

SAPPHIRE PANEL AIR CONDITIONER



**TAILOR MADE COOLING SOLUTIONS DESIGNED FOR
COMMERCIAL, ELECTRIC AND INDUSTRIAL PANEL AIR CONDITIONERS**

SAPPHIRE PANEL AIR CONDITIONER

Features

- GI Power coated body
- High sensible cooling
- High static backward curved fan
- Fully programmable micro-controller
- Inbuilt safety for High/ Low temperature & Voltage
- Over/ Low pressure switch
- Vandal proof for outdoor application
- Down discharge
- Alarms for critical failure
- Can connect to solar application
- High EER
- No need for inverter
- Variable speed compressor, fans and DC operation gives unmatched combination for high efficiency
- OPEX saving while free and active cooling

Application

- The units can be used in enclosure automation panels
- Server cabinets
- Outdoor telecom cabinets
- Traffic radar cabinets
- Air Conditioner for Automation Cabinets (Enclosure Coolers)
- Kiosk-Advertisement Panel Coolers
- Elevator Air Conditioners

Technical Specification

Description		Unit	PAC03-A	PAC05-A	PAC10-A	PAC15-A	PAC20-A	PAC25-A	PAC30-A
Cooling Capacity	L35L35	Watts	300	500	1000	1500	2000	2500	3000
	L35L50		230	380	760	1160	1700	2125	2550
Power Supply		V/Ph/Hz	230V/1/50						
Rated Current		Amps	1.3	2.4	2.8	4.6	5	6	7
Start-up-Current		Amps	7.8	14	15	20	20	24	28
Air Flow		M3/hr	175	255	550	550	575	700	850
Power Consumption	L35L35	Watts	225	300	540	840	950	1200	1400
	L35L50		250	345	620	950	1090	1380	1600
Operating Temperature Ranges		Deg C	20-55						
Unit Dimension w x d x h		mm	320 x 265 x 520		425 x 320x1250		425 x 320x1600		500 x 420 x 1600
Unit Weight		Kgs	19	25	45	50	55	60	70
Protection Category		Internal Circuit	IP54						



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SAFARIO TRADING COMPANY LLC

PO Box 60091, Dubai, UAE

Showroom: Tel: +971 4 2664081, +971 4 2696964, Fax: +971 4 2973619, +971 4 2621213
HO: Tel: +971 4 3239032 Fax: +971 4 3239017 Email: safario1@eim.ae, www.safario.com

Latifa Towers, Shaikh Zayed Road, Office No:1505



S A F A R I O
FOR DISTINCT QUALITY & SERVICE



Since 1999, Safario Cooling Factory LLC has been a leading manufacturer of Commercial and Industrial HVAC Coils, chilled water coils, chiller coils, steam coils, Marine coils, immersion coils, refrigeration, condenser & evaporator coils. With excellent Engineering and Designing skills and solutions, we offer outstanding services to our clients and to the market. We have been serving all the major OEM companies, electromechanical contracting companies and Retailers in UAE as well as other GCC countries with quality products at competitive prices. Our technical team is always there to guide and install coils which improve the efficiency of the units whilst reducing power consumption.

Apart from the above Heat Exchangers, we also manufacture Air-Cooled chillers, Shell & Tube Condensers & Evaporators, AHU & FAHU Units, Heat Pipes, Dry Coolers, Make-up air Units, U-Tube Bundles, Plate Heat Exchangers [PHE], Panel coolers etc. Our Quality Assurance Department ensures that each and every coil is tested and approved at every stage of production. Pressure tests are carried out with nitrogen gas to check for leaks. We have qualified/professional field engineers who visit sites to gather technical data to provide the best solution for our clients. We have flexible manufacturing and delivery schedules; this helps us accommodate a client's emergency requests to produce a coil at an early date.

Coil production shop is equipped with latest advanced automated machines imported from reputed machine manufacturers in Europe, Japan, USA, India and Far East. With all the high speed machines, the installed capacity of the shop meets the requirements of the customers, thereby enhancing their satisfaction. The brazing operation of the coils is performed by well trained and qualified personnel. The material for brazing is being imported directly from the renowned suppliers, thereby eliminating the possible cause of leak or failure when the coils are in operation.



COPPER TUBES

- OD 7.93 mm (5/16"): With wall thickness of 0.28 mm smooth as standard
- OD 9.52 mm (3/8"): With wall thickness of 0.30 mm smooth as standard; 0.35 mm smooth or 0.40 / 0.51 mm Inner Groove Tubes are also available
- OD 12.70 mm (1/2") : With wall thickness of 0.38mm smooth as standard; 0.58mm Inner Groove Tubes are also available
- OD 15.87 mm (5/8") : With wall thickness of 0.41 mm smooth as standard
- Steam coils and oil coolers are equipped with 0.71mm copper tubes of 3/8", 1/2" and 5/8" patterns

Tubes have the suitable quality for refrigeration and air conditioning.

BRAZING MATERIAL

The most appropriate brazing material is chosen according to the application area.

HEADER MATERIALS

Unless otherwise stated, steel manifolds are used for dry coolers, water and steam coils. For all other products, copper manifolds are used.

FIN SURFACES

Fin surfaces can be manufactured as 'flat', 'corrugated', 'louvered' or 'pyramid' as per design requirement.

UNILAB COIL SELECTION SOFTWARE

FINS

The available tube arrangements and fin properties used are given in details in the following pages. In addition to 8006 H22 aluminium alloy, copper foils and hydrophobic, hydrophilic foils are used upon request.

CASING

Galvanized Iron, aluminium and stainless steel sheets are used as casework materials. Other appropriate materials can be used upon request.

The screenshot displays the UNILAB COIL SELECTION SOFTWARE interface. It is divided into two main sections: AIR SIDE and TUBES SIDE. The AIR SIDE section includes input fields for Capacity (kW), Airflow (m³/h), Face Velocity (m/s), Inlet Temperature DB (°C), Inlet Relative Humidity, Outlet Temperature DB (°C), Outlet Relative Humidity, Fouling factor (m² K/W), Pressure Drop (Pa), and Fin Pitch (mm (2)). The TUBES SIDE section includes input fields for Fluid (R134a), Flow (kg/h), Evaporating Temp. (°C), Condensing Temp. (°C), Overheating (K), Subcooling (K), Pressure Drop (kPa), Fouling factor (m² K/W), Fluid Velocity [Gas phase] (m/s), Finned Length (mm), and Circuits. The software also displays calculated results for Req. (Required) and Obt. (Obtained) values for Capacity, Airflow, Face Velocity, Inlet Temperature DB, Inlet Relative Humidity, Outlet Temperature DB, Outlet Relative Humidity, Fouling factor, Pressure Drop, and Fin Pitch. The interface includes a sidebar with navigation options like Direct Expansion, Calculation Method, Verify, Design, Geometry, Tube, Fin, Fin Pitch, and Fin Material. The bottom of the interface has buttons for Calculate, Print, and Close.

AIR SIDE		Req.	Obt.	TUBES SIDE	
Capacity	kW		13.12	Fluid	R134a
Airflow	m³/h		2500	Flow	kg/h
Face Velocity	m/s		2.22	Evaporating Temp.	°C
Inlet Temperature DB	°C		27	Condensing Temp.	°C
Inlet Relative Humidity			50	Overheating	K
Outlet Temperature DB	°C		15.5	Subcooling	K
Outlet Relative Humidity			85.5	Pressure Drop	kPa
Fouling factor	(m² K)/W		0	Fouling factor	(m² K)/W
Pressure Drop	Pa		70	Fluid Velocity [Gas phase]	m/s
No tubes for row			6	Finned Length	mm
Rows			4	Circuits	
Fin Pitch	mm (2)		2.10		
No of Skipped Tubes			0		

DESIGNING

Our R & D department offers state of the art product design and testing facilities. Accurate product performance data is used for the benefit of the customers ensuring the highest level of integrity and quality. Complete coil designing is performed with advanced design software, for the production of extensive range of HVAC coils in response to customer's requirements. Safario has recently procured high level optimized software for the design and development of AHU, Air-Cooled Chiller and Shell and Tube heat exchangers, thereby providing efficient and cost effective heat transfer solutions to the customers.

PRODUCTION FACILITIES

Safario is equipped with advanced manufacturing facilities which lead to high quality finished products. It's commitment to the technological innovation is exemplified by the degree of automation throughout the business. A network of computers connected via custom built software coordinates Engineering, Design, Production and Customer Service activities to ensure the client receives the products well on time. The sheet metal shop is equipped with CNC machines for mass production of complex sheet metal parts. The punching head has a combination of 45 stations and the mode of operations include punching, forming, notching, shearing, louvers, etc.

INSPECTION & QUALITY CONTROL

Safario has stringent quality control procedures for checking quality and controlling parameters at various levels of manufacturing for each unit to ensure a defect free product and achieve a high level of customer satisfaction. The raw material used in the fabrication of products complies with national and international standards. The raw materials are imported from reputed suppliers from Europe and other Far East nations, for better quality and performance.

ENGINEERING

Precision and accuracy of our calculations are provided by a simulation software program by UNILAB, which enables us to provide the most efficient design. The latest version of this software is currently available in our company. Safario specializes in OEM coils in addition to a wide range of other heat exchangers; OEM coils are either designed or directly manufactured upon customer needs and requirements. A large family of fin geometries makes it easier for our customers to get what they exactly need. 5/16", 3/8", 1/2" or 5/8" coils are manufactured for different application areas from Industrial refrigeration sector to special project.





ANTI-CORROSIVE COATING

Heresite {USA}

Different type of coatings is applied depending on application areas and corrosion conditions. Safario is an authorized applicator of Heresite coating in the UAE. Heresite coating is the Anticorrosive coating most conventional in the common market with good quality and economical rates. Heresite Coating extends the life of the coil multiple times, so there is significant economic benefit having Heresite coatings applied to the coils, radiators or other process equipment. For heat transfer equipment, the impact on thermal efficiency is negligible with thin-filmed Heresite coatings; hence no modification (i.e. sizing or other design elements) is necessary. Items coated with Heresite includes: Coils, finned tube coils, Evaporators, Condensers, HVAC / R Units*, RTUS (pre-engineered rooftop unitary systems), Air to Air heat Exchangers, Refrigeration coils, Fans, Blowers, Air Handlers, Duct Work and piping. Due to its Superior bond Strength, and ability to perform in temperature extremes, Heresite protective coatings also used to prevent corrosion of the entire HVAC unit.

Bronz Glow Husky Green {USA}

Bronz Glow Husky Green Spray Coating for HVAC Fin tube and coaxial coils-tough, flexible, will not chip, crack, powder or flake. This tough single component air-dry coating provides surface protection in any harsh environment, even from severe acid fumes, where traditional coil coatings may fail. Formulated around a synthetic resin base, at 0.8 to 1.5 mils dry thickness, provides corrosion protection across the entire pH range (1.0 to 14) and has little effect on the heat transfer. Bronz Glow Sea Coast spray coating Sea Coast Protector is a versatile, single-component elastomeric coating that has been formulated for multiple uses. In addition to providing coastal corrosion protection for condensing coil, it is also confidently applied to metal surfaces such as steel, copper, aluminum and brass.

COATING CHARACTERISTICS:

Solids: (wt) 17%

Tensile: 2,500 psi (ASTM D- 638)

Finish: Semi - Gloss

Shelf Life: 1yr@ 77° F

Elongation: 500% (ASTM D-638)

Durometer: Shore A 70 (ASTM D-2240)

VOC lbs. Per gallon 5.1-5.4

Abrasion: (ASTM D- 3170)

Weather Ability: (ASTM G-53)

Temperature use range:-30° to 220° F

Cut Resistance: Very Good (astm d- 1044)

Salt Spray: 3,000 hrs (ASTM B-117.85)

Field Repairable

Viscosity Range: 55-66 K.V. @ 77 deg.F.

Gas Chromatography Test (FID) No evidence of residual vapors

COLOR : Olive Green

FIN GEOMETRIES

DESCRIPTION	FINS SPACING	TUBE SPACING	ROW SPACING	F P I	TUBE THICKNESS	TUBE EXTERNAL DIA	FIN THICKNESS	FIN MATERIAL	FIN CORRUGATION	TUBE CORRUGATION	MAX. TESTING PRESSURE
3/8" X 0.011"	Staggered	25.4 mm	18.24 mm & 22 mm	6 TO 20	0.28 mm	9.525 mm	0.1 mm, 0.12 mm, 0.13 mm, 0.15mm, 0.17mm	Aluminium,Copper & Hydrophilic	Smooth, Sine Wave Corrugated, Louver	Smooth	350 psi
3/8" X 0.012"	Staggered	25.4 mm	18.24 mm & 22 mm	6 TO 20	0.30 mm	9.525 mm	0.1 mm, 0.12 mm, 0.13 mm, 0.15mm, 0.17mm	Aluminium,Copper & Hydrophilic	Smooth, Sine Wave Corrugated, Louver	Smooth	450 psi
3/8" X 0.014"	Staggered	25.4 mm	18.24 mm & 22 mm	6 TO 20	0.35 mm	9.525 mm	0.1 mm, 0.12 mm, 0.13 mm, 0.15mm, 0.17mm	Aluminium,Copper & Hydrophilic	Smooth, Sine Wave Corrugated, Louver	Smooth	450 psi
3/8" X 0.011" (IGT)	Staggered	25.4 mm	18.24 mm & 22 mm	6 TO 20	0.28 (IGT)	9.525 mm	0.1 mm, 0.12 mm, 0.13 mm, 0.15mm, 0.17mm	Aluminium,Copper & Hydrophilic	Smooth, Sine Wave Corrugated, Louver	Inner Groove	450 psi
3/8" X 0.028"	Staggered	25.4 mm	18.24 mm & 22 mm	6 TO 20	0.71 mm	9.525 mm	0.1 mm, 0.12 mm, 0.13 mm, 0.15mm, 0.17mm	Aluminium,Copper & Hydrophilic	Smooth, Sine Wave Corrugated, Louver	Smooth	450 psi
1/2" X 0.015"	Staggered	31.75 mm	27.5 mm	6 TO 16	0.38 mm	12.7 mm	0.13 mm, 0.15 mm, 0.17 mm	Aluminium,Copper & Hydrophilic	Smooth, Sine Wave Corrugated, Louver	Smooth	450 psi
1/2" X 0.016"	Staggered	31.75 mm	27.5 mm	6 TO 16	0.40 mm	12.7 mm	0.13 mm, 0.15 mm, 0.17 mm	Aluminium,Copper & Hydrophilic	Smooth, Sine Wave Corrugated, Louver	Smooth	450 psi
1/2" X 0.016" (IGT)	Staggered	31.75 mm	27.5 mm	6 TO 16	0.40 mm (IGT)	12.7 mm	0.13 mm, 0.15 mm, 0.17 mm	Aluminium,Copper & Hydrophilic	Smooth, Sine Wave Corrugated, Louver	Inner Groove	450 psi
1/2" X 0.028"	Staggered	31.75 mm	27.5 mm	6 TO 16	0.71 mm	12.7 mm	0.13 mm, 0.15 mm, 0.17 mm	Aluminium,Copper & Hydrophilic	Smooth, Sine Wave Corrugated, Louver	Smooth	450 psi
5/8" x 0.016"	Staggered	38.1 mm	33 mm	8 TO 13	0.40 mm	15.875 mm	0.15 mm	Aluminium,Copper & Hydrophilic	Smooth, Corrugated	Smooth	450 psi
5/8" x 0.018"	Staggered	38.1 mm	33 mm	8 TO 13	0.45 mm	15.875 mm	0.15 mm	Aluminium,Copper & Hydrophilic	Smooth, Corrugated	Smooth	450 psi
5/8" x 0.020"	Staggered	38.1 mm	33 mm	8 TO 13	0.50 mm	15.875 mm	0.15 mm	Aluminium,Copper & Hydrophilic	Smooth, Corrugated	Smooth	450 psi
5/8" x 0.030"	Staggered	38.1 mm	33 mm	8 TO 13	0.76 mm	15.875 mm	0.15 mm	Aluminium,Copper & Hydrophilic	Smooth, Corrugated	Smooth	450 psi

SHELL & TUBES

Shell & Tube heat exchangers are available with tubing dia ranging from 0.375 to 0.875 inches. Shells are made of MS, SS 304, SS 316 and internal tubes - grooved and plain tubes in SS 304, SS316, Copper, Copper Nickel, AluBrass and Titanium to meet specific application requirements.

HEAT PIPE COILS:

Safario Cooling Factory manufactures Heat Pipe Coils as Original Equipment parts for several leading manufacturers of Heat Pipes in Europe and UK for their Heat Pipe Units. Our manufacturing facility and quality have been well accepted by these Companies.

Copper Fin - Plain / Smooth



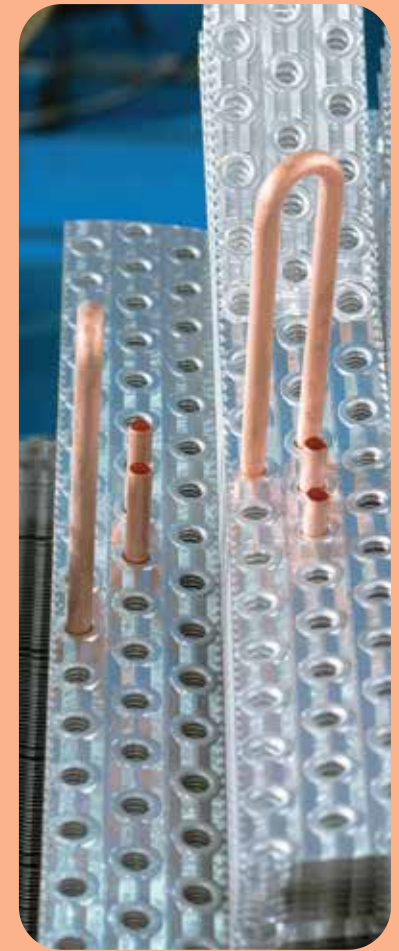
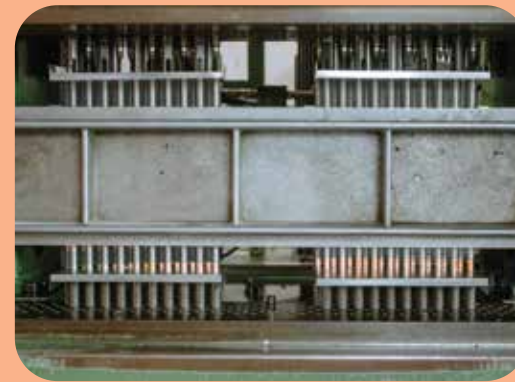
Aluminium Fin - Louvered



Hydrophilic Fin - Plain / Smooth



Aluminium Fin - Corrugated



Aluminium Fin - Sinewave



Copper Fin - Corrugated



Aluminium Fin - Louvered



DX. Type AHU Coil



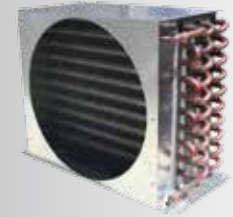
Heat Pipe Coil



Chilled Water AHU Coil



Condenser - Water Cooler



FCU Coil



Heat Pump Coil



Dry Cooler (40 - 50) TON



Condenser - O-bend



Condenser - Chiller



Evaporator - Water Cooler



Condenser C - Bend



Direct Expansion Coil





SAFARIO TRADING CO. LLC

Trading Division of Safario Group of Companies handles distribution of Sapphire brand air conditioner products, which includes window, split, ducted, package type air conditioners, water chillers and all other products related to HVAC. The group offers market expertise, solutions and services in Refrigeration & HVAC field.

SAFARIO AC MAINTENANCE LLC

This division of Safario group of companies takes care of After-Sales-Service. It also undertakes installation and annual maintenance contract of chillers and other HVAC products.

SAFARIO COOLING FACTORY LLC

📍 Dubai Industrial Park
Dubai - UAE
📞 60091
☎ +971 4 58 93 311
✉ info1@safario.com

HEAD OFFICE

📍 1505, Latifa Towers
Shaikh Zayed Road, Dubai - UAE
📞 60091
☎ +971 4 32 39 032
☎ +971 4 32 39 017
✉ info1@safario.com

SAFARIO TRADING CO. LLC & SAFARIO AC MAINTENANCE LLC

📍 Al Khabaisi, Hor Al Anz
Dubai - UAE
📞 60091
☎ +971 4 26 64 081
☎ +971 4 26 21 213
✉ info1@safario.com

www.safario.com

AQUA COOLING SYSTEM



**Tank Water Cooling Solution
Domestic Water Chillers
Designed for
Residential and Commercial**



SS Brazed Plate Heat Exchangers



SS Shell & Tube Heat Exchangers

TECHNICAL SPECIFICATIONS

Model No.		SC-018R-S	SC-018P-S	SC-024R-S	SC-024P-S	SC-036R-S	SC-036P-S
		SC-018R-P	SC-018P-P	SC-024R-P	SC-024P-P	SC-036R-P	SC-036P-P
Cooling Capacity	BTU/Hr (kw)	18,000 (5.25)	18,000(5.25)	24,000 (7.0)	24,000(7.0)	36,000 (10.5)	36,000(10.5)
Compressor	Qty	1	1	1	1	1	1
	Type	Rotary	Piston	Rotary	Piston	Rotary	Piston
	V/Ph/Hz	220-230/1/50					
Axial Fan (Condenser)	Qty	1	1	1	1	1	2
	V/Ph/Hz	220-230/1/50					
Evaporator (Water Cooled)	Heat Exchanger	S.S. Shell & Copper Tubes , PHE with SS brazed plates (Optional)					
Water Flow Rate (ΔT- 5°C)	GPM	3.75	3.75	5.0	5.0	7.5	7.5
Max Water Temp. (Tank Inlet)	°C	45°C to 50°C					
Water Temp. (Tank Outlet) Variable	°C	10°C to 15° C					
Condenser	Heat Exchanger	Copper Tube with Aluminum Fins					
Test Pressure -Low/High	PSIG	150/450					
Refrigerant	Gas	R22 / R410a / R407c (optional)					
Unit Voltage	V/Ph/Hz	220-230/1/50					
Unit Power	kW	2.25	2.25	3.0	3.0	4.5	4.5
Water Pump	Hp	1/2	1/2	1/2	1/2	1/2	1/2
Water Connection In/Out	Inches	3/4	3/4	3/4	3/4	3/4	3/4
Unit Dimension LxWxH cm	Shell Type	84x36.5x106.5				92x39x147	
	Plate Type						
Unit Net Weight	kg	65	68	75	78	95	98
Water Tank Capacity Min/Max.	Gallons	250-500	250-500	500-750	500-750	750-1000	750-1000

Model No.		SC-060L-S2	SC-060P-S1	SC-060L-S1
		SC-060L-P2	SC-060P-P1	SC-060L-P1
Cooling Capacity	BTU/Hr (kw)	60,000(17.5)	60,000(17.5)	60,000 (17.5)
Compressor	Qty	1	1	1
	Type	Scroll	Piston	Scroll
	V/Ph/Hz	220-230/1/50		
Axial Fan (Condenser)	Qty	2 in Side throw	1-Top throw	
	V/Ph/Hz	380-420/3/50		
Evaporator (Water Cooled)	Heat Exchanger	S.S. Shell & Copper Tubes , PHE with SS brazed plates (Optional)		
Water Flow Rate (ΔT- 5°C)	GPM	12.5	12.5	12.5
Max Water Temp. (Tank Inlet)	°C	45°C to 50°C		
Water Temp. (Tank Outlet) Variable	°C	10°C to 15° C		
Condenser	Heat Exchanger	Copper Tube with Aluminum Fins		
Test Pressure -Low/High	PSIG	150/450		
Refrigerant	Gas	R22 / R410a / R407c (optional)		
Unit Voltage	V/Ph/Hz	380-415/3/50		
Unit Power	kW	7.5	7.5	7.5
Water Pump	Hp	1/2	1/2	1/2
Water Connection In/Out	Inches	1	1	1
Unit Dimension LxWxH cm	Shell Type	91.5x41.5x159	92 X132.5 X 75	
	Plate Type			
Unit Net Weight	kg	110	180	185
Water Tank Capacity Min/Max.	Gallons	1000-1500	1000-1500	1000-1500



SAFARIO TRADING COMPANY LLC

PO Box 60091, Dubai, UAE

Showroom: Tel: +971 4 2664081, +971 4 2696964, Fax: +971 4 2973619, +971 4 2621213

HO: Tel: +971 4 3239032 Fax: +971 4 3239017 Email: safario1@eim.ae, www.safario.com

Latifa Towers, Shaikh Zayed Road, Office No:1505



AIR COOLED WATER CHILLERS



SCF-S/P-D-IT



SCF-SHD-S



TECHNICAL SPECIFICATIONS

Model No.		SCF-060P-S1	SCF-060L-S1	SCF-100P-S	SCF-100L-S	SCF-120PD-S	SCF-120LD-S
		SCF-060P-P1	SCF-060L-P1	SCF-100P-P	SCF-100L-P	SCF-120PD-P	SCF-120LD-P
Cooling Capacity	BTU/Hr (kW)	60,000(17.5)	60,000(17.5)	90,000(26.25)	90,000(26.25)	120,000(35.0)	120,000(35.0)
Compressor	Qty	1	1	1	1	2	2
	Type	Piston	Scroll	Piston	Scroll	Piston	Scroll
	V/Ph/Hz	380~415/3/50					
Axial Fan (Condenser)	Qty	1	1	2	1	2	2
	Size (Dia) mm	550	550	500	500	550	550
	RPM	900					
	Air Volume m³/hr(each fan)	6500	6500	7950	7950	6500	6500
	V/Ph/Hz	380~415/3/50					
Evaporator (Water Cooled)	Heat Exchanger	S.S. Shell & Copper Tubes / PHE (Optional)					
Water Flow Rate (ΔT- 5°C)	GPM	12.50	12.50	18.75	18.75	25.0	25.0
Max Water Temp. (Tank Inlet)	°C	45°C to 50°C					
Water Temp. (Tank Outlet) Variable	°C	8°C to 10° C					
Condenser (Air Cooled)	Heat Exchanger	Copper Tube with Aluminum Fins					
Test Pressure- Low/High	PSIG	150/450					
Refrigerant	Gas	R22 / R134a / R407C (Optional)					
Unit Voltage	V/Ph/Hz	380-415/3/50					
Unit Power	kW	7.5	7.5	11.25	11.25	15.0	15.0
Water Pump	Hp	0.50	0.50	0.75	0.75	1.0	1.0
Water Connection In/Out	Inches	1	1	1.5	1.5	1.5	1.5
Unit Dimension LxWxH cm	Shell type	101.6X76.2X151.1		162.5 x 106.6 x 151.1			
	Plate type	110.5x76.2x84.2		162.5 x 106.6 x 76.4			
Unit Net Weight	kg	200	180	350	335	415	390
Water Tank Capacity Min/Max.	Gallons	1000-1500	1000-1500	1500-2000	1500-2000	2000-2500	2000-2500

Model No.		SCF-200PD-S	SCF-200LD-S	SCF-240PD-S	SCF-240LD-S	SCF-300PD-S	SCF-300LD-S
		SCF-200PD-P	SCF-200LD-P	SCF-240PD-P	SCF-240LD-P	SCF-300PD-P	SCF-300LD-P
Cooling Capacity	BTU/Hr (kW)	180,000(52.5)	180,000(52.5)	240,000(70.0)	240,000(70.0)	300,000(87.5)	300,000(87.5)
Compressor	Qty	2	2	2	2	2	2
	Type	Piston	Scroll	Piston	Scroll	Piston	Scroll
	V/Ph/Hz	380~415/3/50					
Axial Fan (Condenser)	Qty	2	2	3	3	3	3
	Size (Dia) mm	630					
	RPM	900					
	Air Volume m³/hr(each fan)	9500	9500	9500	9500	9500	12000
	V/Ph/Hz	380~415/3/50					
Evaporator (Water Cooled)	Heat Exchanger	S.S. Shell & Copper Tubes / PHE (Optional)					
Water Flow Rate (ΔT- 5°C)	GPM	37.5	37.5	50.0	50.0	62.5	62.5
Max Water Temp. (Tank Inlet)	°C	45°C to 50°C					
Water Temp. (Tank Outlet) Variable	°C	8°C to 10° C					
Condenser (Air Cooled)	Heat Exchanger	Copper Tube with Aluminum Fins					
Test Pressure- Low/High	PSIG	150/450					
Refrigerant	Gas	R22 / R134a / R407C (Optional)					
Unit Voltage	V/Ph/Hz	380-415/3/50					
Unit Power	kW	22.50	22.50	30.0	30.0	37.5	37.5
Water Pump	Hp	1.5	1.5	2.0	2.0	2.5	2.5
Water Connection In/Out	Inches	1.5	1.5	2.5	2.5	2.5	2.5
Unit Dimension LxWxH cm	Shell type	162.5 x 106.6 x 151.1		238.7.6x117.4x169.2			
	Plate type	162.5 x 106.6 x 76.4		238.7 x 116.8 x 115.6			
Unit Net Weight	kg	475	440	800	750	950	900
Water Tank Capacity Min/Max.	Gallons	2500-3000	2500-3000	3000-3500	3000-3500	3500-4000	3500-4000

TECHNICAL SPECIFICATIONS

Model No.		SCF-400LD-S	SCF-500SHD-S	SCF-600SHD-S	SCF-800SHD-S	SCF-900SHD-S	SCF-1000SHD-S	SCF-1200SHF-S	SCF-1600SHF-S
		SCF-400LD-P							
Cooling Capacity	BTU/Hr (kW)	360,000 (105.0)	480,000 (140)	600,000 (175.0)	720,000(210.0)	840,000 (245.0)	960,000(280.0)	1,200,000 (350.0)	1,440,000 (420.0)
Compressor	Qty	2	2	2	2	2	2	4	4
	Type	Scroll	Semi-Hermatic						
	V/Ph/Hz	380~420/3/50							
Axial Fan (Condenser)	Qty	3	6	6	6	6	12	12	12
	Size (Dia) mm	630							
	RPM	900							
	Air Volume m³/hr(each fan)	9500	9500	9500	12000	12000	9500	9500	12000
	V/Ph/Hz	380~415/3/50							
Evaporator	Heat Exchanger	SS Shell & Cu Tube / PHE	M.S. Shell & Copper Tubes						
Water Flow Rate (ΔT- 5°C)	GPM	75.0	100.0	125.0	150.5	175.0	200.0	250.0	300.0
Max Water Temp. (Tank Inlet)	°C	45°C to 50°C							
Water Temp. (Tank Outlet) Variable	°C	8°C to 10° C							
Condenser	Heat Exchanger	Copper Tube with Aluminum Fins							
Test Pressure Low/High	PSIG	150/450							
Refrigerant	Gas	R22 / R134a / R407c/R410a (Optional)							
Unit Voltage	V/Ph/Hz	380-415/3/50							
Unit Power	kW	45	60	75	90.0	105.0	120.0	150	180
Water Pump	Hp	3.0	4.0	5.0	6.0	7.0	8.0	10.0	12.0
Water Connection In/Out	Inches	3.0	4.0	4.0	4.0	4.0	6.0	6.0	6.0
Unit Dimension LxWxH cm	Shell type	238.7.6x117.4x169.2	272.5X228.6X177.8	320 X 230 X 190			420 X 245 X 205		
	Plate type	238.7 x 116.8 x 115.6							
Unit Net Weight	Kg	950	2015	2,156	2,297	2,450	2,890	3,929	4,331
Water Tank Capacity Min/Max.	Gallons	4000-5000	5000-6000	6000-7000	7000-9000	9000-11000	11000-13000	13000-15000	15000-17000

Note:

- 1) As per clients' requirement, Refrigerant gas can be changed. Accordingly, the technical specifications will also change.
- 2) Upto 30 ton capacity the shell is made of SS and tube is copper. Above 50 ton the shell is of MS and tubes are copper.
- 3) Optional SS Shell and SS tubes can be made as per customer design requirement at additional cost.
- 4) Pumps are supplied along with the chillers from 1.5 ton to 30 ton.
- 5) Circulation pump will be provided for chiller upto 30 Ton.
- 6) Plate type Heat exchangers are made in Europe.
- 7) Specifications mentioned are subject to changes for product improvement.



Sapphire Chillers are designed for simplicity and ease of use:

- * "Cycling" refrigeration circuit.
- * Integrated centrifugal circulation pump.
- * Microprocessor controls (Optional).
- * Single point power connection.
- * High efficiency, stainless steel, brazed tube heat exchangers (Optional).
- * Heavier frame construction, greater resistance to shipping, handling & operation abuse.
- * Standard weatherproof enclosures on all models 5 tons & above.
- * Removable access panels for easy service and maintenance.
- * Standard high-pressure and low-pressure refrigeration gauges on 5 tons and above models.
- * Suitable for high & low ambient temperature.
- * Low noise level.

Safario is a quality manufacturer of Sapphire water chillers for domestic, industrial process cooling and speciality HVAC systems. The Sapphire chillers offer an unparalleled range of cooling capacities, with wide options that allow customers to select a chiller best suited to their needs. Designed with reliability, flexibility and ease of use, the Sapphire range of water chillers have earned a quality reputation, trusted around the Middle East to provide reliable cooling solutions

Sapphire offers a complete range of packaged liquid chillers from 1.5 tons to 120 tons and above. Sapphire chillers are used in industries such as plastics processing, thermal spray, printing processes, oil coolers, pharmaceutical processing, confectionaries and various other industrial manufacturing processes. These chillers can also be applied to HVAC systems where direct expansions systems are not practical.



SAFARIO TRADING COMPANY LLC

PO Box 60091, Dubai, UAE

Showroom: Tel: +971 4 2664081, +971 4 2696964, Fax: +971 4 2973619, +971 4 2621213
 HO: Tel: +971 4 3239032 Fax: +971 4 3239017 Email: safario1@eim.ae, www.safario.com
 Latifa Towers, Shaikh Zayed Road, Office No: 1505