



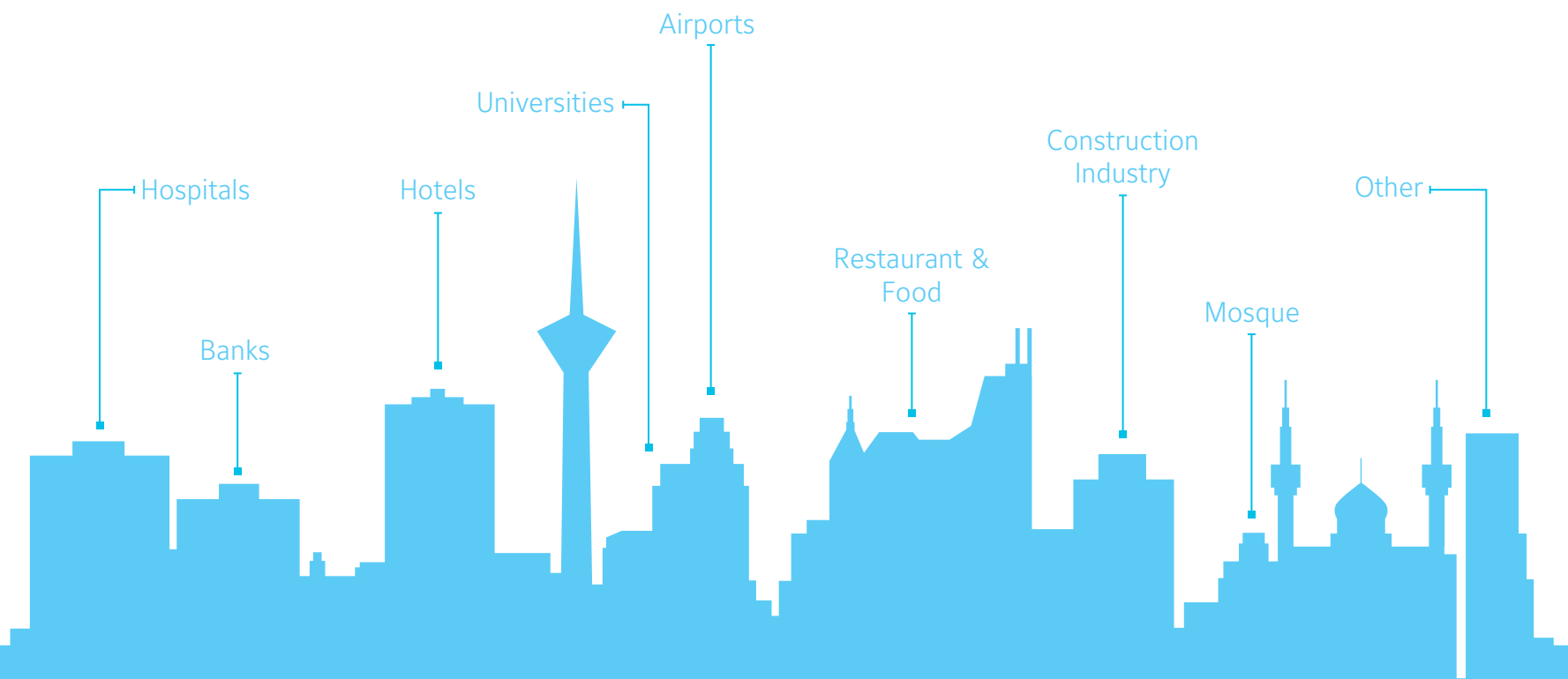
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DECORATIVE
FAN COIL UNIT

Saran

Life's Pleasant Breeze



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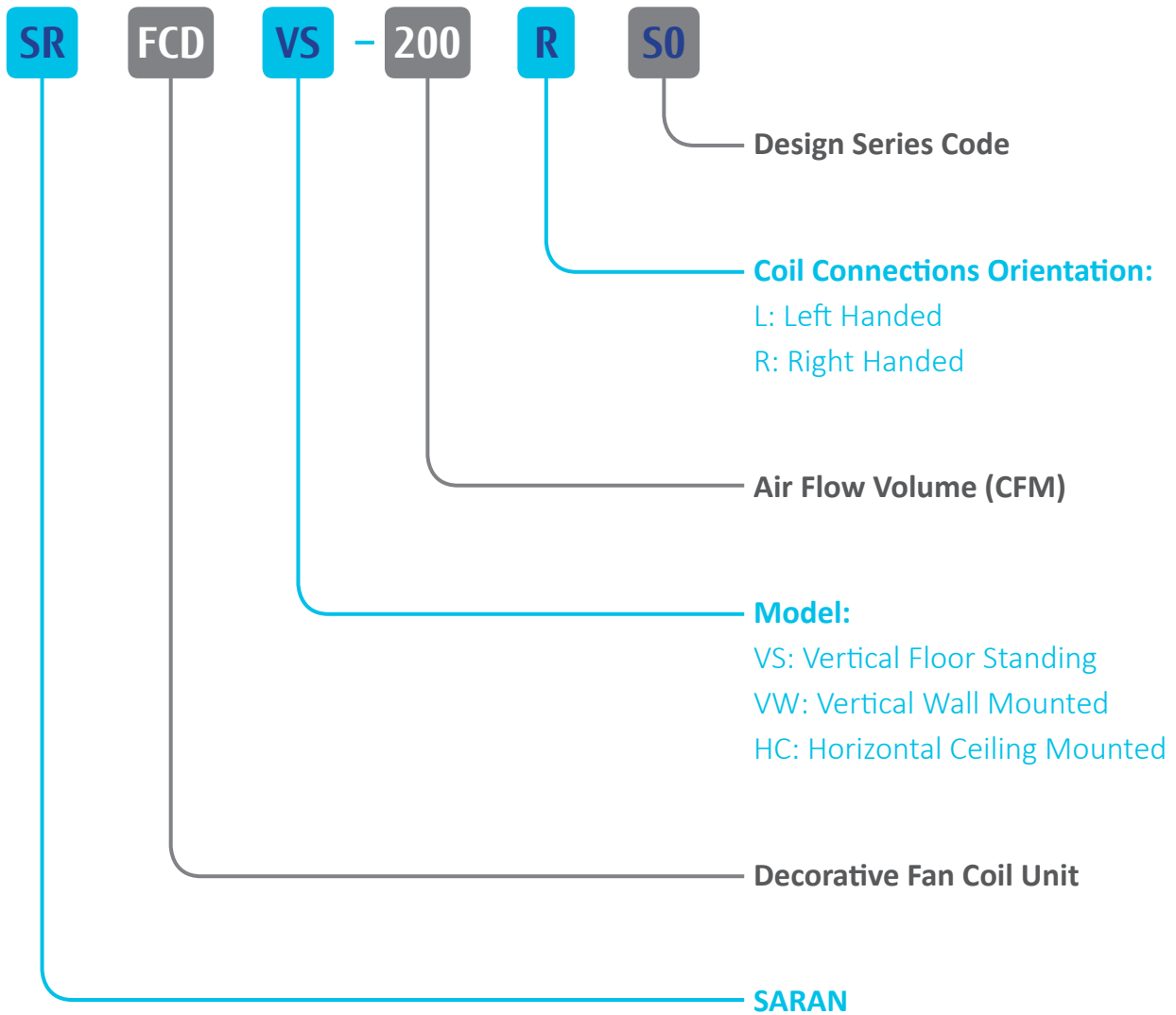


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NOMENCLATURE





Introduction

Saran decorative fan coil units are perfectly convenient for Apartments, Offices, Hospitals, Hotels, Sports Hall and other such installations whereby a central plant supplies chilled/hot water for cooling/heating. They are ideally suited to fulfil almost all space constraints. Advanced system components incorporate innovative technology to provide reliable cooling/heating performance at high efficiencies and low sound levels. Saran decorative fan coil units are available in five sizes with airflow capacity ranging from 200 to 800 CFM.

Main Features:

- High efficiency forward curved fan for quiet operation
- Space saving and light weight
- Low power consumption
- High efficiency coil with wavy corrugated fins
- Quick electrical connections

Component Features

Cabinet:

Attractively designed casing made of plastic grilles and equipped with discharge louvers for perfect air distribution.

Extremely Quiet Operation:

Direct-drive centrifugal fans, are statically and dynamically balanced with large flow-path and low-noise.

Drain Pan:

Drain pans of all units insulated for a maximum protection against sweating and corrosion.

High Performance Coils:

Cooling and Heating coils are manufactured from seamless 3/8" OD copper tubes mechanically bonded to high efficiency wavy corrugated aluminum fins.

Ease of Service and Installation:

Fan motors, blowers, and controls are easily accessible through the decorative return grille.

Filter:

All units are equipped with anti-bacterial and washable synthetic media filter as standard. Washable filter is provided with easy access through return grill.

Technical Data

Table 1

Model	SRFC-200	SRFC-300	SRFC-400	SRFC-600	SRFC-800	
Nominal Air Flow Rate (CFM)	200	300	400	600	800	
Total Heating Capacity (Btu/hr)	22930	31250	40530	53340	67930	
Total Cooling Capacity (Btu/hr)	10700	13960	17780	22220	28670	
Coil Data	Coil Face Area (Sq Ft)	1.49	1.49	2.16	2.16	2.83
	Tube Size	3/8" OD				
	No. of Rows	3				
	Fins Per Inch	12				
No. of Motors	1				2	
Nominal Power (W)	25	25	25	30	25 & 30	
Rated Current (Amp)	0.22	0.26	0.22	0.33	0.54	
Drain Pipe	3/4"					
Noise (dBA)	41	40	38	39	38	
Weight (kg)	25	26	32	33	42	

NOTE

- Cooling capacities are based on entering chilled water temperature of 44°F and entering air temperature of 80°F DB/ 67°F WB at fan high speed.
- Heating capacities are based on entering hot water temperature of 180°F and entering air temperature of 68°F DB at fan high speed.

Selection Considerations

Following factors should be considered for selecting of Saran decorative fan coil units:

- Available space for the unit including floor to ceiling height
- Type of application (Standard / District cooling)
- Presence of high sensible or peripheral loads in space
- Functionality of intended space usage
- Availability of access for pipes, drains and power
- Compatibility with intended space finish
- Fresh air and ventilation requirements
- Noise level desired at peak or part load operations
- Control system desired especially if winter heating is required
- Economy of layout

Saran decorative fan coil units rating data presented in the "Performance Data" tables indicate capacity of the fan coil units at fan full speed on sea level altitude, So for other condition, following performance adjustment factors shall be attend in unit selection:

Table 2: Altitude Correction Factors

Altitude (ft)	0	1000	2000	3000	4000	5000	6000
Total Cooling Capacity	1.00	0.99	0.98	0.97	0.96	0.94	0.93
Sensible Cooling Capacity	1.00	0.96	0.93	0.90	0.86	0.83	0.80
Total Heating Capacity	1.00	0.97	0.94	0.90	0.87	0.83	0.81

Table 3: Fan Speed Correction Factors

Fan Speed	High	Medium	Low
Total Cooling Capacity	1.00	0.86	0.78
Sensible Cooling Capacity	1.00	0.83	0.73
Total Heating Capacity	1.00	0.84	0.74



Selection Example

Given:

Required Air Flow Rate: 600 CFM
 Ambient Altitude: 4000 ft
 Fan Speed: Medium

Summer Conditions

Total Cooling Load: 16000 Btu/hr
 Sensible Cooling Load: 9900 Btu/hr
 Entering Air Temperature: 80°F DB / 67°F WB
 Entering Water Temperature: 46°F

Winter Conditions

Total Heating Load: 29000 Btu/hr
 Entering Air Temperature: 72°F DB
 Entering Water Temperature: 160°F

Step1: Appropriate Fan Coil Unit Selection:

Because of we need 600 CFM air flow rate, in first step we select SRFC-600. By referring to performance table, we can see total and sensible cooling capacity of this unit with 4.5 GPM chilled water flow rate in given summer conditions are 20430 Btu/hr and 14420 Btu/hr, respectively. In addition, heating capacity of this unit with 4.5 GPM hot water flow rate in given winter conditions are 41390 Btu/hr.

Step2: Comparison of Selected Model Performance with Our Requirements:

In this step, we check selected model performance in our condition:

Because of fan coil units performance tables are based on sea level altitude and fan high speed, we should be use load adjustment factor in our conditions, so by referring to tables 2 and 3, we have:

- Actual Total Cooling Capacity = $20430 \times 0.96 \times 0.86 = 16867$ Btu/hr
- Actual Sensible Cooling Capacity = $14420 \times 0.86 \times 0.83 = 10293$ Btu/h
- Actual Heating Capacity = $41390 \times 0.87 \times 0.84 = 30248$ Btu/hr

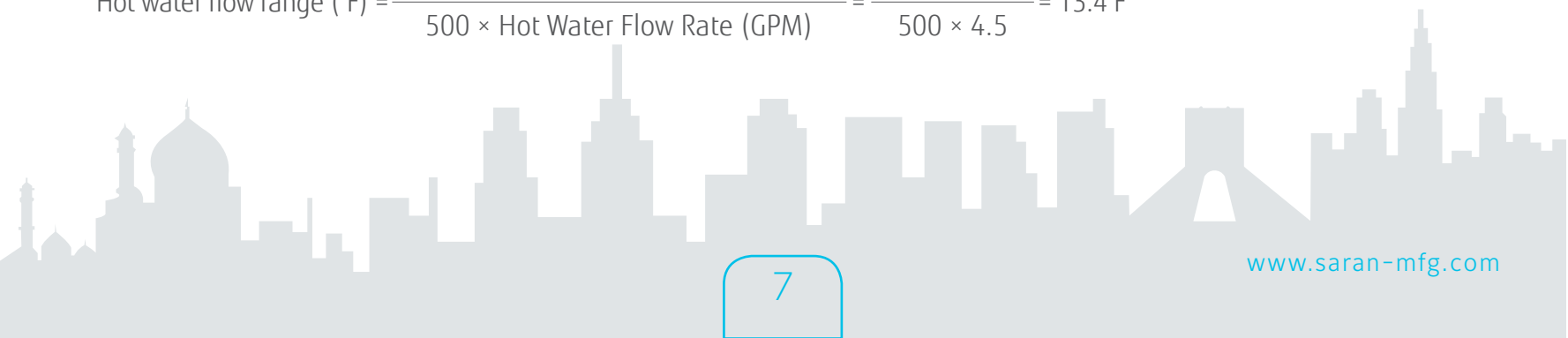
Therefore, the chosen unit satisfies the load requirements.

Step3: Determine Water Flow Range

To determine water flow range, we can using following formula:

$$\text{Chilled water flow range (°F)} = \frac{\text{Actual Total Cooling Capacity (Btu/hr)}}{500 \times \text{Chilled Water Flow Rate (GPM)}} = \frac{16867}{500 \times 4.5} = 7.5^\circ\text{F}$$

$$\text{Hot water flow range (°F)} = \frac{\text{Actual Heating Capacity (Btu/hr)}}{500 \times \text{Hot Water Flow Rate (GPM)}} = \frac{30248}{500 \times 4.5} = 13.4^\circ\text{F}$$



Performance Data

Table 4: Chilled Water Rating Data

Model	Water Inlet Temperature (°F)	Water Flow Rate (GPM)	Water Pressure Drop (Ft.WG)	Air Inlet Temperature (°F)					
				75DB/63WB		77DB/65WB		80DB/67WB	
				Sensible (Btu/hr)	Total (Btu/hr)	Sensible (Btu/hr)	Total (Btu/hr)	Sensible (Btu/hr)	Total (Btu/hr)
SRFCD - 200	42	1.5	5	5810	8150	6050	9050	6460	9870
		2	8.4	6040	8660	6300	9630	6870	10840
		2.5	12.6	6250	9140	6630	10370	7150	11480
	44	1.5	5	5490	7390	5690	8200	6200	9250
		2	8.4	5740	7980	5990	8910	6550	10100
		2.5	12.6	5910	8370	6210	9430	6810	10700
	46	1.5	5	5200	6700	5450	7620	5860	8400
		2	8.4	5430	7270	5720	8270	6150	9130
		2.5	12.6	5640	7740	5840	8570	6370	9650
SRFCD - 300	42	2	8.4	7900	10790	8190	11940	8790	13150
		2.5	12.6	8270	11660	8620	12950	9260	14260
		3	17.2	8520	12230	8900	13610	9590	15040
	44	2	8.4	7530	9930	7810	11030	8410	12210
		2.5	12.6	7820	10610	8170	11900	8840	13260
		3	17.2	8070	11200	8460	12570	9130	13960
	46	2	8.4	7130	8950	7440	10110	8040	11270
		2.5	12.6	7400	9610	7730	10820	8380	12120
		3	17.2	7610	10110	7980	11440	8690	12900
SRFCD - 400	42	2.5	5.2	10250	13920	10610	15380	11400	16950
		3	7.1	10620	14780	11110	16560	11940	18260
		3.5	9.4	10960	15570	11450	17350	12310	19130
	44	2.5	5.2	9780	12830	10120	14190	10930	15780
		3	7.1	10090	13560	10500	15130	11400	16950
		3.5	9.4	10340	14140	10870	15990	11740	17780
	46	2.5	5.2	9310	11690	9650	13020	10430	14540
		3	7.1	9590	12360	9960	13810	10800	15480
		3.5	9.4	9810	12900	10240	14490	11180	16420
SRFCD - 600	42	3.5	4.3	13460	17860	13950	19810	14960	21770
		4	5.5	13790	18650	14370	20820	15450	22990
		4.5	6.7	14130	19440	14720	21670	15820	23870
	44	3.5	4.3	12850	16410	13310	18250	14350	20260
		4	5.5	13140	17110	13700	19210	14760	21290
		4.5	6.7	13390	17700	13980	19880	15140	22220
	46	3.5	4.3	12260	14950	12690	16690	13730	18670
		4	5.5	12510	15570	13000	17470	14090	19580
		4.5	6.7	12720	16100	13280	18160	14420	20430
SRFCD - 800	42	4.5	8.2	17440	23620	18060	26110	19400	28760
		5	9.9	17750	24350	18500	27160	19900	29980
		5.5	11.8	18070	25110	18880	28050	20280	30890
	44	4.5	8.2	16580	21580	17240	24130	18610	26810
		5	9.9	16890	22320	17570	24930	18970	27710
		5.5	11.8	17170	22990	17930	25800	19360	28670
	46	4.5	8.2	15760	19600	16380	21980	17780	24720
		5	9.9	16030	20260	16710	22820	18130	25600
		5.5	11.8	16260	20810	16990	23510	18430	26380

NOTE

- Capacities are based on fan high speed and sea level altitude. For other condition, performance adjustment factors shall be attend in fan coil units selection (See Table 2&3).

Performance Data (Cont.)

Table 5: Hot Water Rating Data

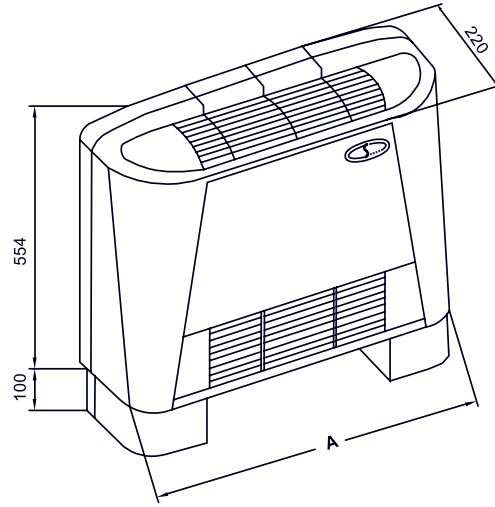
Model	Water Inlet Temperature (°F)	Water Flow Rate (GPM)	Water Pressure Drop (Ft.WG)	Air Inlet Temperature (°F)		
				68 DB	70 DB	72 DB
				Heating Capacity (Btu/hr)	Heating Capacity (Btu/hr)	Heating Capacity (Btu/hr)
SRFCD - 200	140	2	6	14680	14270	13850
		2.5	8.8	14940	14520	14100
		3	12.1	15120	14690	14270
	160	2	6	18540	18130	17720
		2.5	8.8	18860	18450	18030
		3	12.1	19080	18660	18230
	180	2	6	22300	21900	21490
		2.5	8.8	22680	22270	21850
		3	12.1	22930	22520	22100
SRFCD - 300	140	3	12.1	20090	19520	18960
		3.5	16	20350	19780	19210
		4	20.2	20550	19970	19400
	160	3	12.1	25390	24840	24280
		3.5	16	25720	25150	24590
		4	20.2	25970	25390	24820
	180	3	12.1	30580	30030	29470
		3.5	16	30960	30400	29840
		4	20.2	31250	30680	30110
SRFCD - 400	140	3.5	6.7	26050	25320	24590
		4	8.5	26390	25650	24910
		4.5	10.5	26650	25900	25150
	160	3.5	6.7	32940	32220	31490
		4	8.5	33350	32620	31880
		4.5	10.5	33680	32930	32190
	180	3.5	6.7	39670	38950	38240
		4	8.5	40150	39420	38700
		4.5	10.5	40530	39790	39050
SRFCD - 600	140	4.5	5.2	34160	33210	32250
		5	6	34580	33620	32650
		5.5	6.9	34930	33950	32980
	160	4.5	5.2	43290	42340	41390
		5	6	43800	42840	41880
		5.5	6.9	44230	43260	42290
	180	4.5	5.2	52230	51290	50350
		5	6	52830	51880	50930
		5.5	6.9	53340	52370	51410
SRFCD - 800	140	6	10.5	43890	42660	41430
		6.5	12.1	44250	43010	41770
		7	13.8	44560	43320	42070
	160	6	10.5	55540	54320	53110
		6.5	12.1	55990	54760	53530
		7	13.8	56380	55140	53900
	180	6	10.5	66950	65740	64530
		6.5	12.1	67480	66260	65040
		7	13.8	67930	66700	65470

NOTE Capacities are based on fan high speed and sea level altitude. For other condition, performance adjustment factors shall be attend in fan coil units selection (See Table 2&3).

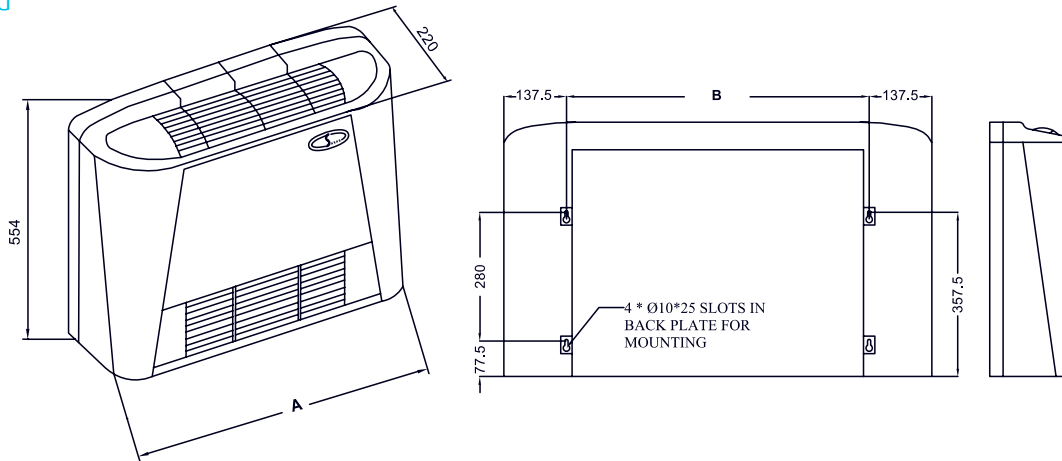


Dimensions

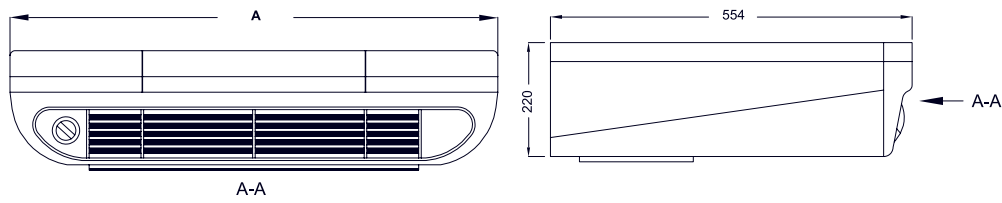
Vertical Floor Standing



Vertical Wall Mounted



Horizontal Ceiling Mounted



Model	SRFCD- 200	SRFCD- 300	SRFCD- 400	SRFCD- 600	SRFCD- 800
A	945	945	1195	1195	1445
B	670	670	920	920	1170

NOTE

- To order desired model add proper characters to model (see nomenclature).
- All dimensions in mm.