



Air Conditioner
Damavand
www.damavandhvac.com

Your comfort and our environment

Company Introduction

As a manufacturer, Damavand Air Conditioning Company produce a wide range of chillers based on decades of knowledge and experience. We design and provide smart technology to assure your comfort, with high energy efficiency for your residential and commercial demands. We are all about getting more efficient and more intelligent as we are using the latest technology and searching for more. Our extensive chiller product line manufactures various types of chillers including Screw, Scroll and reciprocating compressor chillers ranging in capacities from 52 to 3,300+ kilowatt. Our efforts to bring the comfort and making indoor life more convenient led us to the development of amazingly sophisticated machines which provide high quality and efficient operation.

Our engineering team design each every single air conditioning unit according to the customer site condition in order to achieve optimum performance and efficiency and to save energy and expenses.

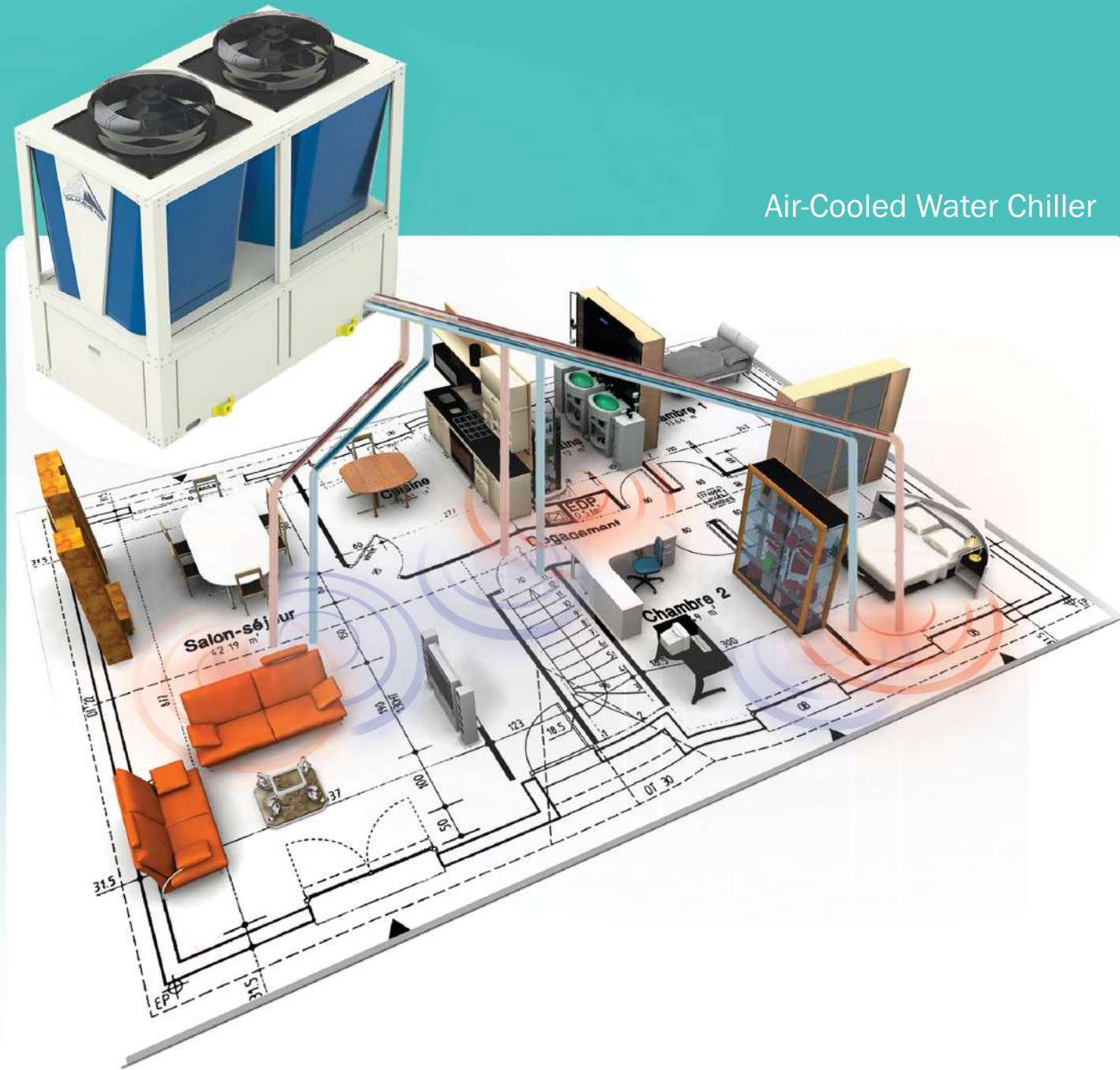
Damavand Air Conditioning Company with over 30 years of experience in manufacturing, installation and servicing, provide comfort and efficient use of energy for your residential, commercial and industrial units.

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Chiller
Technical Catalogue

Air-Cooled Water Chiller



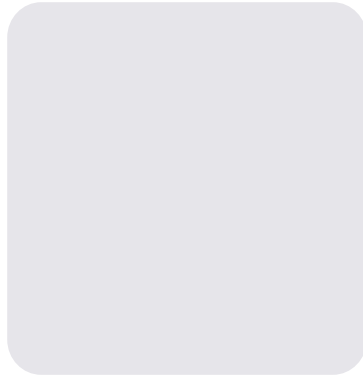
Air Conditioning Solution



ISO Description

ISO 9001:2015 is one of the few ISO standards that have been implemented by our organization as the standard focuses on maintaining consistently impeccable customer service for our clients. Damavand Air Conditioning derives benefit from the standard to improve its customer experience as well as its efficiency. We have been certified based on our quality management principles, including a strong customer focus, the motivation and implication of top management, the process approach and continual improvement.





Damavand Your And Our Environment Comfort

Design Series

DCA: Damavand Chiller Air Cooled Series
 DCW: Damavand Chiller Water Cooled Series
 DCU: Damavand Condensing Unit Series
 DCFA: Damavand Chiller Flooded Air Cooled Series
 DCFW: Damavand Chiller Flooded Water Cooled Series

Nominal Capacity

Economizer

Compressor Type

S Screw Comp.
 O Scroll Comp.
 R Reciprocating Comp.

No. of Compressor

Refrigerant*(Color Code)

Y R134a B R407c
 G R22 R R410a

Design Condition

S Standard (Ambient Temp. 35 °C)
 R Regional (Ambient Temp. 40 °C)
 T Tropical (Ambient Temp. 46 °C)

Condenser Option

0 Water Cooled
 1 Aluminum Fin / Copper Tube
 2 Hydrophilic Aluminum Fin / Copper Tube
 3 Hydrophobic Aluminum Fin / Copper Tube

Expansion Valve Type

E Electronic Expansion Valve
 T Thermostatic Expansion Valve

No. of Circuits

** As a part of Continuous product improvement , The specification are subject to change without notice.**

Scroll Compressor Chiller

Air Cooled Chiller



Overview

Air cooled scroll chiller is a reliable and self-contained solution, suitable for small and medium-sized applications, commercial or residential that use central air handling unit or terminal unit e.g. fan coils. Damavand® air cooled scroll chillers are designed and manufactured with high lifespan for outdoor installation with the overall protection class of IP54. The fact that the air cooled chillers do not consume water as their cooler, made them the best possible solution for the areas where there is water shortage. Each unit includes hermetic scroll compressors with outstanding durability, a liquid evaporator (shell & tube DX type or plated), centrifugal propeller condenser fans and a user-friendly controller (PLC) mounted in an electrical panel.

Chillers are designed in dual circuits in order to enhance the reliability; and the standard ambient temperature of 35 °C for the mild summer climate.

Characteristics:

- 14 sizes available ranging from 39 kW (11ton) to 683 kW (195 ton) cooling capacity.
- Designed for outdoor installation

- Axial fan with external rotor motor equipped with three-phase direct drive motor, low noise with protection class of IP55.
- Electrical circuit breaker
- BMS compatible
- High efficiency evaporator engineered for the optimum performance. Factory insulated with the aluminum foil elastomeric rubber foam
- Condenser designed and built with finest seamless copper tube mechanically expanded in aluminum fins
- Oven baked electrostatic powder painting
- Condenser Receiver/Heat-Ex Receiver
- Designed for Quiet Operation: Piping specifically designed to reduce vibration
- Refrigerant: R22, R407C

Optional

Available options provide the flexibility to meet a variety of project configurations

- HMI: touch screen panel with English/Persian interface
- Compressor Sound Attenuator Box: Sound pressure level reduction
- Condenser Inverter fan
- Electronic Expansion Valve

- Hydrophilic/Hydrophobic aluminum coating
- Condenser fin protection mesh
- Vibration isolator: Neoprene pads or spring type
- Electrical power Soft Starter
- WiFi access to the controller and monitoring / commanding through internet web

Technical Data for Air Cooled Scroll Compressor Chiller						R22/R407C	Ambient 35°C (1S)	
Model	DCA	15-O2G-2T	20-O2G-2T	26-O2G-2T	30-O2G-2T	40-O2G-2T	50-O2G-2T	60-O2G-2T
Nominal Capacity	hp	15	20	26	30	40	50	60
Cooling Capacity (Actual)	kW	39.36	54.6	70.56	82.18	110.8	141.6	171.06
	Ton	11.19	15.52	20.06	23.37	31.50	40.26	48.64
Compressor Rotary Scroll								
Qty./Refrigerant Circuit	N.A.	2/2	2/2	2/2	2/2	2/2	2/2	2/2
COP	N.A.	3.46	3.53	3.56	3.58	3.51	3.59	3.60
Compressors Power / Amps	kW/A	11.38/22.36	15.48/29.76	19.8/36.82	22.98/43.58	31.54/55.46	39.44/70.42	47.5/80.32
Evaporator Shell & Tube - DX Type								
Chilled Water Flow Rate	m³/hr.	6.77	9.39	12.13	14.13	19.05	24.34	29.40
	GPM	29.77	41.30	53.37	62.15	83.80	107.10	129.38
Water Side Pressure Drop	m H ₂ O	3.2	3.5	3.7	3.8	4	4	4.2
Connection Size	Inch	2	2 1/2	3	3	3	3	4
Condenser Air Cooled Aluminum Fin – Copper Tube								
Heat Reject	kW	50.7	70.1	90.4	105.2	142.3	181.0	218.6
Number of Condenser Fans	Qty.	2	2	2	2	2	4	4
Expansion Valve Thermostatic Expansion Valve								
Sound Pressure	dB(A)	69	70	73	73	75	75	79
Chiller Power Consumption	kW	13.18	17.28	23.12	26.3	34.86	46.08	54.14
Chiller Current	A	30.16	37.56	44.62	51.38	63.26	86.02	95.92
EER Total energy efficiency	kW/kW	2.99	3.16	3.05	3.12	3.18	3.07	3.16
Net Weight	kg	860	935	1070	1350	1450	1710	2090

Technical Data for Air Cooled Scroll Compressor Chiller						R22/R407C	Ambient 35°C (1S)	
Model	DCA	80-O4G-2E	100-O4G-2E	120-O4G-2E	150-O6G-2E	180-O6G-2E	200-O8G-2E	240-O8G-2E
Nominal Capacity	hp	80	100	120	150	180	200	240
Cooling Capacity (Actual)	kW	229.8	283.2	342.12	424.8	513.18	566.4	684.24
	Ton	65.34	80.52	97.28	120.78	145.91	161.05	194.55
Compressor Rotary Scroll								
Qty./Refrigerant Circuit	N.A.	4/2	4/2	4/2	6/2	6/2	8/2	8/2
COP	N.A.	3.64	3.59	3.60	3.59	3.60	3.59	3.60
Compressors Power / Amps	kW/A	63.08/110.92	78.88/140.84	95/160.64	118.32/211.26	142.5/240.96	157.76/281.68	190/321.28
Evaporator Shell & Tube - DX Type								
Chilled Water Flow Rate	m³/hr.	39.50	48.68	58.81	73.02	88.21	97.36	117.62
	GPM	173.80	214.19	258.75	321.29	388.13	428.38	517.51
Water Side Pressure Drop	m H ₂ O	4	4	4.2	4	4.2	4	4.2
Connection Size	Inch	4	5	5	5	6	6	6
Condenser Air cooled Aluminum Fin – Copper Tube								
Heat Reject	kW	292.9	362.1	437.1	543.1	655.7	724.2	874.2
Number of Condenser Fans	Qty.	6	6	8	10	12	14	16
Expansion Valve Electronic Expansion Valve								
Sound Pressure	dB(A)	76	76	77	78	79	79	80
Chiller Power Consumption	kW	73.04	88.84	108.28	134.92	162.42	181	216.56
Chiller Current	A	134.32	164.24	191.84	250.26	287.76	336.28	383.68
EER Total energy efficiency	kW/kW	3.15	3.19	3.16	3.15	3.16	3.13	3.16
Net Weight	kg	2820	3450	3600	4200	4650	6000	6350

* Altitude 4,000 ft

** All data is based on: Chilled water inlet 12°C/outlet 7°C

*** For other refrigerant specification, contact sale office.

Scroll Compressor Chiller

Air Cooled Chiller



Overview

Air cooled scroll chiller is a reliable and self-contained solution, suitable for small and medium-sized applications, commercial or residential that use central air handling unit or terminal unit e.g. fan coils. Damavand® air cooled scroll chillers are designed and manufactured with high lifespan for outdoor installation with the overall protection class of IP54. The fact that the air cooled chillers do not consume water as their cooler, made them the best possible solution for the areas where there is water shortage.

Each unit includes hermetic scroll compressors with outstanding durability, a liquid evaporator (shell & tube DX type or plated), centrifugal propeller condenser fans and a user-friendly controller (PLC) mounted in an electrical panel.

All chillers are designed in dual circuits in order to enhance the reliability; and the regional ambient temperature of 40 °C for the hot climates.



Characteristics:

- 14 sizes available ranging from 38 kW (11 ton) to 658 kW (187 ton) cooling capacity
- Designed for outdoor installation.
- Axial fan with external rotor motor equipped with three-phase direct drive motor, low noise with protection class of IP55
- Electrical circuit breaker
- BMS compatible
- High efficiency evaporator engineered for the optimum performance. Factory insulated with the aluminum foil elastomeric rubber foam
- Condenser designed and built with finest seamless copper tube mechanically expanded in aluminum fins
- Oven baked electrostatic powder painting
- Condenser Receiver/Heat-Ex Receiver
- Designed for Quiet Operation: Piping specifically designed to reduce vibration
- Refrigerant: R22, R407C

Optional

Available options provide the flexibility to meet a variety of project configurations

- HMI: touch screen panel with English/Persian interface
- Compressor Sound Attenuator Box: Sound pressure level reduction
- Condenser Inverter fan

- Electronic Expansion Valve
- Hydrophilic/Hydrophobic aluminum coating
- Condenser fin protection mesh
- Vibration isolator: Neoprene pads or spring type
- Electrical power Soft Starter
- WiFi access to the controller and monitoring / commanding through internet web

Technical Data for Air Cooled Scroll Compressor Chiller						R22/R407C	Ambient 40°C (1R)	
Model	DCA	<u>15-O2G-2T</u>	<u>20-O2G-2T</u>	<u>26-O2G-2T</u>	<u>30-O2G-2T</u>	<u>40-O2G-2T</u>	<u>50-O2G-2T</u>	<u>60-O2G-2T</u>
Nominal Capacity	hp	15	20	26	30	40	50	60
Cooling Capacity (Actual)	kW	37.74	52.36	67.78	79.04	106.4	135.72	164.44
	Ton	10.73	14.89	19.27	22.47	30.25	38.59	46.76
Compressor	Rotary <u>Scroll</u>							
Qty./Refrigerant Circuit	N.A.	2/2	2/2	2/2	2/2	2/2	2/2	2/2
COP	N.A.	3.08	3.13	3.14	3.11	3.15	3.22	3.24
Compressors Power / Amps	kW/A	12.268/23.42	16.752/31.28	21.56/38.82	25.38/46.06	33.76/58.24	42.12/73.82	50.74/84.66
Evaporator	Shell & Tube - <u>DX Type</u>							
Chilled Water Flow Rate	m³/hr.	6.48	8.99	11.64	13.58	18.28	23.31	28.25
	GPM	28.5	39.6	51.3	59.8	80.5	102.6	124.4
Water Side Pressure Drop	m H ₂ O	3.2	3.5	3.7	3.8	4	4	4.2
Connection Size	Inch	2	2 1/2	3	3	3	3	4
Condenser	Air Cooled Aluminum Fin – Copper Tube							
Heat Reject	kW	50.0	69.1	89.3	104.4	140.2	177.8	215.2
Number of Condenser Fans	Qty.	2	2	2	2	2	4	4
Expansion Valve	<u>Thermostatic</u> Expansion Valve							
Sound Pressure	dB(A)	69	70	73	73	75	75	79
Chiller Power Consumption	kW	15.59	20.07	24.88	28.70	37.08	48.76	57.38
Chiller Current	A	31.22	39.08	46.62	53.86	66.04	89.42	100.26
EER Total energy efficiency	kW/kW	2.42	2.61	2.72	2.75	2.87	2.78	2.87
Net Weight	kg	860	935	1070	1350	1450	1710	2090

Technical Data for Air Cooled Scroll Compressor Chiller					R22/R407C	Ambient 40°C (1R)		
Model	DCA	80-O4G-2E	100-O4G-2E	120-O4G-2E	150-O6G-2E	180-O6G-2E	200-O8G-2E	240-O8G-2E
Nominal Capacity	hp	80	100	120	150	180	200	240
Cooling Capacity (Actual)	kW	212.8	271.44	328.88	407.16	493.32	542.88	657.76
	Ton	60.51	77.18	93.51	115.77	140.27	154.36	187.02
Compressor	Rotary Scroll							
Qty./Refrigerant Circuit	N.A.	4/2	4/2	4/2	6/2	6/2	8/2	8/2
COP	N.A.	3.15	3.22	3.24	3.22	3.24	3.22	3.24
Compressors Power / Amps	kW/A	67.5/116.5	84.2/147.6	101.5/169.3	126.4/221.5	152.2/254	168.5/295.3	203/338.6
Evaporator	Shell & Tube - DX Type							
Chilled Water Flow Rate	m³/hr.	36.58	46.66	56.53	69.99	84.80	93.32	113.06
	GPM	160.9	205.3	248.7	307.9	373.1	410.6	497.5
Water Side Pressure Drop	m H ₂ O	4	4	4.2	4	4.2	4	4.2
Connection Size	Inch	4	5	5	5	6	6	6
Condenser	Air cooled Aluminum Fin – Copper Tube							
Heat Reject	kW	280.3	355.7	430.4	533.5	645.5	711.4	860.7
Number of Condenser Fans	Qty.	6	6	8	10	12	14	14
Expansion Valve	Electronic Expansion Valve							
Sound Pressure	dB(A)	76	76	77	78	79	79	80
Chiller Power Consumption	kW	77.48	94.2	114.76	142.96	172.14	191.72	226.2
Chiller Current	A	139.88	171.04	200.52	260.46	300.78	349.88	393.24
EER Total energy efficiency	kW/kW	2.75	2.88	2.87	2.85	2.87	2.83	2.91
Net Weight	kg	2820	3450	3600	4200	4650	6000	6350

* Altitude: 4,000 ft

** All data is based on: Chilled water inlet 12°C/outlet 7°C

*** For other refrigerant specification, contact sale office.

Scroll Compressor Chiller

Air Cooled Chiller



Overview

Air cooled scroll chiller is a reliable and self-contained solution, suitable for small and medium-sized applications, commercial or residential that use central air handling unit or terminal unit e.g. fan coils. Damavand® air cooled scroll chillers are designed and manufactured with high lifespan for outdoor installation with the overall protection class of IP54. The fact that the air cooled chillers do not consume water as their cooler, made them the best possible solution for the areas where there is water shortage. Each unit includes hermetic scroll compressor(s) with outstanding durability, a liquid evaporator (shell-and-tube or plated), centrifugal propeller condenser fan(s) and a user-friendly controller (PLC) mounted in an electrical panel. All chillers are designed in dual individual circuits in order to enhance the reliability according to the cooling capacity and the ambient temperature of 46°C for the tropical climate also for this type of weather, air cooled condensers are modified to prevent aluminum corrosion.

Characteristics:

- 14 sizes available ranging from 35kW (10 ton) to 613 kW (174 ton) cooling capacity
- Designed for outdoor installation
- Axial fan with external rotor motor equipped with three-phase direct drive motor, low noise with protection class of IP55
- Electrical circuit breaker
- BMS compatible
- High efficiency evaporator engineered for the optimum performance. Factory insulated with the aluminum foil elastomeric rubber foam
- Condenser designed and built with finest seamless copper tube mechanically expanded in hydrophilic/hydrophobic aluminum fins. (Black-Blue/Gold)
- Oven baked electrostatic powder painting
- Condenser Receiver/Heat-Ex Receiver
- Designed for Quiet Operation: Piping specifically designed to reduce vibration

Optional

Available options provide the flexibility to meet a variety of project configurations

- HMI: touch screen panel with English/Persian interface
- Compressor Sound Attenuator Box: Sound pressure level reduction
- Condenser Inverter fan

- Electronic Expansion Valve
- Hydrophilic/Hydrophobic aluminum coating
- Condenser fin protection mesh
- Vibration isolator: Neoprene pads
- Exposed copper tubes coated by anti-corrosion air dry phenolic material
- Electrical power Soft- Starter

Technical Data for Air Cooled Scroll Compressor Chiller						R22/R407C	Ambient 46°C (2T)	
Model	DCA	15-O2G-1T	20-O2G-2E	26-O2G-2E	30-O2G-2E	40-O2G-2E	50-O2G-2E	60-O2G-2E
Nominal Capacity	hp	15	20	26	30	40	50	60
Cooling Capacity (Actual)	kW	34.92	48.52	62.82	73.9	98.9	125.8	153.18
	Ton	9.93	13.80	17.86	21.01	28.12	35.77	43.55
Compressor	Rotary Scroll							
Qty./Refrigerant Circuit	N.A.	2/2	2/2	2/2	2/2	2/2	2/2	2/2
COP	N.A.	2.52	2.55	2.58	2.65	2.62	2.67	2.70
Compressor Power / Amps	kW/A	13.86/25.42	19.04/34	24.32/41.14	27.86/49.3	37.82/63.52	47.04/80.3	56.72/92.7
Evaporator	Shell & Tube - DX Type							
Chilled Water Flow Rate	m³/hr.	6.00	8.34	10.80	12.70	17.00	21.62	26.33
	GPM	26.4	36.7	47.5	55.9	74.8	95.1	115.9
Water Side Pressure Drop	m H ₂ O	3.2	3.5	3.7	3.8	4	4	4.2
Connection Size	Inch	2	2 ½	3	3	3	3	4
Condenser	Air Cooled Hydrophilic Aluminum Fin – Copper Tube							
Heat Reject	kW	48.8	67.6	87.1	101.8	136.7	172.8	209.9
Number of Condenser Fans	Qty.	2	2	2	2	2	4	4
Expansion Valve	Thermostatic Expansion Valve							
Sound Pressure	dB(A)	69	70	73	73	75	75	79
Chiller Power Consumption	kW	15.66	20.84	27.64	31.18	41.14	53.68	63.36
Chiller Current	A	33.22	41.8	48.94	57.14	71.32	95.9	108.3
EER Total energy efficiency	kW/kW	2.23	2.33	2.27	2.37	2.40	2.34	2.42
Net Weight	kg	880	965	1100	1390	1450	1820	2120

Technical Data for Air Cooled Scroll Compressor Chiller					R22/R407C		Ambient 46°C (2T)	
Model	DCA	80-O4G-2E	100-O4G-2E	120-O4G-2E	150-O6G-2E	180-O6G-2E	200-O8G-2E	240-O8G-2E
Nominal Capacity	hp	80	100	120	150	180	200	240
Cooling Capacity (Actual)	kW	197.8	251.6	306.36	377.4	459.54	503.2	612.72
	Ton	56.24	71.54	87.11	107.31	130.66	143.08	174.22
Compressor	Rotary <u>Scroll</u>							
Qty./Refrigerant Circuit	N.A.	4/2	4/2	4/2	6/2	6/2	8/2	8/2
COP	N.A.	2.62	2.67	2.70	2.67	2.70	2.67	2.70
Compressors Power / Amps	kW/A	75.6/127.	94.1/161	113.4/185.4	141.1/240.9	170.2/278.1	188.2/321.2	226.9/370.8
Evaporator	Shell & Tube - DX <u>Type</u>							
Chilled Water Flow Rate	m³/hr.	34.00	43.25	52.66	64.87	78.99	86.50	105.32
	GPM	149.6	190.3	231.7	285.4	347.6	380.6	463.4
Water Side Pressure Drop	m H ₂ O	4	4	4.2	4	4.2	4	4.2
Connection Size	Inch	4	5	5	5	5	6	6
Condenser	Air Cooled <u>Hydrophilic Aluminum Fin</u> – Copper Tube							
Heat Reject	kW	273.4	345.7	419.8	518.5	629.7	691.4	839.6
Number of Condenser Fans	Qty.	6	6	8	10	12	14	16
Expansion Valve	<u>Electronic</u> Expansion Valve							
Sound Pressure	dB(A)	76	76	77	78	79	79	80
Chiller Power Consumption	kW	85.6	104.04	126.72	157.72	190.08	211.4	253.44
Chiller Current	A	150.44	184	216.6	279.9	324.9	375.8	433.2
EER Total energy efficiency	kW/kW	2.31	2.42	2.42	2.39	2.42	2.38	2.42
Net Weight	kg	2820	3450	3600	4200	4650	6000	6350

* Altitude: 100 ft

** All data is based on: Chilled water inlet 12°C/outlet 7°C

*** For other refrigerant specification, contact sale office.

Scroll Compressor Chiller

Water Cooled Chiller



Characteristics:

- . 8 sizes available ranging from 120kW (34 ton) to 553kW (157 ton) cooling capacity
- . Large operating envelope suitable for comfort cooling and process cooling
- . Electrical circuit breaker
- . BMS compatible
- . Designed for indoor installation
- . High efficiency evaporator engineered for the optimum performance. Factory insulated with the plain elastomeric rubber foam.
- . Condenser designed and built with finest low-finned seamless copper tube
- . Polyurethane paint finish
- . Designed for smaller foot print
- . Designed for Quiet Operation: Piping specifically designed to reduce vibration

Optional

- . HMI: touch screen panel with English/Persian interface
- . Compressor Sound Attenuator Box: Sound pressure level reduction
- . Electronic Expansion Valve
- . Vibration Isolator: Neoprene pads
- . Insulation: aluminum foil elastomeric rubber foam

Overview

Water cooled scroll chiller is a reliable and self-contained solution, suitable for small and medium-sized applications, commercial or residential that use central air handling unit or terminal unit e.g. fan coils. Damayand® water cooled scroll chillers are designed and manufactured with high lifespan for indoor installation.

Each unit includes hermetic scroll compressor(s) with outstanding durability, a liquid evaporator (shell-and-tube or plated), shell-and-tube water-cooled condenser built with finest low-finned seamless copper tubes and a user-friendly controller (PLC) mounted in an electrical panel. Chillers designed in both single-and-dual circuits in accordance with the cooling capacity.

Technical Data for Water Cooled Scroll Compressor Chiller						R22/R407C		Cond @ 40°C (05)	
Model	DCW	40-O2G-2T	50-O2G-2T	60-O2G-2T	80-O4G-2E	100-O4G-2E	120-O4G-2E	150-O6G-2E	180-O6G-2E
Nominal Capacity	hp	40	50	60	80	100	120	150	180
Cooling Capacity (Actual)	kW	119.54	153.3	184.18	239.08	306.6	368.36	459.9	552.54
	Ton	33.99	43.59	52.37	67.98	87.18	104.74	130.76	157.11
Compressor	Rotary Scroll								
Qty./Refrigerant Circuit	N.A.	2/2	2/2	2/2	4/2	4/2	4/2	6/2	6/2
COP	N.A.	4.35	4.44	4.43	4.35	4.44	4.43	4.44	4.43
Compressors Power / Amps	kW/A	27.46/50.46	34.56/64.4	41.56/72.04	54.92/100.92	69.12/128.8	83.12/144.08	103.68/193.2	124.68/216.12
Evaporator	Shell & Tube - DX Type								
Chilled Water Flow Rate	m³/hr.	20.53	26.33	31.64	41.07	52.67	63.28	79.00	94.92
	GPM	90.41	115.94	139.30	180.82	231.89	278.60	347.83	417.90
Water Side Pressure Drop	m H ₂ O	4	4	4	4.2	4.5	4.5	4.7	4.8
Connection Size	Inch	3	3	3	4	5	5	5	6
Connection Type	Flange								
Condenser	Water Cooled Shell & Tube								
Heat Rejection	kW	147	187.86	225.74	294	375.72	451.48	563.58	677.22
Cooling Water Flow Rate	m³/hr.	23.16	29.70	35.68	46.32	59.40	71.37	89.10	107.05
	GPM	101.97	130.76	157.11	203.94	261.53	314.21	392.29	471.32
Water Side Pressure Drop	m H ₂ O	5	5	5.1	5.1	5.3	5.3	5.5	5.5
Connection Size	Inch	2 x 1 ½	2 x 1 ½	2 x 1 ½	2 x 2 ½	2 x 3	2 x 3	2 x 3	2 x 3
Connection Type	Threaded (Optional Flange)								
Expansion Valve	Thermostatic Expansion Valve				Electronic Expansion Valve				
Sound Pressure	dB(A)	74	74	79	77	77	82	79	83
Chiller Power Consumption	kW	28.16	35.26	42.26	55.92	70.12	84.12	104.68	125.68
Chiller Current		51.96	65.9	73.54	103.42	131.3	146.58	196.2	219.12
EER Total energy efficiency	kW/kW	4.25	4.35	4.36	4.28	4.37	4.38	4.39	4.40
Net Weight	kg	1220	1440	1620	1930	2260	2320	2500	2700



* All data is based on: Chilled water inlet 12°C/outlet 7°C

** All data is based on: Condenser water inlet 29.5°C/outlet 35°C.

Screw Compressor Chiller

Air Cooled Chiller



Overview

Air cooled screw chiller is an ideal solution for medium-sized and large projects both commercial and industrial. It is a perfect choice for the projects requiring high efficiency and reliability. Since the air-cooled screw chillers manufactured by Damavand®, use R-134a refrigerant, which has no ozone depletion potential, and no phase-out date, made them one of the best choices for GREEN PROJECTS. The other benefit of refrigerant R-134a is the lower working pressure, which extends the unit lifespan. The fact that the air-cooled chillers do not consume water as their cooler, made them the best possible solution for the areas where there is water shortage. Our air-cooled screw chillers offer superior control, thanks to the user-friendly controller a BMS compatible PLC. Damavand Air Cond.

produces the most comprehensive range of screw chillers in the country.

Each unit includes semi hermetic compact screw compressors, a liquid

evaporator (shell-and-tube or plated), centrifugal propeller condenser fans and a user-friendly controller (PLC) mounted in the electrical panel. Damavand® air cooled screw chillers are designed and manufactured with high lifespan for outdoor installation with the overall protection class of IP54. All chillers are designed in dual circuits in order to enhance the reliability also the are chillers designed in both step and stepless capacity control in accordance with the application requirement. The condenser designed in proportion to standard ambient temperature of 35 °C for the mild summer climates.

Characteristics:

- 14 sizes available ranging from 218 kW (62 ton) to 1260 kW (366 ton) cooling capacity
- Electronic Expansion Valve
- Designed for outdoor installation
- Axial fan with external rotor motor equipped with three-phase direct drive motor, low noise with protection class of IP55
- Electrical circuit breaker
- BMS compatible
- High efficiency evaporator engineered for the optimum performance. Factory insulated with the aluminum foil elastomeric rubber foam
- Condenser designed and built with finest seamless copper tube mechanically expanded in plain , hydrophilic or hydrophobic aluminum fins
- Oven baked electrostatic powder painting
- Condenser Receiver/Heat-Ex Receiver
- Refrigerant: R134a

Optional

Available options provide the flexibility to meet a variety of project configurations

- HMI: touch screen panel with English/Persian interface
- Economizer
- Compressor Sound Attenuator Box: Sound pressure level reduction
- Condenser Inverter fan
- Hydrophilic or Hydrophobic aluminum coating
- Condenser fin protection mesh
- Vibration isolator: Neoprene pads
- Evaporator electrical element

Technical Data for Air Cooled Screw Compressor Chiller						R134a	Ambient 35°C (1S)	
Model	DCA	100-S2Y-2E	120-S2Y-2E	140-S2Y-2E	160-S2Y-2E	180-S2Y-2E	220-S2Y-2E	250-S2Y-2E
Nominal Capacity	hp	100	120	140	160	180	220	250
Cooling Capacity (Actual)	kW	218.2	251.8	289.4	354.2	408	480	530
	Ton	62.04	71.60	82.29	100.71	116.01	136.48	150.70
Compressor Compact Twin Screw								
Qty./Refrigerant Circuit	N.A.	2/2	2/2	2/2	2/2	2/2	2/2	2/2
COP	N.A.	3.61	3.47	3.48	3.51	3.55	3.66	3.60
Compressors Power / Amps	kW/A	60.4/112	72.6/135.2	83.2/152.4	100.8/170.2	115/199	131.2/236.4	147.4/268.4
Evaporator Shell & Tube - DX Type								
Chilled Water Flow Rate	m³/hr.	37.48	43.25	49.71	60.84	70.09	82.45	91.04
	GPM	165.0	190.4	218.9	267.9	308.6	363.0	400.9
Water Side Pressure Drop	m H ₂ O	3.2	3.5	3.7	3.8	4.2	4.3	4.5
Connection Size	Inch	4	4	4	4	5	5	6
Condenser Air Cooled Aluminum Fin – Copper Tube								
Heat Reject	kW	278.6	324.4	372.6	455.0	523.0	611.2	677.4
Number of Condenser Fans	Qty.	6	6	6	8	8	10	12
Expansion Valve Electronic Expansion Valve								
Sound Pressure	dB(A)	81.8	82.4	82.6	83.2	82.6	83.9	84.7
Chiller Power Consumption	kW	70.36	82.56	93.16	114.08	128.28	147.80	167.32
Chiller Current	A	135.4	158.6	175.8	201.4	230.2	275.4	315.2
EER Total energy efficiency	kW/kW	3.10	3.05	3.11	3.10	3.18	3.25	3.17
Net Weight	kg	3150	3190	3680	4185	4480	6200	6525

Technical Data for Air Cooled Screw Compressor Chiller						R134a	Ambient 35°C (1S)	
Model	DCA	280-S2Y-2E	320-S2Y-2E	360-S2Y-2E	420-S2Y-2E	480-S2Y-2E	560-S2Y-2E	640-S2Y-2E
Nominal Capacity	Hp	280	320	360	420	480	560	640
Cooling Capacity (Actual)	kW	602	716	834	960	1092	1176	1286
	Ton	171.17	203.58	237.13	272.96	310.49	334.38	365.65
Compressor Compact Twin Screw								
Qty./Refrigerant Circuit	N.A.	2/2	2/2	2/2	2/2	2/2	2/2	2/2
COP	N.A.	3.59	3.64	3.78	3.75	3.77	3.56	3.63
Compressors Power / Amps	kW/A	167.8/302.8	196.8/343.6	220.8/377.6	256/452	289.4/506	330.4/578	354.4/628
Evaporator Shell & Tube - DX Type								
Chilled Water Flow Rate	m³/hr.	103.48	123.07	143.36	165.02	187.71	202.15	221.05
	GPM	455.3	541.5	630.8	726.1	825.9	889.4	972.6
Water Side Pressure Drop	m H ₂ O	4	4	4.2	4	4.2	4	4.2
Connection Size	Inch	6	6	6	6	6	8	8
Condenser Air cooled Aluminum Fin – Copper Tube								
Heat Reject	kW	769.8	912.8	1054.8	1216.0	1381.4	1506.4	1640.4
Number of Condenser Fans	Qty.	12	14	16	18	22	24	26
Expansion Valve Electronic Expansion Valve								
Sound Pressure	dB(A)	84.2	84.4	85	86	86.3	86.6	87
Chiller Power Consumption	kW	187.72	220.04	247.36	285.88	325.92	370.24	397.56
Chiller Current	A	349.6	398.2	440	522.2	591.8	671.6	729.4
EER Total energy efficiency	kW/kW	3.21	3.25	3.37	3.36	3.35	3.18	3.23
Net Weight	kg	6500	8000	8900	9400	9850	10320	11220

* Altitude: 4,000 ft

** All data is based on: Chilled water inlet 12°C/outlet 7°C

*** For other refrigerant specification, contact sale office.

Screw Compressor Chiller

Air Cooled Chiller



Overview

Air cooled screw chiller is an ideal solution for medium-sized and large projects both commercial and industrial. It is a perfect choice for the projects requiring high efficiency and reliability. Since the air-cooled screw chillers manufactured by Damavand®, use R-134a refrigerant, which has no ozone depletion potential, and no phase-out date, made them one of the best choices for GREEN PROJECTS. The other benefit of refrigerant R-134a is the lower working pressure, which extends the unit lifespan. The fact that the air-cooled chillers do not consume water as their cooler, made them the best possible solution for the areas where there is water shortage. Our air-cooled screw chillers offer superior control, thanks to the user-friendly controller a BMS compatible PLC. Damavand Air Cond. produces

the most comprehensive range of screw chillers in the country. Each unit includes semi hermetic compact screw compressors, a liquid evaporator (shell-and-tube or plated), centrifugal propeller condenser fans and a user-friendly controller (PLC) mounted in the electrical panel. Damavand® air cooled screw chillers are designed and manufactured with high lifespan for outdoor installation with the overall protection class of IP54. All chillers are designed in dual circuits in order to enhance the reliability also the are chillers designed in both step and stepless capacity control in accordance with the application requirement. The condenser designed in proportion to regional ambient temperature of 40 °C for hot climate.

Characteristics:

- 14 sizes available ranging from 206 kW (59 ton) to 1226 kW (349 ton)cooling capacity
- Electronic Expansion Valve
- Designed for outdoor installation
- Axial fan with external rotor motor equipped with three-phase direct drive motor, low noise with protection class of IP55
- Electrical circuit breaker
- BMS compatible
- High efficiency evaporator engineered for the optimum performance. Factory insulated with the aluminum foil elastomeric rubber foam
- Condenser designed and built with finest seamless copper tube mechanically expanded in plain , hydrophilic or hydrophobic aluminum fins.
- Oven baked electrostatic powder painting
- Condenser Receiver/Heat-Ex Receiver
- Refrigerant: R134a

Optional

Available options provide the flexibility to meet a variety of project configurations

- HMI: touch screen panel with English/Persian interface

- Economizer
- Compressor Sound Attenuator Box: Sound pressure level reduction
- Condenser Inverter fan
- Hydrophilic or Hydrophobic aluminum coating
- Condenser fin protection mesh
- WiFi access to the controller and monitoring / commanding through internet web
- Evaporator electrical element

Technical Data for Air Cooled Screw Compressor Chiller						R134a	Ambient 40°C (1R)	
Model	DCA	100-S2Y-2E	120-S2Y-2E	140-S2Y-2E	160-S2Y-2E	180-S2Y-2E	220-S2Y-2E	250-S2Y-2E
Nominal Capacity	hp	100	120	140	160	180	220	250
Cooling Capacity (Actual)	kW	206.4	237.4	272.8	336.6	388	454	502
	Ton	58.69	67.50	77.57	95.71	110.32	129.09	142.74
Compressor Compact Twin Screw								
Qty./Refrigerant Circuit	N.A.	2/2	2/2	2/2	2/2	2/2	2/2	2/2
COP	N.A.	3.20	3.02	3.05	3.09	3.12	3.22	3.16
Compressors Power / Amps	kW/A	64.6/118.2	78.6/143	89.4/161.4	109/181.8	124.2/212.8	141.2/251.6	158.8/285.4
Evaporator Shell & Tube - DX Type								
Chilled Water Flow Rate	m³/hr.	35.46	40.78	46.86	57.82	66.65	77.99	86.23
	GPM	156.1	179.6	206.3	254.6	293.5	343.4	379.7
Water Side Pressure Drop	m H ₂ O	3.2	3.5	3.7	3.8	4	4	4.2
Connection Size	Inch	4	4	4	4	5	5	6
Condenser Air Cooled Aluminum Fin – Copper Tube								
Heat Reject	kW	271.0	316.0	362.2	445.6	512.2	595.2	660.8
Number of Condenser Fans	Qty.	6	6	6	8	8	10	12
Expansion Valve Electronic Expansion Valve								
Sound Pressure	dB(A)	81.8	82.4	82.6	83.2	82.6	83.9	84.7
Chiller Power Consumption	kW	74.56	88.56	99.36	122.28	137.48	157.80	178.72
Chiller Current	A	141.6	166.4	184.8	213	244	290.6	332.2
EER Total energy efficiency	kW/kW	2.77	2.68	2.75	2.75	2.82	2.88	2.81
Net Weight	kg	3150	3190	3680	4185	4480	6200	6525

Technical Data for Air Cooled Screw Compressor Chiller						R134a	Ambient 40°C (1R)	
Model	DCA	280-S2Y-2E	320-S2Y-2E	360-S2Y-2E	420-S2Y-2E	480-S2Y-2E	560-S2Y-2E	640-S2Y-2E
Nominal Capacity	Hp	280	320	360	420	480	560	640
Cooling Capacity (Actual)	kW	572	678	790	914	1040	1118	1226
	Ton	162.64	192.78	224.62	259.88	295.71	317.88	348.59
Compressor Compact Twin Screw								
Qty./Refrigerant Circuit	N.A.	2/2	2/2	2/2	2/2	2/2	2/2	2/2
COP	N.A.	3.17	3.20	3.35	3.33	3.35	3.17	3.24
Compressors Power / Amps	kW/A	180.6/322.4	211.6/366.8	235.6/402	274.8/482	310.6/540	352.4/612	378.6/666
Evaporator Shell & Tube - DX Type								
Chilled Water Flow Rate	m³/hr.	98.32	116.54	135.79	157.11	178.77	192.18	210.74
	GPM	432.6	512.8	597.5	691.3	786.6	845.6	927.3
Water Side Pressure Drop	m H ₂ O	4	4	4.2	4	4.2	4	4.2
Connection Size	Inch	6	6	6	6	6	8	8
Condenser Air cooled Aluminum Fin – Copper Tube								
Heat Reject	kW	752.6	889.6	1025.6	1188.8	1350.6	1470.4	1604.6
Number of Condenser Fans	Qty.	12	14	16	18	22	24	26
Expansion Valve Electronic Expansion Valve								
Sound Pressure	dB(A)	84.2	84.4	85	86	86.3	86.6	87
Chiller Power Consumption	kW	200.52	234.84	262.16	304.68	347.12	392.24	421.76
Chiller Current	A	369.2	421.4	464.4	552.2	625.8	705.6	767.4
EER Total energy efficiency	kW/kW	2.85	2.89	3.01	3.00	3.00	2.85	2.91
Net Weight	kg	6620	8000	8900	9400	9850	10320	11220

* Altitude: 4,000 ft

** All data is based on: Chilled water inlet 12°C/outlet 7°C

*** For other refrigerant specification, contact sale office.

Screw Compressor Chiller

Air Cooled Chiller



Overview

Air cooled screw chiller is an ideal solution for medium-sized and large projects both commercial and residential. It is a perfect choice for the projects requiring high efficiency and reliability. Since the air cooled screw chillers manufactured by Damavand®, use R-134a refrigerant, which has no ozone depletion potential, and no phase-out date, made them one of the best choices for GREEN PROJECTS. The fact that the air cooled chillers do not consume water as their cooler, made them the best possible solution for the areas where there is water shortage. Our air cooled screw chillers offer superior control, thanks to the user-friendly controller; BMS compatible PLC. Damavand Air Cond. produce the most comprehensive range of screw chillers in the country. Each unit includes semi hermetic compact screw compressors, a liquid evaporator (shell-and-tube or plated),

centrifugal propeller condenser fans and a user-friendly controller (PLC) mounted in the electrical panel. Damavand® air cooled screw chillers are designed and manufactured with high lifespan for outdoor installation with the overall protection class of IP54. Chillers designed in both step and stepless capacity control in accordance with the application requirement. The condenser is designed in proportion to ambient temperature of 46°C for the tropical climate. For this type of weather conditioners, air cooled condensers are modified to prevent aluminum corrosion.

Characteristics:

- 14 sizes available ranging from 187 kW (53 ton) to 1124 kW (320 ton) cooling capacity
- Electronic Expansion Valve
- Designed for outdoor installation
- Axial fan with external rotor motor equipped with three-phase direct drive motor, low noise with protection class of IP55
- Electrical circuit breaker
- BMS compatible
- High efficiency evaporator engineered for the optimum performance. Factory insulated with the aluminum foil elastomeric rubber foam
- Condenser designed and built with finest seamless copper tube mechanically expanded in hydrophilic or hydrophobic aluminum fins.
- Oven baked electrostatic powder painting
- Condenser Receiver/Heat-Ex Receiver
- Refrigerant: R134a

Optional

Available options provide the flexibility to meet a variety of project configurations

- HMI: touch screen panel with English/Persian interface

- Economizer
- Compressor Sound Attenuator Box: Sound pressure level reduction
- Condenser Inverter fan
- Hydrophilic or Hydrophobic aluminum coating
- Condenser fin protection mesh
- Evaporator electrical element
- Exposed copper tubes coated by anti-corrosion air dry phenolic material
- WiFi access to the controller and monitoring / commanding through internet web

Technical Data for Air Cooled Screw Compressor Chiller						R134a	Ambient 46°C (2T)	
Model	DCA	100-S2Y-2E	120-S2Y-2E	140-S2Y-2E	160-S2Y-2E	180-S2Y-2E	220-S2Y-2E	250-S2Y-2E
Nominal Capacity	hp	100	120	140	160	180	220	250
Cooling Capacity (Actual)	kW	186.6	212.8	244.8	307	353.8	410	458
	Ton	53.06	60.51	69.60	87.29	100.60	116.58	130.22
Compressor								
Compact Twin Screw								
Qty./Refrigerant Circuit	N.A.	2/2	2/2	2/2	2/2	2/2	2/2	2/2
COP	N.A.	2.58	2.40	2.43	2.48	2.51	2.56	2.54
Compressors Power / Amps	kW/A	72.4/130.8	88.8/157.8	100.8/178.4	123.6/203.8	140.8/239.4	160/281	180/318.4
Evaporator								
Shell & Tube - DX Type								
Chilled Water Flow Rate	m ³ /hr.	32.05	36.55	42.05	52.74	60.78	70.43	78.68
	GPM	141.1	160.9	185.1	232.2	267.6	310.1	346.4
Water Side Pressure Drop	m H ₂ O	3	3.3	3.3	3.4	3.6	3.7	3.8
Connection Size	Inch	4	4	4	5	5	5	5
Condenser								
Air Cooled Aluminum Fin – Copper Tube								
Heat Rejection	kW	259.0	301.6	345.6	430.6	494.6	570.0	638.0
Number of Condenser Fans	Qty.	6	6	6	8	8	10	12
Expansion Valve								
Electronic Expansion Valve								
Sound Pressure	dB(A)	81.8	82.4	82.6	83.2	82.6	83.9	84.7
Chiller Power Consumption	kW	82.36	98.76	110.76	136.88	154.08	176.60	199.92
Chiller Current	A	154.2	181.2	201.8	235	270.6	320	365.2
EER Total energy efficiency	kW/kW	2.27	2.15	2.21	2.24	2.30	2.32	2.29
Net Weight	kg	2900	3190	3680	4185	4480	6200	6525

Technical Data for Air Cooled Screw Compressor Chiller						R134a	Ambient 46°C (2T)	
Model	DCA	280-S2Y-2E	320-S2Y-2E	360-S2Y-2E	420-S2Y-2E	480-S2Y-2E	560-S2Y-2E	640-S2Y-2E
Nominal Capacity	Hp	280	320	360	420	480	560	640
Cooling Capacity (Actual)	kW	520	612	716	838	952	1020	1124
	Ton	147.85	174.01	203.58	238.27	270.69	290.02	319.59
Compressor								
Compact Twin Screw								
Qty./Refrigerant Circuit	N.A.	2/2	2/2	2/2	2/2	2/2	2/2	2/2
COP	N.A.	2.54	2.57	2.72	2.72	2.73	2.60	2.66
Compressors Power / Amps	kW/A	204.8/359.8	238.2/410	263/446	308.2/534	348.4/600	392.2/676	422/734
Evaporator								
Shell & Tube - DX Type								
Chilled Water Flow Rate	m ³ /hr.	89.38	105.20	123.07	144.05	163.64	175.33	193.21
	GPM	393.3	462.9	541.5	633.8	720.0	771.5	850.1
Water Side Pressure Drop	m H ₂ O	4	4	4.2	4	4.2	4	4.2
Connection Size	Inch	6	6	6	6	6	8	8
Condenser								
Air cooled Aluminum Fin – Copper Tube								
Heat Reject	kW	724.8	850.2	979.0	1146.2	1300.4	1412.2	1546.0
Number of Condenser Fans	Qty.	12	14	16	18	22	24	26
Expansion Valve								
Electronic Expansion Valve								
Sound Pressure	dB(A)	84.2	84.4	85	86	86.3	86.6	87
Chiller Power Consumption	kW	224.72	261.44	289.56	338.08	384.92	432.04	465.16
Chiller Current	A	406.6	464.6	508.4	604.2	685.8	769.6	835.4
EER Total energy efficiency	kW/kW	2.31	2.34	2.47	2.48	2.47	2.36	2.42
Net Weight	kg	6500	8000	8900	9400	9850	10320	11220

* Altitude: 100 ft

** All data is based on: Chilled water inlet 12°C/outlet 7°C

*** For other refrigerant specification, contact sale office.

Screw Compressor Chiller

Water Cooled Chiller

Overview

Water cooled screw chiller is an ideal solution for medium-sized and large projects both commercial and residential. It is a perfect choice for the projects requiring high efficiency and reliability. Since the water cooled screw chillers manufactured by Damavand®, use R-134a refrigerant, which has no ozone depletion potential, and no phase-out date, made them one of the best choices for GREEN PROJECTS. The other benefit of refrigerant R-134a is the lower working pressure, which extends the unit lifespan. Our water cooled screw chillers offer superior control, thanks to the user-friendly controller a BMS compatible PLC. Damavand Air Cond. produce the most comprehensive range of screw chillers in the country. Each unit includes semi hermetic compact screw compressors, a liquid evaporator (shell-and-tube or plated), shell-and-tube water-cooled condenser and a user-friendly controller (PLC) mounted



in the electrical panel. Damavand® water cooled screw chillers are designed and manufactured with for indoor installation. Chillers designed in both step and stepless capacity control in accordance with the application requirement.

Characteristics:

- 14 sizes available ranging from 242 kW (69 ton) to 1410 kW (401 ton)cooling capacity
- Large operating envelope suitable for comfort cooling and process cooling
- Electronic Expansion Valve
- Electrical circuit breaker
- BMS compatible
- Designed for indoor installation
- High efficiency evaporator engineered for the optimum performance. Factory insulated with the plain elastomeric rubber foam
- Condenser designed and built with finest low-finned seamless copper tube
- Polyurethane paint finish
- Designed for smaller foot print
- Refrigerant: R134a

Optional

Available options provide the flexibility to meet a variety of project configurations

- HMI: touch screen panel with English/Persian interface

- Economizer
- Compressor Sound Attenuator Box: Sound pressure level reduction
- Vibration isolator: Neoprene pads
- Evaporator electrical element
- Insulation: aluminum foil elastomeric rubber foam

Technical Data for Water Cooled Screw Compressor Chiller					R134a		Cond @ 40°C (0S)	
Model	DCW	<u>100-S2Y-2E</u>	<u>120-S2Y-2E</u>	<u>140-S2Y-2E</u>	<u>160-S2Y-2E</u>	<u>180-S2Y-2E</u>	<u>220-S2Y-2E</u>	<u>250-S2Y-2E</u>
Nominal Capacity	hp	100	120	140	160	180	220	250
Cooling Capacity (Actual)	kW	241.8	280.8	322.6	389.2	448	530	584
	Ton	68.75	79.84	91.73	110.66	127.38	150.70	166.05
Compressor	Rotary Screw							
Qty./Refrigerant Circuit	N.A.	2/2	2/2	2/2	2/2	2/2	2/2	2/2
COP	N.A.	4.60	4.43	4.48	4.43	4.48	4.67	4.58
Compressors Power / Amps	kW/A	52.6 / 101	63.4 / 121.4	72 / 136.2	87.8 / 150.2	100 / 174.8	113.6 / 209.6	127.6 / 238.8
Evaporator	Shell & Tube - DX Type							
Chilled Water Flow Rate	m³/hr.	41.54	48.24	55.42	66.86	76.96	91.04	100.32
	GPM	182.88	212.38	243.99	294.36	338.83	400.85	441.69
Water Side Pressure Drop	m H ₂ O	4	4	4	4	4.5	4.5	4.7
Connection Size	Inch	4	4	5	5	6	6	6
Connection Type	Flange							
Condenser	Water Cooled Shell & Tube							
Heat Rejection	kW	294.4	344.2	394.6	477	548	643.6	711.6
	m3/hr.	46.85	54.40	62.50	75.40	86.79	102.68	113.14
Cooling Water Flow Rate	GPM	206.26	239.52	275.18	331.99	382.14	452.09	498.15
	m H ₂ O	3	3	3	5.1	5.3	5.3	5.3
Connection Size	Inch	2 x 2	2 x 3	2 x 4	2 x 4	2 x 4	2 x 4	2 x 4
Connection Type	Threaded (Optional Flange)							
Expansion Valve	Electronic Expansion Valve							
Sound Pressure	dB(A)	79	80	79	81	82	82	79
Chiller Power Consumption	kW	53.3	64.1	72.7	88.8	101	114.6	128.6
Chiller Current	A	102.5	122.9	137.7	152.7	177.3	212.1	241.8
EER Total energy efficiency	kW/kW	4.54	4.38	4.44	4.38	4.44	4.62	4.54
Net Weight	kg	2250	2480	3070	3090	3230	4360	4450

Technical Data for Water Cooled Screw Compressor Chiller						R134a	Cond @ 40°C (0S)	
Model	DCW	<u>280-S2Y-2E</u>	<u>320-S2Y-2E</u>	<u>360-S2Y-2E</u>	<u>420-S2Y-2E</u>	<u>480-S2Y-2E</u>	<u>560-S2Y-2E</u>	<u>640-S2Y-2E</u>
Nominal Capacity	hp	280	320	360	420	480	560	640
Cooling Capacity (Actual)	kW	666	790	918	1050	1194	1290	1410
	Ton	189.37	224.62	261.02	298.55	339.49	366.79	400.91
Compressor	Rotary Scroll							
Qty./Refrigerant Circuit	N.A.	2/2	2/2	2/2	4/2	4/2	4/2	6/2
COP	N.A.	4.58	4.64	4.74	4.74	4.77	4.46	4.57
Compressors Power / Amps	kW/A	145.4 / 268.8	170.4 / 302.6	193.6 / 334.8	221.6 / 399.4	250.4 / 446	289 / 514	308.8 / 560
Evaporator	Shell & Tube - DX Type							
Chilled Water Flow Rate	m³/hr.	114.41	135.71	157.69	180.37	205.11	221.60	242.21
	GPM	503.71	597.50	694.31	794.14	903.05	975.66	1066.42
Water Side Pressure Drop	m H ₂ O	3	4	4	6.5	9	7	7.5
Connection Size	Inch	6	6	6	6	8	2 x 6	2 x 6
Connection Type	Flange							
Condenser	Water Cooled Shell & Tube							
Heat Rejection	kW	811.4	960.4	1111.6	1271.6	1444.4	1579	1718.8
Cooling Water Flow Rate	m³/hr.	129.03	153.05	177.85	203.42	231.32	249.92	273.17
	GPM	568.10	673.87	783.05	895.65	1018.48	1100.37	1202.73
Water Side Pressure Drop	m H ₂ O	7	6	8	5.1	7.5	5.3	5.5
Connection Size	Inch	2 x 4	2 x 4	2 x 5	2 x 5	2 x 5	4 x 4	4 x 4
Connection Type	Threaded (Optional Flange)							
Expansion Valve	Electronic Expansion Valve							
Sound Pressure	dB(A)	80	81	81.5	82	84	84.5	85
Chiller Power Consumption	kW	146.1	171.1	194.3	222.6	251.4	290	309.8
Chiller Current	A	270.3	304.1	336.3	400.9	447.5	515.5	561.5
EER Total energy efficiency	kW/kW	4.56	4.62	4.72	4.72	4.75	4.45	4.55
Net Weight	kg	4600	5260	5850	6200	7100	2 x 4570	2 x 4800

* All data is based on: Chilled water inlet 12°C/outlet 7°C

** All data is based on: Condenser water inlet 29.5°C/outlet 35°C.

Screw Compressor Flooded Chiller

Air Cooled Chiller

Overview

Air cooled screw chiller with a flooded evaporator is an ideal solution for projects with high cooling load capacity for both commercial and industrial demands. In accordance with the laws of physics, the efficiency of a chiller equipped with a flooded type evaporator is remarkably higher than the chillers with a DX type evaporator, as the boiling liquid refrigerant fully surrounds the copper tubes bundle which chilled water passes through. Consequently, the higher the efficiency, the lower the power consumption cost and the lower CO2 footprint. The air cooled screw flooded chiller manufactured by Damavand®, comes with refrigerant R-134a, which has no ozone depletion potential, and no phase-out date, as well as lower power consumption, making them the best choice for GREEN PROJECTS. Thanks to the highly reliable oil return and efficient oil separation process, proper lubrication of the compressor bearings and oil level is guaranteed.

Our air cooled screw flooded chillers offer superior control, as the user-friendly,



BMS compatible controller, constantly regulates and maintains the functionality of the system at its highest efficiency level. Damavand® Air Cond. produces the most comprehensive range of screw chillers in the country.

Each unit includes semi hermetic compact screw compressors with an optional ECONOMIZER in order to increase the IPLV/ESEER, a shell and tube flooded evaporator, oil separator with the separation efficiency of 99.8 % of the oil mixed in the gas flow, axial propeller condenser fans and a user-friendly controller (PLC) mounted in the electrical panel. A touch screen HMI can combine these features with both English and Persian language. Chillers are designed in both step and stepless capacity control in accordance with the requirement of the application. The condenser designed in proportion to standard ambient temperature of 35°C for the mild summer climates.

Characteristics:

- 20 models available, ranging from 472 kW (134 Ton) to 1570 kW (446 Ton) cooling capacity
- Electronic Expansion Valve paralleled with the Fixed Orifice Plate in order to increase the reliability
- Designed for outdoor installation
- Axial fan with external rotor motor equipped with three-phase direct drive motor, low noise with protection class of IP55.
- Electrical circuit breaker
- BMS compatible
- High efficiency flooded evaporator engineered for the optimum refrigerant distribution and performance. Factory insulated with the aluminum foil elastomeric rubber foam.
- Condenser designed and built with finest seamless copper tube mechanically expanded in aluminum fins.
- Oven baked electrostatic powder painting

- High efficiency oil separator
- External high efficiency Muffler to reduce the pulsation and sound pressure level
- Reliable oil return from the evaporator
- Refrigerant: R134a

Optional

Available options provide the flexibility to meet a variety of project configurations.

- HMI: touch screen panel with English/Persian interface
- Economizer (Plate or Flash Tank)
- Compressor Sound Attenuator Box
- Condenser fan speed frequency drive inverter
- Evaporator auto air vent
- Hydrophilic or Hydrophobic aluminum coating
- Condenser fin protection mesh
- Vibration isolator: Neoprene pads or spring type
- Exposed copper tubes coated by anti-corrosion air dry phenolic material
- Electrical power Soft-Starter

Technical Data for Air Cooled Screw Flooded Compressor Chiller										R134a	Ambient 35°C (1S)
Model	DCFA	180-S2Y-2E	180E-S2Y-2E	220-S2Y-2E	220E-S2Y-2E	250-S2Y-2E	250E-S2Y-2E	280-S2Y-2E	280E-S2Y-2E	320-S2Y-2E	320E-S2Y-2E
Nominal Capacity	hp	180	180 + ECO	220	220 + ECO	250	250 + ECO	280	280 + ECO	320	320 + ECO
Cooling Capacity (Actual)	kW	472	520	554	600	610	670	696	750	824	900
	Ton	134.21	147.85	157.52	170.60	173.44	190.50	197.90	213.25	234.29	255.90
Compressor											
Compact Twin Screw											
Qty./Refrigerant Circuit	N.A.	2/2	2/2	2/2	2/2	2/2	2/2	2/2	2/2	2/2	2/2
COP	N.A.	3.99	4.06	4.13	4.21	4.04	4.11	4.05	4.11	4.12	4.19
Compressors Power / Amps	kW/A	118.2/203.2	128.2/219	134.2/241	142.6/254	151/273.6	163/292	171.8/308.8	182.6/325.4	200/348.4	214.8/371.8
Evaporator											
Shell & Tube - Flooded Type											
Chilled Water Flow Rate	m³/hr.	81.28	89.55	95.40	103.33	105.05	115.38	119.86	129.16	141.90	154.99
	GPM	357.9	394.3	420.1	454.9	462.5	508.0	527.7	568.7	624.8	682.4
Water Side Pressure Drop	m H ₂ O	4.4	4.6	4.9	4.5	4.6	4.6	5	5.5	5.5	5.5
Connection Size	Inch	5	5	5	6	6	6	6	6	6	6
Condenser											
Air Cooled Aluminum Fin - Copper Tube											
Heat Rejection	kW	590.2	648.2	688.2	742.6	761.0	833.0	867.8	932.6	1024.0	1114.8
Number of Condenser Fans	Qty.	8	10	10	10	12	12	12	14	14	16
Expansion Valve											
Electronic Expansion Valve											
Sound Pressure	dB(A)	82.2	82.6	83.9	83.9	84.7	84.7	84.2	84.2	84.4	84.4
Chiller Power Consumption	kW	131.48	144.80	150.80	159.20	170.92	182.92	191.72	205.84	223.24	241.36
Chiller Current	A	234.4	258	280	293	320.4	338.8	355.6	380	403	434.2
EER Total energy efficiency	kW/kW	3.59	3.59	3.67	3.77	3.57	3.66	3.63	3.64	3.69	3.73
Net Weight	kg	5700	6100	6150	6230	6520	6360	6380	6805	7650	7760

Technical Data for Air Cooled Screw Flooded Compressor Chiller										R134a	Ambient 35°C (1S)
Model	DCFA	360-S2Y-2E	360E-S2Y-2E	420-S2Y-2E	420E-S2Y-2E	480-S2Y-2E	480E-S2Y-2E	560-S2Y-2E	560E-S2Y-2E	640-S2Y-2E	640E-S2Y-2E
Nominal Capacity	hp	360	360 + ECO	420	420 + ECO	480	480 + ECO	560	560 + ECO	640	640 + ECO
Cooling Capacity (Actual)	kW	964	1036	1104	1192	1254	1334	1354	1452	1482	1570
	Ton	274.10	294.57	313.90	338.93	356.55	379.30	384.99	412.85	421.38	446.40
Compressor											
Compact Twin Screw											
Qty./Refrigerant Circuit	N.A.	2/2	2/2	2/2	2/2	2/2	2/2	2/2	2/2	2/2	2/2
COP	N.A.	4.27	4.33	4.23	4.29	4.25	4.31	4.00	4.06	4.08	4.14
Compressors Power / Amps	kW/A	225.8/385.6	239/406	261/460	278/486	295/516	309.6/538	338.4/590	357.6/620	363/642	379.4/666
Evaporator											
Shell & Tube - Flooded Type											
Chilled Water Flow Rate	m³/hr.	166.01	178.41	190.12	205.28	215.95	229.73	233.17	250.05	255.22	270.37
	GPM	730.9	785.5	837.1	903.8	950.8	1011.5	1026.6	1100.9	1123.7	1190.4
Water Side Pressure Drop	m H ₂ O	5.8	5.2	5.2	5.3	5.5	5.8	5.8	6.1	6.2	6.2
Connection Size	Inch	6	6	8	8	8	8	8	8	8	8
Condenser											
Air Cooled Aluminum Fin - Copper Tube											
Heat Rejection	kW	1189.8	1275.0	1365.0	1470.0	1549.0	1643.6	1692.4	1809.6	1845.0	1949.4
Number of Condenser Fans	Qty.	16	18	20	20	22	22	24	26	26	28
Expansion Valve											
Electronic Expansion Valve											
Sound Pressure	dB(A)	85	86	86	86	86.7	87	87.6	87.6	88	88
Chiller Power Consumption	kW	252.36	268.88	294.2	311.2	331.52	346.12	378.24	400.76	406.16	425.88
Chiller Current	A	448	476.2	538	564	601.8	623.8	683.6	721.4	743.4	775.2
EER Total energy efficiency	kW/kW	3.82	3.85	3.75	3.83	3.78	3.85	3.58	3.62	3.65	3.69
Net Weight	kg	7680	8115	8600	7990	8500	9540	2 x 5550	5750 + 6120	5795 + 6165	2 x 7200

* Altitude 4,000 ft

** All data is based on: Chilled water inlet 12°C/outlet 7°C

Screw Compressor Flooded Chiller

Air Cooled Chiller



Overview

Air cooled screw chiller with a flooded evaporator is an ideal solution for projects with high cooling load capacity for both commercial and industrial demands. In accordance with the laws of physics, the efficiency of a chiller equipped with a flooded type evaporator is remarkably higher than the chillers with a DX type evaporator, as the boiling liquid refrigerant fully surrounds the copper tubes bundle which chilled water passes through. Consequently, the higher the efficiency, the lower the power consumption cost and the lower CO2 footprint. The air cooled screw flooded chiller manufactured by Damavand®, comes with refrigerant R-134a, which has no ozone depletion potential, and no phase-out date, as well as lower power consumption, making them the best choice for GREEN PROJECTS. Thanks to the highly reliable oil return and efficient oil separation process, proper lubrication of the compressor bearings and oil level is guaranteed. Our air cooled screw flooded chillers offer superior control, as the user-friendly, BMS compatible controller, constantly regulates and maintains the functionality of the system at its highest efficiency level. Damavand® Air Cond. produces



the most comprehensive range of screw chillers in the country. Each unit includes semi hermetic compact screw compressors with an optional ECONOMIZER in order to increase the IPLV/ESEER, a shell and tube flooded evaporator, oil separator with the separation efficiency of 99.8 % of the oil mixed in the gas flow, axial propeller condenser fans and a user-friendly controller (PLC) mounted in the electrical panel. A touch screen HMI can combine these features with both English and Persian language. Chillers are designed in both step and stepless capacity control in accordance with the requirement of the application. The condenser designed in proportion to the regional ambient temperature of 40 °C for hot climates.

Characteristics:

- 20 models available, ranging from 450 kW (128 Ton) to 1522 kW (433 Ton) cooling capacity
- Electronic Expansion Valve paralleled with the Fixed Orifice Plate in order to increase the reliability
- Designed for outdoor installation
- Axial fan with external rotor motor equipped with three-phase direct drive motor, low noise with protection class of IP55
- Electrical circuit breaker
- BMS compatible
- High efficiency flooded evaporator engineered for the optimum refrigerant distribution and performance. Factory insulated with the aluminum foil elastomeric rubber foam
- Condenser designed and built with finest seamless copper tube mechanically expanded in aluminum fins
- Oven baked electrostatic powder painting
- High efficiency oil separator

- External high efficiency Muffler to reduce the pulsation and sound pressure level
- Reliable oil return from the evaporator
- Refrigerant: R134a

Optional

Available options provide the flexibility to meet a variety of project configurations

- HMI: touch screen panel with English/Persian interface
- Economizer (Plate or Flash Tank)
- Compressor Sound Attenuator Box
- Condenser fan speed frequency drive inverter
- Evaporator auto air vent
- Hydrophilic or Hydrophobic aluminum coating
- Condenser fin protection mesh
- Vibration isolator: Neoprene pads or spring type
- Exposed copper tubes coated by anti-corrosion air dry phenolic material
- Electrical power Soft-Starter

Technical Data for Air Cooled Screw Compressor Flooded Chiller										R134a	Ambient 40°C (1R)
Model	DCFA	180-S2Y-2E	180E-S2Y-2E	220-S2Y-2E	220E-S2Y-2E	250-S2Y-2E	250E-S2Y-2E	280-S2Y-2E	280E-S2Y-2E	320-S2Y-2E	320E-S2Y-2E
Nominal Capacity	hp	180	180 + ECO	220	220 + ECO	250	250 + ECO	280	280 + ECO	320	320 + ECO
Cooling Capacity (Actual)	kW	450	516	526	584	580	652	662	730	782	872
	Ton	127.95	146.72	149.56	166.05	164.91	185.39	188.23	207.56	222.35	247.94
Compressor											
Compact Twin screw											
No of refrigerant Circuit	N.A.	2	2	2	2	2	2	2	2	2	2
COP	N.A.	3.54	3.70	3.65	3.76	3.58	3.68	3.59	3.68	3.64	3.74
Compressor Power / Amps	kW/A	127/217	139.4/237	144.2/256.4	155.4/273.8	162.2/290.8	177.2/314	184.6/328.4	198.6/350	214.8/372	233.2/402
Evaporator											
Shell & Tube - Flooded Type											
Chilled Water Flow Rate	m³/hr.	77.49	88.86	90.58	100.57	99.88	112.28	114.00	125.71	134.67	150.17
	GPM	341.2	391.2	398.8	442.8	439.8	494.4	501.9	553.5	592.9	661.2
Water Side Pressure Drop	m H ₂ O	4.4	4.6	4.8	4.4	4.5	4.6	5	5.5	5.5	5.5
Connection Size	Inch	5	5	5	6	6	6	6	6	6	6
Condenser											
Air cooled Aluminum Fin - Copper Tube											
Heat Rejection	kW	577.0	655.4	670.2	739.4	742.2	829.2	846.6	928.6	996.8	1105.2
No of axial fan	Qty.	10	10	10	12	12	14	14	16	16	18
Expansion Valve											
Electronic Expansion Valve											
Sound Pressure	dB(A)	82.6	82.6	83.9	83.9	84.7	84.7	84.2	84.2	84.4	84.4
Chiller Power Consumption	kW	143.60	156.00	160.80	175.32	182.12	200.44	207.84	225.16	241.36	263.08
Chiller Current	A	256	276	295.4	320.6	337.6	368.6	383	412.4	434.4	472.2
EER Total energy efficiency	kW/kW	3.13	3.31	3.27	3.33	3.18	3.25	3.19	3.24	3.24	3.31
Net Weight	kg	6000	6150	6500	6580	6620	6710	6730	7155	8000	8110

Technical Data for Air Cooled Screw Compressor Flooded Chiller										R-134a	Ambient 40°C (1R)
Model	DCFA	360-S2Y-2E	360E-S2Y-2E	420-S2Y-2E	420E-S2Y-2E	480-S2Y-2E	480E-S2Y-2E	560-S2Y-2E	560E-S2Y-2E	640-S2Y-2E	640E-S2Y-2E
Nominal Capacity	hp	360	360+ ECO	420	420+ ECO	480	480+ ECO	560	560+ ECO	640	640+ ECO
Cooling Capacity (Actual)	kW	916	1004	1054	1160	1198	1298	1290	1408	1414	1522
	Ton	260.45	285.47	299.69	329.83	340.63	369.06	366.79	400.34	402.05	432.76
Compressor											
Compact Twin screw											
No of refrigerant Circuit	N.A.	2	2	2	2	2	2	2	2	2	2
COP	N.A.	3.81	3.90	3.77	3.86	3.79	3.87	3.58	3.67	3.65	3.73
Compressor Power / Amps	kW/A	240.6/410	257.6/436	279.8/490	300.8/522	316.4/548	335.2/580	360.6/626	384/662	387.4/680	408/712
Evaporator											
Shell & Tube - Flooded Type											
Chilled Water Flow Rate	m³/hr.	157.75	172.90	181.51	199.76	206.31	223.53	222.15	242.47	243.51	262.11
	GPM	694.5	761.3	799.2	879.5	908.3	984.2	978.1	1067.6	1072.1	1154.0
Water Side Pressure Drop	m H ₂ O	5.8	5	5	5	5.5	5.8	5.8	6	6	6.1
Connection Size	Inch	6	6	8	8	8	8	8	8	8	8
Condenser											
Air cooled Aluminum Fin - Copper Tube											
Heat Rejection	kW	1156.6	1261.6	1333.8	1460.8	1514.4	1633.2	1650.6	1792.0	1801.4	1930.0
No of axial fan	Qty.	18	20	22	24	24	26	26	28	28	30
Expansion Valve											
Electronic Expansion Valve											
Sound Pressure	dB(A)	85	86	86	86	86.7	87	87.6	87.6	88	88
Chiller Power Consumption	kW	270.48	290.8	316.32	340.64	356.24	378.36	403.76	430.48	433.88	457.8
Chiller Current	A	480.2	514	575.8	615.6	641.6	681.4	727.4	771.2	789.2	829
EER Total energy efficiency	kW/kW	3.39	3.45	3.33	3.41	3.36	3.43	3.19	3.27	3.26	3.32
Net Weight	kg	8030	8465	8950	2 x 4700	2 x 4720	4770 + 5470	5200 + 5900	2 x 6100	2 x 6120	6000 + 6350

* Altitude 4,000 ft

** All data is based on: Chilled water inlet 12°C/outlet 7°C

Screw Compressor Flooded Chiller

Air Cooled Chiller



Overview

Air cooled screw chiller with a flooded evaporator is an ideal solution for projects with high cooling load capacity for both commercial and industrial demands. In accordance with the laws of physics, the efficiency of a chiller equipped with a flooded type evaporator is remarkably higher than the chillers with a DX type evaporator, as the boiling liquid refrigerant fully surrounds the copper tubes bundle which chilled water passes through. Consequently, the higher the efficiency, the lower the power consumption cost and the lower CO2 footprint. The air cooled screw flooded chiller manufactured by Damavand®, comes with refrigerant R-134a, which has no ozone depletion potential, and no phase-out date, as well as lower power consumption, making them the best choice for GREEN PROJECTS. Thanks to the highly reliable oil return and efficient oil separation process, proper lubrication of the compressor bearings and oil level is guaranteed. Our air cooled screw flooded chillers offer superior control, as the user-friendly, BMS compatible controller, constantly regulates and maintains the functionality of the system at its highest efficiency level. Damavand® Air Cond.

produces the most comprehensive range of screw chillers in the country. Each unit includes semi hermetic compact screw compressors with an optional ECONOMIZER in order to increase the IPLV/ESEER, a shell and tube flooded evaporator, oil separator with the separation efficiency of 99.8 % of the oil mixed in the gas flow, axial propeller condenser fans and a user-friendly controller (PLC) mounted in the electrical panel. A touch screen HMI can combine these features with both English and Persian language. Chillers are designed in both step and stepless capacity control in accordance with the requirement of the application. The condenser designed in proportion to ambient temperature of 46°C for the tropical climate. For this type of weather condition air cooled condensers are modified to prevent aluminum corrosion.

Characteristics:

- 20 models available, ranging from 412 kW (117Ton) to 1440 kW (409Ton) cooling capacity
- Electronic Expansion Valve paralleled with the Fixed Orifice Plate in order to increase the reliability
- Designed for outdoor installation
- Axial fan with external rotor motor equipped with three-phase direct drive motor, low noise with protection class of IP55
- Electrical circuit breaker
- BMS compatible
- High efficiency flooded evaporator engineered for the optimum refrigerant distribution and performance. Factory insulated with the aluminum foil elastomeric rubber foam
- Condenser designed and built with finest seamless copper tube mechanically expanded in aluminum fins
- Oven baked electrostatic powder painting

- High efficiency oil separator
- External high efficiency Muffler to reduce the pulsation and sound pressure level
- Reliable oil return from the evaporator
- Refrigerant: R134a

Optional

Available options provide the flexibility to meet a variety of project configurations

- HMI: touch screen panel with English/Persian interface
- Economizer (Plate or Flash Tank)
- Compressor Sound Attenuator Box
- Condenser fan speed frequency drive inverter
- Evaporator auto air vent
- Hydrophilic or Hydrophobic aluminum coating
- Condenser fin protection mesh
- Vibration isolator: Neoprene pads or spring type
- Exposed copper tubes coated by anti-corrosion air dry phenolic material
- Electrical power Soft- Starter

Technical Data for Air Cooled Screw Compressor Flooded Chiller									R134a	Ambient 46°C (2T)	
Model	DCFA	180-S2Y-2E	180E-S2Y-2E	220-S2Y-2E	220E-S2Y-2E	250-S2Y-2E	250E-S2Y-2E	280-S2Y-2E	280E-S2Y-2E	320-S2Y-2E	320E-S2Y-2E
Nominal Capacity	hp	180	180 + ECO	220	220 + ECO	250	250 + ECO	280	280 + ECO	320	320 + ECO
Cooling Capacity (Actual)	kW	412	488	476	552	530	620	604	694	670	824
	Ton	117.15	138.75	135.34	156.95	150.70	176.29	171.74	197.33	190.50	234.29
Compressor											
Compact Twin screw											
No of refrigerant Circuit	N.A.	2	2	2	2	2	2	2	2	2	2
COP	N.A.	2.87	3.04	2.92	3.08	2.89	3.05	2.90	3.04	2.77	3.09
Compressor Power / Amps	kW/A	143.6/243.6	160.6/271.2	163/285.8	179/310.8	183.4/323.6	203.6/355.4	208.6/328.4	228.2/396.4	241.8/416	266.4/456
Evaporator											
Shell & Tube - Flooded Type											
Chilled Water Flow Rate	m³/hr.	70.95	84.04	81.97	95.06	91.27	106.77	104.02	119.51	115.38	141.90
	GPM	312.4	370.0	360.9	418.5	401.9	470.1	458.0	526.2	508.0	624.8
Water Side Pressure Drop	m H ₂ O	4.3	4.4	4.4	4.4	4.3	4.5	4.8	5.2	5	5.4
Connection Size	Inch	5	5	5	6	6	6	6	6	6	6
Condenser											
Air cooled Hydrophilic Aluminum Fin – Copper Tube											
Heat Rejection	kW	555.6	648.6	639.0	731.0	713.4	823.6	812.6	922.2	911.8	1090.4
No of axial fan	Qty.	10	10	10	12	12	14	14	14	14	18
Expansion Valve											
Electronic Expansion Valve											
Sound Pressure	dB(A)	82.7	82.7	84.2	84.2	84.9	84.9	84.9	84.9	84.4	84.4
Chiller Power Consumption	kW	160.20	177.20	179.60	198.92	203.32	226.84	231.84	251.44	265.04	296.28
Chiller Current	A	282.6	310.2	324.8	357.6	370.4	410	383	451	470.6	526.2
EER Total energy efficiency	kW/kW	2.57	2.75	2.65	2.77	2.61	2.73	2.61	2.76	2.53	2.78
Net Weight	kg	6000	6150	6550	6580	6620	6710	6730	6805	7650	8110

Technical Data for Air Cooled Screw Compressor Flooded Chiller									R-134a	Ambient 46°C (2T)	
Model	DCFA	360-S2Y-2E	360E-S2Y-2E	420-S2Y-2E	420E-S2Y-2E	480-S2Y-2E	480E-S2Y-2E	560-S2Y-2E	560E-S2Y-2E	640-S2Y-2E	640E-S2Y-2E
Nominal Capacity	hp	360	360 + ECO	420	420 + ECO	480	480 + ECO	560	560 + ECO	640	640 + ECO
Cooling Capacity (Actual)	kW	832	946	968	1098	1102	1230	1182	1324	1300	1440
	Ton	236.57	268.98	275.23	312.20	313.34	349.73	336.08	376.46	369.63	409.44
Compressor											
Compact Twin screw											
No of refrigerant Circuit	N.A.	2	2	2	2	2	2	2	2	2	2
COP	N.A.	3.10	3.25	3.08	3.22	3.11	3.23	2.96	3.08	3.01	3.13
Compressor Power / Amps	kW/A	268/454	291.4/492	313.8/544	341.2/586	354.8/610	380.4/652	400/688	430/738	432/748	460/794
Evaporator											
Shell & Tube - Flooded Type											
Chilled Water Flow Rate	m³/hr.	143.28	162.91	166.70	189.09	189.78	211.82	203.55	228.01	223.87	247.98
	GPM	630.8	717.3	734.0	832.5	835.6	932.6	896.2	1003.9	985.7	1091.8
Water Side Pressure Drop	m H ₂ O	5.8	4.8	5	5	5.5	5.6	5.6	6	6	6.1
Connection Size	Inch	6	6	8	8	8	8	8	8	8	8
Condenser											
Air cooled Hydrophilic Aluminum Fin – Copper Tube											
Heat Rejection	kW	1100.0	1237.4	1281.8	1439.2	1456.8	1610.4	1582.0	1754.0	1732.0	1900.0
No of axial fan	Qty.	18	20	20	22	22	26	24	26	26	28
Expansion Valve											
Electronic Expansion Valve											
Sound Pressure	dB(A)	86	86	86	86	86.5	86.5	87.6	87.6	88	88
Chiller Power Consumption	kW	297.88	324.6	347	377.72	391.32	423.56	439.84	473.16	475.16	506.48
Chiller Current	A	524.2	570	622	671.8	695.8	753.4	781.6	839.4	849.4	903.2
EER Total energy efficiency	kW/kW	2.79	2.91	2.79	2.91	2.82	2.90	2.69	2.80	2.74	2.84
Net Weight	kg	8030	8465	8505	9050	9010	4770 + 5470	2 x 5375	5200 + 5900	5200 + 5900	2 x 5900

* Altitude 100 ft

** All data is based on: Chilled water inlet 12°C/outlet 7°C

Screw Compressor Flooded Chiller

Water Cooled Chiller

Overview

Water cooled flooded screw chiller is an ideal solution for medium-sized and mostly large scale projects for both commercial and industrial purposes. Damavand® chillers are manufactured to the highest design and construction standards to ensure high performance, reliability and adaptability to all types of air conditioning installations. DCFW series are equipped with a high efficiency flooded type evaporator in which the refrigerant surrounds the tubes in the shell and the water be cooled flows through the tubes. The combination of low energy consumption as of the use of highly efficient flooded evaporator and the use of R-134a refrigerant, which has no ozone depletion potential, and no phase-out date, made DCFW one of the best choices for GREEN PROJECTS. The other benefit of refrigerant R-134a is the lower working pressure, which extends the unit lifespan. Our water cooled screw chillers offer superior control, thanks to the user-friendly controller a BMS compatible PLC. Damavand Air Cond. produce the most comprehensive range of screw chillers in the country. Each unit includes two semi hermetic compact screw compressors with



a shell and tube flooded evaporator, oil separator with the separation efficiency of 99.8 % of the oil mixed in the gas flow, high efficiency shell and tube condenser and a user-friendly controller (PLC) mounted in the electrical panel. A touch screen HMI can combine these features with both English and Persian language Chillers designed in both step and stepless capacity control in accordance with the application requirement.

Characteristics:

- 10 sizes available ranging from 516 kW (147 Ton) to 1618 kW (460 Ton) cooling capacity
- Large operating envelope suitable for comfort cooling and process cooling
- Electronic Expansion Valve
- Electrical circuit breaker
- BMS compatible
- Designed for indoor installation
- High efficiency flooded evaporator engineered for the optimum performance. Factory insulated with the elastomeric rubber foam
- Condenser designed and built with finest low-finned seamless copper tube.
- Polyurethane paint finish
- Designed for smaller foot print
- Refrigerant: R134a

Optional

Available options provide the flexibility to meet a variety of project configurations.

- HMI: touch screen panel with English/Persian interface
- Economizer
- Compressor Sound Attenuator Box: Sound pressure level reduction
- Vibration isolator: Neoprene pads
- Highly effective muffler to reduce the compressor sound pressure
- Insulation: aluminum foil elastomeric rubber foam

Technical Data for Water Cooled Screw Compressor Flooded Chiller									R134a		Cond @ 40°C (0S)	
Model	DCFW	180-S2Y-2E	220-S2Y-2E	250-S2Y-2E	280-S2Y-2E	320-S2Y-2E	360-S2Y-2E	420-S2Y-2E	480-S2Y-2E	560-S2Y-2E	640-S2Y-2E	
Nominal Capacity	hp	180	220	250	280	320	360	420	480	560	640	
Cooling Capacity (Actual)	kW	516	610	672	764	908	1056	1204	1368	1480	1618	
	Ton	146.72	173.44	191.07	217.23	258.17	300.26	342.34	388.97	420.81	460.05	
Compressor	Compact Twin Screw											
Qty./Refrigerant Circuit	N.A.	2/2	2/2	2/2	2/2	2/2	2/2	2/2	2/2	2/2	2/2	
COP	N.A.	5.02	5.22	5.12	5.11	5.23	5.32	5.32	5.35	5.00	5.12	
Compressors Power / Amps	kW/A	102.8 / 179.2	116.8 / 214.4	131.2 / 244.2	149.4 / 275	173.6 / 307.6	198.6 / 342.6	226.2 / 406	255.6 / 454	296.2 / 526	316 / 572	
Evaporator	Shell & Tube - Flooded Type											
Chilled Water Flow Rate	m³/hr.	88.86	105.05	115.73	131.57	156.37	181.85	207.34	235.58	254.87	278.64	
	GPM	391.24	462.52	509.53	579.28	688.47	800.68	912.90	1037.25	1122.17	1226.80	
Water Side Pressure Drop	m H ₂ O	4.1	4.3	4.4	4.6	5.5	5.5	4.87	5	5.1	6.26	
Connection Size	Inch	6	6	6	6	6	8	8	8	8	8	
Connection Type	Flange											
Condenser	Water Cooled Shell & Tube											
Heat Rejection	kW	618.8	726.8	803.2	913.4	1081.6	1254.6	1430.2	1623.6	1776.2	1934	
Cooling Water Flow Rate	m³/hr.	99.97	118.18	130.19	148.02	175.91	204.59	233.26	265.03	286.73	313.47	
	GPM	440.15	520.33	573.22	651.69	774.52	900.77	1027.01	1166.90	1262.44	1380.15	
Water Side Pressure Drop	m H ₂ O	6.28	6.3	6.31	6.56	7.05	7.12	6.09	6.51	6.6	6.8	
Connection Size	Inch	6	6	6	6	6	8	8	8	8	8	
Connection Type	Flange											
Expansion Valve	Electronic Expansion Valve											
Sound Pressure	dB(A)	82	82	81	82.5	83	83	83.1	83.2	84	84.5	
Chiller Power Consumption	kW	103.8	117.8	132.2	150.4	174.6	199.6	227.2	256.6	297.2	317	
Chiller Current	A	181.7	216.9	247.2	278	310.6	345.6	409	457	529	575	
EER Total energy efficiency	kW/kW	4.97	5.18	5.08	5.08	5.20	5.29	5.30	5.33	4.98	5.10	
Net Weight	kg	3380	4200	4900	5200	5800	6500	7100	7300	7800	8200	



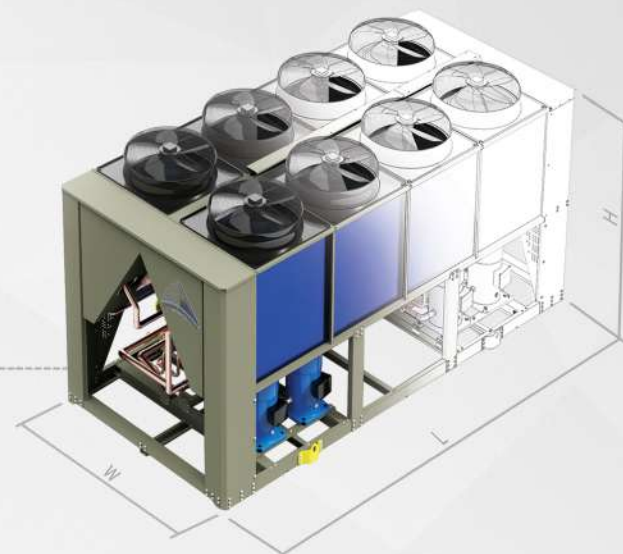
* All data is based on: Chilled water inlet 12°C/outlet 7°C

** All data is based on: Condenser water inlet 29.5°C/outlet 35°C.

Air Cooled Scroll Chiller

Model	Dimension		
	L	W	H
15-O2G-1T	2100	1050	1900
20-O2G-2E	2100	1050	1900
26-O2G-2E	2200	1050	1900
30-O2G-2E	2550	1350	2250
40-O2G-2E	2550	1350	2250
50-O2G-2E	2715	2450	2100
60-O2G-2E	2715	2450	2100
80-O4G-2E	3825	2450	2100
100-O4G-2E	3825	2450	2300
120-O4G-2E	4930	2450	2300
150-O6G-2E	6035	2490	2300
180-O6G-2E	7145	2490	2400
200-O8G-2E	8250	2490	2400
240-O8G-2E	8250	2490	2400

All Dimensions Are In (mm)



Air Cooled Screw Chiller

Model	Dimension		
	L	W	H
100-S2Y-2E	4500	2130	2400
120-S2Y-2E	4600	2130	2400
140-S2Y-2E	5000	2130	2400
160-S2Y-2E	5500	2130	2400
180-S2Y-2E	5500	2130	2400
220-S2Y-2E	6600	2130	2400
250-S2Y-2E	7000	2130	2400
280-S2Y-2E	7200	2130	2400
320-S2Y-2E	7700	2130	2500
360-S2Y-2E	2 x 5500	2130	2400
420-S2Y-2E	2 x 6600	2130	2400
480-S2Y-2E	2 x 7000	2130	2400
560-S2Y-2E	2 x 7200	2130	2500
640-S2Y-2E	2 x 7700	2130	2500

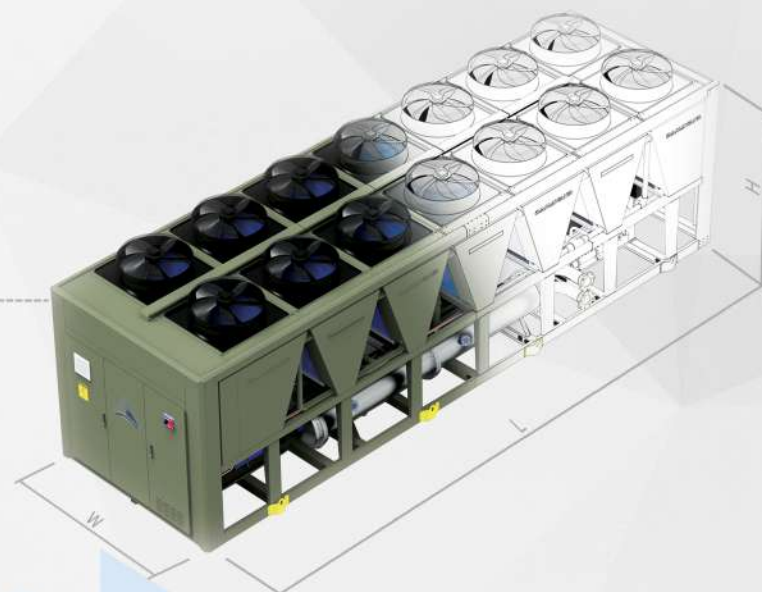
All Dimensions Are In (mm)



Air Cooled Flooded Screw Chiller

Model	Dimension		
	L	W	H
180-S2Y-2E	6100	2490	2400
180E-S2Y-2E	6100	2490	2400
220-S2Y-2E	6100	2490	2400
220E-S2Y-2E	7150	2490	2400
250-S2Y-2E	7150	2490	2400
250E-S2Y-2E	8300	2490	2400
280-S2Y-2E	8300	2490	2400
280E-S2Y-2E	9400	2490	2400
320-S2Y-2E	9400	2490	2500
320E-S2Y-2E	10500	2490	2500
360-S2Y-2E	10500	2490	2500
360E-S2Y-2E	11600	2490	2500
420-S2Y-2E	12700	2490	2500
420E-S2Y-2E	2x7100	2490	2500
480-S2Y-2E	2x7100	2490	2500
480E-S2Y-2E	7100+8200	2490	2500
560-S2Y-2E	7100+8200	2490	2500
560E-S2Y-2E	2x8250	2490	2500
640-S2Y-2E	2x8159	2490	2550
640E-S2Y-2E	8200+9400	2490	2550

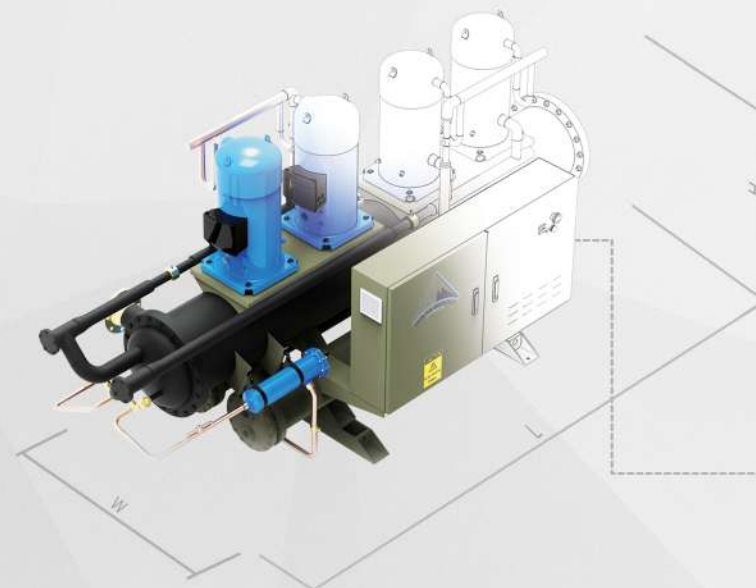
All Dimensions Are In (mm)



Water Cooled Scroll Chiller

Model	Dimension		
	L	W	H
100-S2Y-2E	4500	2130	2400
120-S2Y-2E	4600	2130	2400
140-S2Y-2E	5000	2130	2400
160-S2Y-2E	5500	2130	2400
180-S2Y-2E	5500	2130	2400
220-S2Y-2E	6600	2130	2400
250-S2Y-2E	7000	2130	2400
280-S2Y-2E	7200	2130	2400
320-S2Y-2E	7700	2130	2500
360-S2Y-2E	2 x 5500	2130	2400
420-S2Y-2E	2 x 6600	2130	2400
480-S2Y-2E	2 x 7000	2130	2400
560-S2Y-2E	2 x 7200	2130	2500
640-S2Y-2E	2 x 7700	2130	2500

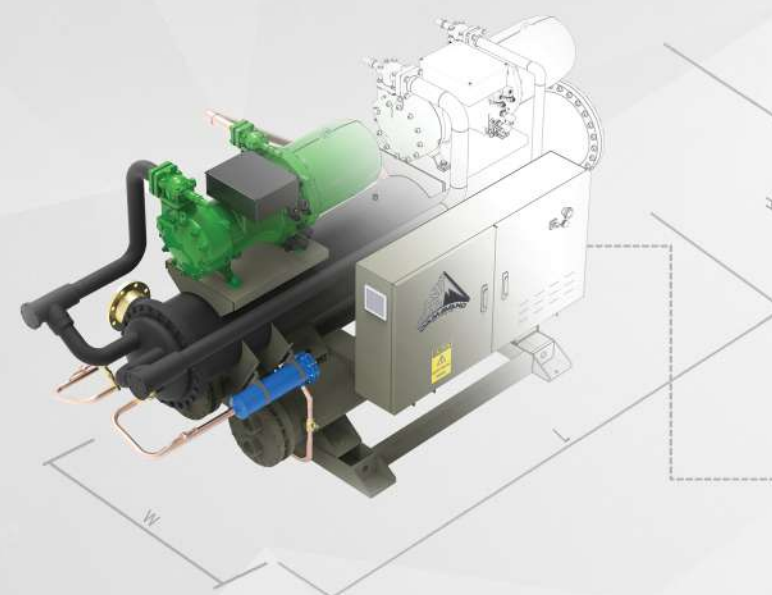
All Dimensions Are In (mm)



Water Cooled Screw Chiller

Model	Dimension		
	L	W	H
100-S2Y-2E	4000	1700	2200
120-S2Y-2E	4000	1700	2200
140-S2Y-2E	4000	1700	2200
160-S2Y-2E	4000	1700	2200
180-S2Y-2E	4000	1700	2200
220-S2Y-2E	4600	1700	2200
250-S2Y-2E	4600	1700	2200
280-S2Y-2E	4700	1700	2200
320-S2Y-2E	4700	2000	2200
360-S2Y-2E	4700	2400	2200
420-S2Y-2E	4700	2400	2200
480-S2Y-2E	4700	2400	2200
560-S2Y-2E	4700	2400	2200
640-S2Y-2E	4700	2400	2200

All Dimensions Are In (mm)



Water Cooled Flooded Screw Chiller

Model	Dimension		
	L	W	H
180-S2Y-2E	3700	1200	1850
220-S2Y-2E	4100	1400	1930
250-S2Y-2E	4100	1400	1930
280-S2Y-2E	4100	1400	2080
320-S2Y-2E	4180	1400	1965
360-S2Y-2E	4690	1600	2000
420-S2Y-2E	4690	1600	2000
480-S2Y-2E	4690	1600	2100
560-S2Y-2E	4690	1800	2100
640-S2Y-2E	4690	1800	2100

All Dimensions Are In (mm)

