

Modular Air-cooled Scroll Chiller(Heat Pump)

D Series



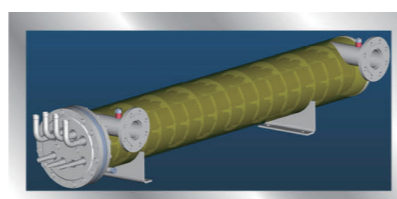
D series modular air-cooled scroll chillers can be widely used at newly-built or retrofitted industrial and civil buildings in various sizes, such as hotels, apartments, restaurants, office buildings, shopping malls, theaters, gyms, workshops, hospitals and other places where there are high requirements on noise level and air quality but it is troublesome to install the cooling tower.

Item	Water side (water temperature)				Air side (outdoor temperature)		
	Nominal operating condition		Operating range		Nominal operating condition		Operating range
	Inlet(°C)	Outlet(°C)	Outlet(°C)	I/O difference(°C)	DB(°C)	WB(°C)	DB(°C)
Cooling	12	7	5~20	2.5~6	35	-	15~45
Heating	40	45	35~50	2.5~6	7	6	-15~24

Features

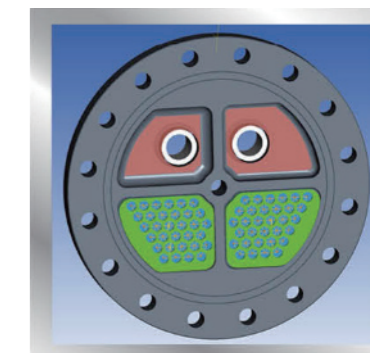
High-efficiency Shell and Tube Heat Exchanger

As for the shell and tube heat exchanger, water inside it flows along the tube, which leaves large heat exchanging space and effectively prevents clogging caused by foreign matters or scale. As for the plate heat exchanger, the distance between plates is less than 3mm, which is vulnerably clogged owing to the bad water quality and causes the heat exchanger frozen up.



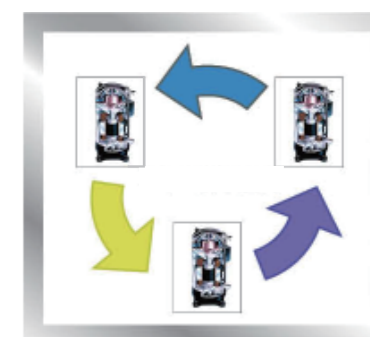
U-shaped Pipe Two-pass Design

The dual flow design of the U-shaped tube can enhance the heat exchange efficiency and effective superheating degree, thus increasing the performance of the unit.



Compressor Operation Balance Technology

The unique compressor operation balance technology makes sure that each compressor operates in turn, which greatly prolongs the lifespan of compressor.



Free Master Module Design

Any single unit can operate as the master once connected with the wired controller. It overcomes the problem which would occur to the product of other manufacturer that the whole system would fail to work properly when there's malfunction for the fixed master unit.



Advanced Flow Dividing Technology

The pipeline and flow equalization plate are especially designed for D series modular air-cooled scroll chillers, which greatly improve flow dividing uniformity and heat exchange capacity.

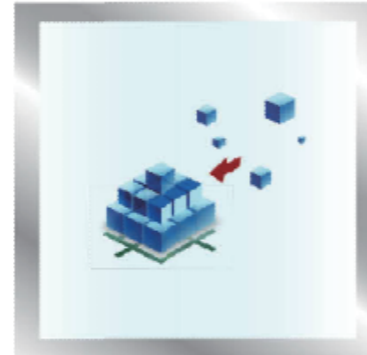
Super Protection Functions

This series is equipped with advanced microcomputer control system, completed protection functions and powerful error diagnosis function.
Main protection functions: compressor high pressure protection, compressor low pressure protection, compressor overload protection, antifreezing protection, overheating protection, auto antifreezing protection in winter, water-flow switch protection, temperature sensor protection, phase sequence protection, high discharge temperature protection, etc.



Excellent Compatibility

The units of the same model or different models can be combined freely. For model 65 and model 80, each system can combine up to 16 modules. For model 130 and model 160, each system can combine up to 8 modules.



60Hz

R410A

Model	Heat pump		LSQWRF65M/NaD-F	LSQWRF80M/NaD-F	LSQWRF130M/NaD-F	LSQWRF160M/NaD-F	
Capacity	Cooling/Heating	kW	60/65	75/85	120/135	145/170	
		RT	17.0/18.5	21.3/24.2	34.1/38.4	41.2/48.3	
Capacity steps		%	0-50-100	0-50-100	0-25-50-75-100	0-25-50-75-100	
EER/COP		W/W	2.79/2.89	2.72/3.04	2.79/3.00	2.71/3.04	
Power supply		V-Ph-Hz	208-230V~3~60Hz				
Power input	Cooling/Heating	kW	21.5/22.5	27.6/28.0	43.0/45.0	53.5/56.0	
		Type	—	Hermetic scroll	Hermetic scroll	Hermetic scroll	Hermetic scroll
Compressor	Starting mode	—	Direct starting	Direct starting	Direct starting	Direct starting	
		Quantity	—	2	2	4	4
Water side heat exchanger	Type	—	High-efficient shell and tube heat exchanger				
		Water flow volume	I/s	2.87	3.58	5.73	6.93
		GPM	45.5	57.0	91.0	110.0	
		Pressure drop	kPa	15	15	30	35
		ft.WG	4.9	4.9	9.8	11.5	
Air side heat exchanger	Type	—	High-efficient fin tube type heat exchanger				
		Fan type and quantity	—	axial×2	axial×2	axial×4	axial×4
		Total fan airflow	I/s	2x0.375×10 ⁴	2x0.417×10 ⁴	4x0.375×10 ⁴	4x0.417×10 ⁴
		CFM	2x0.795×10 ⁴	2x0.882×10 ⁴	4x0.795×10 ⁴	4x0.882×10 ⁴	
		Total fan motor power	kW	0.65×2	0.75×2	0.65×4	0.75×4
Sound pressure level		dB(A)	70	71	72	74	
Dimension	Outline(W×D×H)	mm	2040×1000×2230	2024×1000×2230	2278×1830×2278	2278×1830×2278	
	Package(W×D×H)	mm	2120×1080×2230	2120×1080×2230	2358×1910×2278	2358×1910×2230	
Net/Gross/Operating weight		kg	720/775/792	770/775/847	1370/1375/1507	1580/1585/1738	
Loading quantity	40'GP/40'HQ	set	10/10	10/10	6/6	6/6	

50Hz

R410A

Model	Heat pump		LSQWRF65M/NaD-M	LSQWRF80M/NaD-M	LSQWRF130M/NaD-M	LSQWRF160M/NaD-M	LSQWRF249M/NaD-M*	LSQWRF280M/NaD-M*	
Capacity	Cooling/Heating	kW	60/65	71/79.5	120/130	145/170	249/275	280/325	
		RT	17.06/18.48	20.19/22.61	34.12/36.97	41.23/48.34	70.80/78.20	79.62/92.42	
Capacity steps		%	0-50%-100%		0-25%-50%-75%-100%				
EER/COP		W/W	2.84/3.09	2.76/2.94	2.84/2.93	2.74/3.04	2.95/3.25	2.85/3.10	
Power supply		V-Ph-Hz	380-415V~3N~50Hz						
Power input	Cooling/Heating	kW	21.1	25.7	42.3	53	84.4	98.2	
		kW	21	27	44.4	56	84.6	104.8	
Compressor	Type	-	Constant speed scroll						
	Starting mode	-	Direct starting						
	Quantity	-	2	2	4	4	4	4	
Water side heat exchanger	Type	-	Dry expansion evaporator						
		Water flow volume	I/s	2.87	3.39	5.73	6.93	11.89	13.39
		GPM	46	54	91	110	189	212	
		Pressure drop	kPa	15	20	30	35	75	85
		ft.WG	4.92	6.56	9.84	11.48	24.60	27.88	
Air side heat exchanger	Type	-	DN65		DN80		DN100		
		Fan type and quantity	-	Axial-flow/2	Axial-flow/2	Axial-flow/4	Axial-flow/4	Axial-flow/8	Axial-flow/8
		Total fan air flow	I/s	2×0.375×10 ⁴	2×0.417×10 ⁴	4×0.375×10 ⁴	4×0.417×10 ⁴	8×0.39×10 ⁴	8×0.43×10 ⁴
		CFM	2×0.795×10 ⁴	2×0.882×10 ⁴	4×0.795×10 ⁴	4×0.882×10 ⁴	8×0.8239×10 ⁴	8×0.918×10 ⁴	
		Total fan motor power	kW	2×0.65	2×0.95	4×0.65	4×0.95	8×0.65	8×0.75
Sound pressure level		dB(A)	70	71	72	74	67	69	
Dimension	Outline(W×D×H)	mm	2040×1000×2230	2040×1000×2230	2226×1650×2230	2226×1650×2230	3980×2260×2450	3980×2260×2450	
	Package(W×D×H)	mm	2120×1080×2230	2120×1080×2230	2306×1730×2230	2306×1730×2230	4040×2260×2450	4040×2260×2450	
Net/Gross/Operating weight		kg	740/745/814	792/797/871	1315/1320/1447	1504/1509/1654	2985/2995/3284	3278/3288/3606	
Loading quantity	40'GP/40'HQ	set	10/10	10/10	6/6	6/6	2/2	2/2	

Notes: This product model is under development. Sinclair reserves the right to modify the specifications without prior notice.
Please confirm the final specifications with our sales representatives

50/60Hz

R410A

Model	Cooling only		LSQWF130MT3/NaD-M	LSQWF325M/NaD-H	
Capacity	Cooling	kW	130	325	
		TR	37	92	
Capacity steps		%	0-25-50-75-100	0-25-50-75-100	
EER		W/W	2.8	3.16	
Power supply		V/Ph/Hz	380V-3-50Hz	380V-3-60Hz	
Power input	Cooling	kW	46.4	103	
		Type	—	Constant speed scroll	
		Starting mode	—	Direct start	
Compressor	Quantity	—	4	4	
		Type	—	Dry expansion evaporator	
		Type	—	Dry expansion evaporator	
Water side heat exchanger	Type	Water flow volume	I/s	6.19	
		GPM	98	246	
		Pressure drop	kPa	30	
		ft.WG	9.84	27.88	
		Connection pipe	—	DN80	DN100
Air side heat exchanger	Type	—	Aluminum fin-copper tube		
		Fan type and quantity	—	Axial-flow/4	Axial-flow/8
		Total fan air flow	I/s	4×0.417×10 ⁴	8×0.4361×10 ⁴
		CFM	4×0.882×10 ⁴	8×0.9235×10 ⁴	
		Total fan motor power	kW	The input power depends on the actually-measured value of the whole unit.	
Sound pressure level		dB(A)	72	/	
Dimension	Outline(W×D×H)	mm	2278×1830×2278	3980×2260×2450	
	Package(W×D×H)	mm	2358×1910×2278	4040×2260×2450	
Net/Gross/Operating weight		kg	1460/1465/1606	3245/3255/3570	
Loading quantity	40'GP/40'HQ	set	5/5	2/2	

Modular Air-cooled Scroll Chiller

E Series



65/80kW



130/160kW

Thanks to the compact and flexible modularized structure, E Series Modular Type Scroll Chillers can be widely used for newly-built and retrofitted large and small-sized industrial and civil air conditioning projects, like apartments, hotels, restaurants, office buildings, shopping malls, theaters, gyms, factories, hospitals, etc. It is also the ideal choice for where there is high requirement on noise and ambient environments and it is inconvenient to install the cooling tower.

Item	Water side (water temperature)				Air side (outdoor temperature)	
	Nominal operating condition		Operating range		Nominal operating condition	Operating range
	Inlet (°C)	Outlet (°C)	Outlet (°C)	I/O difference (°C)	DB (°C)	DB (°C)
Cooling	12	7	5~20	2.5~6	35	0~46

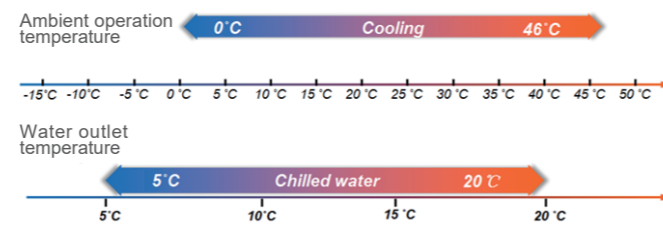
Features

New Appearance Design

- For E series units, it's with beautiful appearance, highlighted outlines, and powerful visual impact.
- The zinc-nickle alloy screws have been put into use for higher corrosion resistance and reliability for the whole unit.

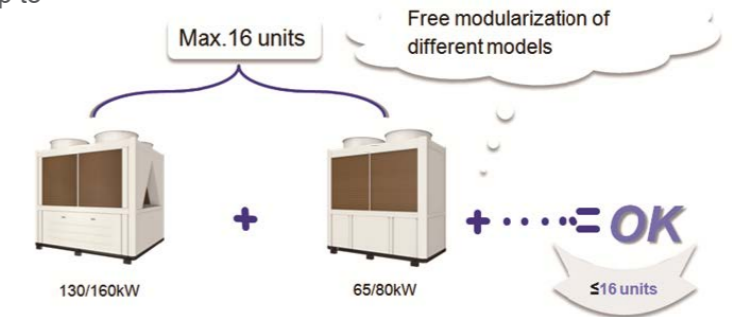
Wide Operation Range

Ambient operation temperature for E Series Modular unit is 0~46°C and the temperature range of water outlet is 5~20°C;



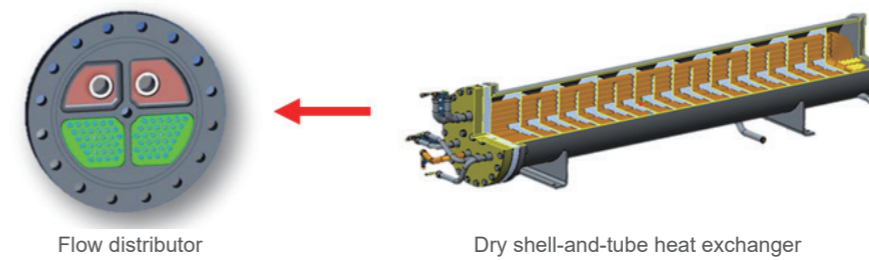
Powerful Compatibility

- Different models can be modularized freely and up to 16 units can be modularized in parallel.
- It can be modularized with any D series model.



High-efficiency Shell and Tube

- The dual-flow design can greatly improve the heat exchanging effect and the capacity of the unit.
- The specially-designed header box and flow distributor can largely improve the evenness of refrigerant vapor-liquid mixture after throttling and then improve the heat exchanging capacity of the shell and tube.



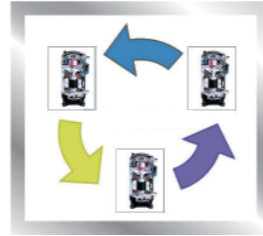
Low Noise Operation

Thanks to active and passive noise reduction technologies, noise of the model 130 can be lowered to 69dB(A), for creating quiet and comfortable environment for users.



Compressor Operation Balance Technology

The unique compressor operation balance technology makes sure that each compressor operates in turn, which greatly prolongs the lifespan of compressor.



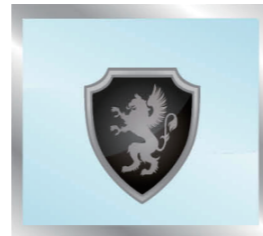
Free Master Module Design

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Super Protection Functions

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50Hz

R410A

Model		Heat pump		LSQWF65M/NaE-M	LSQWF80M/NaE-M	LSQWF130M/NaE-M	LSQWF160M/NaE-M
Capacity	Cooling/Heating	kW	65	82	132	162	
		RT	18.48	23.32	37.54	46.07	
Capacity steps		%	0、50、100	0、50、100	0、50、100	0、25、50、75、100	
EER		W/W	3.20	3.19	3.20	3.00	
Power supply		V-Ph-Hz	400V~3N~50Hz	400V~3N~50Hz	400V~3N~50Hz	400V~3N~50Hz	
Power input	Cooling	kW	20.3	25.7	41.2	54.0	
		Type	Constant speed scroll				
Compressor	Starting mode	—	Direct startup				
		Quantity	2	2	2	4	
Water side heat exchanger	Type	Dry expansion evaporator					
		Water flow volume	m ³ /h	11.20	14.10	22.70	27.90
			GPM	49	62	100	123
		Pressure drop	kPa	45	60	60	60
			ft.WG	14.76	19.68	19.68	19.68
Air side heat exchanger	Fan type and quantity	Flange connection					
		Aluminum fin-copper tube					
		Axial-flow					
Total fan airflow	m ³ /h	2×1.2×10 ⁴	2×1.4×10 ⁴	4×1.2×10 ⁴	4×1.4×10 ⁴		
	CFM	2×0.7056×10 ⁴	2×0.8239×10 ⁴	4×0.7056×10 ⁴	4×0.8239×10 ⁴		
Total fan motor power		kW	2×0.65	2×0.75	4×0.65	4×0.75	
Sound pressure level		dB(A)	66	67	70	70	
Dimension	Outline(W×D×H)	mm	2138×1025×2243	2138×1025×2243	2306×1980×2320	2306×1980×2320	
	Package(W×D×H)	mm	2198×1085×2243	2198×1085×2243	2366×2040×2320	2366×2040×2320	
Net/Gross/Operating weight		kg	730/735/799	770/775/843	1280/1285/1409	1540/1545/1697	
Loading quantity		40'GP/40'HQ	set	11/11	11/11	5/5	5/5