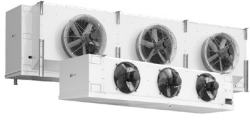




# Industrial air coolers THOR

Standard coolers with Cu tubing





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## Model indication

THOR-**B** - **426** - **8** - **H1/6** - **400** - **G ...**

①
②
③
④
⑤
⑥
⑦
⑧

Pos.	Reference	Options
1	Air direction	B = Blow through Z = Draw through
2	Cooler module	1 - 7
3	Number of fans	1 - 7
4	Tube rows	4, 6 or 8 tube rows
5	Fin spacing	4, 6, 7, 8, 10 or 12 mm
6	Circuiting design	2H, H1, H2 ...
7	Current	400 = 230/400/50/3 230 = 230/50/1
8	Options	For a full survey of all available options see page 4

## Eurovent

Within Europe, a wide variety of published data on capacities are in use, generally depending on national standards. Most in use by the leading manufacturers are national and international standards like DIN, ENV, NEN-EN and ASHRAE. Due to this, customers have not been able to make objective product comparisons, since data published on capacities were based on  $DT_1$ , DTM, dry or wet conditions, with or without certification, etc.



To meet the European requirements on EN standards, the European Refrigeration Industry embodied by Eurovent has set standards to guarantee an independent certification procedure for forced convection air cooled condensers based on NEN-EN 327 and unit air coolers based on NEN-EN 328. Being an active member of Eurovent, the capacities of the Alfa Laval commercial cooler programme, as given in the technical documentation, are based on NEN-EN 328 (evaporating temperature  $t_0 = -8\text{ °C}$ , 8 K temperature difference between air-on temperature and evaporating temperature ( $DT_1$ )).

In order to enable air cooler selection for operating conditions, technical documentation should also give capacities for humid/frosted conditions. According to Eurovent these 'frosted conditions' are to be calculated by multiplying 'dry capacities' with a factor 1.15. These data can be found in the capacity tables, in the columns marked "frosted".

## Capacities

**Frosted conditions**

- Lightly frosted coil.
- Relative humidity 85 %.
- Suction gas superheating 62% of the temperature difference ( $DT_1$ ), with a minimum of 3.5 K.
- Refrigerant liquid temperature 30 °C (for  $t_0 = -20\text{ °C}$  and below: liquid temperature 10 °C).

**Evaporating temperature  $t_0$** 

Evaporating temperature  $t_0$  is the saturated temperature according to the pressure at the suction outlet of the cooler.

**Dry conditions**

Cooling capacity where no condensation or ice build-up occurs on the coil (100% sensible cooling). This condition is used by Eurovent to standardise capacity ratings but should not be used when selecting coolers.

For cooler selection use the columns marked "frosted".



### General Information

The THOR series is a wide and flexible range of industrial air coolers fitted with blow-through or draw-through fans.

Application area: evaporating temperatures of +5 down to -40 °C using either halogen refrigerants, CO<sub>2</sub> or secondary refrigerants.

Capacities (Eurovent SC 2) 5 up to 123 kW.

Air flow 4,000 up to 68,000 m<sup>3</sup>/h.

These models have been highly standardised in construction and dimensions, while maintaining flexibility in fin spacings, coil construction and circuiting design.

### Other THOR models



#### THOR-D

Low silhouette dual discharge air coolers.



#### THOR-F

Air cooler models THOR-F have been optimized for the refrigerated storage of agricultural products. These cooler models are characterised by an optimised capacity / air volume ratio and a relatively low profile.



#### THOR-A

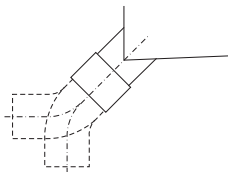
For airsock application Alfa Laval has developed a special airsock cooler range. These THOR-A models are fitted with an airsock ring and fan motors capable of supplying the extra external pressure that is required for the proper functioning of airsocks.

All THOR, THOR-D, THOR-F and THOR-A models are also available with stainless steel tubing (TYR range).

### Two-Year Guarantee

Because Alfa Laval has the fullest confidence in the product quality, a two-year full guarantee is given.

### Product Configuration

- Finned coil
  - 7 coil block modules
  - 4, 6 or 8 tube rows deep
  - Cu ripple fin tubing  $\varnothing$  5/8" (smooth tubing for brine)
  - Tube pitch 50 x 50 mm square
  - Corrugated Alu-fins
  - Fin spacings 4, 6, 7, 8, 10 and 12 mm.
- 1- 7 Fans, blowing or drawing through the coil, available in a range of different executions. Diameters  $\varnothing$  406 mm up to  $\varnothing$  710 mm. Fan motor protection class IP55.
- Corrosion resistant casing material: Aluminium/Sendzimir, white epoxy coated (RAL 9003).
- Hinged, enclosed end covers (modules 1 - 4). Larger modules fitted with easily removable end covers.
- Hinged drip tray. Drain(s) 32 mm PVC connection, freely adjustable into either horizontal or vertical position.
 
- Refrigerant distribution optimised to refrigerant applied.
- Refrigerant connections on right hand side (fan side view).
- Fitted with schröder valve on the suction connection for testing purposes.
- Sufficient room for fitting the expansion valve inside.
- Suitable for dry expansion or pumped system.
- Stickers indicate fan direction and refrigerant in/out.
- Delivery in mounting position. Coolers are mounted on wooden beams. Installation can take place with use of a forklift.
- Design pressure 33 bar (H(C)FC) or 6 bar (brine). Higher design pressures on request. Each heat exchanger is leak tested with dry air and finally supplied with a nitrogen pre-charge.



## Options

**Defrost systems**

- Hot gas coil in driptray
- Electric defrost
- Hot glycol defrost
- Water defrost

**G1, G2**  
**E1, E2, E4, E5**  
**HW1, HW2**  
**W**

*Electric defrost for air coolers with pumped refrigerant circulation or in glycol execution on special request only.*

**Fan ring heater**

**FRH**

**Driptray insulation**

- Styropore 10 mm + cladding **I 2**  
*not in combination with electric defrost*
- Foamglass 25 mm + cladding **I 3**

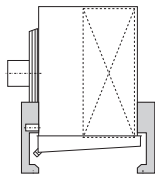

**Refrigerant connections left**  
(fan side view)

**L**

**Mounting feet**

**MF**

*For floor mounting, THOR coolers can be equipped with hot dip galvanized steel mounting feet. The positioning of these is the same as the suspension brackets for ceiling mounting.*

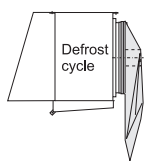
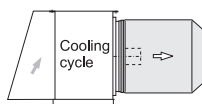

**Isolating switch (mounted)**

**ISM**

**Shut up® system**

**S + SH**

*for THOR-Z only.*  
*The system comprises a shut up sock (S) and an inlet hood (SH) to enhance defrost efficiency.*

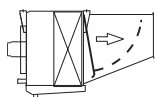


*The use of a shut-up® system may lead to a decline in cooling capacity up to max. 5 percent. Please take this into account during selection. When working conditions are such that condensation would freeze during the derosting period, the inlet hood should be insulated.*

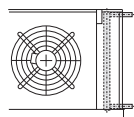
**Diffuser + defrost damper**

**D/DO**

*Discharge diffuser to increase air throw (D), can also be fitted with a defrost damper valve (O) that closes automatically when the fans are stopped. THOR-B only.*


**Secondary refrigerant**

*Air coolers for secondary refrigerant application can be selected with our selection software. Extra information on request.*


**Stainless steel 304 casing**

**SSC**

**Fan motors 400/60/3 or 230/60/1**
Non-standard executions *(on request only)*
**Special fan motors**

- Dual fan speed motors
- Variable fan speed motors
- EC fans
- Alternative electrical supply 460/60/3
- Fans for extra external pressure 125 Pa (modules 5, 6 and 7)

**P**

**Built in heater coil sections**

## Fan Ring Heater (FRH, 230 Volt)

incl. mounting gear

Cooler module	Fan diameter mm	Ring heater power W
1	406	400
2	457	450
3	508	500
4	560	500
5	560	500
6	630	325
7	710	350

## Driptray Insulation ( I )

For specific operational conditions the air coolers can be fitted with driptray insulation.

Insulation of the driptray is recommended for air coolers with hot gas defrosting used at a room temperature below - 5 °C. For areas with high relative humidity it may also be necessary to insulate other parts of the casing. At extra cost this driptray insulation can be combined with the usual epoxy coating.

*Note :* When selecting driptray insulation the overall height "B" of the coolers (see page 20 and 22) increases by the thickness of the insulation material applied.

Selection Example DT<sub>1</sub>

Refrigerant .....	R 404A dx
Selected fin spacing .....	7 mm
Required cooling capacity .....	23 kW
Air-on temperature .....	+2 °C
Evaporating temperature .....	-5 °C

- 1)  $DT_1 = +2 - (-5) = 7\text{ K}$
- 2) Correction factor  $DT_1 / R\ 404A : 1.15$
- 3) Multiply required capacity  
with correction factor :  $23 \times 1.15 = 26.5\text{ kW}$ .
- 4) Cooler models can be selected in columns 'capacity / frosted' on pages 9 and 10 with a nominal capacity of 26.5 kW.

For the above mentioned conditions the following THOR models can be selected :

- THOR 146-7, nom. cap. 27.1 kW
- THOR 238-7, nom. cap. 29.5 kW
- THOR 328-7, nom. cap. 26.8 kW
- THOR 426-7, nom. cap. 27.6 kW

Depending on parameters such as *air flow*, *number of fans* and *cooler dimensions* (see tables) a final cooler model selection can take place.

Capacity values under 'Dry Conditions' are reference values for Eurovent conditions.

Standard condition	Air on temp. °C	Evaporating temperature °C	Factor dry frosted
SC1	10	0	1.35
SC2	0	-8	1.15
SC3	-18	-25	1.05
SC4	-25	-31	1.01

SC 2 : Nominal capacity for cooling design.

Air-on temperature is the air temperature at the intake side of the coil block.

## Correction factors

DT1 K	Evaporating temperature °C									
	+5	0	-5	-8	-10	-15	-20	-25	-30	-35
<b>R-404A dx</b>										
6	1.28	1.32	1.38		1.44	1.51	1.58	1.64	1.69	1.72
7	1.06	1.10	1.15		1.20	1.27	1.33	1.39	1.44	1.48
8	0.89	0.93	0.97	1.00	1.03	1.09	1.15	1.21	1.26	1.29
9	0.77	0.80	0.84		0.89	0.95	1.00	1.06	1.11	1.15
10	0.67	0.70	0.74		0.78	0.83	0.89	0.95	1.00	1.04
11	0.59	0.62	0.65		0.70	0.74	0.80	0.85	0.90	0.94
<b>R-134a dx</b>										
6	1.34	1.42	1.50		1.60	1.71	1.82	1.94		
7	1.11	1.17	1.25		1.34	1.43	1.54	1.64		
8	0.94	0.99	1.06		1.14	1.23	1.32	1.42		
9	0.81	0.86	0.92		0.99	1.07	1.16	1.25		
10	0.70	0.75	0.80		0.87	0.94	1.03	1.11		
11	0.62	0.66	0.71		0.77	0.84	0.92	1.00		
<b>R-22 dx</b>										
6	1.34	1.39	1.45		1.52	1.59	1.66	1.73	1.78	1.81
7	1.11	1.15	1.21		1.27	1.33	1.40	1.47	1.52	1.55
8	0.94	0.98	1.03		1.08	1.14	1.21	1.27	1.32	1.36
9	0.81	0.84	0.89		0.94	1.00	1.06	1.12	1.17	1.21
10	0.70	0.74	0.78		0.82	0.88	0.94	1.00	1.05	1.09
11	0.62	0.65	0.69		0.73	0.78	0.84	0.90	0.95	0.99
<b>R-404A pumped system</b>										
6	1.00	1.07	1.13		1.19	1.24	1.29	1.34	1.39	1.44
7	0.82	0.88	0.94		1.00	1.05	1.10	1.15	1.20	1.25
8	0.70	0.75	0.80		0.85	0.90	0.95	1.00	1.05	1.11
9	0.60	0.65	0.69		0.74	0.79	0.84	0.89	0.94	1.00
10	0.52	0.56	0.61		0.65	0.70	0.75	0.80	0.85	0.91
11	0.46	0.50	0.54		0.58	0.62	0.67	0.72	0.78	0.84
<b>R-22 pumped system</b>										
6	1.13	1.21	1.28		1.34	1.39	1.44	1.48	1.53	1.58
7	0.92	0.98	1.05		1.10	1.16	1.21	1.25	1.30	1.36
8	0.76	0.82	0.88		0.93	0.98	1.03	1.08	1.14	1.20
9	0.64	0.70	0.75		0.80	0.85	0.90	0.95	1.01	1.07
10	0.55	0.60	0.65		0.70	0.74	0.79	0.84	0.90	0.97
11	0.48	0.52	0.57		0.61	0.66	0.71	0.76	0.82	0.89

Correction factors for other refrigerants, alternative fin materials, coatings and optional coil block configurations on request.

## Capacities R-404A

Fin spacing 4 mm

Cooler model THOR	Capacities kW		Air flow m <sup>3</sup> /h	Coil surface m <sup>2</sup>	Int. vol. dm <sup>3</sup>	Weight kg	Dimensions		Fans		Air throw (m)		Sound press. dB(A)
	Frosted	Dry cond.					Length A mm	Height B mm	Cap. kW	Nr	THOR-B	THOR-Z	
	$t_0=-8^{\circ}\text{C}$ $DT_1=8\text{K}$	$t_0=-8^{\circ}\text{C}$ $DT_1=8\text{K}$											
116 - 4	8.3	7.2	4100	57.5	11	74	1320	580	0.25	1	20	24	57
118 - 4	9.9	8.6	4060	76.6	14	83	1320	580	0.25	1	20	24	57
126 - 4	16.7	14.5	8210	114.9	21	120	2120	580	0.25	2	20	24	60
128 - 4	19.9	17.3	8120	153.2	28	136	2120	580	0.25	2	20	24	60
136 - 4	24.9	21.7	12320	172.4	32	165	2920	580	0.25	3	20	24	62
138 - 4	29.5	25.6	12180	229.8	42	190	2920	580	0.25	3	20	24	62
146 - 4	33.3	29.0	16430	229.8	42	210	3720	580	0.25	4	20	24	63
148 - 4	39.8	34.6	16240	306.4	56	243	3720	580	0.25	4	20	24	63
156 - 4	42.1	36.6	20540	287.3	53	255	4520	580	0.25	5	20	24	64
158 - 4	48.9	42.5	20300	383.0	70	297	4520	580	0.25	5	20	24	64
166 - 4	49.9	43.4	24650	344.7	63	300	5320	580	0.25	6	20	24	65
168 - 4	56.4	49.1	24360	459.6	84	350	5320	580	0.25	6	20	24	65
176 - 4	56.7	49.3	28750	402.2	74	344	6120	580	0.25	7	20	24	66
178 - 4	62.3	54.2	28430	536.3	99	403	6120	580	0.25	7	20	24	66
214 - 4	7.6	6.6	4990	46.0	12	71	1320	680	0.25	1	23	28	60
216 - 4	10.0	8.7	4930	68.9	19	81	1320	680	0.25	1	23	28	60
218 - 4	11.9	10.4	4870	91.9	25	92	1320	680	0.25	1	23	28	60
224 - 4	15.2	13.2	9970	91.9	20	112	2120	680	0.25	2	23	28	63
226 - 4	20.0	17.4	9860	137.9	30	133	2120	680	0.25	2	23	28	63
228 - 4	23.9	20.8	9750	183.9	40	154	2120	680	0.25	2	23	28	63
234 - 4	22.8	19.8	15000	137.9	28	153	2920	680	0.25	3	23	28	65
236 - 4	30.0	26.1	14800	206.8	42	185	2920	680	0.25	3	23	28	65
238 - 4	35.3	30.7	14600	275.8	56	217	2920	680	0.25	3	23	28	65
244 - 4	30.4	26.4	19900	183.9	36	194	3720	680	0.25	4	23	28	66
246 - 4	40.0	34.8	19700	275.8	53	237	3720	680	0.25	4	23	28	66
248 - 4	47.8	41.6	19500	367.7	71	279	3720	680	0.25	4	23	28	66
254 - 4	37.2	32.3	24900	229.8	43	236	4520	680	0.25	5	23	28	67
256 - 4	50.6	44.0	24700	344.7	65	289	4520	680	0.25	5	23	28	67
258 - 4	58.7	51.1	24400	459.6	86	342	4520	680	0.25	5	23	28	67
264 - 4	45.6	39.6	29900	275.8	51	277	5320	680	0.25	6	23	28	68
266 - 4	59.9	52.1	29600	413.7	76	340	5320	680	0.25	6	23	28	68
268 - 4	67.6	58.8	29200	551.6	102	404	5320	680	0.25	6	23	28	68
274 - 4	53.7	46.7	35200	321.8	59	318	6120	680	0.25	7	23	28	69
276 - 4	68.4	59.5	34900	482.6	88	391	6120	680	0.25	7	23	28	69
278 - 4	75.1	65.3	34400	643.5	117	466	6120	680	0.25	7	23	28	69

## Capacities R-404A

Fin spacing 6 mm

Cooler model THOR	Capacities kW		Air flow m <sup>3</sup> /h	Coil surface m <sup>2</sup>	Int. vol. dm <sup>3</sup>	Weight kg	Dimensions		Fans		Air throw (m)		Sound press. dB(A)
	Frosted $t_0=-8^{\circ}\text{C}$ $DT_1=8\text{K}$	Dry cond. $t_0=-8^{\circ}\text{C}$ $DT_1=8\text{K}$					Length A mm	Height B mm	Cap. kW	Nr	THOR-B	THOR-Z	
116 - 6	7.2	6.3	4220	39.1	11	73	1320	580	0.25	1	20	24	57
118 - 6	8.9	7.7	4170	52.1	14	81	1320	580	0.25	1	20	24	57
126 - 6	14.5	12.6	8440	78.1	21	117	2120	580	0.25	2	20	24	60
128 - 6	17.8	15.5	8350	104.1	28	133	2120	580	0.25	2	20	24	60
136 - 6	22.0	19.2	12670	117.2	32	161	2920	580	0.25	3	20	24	62
138 - 6	26.2	22.8	12520	156.2	42	185	2920	580	0.25	3	20	24	62
146 - 6	29.0	25.2	16890	156.2	42	205	3720	580	0.25	4	20	24	63
148 - 6	35.6	31.0	16700	208.3	56	237	3720	580	0.25	4	20	24	63
156 - 6	36.9	32.1	21120	195.3	53	249	4520	580	0.25	5	20	24	64
158 - 6	44.1	38.4	20880	260.4	70	288	4520	580	0.25	5	20	24	64
166 - 6	44.1	38.3	25340	234.3	63	293	5320	580	0.25	6	20	24	65
168 - 6	51.4	44.8	25050	312.4	84	340	5320	580	0.25	6	20	24	65
176 - 6	50.6	44.0	29570	273.4	74	337	6120	580	0.25	7	20	24	66
178 - 6	54.4	47.3	26230	364.5	99	392	6120	580	0.25	7	20	24	66
214 - 6	6.5	5.7	5130	31.2	12	69	1320	680	0.25	1	24	29	60
216 - 6	8.8	7.6	5070	46.9	19	79	1320	680	0.25	1	23	28	60
218 - 6	10.7	9.3	5010	62.5	25	89	1320	680	0.25	1	23	28	60
224 - 6	13.1	11.4	10300	62.5	20	109	2120	680	0.25	2	24	29	63
226 - 6	17.4	15.1	10100	93.7	30	129	2120	680	0.25	2	23	28	63
228 - 6	21.3	18.5	10000	125.0	40	149	2120	680	0.25	2	23	28	63
234 - 6	19.4	16.9	15400	93.7	28	149	2920	680	0.25	3	24	29	65
236 - 6	26.4	23.0	15200	140.6	42	179	2920	680	0.25	3	23	28	65
238 - 6	31.4	27.3	15000	187.5	56	209	2920	680	0.25	3	23	28	65
244 - 6	26.2	22.8	20500	125.0	36	189	3720	680	0.25	4	24	29	66
246 - 6	34.9	30.3	20300	187.5	53	229	3720	680	0.25	4	23	28	66
248 - 6	42.7	37.1	20000	250.0	71	269	3720	680	0.25	4	23	28	66
254 - 6	32.0	27.8	25600	156.2	43	229	4520	680	0.25	5	24	29	67
256 - 6	44.2	38.4	25300	234.3	65	279	4520	680	0.25	5	23	28	67
258 - 6	53.0	46.1	25100	312.4	86	328	4520	680	0.25	5	23	28	67
264 - 6	38.8	33.7	30800	187.5	51	269	5320	680	0.25	6	24	29	67
266 - 6	52.9	46.0	30400	281.2	76	329	5320	680	0.25	6	23	28	67
268 - 6	61.8	53.7	30100	374.9	102	388	5320	680	0.25	6	23	28	68
274 - 6	45.9	40.0	36200	218.7	59	309	6120	680	0.25	7	24	29	69
276 - 6	61.0	53.1	35900	328.1	88	379	6120	680	0.25	7	23	28	69
278 - 6	69.3	60.3	35400	437.4	117	448	6120	680	0.25	7	23	28	69
314 - 6	8.7	7.6	6840	41.7	17	89	1320	880	0.37	1	26	32	62
316 - 6	11.6	10.1	6760	62.5	25	102	1320	880	0.55	1	26	32	62
318 - 6	14.2	12.4	6680	83.3	33	116	1320	880	0.55	1	26	32	62
324 - 6	17.4	15.2	13700	83.3	27	144	2120	880	0.37	2	26	32	65
326 - 6	23.2	20.2	13500	125.0	40	170	2120	880	0.55	2	26	32	65
328 - 6	28.5	24.8	13400	166.6	54	197	2120	880	0.55	2	26	32	65
334 - 6	25.8	22.5	20500	125.0	37	198	2920	880	0.37	3	26	32	67
336 - 6	35.3	30.7	20300	187.5	56	238	2920	880	0.55	3	26	32	67
338 - 6	41.8	36.4	20000	250.0	74	278	2920	880	0.55	3	26	32	67
344 - 6	34.8	30.3	27300	166.6	47	253	3720	880	0.37	4	26	32	68
346 - 6	46.4	40.4	27000	250.0	71	306	3720	880	0.55	4	26	32	68
348 - 6	56.9	49.5	26700	333.3	95	359	3720	880	0.55	4	26	32	68
354 - 6	42.7	37.1	34200	208.3	58	307	4520	880	0.37	5	26	32	69
356 - 6	59.0	51.3	34200	312.4	86	373	4520	880	0.55	5	26	32	69
358 - 6	70.6	61.4	33800	416.6	115	440	4520	880	0.55	5	26	32	69
364 - 6	51.7	45.0	33400	250.0	68	362	5320	880	0.37	6	26	32	70
366 - 6	70.6	61.4	41000	374.9	102	441	5320	880	0.55	6	26	32	70
368 - 6	82.3	71.6	40600	499.9	136	521	5320	880	0.55	6	26	32	70

Changes possible without prior notice

Capacities R-404A

Fin spacing 6 mm

Cooler model THOR	Capacities kW		Air flow m <sup>3</sup> /h	Coil surface m <sup>2</sup>	Int. vol. dm <sup>3</sup>	Weight kg	Dimensions		Fans			Sound press. dB(A)	
	Frosted $t_0=-8^{\circ}\text{C}$ $DT_1=8\text{K}$	Dry cond. $t_0=-8^{\circ}\text{C}$ $DT_1=8\text{K}$					Length A mm	Height B mm	Cap. kW	Nr	Air throw (m)		
	THOR-B	THOR-Z											
414 - 6	10.6	9.2	8550	52.1	19	102	1520	880	0.75	1	28	34	64
416 - 6	14.7	12.8	8450	78.1	29	118	1520	880	0.75	1	28	34	64
418 - 6	17.6	15.3	8350	104.1	38	135	1520	880	0.75	1	27	33	64
424 - 6	21.3	18.5	17100	104.1	32	166	2520	880	0.75	2	28	34	67
426 - 6	29.5	25.6	16900	156.2	48	199	2520	880	0.75	2	28	34	67
428 - 6	35.3	30.7	16700	208.3	64	232	2520	880	0.75	2	27	33	67
434 - 6	32.7	28.4	25600	156.2	45	230	3520	880	0.75	3	28	34	69
436 - 6	43.1	37.5	25300	234.3	67	280	3520	880	0.75	3	28	34	69
438 - 6	53.4	46.4	25100	312.4	90	329	3520	880	0.75	3	27	33	69
444 - 6	42.7	37.1	34200	208.3	58	294	4520	880	0.75	4	28	34	70
446 - 6	59.0	51.3	33800	312.4	86	360	4520	880	0.75	4	28	34	70
448 - 6	70.6	61.4	33400	416.6	115	427	4520	880	0.75	4	27	33	70
454 - 6	54.0	47.0	42700	260.4	70	358	5520	880	0.75	5	28	34	71
456 - 6	73.2	63.7	42200	390.6	106	441	5520	880	0.75	5	28	34	71
458 - 6	85.0	73.9	41800	520.7	141	524	5520	880	0.75	5	27	33	71
464 - 6	65.5	57.0	51300	312.4	83	422	6520	880	0.75	6	28	34	72
466 - 6	85.6	74.4	50700	468.7	125	522	6520	880	0.75	6	28	34	72
468 - 6	96.0	83.5	50100	624.9	166	621	6520	880	0.75	6	27	33	72
516 - 6	18.3	16.0	10500	97.6	36	175	1520	1080	1.20	1	30	36	65
518 - 6	21.9	19.1	10400	130.2	48	195	1520	1080	1.20	1	30	36	65
526 - 6	36.8	32.0	21100	195.3	60	290	2520	1080	1.20	2	30	36	68
528 - 6	44.0	38.2	20800	260.4	80	331	2520	1080	1.20	2	30	36	68
536 - 6	53.9	46.9	31600	292.9	84	405	3520	1080	1.20	3	30	36	70
538 - 6	66.6	57.9	31300	390.6	112	467	3520	1080	1.20	3	30	36	70
546 - 6	73.7	64.1	42200	390.6	108	520	4520	1080	1.20	4	30	36	71
548 - 6	88.1	76.7	41700	520.7	144	603	4520	1080	1.20	4	30	36	71
556 - 6	91.5	79.6	52800	488.2	132	635	5520	1080	1.20	5	30	36	72
558 - 6	106.2	92.4	52200	650.9	176	739	5520	1080	1.20	5	30	36	72
616 - 6	21.9	19.1	12600	117.2	41	171	1720	1080	1.20	1	31	38	65
618 - 6	26.1	22.7	12500	156.2	54	190	1720	1080	1.20	1	31	38	65
626 - 6	44.0	38.3	25300	234.3	70	282	2920	1080	1.20	2	31	38	68
628 - 6	52.3	45.5	25000	312.4	93	320	2920	1080	1.20	2	31	38	68
636 - 6	66.0	57.4	38000	351.5	98	393	4120	1080	1.20	3	31	38	70
638 - 6	79.9	69.5	37500	468.7	131	451	4120	1080	1.20	3	31	38	70
646 - 6	88.1	76.6	50600	468.7	127	504	5320	1080	1.20	4	31	38	71
648 - 6	102.9	89.5	50100	624.9	170	581	5320	1080	1.20	4	31	38	71
656 - 6	106.9	93.0	63300	585.8	156	615	6520	1080	1.20	5	31	38	72
658 - 6	119.9	104.3	62600	781.1	208	712	6520	1080	1.20	5	31	38	72
716 - 6	34.7	30.2	20200	187.5	60	285	2120	1280	2.40	1	36	44	69
718 - 6	42.6	37.1	20000	250.0	81	325	2120	1280	2.40	1	36	44	69
726 - 6	69.6	60.5	40500	374.9	107	486	3720	1280	2.40	2	36	44	72
728 - 6	85.3	74.2	40000	499.9	142	566	3720	1280	2.40	2	36	44	72
736 - 6	105.8	92.0	60800	562.4	153	688	5320	1280	2.40	3	36	44	74
738 - 6	123.4	107.4	60100	749.9	204	807	5320	1280	2.40	3	37	45	74

Changes possible without prior notice



Capacities R-404A

Fin spacing 7 mm

Cooler model THOR	Capacities kW		Air flow m <sup>3</sup> /h	Coil surface m <sup>2</sup>	Int. vol. dm <sup>3</sup>	Weight kg	Dimensions		Fans		Air throw (m) THOR-B THOR-Z	Sound press. dB(A)	
	Frosted $t_0 = -8^\circ\text{C}$ $DT_1 = 8\text{K}$	Dry cond. $t_0 = -8^\circ\text{C}$ $DT_1 = 8\text{K}$					Length A mm	Height B mm	Cap. kW	Nr			
116 - 7	6.8	5.9	4280	33.8	11	72	1320	580	0.25	1	20	24	57
118 - 7	8.4	7.3	4230	45.1	14	81	1320	580	0.25	1	20	24	57
126 - 7	13.5	11.8	8560	67.6	21	116	2120	580	0.25	2	20	24	60
128 - 7	16.8	14.6	8460	90.1	28	132	2120	580	0.25	2	20	24	60
136 - 7	20.7	18.0	12840	101.4	32	159	2920	580	0.25	3	20	24	62
138 - 7	24.6	21.4	12700	135.2	42	183	2920	580	0.25	3	20	24	62
146 - 7	27.1	23.5	17130	135.2	42	203	3720	580	0.25	4	20	24	63
148 - 7	33.6	29.2	16930	180.3	56	234	3720	580	0.25	4	20	24	63
156 - 7	34.4	30.0	21410	169.0	53	246	4520	580	0.25	5	20	24	64
158 - 7	41.8	36.3	21170	225.3	70	285	4520	580	0.25	5	20	24	64
166 - 7	41.3	35.9	25690	202.8	63	290	5320	580	0.25	6	20	24	65
168 - 7	48.9	42.6	25400	270.4	84	336	5320	580	0.25	6	20	24	65
176 - 7	47.6	41.4	29970	236.6	74	333	6120	580	0.25	7	20	24	66
178 - 7	54.9	47.8	29630	315.5	99	388	6120	580	0.25	7	20	24	66
214 - 7	6.0	5.3	5190	27.0	12	69	1320	680	0.25	1	24	29	60
216 - 7	8.3	7.2	5150	40.6	19	78	1320	680	0.25	1	24	29	60
218 - 7	10.0	8.7	5070	54.1	25	88	1320	680	0.25	1	24	29	61
224 - 7	12.1	10.5	10400	54.1	20	108	2120	680	0.25	2	24	29	63
226 - 7	16.3	14.1	10300	81.1	30	127	2120	680	0.25	2	24	29	63
228 - 7	20.1	17.4	10100	108.2	40	147	2120	680	0.25	2	24	29	64
234 - 7	17.9	15.6	15600	81.1	28	147	2920	680	0.25	3	24	29	65
236 - 7	24.8	21.6	15410	121.7	42	176	2920	680	0.25	3	24	29	65
238 - 7	29.5	25.7	15200	162.2	56	205	2920	680	0.25	3	24	29	65
244 - 7	24.2	21.1	20700	108.2	36	187	3720	680	0.25	4	24	29	66
246 - 7	32.5	28.2	20550	162.2	53	225	3720	680	0.25	4	24	29	66
248 - 7	40.2	35.0	20300	216.2	71	264	3720	680	0.25	4	24	29	67
254 - 7	29.8	26.0	25900	135.2	43	226	4520	680	0.25	5	24	29	67
256 - 7	41.3	35.9	25690	202.8	65	274	4520	680	0.25	5	24	29	67
258 - 7	50.1	43.6	25400	270.4	86	322	4520	680	0.25	5	24	29	68
264 - 7	35.7	31.1	31100	162.2	51	265	5320	680	0.25	6	24	29	68
266 - 7	49.6	43.1	30830	243.4	76	323	5320	680	0.25	6	24	29	68
268 - 7	58.6	51.0	30400	324.5	102	381	5320	680	0.25	6	24	29	68
274 - 7	42.3	36.8	36300	189.3	59	305	6120	680	0.25	7	24	29	69
276 - 7	57.1	49.7	35970	283.9	88	372	6120	680	0.25	7	24	29	69
278 - 7	65.9	57.3	35500	378.5	117	440	6120	680	0.25	7	24	29	69
314 - 7	8.1	7.0	6920	36.1	17	88	1320	880	0.37	1	27	33	62
316 - 7	10.8	9.4	6870	54.1	25	101	1320	880	0.37	1	26	32	62
318 - 7	13.4	11.7	6770	72.1	33	114	1320	880	0.55	1	26	32	62
324 - 7	16.1	14.0	13800	72.1	27	142	2120	880	0.37	2	27	33	65
326 - 7	21.6	18.8	13700	108.2	40	168	2120	880	0.37	2	26	32	65
328 - 7	26.8	23.3	13500	144.2	54	194	2120	880	0.55	2	26	32	65
334 - 7	23.9	20.8	20800	108.2	37	196	2920	880	0.37	3	27	33	67
336 - 7	33.1	28.8	20600	162.2	56	234	2920	880	0.37	3	26	32	67
338 - 7	39.4	34.3	20300	216.3	74	273	2920	880	0.55	3	26	32	67
344 - 7	32.3	28.1	27700	144.2	47	250	3720	880	0.37	4	27	33	68
346 - 7	43.4	37.7	27500	216.3	71	301	3720	880	0.37	4	26	32	68
348 - 7	53.7	46.7	27100	288.4	95	352	3720	880	0.55	4	26	32	68
354 - 7	39.8	34.6	34600	180.3	58	303	4520	880	0.37	5	27	33	69
356 - 7	55.1	48.0	34300	270.4	86	367	4520	880	0.37	5	26	32	69
358 - 7	66.7	58.0	33800	360.5	115	431	4520	880	0.55	5	26	32	69
364 - 7	47.7	41.5	41500	216.3	68	357	5320	880	0.37	6	27	33	70
366 - 7	66.2	57.6	41200	324.5	102	434	5320	880	0.37	6	26	32	70
368 - 7	78.2	68.1	40600	432.6	136	511	5320	880	0.55	6	26	32	70

Changes possible without prior notice

## Capacities R-404A

Fin spacing 7 mm

Cooler model THOR	Capacities kW		Air flow m <sup>3</sup> /h	Coil surface m <sup>2</sup>	Int. vol. dm <sup>3</sup>	Weight kg	Dimensions		Fans		Air throw (m)		Sound press. dB(A)
	Frosted	Dry cond.					Length A mm	Height B mm	Cap. kW	Nr	THOR-B	THOR-Z	
	$t_0 = -8^\circ\text{C}$ $DT_i = 8\text{K}$	$t_0 = -8^\circ\text{C}$ $DT_i = 8\text{K}$											
414 - 7	9.9	8.6	8640	45.1	19	101	1520	880	0.75	1	29	35	64
416 - 7	13.8	12.0	8580	67.6	29	117	1520	880	0.75	1	28	34	64
418 - 7	16.6	14.5	8450	90.1	38	133	1520	880	0.75	1	28	34	64
424 - 7	19.9	17.3	17300	90.1	32	164	2520	880	0.75	2	29	35	67
426 - 7	27.6	24.0	17200	135.2	48	196	2520	880	0.75	2	28	34	67
428 - 7	33.3	29.0	16900	180.3	64	228	2520	880	0.75	2	28	34	67
434 - 7	30.2	26.3	25900	135.2	45	227	3520	880	0.75	3	29	35	69
436 - 7	40.3	35.1	24700	202.8	67	275	3520	880	0.75	3	28	34	69
438 - 7	50.1	43.6	25300	270.4	90	323	3520	880	0.75	3	28	34	69
444 - 7	39.8	34.6	34600	180.3	58	290	4520	880	0.75	4	29	35	70
446 - 7	55.1	48.0	34300	270.4	86	354	4520	880	0.75	4	28	34	70
448 - 7	66.7	58.0	33800	360.5	115	418	4520	880	0.75	4	28	34	70
454 - 7	49.9	43.4	43200	225.3	70	353	5520	880	0.75	5	29	35	71
456 - 7	68.8	59.8	42900	338.0	106	433	5520	880	0.75	5	28	34	71
458 - 7	80.8	70.3	42300	450.7	141	513	5520	880	0.75	5	28	34	71
464 - 7	60.6	52.7	51900	270.4	83	416	6520	880	0.75	6	29	35	72
466 - 7	80.8	70.3	51500	405.6	125	512	6520	880	0.75	6	28	34	72
468 - 7	91.9	80.0	50700	540.8	166	608	6520	880	0.75	6	28	34	72

## Capacities R-404A

Fin spacing 8 mm

Cooler model THOR	Capacities kW		Air flow m <sup>3</sup> /h	Coil surface m <sup>2</sup>	Int. vol. dm <sup>3</sup>	Weight kg	Dimensions		Fans		Air throw (m) THOR-B THOR-Z	Sound press. dB(A)	
	Frosted t <sub>0</sub> =-8°C DT <sub>1</sub> =8K	Dry cond. t <sub>0</sub> =-8°C DT <sub>1</sub> =8K					Length A mm	Height B mm	Cap. kW	Nr			
116 - 8	5.9	5.2	4340	29.9	11	72	1320	580	0.25	1	20	24	57
118 - 8	7.5	6.5	4290	39.8	14	80	1320	580	0.25	1	20	24	57
126 - 8	11.9	10.3	8680	59.7	21	115	2120	580	0.25	2	20	24	60
128 - 8	15.0	13.0	8580	79.6	28	130	2120	580	0.25	2	20	24	60
136 - 8	18.3	15.9	13020	89.6	32	157	2920	580	0.25	3	20	24	62
138 - 8	22.1	19.2	12870	119.4	42	180	2920	580	0.25	3	20	24	62
146 - 8	23.8	20.7	17360	119.4	42	200	3720	580	0.25	4	20	24	63
148 - 8	29.9	26.0	17160	159.2	56	230	3720	580	0.25	4	20	24	63
156 - 8	30.3	26.4	21700	149.3	53	243	4520	580	0.25	5	20	24	64
158 - 8	37.5	32.6	21450	199.0	70	280	4520	580	0.25	5	20	24	64
166 - 8	36.6	31.8	26040	179.1	63	286	5320	580	0.25	6	20	24	65
168 - 8	44.3	38.5	25740	238.8	84	331	5320	580	0.25	6	20	24	65
176 - 8	42.4	36.8	30380	209.0	74	329	6120	580	0.25	7	20	24	66
178 - 8	50.1	43.6	30040	278.7	99	383	6120	580	0.25	7	20	24	66
214 - 8	5.3	4.6	5270	23.9	12	68	1320	680	0.25	1	24	29	60
216 - 8	7.3	6.4	5210	35.8	19	77	1320	680	0.25	1	24	29	60
218 - 8	9.0	7.8	5150	47.8	25	87	1320	680	0.25	1	24	29	61
224 - 8	10.5	9.2	10500	47.8	20	107	2120	680	0.25	2	24	29	63
226 - 8	14.2	12.4	10400	71.7	30	125	2120	680	0.25	2	24	29	63
228 - 8	18.0	15.6	10300	95.5	40	144	2120	680	0.25	2	24	29	64
234 - 8	15.5	13.5	15800	71.7	28	145	2920	680	0.25	3	24	29	65
236 - 8	21.9	19.1	15600	107.5	42	173	2920	680	0.25	3	24	29	65
238 - 8	26.5	23.0	15400	143.3	56	201	2920	680	0.25	3	24	29	65
244 - 8	21.1	18.4	21100	95.5	36	184	3720	680	0.25	4	24	29	66
246 - 8	28.5	24.8	20800	143.3	53	221	3720	680	0.25	4	24	29	66
248 - 8	35.9	31.3	20600	191.1	71	258	3720	680	0.25	4	24	29	67
254 - 8	26.2	22.8	26300	119.4	43	222	4520	680	0.25	5	24	29	67
256 - 8	36.3	31.6	26000	179.1	65	269	4520	680	0.25	5	24	29	67
258 - 8	44.9	39.1	25700	238.8	86	315	4520	680	0.25	5	24	29	68
264 - 8	31.0	26.9	31600	143.3	51	261	5320	680	0.25	6	24	29	68
266 - 8	43.9	38.2	31300	215.0	76	317	5320	680	0.25	6	24	29	68
268 - 8	53.1	46.2	30900	286.6	102	373	5320	680	0.25	6	24	29	68
274 - 8	36.5	31.8	36600	167.2	59	300	6120	680	0.25	7	24	29	69
276 - 8	50.7	44.1	36300	250.8	88	365	6120	680	0.25	7	24	29	69
278 - 8	59.9	52.1	35800	334.4	117	431	6120	680	0.25	7	24	29	69
314 - 8	7.0	6.1	7020	31.8	17	87	1320	880	0.37	1	27	33	62
316 - 8	9.5	8.3	6950	47.8	25	100	1320	880	0.37	1	26	32	62
318 - 8	12.0	10.4	6870	63.7	33	112	1320	880	0.37	1	26	32	62
324 - 8	14.0	12.2	14000	63.7	27	140	2120	880	0.37	2	27	33	65
326 - 8	19.0	16.5	13900	95.5	40	165	2120	880	0.37	2	26	32	65
328 - 8	23.9	20.8	13700	127.4	54	190	2120	880	0.37	2	26	32	65
334 - 8	20.7	18.0	21100	95.5	37	193	2920	880	0.37	3	27	33	67
336 - 8	29.2	25.4	20800	143.3	56	230	2920	880	0.37	3	26	32	67
338 - 8	35.4	30.8	20600	191.1	74	267	2920	880	0.37	3	26	32	67
344 - 8	28.2	24.5	28100	127.4	47	246	3720	880	0.37	4	27	33	68
346 - 8	38.1	33.1	27800	191.1	71	295	3720	880	0.37	4	26	32	68
348 - 8	47.9	41.7	27500	254.8	95	345	3720	880	0.37	4	26	32	68
354 - 8	35.0	30.4	35100	159.2	58	298	4520	880	0.37	5	27	33	69
356 - 8	48.5	42.2	34700	238.8	86	360	4520	880	0.37	5	26	32	69
358 - 8	59.9	52.1	34300	318.5	115	422	4520	880	0.37	5	26	32	69
364 - 8	41.3	35.9	42100	191.1	68	351	5320	880	0.37	6	27	33	70
366 - 8	58.5	50.9	41700	286.6	102	426	5320	880	0.37	6	26	32	70
368 - 8	70.8	61.6	41200	382.2	136	500	5320	880	0.37	6	26	32	70

Changes possible without prior notice

Capacities R-404A

Fin spacing 8 mm

Cooler model THOR	Capacities kW		Air flow m <sup>3</sup> /h	Coil surface m <sup>2</sup>	Int. vol. dm <sup>3</sup>	Weight kg	Dimensions		Fans			Sound press. dB(A)	
	Frosted	Dry cond.					Length A mm	Height B mm	Cap. kW	Nr	Air throw (m)		
	$t_0=-8^{\circ}\text{C}$ $DT_1=8\text{K}$	$t_0=-8^{\circ}\text{C}$ $DT_1=8\text{K}$									THOR-B		THOR-Z
414 - 8	8.7	7.6	8780	39.8	19	100	1520	880	0.75	1	29	35	64
416 - 8	12.1	10.5	8680	59.7	29	115	1520	880	0.75	1	28	34	64
418 - 8	15.0	13.0	8580	79.6	38	131	1520	880	0.75	1	28	34	64
424 - 8	17.5	15.2	17600	79.6	32	162	2520	880	0.75	2	29	35	67
426 - 8	24.3	21.1	17400	119.4	48	192	2520	880	0.75	2	28	34	67
428 - 8	30.0	26.1	17200	159.2	64	223	2520	880	0.75	2	28	34	67
434 - 8	26.3	22.9	26300	119.4	45	223	3520	880	0.75	3	29	35	69
436 - 8	36.0	31.3	26000	179.1	67	270	3520	880	0.75	3	28	34	69
438 - 8	44.7	38.9	25700	238.8	90	316	3520	880	0.75	3	28	34	69
444 - 8	35.0	30.4	35100	159.2	58	285	4520	880	0.75	4	29	35	70
446 - 8	48.5	42.2	34700	238.8	86	347	4520	880	0.75	4	28	34	70
448 - 8	59.9	52.1	34300	318.5	115	409	4520	880	0.75	4	28	34	70
454 - 8	43.2	37.6	43900	199.0	70	347	5520	880	0.75	5	29	35	71
456 - 8	60.9	53.0	43400	298.6	106	425	5520	880	0.75	5	28	34	71
458 - 8	73.3	63.8	42900	398.1	141	502	5520	880	0.75	5	28	34	71
464 - 8	52.7	45.8	52700	238.8	83	409	6520	880	0.75	6	29	35	72
466 - 8	72.1	62.7	52100	358.3	125	502	6520	880	0.75	6	28	34	72
468 - 8	84.4	73.4	51500	477.7	166	595	6520	880	0.75	6	28	34	72
516 - 8	15.1	13.1	10800	74.6	36	133	1520	1080	1.20	1	30	36	65
518 - 8	18.7	16.2	10700	99.5	48	155	1520	1080	1.20	1	30	36	65
526 - 8	30.3	26.4	21700	149.3	60	255	2520	1080	1.20	2	30	36	68
528 - 8	37.4	32.5	21400	199.0	80	298	2520	1080	1.20	2	30	36	68
536 - 8	45.0	39.1	32500	223.9	84	376	3520	1080	1.20	3	30	36	70
538 - 8	55.8	48.6	32100	298.6	112	439	3520	1080	1.20	3	30	36	70
546 - 8	60.6	52.7	43400	298.6	108	498	4520	1080	1.20	4	30	36	71
548 - 8	74.9	65.2	42900	398.1	144	522	4520	1080	1.20	4	30	36	71
556 - 8	76.1	66.2	54200	373.2	132	620	5520	1080	1.20	5	30	36	72
558 - 8	91.6	79.7	53600	497.6	176	722	5520	1080	1.20	5	30	36	72
616 - 8	18.2	15.9	13000	89.6	41	189	1720	1080	1.20	1	31	38	65
618 - 8	22.0	19.1	12800	119.4	54	212	1720	1080	1.20	1	31	38	65
626 - 8	36.5	31.8	26000	179.1	70	316	2920	1080	1.20	2	31	38	68
628 - 8	44.2	38.4	25700	238.8	93	362	2920	1080	1.20	2	31	38	68
636 - 8	54.1	47.0	39000	268.7	98	443	4120	1080	1.20	3	31	38	70
638 - 8	67.6	58.8	38600	358.3	131	512	4120	1080	1.20	3	31	38	70
646 - 8	73.0	63.5	52000	358.3	127	569	5320	1080	1.20	4	31	38	71
648 - 8	88.4	76.9	51400	477.7	170	662	5320	1080	1.20	4	31	38	71
656 - 8	90.1	78.4	65100	447.8	156	696	6520	1080	1.20	5	31	38	72
658 - 8	105.4	91.7	64300	597.1	208	812	6520	1080	1.20	5	31	38	72
716 - 8	28.5	24.8	20800	143.3	60	277	2120	1280	2.40	1	36	44	69
718 - 8	35.8	31.1	20500	191.1	81	314	2120	1280	2.40	1	36	44	69
726 - 8	57.0	49.6	41600	286.6	107	471	3720	1280	2.40	2	36	44	72
728 - 8	71.7	62.4	41100	382.2	142	545	3720	1280	2.40	2	36	44	72
736 - 8	87.7	76.3	62500	429.9	153	664	5320	1280	2.40	3	36	44	74
738 - 8	106.1	92.3	61700	573.2	204	776	5320	1280	2.40	3	36	44	74

Changes possible without prior notice

## Capacities R-404A

Fin spacing 10 mm

Cooler model THOR	Capacities kW		Air flow m <sup>3</sup> /h	Coil surface m <sup>2</sup>	Int. vol. dm <sup>3</sup>	Weight kg	Dimensions		Fans		Air throw (m)		Sound press. dB(A)
	Frosted	Dry cond.					Length A mm	Height B mm	Cap. kW	Nr	THOR-B	THOR-Z	
	$t_0=-8^{\circ}\text{C}$ $DT_1=8\text{K}$	$t_0=-8^{\circ}\text{C}$ $DT_1=8\text{K}$											
314 - 10	6.4	5.6	7210	26.0	17	86	1320	880	0.37	1	27	33	63
316 - 10	8.8	7.7	7130	38.9	25	97	1320	880	0.37	1	27	33	63
318 - 10	11.1	9.7	7050	51.9	33	109	1320	880	0.37	1	27	33	64
324 - 10	12.8	11.2	14400	51.9	27	137	2120	880	0.37	2	27	33	66
326 - 10	17.7	15.4	14300	77.9	40	160	2120	880	0.37	2	27	33	66
328 - 10	22.2	19.3	14100	103.8	54	183	2120	880	0.37	2	27	33	67
334 - 10	18.9	16.4	21600	77.9	37	188	2920	880	0.37	3	27	33	68
336 - 10	27.0	23.5	21400	116.8	56	222	2920	880	0.37	3	27	33	68
338 - 10	33.2	28.8	21200	155.8	74	257	2920	880	0.37	3	27	33	68
344 - 10	25.7	22.3	28800	103.8	47	239	3720	880	0.37	4	27	33	69
346 - 10	35.4	30.8	28500	155.8	71	285	3720	880	0.37	4	27	33	69
348 - 10	44.5	38.7	28200	207.7	95	331	3720	880	0.37	4	27	33	70
354 - 10	44.5	38.7	36100	129.8	58	290	4520	880	0.37	5	27	33	70
356 - 10	32.1	27.9	35700	194.7	86	347	4520	880	0.37	5	27	33	70
358 - 10	44.7	38.9	35300	259.6	115	405	4520	880	0.37	5	27	33	71
364 - 10	55.9	48.6	43300	155.8	68	341	5320	880	0.37	6	27	33	71
366 - 10	37.8	32.9	42800	233.6	102	410	5320	880	0.37	6	27	33	71
368 - 10	54.0	47.0	42300	311.5	136	479	5320	880	0.37	6	27	33	71
414 - 10	66.3	57.6	9020	32.4	19	97	1520	880	0.75	1	29	35	65
416 - 10	8.0	7.0	8910	48.7	29	112	1520	880	0.75	1	29	35	65
418 - 10	11.1	9.7	8810	64.9	38	126	1520	880	0.75	1	29	35	65
424 - 10	13.9	12.1	18000	64.9	32	157	2520	880	0.75	2	29	35	68
426 - 10	16.0	13.9	17800	97.3	48	186	2520	880	0.75	2	29	35	68
428 - 10	22.3	19.4	17600	129.8	64	215	2520	880	0.75	2	29	35	68
434 - 10	27.9	24.3	27000	97.3	45	217	3520	880	0.75	3	29	35	69
436 - 10	24.0	20.9	26700	146.0	67	260	3520	880	0.75	3	29	35	69
438 - 10	33.4	29.0	26400	194.7	90	303	3520	880	0.75	3	29	35	70
444 - 10	41.5	36.1	36100	129.8	58	277	4520	880	0.75	4	29	35	71
446 - 10	32.1	27.9	35700	194.7	86	334	4520	880	0.75	4	29	35	71
448 - 10	44.7	38.9	35300	259.6	115	392	4520	880	0.75	4	29	35	71
454 - 10	55.9	48.6	45100	162.2	70	337	5520	880	0.75	5	29	35	72
456 - 10	56.2	48.9	44600	243.4	106	409	5520	880	0.75	5	29	35	72
458 - 10	68.7	59.8	44100	324.5	141	481	5520	880	0.75	5	29	35	72
464 - 10	48.0	41.8	54100	194.7	83	396	6520	880	0.75	6	29	35	72
466 - 10	66.9	58.2	53500	292.0	125	483	6520	880	0.75	6	29	35	72
468 - 10	79.6	69.2	52900	389.4	166	569	6520	880	0.75	6	29	35	73

## Capacities R-404A

Fin spacing 10 mm

Cooler model THOR	Capacities kW		Air flow m <sup>3</sup> /h	Coil surface m <sup>2</sup>	Int. vol. dm <sup>3</sup>	Weight kg	Dimensions		Fans		Air throw (m) THOR-B THOR-Z	Sound press. dB(A)	
	Frosted $t_0 = -8^\circ\text{C}$ $DT_1 = 8\text{K}$	Dry cond. $t_0 = -8^\circ\text{C}$ $DT_1 = 8\text{K}$					Length A mm	Height B mm	Cap. kW	Nr			
516 - 10	13.9	12.1	11100	60.8	36	167	1520	1080	1.20	1	30	36	65
518 - 10	17.4	15.1	11000	81.1	48	185	1520	1080	1.20	1	30	36	65
526 - 10	27.8	24.2	22200	121.7	60	274	2520	1080	1.20	2	30	36	68
528 - 10	34.9	30.3	22000	162.2	80	310	2520	1080	1.20	2	30	36	68
536 - 10	41.8	36.3	33400	182.5	84	381	3520	1080	1.20	3	30	36	70
538 - 10	51.9	45.1	33000	243.4	112	435	3520	1080	1.20	3	30	36	70
546 - 10	55.7	48.5	44500	243.4	108	488	4520	1080	1.20	4	30	36	71
548 - 10	69.8	60.7	44000	324.5	144	560	4520	1080	1.20	4	30	36	71
556 - 10	70.3	61.1	55700	304.2	132	595	5520	1080	1.20	5	30	36	72
558 - 10	85.8	74.6	55000	405.6	176	685	5520	1080	1.20	5	30	36	72
616 - 10	16.8	14.6	13300	73.0	41	184	1720	1080	1.20	1	31	38	65
618 - 10	20.6	18.0	13200	97.3	54	206	1720	1080	1.20	1	31	38	65
626 - 10	33.7	29.3	26700	146.0	70	306	2920	1080	1.20	2	31	38	68
628 - 10	41.3	36.0	26400	194.7	93	349	2920	1080	1.20	2	31	38	68
636 - 10	49.7	43.3	40100	219.0	98	428	4120	1080	1.20	3	31	38	70
638 - 10	62.8	54.6	39600	292.0	131	493	4120	1080	1.20	3	31	38	70
646 - 10	67.4	58.6	53400	292.0	127	550	5320	1080	1.20	4	31	38	71
648 - 10	82.8	72.0	52800	389.4	170	636	5320	1080	1.20	4	31	38	71
656 - 10	83.5	72.7	66800	365.0	156	672	6520	1080	1.20	5	31	38	72
658 - 10	99.4	86.4	66000	486.7	208	780	6520	1080	1.20	5	31	38	72
716 - 10	26.4	23.0	21300	116.8	60	269	2120	1280	2.40	1	36	44	69
718 - 10	33.3	29.0	21100	155.8	81	304	2120	1280	2.40	1	36	44	69
726 - 10	53.0	46.1	42700	233.6	107	455	3720	1280	2.40	2	36	44	72
728 - 10	66.7	58.1	42300	311.5	142	524	3720	1280	2.40	2	36	44	72
736 - 10	80.9	70.4	64100	350.4	153	641	5320	1280	2.40	3	36	44	74
738 - 10	99.3	86.4	63400	467.3	204	744	5320	1280	2.40	3	36	44	74

Changes possible without prior notice

## Capacities R-404A

Fin spacing 12 mm

Cooler model THOR	Capacities kW			Air flow m <sup>3</sup> /h	Coil surface m <sup>2</sup>	Int. vol. dm <sup>3</sup>	Weight kg	Dimensions		Fans			
	Frosted	Dry cond.	Air throw (m)					Length A mm	Height B mm	Cap. kW	Nr	Sound press. dB(A)	
	$t_0=-8^{\circ}\text{C}$ $DT_1=8\text{K}$	$t_0=-8^{\circ}\text{C}$ $DT_1=8\text{K}$											THOR-B
314 - 12	5.8	5.0	7350	22	17	84	1320	880	0.37	1	27	33	63
316 - 12	8.1	7.0	7270	34	25	94	1320	880	0.37	1	27	33	63
318 - 12	10.2	8.9	7190	45	33	105	1320	880	0.37	1	27	33	64
324 - 12	11.6	10.1	14700	45	27	133	2120	880	0.37	2	27	33	66
326 - 12	16.3	14.2	14600	67	40	155	2120	880	0.37	2	27	33	66
328 - 12	20.4	17.8	14400	89	54	176	2120	880	0.37	2	27	33	67
334 - 12	17.2	15.0	22000	67	37	183	2920	880	0.37	3	27	33	68
336 - 12	24.6	21.4	21800	101	56	214	2920	880	0.37	3	27	33	68
338 - 12	30.7	26.7	21600	134	74	246	2920	880	0.37	3	27	33	68
344 - 12	23.2	20.2	29400	89	47	232	3720	880	0.37	4	27	33	69
346 - 12	32.5	28.3	29100	134	71	274	3720	880	0.37	4	27	33	69
348 - 12	40.9	35.6	28800	179	95	317	3720	880	0.37	4	27	33	70
354 - 12	29.2	25.4	36800	112	58	281	4520	880	0.37	5	27	33	70
356 - 12	40.7	35.4	36400	168	86	334	4520	880	0.37	5	27	33	70
358 - 12	51.5	44.8	36000	223	115	387	4520	880	0.37	5	27	33	71
364 - 12	34.6	30.1	44200	134	68	330	5320	880	0.37	6	27	33	71
366 - 12	49.3	42.9	43700	201	102	394	5320	880	0.37	6	27	33	71
368 - 12	61.3	53.3	43100	268	136	457	5320	880	0.37	6	27	33	71
414 - 12	7.3	6.3	9200	28	19	95	1520	880	0.75	1	29	35	65
416 - 12	10.2	8.8	9090	42	29	109	1520	880	0.75	1	29	35	65
418 - 12	12.8	11.2	8990	56	38	122	1520	880	0.75	1	29	35	65
424 - 12	14.6	12.7	18400	56	32	153	2520	880	0.75	2	29	35	68
426 - 12	20.3	17.7	18200	84	48	179	2520	880	0.75	2	29	35	68
428 - 12	25.7	22.4	18000	112	64	206	2520	880	0.75	2	29	35	68
434 - 12	21.7	18.8	27500	84	45	210	3520	880	0.75	3	29	35	69
436 - 12	30.6	26.6	27200	126	67	250	3520	880	0.75	3	29	35	69
438 - 12	38.1	33.1	26900	168	90	290	3520	880	0.75	3	29	35	70
444 - 12	29.2	25.4	36800	112	58	268	4520	880	0.75	4	29	35	71
446 - 12	40.7	35.4	36400	168	86	321	4520	880	0.75	4	29	35	71
448 - 12	51.5	44.8	36000	223	115	374	4520	880	0.75	4	29	35	71
454 - 12	35.8	31.1	46000	140	70	326	5520	880	0.75	5	29	35	72
456 - 12	51.4	44.7	45500	209	106	392	5520	880	0.75	5	29	35	72
458 - 12	63.6	55.4	45000	279	141	459	5520	880	0.75	5	29	35	72
464 - 12	43.4	37.7	55200	168	83	383	6520	880	0.75	6	29	35	72
466 - 12	61.4	53.4	54600	251	125	463	6520	880	0.75	6	29	35	72
468 - 12	74.2	64.6	54000	335	166	542	6520	880	0.75	6	29	35	73

Changes possible without prior notice

## Capacities R-404A

Fin spacing 12 mm

Cooler model THOR	Capacities kW		Air flow m <sup>3</sup> /h	Coil surface m <sup>2</sup>	Int. vol. dm <sup>3</sup>	Weight kg	Dimensions		Fans		Nr	Air throw (m)		Sound press. dB(A)
	Frosted	Dry cond.					Length A mm	Height B mm	Cap. kW	THOR-B THOR-Z				
	t <sub>0</sub> =-8°C DT <sub>1</sub> =8K	t <sub>0</sub> =-8°C DT <sub>1</sub> =8K								THOR-B		THOR-Z		
516 - 12	12.7	11.0	11300	52	36	163	1520	1080	1.20	1	30	36	65	
518 - 12	16.0	13.9	11200	70	48	179	1520	1080	1.20	1	30	36	65	
526 - 12	25.3	22.0	22600	105	60	266	2520	1080	1.20	2	30	36	68	
528 - 12	32.1	27.9	22400	140	80	299	2520	1080	1.20	2	30	36	68	
536 - 12	38.3	33.3	34100	157	84	368	3520	1080	1.20	3	30	36	70	
538 - 12	47.6	41.4	33700	209	112	418	3520	1080	1.20	3	30	36	70	
546 - 12	50.8	44.2	45400	209	108	471	4520	1080	1.20	4	30	36	71	
548 - 12	64.3	55.9	44900	279	144	538	4520	1080	1.20	4	30	36	71	
556 - 12	64.2	55.8	56800	262	132	574	5520	1080	1.20	5	30	36	72	
558 - 12	79.4	69.1	56100	349	176	657	5520	1080	1.20	5	30	36	72	
616 - 12	15.4	13.4	13600	63	41	179	1720	1080	1.20	1	31	38	65	
618 - 12	19.1	16.6	13500	84	54	199	1720	1080	1.20	1	31	38	65	
626 - 12	30.7	26.7	27200	126	70	296	2920	1080	1.20	2	31	38	68	
628 - 12	38.2	33.3	26900	168	93	336	2920	1080	1.20	2	31	38	68	
636 - 12	45.3	39.4	40900	188	98	413	4120	1080	1.20	3	31	38	70	
638 - 12	57.7	50.2	40400	251	131	473	4120	1080	1.20	3	31	38	70	
646 - 12	61.5	53.5	54500	251	127	530	5320	1080	1.20	4	31	38	71	
648 - 12	76.6	66.6	53900	335	170	609	5320	1080	1.20	4	31	38	71	
656 - 12	76.6	66.6	68100	314	156	647	6520	1080	1.20	5	31	38	72	
658 - 12	92.6	80.6	67300	419	208	746	6520	1080	1.20	5	31	38	72	
716 - 12	24.3	21.1	21700	101	60	261	2120	1280	2.40	1	36	44	69	
718 - 12	30.6	26.6	21500	134	81	293	2120	1280	2.40	1	36	44	69	
726 - 12	48.8	42.4	43600	201	107	439	3720	1280	2.40	2	36	44	72	
728 - 12	61.2	53.3	43100	268	142	502	3720	1280	2.40	2	36	44	72	
736 - 12	73.8	64.2	65400	302	153	617	5320	1280	2.40	3	36	44	74	
738 - 12	91.9	80.0	64700	402	204	712	5320	1280	2.40	3	36	44	74	

Changes possible without prior notice





## Fans

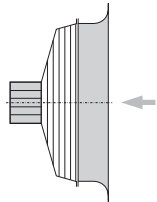
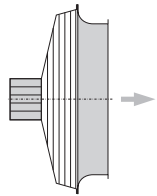
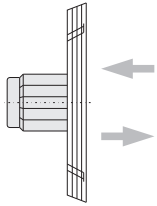
In view of its flexible construction, in principle THOR can be supplied with any desired fan.

Depending on the application there is a standard series of fans which match THOR perfectly.

These fans can be supplied in both blow-through and draw-through versions.

### Execution

The fans are fitted with balanced aluminium or polyamide fan blades. Plate fans are fitted with robust electrolytically galvanized and epoxy coated fan guards according to DIN 31001 and are mounted in vibration dampers. Short case fans are fitted with stainless steel fan guards.



Enclosed design spray-tight motors, protection class IP-55.

All motors, with the exception of the 0.37 kW, 230/50/1 motor, are equipped with a thermal safety device built in the windings, connected to separate terminals in the box.

This safety device can therefore be integrated into the control circuit. The electrical control should be arranged preferably with a manual reset device in order to prevent continuous on/off switching (tripping) of the motors.

Cable inlet ranges from 7 up to 12 mm.

## Air throw

Air throws as given in the tables are for ceiling mounted coolers at  $t = 20\text{ °C}$ , an unrestrained air flow in the cold room and a minimal air velocity of 0.25 m/s at air throw distance.

## Sound pressure dB(A)

Sound pressure as given in the tables are sound pressure levels in dB(A) according to EN 13487 at 5 m distance in free field conditions. Values may deviate depending on situations at site. The table below gives calculated sound pressure corrections at various distances.

Distance m	Correction dB(A)
1	+ 14
2	+ 8
3	+ 4
4	+ 2
5	0
10	- 6
20	-12
50	-20

## Fans 50 Hz / 1500 rpm

Fan motor W	Motor voltage* V	Electric capacity		Adj. values overload relays A			Cable inlet
		nom. kW	abs. kW***	0°C	-20°C	-40°C	
250	230/400/3	0.25	0.37	1.1	1.1	1.2	2 x M20 x 1.5
220	230/1	0.22	0.37	2.6	2.8	2.9	2 x M20 x 1.5
370	230/400/3	0.37	0.50	1.4	1.4	1.5	2 x M20 x 1.5
370	230/1**	0.37	0.50	3.7	4.0	-	2 x M20 x 1.5
550	230/400/3	0.55	0.70	1.7	1.8	2.0	2 x M20 x 1.5
550	230/1	0.55	0.70	5.5	6.0	6.2	2 x M20 x 1.5
750	230/400/3	0.75	0.70	2.1	2.3	2.4	2 x M20 x 1.5
1200	230/400/3	1.20	1.20	3.0	3.2	3.4	2 x M20 x 1.5
2400	230/400/3	2.40	2.80	6.8	7.3	7.8	2 x M20 x 1.5

\* Motor windings 230 Volt.

\*\* These 230/50/1 motors are suitable for temperatures down to -20 °C and are not provided with a thermal safety device in the windings.

\*\*\* Absorbed fan motor energy is measured in under laboratory conditions at ambient temperature 20 °C. These values may vary depending on local conditions.



### Defrost Systems

Several forced defrost systems are available. Each defrost system is optimised for specific applications and ambient conditions.

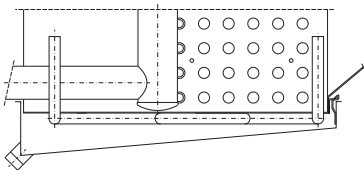
Recommended Defrost System						
Air in Temperature °C	+5	0	-5	-15	-25	-35
Hotgas defrost G 1		■	■			
G 2 G 2 + I			■	■	■	■
Electric Defrost E1 E1 + I 3		■	■	■	■	■
E2 E2 + I 3		■	■	■	■	■
E4		■	■			

Temperatures may vary depending on operating conditions.

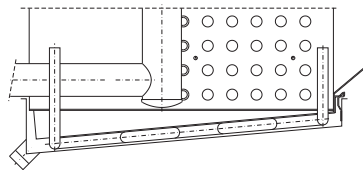
### Hot Gas Defrost (G)

The driptray can be fitted with a copper defrost coil (G) to bring it rapidly up to temperature by means of hot gas. The following G-systems are available :

- G1** For modules 1, 2, 3 and 4 only :  
*Air on temperature down to - 5 °C.*  
Defrost coil under the coil block.
- G2** *Air on temperature down to - 25 °C.*  
Defrost coil in the drip tray.
- G2 + I** *Air on temperature down to - 35 °C.*  
G2, additionally equipped with an insulated double driptray.



**Hot gas defrost G1**  
For modules 1, 2, 3 and 4 only.



**Hot gas defrost G2**

### Electric Defrost (E)

Stainless steel heater elements placed in additional tubes between the evaporator tubes. The elements for the driptray are fitted to the bottom of the inner tray.

Both coil and driptray have the same elements. Standard voltage per element 230 V.  
Connection to 230 V / 1 phase or 400 V / 3 phase, connected in star with Zero-Wire. Total defrost power is given for 400 V / 3 phase with Zero-Wire.

All elements can be withdrawn at the refrigerant connection side. The driptray elements can be taken out after removal of the outer tray.

The heater elements are pre-wired and are connected to one or more terminal boxes.

Depending on the ambient temperature and air humidity a number of E-executions are available.

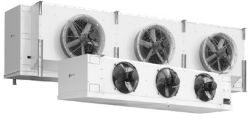
- E1** *Air on temperature down to - 25 °C.*  
Electric stainless steel defrost elements in the driptray. For use in combination with for example hot gas defrost in the coil block.
- E1 + I 3** *Air on temperature down to - 35 °C.*  
E1, additionally equipped with an insulated double driptray. Recommended for general use in the low-temperature region.
- E2** *Air on temperature down to - 25 °C.*  
Electric stainless steel defrost elements in the coil block and driptray. Recommended for general use.
- E2 + I 3** *Air on temperature down to - 35 °C.*  
E2, additionally equipped with an insulated double driptray. Recommended for general use in the low-temperature region.
- E4** *Air on temperature down to - 5 °C.*  
Electric stainless steel defrost elements in the coil block and driptray, low duty.
- E5** Electric defrost in diffuser for defrost damper.  
(THOR-B only)

### Hot Glycol Defrost (HW)

- HW1** Hot glycol defrost in coil and driptray.  
*High temperatures.*
- HW2** Hot glycol defrost in coil and driptray.  
*Low temperatures.*

### Water Defrost (W)

- W** Water defrost system for defrosting in the temperature range to -20 °C.



## Connection boxes

Defrost power	Nr of connection boxes
up to 52.4 kW	1
52.4 - 104.8 kW	2
104.8 kW and up	3

## Defrost power kW

4 tube rows deep

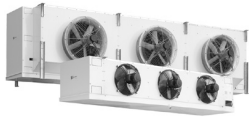
Cooler	Element	E1		E2		E4	
		number of elem.	cap. kW	number of elem.	cap. kW	number of elem.	cap. kW
214	33.03.21	2	2.1	4 + 2	6.4	3 + 1	4.2
224	33.03.31	2	4.0	4 + 2	12.1	3 + 1	8.1
234	33.03.39	2	6.0	4 + 2	17.9	3 + 1	11.9
244	33.03.45	2	7.9	4 + 2	23.6	3 + 1	15.8
254	33.03.52	4	9.8	8 + 4	29.4	6 + 2	19.6
264	33.03.58	4	11.7	8 + 4	35.2	6 + 2	23.4
274	33.03.63	4	13.6	8 + 4	40.9	6 + 2	27.3
314	33.03.21	2	2.1	5 + 2	7.4	4 + 1	5.3
324	33.03.31	2	4.0	5 + 2	14.1	4 + 1	10.1
334	33.03.39	2	6.0	5 + 2	20.9	4 + 1	14.9
344	33.03.45	2	7.9	5 + 2	27.6	4 + 1	19.7
354	33.03.52	4	9.8	10 + 4	34.3	8 + 2	24.5
364	33.03.58	4	11.7	10 + 4	41.0	8 + 2	29.3
414	33.03.24	2	2.4	5 + 2	8.5	4 + 1	6.1
424	33.03.36	2	4.9	5 + 2	17.2	4 + 1	12.3
434	33.03.43	2	7.4	5 + 2	25.9	4 + 1	18.5
444	33.03.52	4	9.8	10 + 4	34.3	8 + 2	24.5
454	33.03.60	4	12.2	10 + 4	42.7	8 + 2	30.5
464	33.03.64	4	14.6	10 + 4	51.1	8 + 2	36.5



## Defrost power kW

6 tube rows deep

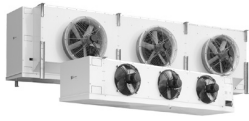
Cooler	Element	E1		E2		E4	
		number of elem.	cap. kW	number of elem.	cap. kW	number of elem.	cap. kW
116	33.03.21	2	2.1	4 + 2	6.4	3 + 1	4.2
126	33.03.31	2	4.0	4 + 2	12.1	3 + 1	8.1
136	33.03.39	2	6.0	4 + 2	17.9	3 + 1	11.9
146	33.03.45	2	7.9	4 + 2	23.6	3 + 1	15.8
156	33.03.52	4	9.8	8 + 4	29.4	6 + 2	19.6
166	33.03.58	4	11.7	8 + 4	35.2	6 + 2	23.4
176	33.03.63	4	13.6	8 + 4	40.9	6 + 2	27.3
216	33.03.21	2	2.1	6 + 2	8.5	4 + 1	5.3
226	33.03.31	2	4.0	6 + 2	16.2	4 + 1	10.1
236	33.03.39	2	6.0	6 + 2	23.8	4 + 1	14.9
246	33.03.45	2	7.9	6 + 2	31.5	4 + 1	19.7
256	33.03.52	4	9.8	12 + 4	39.2	8 + 2	24.5
266	33.03.58	4	11.7	12 + 4	46.9	8 + 2	29.3
276	33.03.63	4	13.6	12 + 4	54.6	8 + 2	34.1
316	33.03.21	2	2.1	7 + 2	9.5	5 + 1	6.4
326	33.03.31	2	4.0	7 + 2	18.2	5 + 1	12.1
336	33.03.39	2	6.0	7 + 2	26.8	5 + 1	17.9
346	33.03.45	2	7.9	7 + 2	35.5	5 + 1	23.6
356	33.03.52	4	9.8	14 + 4	44.1	10 + 2	29.4
366	33.03.58	4	11.7	14 + 4	52.7	10 + 2	35.2
416	33.03.24	2	2.4	7 + 2	11.0	5 + 1	7.3
426	33.03.36	2	4.9	7 + 2	22.1	5 + 1	14.8
436	33.03.43	2	7.4	7 + 2	33.3	5 + 1	22.2
446	33.03.52	4	9.8	14 + 4	44.1	10 + 2	29.4
456	33.03.60	4	12.2	14 + 4	54.9	10 + 2	36.6
466	33.03.64	4	14.6	14 + 4	65.7	10 + 2	43.8
516	33.03.24	2	2.4	10 + 2	14.6	6 + 1	8.5
526	33.03.36	2	4.9	10 + 2	29.5	6 + 1	17.2
536	33.03.43	2	7.4	10 + 2	44.4	6 + 1	25.9
546	33.03.52	4	9.8	20 + 4	58.8	12 + 2	34.3
556	33.03.60	4	12.2	20 + 4	73.2	12 + 2	42.7
616	33.03.27	2	3.1	10 + 2	18.5	6 + 1	10.8
626	33.03.39	2	6.0	10 + 2	35.8	6 + 1	20.9
636	33.03.48	2	8.8	10 + 2	53.0	6 + 1	30.9
646	33.03.58	4	11.7	20 + 4	70.3	12 + 2	41.0
656	33.03.64	4	14.6	20 + 4	87.6	12 + 2	51.1
716	33.03.31	2	4.0	11 + 2	26.3	8 + 1	18.2
726	33.03.45	2	7.9	11 + 2	51.5	8 + 1	35.5
736	33.03.58	4	11.7	22 + 4	76.2	16 + 2	52.7



## Defrost power kW

8 tube rows deep

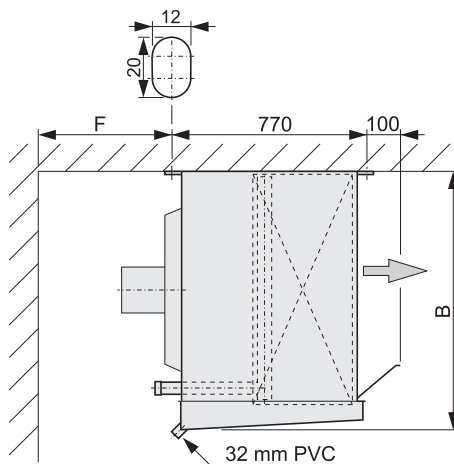
Cooler model THOR	Element article number	E1		E2		E4	
		number of elem.	cap. kW	number of elem.	cap. kW	number of elem.	cap. kW
118	33.03.21	2	2.1	6 + 2	8.5	4 + 1	6.4
128	33.03.31	2	4.0	6 + 2	16.2	4 + 1	12.1
138	33.03.39	2	6.0	6 + 2	23.8	4 + 1	17.9
148	33.03.45	2	7.9	6 + 2	31.5	4 + 1	19.7
158	33.03.52	4	9.8	12 + 4	39.2	8 + 2	29.4
168	33.03.58	4	11.7	12 + 4	46.9	8 + 2	35.2
178	33.03.63	4	13.6	12 + 4	54.6	8 + 2	40.9
218	33.03.21	2	2.1	7 + 2	9.5	5 + 2	7.4
228	33.03.31	2	4.0	7 + 2	18.2	5 + 2	14.1
238	33.03.39	2	6.0	7 + 2	26.8	5 + 2	20.9
248	33.03.45	2	7.9	7 + 2	35.5	5 + 2	27.6
258	33.03.52	4	9.8	14 + 4	44.1	10 + 4	34.3
268	33.03.58	4	11.7	14 + 4	52.7	10 + 4	41.0
278	33.03.63	4	13.6	14 + 4	61.4	10 + 4	47.7
318	33.03.21	2	2.1	10 + 2	12.7	7 + 2	9.5
328	33.03.31	2	4.0	10 + 2	24.2	7 + 2	18.2
338	33.03.39	2	6.0	10 + 2	35.8	7 + 2	26.8
348	33.03.45	2	7.9	10 + 2	47.3	7 + 2	35.5
358	33.03.52	4	9.8	20 + 4	58.8	14 + 4	44.1
368	33.03.58	4	11.7	20 + 4	70.3	14 + 4	52.7
418	33.03.24	2	2.4	10 + 2	14.6	7 + 2	11.0
428	33.03.36	2	4.9	10 + 2	29.5	7 + 2	22.1
438	33.03.43	2	7.4	10 + 2	44.4	7 + 2	33.3
448	33.03.52	4	9.8	20 + 4	58.8	14 + 4	44.1
458	33.03.60	4	12.2	20 + 4	73.2	14 + 4	54.9
468	33.03.64	4	14.6	20 + 4	87.6	14 + 4	65.7
518	33.03.24	2	2.4	13 + 2	18.3	8 + 2	12.2
528	33.03.36	2	4.9	13 + 2	36.9	8 + 2	24.6
538	33.03.43	2	7.4	13 + 2	55.5	8 + 2	37.0
548	33.03.52	4	9.8	26 + 4	73.5	16 + 4	49.0
558	33.03.60	4	12.2	26 + 4	91.5	16 + 4	61.0
618	33.03.27	2	3.1	13 + 2	23.1	8 + 2	15.4
628	33.03.39	2	6.0	13 + 2	44.7	8 + 2	29.8
638	33.03.48	2	8.8	13 + 2	66.3	8 + 2	44.2
648	33.03.58	4	11.7	24 + 4	82.0	16 + 4	58.6
658	33.03.64	4	14.6	24 + 4	102.2	16 + 4	73.0
718	33.03.31	2	4.0	15 + 2	34.3	10 + 2	24.2
728	33.03.45	2	7.9	15 + 2	67.0	10 + 2	47.3
738	33.03.58	4	11.7	30 + 4	99.6	20 + 4	70.3



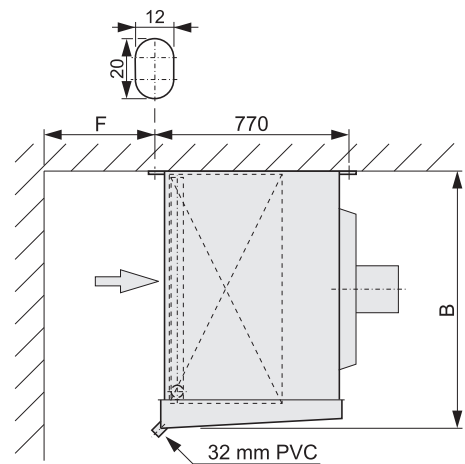
Dimensions

Modules 1-4

Cooler model THOR	Dimensions in mm							
	A	B	C1	C2	C3	D1	D2	F
11*	1320	580	800			660		450
12*	2120	580	1600			1060		450
13*	2920	580	2400			1460		450
14*	3720	580	1600	1600		1060	1600	450
15*	4520	580	2400	1600		1260	2000	450
16*	5320	580	2400	2400		1460	2400	450
17*	6120	580	1600	2400	1600	1660	2800	450
21*	1320	680	800			660		450
22*	2120	680	1600			1060		450
23*	2920	680	2400			1460		450
24*	3720	680	1600	1600		1060	1600	450
25*	4520	680	2400	1600		1260	2000	450
26*	5320	680	2400	2400		1460	2400	450
27*	6120	680	1600	2400	1600	1660	2800	450
31*	1320	880	800			660		500
32*	2120	880	1600			1060		500
33*	2920	880	2400			1460		500
34*	3720	880	1600	1600		1060	1600	500
35*	4520	880	2400	1600		1260	2000	500
36*	5320	880	2400	2400		1460	2400	500
41*	1520	880	1000			760		600
42*	2520	880	2000			1260		600
43*	3520	880	1000	2000		1010	1500	600
44*	4520	880	2000	2000		1260	2000	600
45*	5520	880	2000	1000	2000	1510	2500	600
46*	6520	880	2000	2000	2000	1760	3000	600

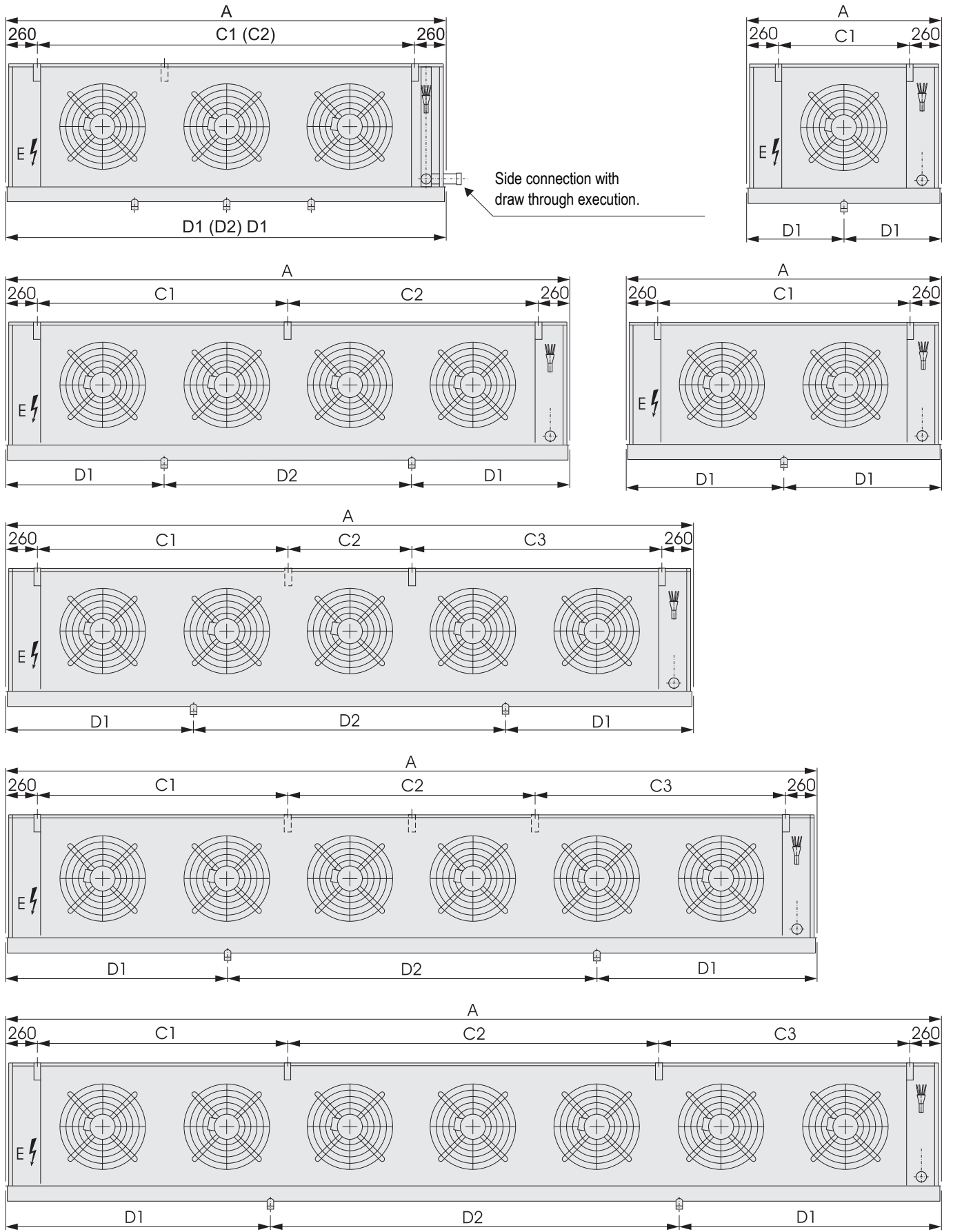


THOR-B modules 1 - 4



THOR-Z modules 1 - 4

Changes possible without prior notice



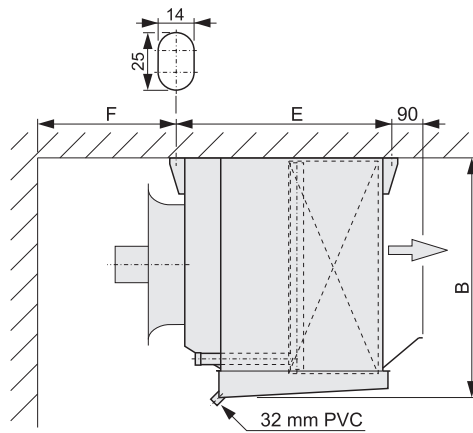
Changes possible without prior notice



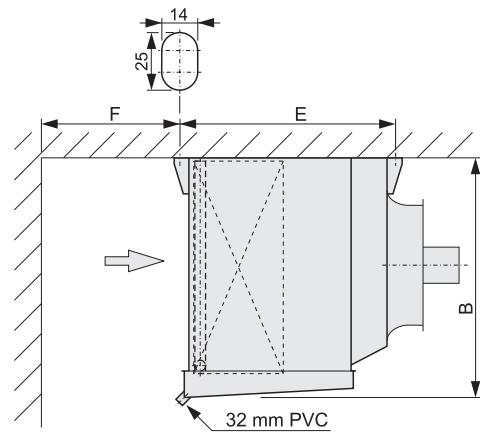
Dimensions

Modules 5-7

Cooler model THOR	Dimensions in mm								
	A	B	C1	C2	C3	D1	D2	E	F
51*	1520	1080	1000			760		970	700
52*	2520	1080	2000			1260		970	700
53*	3520	1080	2000	1000		1010	1500	970	700
54*	4520	1080	2000	2000		1260	2000	970	700
55*	5520	1080	2000	1000	2000	1510	2500	970	700
61*	1720	1080	1200			860		970	750
62*	2920	1080	2400			1460		970	750
63*	4120	1080	1200	1200	1200	1160	1800	970	750
64*	5320	1080	1200	2400	1200	1460	2400	970	750
65*	6520	1080	2400	1200	2400	1760	3000	970	750
71*	2120	1280	1600			1060		1070	800
72*	3720	1280	1600	1600		1060	1600	1070	800
73*	5320	1280	1600	1600	1600	1460	2400	1070	800

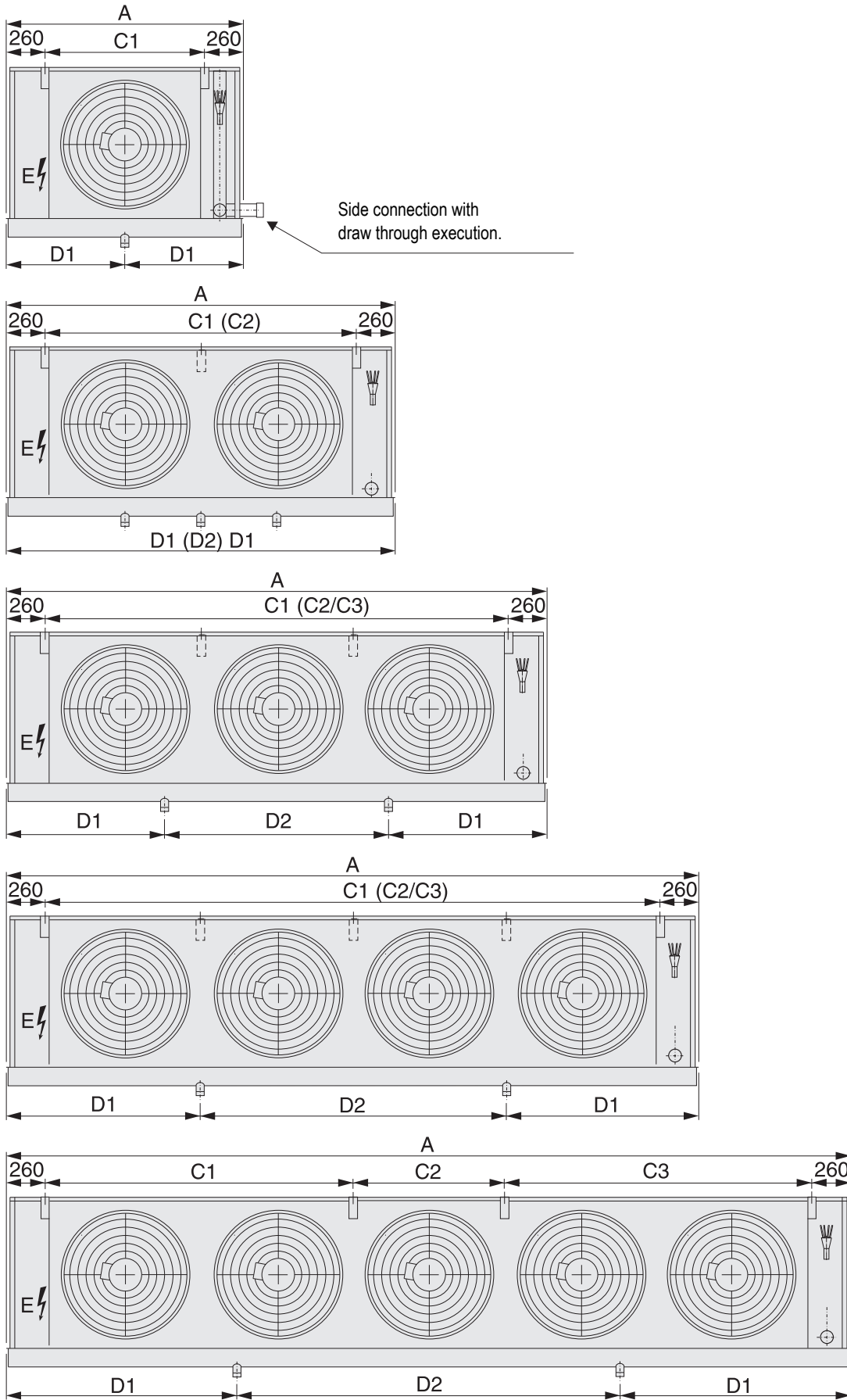


**THOR-B modules 5 - 7**



**THOR-Z modules 5 - 7**





Side connection with draw through execution.

Changes possible without prior notice

### **Alfa Laval in brief**

Alfa Laval is a leading global provider of specialized products and engineered solutions.

Our equipment, systems and services are dedicated to helping customers to optimize the performance of their processes. Time and time again.

We help our customers to heat, cool, separate and transport products such as oil, water, chemicals, beverages, foodstuffs, starch and pharmaceuticals.

Our worldwide organization works closely with customers in almost 100 countries to help them stay ahead.

### **How to contact Alfa Laval**

Up-to-date Alfa Laval contact details for all countries are always available on our website at [www.alfalaval.com](http://www.alfalaval.com)