MINIB®

more than just heat

INNOVATIVE ACTIVE CHILLED BEAM

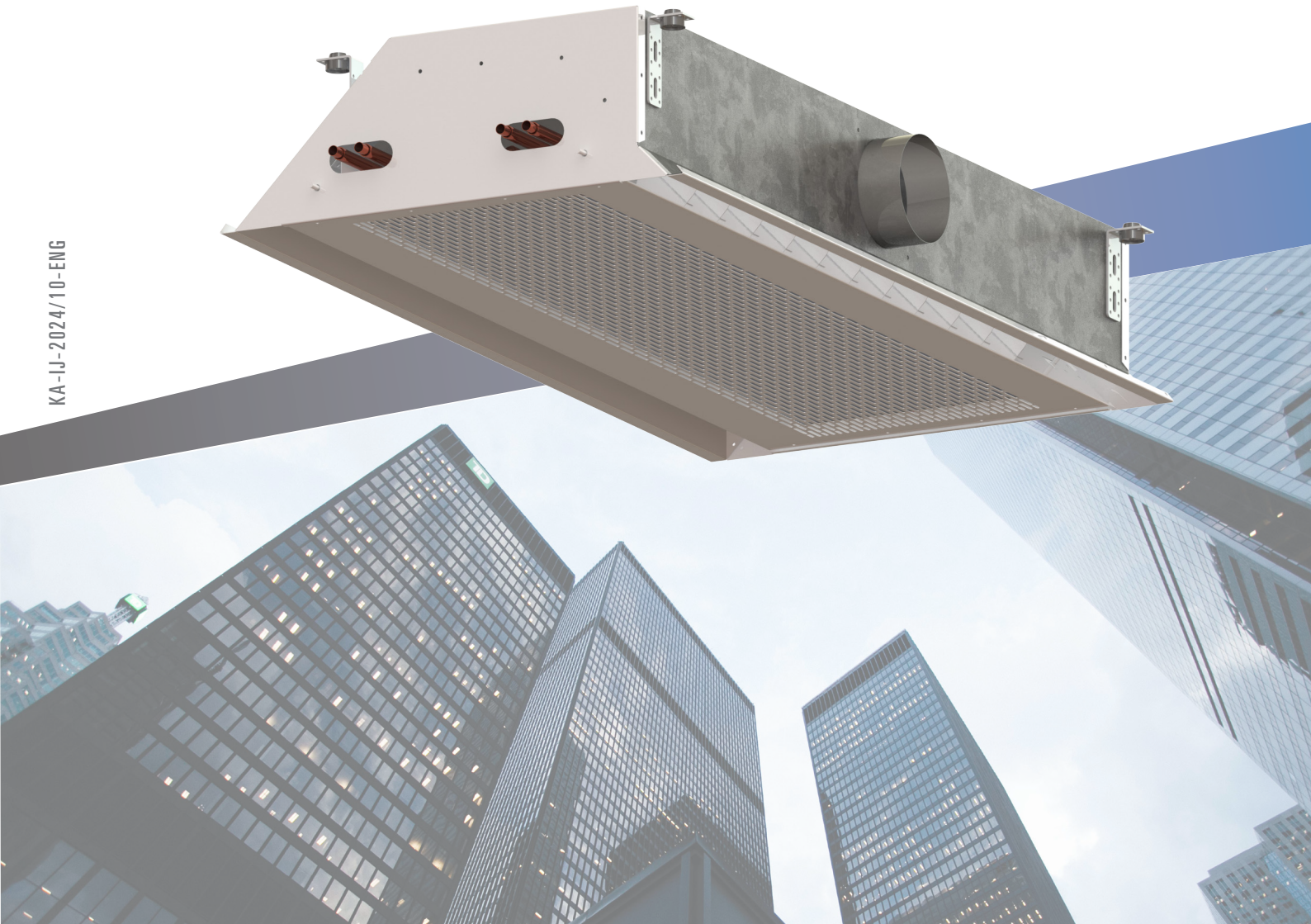
effective and efficient

COOLING, HEATING AND VENTILATION

minimal energy requirements

high output

low noise



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ABOUT US

ABOUT THE COMPANY

We are a leading European manufacturer of heating and cooling units, exporting to 50+ countries across Europe, Asia, and America. With 25+ years of experience, MINIB is a trusted industry partner.

Our product portfolio includes ultra-silent convectors, fan-coils, and chilled beams for heating, cooling, and ventilation.

Since 1999, MINIB has been systematically innovating production technology and its products, and it invests quite considerable amounts in its own development and design, with the goal of offering its customers advanced technical and aesthetic solutions.

MINIB is an economically stable company which has been consistently generating profit.

ABOUT THE MANUFACTURING PROCESS

The manufacturing facility is located in Býkev near Mělník, and has excellent road connections. It is equipped with state-of-the-art production technology, enabling us to meet even the most complex demands of discerning customers.

Thanks to in-house production and minimal reliance on external suppliers, we can carefully monitor the quality of individual components and respond flexibly to specific requirements.

All products are made only from high-quality materials with long life cycle, which allows us to offer ten-year warranty on the heat exchangers.

CERTIFICATION

Our company is a holder of a quality management certificate, ISO 9001:2016 for the field of design, development, manufacturing and sale of heating and cooling units. The entire product portfolio is tested in an independent accredited testing chamber, which allows us to guarantee the stated heating and cooling output values. Our company is also a holder of numerous utility models and patents.


CERTIFICATE

Certification Body Management System No. 3053
TÜV SÜD Czech s.r.o.
certifies that

MINIB, a.s.
Na okraji 335/42
CZ – 102 00 Praha 6, Veleslavín
Ident. No.: 25732153

has established and applies a Quality Management System for

development, design, production and sale of heating and cooling units

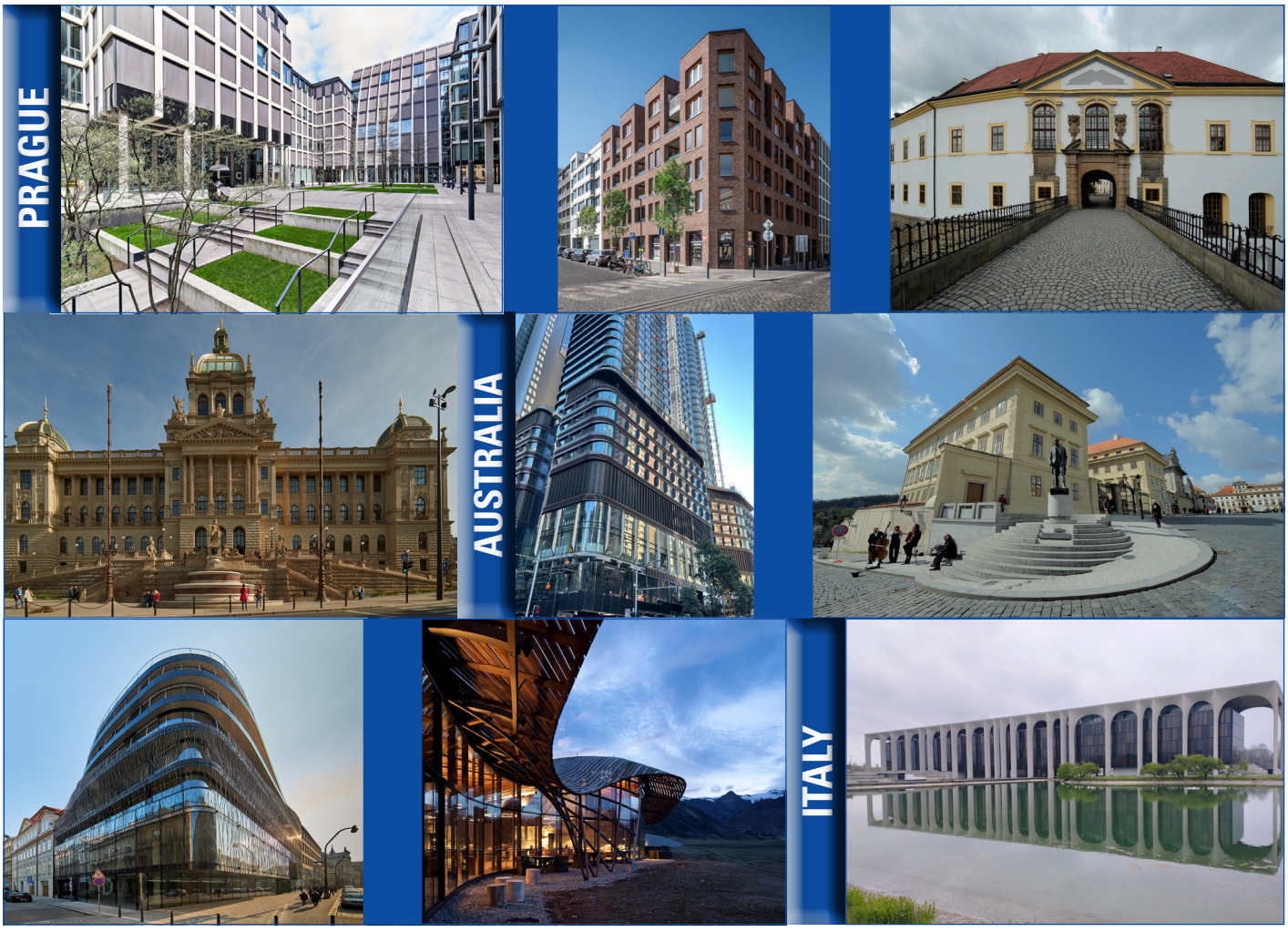
Proof has been furnished that the requirements according to

ISO 9001:2015

are fulfilled.

Certificate Registration No. 15.805.840

REFERENCES



CHILLED BEAM DESCRIPTION

BASIC INFORMATION

Chilled beams are modern devices based on a water to air system, which makes it possible to efficiently change the temperature of the air and to distribute it silently with minimal energy requirements.

A chilled beam does not contain a fan; it functions by way of entraining the primary air through nozzles, driven by the induced injection effect drawing the secondary air to the room. This principle is explained in more detail in the next chapter.

The primary air is centrally treated fresh air from outside, which is distributed by HVAC ducts to the Chilled beams installed in the ceilings of the rooms concerned.

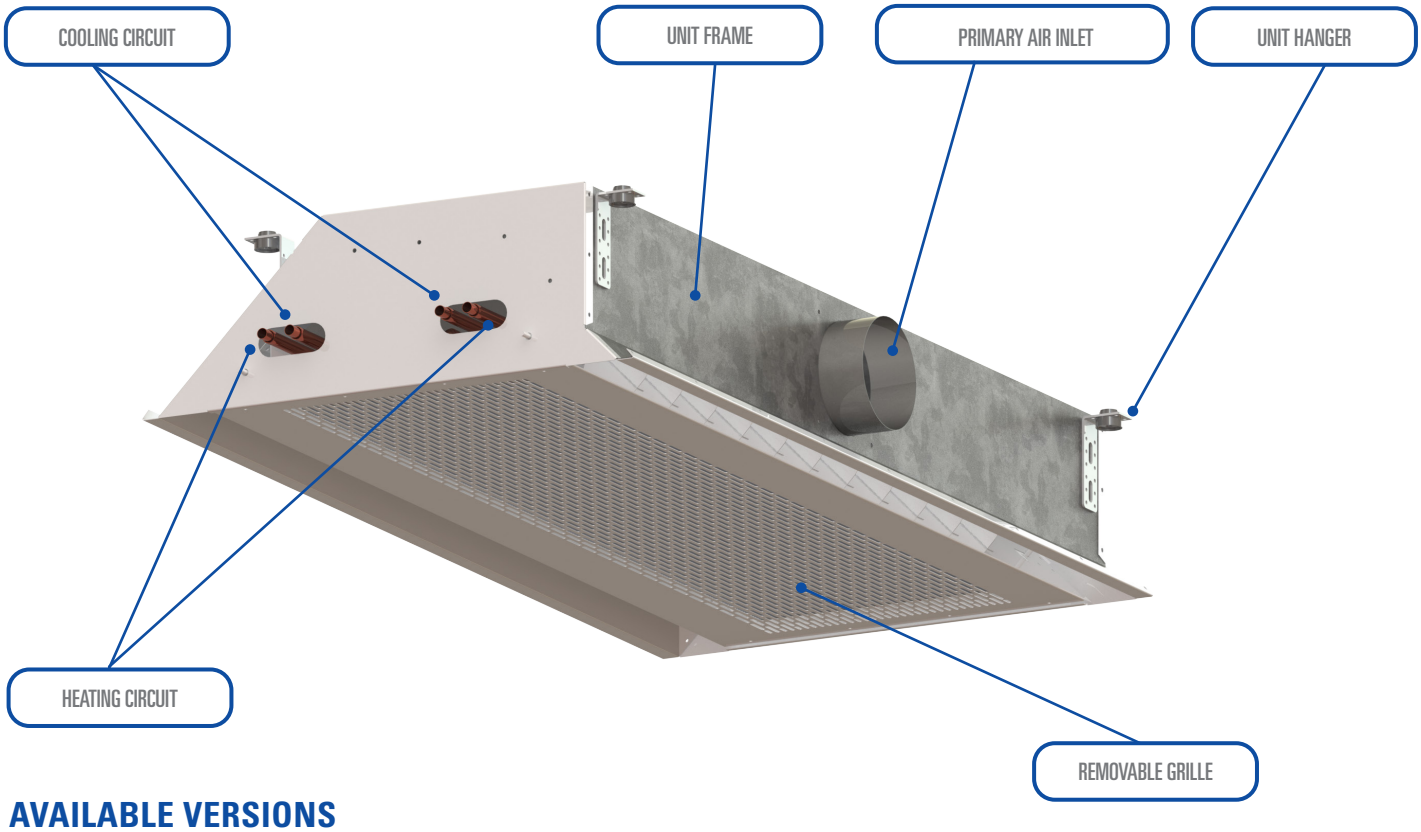
The secondary air is the air in the room that is drawn in through a heat exchanger within the Chilled beam; the secondary air is cooled by the heat exchanger when the cooling function is on, and heated by the heat exchanger when the heating function is on.

In the case of cooling, it is necessary to ensure correct design of the temperature of the cold water supplied, so that the dew point is not reached, which would lead to condensation of the air humidity.

Optimal mixing of the primary and the secondary air occurs in the Chilled beam.

The cooling or heating output, to cover the thermal losses or gains, is therefore provided by the change of the condition of the secondary air, using a water to air heat exchanger and also by the supply of the centrally treated primary air.

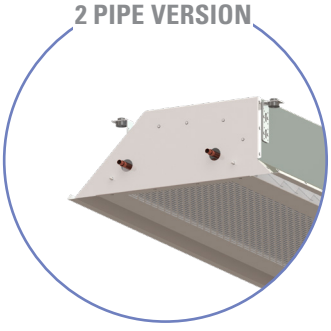
The troughs metal parts and grilles are made of galvanized sheet metal. The visible surfaces of the trough and grilles are painted white as a standard design. The unit can also be supplied in different colours, depending on the end user's request. The pipes for the water supply and the drain are made of copper. The unit grille is removable and secured with a steel wire to prevent it falling down when removed for service.



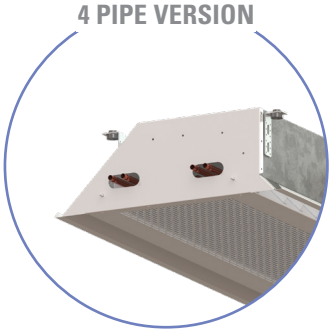
AVAILABLE VERSIONS

SUSPENDED CEILING INSTALLATION

2 PIPE VERSION

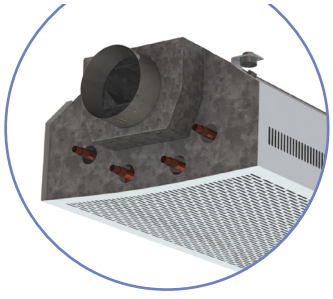


4 PIPE VERSION



VISIBLE, SUSPENDED INSTALLATION

2 & 4 PIPE VERSION



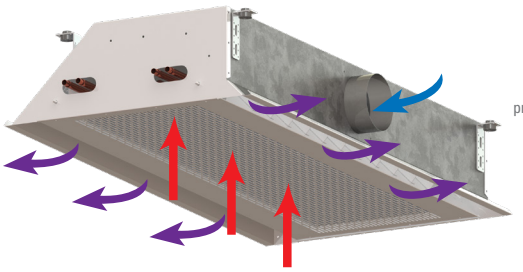
CHILLED BEAM DESCRIPTION

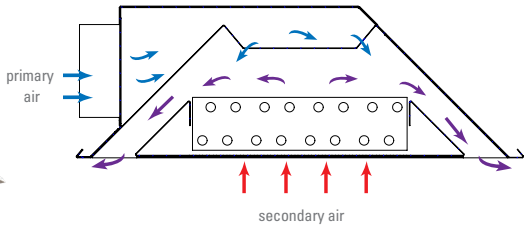
CHILLED BEAM BENEFITS

- Specially developed for high cooling and heating outputs
- Very high level of comfort
- Does not contain fan
- Silent operation
- Ideal for installation in a ceiling
- Does not reduce the usable area and its variable functional arrangement
- Low installation height of the unit is suitable for new construction projects, as well as renovations
- Optimisation of air flow by adjustable slats
- Doesn´t need supply of energy
- Minimum maintenance requirements
- Low operating cost
- Allows for non-standard design according to the customer's request

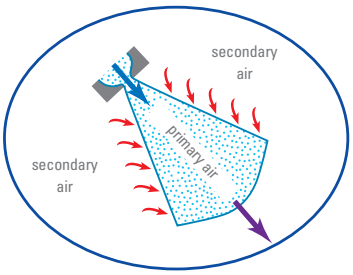
CHILLED BEAM PRINCIPLE

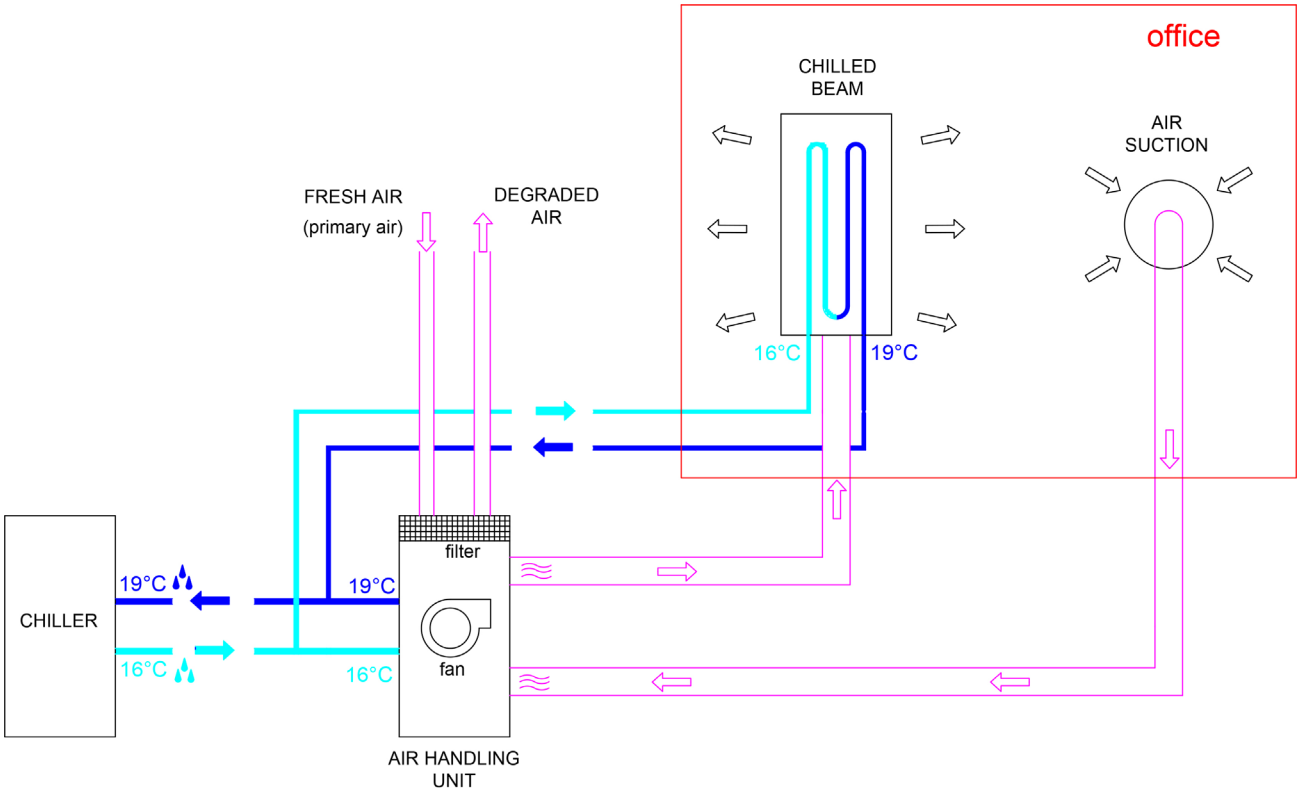
Chilled beams, also known as active cooling beams, are connected to the distribution system for external treated air, the primary air. The primary air is pushed under pressure through nozzles behind which the ejection effect takes and sucks in the secondary air from the room. This suction of the secondary air from the room occurs through a heat exchanger where the air is cooled or heated. The primary and secondary air is mixed inside the unit, and the mixed air is subsequently distributed to the room. This "induction" takes place inside the Chilled beam.





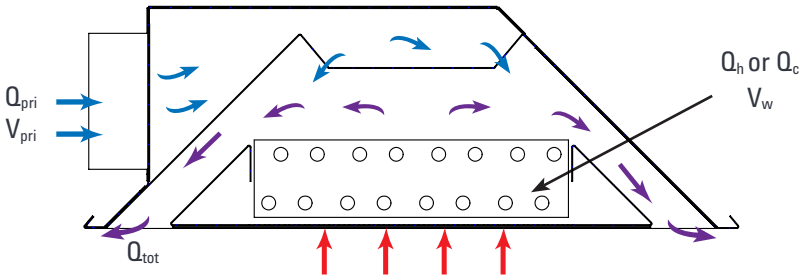
Close-up view of the nozzle position





CALCULATION OF THE CHILLED BEAM PARAMETERS

DEFINITION OF PARAMETERS



Parameter	Unit	Definition
Qtot	[W]	Total output
Qpri	[W]	Output on the primary air side (cooling or heating)
Qc	[W]	Cooling output on the water side (cooling output of the secondary air)
Qh	[W]	Heating output on the water side (heating output of the secondary air)
T	[-]	Nozzle adjustment
L	[mm]	Unit length
Vpri	[m3/hr]	Volume flow of the primary air
Vw	[l/h]	Volume flow of the water
Δ tpri	[K]	Difference between the temperature of the air in the room and the primary air (the supplied external treated air)
Δ tiw	[K]	Difference between the temperature of the air in the room and the mean temperature of the water
Δ pv	[Pa]	Air pressure drop
Δ pw	[kPa]	Water pressure drop
LA,eq	[dB]	Equivalent level of acoustic pressure in distance of 2 m from the induction unit

INLET WATER TEMPERATURE WHEN COOLING

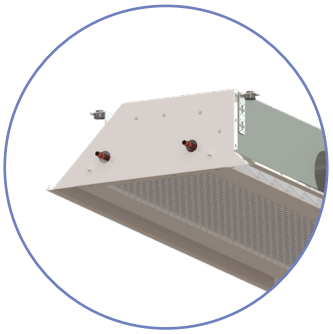
In the case of cooling, it is necessary to ensure correct design of the temperature of the cold water supplied, so that the dew point is not reached on the heat exchanger, which would lead to condensation of the air humidity. Indicative values of the dew point are provided in the table below.

INDICATIVE TABLE FOR DEW POINT DETERMINATION

Room air temperature (C°)	Relative humidity (%)										
	40	45	50	55	60	65	70	75	80	85	90
15	1,5	3,2	4,7	6,0	7,3	8,5	9,6	10,6	11,6	12,5	13,4
16	2,4	4,1	5,6	7,0	8,2	9,4	10,5	11,6	12,6	13,5	14,4
17	3,3	5,0	6,5	7,9	9,2	10,4	11,5	12,5	13,5	14,5	15,4
18	4,2	5,9	7,4	8,8	10,1	11,3	12,5	13,5	14,5	15,4	16,3
19	5,1	6,8	8,4	9,8	11,1	12,3	13,4	14,5	15,5	16,4	17,3
20	5,9	7,7	9,3	10,7	12,0	13,2	14,4	15,4	16,4	17,4	18,3
21	6,9	8,6	10,2	11,6	12,9	14,2	15,3	16,4	17,4	18,4	19,3
22	7,8	9,5	11,1	12,6	13,9	15,1	16,3	17,4	18,4	19,4	20,3
23	8,7	10,4	12,0	13,5	14,8	16,1	17,2	18,3	19,4	20,3	21,3
24	9,6	11,3	12,9	14,4	15,8	17,0	18,2	19,3	20,3	21,3	22,3
25	10,5	12,3	13,9	15,3	16,7	18,0	19,2	20,3	21,3	22,3	23,2
26	11,4	13,2	14,8	16,3	17,6	18,9	20,1	21,2	22,3	23,3	24,2
27	12,3	14,1	15,7	17,2	18,6	19,9	21,1	22,2	23,3	24,3	25,2
28	13,1	15,0	16,6	18,1	19,5	20,8	22,0	23,2	24,2	25,2	26,2
29	14,0	15,9	17,5	19,0	20,4	21,8	23,0	24,1	25,2	26,2	27,2
30	14,9	16,8	18,4	20,0	21,4	22,7	23,9	25,1	26,2	27,2	28,2

CALCULATION OF THE CHILLED BEAM PARAMETERS

COOLING OUTPUT FOR SELECTED CONDITIONS - 2 PIPE VERSION



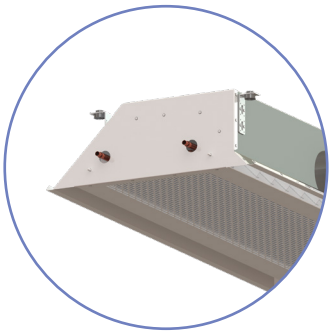
IJ	T	L	Vpri	Δpv	Qtot = Qpri + Qc [W]				Vw	Δpw	LA,eq
					Qpri [W]		Qc [W]				
[-]	[-]	[mm]	[m3/h]	[Pa]	Δ tpri [K]		Δ tiw [K]		[l/h]	[kPa]	[dB]
					6	12	6	12			
IJ-2P	2F	600	8	50	16	33	81	162	125	3,7	<29
			12	100	23	47	115	231	125	3,7	30
			14	150	29	57	142	284	125	3,7	33
	3F		16	50	32	64	119	238	125	3,7	<29
			22	100	45	91	204	409	125	3,7	<29
			28	150	56	111	270	540	125	3,7	33
	4B		19	50	39	78	160	320	125	3,7	<29
			28	100	56	112	224	448	125	3,7	<29
			34	150	69	139	274	547	125	3,7	<29
	4I		27	50	55	110	188	376	125	3,7	<29
			38	100	77	154	244	489	125	3,7	<29
			46	150	94	187	287	575	125	3,7	31
	5A		38	50	76	153	196	392	125	3,7	<29
			53	100	108	216	267	535	125	3,7	32
			65	150	132	264	316	631	125	3,7	35
	2F	1200	18	50	35	71	160	321	125	5,5	<29
			25	100	51	101	229	457	125	5,5	<29
			31	150	62	124	281	563	125	5,5	32
	3F		34	50	69	138	232	465	125	5,5	<29
			49	100	98	196	401	802	125	5,5	<29
			60	150	120	241	531	1062	125	5,5	32
	4B		43	50	87	174	321	641	125	5,5	<29
			62	100	125	250	449	898	125	5,5	<29
			76	150	154	309	549	1098	125	5,5	<29
	4I		59	50	119	237	375	750	125	5,5	<29
			82	100	166	333	486	973	125	5,5	<29
			100	150	203	405	571	1143	125	5,5	30
	5A		76	50	153	305	360	720	125	5,5	<29
			107	100	216	432	496	991	125	5,5	30
			131	150	264	529	589	1178	125	5,5	33
	2F	1800	28	50	56	111	260	520	250	4,6	<29
			39	100	79	159	370	740	250	4,6	<29
			48	150	98	196	456	911	250	4,6	32
	3F		54	50	108	217	380	761	250	4,6	<29
			76	100	154	308	654	1307	250	4,6	<29
			94	150	189	378	864	1728	250	4,6	32
	4B		69	50	139	279	529	1058	250	4,6	<29
			99	100	200	399	741	1482	250	4,6	<29
			122	150	247	493	906	1812	250	4,6	<29

IJ	T	L	Vpri	Δpv	Qtot = Qpri + Qc [W]				Vw	Δpw	LA,eq
					Qpri [W]		Qc [W]				
[-]	[-]	[mm]	[m3/h]	[Pa]	Δ tpri [K]		Δ tiw [K]		[l/h]	[kPa]	[dB]
					6	12	6	12			
IJ-2P	4I	1800	92	50	186	373	604	1207	250	4,6	<29
			129	100	261	522	784	1568	250	4,6	<29
			158	150	318	637	922	1843	250	4,6	30
	5A		113	50	229	458	557	1114	250	4,6	<29
			160	100	324	647	768	1536	250	4,6	<29
			196	150	396	793	914	1828	250	4,6	33
	2F	2400	38	50	77	153	375	750	500	17,4	<29
			54	100	109	219	534	1068	500	17,4	<29
			67	150	135	270	657	1314	500	17,4	33
	3F		74	50	149	299	555	1111	500	17,4	<29
			105	100	212	424	949	1898	500	17,4	<29
			129	150	260	521	1252	2504	500	17,4	32
	4B		96	50	194	389	775	1550	500	17,4	<29
			138	100	278	557	1087	2174	500	17,4	<29
			170	150	344	688	1329	2657	500	17,4	31
	4I		127	50	257	514	865	1729	500	17,4	<29
			178	100	360	720	1124	2249	500	17,4	<29
			217	150	439	877	1322	2644	500	17,4	31
	5A		151	50	305	610	776	1553	500	17,4	<29
			214	100	432	863	1072	2145	500	17,4	<29
			262	150	529	1057	1277	2554	500	17,4	32
	2F	3000	49	50	98	197	468	936	500	19,1	<29
			70	100	140	281	667	1334	500	19,1	30
			86	150	173	346	820	1641	500	19,1	33
	3F		95	50	192	383	701	1402	500	19,1	<29
			135	100	272	544	1193	2385	500	19,1	<29
			165	150	334	668	1571	3142	500	19,1	33
	4B		124	50	251	503	971	1941	500	19,1	<29
			178	100	360	721	1362	2724	500	19,1	31
			220	150	445	890	1666	3331	500	19,1	35
	4I		163	50	329	659	1076	2152	500	19,1	<29
			229	100	462	923	1401	2801	500	19,1	<29
			278	150	563	1125	1648	3296	500	19,1	31
	5A		189	50	381	763	945	1891	500	19,1	<29
			267	100	539	1079	1307	2614	500	19,1	<29
			327	150	661	1321	1557	3114	500	19,1	32

The calculation of the output and other parameters according to the customer requirements can be made upon request.

CALCULATION OF THE CHILLED BEAM PARAMETERS

HEATING OUTPUT FOR SELECTED CONDITIONS - 2 PIPE VERSION



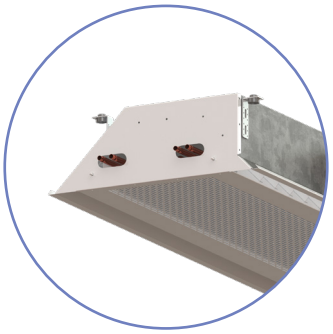
IJ	T	L	Vpri	Δpv	Qtot = Qpri + Qh [W]				Vw	Δpw	LA,eq
					Qpri [W]		Qh [W]				
[-]	[-]	[mm]	[m3/h]	[Pa]	Δ tpri [K]		Δ tiw [K]		[l/h]	[kPa]	[dB]
					6	12	20	60			
IJ-2P	2F	600	8	50	16	33	144	391	125	3,7	<29
			12	100	23	47	205	557	125	3,7	30
			14	150	29	57	252	686	125	3,7	33
	3F		16	50	32	64	261	710	125	3,7	<29
			22	100	45	91	448	1219	125	3,7	<29
			28	150	56	111	592	1612	125	3,7	33
	4B		19	50	39	78	281	765	125	3,7	<29
			28	100	56	112	394	1072	125	3,7	<29
			34	150	69	139	481	1310	125	3,7	<29
	4I		27	50	55	110	334	910	125	3,7	<29
			38	100	77	154	434	1182	125	3,7	<29
			46	150	94	187	510	1389	125	3,7	31
	5A		38	50	76	153	375	1020	125	3,7	<29
			53	100	108	216	542	1474	125	3,7	32
			65	150	132	264	670	1823	125	3,7	35
	2F	1200	18	50	35	71	285	774	125	5,5	<29
			25	100	51	101	405	1103	125	5,5	<29
			31	150	62	124	499	1357	125	5,5	32
	3F		34	50	69	138	509	1386	125	5,5	<29
			49	100	98	196	879	2393	125	5,5	<29
			60	150	120	241	1164	3169	125	5,5	32
	4B		43	50	87	174	564	1535	125	5,5	<29
			62	100	125	250	790	2150	125	5,5	<29
			76	150	154	309	965	2627	125	5,5	<29
	4I		59	50	119	237	666	1813	125	5,5	<29
			82	100	166	333	864	2352	125	5,5	<29
			100	150	203	405	1015	2763	125	5,5	30
	5A		76	50	153	305	678	1845	125	5,5	<29
			107	100	216	432	983	2675	125	5,5	30
			131	150	264	529	1217	3312	125	5,5	33
	2F	1800	28	50	56	111	461	1254	250	4,6	<29
			39	100	79	159	656	1787	250	4,6	<29
			48	150	98	196	808	2198	250	4,6	32
	3F		54	50	108	217	834	2270	250	4,6	<29
			76	100	154	308	1433	3900	250	4,6	<29
			94	150	189	378	1894	5155	250	4,6	32
	4B		69	50	139	279	930	2531	250	4,6	<29
			99	100	200	399	1303	3548	250	4,6	<29
			122	150	247	493	1593	4336	250	4,6	<29

IJ	T	L	Vpri	Δpv	Qtot = Qpri + Qh [W]				Vw	Δpw	LA,eq
					Qpri [W]		Qh [W]				
[-]	[-]	[mm]	[m3/h]	[Pa]	Δ tpri [K]		Δ tiw [K]		[l/h]	[kPa]	[dB]
					6	12	20	60			
IJ-2P	4I	1800	92	50	186	373	1072	2919	250	4,6	<29
			129	100	261	522	1393	3791	250	4,6	<29
			158	150	318	637	1637	4455	250	4,6	30
	5A		113	50	229	458	1046	2848	250	4,6	<29
			160	100	324	647	1518	4133	250	4,6	<29
			196	150	396	793	1880	5118	250	4,6	33
	2F	2400	38	50	77	153	664	1809	500	17,4	<29
			54	100	109	219	946	2576	500	17,4	<29
			67	150	135	270	1165	3170	500	17,4	33
	3F		74	50	149	299	1217	3314	500	17,4	<29
			105	100	212	424	2080	5663	500	17,4	<29
			129	150	260	521	2745	7472	500	17,4	32
	4B		96	50	194	389	1362	3709	500	17,4	<29
			138	100	278	557	1911	5202	500	17,4	<29
			170	150	344	688	2336	6360	500	17,4	31
	4I		127	50	257	514	1536	4181	500	17,4	<29
			178	100	360	720	1997	5436	500	17,4	<29
			217	150	439	877	2348	6392	500	17,4	31
	5A		151	50	305	610	1456	3964	500	17,4	<29
			214	100	432	863	2114	5755	500	17,4	<29
			262	150	529	1057	2619	7128	500	17,4	32
	2F	3000	49	50	98	197	830	2259	500	19,1	<29
			70	100	140	281	1182	3217	500	19,1	30
			86	150	173	346	1454	3959	500	19,1	33
	3F		95	50	192	383	1537	4184	500	19,1	<29
			135	100	272	544	2615	7117	500	19,1	<29
			165	150	334	668	3444	9375	500	19,1	33
	4B		124	50	251	503	1707	4646	500	19,1	<29
			178	100	360	721	2395	6520	500	19,1	31
			220	150	445	890	2929	7973	500	19,1	35
	4I		163	50	329	659	1911	5203	500	19,1	<29
			229	100	462	923	2488	6771	500	19,1	<29
			278	150	563	1125	2927	7967	500	19,1	31
	5A		189	50	381	763	1772	4823	500	19,1	<29
			267	100	539	1079	2573	7003	500	19,1	<29
			327	150	661	1321	3187	8675	500	19,1	32

The calculation of the output and other parameters according to the customer requirements can be made upon request.

CALCULATION OF THE CHILLED BEAM PARAMETERS

COOLING OUTPUT FOR SELECTED CONDITIONS - 4 PIPE VERSION



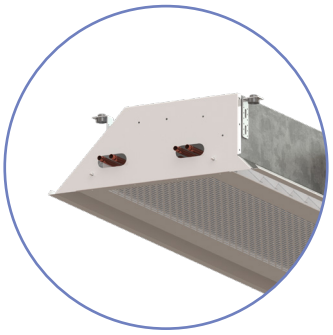
IJ	T	L	Vpri	Δpv	Qtot = Qpri + Qc [W]				Vw	Δpw	LA,eq
					Qpri [W]		Qc [W]				
[-]	[-]	[mm]	[m3/h]	[Pa]	Δ tpri [K]		Δ tiw [K]		[l/h]	[kPa]	[dB]
					6	12	6	12			
IJ-4P	2F	600	8	50	16	33	62	123	125	2,9	<29
			12	100	23	47	88	175	125	2,9	30
			14	150	29	57	108	216	125	2,9	33
	3F		16	50	32	64	90	180	125	2,9	<29
			22	100	45	91	155	310	125	2,9	<29
			28	150	56	111	205	409	125	2,9	33
	4B		19	50	39	78	121	241	125	2,9	<29
			28	100	56	112	169	338	125	2,9	<29
			34	150	69	139	206	413	125	2,9	<29
	4I		27	50	55	110	143	285	125	2,9	<29
			38	100	77	154	185	370	125	2,9	<29
			46	150	94	187	218	435	125	2,9	31
	5A		38	50	76	153	145	289	125	2,9	<29
			53	100	108	216	206	412	125	2,9	35
			65	150	132	264	248	496	125	2,9	38
	2F	1200	18	50	35	71	122	244	125	4,4	<29
			25	100	51	101	174	347	125	4,4	<29
			31	150	62	124	214	427	125	4,4	32
	3F		34	50	69	138	176	352	125	4,4	<29
			49	100	98	196	304	608	125	4,4	<29
			60	150	120	241	402	805	125	4,4	32
	4B		43	50	87	174	242	483	125	4,4	<29
			62	100	125	250	339	677	125	4,4	<29
			76	150	154	309	414	827	125	4,4	<29
	4I		59	50	119	237	284	568	125	4,4	<29
			82	100	166	333	368	737	125	4,4	<29
			100	150	203	405	433	866	125	4,4	30
	5A		76	50	153	305	260	521	125	4,4	<29
			107	100	216	432	377	754	125	4,4	33
			131	150	264	529	458	916	125	4,4	36
	2F	1800	28	50	56	111	197	395	250	18,7	<29
			39	100	79	159	281	563	250	18,7	<29
			48	150	98	196	346	692	250	18,7	32
	3F		54	50	108	217	288	576	250	18,7	<29
			76	100	154	308	495	990	250	18,7	<29
			94	150	189	378	654	1309	250	18,7	32
	4B		69	50	139	279	399	797	250	18,7	<29
			99	100	200	399	559	1118	250	18,7	<29
			122	150	247	493	683	1366	250	18,7	<29

IJ	T	L	Vpri	Δpv	Qtot = Qpri + Qc [W]				Vw	Δpw	LA,eq
					Qpri [W]		Qc [W]				
[-]	[-]	[mm]	[m3/h]	[Pa]	Δ tpri [K]		Δ tiw [K]		[l/h]	[kPa]	[dB]
					6	12	6	12			
IJ-4P	4I	1800	92	50	186	373	457	914	250	18,7	<29
			129	100	261	522	594	1188	250	18,7	<29
			158	150	318	637	698	1396	250	18,7	30
	5A		113	50	229	458	402	803	250	18,7	<29
			160	100	324	647	583	1167	250	18,7	32
			196	150	396	793	709	1419	250	18,7	36
	2F	2400	38	50	77	153	285	570	500	75,4	<29
			54	100	109	219	406	811	500	75,4	<29
			67	150	135	270	499	998	500	75,4	33
	3F		74	50	149	299	421	841	500	75,4	<29
			105	100	212	424	719	1438	500	75,4	<29
			129	150	260	521	949	1897	500	75,4	32
	4B		96	50	194	389	584	1168	500	75,4	<29
			138	100	278	557	819	1639	500	75,4	<29
			170	150	344	688	1002	2003	500	75,4	31
	4I		127	50	257	514	655	1310	500	75,4	<29
			178	100	360	720	852	1703	500	75,4	<29
			217	150	439	877	1001	2003	500	75,4	31
	5A		151	50	305	610	558	1117	500	75,4	<29
			214	100	432	863	813	1626	500	75,4	32
			262	150	529	1057	990	1980	500	75,4	35
	2F	3000	49	50	98	197	356	711	500	84,5	<29
			70	100	140	281	507	1013	500	84,5	30
			86	150	173	346	623	1247	500	84,5	33
	3F		95	50	192	383	531	1062	500	84,5	<29
			135	100	272	544	904	1807	500	84,5	<29
			165	150	334	668	1190	2380	500	84,5	33
	4B		124	50	251	503	732	1463	500	84,5	<29
			178	100	360	721	1027	2054	500	84,5	31
			220	150	445	890	1256	2511	500	84,5	35
	4I		163	50	329	659	815	1630	500	84,5	<29
			229	100	462	923	1061	2121	500	84,5	<29
			278	150	563	1125	1248	2496	500	84,5	31
	5A		189	50	381	763	679	1358	500	84,5	<29
			267	100	539	1079	990	1980	500	84,5	32
			327	150	661	1321	1206	2412	500	84,5	35

The calculation of the output and other parameters according to the customer requirements can be made upon request.

CALCULATION OF THE CHILLED BEAM PARAMETERS

HEATING OUTPUT FOR SELECTED CONDITIONS - 4 PIPE VERSION



IJ	T	L	Vpri	Δpv	Qtot = Qpri + Qh [W]				Vw	Δpw	LA,eq
					Qpri [W]		Qh [W]				
[-]	[-]	[mm]	[m3/h]	[Pa]	Δ tpri [K]		Δ tiw [K]		[l/h]	[kPa]	[dB]
					6	12	20	60			
IJ-4P	2F	600	8	50	16	33	123	334	125	2,3	<29
			12	100	23	47	175	476	125	2,3	30
			14	150	29	57	215	586	125	2,3	33
	3F		16	50	32	64	223	607	125	2,3	<29
			22	100	45	91	383	1043	125	2,3	<29
			28	150	56	111	506	1378	125	2,3	33
	4B		19	50	39	78	239	650	125	2,3	<29
			28	100	56	112	334	910	125	2,3	<29
			34	150	69	139	409	1112	125	2,3	<29
	4I		27	50	55	110	286	780	125	2,3	<29
			38	100	77	154	372	1013	125	2,3	<29
			46	150	94	187	437	1190	125	2,3	31
	5A		38	50	76	153	345	939	125	2,3	<29
			53	100	108	216	465	1265	125	2,3	35
			65	150	132	264	557	1516	125	2,3	38
	2F	1200	18	50	35	71	243	662	125	3,4	<29
			25	100	51	101	346	943	125	3,4	<29
			31	150	62	124	426	1160	125	3,4	32
	3F		34	50	69	138	435	1185	125	3,4	<29
			49	100	98	196	752	2047	125	3,4	<29
			60	150	120	241	995	2709	125	3,4	32
	4B		43	50	87	174	479	1303	125	3,4	<29
			62	100	125	250	671	1826	125	3,4	<29
			76	150	154	309	820	2231	125	3,4	<29
	4I		59	50	119	237	571	1553	125	3,4	<29
			82	100	166	333	740	2015	125	3,4	<29
			100	150	203	405	870	2367	125	3,4	30
	5A		76	50	153	305	642	1747	125	3,4	<29
			107	100	216	432	861	2343	125	3,4	33
			131	150	264	529	1029	2800	125	3,4	36
	2F	1800	28	50	56	111	394	1072	250	14,5	<29
			39	100	79	159	561	1527	250	14,5	<29
			48	150	98	196	690	1879	250	14,5	32
	3F		54	50	108	217	713	1941	250	14,5	<29
			76	100	154	308	1225	3335	250	14,5	<29
			94	150	189	378	1619	4408	250	14,5	32
	4B		69	50	139	279	790	2150	250	14,5	<29
			99	100	200	399	1107	3013	250	14,5	<29
			122	150	247	493	1353	3683	250	14,5	<29

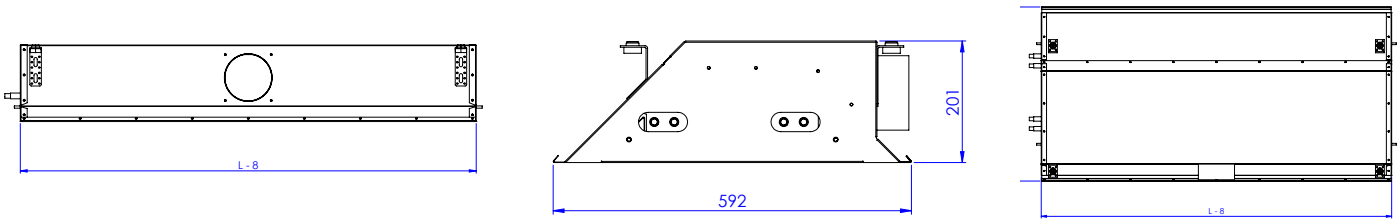
IJ	T	L	Vpri	Δpv	Qtot = Qpri + Qh [W]				Vw	Δpw	LA,eq
					Qpri [W]		Qh [W]				
[-]	[-]	[mm]	[m3/h]	[Pa]	Δ tpri [K]		Δ tiw [K]		[l/h]	[kPa]	[dB]
					6	12	20	60			
IJ-4P	4I	1800	92	50	186	373	919	2500	250	14,5	<29
			129	100	261	522	1193	3248	250	14,5	<29
			158	150	318	637	1402	3817	250	14,5	30
	5A		113	50	229	458	996	2710	250	14,5	<29
			160	100	324	647	1334	3632	250	14,5	32
			196	150	396	793	1594	4339	250	14,5	36
	2F	2400	38	50	77	153	568	1546	500	58,5	<29
			54	100	109	219	809	2202	500	58,5	<29
			67	150	135	270	995	2710	500	58,5	33
	3F		74	50	149	299	1041	2833	500	58,5	<29
			105	100	212	424	1779	4842	500	58,5	<29
			129	150	260	521	2347	6389	500	58,5	32
	4B		96	50	194	389	1157	3150	500	58,5	<29
			138	100	278	557	1623	4418	500	58,5	<29
			170	150	344	688	1984	5402	500	58,5	31
	4I		127	50	257	514	1316	3582	500	58,5	<29
			178	100	360	720	1711	4657	500	58,5	<29
			217	150	439	877	2012	5477	500	58,5	31
	5A		151	50	305	610	1391	3787	500	58,5	<29
			214	100	432	863	1863	5071	500	58,5	32
			262	150	529	1057	2225	6057	500	58,5	35
	2F	3000	49	50	98	197	568	1546	500	65,6	<29
			70	100	140	281	809	2202	500	65,6	30
			86	150	173	346	995	2710	500	65,6	33
	3F		95	50	192	383	1041	2833	500	65,6	<29
			135	100	272	544	1779	4842	500	65,6	<29
			165	150	334	668	2347	6389	500	65,6	33
	4B		124	50	251	503	1157	3150	500	65,6	<29
			178	100	360	721	1623	4418	500	65,6	31
			220	150	445	890	1984	5402	500	65,6	35
	4I		163	50	329	659	1316	3582	500	65,6	<29
			229	100	462	923	1711	4657	500	65,6	<29
			278	150	563	1125	2012	5477	500	65,6	31
	5A		189	50	381	763	1391	3787	500	65,6	<29
			267	100	539	1079	1863	5071	500	65,6	32
			327	150	661	1321	2225	6057	500	65,6	35

The calculation of the output and other parameters according to the customer requirements can be made upon request.

POSSIBLE CONNECTIONS TO HVAC

BASIC DIMENSIONS

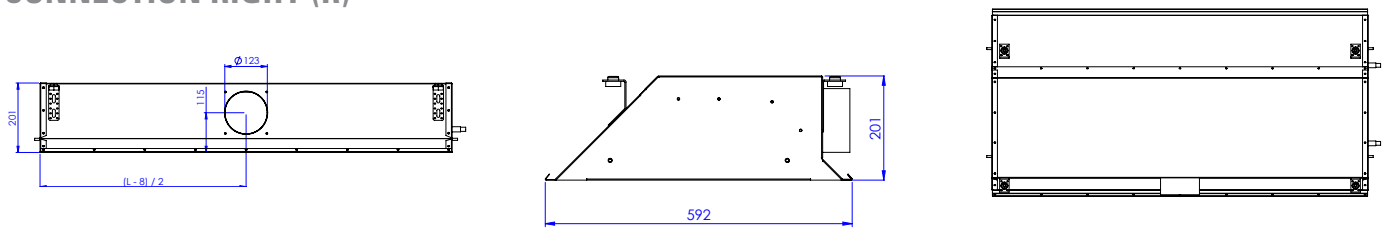
The basic height and width of the unit are identical for all units. Only the length L varies (600, 1200, 1800, 2400, 3000 mm).



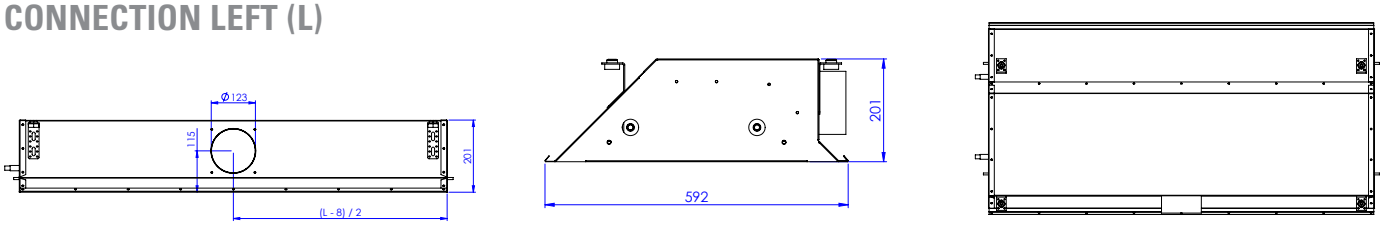
DIMENSIONS FOR AIR INLET

The different versions left (L) and right (R) determine the positions of the air connection relative to the water connection position.

CONNECTION RIGHT (R)

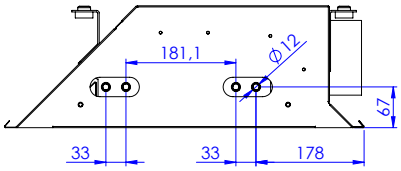


CONNECTION LEFT (L)



DIMENSIONS FOR WATER INLET AND OUTLET

The water circuit is connected to copper pipes with diameter 12 mm. The distances of the pipes for water inlet and outlet are designed individually according to customer specifications. Operating pressure and temperature: max. 10bar at max. temperature 100°C.



CHILLED BEAM ORDERING CODE

NAME	IJ-2P, IJ-4P
LENGTH	600, 1200, 1800, 2400, 3000 [mm]
CONNECTION	left (L), right (R) (according to the connection scheme)
NOZZLE ADJUSTMENT	2F, 3F, 4B, 4I, 5A
COLOUR	B (according to the customer's request, available colors according to the RAL sampler)

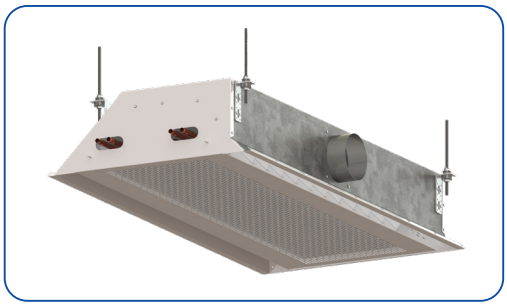
Some parameters of the unit connection can be changed upon request, depending on the manufacturing possibilities.

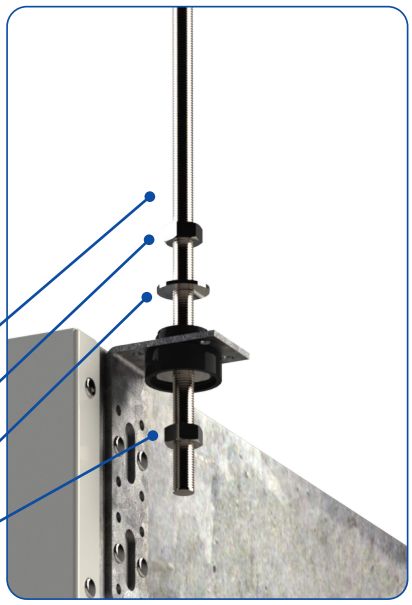
EXAMPLE OF THE CODE: IJ-2P-1200-L-3F-B

INSTALLATION AND MAINTENANCE

METHOD AND CLOSE-UP VIEW OF THE MOUNTING

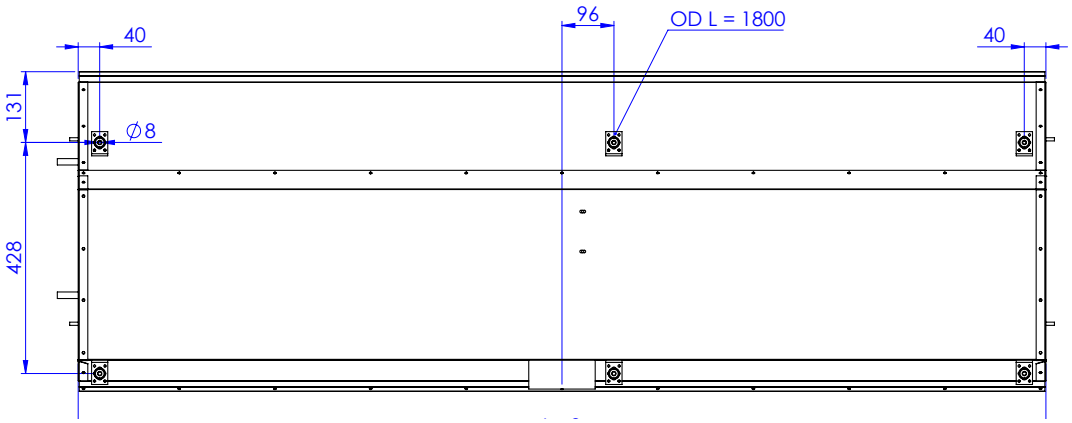
RECOMMENDED INSTALLATION METHOD: The unit is to be mounted using screws on the threaded bar at such distance from the ceiling that the bottom edge of the unit is levelled with the ceiling. Units 600 and 1200 are mounted using 4 threaded bars. Units 1800, 2400 and 3000 are mounted using 6 threaded bars.



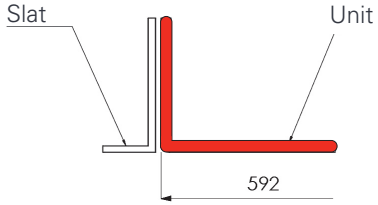


mounting elements not included

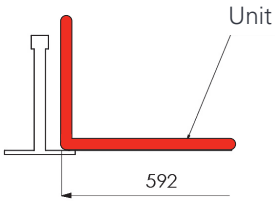
SPACING OF HOLES FOR SUSPENSION OF THE UNIT FROM THE CEILING



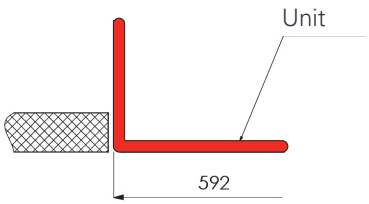
The installation of the Chilled beam in several basic types of ceilings is shown on the following diagrams.



installation in slat ceilings



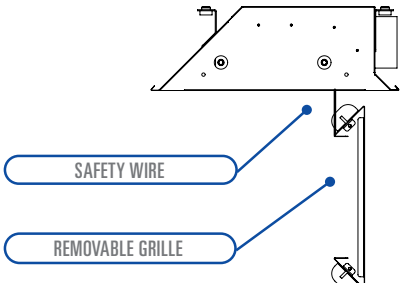
installation in T-ceiling panels



installation in drywall
and other closed ceiling types

MAINTENANCE OF THE UNIT

Maintenance of the Chilled beam by the ordinary user is very easy. As the temperature of the water supply must be above the dew point, it is not necessary to remove the heat exchanger during regular maintenance. We recommend removing the removable cover once a year and removing the contamination, if any, from the inner parts of the unit.



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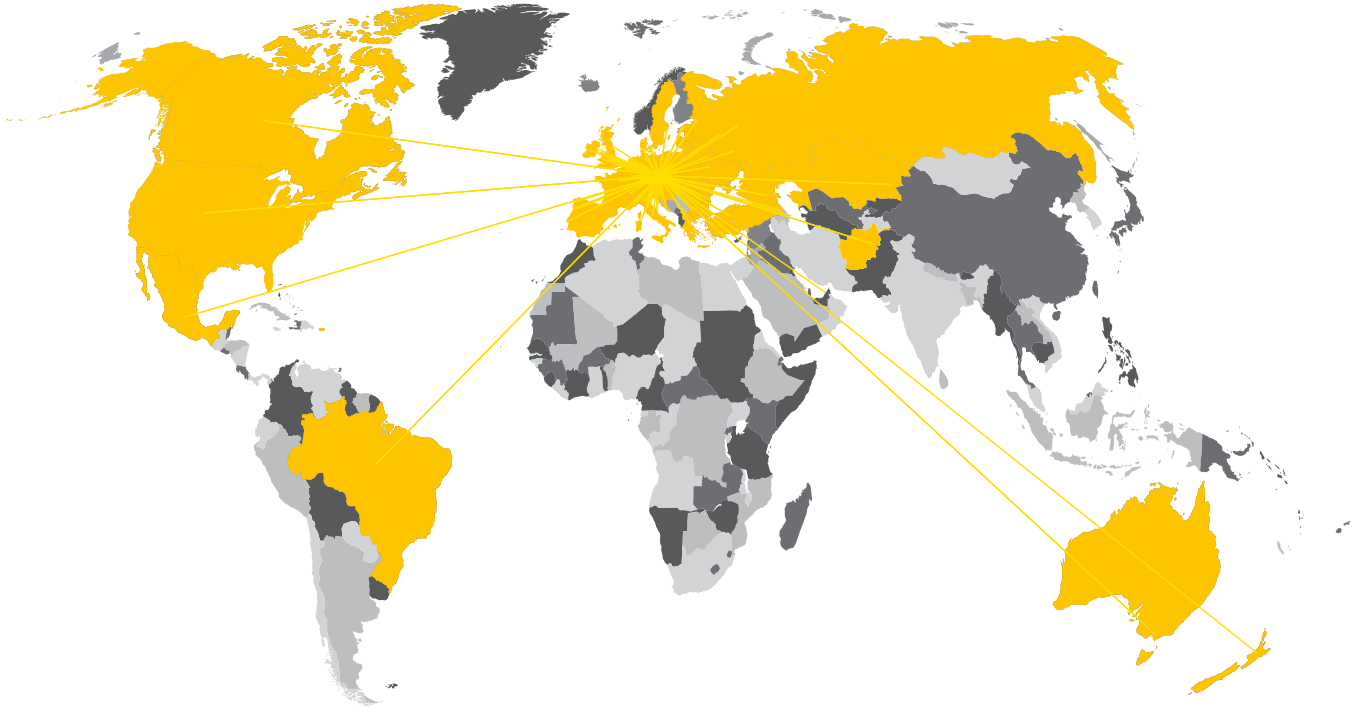
more than just heat



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