

Kelvion



Engineering solutions that make a difference

KELVION SM INDUSTRIAL COOLER







**Kelvion –
a tribute to
Lord Kelvin**

**70 branches and
sales partners
worldwide**

**More than 4,000
employees
worldwide**

Lord Kelvin (1824 – 1907) formulated
the laws of thermodynamics

EXPERTS IN HEAT EXCHANGE – SINCE 1920

Welcome to Kelvion. As successor to the GEA Heat Exchangers Group, we continue to break new ground, making discerning customers more successful than ever with our integrated heat exchanger solutions.

Our solutions for your applications:

We offer our customers one of the world's largest product portfolios in the field of heat exchangers. It includes individual solutions for practically all conceivable applications and complex environmental conditions: plate heat exchangers, shell and tube heat exchangers, finned tube heat exchangers, modular cooling tower systems, and refrigeration heat exchangers.

Your markets are our markets, too:

The markets in which you and we together operate are among the most important in the world: the chemical industry, food and beverages, the heavy industry, climate and environment, marine applications, the oil and gas industry, energy, refrigeration technology, sugar and transportation. We provide every single market segment with solutions of outstanding efficiency, safety, and sustainability.

We are highly committed to earning your trust:

We want to win your trust with everything we do and convince you with the solutions we offer. With this high aim in mind, we invest our extensive know-how, our great precision, and our passion in everything we do: including product development, manufacturing, installation, and after-sales support.


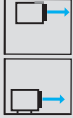

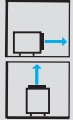
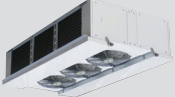

Seeing things from the customer perspective:

Your specific requirements count – and nothing else. Whatever we offer you, it must meet these requirements. Our entire way of thinking and working is geared towards this aim. Our customers truly appreciate this: after all, this is how we make their companies more efficient.

We are at your service.

Kelvion – Experts in Heat Exchange.

INDUSTRIAL AIR COOLERS RANGE

MODEL	NO.FANS	CONFIGURATION	EUROVENT	SUPPLY	EC FANS	STANDARD ELECTRIC	HEAVY ELECTRIC DEFROST	HOT GAS A/B/C/D DEFROST	CO2	FIN MATERIAL	CAPACITY
SM 	1 - 4		✓	3 ph	○	✓	✓	✓	✓	AL, AV	12 - 199kW
FM 	1 - 4		✓	3 ph	○	✓	✓	✓	✓	AL, AV	22 - 265kW
LSR 	1 - 6		✓	3 ph	X	✓	X	✓	✓	AL, AV	6 - 89kW

✓ YES X NO ○ OPTION

SM SPECIFICATION

CASEWORK: Fashioned from galvanised painted steel RAL 9010 the external surfaces are corrosion protected. The pleasing aesthetics offered by other Kelvion coolers such as the KEC and KME is also reflected in the SM, the casework has also been modified suitably to withstand the demanding effects from industrial environments. The versatile design to the SM casework allows the option for ceiling or base mounted positioning with easy access for maintenance and cleaning. All units have a one-piece drain tray which allows units to be lifted fully assembled from underneath using the packing pieces supplied. It is double skinned and insulated to assist defrost in low temperature applications and prevents condensation in high temperature applications.

FAN: Available as propeller or ducted axial fans, with varying face velocities and air throws, are offered to provide optimum performance in the two broad operating conditions. The fan sets are provided with a motor side wire guard, which is sufficiently far away from the rotating fan blades to prevent danger zones being reached .

- Both fans and motors (P1 propeller type) are suitable for use from -25°C to +40°C
- Propeller or ducted axial fans
- P1 option fan-sets are suitable for 400V/50Hz operation
- Motors are 3 phase and suitable for 400V/50Hz as standard
- Motors are fitted outboard of the cooler with the terminal box readily accessible for wiring.

COIL: The Kelvion SM coil features the same characteristics as the FM range. The coils are manufactured in one or two sections with aluminium fins and they are 4, 6 and 8 rows deep designed to offer a large secondary cooling surface which means frost can build over a larger surface, reducing the number of defrost cycles allowing the cooler to operate efficiently for longer periods.

- Manufactured from 5/8" Tube
- Tube Pitch In Direction of Airflow = 50.8mm
- Tube Pitch Across Airflow = 55mm
- Fin Spacing(s): 4mm, 6mm and 8mm
- Fin Features: Light Ripple and Heater Holes

ADDITIONAL INFORMATION: Incorrect unit location will adversely affect unit performance and air flow. Units should be adequately spaced from walls to ensure even air coverage over the coil block. For advice on unit location, please contact your supplier. Air throws quoted within this catalogue are based on a terminal velocity of 0.25m/s in ideal conditions. Store layout, cooler location and type of fan can affect the air throw. Please refer to your supplier for further information.

Noise levels are quoted at a distance of 3m from the unit at an angle of 45° to the horizontal within a free field condition. The figures are supplied as a guide only, showing comparative noise levels between models and fan selections. If the application is noise sensitive we would advise the appointment of an independent noise consultant.

SM INDUSTRIAL COOLER






BENEFITS

- ▶ **The SM range has been designed by Kelvion to be versatile:** Whilst allowing unit selections to be easily made. Unit sizes and coils have been matched with different fan and motor combinations to broadly meet high and low temperatures.
- ▶ **Pleasing aesthetic design:** Robust construction, designed to withstand demanding applications. The versatile design to the SM casework allows the option for ceiling or base mounted positioning with easy access for maintenance and cleaning.
- ▶ **The SM coil features the same characteristics as the FM range:** The coils are manufactured in one or two sections with aluminium fins and they are 4, 6 and 8 rows deep designed to offer a large secondary cooling surface which means frost can build over a larger surface, reducing the number of defrost cycles allowing the cooler to operate efficiently for longer periods.
- ▶ **Eurovent certify-all:** independent certification for thermal performance, power consumption, sound data and unit air volumes for standard products under scheme limits.

CAPACITY RANGE

HFO/HFK **12 kW - 199 kW**
 $t_{i}=0^{\circ}\text{C} \mid t_{o}=-8^{\circ}\text{C} \mid \text{DT}=8\text{K} \mid \text{[SC2]} \mid \text{R404A}$

HEAT EXCHANGE

- ▶ Fin Type: S
- ▶ Tube Diameter: [in mm]
15.8 |
- ▶ Standard Fin spacing: [in mm]
4 | 6 | 8 |
- ▶ Fin Enhancements: Light Ripple

VARIANTS & ACCESSORIES

- ▶ Fan sets
- ▶ EC Fan sets
- ▶ Heaters - Coil Block
- ▶ Heaters - Drain Tray
- ▶ 10mm fin spacing

DEFROST


DEFROST	FAN	COIL	DRIP TRAY
Standard Electric	✓	✓	✓
Heavy Electric		✓	✓
Hot gas		✓	✓

Defrost loads include drain pan power as below

MODULES	SM-1	SM-2	SM-3	SM-4
Drainpan	1.6	3.2	4.8	6.4

Peripheral heater load (where fitted) for ducted axial fan sets 800mm diameter = 630W, 900mm diameter = 710W per fan.

FAN

▶ AC Standard		3 phase
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MATERIALS

MATERIAL	TUBE	FINS	CASING	END PLATE
Copper (Cu)	☑	✓		
Aluminium (Al)		☑		☑
Aluminium Epoxy (AV)		✓		
Galvanised Steel			☑	

☑ Standard | ✓ Available as a variant

REFRIGERANT DATA

REFRIGERATION	R404A	R134a	R507A	R407A/F	R407C
Capacity factor (dew point, DT1)	1.00	0.91	0.97	1.24*	1.26*
Refrigerant charge density (kg/dm ³)	0.312	0.338	0.313	0.332	0.332

* Capacity factors for refrigerants with high glide apply only at the nominal rating condition. Refrigerant charge densities are based on 25% of the internal volume being liquid.

DESIGNATION

The model number indicates the casework model size and other relevant information, for example: -

PART NUMBER	SM	16	1	-	4	4	-	A3	EL	CU/AL
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Range:	SM	_____								
Height of case:	Tube high = 16 , 20, 24, 30	_____								
No of fans:	1 , 2, 3, 4,	_____								
Coil depth:	4 , 6, 8	_____								
Fin spacing:	4 mm, 6mm, 8mm	_____								
Fan/motor type:	Ducted axial A1, A2, A3 , A4, A5	_____								
Coil materials:	EL = Electric defrost in coil and drain tray, HGEA,B,C,D = hot gas coil, electric drain tray defrost, HGDA,B = hot gas coil and drain tray defrost, HGDC = hot gas coil and drain tray defrost, HGDD = hot gas coil and drain tray defrost,	_____								
Coil material:	CU/AL = Copper, Aluminium Fin, BG Blygold	_____								

SELECTION DATA - 8MM HIGH/LOW TEMPERATURE - LOW FACE VELOCITY, LOW CAPACITY, LOW AIR THROW, COMPACT UNIT

MODEL	AIR ENTERING -25 °C TO + 20 °C					AIR ENTERING -25 °C TO + 20 °C					CONNECTIONS		SURFACE AREA m ²	INTERNAL VOLUME dm ³	DEFROST POWER kw
	PROPELLER					DUCTED AXIAL					OUTLET	INLET			
	FAN/MOTOR	R404A CAPACITY kw	AIR VOLUME m ³ /s	AIR THROW m	NOISE dB(A)	FAN/MOTOR	R404A CAPACITY kw	AIR VOLUME m ³ /s	AIR THROW m	NOISE dB(A)					
SM161-48	P1 Dia. = 630mm 6 pole FLC/SC = 1.4/5A input = 650W	12.2	2.7	19	59	A1 Dia. = 630mm 6 pole FLC/SC = 1.5/4.5A input = 710W	12.8	2.88	37	58	1 3/8"	1/2"	57	20	7
SM161-68		15.8	2.6	18	59		16.6	2.78	36	58	1 3/8"	5/8"	86	30	10
SM161-88		19.2	2.68	34	58		19.2	2.68	34	58	1 3/8"	5/8"	114	40	12
SM162-68		31.9	5.2	18	62		33.2	5.56	36	61	1 5/8"	5/8"	171	57	19
SM162-88		48	7.8	18	64		38.2	5.34	34	61	2 1/8"	7/8"	228	77	24
SM163-68	P1 Dia. = 630mm 6 pole FLC/SC = 1.4/5A input = 650W	48	7.8	18	64	A2 Dia. = 710mm 6 pole FLC/SC = 1.5/4.5A input = 680W	50	8.34	36	63	2 1/8"	1 1/8"	257	84	29
SM163-88		58.2	8.02	34	63		58.2	8.02	34	63	2 1/8"	1 1/8"	343	112	39
SM201-68		18.7	3.2	22	59		18.8	3.02	34	60	1 3/8"	5/8"	107	38	12
SM201-88		20	2.92	33	60		20	2.92	33	60	1 5/8"	5/8"	143	50	14
SM202-68		37.4	6.38	22	62		37.6	6.04	34	63	2 1/8"	7/8"	214	72	24
SM202-88		44.2	5.86	33	63		44.2	5.86	33	63	2 1/8"	1 1/8"	286	96	29
SM203-68		56.6	9.58	22	62		57.2	9.06	34	65	2 1/8"	1 1/8"	321	106	36
SM203-88							66	8.78	33	65	2 1/8"	1 1/8"	428	140	43
SM242-68							48.7	7.88	40	66	2 1/8"	1 1/8"	257	87	24
SM242-88							56.4	7.7	39	66	2 1/8"	1 1/8"	343	115	29
SM243-68					73.6	11.88	40	68	2 1/8"	1 1/8"	386	127	36		
SM243-88					86	11.6	39	68	2 x 2 1/8"	2 x 7/8"	514	168	43		
SM244-68					97.4	15.78	40	69	2 x 2 1/8"	2 x 1 1/8"	514	166	48		
SM244-88					113.4	15.4	39	69	2 x 2 1/8"	2 x 1 1/8"	685	221	58		
SM302-68					55	8.36	42	66	2 1/8"	1 1/8"	321	109	29		
SM302-88					63.8	8.18	41	66	2 1/8"	1 1/8"	428	144	38		
SM303-68					82.5	12.54	42	68	2 x 2 1/8"	2 x 7/8"	482	158	43		
SM303-88					94.2	12.26	41	68	2 x 2 1/8"	2 x 1 1/8"	643	210	58		
SM304-68					108.2	16.72	42	69	2 x 2 1/8"	2 x 1 1/8"	643	208	58		
SM304-88					127.7	16.34	41	69	2 x 2 1/8"	2 x 1 1/8"	857	276	77		

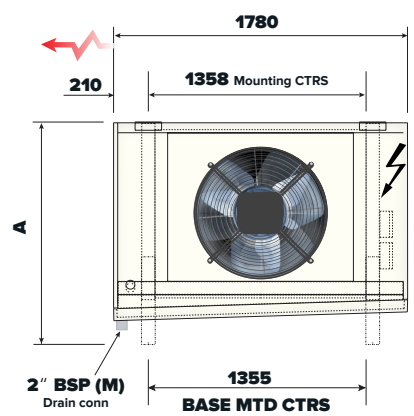
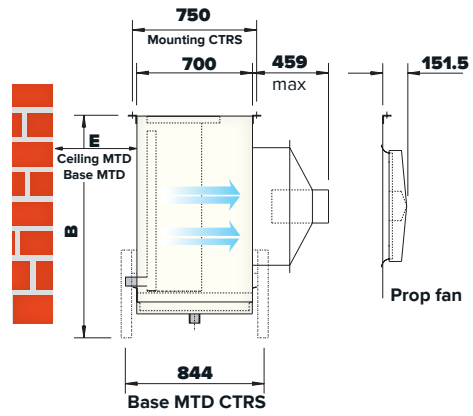
8MM HIGH/LOW TEMPERATURE - LOW FACE VELOCITY, LOW CAPACITY, LOW AIR THROW, COMPACT UNIT

MODEL	AIR ENTERING -35 °C TO + 20 °C					CONNECTIONS		SURFACE AREA m ²	INTERNAL VOLUME dm ³	DEFROST POWER kw
	PROPELLER					OUTLET	INLET			
	FAN/MOTOR	R404A CAPACITY kw	AIR VOLUME m ³ /s	AIR THROW m	NOISE dB(A)					
SM161-48	P1 Dia. = 630mm 6 pole FLC/SC = 1.4/5A input = 650W	15.2	3.94	51	69	1 3/8"	1/2"	57	20	7
SM161-68		20	3.8	49	69	1 5/8"	5/8"	86	30	10
SM161-88		24	3.72	48	69	1 5/8"	5/8"	114	40	12
SM162-68		40	7.62	49	72	2 1/8"	7/8"	171	57	19
SM162-88		48	7.42	48	72	2 1/8"	1 1/8"	228	77	24
SM163-68	A5 Dia. = 800mm 6 pole FLC/SC = 3.4/15A input = 2000W	60	11.42	49	74	2 1/8"	1 1/8"	257	84	29
SM163-88		72.2	11.14	48	74	2 1/8"	1 1/8"	343	112	39
SM201-68		26.2	5.14	52	71	1 5/8"	5/8"	107	38	12
SM201-88		30.6	4.94	50	71	1 5/8"	5/8"	143	50	14
SM202-68		52.8	10.26	52	72	2 1/8"	1 1/8"	214	72	24
SM202-88		62.6	9.88	50	72	2 1/8"	1 1/8"	286	96	29
SM203-68		78.4	15.4	52	74	2 x 2 1/8"	2 x 7/8"	321	106	36
SM203-88		93.6	14.82	50	74	2 5/8"	1 1/8"	428	140	43
SM242-68		57.6	10.84	55	72	2 1/8"	1 1/8"	257	87	24
SM242-88		69.6	10.54	53	72	2 1/8"	1 1/8"	343	115	29
SM243-68	86.4	16.24	55	74	2 x 2 1/8"	2 x 1 1/8"	386	127	36	
SM243-88	104.8	15.86	53	74	2 x 2 1/8"	2 x 1 1/8"	514	168	43	
SM244-68	118.5	21.66	55	75	2 x 2 1/8"	2 x 1 1/8"	514	166	48	
SM244-88	135.7	21.1	53	75	2 x 2 1/8"	2 x 1 1/8"	685	221	58	
SM302-68	A6 Dia. = 1000mm 6 pole FLC/SC = 5.8/24A input = 2625W	72.8	13.68	55	78	2 x 2 1/8"	2 x 7/8"	321	109	29
SM302-88		87.1	13.1	53	78	2 x 2 1/8"	2 x 1 1/8"	428	144	38
SM303-68		110.2	20.56	55	79	2 x 2 1/8"	2 x 1 1/8"	428	158	43
SM303-88		131.1	19.7	53	79	2 x 2 1/8"	2 x 1 1/8"	643	210	58
SM304-68		148.4	27.36	55	81	2 x 2 1/8"	2 x 1 1/8"	643	208	58
SM304-88		169.1	26.2	53	81	2 x 2 1/8"	2 x 1 1/8"	857	276	77

DIMENSIONS

CEILING MOUNTED

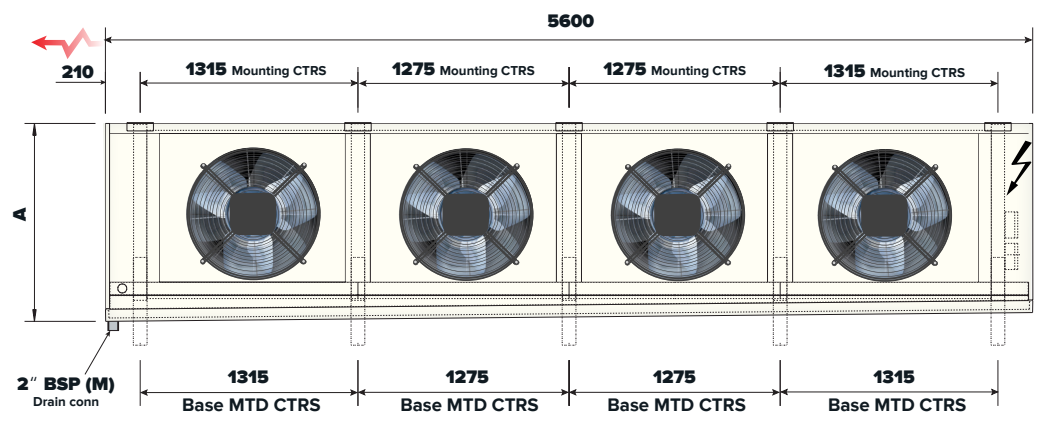
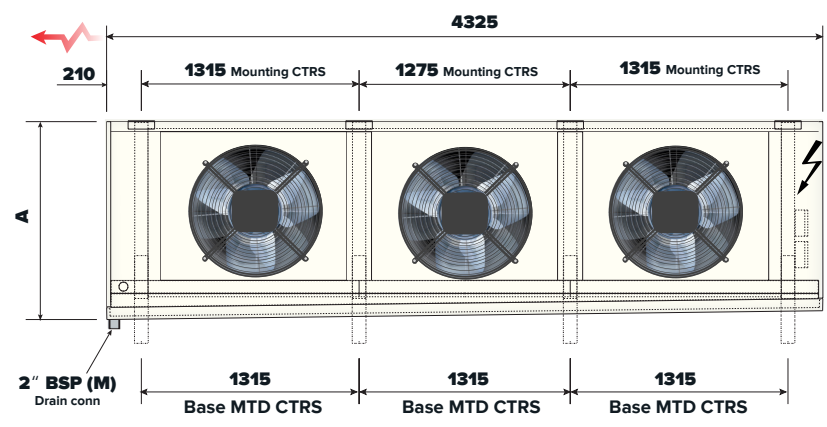
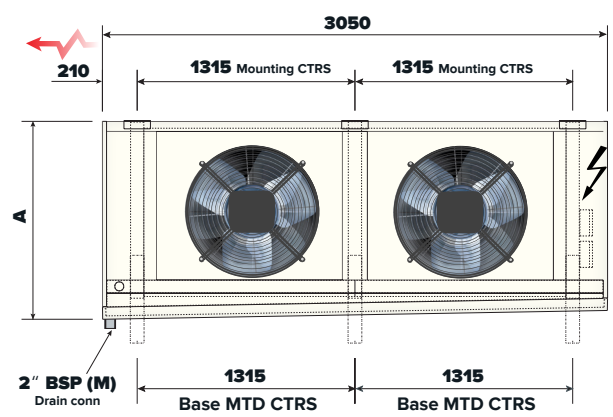
MODEL HEIGHT
MODEL WIDTH



E	MM
SM 16	800
SM 20	1000
SM 24	1200
SM 30	1500

NOTE: = Heater removal 2000 min

MODEL	FAN	A CEILING MOUNTING	A BASE MOUNTING
SM 16*		969.6	1141
SM 20*		1176	1344
SM 16 *		969.6	1141
SM 20*		1176	1344
SM 24*		1380	1547
SM 30*		1681	1852
SM 16*		992	1141
SM 20*		1198	1344
SM 24*		1400	1547
SM 30*		1703	1852
SM 24*		1400	1547
SM 30*		1703	1852



SELECTION AND PRICING

This can be performed on the Selection software which can be downloaded from our website www.kelvion.com

www.kelvion.com

Distributor/Wholesaler



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