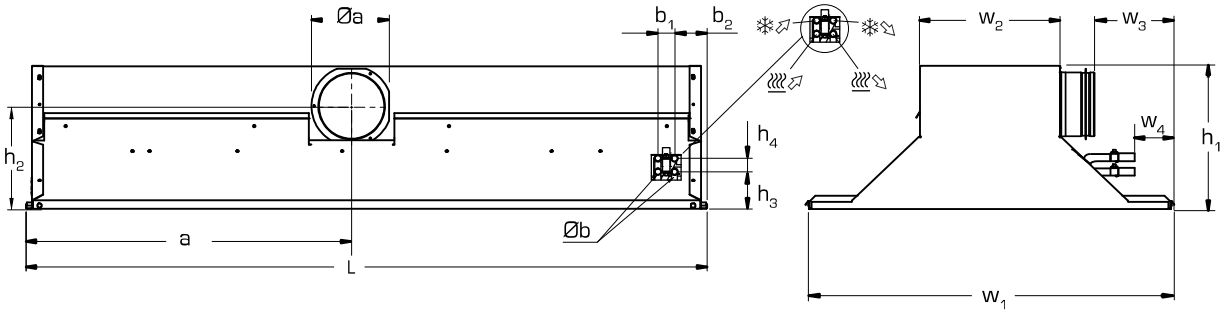
Dimensions

IQII-aaa-22/44-cc-dd-e (2-pipe system)



Øa	Øb	a	b_1	b_2	w_1	w_2	w_3	w_4	h_1	h_2	h_3
125	15	L/2	35	53	594	242	138	37	250	177	67

IQII-aaa-22/44-cc-dd-e (4-pipe system)



Øa	Øb	a	b_1	b_2	w_1	w_2	w_3	w_4	h_1	h_2	h_3	h_4
125	15	L/2	35	53	594	242	138	37	250	177	67	28

Length, aaa	120 cm	180 cm	240 cm	300 cm
L, mm	1194	1794	2394	2994

Air connection is male.

Water connections are male.

❄⇗ = Cooling water in

❄⇘ = Cooling water out

♨⇗ = Heating water in

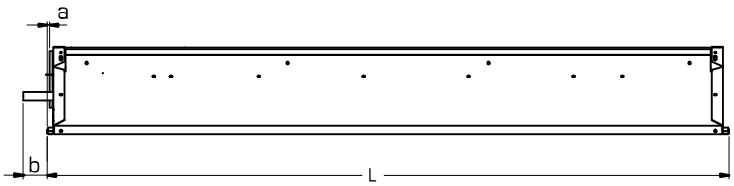
♨⇘ = Heating water out

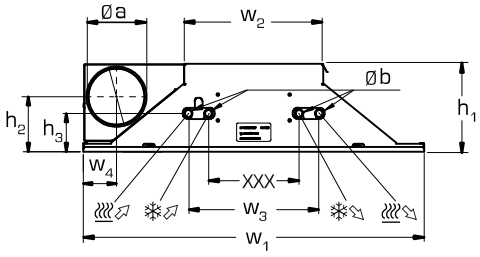
Specifications are subject of alteration without further notice.

Dimensions and weight

Dimensions

IQII-aaa-71/73-cc-dd-e





Øa	Øb	a	b	w_1	w_2	w_3	w_4	h_1	h_2	h_3
100	15	4	42	594	242	228	58	152	96	67

Length, aaa	120 cm	180 cm	240 cm	300 cm
L, mm	1194	1794	2394	2994

cc	Coil rows	xxx (mm)	cc	Coil rows	xxx (mm)
01, 02	6	228	05, 06	6+2	158
03, 04	8		09, 10	8+2	
07, 08	10				

Air connection is male.

Water connections are male.

❄⇗ = Cooling water in

❄⇘ = Cooling water out

♨⇗ = Heating water in

♨⇘ = Heating water out

Water content

Water volume Cooling/Heating	Coil rows	Water content per length coil l/m
Cooling	10 rows	0.63
Cooling	8 rows	0.50
Cooling	6 rows	0.38
Heating	2 rows	0.13

Weight

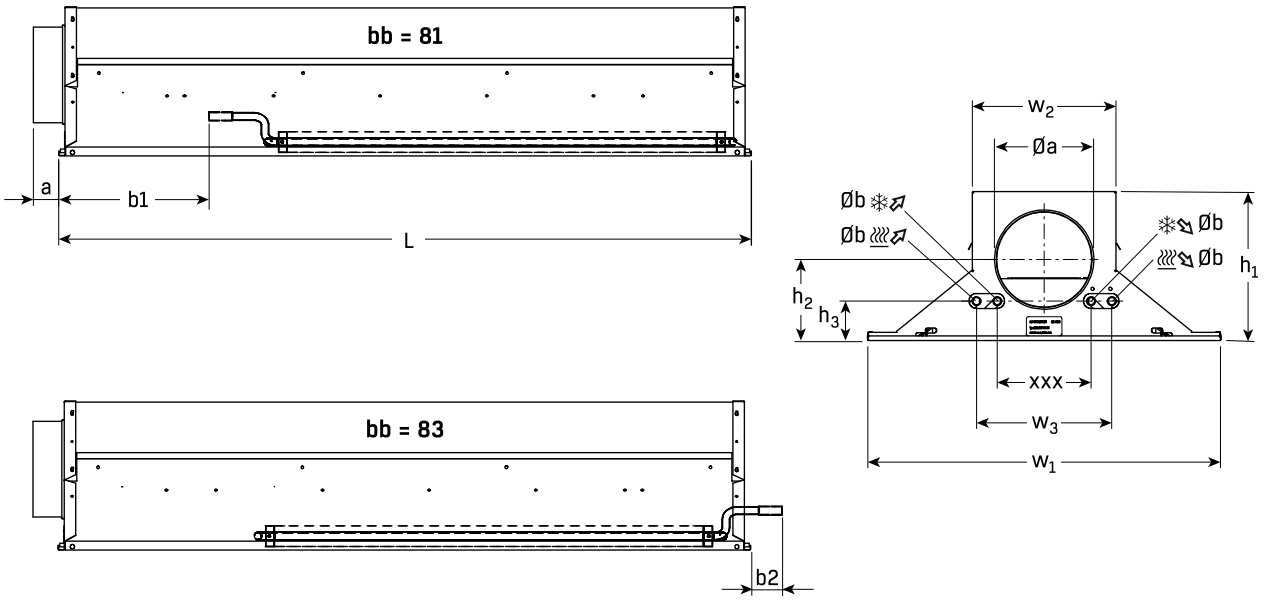
Length, aaa	120 cm	180 cm	240 cm	300 cm
Beam dry weight, kg	19	27	35	43
Beam water filled, kg	20	28	37	45

Specifications are subject of alteration without further notice.

Dimensions and weight

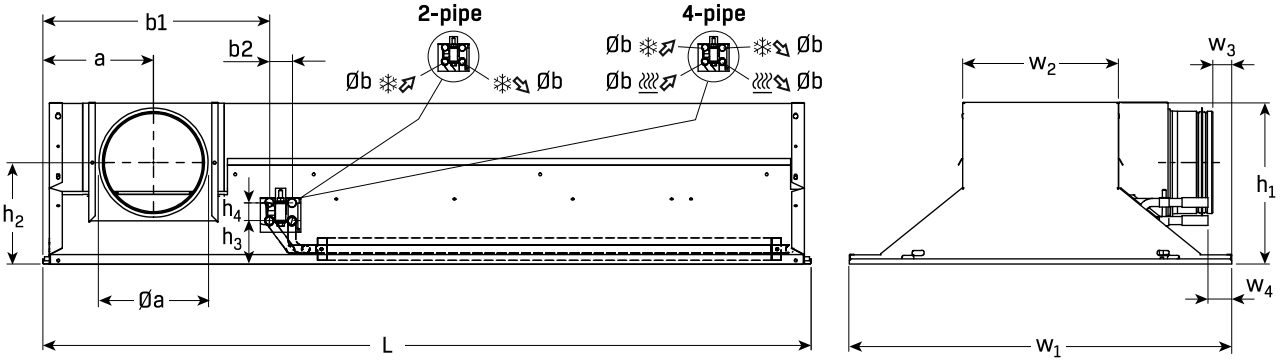
Dimensions

IQII-aaa-81/83-cc-dd-e



Øa	Øb	a	b_1	b_2	w_1	w_2	w_3	h_1	h_2	h_3
160	15	44	258	54	594	242	228	250	136.5	67

IQII-aaa-82/84-cc-dd-e



Øa	Øb	a	b_1	b_2	w_1	w_2	w_3	w_4	h_1	h_2	h_3	h_4
160	15	172	353	35	594	242	29	37	250	158	68	28

Air connection is female for bb=81, 83.

Air connection is male for bb=82, 84.

Water connections are male.

❄⇗ = Cooling water in

❄⇘ = Cooling water out

⇗ = Heating water in

⇘ = Heating water out

Length, aaa	120 cm	180 cm	240 cm	300 cm
L, mm	1194	1794	2394	2994

cc	Coil rows	xxx (mm)	cc	Coil rows	xxx (mm)
07, 08	10	228	09, 10	8+2	158

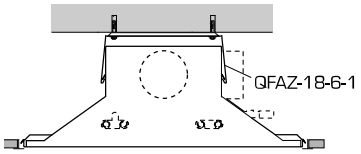
Specifications are subject of alteration without further notice.

Accessories

Installation with fastening bracket QFAZ-18

A suspension bracket facilitates the suspension of chilled beams from the ceiling. Two brackets are used for each beam. The brackets can be ordered in advance or along with the chilled beam. The suspension brackets can be fitted directly to the ceiling or onto channel support bars. The chilled beam is simply attached by pressing it against the bracket until it clicks into place. No tools are needed. After this, the chilled beam can be adjusted lengthwise by sliding the bracket along the beam's fastening points. To adjust it sideways, slide the threaded bars along the grooves in the bracket.

Figure 2: QFAZ-18



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

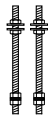
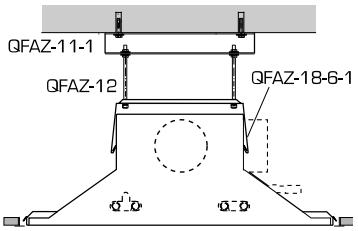


Figure 3: QFAZ-12



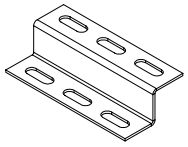
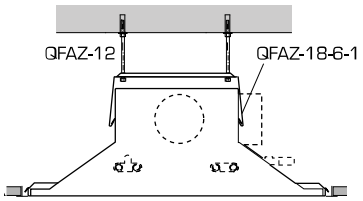


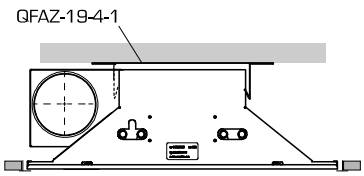
Figure 4: Suspension bracket QFAZ-11



Installation of the intermediate height version

To install intermediate height version in limited void spaces, QFAZ-19 can be ordered.

Figure 5: QFAZ-19-4-1



Installation of the low-build version

To install low height version in limited void spaces, QFAZ-19 or IQAZ-02 can be ordered.

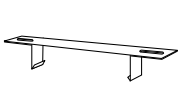
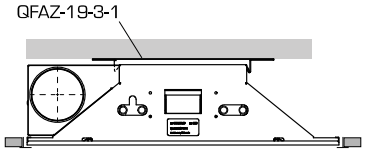


Figure 6: QFAZ-19-3-1



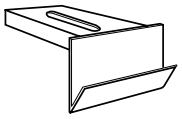
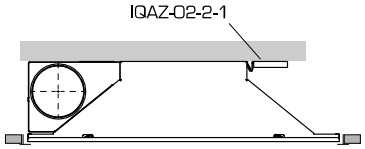


Figure 7: IQAZ-02-2-1



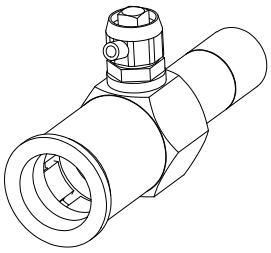
For more information regarding the installation procedures, please see the installation manual for this chilled beam.

Purging nipple

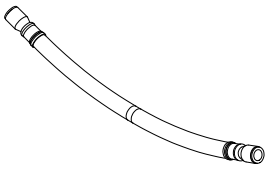
Purging nipple is available on demand and can be selected in product code.

Flexible hoses

Flexible hoses are available with push-on connection for easy installation.



Purging nipple



IQAZ-19 flexible hose with push-on connection.

Nozzle actuator for Pi Function

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

The actuator is always positioned on the same gabel as the water connection or the gabel nearest the water connections (bb=22, 44)

Specifications are subject of alteration without further notice.

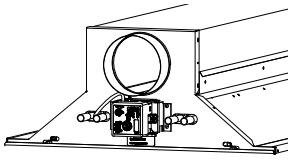
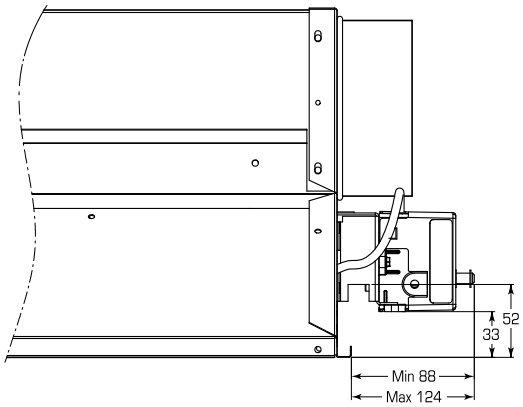


Figure 8: IQAZ-35



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

Extended Casing

This chilled beam is available with extended casing enabling access to the valves, VAV actuator and connections just by opening the front plate. Extended casing is available in 300 mm and 600 mm length. The extention is always located on the same gabel end as the water connection or the gabel nearest the water connections (bb=22, 44)

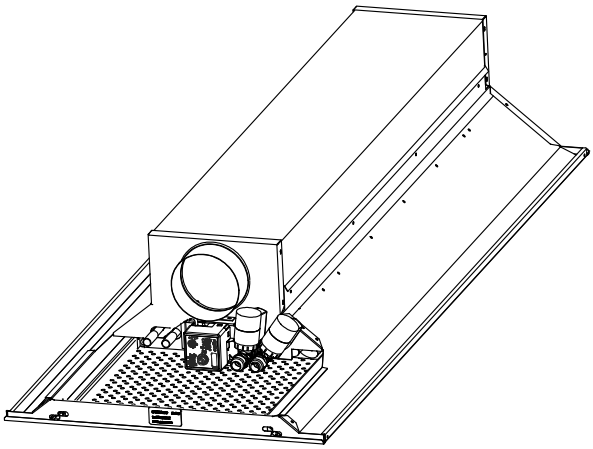


Figure 9: Extended casing

Extended Casing back cover

An unpainted back cover plate for the extended casing section is available as an accessory (IQAZ-17). It will be mounted above the faceplate within extended casing section and can be used as a hygienic barrier between room and void space, also serving to hide services and connections contained in this section.

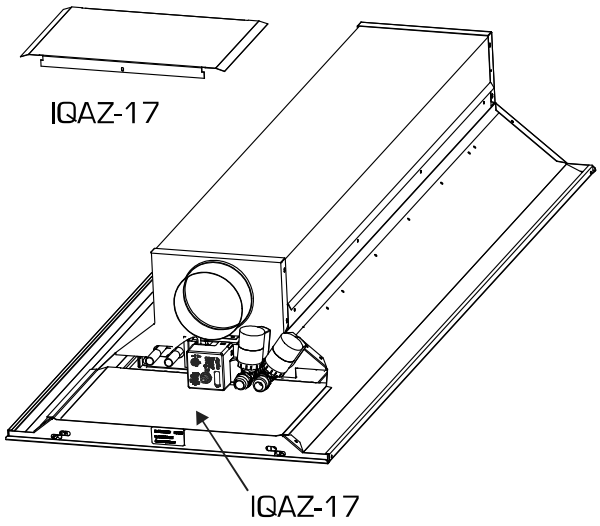


Figure 10: IQAZ-17 cross talk protection plate

Electrical heating

This chilled beam is available with 300 W electrical heating as an option comprising 2×150 W electrical heating films each measuring 950×135 mm.

The electrical heater works by providing local heating to the supply air within plenum chamber.

When electrical heater is used in the chilled beam, it heats the primary air which is mixed with the inducted room air and then delivered to the room. Air is heated and the mixing of the room air will decrease slightly compared with when you are mixing with cold air. The temperature difference between the floor and the ceiling will increase slightly.

Warning! Electrical heater must only operate when supply airflow is above 7 l/s.m (airflow per active m of chilled beam) or there is high risk of overheating of plenum chamber.

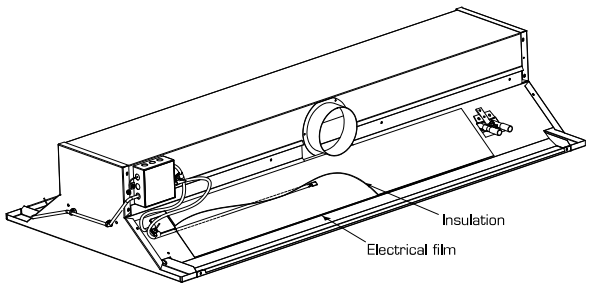


Figure 11: IQAZ-27 electrical film

For more information regarding the electrical heating, please see the both **Function - Electrical heating** technical and installation documents.

Room Controller STRA-24

STRA-24 is a pre-programmed room controller intended to control the temperature and the CO_2 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 is able to optimise energy consumption in rooms depending on different parameters: occupancy, CO_2 level, outside conditions (free cooling feature) and timetable.

Different modes are offered : OFF, Standby, occupied and boost. For each modes, different sequences between water and air are possible : cooling without free cooling, cooling with free cooling and airflow depending on CO_2.

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

Figure 12: STRA-24 Room Controller

Valves and actuators

To see full description and technical data for valve kit, please see the **STRA Accessories catalouge**.

Figure 13: STRZ-70

Integrated control

WEGA II is available with integrated control by ordering the accessory STRZ-76. The room controller can be positioned in three different locations depending on the desired level of accessibility.

Actuators and valves (STRZ-70-31-01-0-2) are fixed on WEGA II in factory. It is delivered with push–on connections. A very simple operation allows the installer to connect it with no risk of leakage. The valves, optional condensate sensor and optional PIR (presence detector) are factory wired to a terminal block which is mounted on the side of the unit. The PIR is mounted and integrated in the frontplate. If the Pi-actuator (IQAZ-35) is chosen it will also be wired to the terminal block. 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 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 catalogue and STRA Accessories catalouge**.

Mounted on side

The room controller is factory mounted on the side of WEGA II and wired. This configuration uses an external temperature sensor installed below the coil. Temperature and condensation (in option) sensor are factory wired.

Integrated in front plate

The room controller is factory mounted integrated in the front plate of WEGA II and wired. This configuration uses the temperature sensor built into the room controller. Condensation sensor (in option) is factory wired. With this option the beam need to be ordered with a 300mm extended casing (IQII-aaa-bb-cc-d-2).

Supplied loose

The room controller is supplied loose. On site the installer needs to connect the room controller to the terminal block placed on the side of WEGA II. This configuration uses the integrated temperature sensor in the room controller.

Condensation sensor (in option) is factory wired.

Specifications are subject of alteration without further notice.

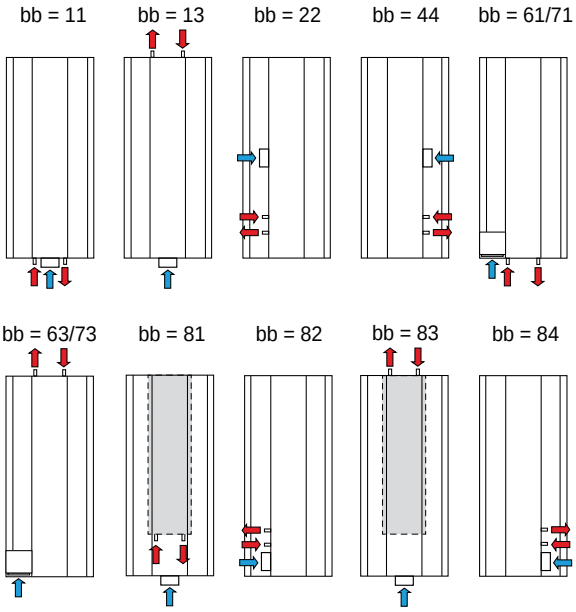
Product Code and Accessories

Product code

WEGA II chilled beam **IQII-aaa-bb-cc-d-e**

Length (aaa) cm
120, 180, 240, 300

Connection alternative (bb)
11 = Air/Water same gable. Height = 250 mm.
Air connection = Ø125 mm.
13 = Air/Water opposite gable. Height = 250 mm.
Air connection = Ø125 mm.
22 = Air/Water left side. Height = 250 mm.
Air connection = Ø125 mm.
44 = Air/Water right side. Height = 250 mm.
Air connection = Ø125 mm.
61 = Air/Water same gable. Height = 190 mm.
Air connection = Ø125 mm.
63 = Air/Water opposite gable. Height = 190 mm.
Air connection = Ø125 mm.
71 = Air/Water same gable. Height = 152 mm.
Air connection = Ø100 mm.
73 = Air/Water opposite gable. Height = 152 mm.
Air connection = Ø100 mm.
81 = X-Flow, Air/Water same gable. Height = 250 mm
Air connection = Ø160 mm
83 = X-Flow, Air/Water opposite gable. Height = 250 mm
Air connection = Ø160 mm
82 = X-Flow, Air/Water left side. Height = 250 mm
Air connection = Ø160 mm
84 = X-Flow, Air/Water right side. Height = 250 mm
Air connection = Ø160 mm



Coil construction (cc)
01 = Cooling 6 tubes (not for bb=22, 44, 81-84)
02 = Cooling 6 tubes with purging nipple (not for bb=bb=22, 44, 81-84)
03 = Cooling 8 tubes (not for bb=81-84)
04 = Cooling 8 tubes with purging nipple (not for bb=81-84)
05 = Cooling\Heating - 6\2 tubes (not for bb=81-84)
06 = Cooling\Heating - 6\2 tubes with purging nipple (not for bb=81-84)
07 = Cooling 10 tubes
08 = Cooling 10 tubes with purging nipple
09 = Cooling\Heating - 8\2 tubes
10 = Cooling\Heating - 8\2 tubes with purging nipple
Coil option for aaa=240 & 300
11 = Low pressure drop coil-Cooling 8 tubes (not for bb=22, 44, 81-84)
12 = Low pressure drop coil-Cooling 8 tubes with purging nipple (not for bb=22, 44, 81-84)
13 = Low pressure drop coil-Cooling 10 tubes (not for bb=22, 44, 82, 84 & 81, 83 when aaa=240)
14 = Low pressure drop coil-Cooling 10 tubes with purging nipple (not for bb=22, 44, 82, 84 & 81, 83 when aaa=240)

Comfort Control (d)
1 = Without FPC
2 = With FPC

False ceiling type (e)
1 = T24, 12 mm gables, width = 594 mm
2 = T24, 12 mm gables, width = 594 mm, extended casing 300 mm (not for bb=13, 63, 73, 83)
3 = T24, 12 mm gables, width = 594 mm, extended casing 600 mm (not for bb=13, 63, 73, 83)

Specifications are subject of alteration without further notice.

Accessory codes

Pi Function actuator
(With Modbus Communication)

IQAZ-35-01-c-1-e

Cable execution (c)
1 = Cabel 1m without contact
2 = Cabel 80mm with RJ45-contact (female) for use with IPSUM Connection unit and is not compatible in combination with STRZ-76[a)]

a) Please note that RJ45-contact has a extended delivery time

Installation (e)
1 = Installed on chilled beam
2 = Supplied loose

Pre-set Pi actuator

IQAZ-36-bbb-cccccc

k100% (bbb)

IQII height 250mm
354 = IQII-120
564 = IQII-180
752 = IQII-240
966 = IQII-300

IQII height 190mm
350 = IQII-120
540 = IQII-180
730 = IQII-240
940 = IQII-300

IQII height 152mm
328 = IQII-120
520 = IQII-180
680 = IQII-240
890 = IQII-300

IQII X-flow
958 = IQII-240
126[a)] = IQII-300

a) For values above 9.99 adjust decimal placement on the actuator to one decimal

Airflow V_0, V_{min}, V_{max}in l/s (cccccc) [a)]
cc---- = V_0
--cc-- = V_{min}
----cc = V_{max}

a) Ordering example below

Eg: IQAZ-36-354-020420
- k100% = 3.54
- V_0 = 2l/s
- V_{min} = 4l/s
- V_{max} = 20l/s

Integrated controls

STRZ-76-bb-cc-1-06

Only for IQII bb = 11, 13, 81

Placement of controller (bb)
00 = Without room controller (slave)
01 = Supplied loose
02 = Mounted on side
03 = Integrated in frontplate (only IQII-aaa-bb-cc-d-2)

Sensors and valve kit (valve and actuator) (cc)
01 = Cooling valvekit
02 = Cooling valvekit, condensate sensor
03 = Cooling valvekit, PIR
04 = Cooling valvekit, condensate sensor, PIR
05 = Cooling and heating valvekit
06 = Cooling and heating valvekit, condensate sensor
07 = Cooling and heating valvekit, PIR
08 = Cooling and heating valvekit, condensate sensor, PIR

Fastening brackets **QFAZ-18-6-1**
Set with 2 pieces, 1 set per beam

Suspension rods M8 **QFAZ-12**
Set with 2 pieces. Length 500 mm, 2 sets per beam

Suspension bracket **QFAZ-11-1**
Set with 2 pieces, 1 set per beam

Brackets, Set with 2 pieces, 1 set per beam **QFAZ-19-b-1**
b = 3, For low-build version, 152mm
b = 4, For intermediate height version, 190mm

Fastening brackets, For low-built version, **IQAZ-02-2-1**
Set with 4 pieces, 1 set per beam

Extended Casing back cover **IQAZ-17-bb-cc-d**

Execution (bb)
02 = Extended 600 mm
03 = Extended 300 mm

Beam type (cc)
05 = IQII cc=01-06, 11-12 (6, 6+2 & 8 tubes) [a)]
06 = IQII cc=07-10, 13-14 (8+2 & 10 tubes)

a) cc is related to the chilled beam product code. Please see Coil construction (cc) in Product code section.

Installation (d)
1 = Installed
2 = Supplied loose

Electrical heating, 300W **IQAZ-27-bbb-1-0-01**

Length (bbb) cm
Chilled beam length (IQII-aaa).

Flexible hose, supplied loose **IQAZ-19-550-010010**
Length = 550 mm
Push-on 15 mm connection

Bend 90°, supplied loose **BDEB-90-bbb**

Diameter (bbb)
010 = 100 mm
012 = 125 mm

Specifications are subject of alteration without further notice.

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, please contact your nearest **Fläkt Woods sales office.**

An order example for a room with 5 chilled beams. The beams are calculated as 240 cm length for required airflow and cooling capacity in product selection tool ExSelAir (http://exselair.flaktwoods.com).

Table 34: **Chilled beams**

Product codes	Description	Quantity
IQII-240-11-06-2-1	WEGA II chilled beam, water cooling and heating with purging nipple, with FPC, for T24 ceiling	5
QFAZ-18-6-1	Fastning bracket, set of 2 for installation	5

Table 35: **Option for Demand Controlled Ventilation**

Product codes	Description	Quantity
IQAZ-35-01-1-1-1	Pi Function, Nozzle actuator 1 piece per chilled beam	5

Table 36: **Controls**

Product codes [a]	Description	Quantity
STRA-24-00-0-00	Room Controller	1
STRZ-05-02	External temperature sensor	1
STRZ-16-1	Condensation sensor	1
STRZ-24-1	Transformer	1

a) For more information, please see the STRA-24 technical manual.

Table 37: **Controls options for Demand Controlled Ventilation**

Product codes [a]	Description	Quantity
STRZ-09-2	Occupancy detector (for single office application)	1
STRZ-18-1-2	CO_2 sensor (for meeting room)	1

a) For more information, please see the STRA-24 technical manual.

Table 38: **Valves, actuators and flexible hoses**

Product codes	Description	Quantity
STRZ-70-31-01-0-2 [a]	Valve + valve actuator	10
IQAZ-19-550-010010	Flexible hose push-on	10

a) For more information, please see the STRA-24 technical manual.

Table 39: **Integrated controls**

Product codes	Description	Quantity
IQII-240-11-03-2-2	WEGA II chilled beam, water cooling with FPC, for T24 ceiling with 300mm extended casing	1
STRZ-76-03-04-1-06	Integrated controls in frontplate, incl valvekit (valve and actuator), condensate sensor and PIR.	1

Specifications are subject of alteration without further notice.