THE HEART OF FRESHNESS

KK SERIES

INDUCED DRAUGHT HEAVY DUTY BLAST EVAPORATORS

KK Series

Certified System

Quality
ISO 9001
SAI GLOBAL

CUT OFF AREA

Features

KK Series Features:

- ❏ Six Modules - each with Nine Coil Options.
- ❏ Individually circuited for each application.
- ❏ Available in 3, 4, 5 or 6 fins per inch, 8, 6, 5 or 4 mm fin spacing.
- ❏ Air, hot gas and water defrost models.
- ❏ Operating range -50˚C to +10˚C.
- ❏ Fan motors prewired to a common terminal box.
- ❏ Low weight construction with aluminium casing.
- ❏ Can be floor or ceiling mounted using the universal top or bottom support legs.
- ❏ Simple direct lifting or ceiling mounting.
- ❏ Steel support sections hot dipped galvanized.
- ❏ Adjustable pitch axial flow fans - constant air flow.
- ❏ Fans available for free discharge or 125 Pa external pressure using upgraded motors.

KK Series Blast Freezer/Chiller Evaporators

Specifications - Capacities based on -25°C S.S.T. Coil

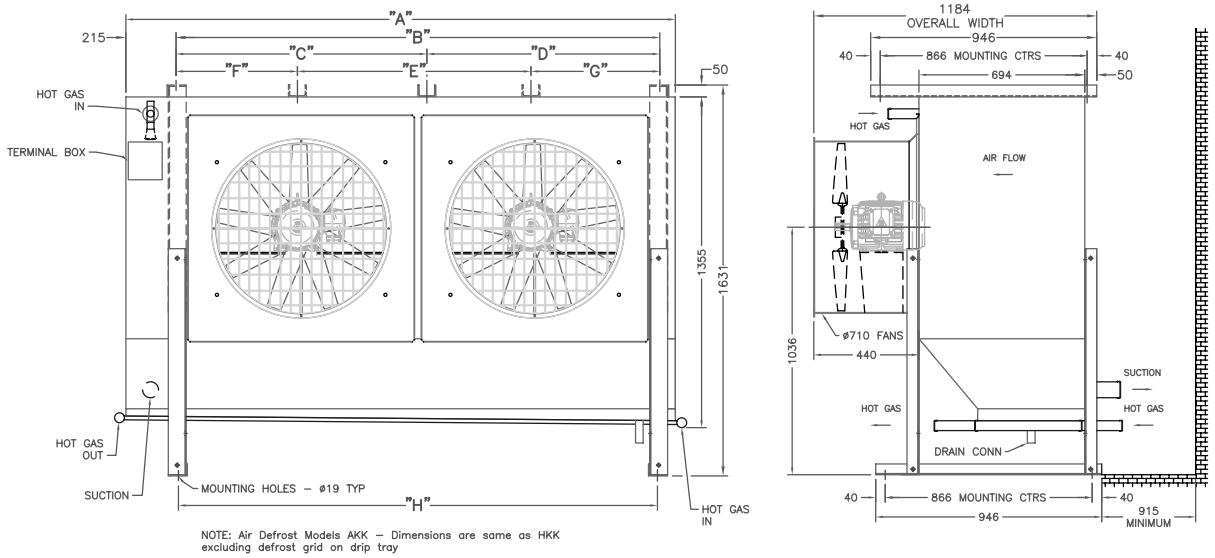
Model	Coil		Watts @ 6 KTD				Air Flow Total	No of Fans	Fan Motor Data (per motor)				Approx Operating Charge @25°C
									Free Air Discharge		125Pa External Resistance		
	Rows Deep	Fin Series (F.P.I.)	R22	R507	R404A	R407B	l/sec		kW	F.L.C.*	kW	F.L.C.*	DX (R22)
KK12	6	6	13310	12937	12778	12711	3963	1	2.2	4.52	3.0	6.2	5.4
	6	5	11784	11454	11313	11254			2.2	4.52	3.0	6.2	
	6	4	10521	10226	10100	10048			1.5	3.25	3.0	6.2	
	6	3	9153	8897	8787	8741			1.5	3.25	2.2	4.52	
	8	5	15032	14611	14431	14356			2.2	4.52	4.0	8.1	6.8
	8	4	13421	13045	12884	12817			2.2	4.52	3.0	6.2	
	8	3	11676	11349	11209	11151			2.2	4.52	3.0	6.2	
	10	4	15132	14708	14527	14451			2.2	4.52	4.0	8.1	8.6
	10	3	13164	12795	12637	12572			2.2	4.52	3.0	6.2	
KK14	6	6	15761	15320	15131	15052	4623	1	2.2	4.52	4.0	8.1	5.9
	6	5	13986	13594	13427	13357			2.2	4.52	3.0	6.2	
	6	4	12459	12110	11961	11898			2.2	4.52	3.0	6.2	
	6	3	10840	10536	10406	10352			2.2	4.52	3.0	6.2	
	8	5	17801	17303	17089	17000			2.2	4.52	4.0	8.1	8.2
	8	4	15893	15448	15257	15178			2.2	4.52	4.0	8.1	
	8	3	13827	13440	13274	13205			2.2	4.52	3.0	6.2	
	10	4	17919	17417	17202	17113			3.0	6.2	5.5	8.4	10.0
	10	3	15589	15153	14965	14887			2.2	4.52	4.0	8.1	
KK24	6	6	26620	25875	25555	25422	7924	2	2.2	4.52	3.0	6.2	10.0
	6	5	23568	22908	22625	22507			2.2	4.52	3.0	6.2	
	6	4	21043	20454	20201	20096			1.5	3.25	3.0	6.2	
	6	3	18307	17794	17575	17483			1.5	3.25	2.2	4.52	
	8	5	30064	29222	28861	28711			2.2	4.52	4.0	8.1	13.2
	8	4	26849	26097	25775	25641			2.2	4.52	3.0	6.2	
	8	3	23353	22699	22419	22302			2.2	4.52	3.0	6.2	
	10	4	30263	29416	29052	28901			2.2	4.52	4.0	8.1	16.8
	10	3	26329	25592	25276	25144			2.2	4.52	3.0	6.2	
KK28	6	6	31524	30641	30263	30105	9245	2	2.2	4.52	4.0	8.1	11.8
	6	5	27910	27129	26794	26654			2.2	4.52	3.0	6.2	
	6	4	24919	24221	23922	23798			2.2	4.52	3.0	6.2	
	6	3	21680	21073	20813	20704			2.2	4.52	3.0	6.2	
	8	5	35602	34605	34178	34000			2.2	4.52	4.0	8.1	15.4
	8	4	31788	30898	30516	30358			2.2	4.52	4.0	8.1	
	8	3	27655	26881	26549	26411			2.2	4.52	3.0	6.2	
	10	4	35838	34835	34404	34225			3.0	6.2	5.5	8.4	19.0
	10	3	31179	30306	29932	29776			2.2	4.52	4.0	8.1	
KK36	6	6	39930	38812	38333	38133	11886	3	2.2	4.52	3.0	6.2	14.5
	6	5	35353	34363	33939	33762			2.2	4.52	3.0	6.2	
	6	4	31565	30681	30302	30145			1.5	3.25	3.0	6.2	
	6	3	27461	26692	26363	26225			1.5	3.25	2.2	4.52	
	8	5	45097	43834	43293	43068			2.2	4.52	4.0	8.1	19.5
	8	4	40265	39138	38654	38453			2.2	4.52	3.0	6.2	
	8	3	35030	34049	33629	33454			2.2	4.52	3.0	6.2	
	10	4	45395	44124	43579	43352			2.2	4.52	4.0	8.1	24.5
	10	3	39494	38388	37914	37717			2.2	4.52	3.0	6.2	
KK42	6	6	47286	45962	45395	45158	13867	3	2.2	4.52	4.0	8.1	17.2
	6	5	41865	40693	40190	39981			2.2	4.52	3.0	6.2	
	6	4	37379	36332	35884	35697			2.2	4.52	3.0	6.2	
	6	3	32520	31609	31219	31057			2.2	4.52	3.0	6.2	
	8	5	53404	51909	51268	51001			2.2	4.52	4.0	8.1	22.7
	8	4	47682	46347	45775	45536			2.2	4.52	4.0	8.1	
	8	3	41483	40321	39824	39616			2.2	4.52	3.0	6.2	
	10	4	53758	52253	51608	51339			3.0	6.2	5.5	8.4	28.6
	10	3	46769	45459	44898	44664			2.2	4.52	4.0	8.1	

Capacity Correction Factors

SUCTION TEMPERATURE(°C)	-50	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10
CAPACITY MULTIPLIER	0.82	0.92	0.94	0.97	1.0	1.03	1.06	1.09	1.12	1.15	1.18	1.21

Physical Data

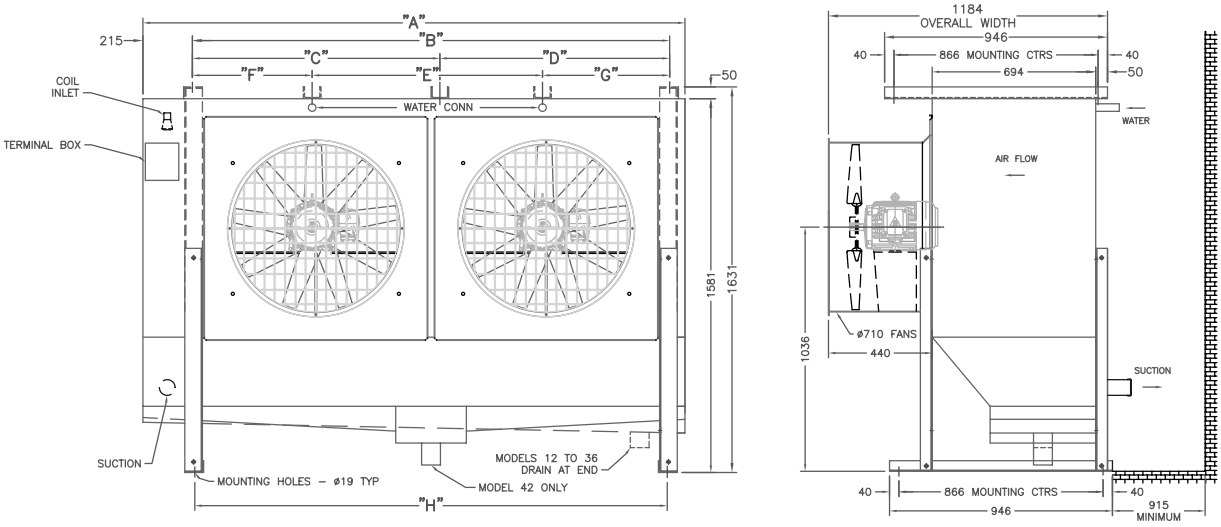
Model HKK - Hot Gas Defrost (Floor or Ceiling Mounted)



NOTE: Air Defrost Models AKK – Dimensions are same as HKK excluding defrost grid on drip tray

Model	Dimensions (mm)									Refrigerant Connections (mm)						Approximate Dry Weight (kg)		
	All Models		2 Fan Models		3 Fan Models			All Models	Drain	6 Row		8 Row		10 Row				
	A	B	C	D	E	F	G	H	Size ø	Suct.	HGas	Suct.	HGas	Suct.	HGas	6 Row	8 Row	10 Row
HKK12	1325	1050	-	-	-	-	-	1040	32	41.2	28.5	41.2	28.5	41.2	28.5	148	168	188
HKK14	1500	1228	-	-	-	-	-	1218	32	41.2	28.5	41.2	28.5	53.9	28.5	158	182	205
HKK24	2285	2015	1045	970	-	-	-	2005	32	53.9	34.9	53.9	34.9	53.9	34.9	286	326	366
HKK28	2645	2371	1223	1148	-	-	-	2356	32	53.9	34.9	53.9	34.9	53.9	34.9	306	353	399
HKK36	3255	2980	-	-	965	1045	970	2970	51	53.9	41.2	66.6	41.2	66.6	41.2	424	484	544
HKK42	3785	3514	-	-	1143	1223	1148	3504	51	66.6	41.2	66.6	41.2	66.6	41.2	454	526	594

Model WKK - Water Defrost (Floor or Ceiling Mounted)



Model	Dimensions (mm)										Refrigerant Connections (mm)			Approximate Dry Weight (kg)		
	All Models		2 Fan Models		3 Fan Models			All Models	Drain	Defrost Water						
	A	B	C	D	E	F	G	H	Size ø	Conn. ø	6 Row	8 Row	10 Row	6 Row	8 Row	10 Row
WKK12	1325	1050	-	-	-	-	-	1040	60.3	32	41.2	41.2	41.2	148	168	188
WKK14	1500	1228	-	-	-	-	-	1218	60.3	32	41.2	41.2	53.9	158	182	205
WKK24	2285	2015	1045	970	-	-	-	2005	80	2 x 32	53.9	53.9	53.9	286	326	366
WKK28	2645	2371	1223	1148	-	-	-	2356	80	2 x 32	53.9	53.9	53.9	306	353	399
WKK36	3255	2980	-	-	965	1045	970	2970	100	3 x 32	53.9	66.6	66.6	424	484	544
WKK42	3785	3514	-	-	1143	1223	1148	3504	100	3 x 32	66.6	66.6	66.6	454	526	594

APPLICATION DETAILS

Application Notes

Full Load Current
F.L.C.* is motor current as marked on motor rating plate and is at standard air conditions of 20°C and 1.2 kg/m^3, **not** operating temperature.

Power requirements vary directly as the air density ratio and/or absolute temperature ratio.

$$Amps_2 = Amps_1 \times \frac{(P_2)}{(P_1)} \quad \textbf{OR} \quad Amps_2 \times Amps_1 \times \frac{(273 + T_1)}{(273 + T_2)}$$

Defrost Water Requirement
Models 12 and 14 - 0.681 l/sec.
Models 24 and 28 - 1.361 l/sec.
Models 36 and 42 - 2.043 l/sec.

Air Throw (Free Discharge)
Air throw is a function of many factors. Larger fans, more per cooler, several coolers grouped closely, air discharge close to a ceiling; all improve the chance of air reaching the far end of a store.

Just as important, however, is the store geometry, aisle layout and product loading.

Generally speaking, long air throws require significant separation between the leaving and returning air streams. This allows each to play its part in rotating the whole of the store air. Tall stores with longitudinal aisles and coolers discharging at high level, present no problems.

On low ceiling stores the coolers should be positioned for the leaving and return air streams to be separated in the horizontal plane.

Most difficult are "tunnel" shaped rooms which can reduce the potential air throw by a very high proportion. This may require special arrangements such as ducting, false ceiling or "socks". All will require some degree of external pressure at the fans.

KK Models	Approx. Air Throw (m)
12 & 14	13 to 19
24 & 28	18 to 27
36 & 42	24 to 36

Selection

Capacities of models that overlap, permit a more flexible and economical selection, where the "LATENT LOAD" is low. The following Table is a guide to selection of Fin Spacing.

Fin Spacing	Application	Latent Load
4 mm (6 FPI)	Air Defrost - Light Duty Storage	Light
5 mm (5 FPI)	Air Defrost - Normal Duty Storage/ Freezing	Normal
6 mm (4 FPI)	Heavy Duty Storage - Packaged Freezing	High
8 mm (3 FPI)	Extra Heavy Duty Storage - Blast Freezing	Heavy

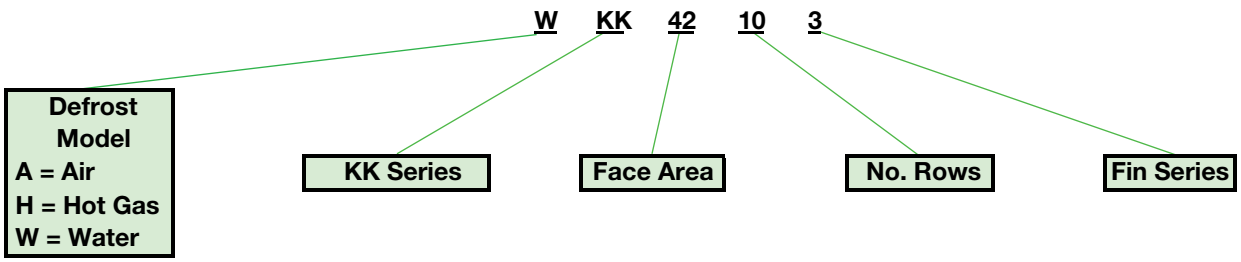
Example

Requirements
Blast Freezer -29°C, Load (incl. fan motors) 37.0 kW,
S.S.T. -35°C (6 KTD), required external resistance 120Pa,
Water Defrost.

Selection
Correction for -35°C = 0.94 (1 ÷ R = 1.0638)
Where, 37.0 kW x 1.0638 = 39.36 kW.
Read directly from Capacity Table
Where, WKK36103 at 39.494 kW fitted with 3 x 2.2 kW fan motors.
New Current Draw of Fan Motor (at -35°C)

$$Amps = 4.52 \times \frac{(273 + 20)}{(273 + -35)} = 5.56 \text{ Amps per motor.}$$

Model Nomenclature



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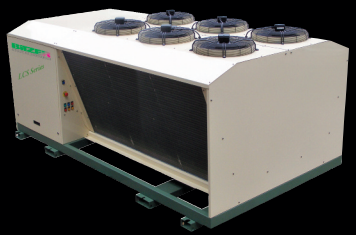

LCS Large Outdoor Condensing Unit

V-shape condenser set

BITZER Octagon and B5-Compressor Series

Standard version features fully wired electrical panel

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