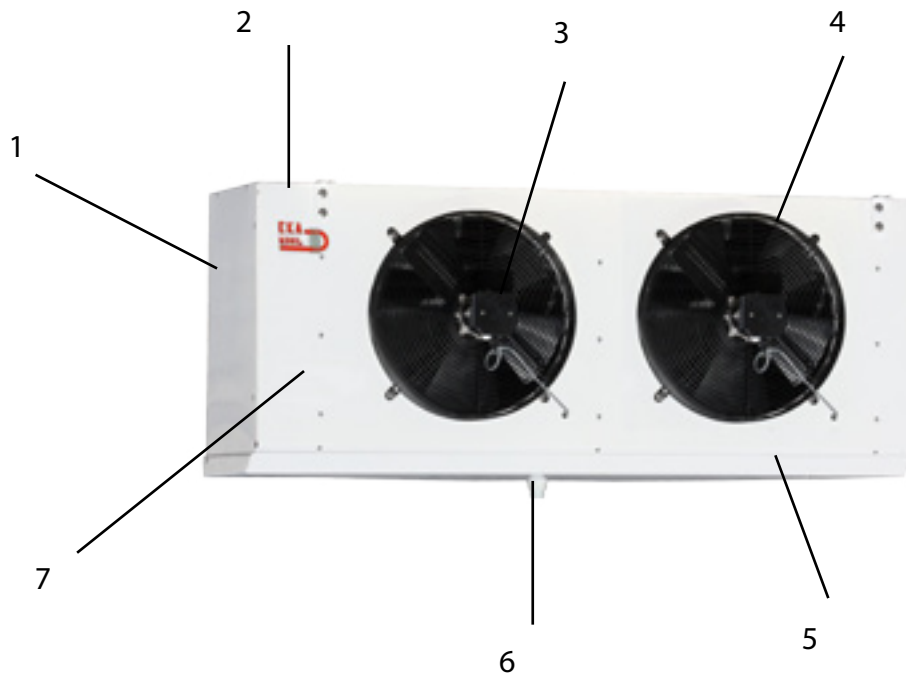


Installation Manual

EKA1. EKC1. EKL1.EKX1



- 1 Side panel
- 2 Type plate
- 3 Fan
- 4 Protection grille
- 5 Drain pan
- 6 Condensate drain
- 7 Fan panel

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Declaration of manufacturer

EKA-KOOL pte ltd as an Manufacture of Fin and Tube forced convection unit air coolers hereby declare its products to be manufactured according to the International Standard.

All below models and their construction are, as far as possible, lean on EC conformity and its Directive. Forced convection unit air cooler EKA1, EKL1, EKX1, EKC1, ELP, EDA,

All incorporated moving component parts are in conformity with the following EC Directives, where applicable: 2006/95/EC (Low Voltage), 2004/108/EC (EMC) and 97/23/EC (Pressure Equipment).

A Safety signs and regulation

Safety Signs and Regulations:

Local rules and regulations

During installation and start-up, all regulations for safety and accident prevention as well as rules and standards of the individual country have to be observed.

Personal qualification

- The unit may only be mounted and serviced by authorized and skilled personnel.
- The electrical connection may only be made by a licensed electrician

Personal protective equipment

- The protective equipment for mounting and servicing has to comply with the security regulations.

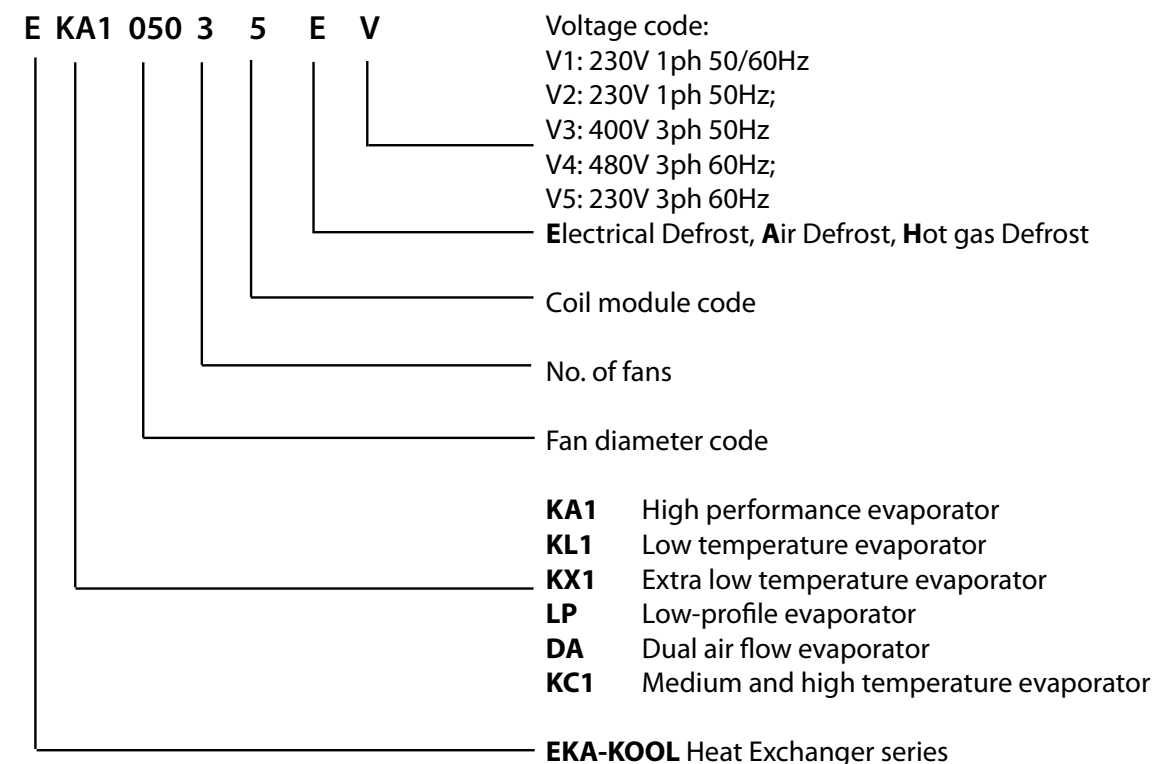
Accident prevention

- During mounting, servicing and repairing the danger area has to be guarded safely from unauthorized persons, especially children.
- Prior to working on the unit, switch- off electricity and secure against unauthorized connecting.
- Be careful with walls and ceilings which could possibly contain electric wires or gas and water piping.

Unauthorized modification

- Modifications and alterations on the unit are not allowed.

Product nomenclature



B. Intended Application

EKA1. 8.4/4.2 mm Application -40°C to +26°C room temperature

EKL1. 12 / 6 mm Application -45°C to +0°C room temperature

EKX1. 16 / 8 mm Application -45°C to +0°C room temperature

EDA. 8.4/4.2 mm Application -30°C to +26°C room temperature

ELP. 8.4/4.2 mm Application -30°C to +26°C room temperature

EKC1. 4.2 mm Application -10°C to +26°C room temperature

- Mounting and connecting has to be done according to these instructions.
- Use for purpose other than designed for is forbidden.
- The unit is suitable for all safety refrigerants. Allowable operating pressure bar, see technical data sheet
- After having completed mounting, this mounting instruction has to be given to the user.

The following pollutions of the air have to be avoided:

Abrasive particles.

Strong corrosive pollutions e.g. salt spray mist.

High dust loading, e.g. exhaustion of saw dust.

Flammable gases/ particles.

The cooler may not be run next to flammable materials or components.

The cooler may not be run in explosive ambient. The cooler mustn't take over security relevant duties. Use for purpose other than designed for is forbidden.

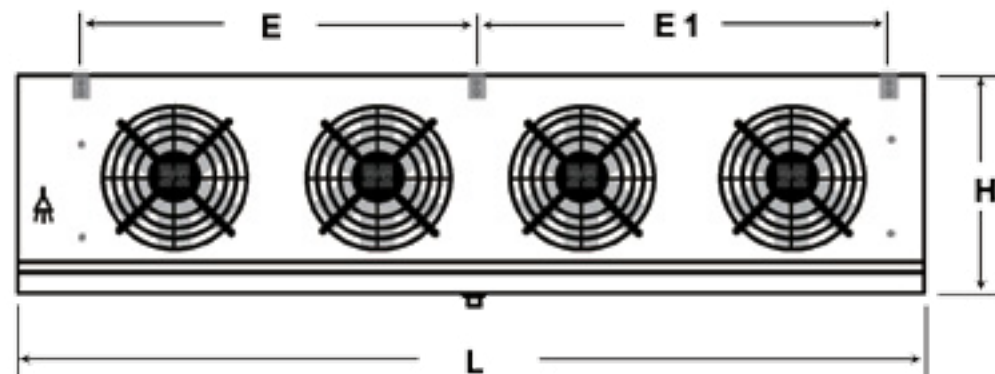
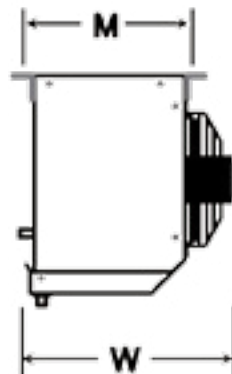
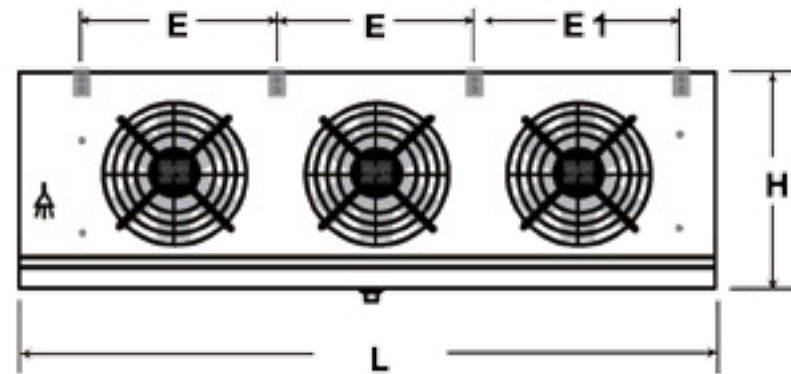
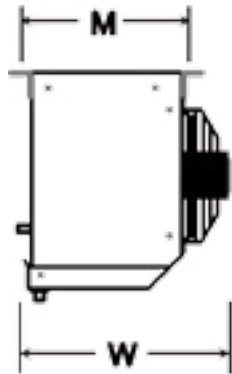
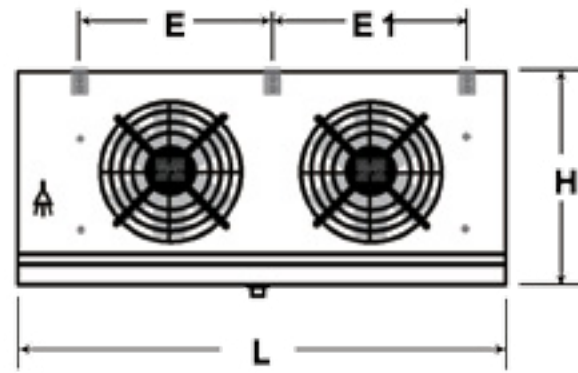
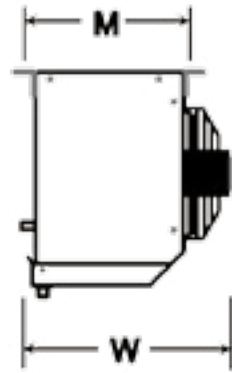
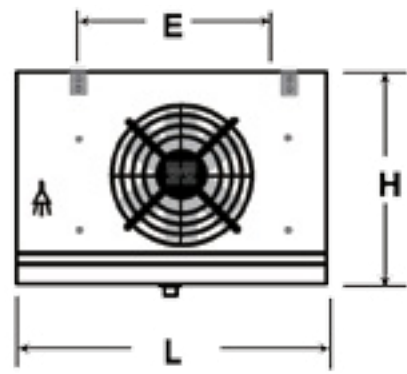
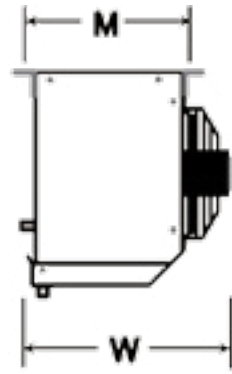
C. Storage

- The unit has to be warehoused dry and weather protected in the original packing until installation.

D. Transportation

- The original packing should be used for transport.
- Should only be moved with intended lifting device using appropriate fixtures. For weight specifications see chapter G
- Move the unit carefully avoiding jolts and impacts.

E. Dimension and weight EKA1. EKL.1, EKX1, EKC1



EKA1, EKL1, EKX1, EKC1

Model	H	L	W	M	E1	E2	Pipe connection		Weight kg	Drain	A'
							Liquid	Suction			
EKA/C1.025-13	360	650	470	345	425	N/A	12.7mm (1/2")	12.7mm (1/2")	12	3/4"	230
EKA/C1.025-14	360	650	470	345	425	N/A	12.7mm (1/2")	12.7mm (1/2")	13	3/4"	230
EKA/C1.025-15	360	650	470	345	425	N/A	12.7mm (1/2")	12.7mm (1/2")	14	3/4"	230
EKA/C1.025-24	360	1050	470	345	825	N/A	12.7mm (1/2")	15.8mm (5/8")	21	3/4"	280
EKA/C1.025-25	360	1050	470	345	825	N/A	12.7mm (1/2")	19.1mm (3/4")	24	3/4"	280
EKA/C/L1.030-13	475	760	450	320	525	N/A	12.7mm (1/2")	12.7mm (1/2")	18	3/4"	280
EKA/C/L1.030-14	475	760	450	320	525	N/A	12.7mm (1/2")	15.8mm (5/8")	19	3/4"	280
EKA/C/L1.030-15	480	760	495	390	525	N/A	12.7mm (1/2")	15.8mm (5/8")	22	3/4"	280
EKA/C/L1.030-16	480	760	495	390	525	N/A	12.7mm (1/2")	19.1mm (3/4")	24	3/4"	280
EKA/C/L1.030-23	480	1270	450	320	1025	N/A	12.7mm (1/2")	19.1mm (3/4")	34	3/4"	300
EKA/C/L1.030-24	480	1270	495	390	1025	N/A	12.7mm (1/2")	22.2mm (7/8")	35	3/4"	300
EKA/C/L1.030-25	480	1270	495	390	1025	N/A	12.7mm (1/2")	22.2mm (7/8")	36	3/4"	300
EKA/C/L1.030-26	480	1270	495	390	1025	N/A	12.7mm (1/2")	22.2mm (7/8")	38	3/4"	300
EKA/C/L1.030-34	480	1670	495	390	1425	N/A	12.7mm (1/2")	22.2mm (7/8")	48	1"	350
EKA/C/L1.030-35	480	1670	495	390	1425	N/A	12.7mm (1/2")	28.5mm (1 1/8")	51	1"	350
EKA/C/L1.030-36	480	1670	495	390	1425	N/A	12.7mm (1/2")	28.5mm (1 1/8")	58	1"	350
EKA/C/L1.030-45	480	2370	500	390	1050	1075	15.8mm (5/8")	28.5mm (1 1/8")	92	1"	450
EKA/C/L1.030-46	480	2370	500	390	1050	1075	15.8mm (5/8")	28.5mm (1 1/8")	101	1"	450
EKA/C/L1.040-14	620	970	600	455	725	N/A	12.7mm (1/2")	22.2mm (7/8")	32	1"	350
EKA/C/L1.040-15	620	970	600	455	725	N/A	12.7mm (1/2")	22.2mm (7/8")	35	1"	350
EKA/C/L1.040-16	620	970	600	455	725	N/A	12.7mm (1/2")	22.2mm (7/8")	39	1"	350
EKA/C/L1.040-24	620	1670	600	455	1425	N/A	12.7mm (1/2")	28.5mm (1 1/8")	55	1"	400
EKA/C/L1.040-25	620	1670	600	455	1425	N/A	15.8mm (5/8")	28.5mm (1 1/8")	62	1"	400
EKA/C/L1.040-26	620	1670	600	455	1425	N/A	15.8mm (5/8")	28.5mm (1 1/8")	69	1"	400
EKA/C/L1.040-34	620	2380	600	455	700	725	15.8mm (5/8")	28.5mm (1 1/8")	99	1"	450
EKA/C/L1.040-35	620	2380	600	455	700	725	15.8mm (5/8")	35mm (1 3/8")	106	1"	450
EKA/C/L1.040-36	620	2380	600	455	700	725	15.8mm (5/8")	35mm (1 3/8")	111	1"	450
EKA/C/L1.040-45	620	2980	600	455	1375	1350	15.8mm (5/8")	35mm (1 3/8")	122	1.1/4"	500
EKA/C/L1.040-46	620	2980	600	455	1375	1350	22.2mm (7/8")	41.2mm (1 5/8")	131	1.1/4"	500

Model	H	L	W	M	E1	E2	Pipe connection		Weight kg	Drain	A ¹
							Liquid	Suction			
EKA/C/L/X1.050-14	900	1260	700	492	925	N/A	15.8mm (5/8")	28.5mm (1 1/8")	71	1"	500
EKA/C/L/X1.050-15	900	1260	700	492	925	N/A	15.8mm (5/8")	28.5mm (1 1/8")	71	1"	500
EKA/C/L/X1.050-16	900	1260	700	492	925	N/A	15.8mm (5/8")	28.5mm (1 1/8")	75	1"	500
EKA/C/L/X1.050-18	900	1260	780	572	925	N/A	15.8mm (5/8")	35mm (1 3/8")	86	1.1/4"	500
EKA/C/L/X1.050-24	900	2170	700	492	900	925	15.8mm (5/8")	35mm (1 3/8")	136	1.1/4"	600
EKA/C/L/X1.050-25	900	2170	700	492	900	925	15.8mm (5/8")	35mm (1 3/8")	149	1.1/4"	600
EKA/C/L/X1.050-26	900	2170	700	492	900	925	22.2mm (7/8")	41.2mm (1 5/8")	163	1.1/4"	600
EKA/C/L/X1.050-28	900	2170	780	572	900	925	22.2mm (7/8")	41.2mm (1 5/8")	178	1.1/4"	600
EKA/C/L/X1.050-34	900	3070	700	492	900	925	22.2mm (7/8")	41.2mm (1 5/8")	171	1.1/4"	700
EKA/C/L/X1.050-35	900	3070	700	492	900	925	22.2mm (7/8")	41.2mm (1 5/8")	180	1.1/4"	700
EKA/C/L/X1.050-36	900	3070	700	492	900	925	22.2mm (7/8")	54mm (2 1/8")	196	1.1/4"	700
EKA/C/L/X1.050-45	900	3470	700	492	781	781	22.2mm (7/8")	54mm (2 1/8")	242	1.1/4"	750
EKA/C/L/X1.050-46	900	3470	700	492	781	781	22.2mm (7/8")	54mm (2 1/8")	253	1.1/4"	750
EKA/C/L/X1.063-15	1350	1680	900	700	1430	N/A	2 x 15.8mm (5/8")	2 x 28.5mm (1.1/8")	135	1.1/4"	700
EKA/C/L/X1.063-16	1350	1680	900	700	1430	N/A	2 x 15.8mm (5/8")	2 x 28.5mm (1.1/8")	153	1.1/4"	700
EKA/C/L/X1.063-25	1350	3080	900	700	1350	1380	2 x 22.2mm (7/8")	2 x 41.2mm (1 5/8")	273	1.1/4"	800
EKA/C/L/X1.063-26	1350	3080	900	700	1350	1380	2 x 22.2mm (7/8")	2 x 41.2mm (1 5/8")	285	1.1/4"	800
EKA/C/L/X1.080-15	1690	1900	920	720	1630	N/A	2 x 15.8mm (5/8")	2 x 41.2mm (1 5/8")	285	1.1/4"	850
EKA/C/L/X1.080-16	1690	1900	920	720	1630	N/A	2 x 22.2mm (7/8")	2 x 41.2mm (1 5/8")	318	1.1/4"	850
EKA/C/L/X1.080-18	1690	1900	1040	810	1630	N/A	2 x 22.2mm (7/8")	2 x 54mm (2 1/8")	351	1.1/4"	850
EKA/C/L/X1.080-24	1690	3500	920	720	1600	1630	2 x 22.2mm (7/8")	2 x 54mm (2 1/8")	612	2"	900
EKA/C/L/X1.080-25	1690	3500	920	720	1600	1630	2 x 22.2mm (7/8")	2 x 63mm (2.5/8")	678	2"	900
EKA/C/L/X1.080-26	1690	3500	920	720	1600	1630	2 x 22.2mm (7/8")	2 x 63mm (2.5/8")	745	2"	900
EKA/C/L/X1.080-28	1690	3500	1040	810	1600	1630	2 x 28.5mm (1.1/8")	2 x 63mm (2.5/8")	812	2"	900
EKA/C/L/X1.080-34	1690	5130	920	720	1600	1630	2 x 22.2mm (7/8")	2 x 54mm (2 1/8")	828	2"	1000
EKA/C/L/X1.080-35	1690	5130	920	720	1600	1630	2 x 22.2mm (7/8")	2 x 63mm (2.5/8")	927	2"	1000
EKA/C/L/X1.080-36	1690	5130	920	720	1600	1630	2 x 22.2mm (7/8")	2 x 63mm (2.5/8")	1025	2"	1000
EKA/C/L/X1.080-38	1690	5130	1040	810	1600	1630	2 x 28.5mm (1.1/8")	2 x 63mm (2.5/8")	1126	2"	1000

F. Fan and Heater Data

Model ¹	Tube Volume l	Air Flow m ³ /hr	Air throw m	Fan qty	Fan Blade dia. mm	Voltage code	Fan speed rpm	Input ² Power W per fan	Power Amp	Heater kW	Sound Pressure level DB(A) 3m
EKA/C1.025-13	1.5	910	4	1	255	V1	1370	63	0.27	2 x 0.48	47
EKA/C1.025-14	2.0	900	4	1	255	V1	1370	63	0.27	2 x 0.48	47
EKA/C1.025-15	2.5	890	4	1	255	V1	1370	63	0.27	3 x 0.48	47
EKA/C1.025-24	4.1	1800	6	2	255	V1	1370	63	0.27	2 x 0.96	50
EKA/C1.025-25	5.1	1780	5	2	255	V1	1370	63	0.27	3 x 0.96	50
EKA/C/L1.030-13	2.5	1670	6	1	300	V1	1400	110	0.49	3 x 0.6	53
EKA/C/L1.030-14	3.3	1630	6	1	300	V1	1400	110	0.49	3 x 0.6	53
EKA/C/L1.030-15	4.2	1600	6	1	300	V1	1400	110	0.49	4 x 0.6	53
EKA/C/L1.030-16	5.0	1570	5	1	300	V1	1390	110	0.49	4 x 0.6	53
EKA/C/L1.030-23	5.1	3250	8	2	300	V1	1400	110	0.49	3 x 1.2	55
EKA/C/L1.030-24	6.7	3260	8	2	300	V1	1400	110	0.49	3 x 1.2	55
EKA/C/L1.030-25	8.4	3200	8	2	300	V1	1400	110	0.49	4 x 1.2	55
EKA/C/L1.030-26	10.0	3140	7	2	300	V1	1390	110	0.49	4 x 1.2	55
EKA/C/L1.030-34	9.3	4890	11	3	300	V1	1400	110	0.49	3 x 1.7	57
EKA/C/L1.030-35	11.7	4800	10	3	300	V1	1400	110	0.49	4 x 1.7	57
EKA/C/L1.030-36	14.0	4710	9	3	300	V1	1390	110	0.49	4 x 1.7	58
EKA/C/L1.030-45	17.5	6400	13	4	300	V1	1400	110	0.49	4 x 2.5	61
EKA/C/L1.030-46	21.1	6280	12	4	300	V1	1390	110	0.49	4 x 2.5	61
EKA/C/L1.040-14	6.1	3230	12	1	400	V2	1300	198	0.88	4 x 0.84	59
EKA/C/L1.040-14	6.1	3270	12	1	400	V3	1385	190	0.54	4 x 0.84	59
EKA/C/L1.040-15	7.6	3180	12	1	400	V2	1300	200	0.89	4 x 0.84	59
EKA/C/L1.040-15	7.6	3210	12	1	400	V3	1380	190	0.54	4 x 0.84	59
EKA/C/L1.040-16	9.1	3090	11	1	400	V2	1300	208	0.91	5 x 0.84	59
EKA/C/L1.040-16	9.1	3150	11	1	400	V3	1380	192	0.54	5 x 0.84	59
EKA/C/L1.040-24	12.2	6320	15	2	400	V2	1300	198	0.88	4 x 1.7	62
EKA/C/L1.040-24	12.2	6500	15	2	400	V3	1385	190	0.54	4 x 1.7	62
EKA/C/L1.040-25	15.3	6220	15	2	400	V2	1300	200	0.89	4 x 1.7	62
EKA/C/L1.040-25	15.3	6420	15	2	400	V3	1380	190	0.54	4 x 1.7	62
EKA/C/L1.040-26	18.6	6100	14	2	400	V2	1300	208	0.91	5 x 1.7	62
EKA/C/L1.040-26	18.6	6300	14	2	400	V3	1380	192	0.54	5 x 1.7	62
EKA/C/L1.040-34	18.3	9480	17	3	400	V2	1300	198	0.88	4 x 2.5	64
EKA/C/L1.040-34	18.3	9750	17	3	400	V3	1385	190	0.54	4 x 2.5	64
EKA/C/L1.040-35	23.1	9330	17	3	400	V2	1300	200	0.89	4 x 2.5	64
EKA/C/L1.040-35	23.1	9630	17	3	400	V3	1380	192	0.54	4 x 2.5	64
EKA/C/L1.040-36	27.7	9150	16	3	400	V2	1300	208	0.91	5 x 2.5	64
EKA/C/L1.040-36	27.7	9450	16	3	400	V3	1380	190	0.54	5 x 2.5	64
EKA/C/L1.040-45	30.6	12690	20	4	400	V2	1300	200	0.89	4 x 3.2	64
EKA/C/L1.040-45	30.6	12800	20	4	400	V3	1380	190	0.54	4 x 3.2	64
EKA/C/L1.040-46	35.6	12300	20	4	400	V2	1300	210	0.91	5 x 3.2	65
EKA/C/L1.040-46	35.6	12600	20	4	400	V3	1380	190	0.54	5 x 3.2	65

Model ¹	Tube Volume l	Air Flow m ³ /hr	Air throw m	Fan qty	Fan Blade dia. mm	Voltage code	Fan speed rpm	Input ² Power W per fan	Power Amp	Heater kW	Sound Pressure level DB(A) 3m
EKA/C/L/X1.050-14	12.3	7030	24	1	500	V3	1400	590	1.1	5 x 1.1	68
EKA/C/L/X1.050-15	15.4	6850	24	1	500	V3	1400	590	1.1	5 x 1.1	68
EKA/C/L/X1.050-16	18.5	6690	23	1	500	V3	1400	590	1.1	6 x 1.1	68
EKA/C/L/X1.050-18	24.5	6550	22	1	500	V3	1390	590	1.1	9 x 1.1	68
EKA/C/L/X1.050-24	24.7	14070	26	2	500	V3	1400	590	1.1	5 x 2.2	71
EKA/C/L/X1.050-25	30.8	13720	26	2	500	V3	1400	590	1.1	5 x 2.2	71
EKA/C/L/X1.050-26	37.0	13370	25	2	500	V3	1400	590	1.1	6 x 2.2	71
EKA/C/L/X1.050-28	48.9	13190	24	2	500	V3	1390	590	1.1	9 x 1.1	71
EKA/C/L/X1.050-34	37.1	21540	27	3	500	V3	1400	590	1.1	5 x 3.2	73
EKA/C/L/X1.050-35	46.3	20930	27	3	500	V3	1400	590	1.1	5 x 3.2	73
EKA/C/L/X1.050-36	55.2	20270	26	3	500	V3	1400	590	1.1	6 x 3.2	73
EKA/C/L/X1.050-45	51.3	27010	29	4	500	V3	1400	590	1.1	5 x 3.7	74
EKA/C/L/X1.050-46	61.6	26690	28	4	500	V3	1400	590	1.1	6 x 3.7	74
EKA/C/L/X1.063-15	35.2	13950	26	1	630	V3	1420	1290	3	8 x 1.7	74
EKA/C/L/X1.063-16	42.3	13680	25	1	630	V3	1420	1290	3	10 x 1.7	74
EKA/C/L/X1.063-25	65.7	27750	28	2	630	V3	1420	1290	3	10 x 3.2	74
EKA/C/L/X1.063-26	78.0	27610	27	2	630	V3	1420	1290	3	10 x 3.2	74
EKA/C/L/X1.080-15	54.3	22670	30	1	800	V3	950	1960	4.3	12 x 1.9	72
EKA/C/L/X1.080-16	65.2	22210	29	1	800	V3	950	1980	4.3	12 x 1.9	72
EKA/C/L/X1.080-18	86.9	21750	27	1	800	V3	948	1990	4.31	16 x 1.9	72
EKA/C/L/X1.080-24	84.5	45340	37	2	800	V3	950	1950	4.3	9 x 3.8	75
EKA/C/L/X1.080-25	105.6	45110	36	2	800	V3	950	1960	4.3	12 x 3.8	75
EKA/C/L/X1.080-26	126.7	44200	34	2	800	V3	950	1980	4.3	12 x 3.8	75
EKA/C/L/X1.080-28	168.9	43280	31	2	800	V3	948	1990	4.31	16 x 3.8	75
EKA/C/L/X1.080-34	130.7	68010	38	3	800	V3	950	1950	4.3	9 x 5.7	77
EKA/C/L/X1.080-35	162.2	67670	37	3	800	V3	950	1960	4.3	12 x 5.7	77
EKA/C/L/X1.080-36	196.1	66290	35	3	800	V3	950	1980	4.3	12 x 5.7	77
EKA/C/L/X1.080-38	260.1	64920	32	3	800	V3	948	1990	4.31	16 x 5.7	77

G. Mounting and installation

The unit may only be installed by authorized and skilled personnel

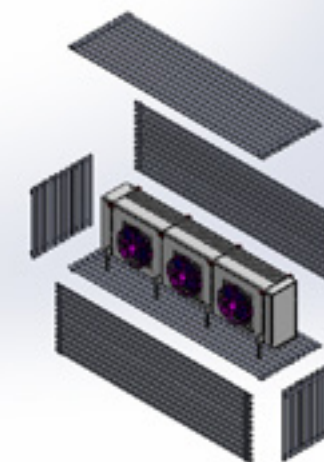
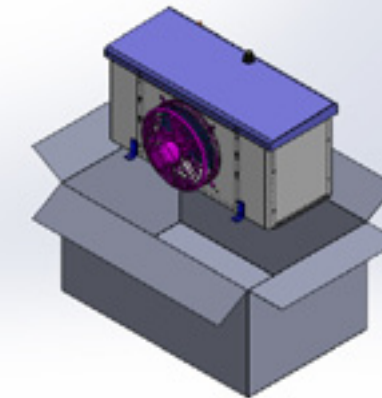
Unpacking

All EKA-KOOL's units delivered packaged in installation position without mounted drain tray. The drain tray is set on the side to prevent any damage to the tray during transportation.

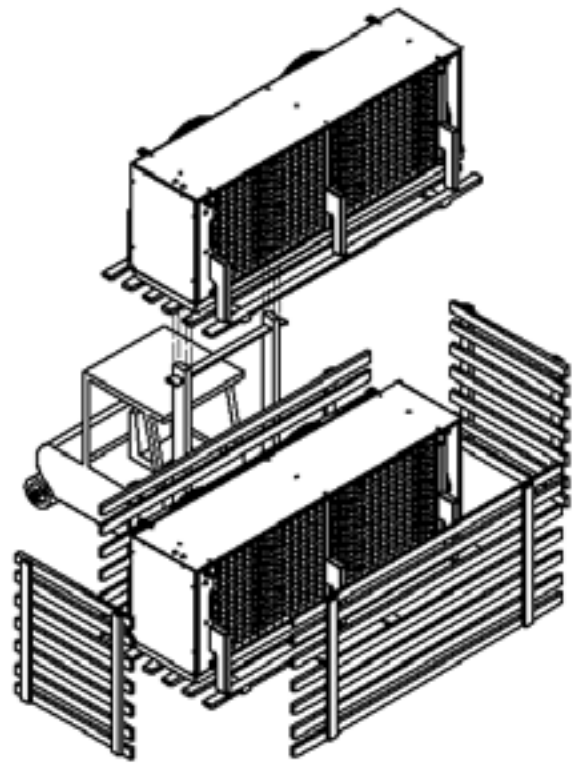
All units small than EKA/C/L1.040-16 packaged in strong and robust carton box.

All units larger than EKA/L/X/C1-040-16 packaged in a wooden case

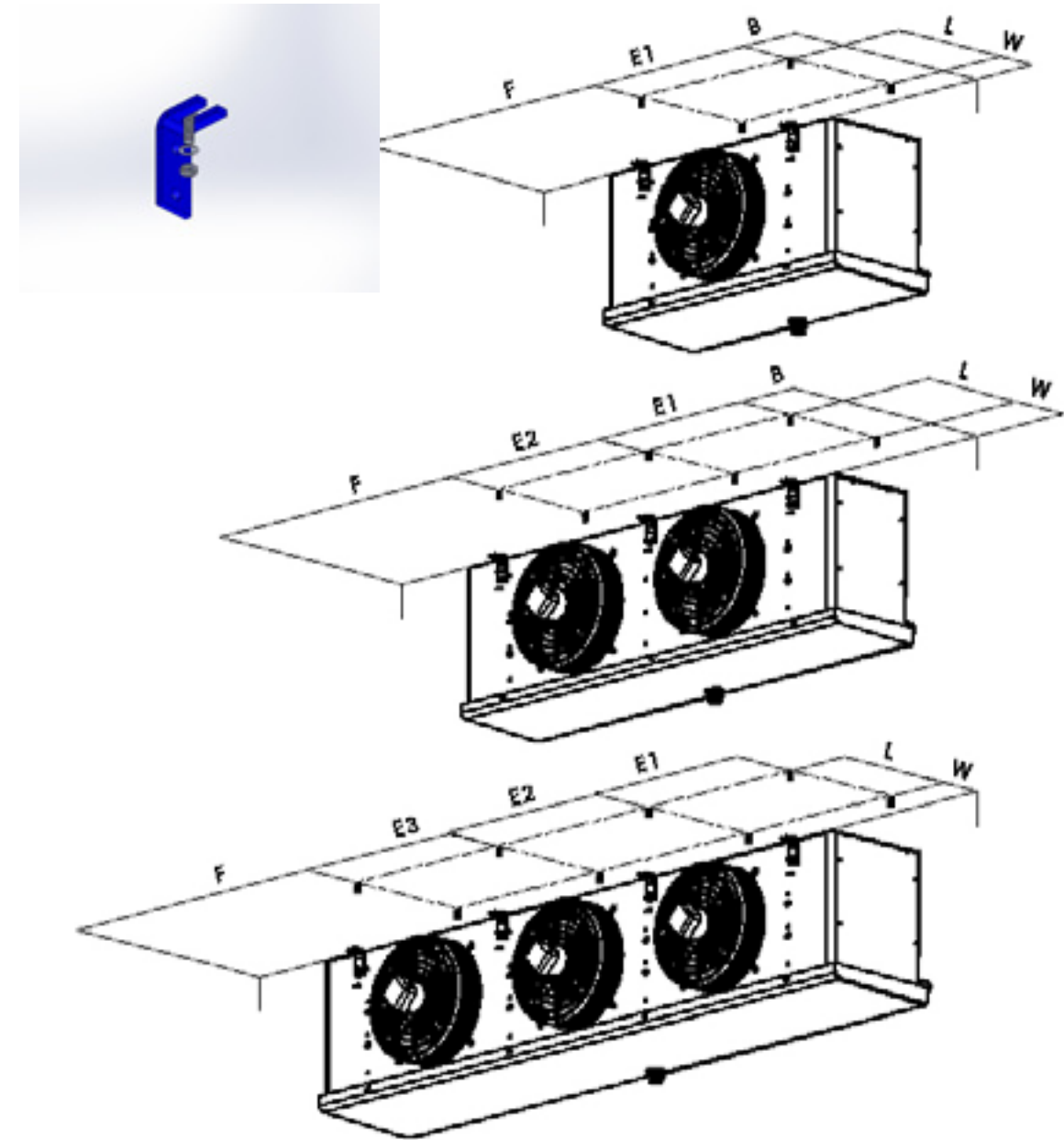
Remove packing and cover



Lifting



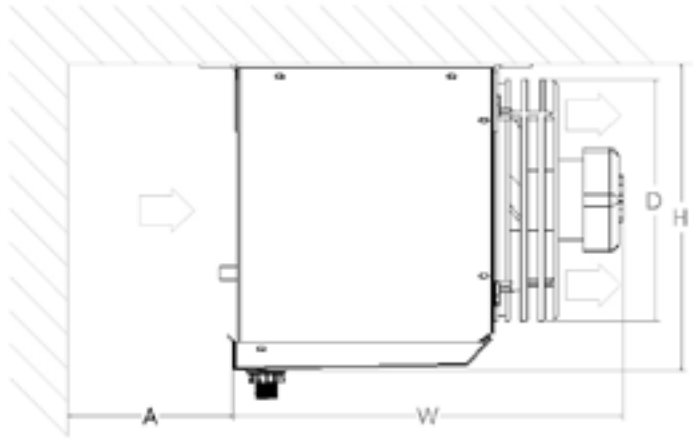
Mounting



Mount units with suitable screws and screws locking.
All units are to be mounted flat up to the ceiling leaving no gap between units and ceiling to prevent entrance of dirt and other unwanted particles/agents

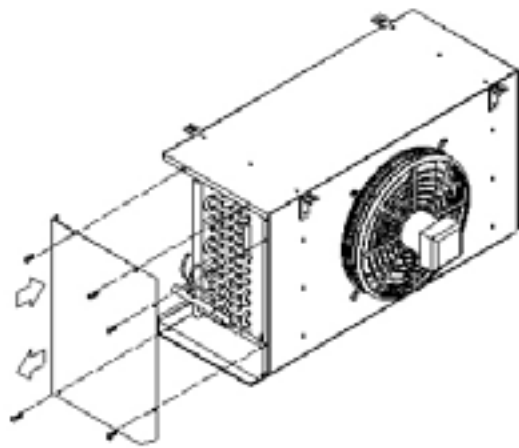


There must be a minimum distance A" between the wall and the fins air inlet for efficient air flow. Please refer to the technical data sheet for correct distance of the unit



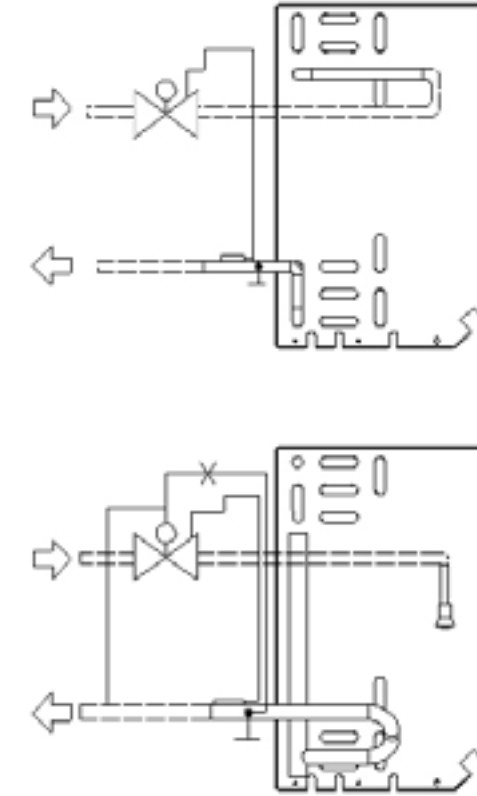
H. Refrigerant connection

Remove side pannel for refrogerant connection and put it back after connection

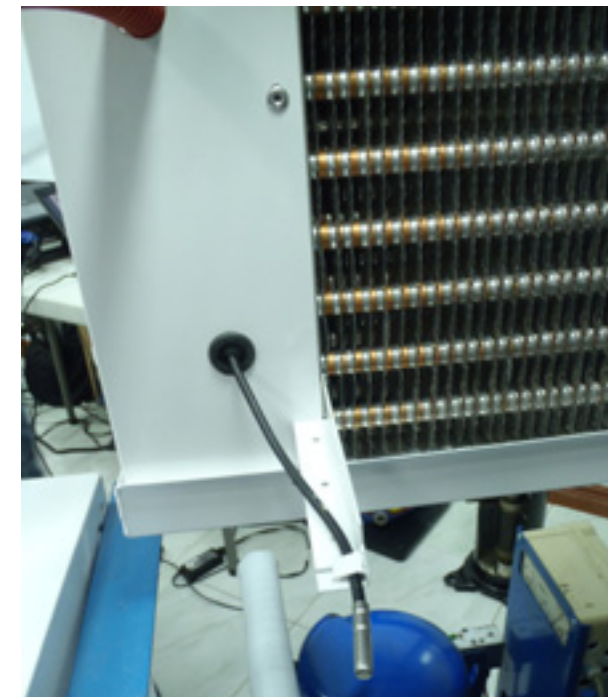


Holding charge
All EKA-KOOL Heat exchanger units are leak tested with dry nitrogen ensuring leak free coils.
All coils are delivered with a holding charge of dry nitrogen

Fit the expansion valve onto the liquid distributor adhere to the expansion valve instruction



Fit the room temperature sensor bulb into its sensor holder.
Fit defrost sensor onto first or second last U-Bend of outlet pipe



Room temperature sensor bulb



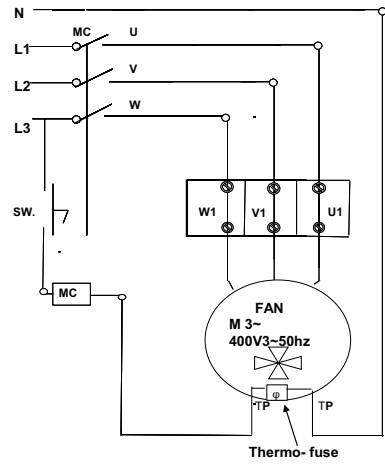
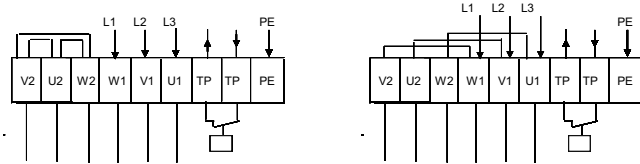
Defrost sensor bulb

J. Electrical connection fans

CONNECTION WIRING DIAGRAM OF MOTOR

FAN MOTOR : SFMC 045 - D4N-H2
230/400V 3~ -50HZ 2.2/1.28A 700W
1365r/min
POWERSUPPLY : 400V / 3 / 50 HZ - Y
1.28A / 700W / 1365 r/min

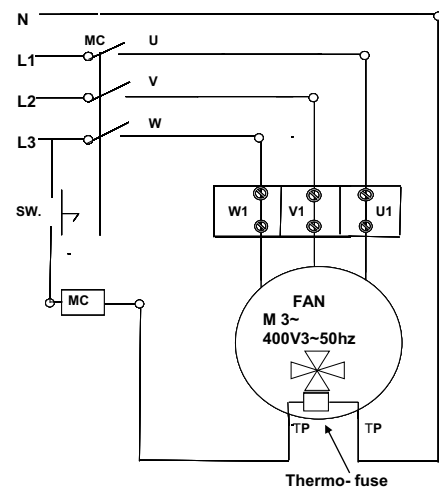
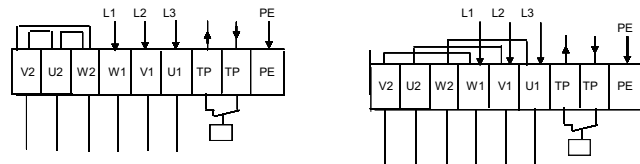
FAN MOTOR : SFMC 045 - D4N-H2
230/400V 3~ -50HZ 2.2/1.28A 700W
1365r/min
POWERSUPPLY : 230V / 3 / 50 HZ - Δ
2.2A / 700W / 1365 r/min



CONNECTION WIRING DIAGRAM OF MOTOR

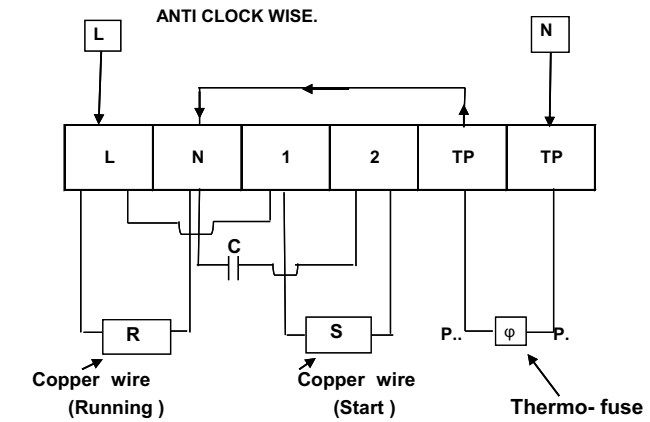
FAN MOTOR : SFMC 045 - DVN-H2
D/Y 400V/3/50HZ1.8/1.25A700/500W
1350/1050r/min
POWERSUPPLY : 400V / 3 / 50 HZ - Y
1.25A / 500W / 1050r/min

FAN MOTOR : SFMC 045 - D4N-H2
D/Y 400V/3/50HZ1.8/1.25A700/500W
1350/1050r/min
POWERSUPPLY : 400V / 3 / 50 HZ - Δ
1.8A / 700W / 1350r/min



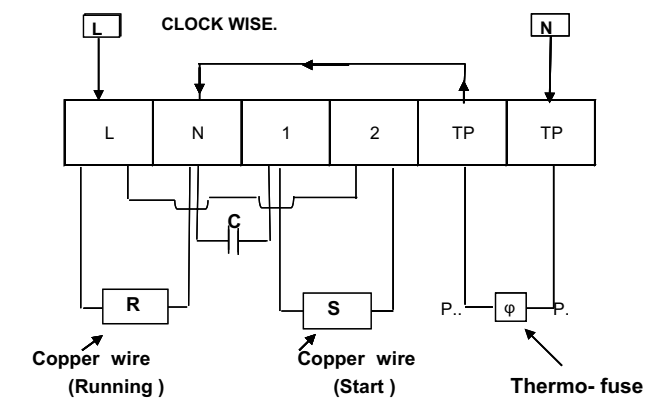
CONNECTION WIRING DIAGRAM OF MOTOR

FAN MOTOR : SFC : 255 / 300 / 350 / 400
230V /1/ 50-60HZ
POWERSUPPLY : 230V / 1 / 50-60 HZ



CONNECTION WIRING DIAGRAM OF MOTOR

FAN MOTOR : SFC : 255 / 300 / 350 / 400
230V /1/ 50-60HZ
POWERSUPPLY : 230V / 1 / 50-60 HZ



K. Defrost Setup Guidline

ELECTRIC DEFROST

The EKA-Kool evaporators are fitted with electric heaters underneath and within the heat exchanger coil block. The special design by Eka-Kool eliminate with the need for a drain tray heater.

The lower Electric heaters are place in a way that the drain tray is heated at the same time as the coil block is being defrosted. No disruption of water flow out of the drain tray by a drain tray heater, as with other manufacturers.

Eka-Kool has in most cases more heaters that other brands and the heater watts per heater may be less. This is done to ensure a very fast and clean defrost, and not warm up the room more than necessary. Timing of the defrost intervals and duration of heater on time as well as dripping times are very important.

Defrost Duration

Eka-Kool average defrost times vary from 8 minutes to 26 minutes. This is all depending on the type and model of the evaporator, amount of frost or ice accumulated on the fins and tubes at the time of defrost, as well as the room temperature.

Defrost Intervals:

are dependant of the environment the evaporator is exposed to, as well as the room temperature.

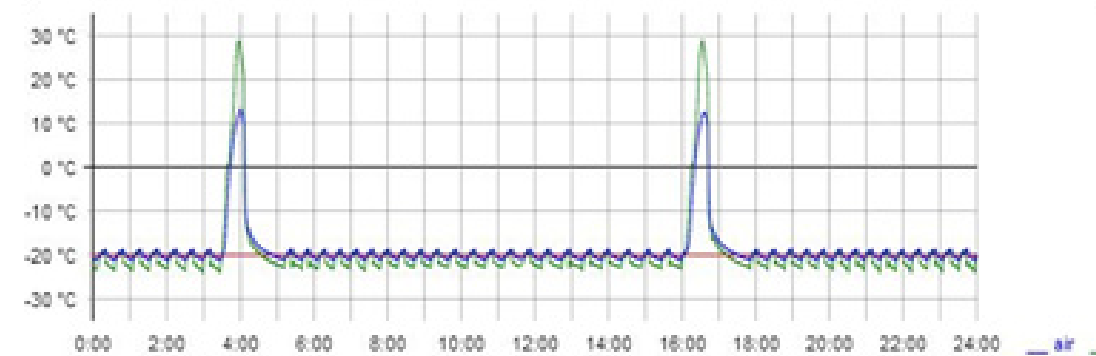
The defrost intervals can vary between, 1 to 8 defrost per day.

Eka-Kool dual fin spacing design, requires less frequent defrost per day as the fins have a larger spacing at the air inlet where the most frost or ice is accumulated. Generally Eka-Kool evaporators run with 1 defrost per day less than most others.

Standard setting which most systems are set up with are 4 or 6 defrost per day.

With a DOD (Defrost on demand) function these defrost will vary as per the ice build-up.

Example: during the day time heavy load, many door openings will result in a defrost initiated every 3 to 4 hrs. Were as at night when doors are closed and lights are off, a defrost will only be initiated every 10 to 15 hrs. Chart below freezer daily duty, 13 hour defrost interval.



#	db_id	utc	time	state	air t	blk t	set t	alarm	relay
938	2082695	1402755343	15:43	103 COOL*	-20.0	-21.9	-20.0	000	(03)CF
939	2082703	1402755344	15:44	103 COOL*	-20.1	-22.0	-20.0	000	(03)CF
940	2082711	1402755345	15:45	103 COOL*	-20.2	-22.1	-20.0	000	(03)CF
941	2082719	1402755346	15:46	103 COOL*	-20.3	-22.2	-20.0	000	(03)CF
942	2082727	1402755347	15:47	103 COOL*	-20.4	-22.3	-20.0	000	(03)CF
943	2082735	1402755348	15:48	103 COOL*	-20.5	-22.3	-20.0	000	(03)CF
944	2082743	1402755349	15:49	103 COOL*	-20.6	-22.4	-20.0	000	(03)CF
945	2082751	1402755350	15:50	103 COOL*	-20.7	-22.5	-20.0	000	(03)CF
946	2082759	1402755351	15:51	103 COOL*	-20.7	-22.5	-20.0	000	(03)CF
947	2082767	1402755352	15:52	103 COOL*	-20.8	-22.6	-20.0	000	(03)CF
948	2082775	1402755353	15:53	103 COOL*	-20.9	-22.7	-20.0	000	(03)CF
949	2082783	1402755354	15:54	103 COOL*	-20.9	-22.7	-20.0	000	(03)CF
950	2082791	1402755355	15:55	103 COOL*	-21.0	-22.8	-20.0	000	(03)CF
951	2082799	1402755356	15:56	101 COOL*	-21.1	-22.9	-20.0	000	(00)

Defrost Termination

The defrost termination is either by time or by temperature. By time was already discussed previously. Defrost termination by temperature, can be done in a few ways and temperature termination set point will vary accordingly.

Defrost sensor probe placement (Coil Block Sensor):

1. Fitted to a U'Bend to be set at +20oC
2. Fitted inside the coil block to be set at +20oC

These settings are average temperature settings and can be fine tuned during commissioning.

Generally all ice should have been melted at + 8oC. However this will only be the case if the sensor is placed in the perfect position. This may not always be possible. Therefore to allow for areas which may still have ice present we recommend to use the set point of +20oC, to be very sure no ice is remaining.

Recommended sensor position, near the top of the coil and close to the air inlet.

Heat from the heaters will rise to the top, the last place the ice is melted, that is the ideal sensor location.

The time difference between the 2 set points is only 2 minutes of defrosting time.

Drain or Dripping Time

Once the defrost has terminated, either by time or temperature, the heater need time to cool before the refrigeration can begin again. At the time of defrost termination the heaters will remain heating for a further 4 to 5 minutes. Therefore we recommend that a **drain time of 10 minutes** to be set.

Fan Delay

The fan must be off during an electric defrost cycle. Heaters will heat up the coil by convection and radiation.

Once the defrost heating is terminated, the drain time applies and only then the compressor is turned on again for cooling. The evaporator must then cool down sufficiently before the fan is turned on.

This fan delay can be active by time or by temperature.

Setting the sensor probe for the Fan cut in temperature, the set point must be set below Zero to be sure to refreeze any moisture remaining on the coil block.

Set point for the fan delay with time, 1 to 1.5 minutes is recommended.

Your success is our success



EKA-KOOL®, the specialist in fin & tube heat exchangers technology proudly presents to the market its unique design evaporator series serving the refrigeration and air-conditioning industries.

EKA-KOOL® stands for efficiency, value for your investment, true performer and a trust-worthy partner to your business.

EKA-KOOL®'s heat exchangers in operation



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