



BLUE STAR

Scroll Chillers

R22 and R407C

Flexible and energy efficient chillers from the Experts





Air Cooled and Water Cooled Scroll Chillers

Blue Star, India's largest central airconditioning company has been providing expert cooling solutions for over six decades. It is with this expertise that Blue Star introduces a wide range of air cooled and water cooled scroll chillers with R-22 and R-407C refrigerant options.

Manufactured using world-class capabilities at Blue Star's ISO-9001 certified factory, these scroll chillers are available in a wide range of capacities from 10 TR to 85 TR and are very easy to install and commission. What's more, these machines can handle varying cooling requirements, thanks to their multiple compressor configurations. Making them ideal for airconditioning office spaces, hotels, hospitals, shopping malls, multiplexes and process cooling requirements.





Some of the common key features are enumerated below:



Wide range of models

Available in refrigerant options: R22 and R407C

Air cooled: 10, 24, 36, 48, 60 and 80 TR

Water cooled: 11, 26, 39, 52 and 85 TR



Easy and quick installation

These chillers are pre-wired, fully charged and run-tested at the factory thereby making it easy and less time-consuming for installation and start up.



Energy efficient

The compressors used are reliable, time-tested and highly energy efficient.





Capacity modulation in steps

Multiple compressors are used in each of the models, with independent refrigerant circuits. In 'part load' conditions, the microprocessor ensures that only the required number of compressors operate to handle the load, thus saving power.



Lower electrical infrastructure cost

Multiple compressor configurations have lower starting current. Hence, switchgear, transformers and generators need not be up-sized, saving initial capital costs.



Quiet operation

The compressors and condenser fans (in case of air cooled chillers) are designed for quiet operation, ensuring low noise.



Total reliability

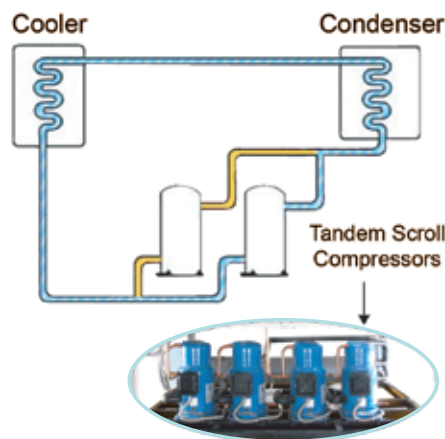
Factory-wired, factory-charged and factory-tested prior to dispatch, these chillers are highly reliable.



Mega power saving for tandem models (Only in air cooled models)



Air cooled chillers from 48 TR to 80 TR incorporate tandem circuits. This feature increases operating efficiency whenever chiller operates under 'part load' conditions. The power saving is achieved by utilising the entire condenser area for heat rejection even when only one compressor in the circuit is in operation.

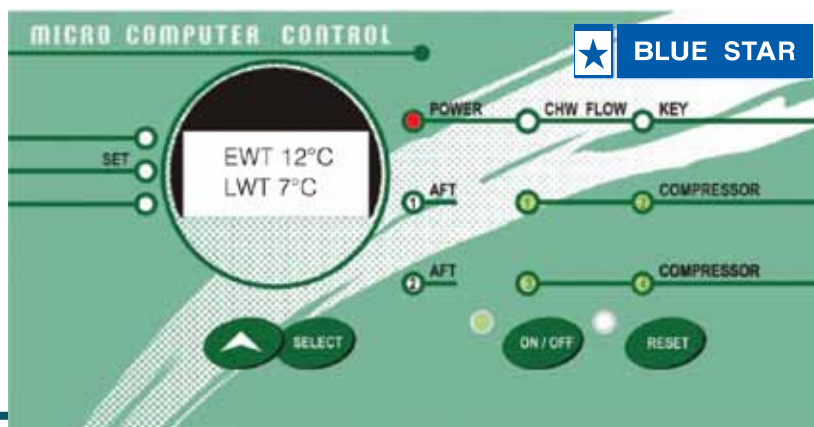


Tandem Scroll System

Intelligent microprocessor control



The entire range of air cooled and water cooled scroll chillers incorporates intelligent microprocessor controls that offer a host of new operating features. These features not only offer convenience and ease of operation, but also ensure significant power savings and reduced maintenance costs and lower instances of breakdown.



Some of the features of the controller are enumerated below:

Digital setting of temperature levels



Unlike in a manual control where tolerances are much higher, the digital control enables setting of the desired temperature levels accurately (to 0.1°C levels), thereby ensuring optimal cooling and significant power savings.

Built-in time delays

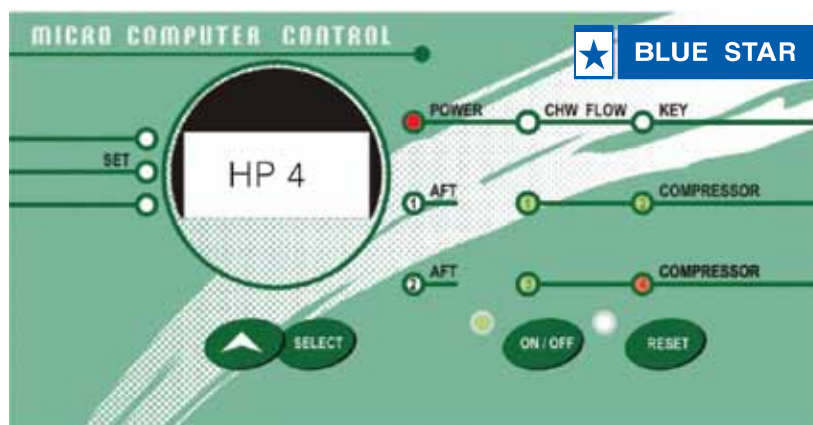


Compressors need a few minutes before they are switched on, after they get switched off, or after a power failure. The built-in time delay feature of the controller ensures that these time delays are automatically adhered to, thereby promising longer compressor life.

Auto distribution of load



When the airconditioning load is less than the full capacity of the chiller, the microprocessor automatically keeps only the required compressors on and switches off the rest. Moreover, the controller ensures that all compressors are evenly switched on or off at regular intervals. This results in efficient running of the chiller and ensures equal load on all the compressors.



Fault indication makes trouble shooting simple

Protection mechanisms



The controller protects the compressors from accidental phase reversal or single phasing errors. The in-built, anti-freeze protection ensures cut-off before the freezing point. This ensures lower instances of breakdown.

Non-volatile memory



All the settings on the controller are stored in the non-volatile memory and stay through power failures, thereby avoiding the need to reset the parameters after every power failure.

Self diagnostics



This powerful tool helps in identifying faults in a very short time. Up to 31 technical faults can be detected and displayed on the controller, thereby making troubleshooting simple.

Auto-restart



The controller restarts automatically with its original settings after the restoration of power, in case of a power failure. Hence there is no user intervention required after a power failure.



Technical Specifications

Air cooled R-22

Description	Units	Models					
		XAC2S-010	XAC2S-024MA	XAC3S-036MA	XAC2YS-048A	XAC2YS-060	XAC2YS-080A
Nominal Cooling Capacity	KW (TR)	35.16 (10)	84.4(24)	126.57(36)	168.4(48)	211(60)	281.3(80)
Capacity Control	%	100,50	100,50	100,67,33	100,75,50,25	100,67,33	100,75,50,25
Nominal Dimensions	Length	mm	1775	2234	3355	2980	2980
	Width	mm	935	1147	1147	2040	2040
	Height	mm	1505	1696	1696	2460	2460
Net Weight/ Unit (approx)	Kg	625	925	1375	2090	2200	2400
Power Supply		380-420 V/3 PH, 50 Hz, AC					
No. of Compressors		2	2	3	4	3	4
No. of Refrigerant Circuits		2	2	3	2	2	2
Total Power Consumption	KW	11	26.5	39.8	54	69.8	92
Fan	Qty	2	2	3	2	3	4
	Dia	mm	610	660	660	915	915
Condenser Coils	Face Area	Sq. mt (Sq. Ft)	2.23 (24)	3.75 (40)	5.57 (60)	8.24 (88.7)	8.24 (88.7)
	Rows		2	3	3	2	2+4
	Type		3/8" OD Inner Grooved Tubes and Super Slit Fins				
Cooler (Shell & Tube Type)	Qty		Twin Circuit	Twin Circuit	Three Circuit	Twin Circuit	Twin Circuit
Water Flow Rate	Min	USGPM	15	36	54	72	90
	Max	USGPM	30	72	108	144	180
Water Connections/Cooler	In & Out	No	1	1	1	1	1
		Size	1-1/2" NB	3" NB	3" NB	4" NB	4" NB

Rating Conditions:

1) Cooler Leaving Water Temp. 6.7 °C (44°F) and Cooler Entering Temp.12.2 °C (54°F)

2) Cooler Fouling Factor 0.0001°F. ft².hr/ Btu

3) 35 °C (95 °F) Ambient Temperature

Specifications are subject to change due to continuous product development

Air cooled R-407C

Description	Units	Models					
		XAC2S-010R2	XAC2S-024MAR2	XAC3S-036MAR2	XAC2YS-048AR2	XAC2YS-060R2	XAC2YS-080AR2
Nominal Cooling Capacity	KW (TR)	32.35(9.2)	79.76(22.7)	119.61(34)	159.85(45.5)	196.9(56)	260.75(74.1)
Capacity Control	%	100,50	100,50	100,67,33	100,75,50,25	100,67,33	100,75,50,25
Nominal Dimensions	Length	mm	1775	2234	3355	2980	2980
	Width	mm	935	1147	1147	2040	2040
	Height	mm	1505	1696	1696	2460	2460
Net Weight/ Unit (approx)	Kg	625	925	1375	2090	2200	2400
Power Supply		380-420 V/3 PH, 50 Hz, AC					
No. of Compressors		2	2	3	4	3	4
No. of Refrigerant Circuits		2	2	3	2	2	2
Total Power Consumption	KW	10.7	26.3	39.5	53.6	69.7	91.2
Fan	Qty	2	2	3	2	3	4
	Dia	mm	610	660	660	915	915
Condenser Coils	Face Area	Sq. mt (Sq. Ft)	2.23 (24)	3.75 (40)	5.57 (60)	8.24(88.7)	8.24 (88.7)
	Rows		2	3	3	3	2+4
	Type		3/8" OD Inner Grooved Tubes and Super Slit Fins				
Cooler (Shell & Tube Type)	Qty		Twin Circuit	Twin Circuit	Three Circuit	Twin Circuit	Twin Circuit
Water Flow Rate	Min		14	34	51	68	84
	Max		28	68	102	137	168
Water Connections/Cooler	In & Out	No	1	1	1	1	1
		Size	1-1/2" NB	3" NB	3" NB	4" NB	4" NB

Rating Conditions:

1) Cooler Leaving Water Temp. 6.7 °C (44°F) and Cooler Entering Temp.12.2 °C (54°F)

2) Cooler Fouling Factor 0.0001°F. ft².hr/ Btu

3) 35 °C (95 °F) Ambient Temperature

Specifications are subject to change due to continuous product development

Water cooled R-22

Description		Units	Models				
			XWC25-011	XWC25-026A	XWC35-039A	XWC45-052A	XWC45-085A
Nominal Cooling Capacity		KW (TR)	38.7(11)	91.4(26)	137.1(39)	182.8 (52)	298.9(85)
Capacity Control		%	100,50	100,50	100,67,33	100,75,50,25	100,75,50,25
Nominal Dimensions	Length	mm	1700	2250	2250	2250	2496
	Width	mm	550	1234	1234	1234	1234
	Height	mm	1415	1607	1956	1956	2087
Net Weight/ Unit (approx)		Kg	650	960	1350	1780	2510
Power Supply			380-420 V/3 PH, 50 Hz, AC				
No. of Compressors			2	2	3	4	4
No. of Refrigerant Circuits			2	2	3	4	4
Total Power Consumption		KW	8.5	20.4	30.6	40.8	67.5
Condenser		Model/Qty	YCD-10/1#	YCD-14/2#	YCD-14/3#	YCD-14/4#	YCD-21/4#
		No. of Pass(Water side)	8	8	8	8	8
		No. of Pass(Refrigerant side)	1	1	1	1	1
Water Flow Rate	Min	USGPM	33	78	117	156	255
	Max	USGPM	44	104	156	208	340
Cooler (Shell & Tube Type)	Qty		Twin Circuit	Twin Circuit	Three Circuit	2#Twin Circuit	2#Twin Circuit
Number of Passes / Each Circuit		No.	4 Pass	2 Pass	2 Pass	2 Pass	2 Pass
Water Flow Rate	Min	USGPM	17	39	59	78	128
	Max	USGPM	33	78	117	156	255
Water Connections/Cooler	In & Out	No	1	1	1	1	1
	Size		1-1/2" NB	3" NB	3" NB	3" NB	4" NB

Rating Conditions:

- 1) Condenser Entering Water Temperature at 85 F at the flow rate of 3 USGPM/TR
- 2) Cooler Leaving Water Temperature at 44 F at the flow Rate of 2.4 USGPM/TR
- 3) Cooler Fouling Factor 0.0001 Hr. Sq. ft. Deg. F/BTU
- 4) Condenser Fouling Factor 0.00025 Hr. Sq. ft. Deg. F/BTU

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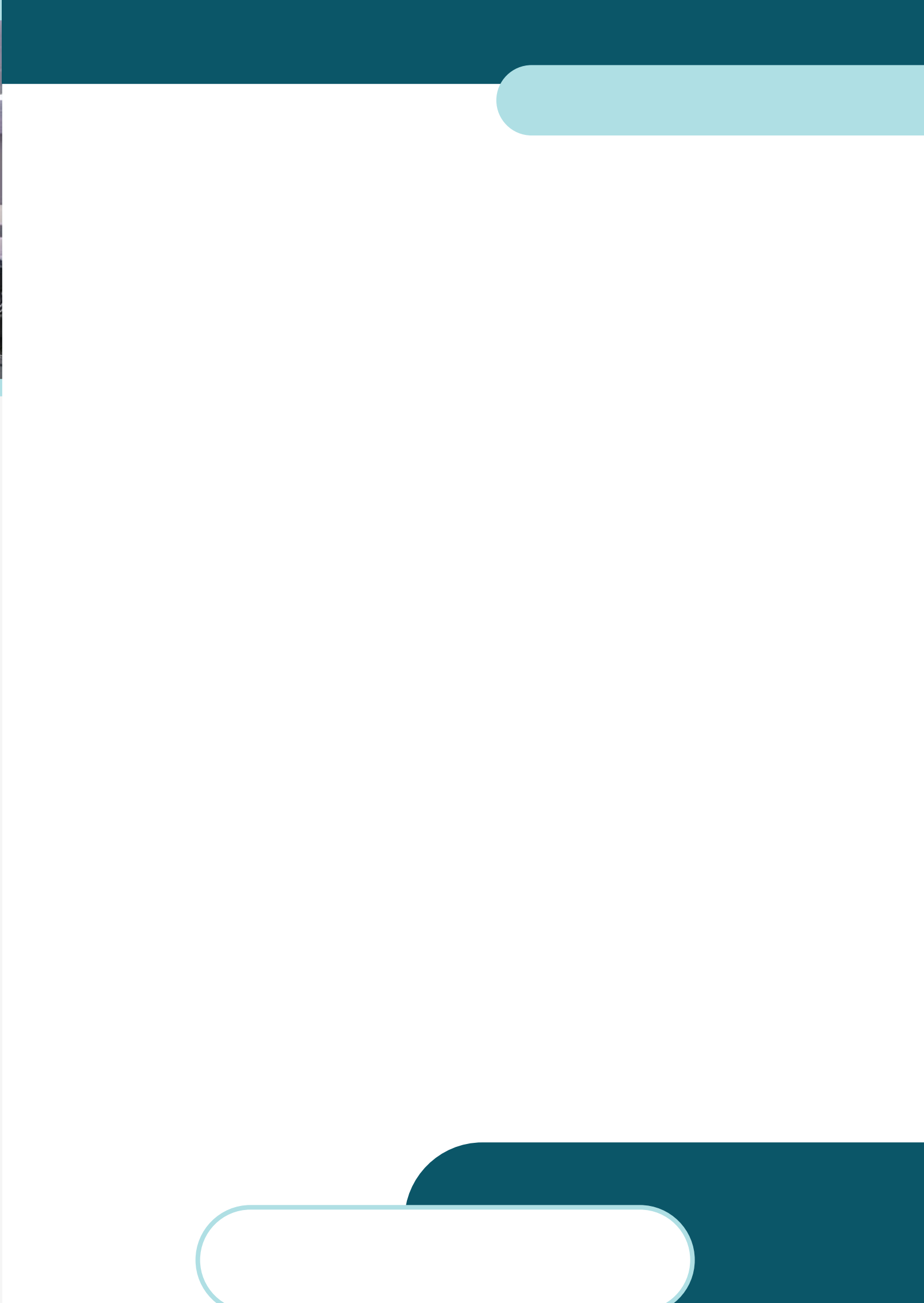
Water cooled R-407C

Description		Units	Models				
			XWC25-011R2	XWC25-026AR2	XWC35-039AR2	XWC45-052AR2	XWC45-085AR2
Nominal Cooling Capacity		KW (TR)	36 (10.2)	88.3(25.1)	132.4(37.7)	176.6 (50.2)	277.3(78.8)
Capacity Control		%	100,50	100,50	100,67,33	100,75,50,25	100,75,50,25
Nominal Dimensions	Length	mm	1700	2250	2250	2250	2496
	Width	mm	550	1234	1234	1234	1234
	Height	mm	1415	1607	1956	1956	2087
Net Weight/ Unit (approx)		Kg	650	960	1350	1780	2510
Power Supply			380-420 V/3 PH, 50 Hz, AC				
No. of Compressors			2	2	3	4	4
No. of Refrigerant Circuits			2	2	3	4	4
Total Power Consumption		KW	8.4	20.8	31.2	41.6	67.3
Condenser		Model/Qty	YCD-10/1#	YCD-14/2#	YCD-14/3#	YCD-14/4#	YCD-21/4#
		No. of Pass(Water side)	8	8	8	8	8
		No. of Pass(Refrigerant side)	1	1	1	1	1
Water Flow Rate	Min	USGPM	31	75	113	151	236
	Max	USGPM	41	100	151	201	315
Cooler (Shell & Tube Type)	Qty		Twin Circuit	Twin Circuit	Three Circuit	2#Twin Circuit	2#Twin Circuit
Number of Passes / Each Circuit		No	4 Pass	2 Pass	2 Pass	2 Pass	2 Pass
Water Flow Rate	Min	USGPM	15	38	57	75	118
	Max	USGPM	31	75	113	151	236
Water Connections/Cooler	In & Out	No	1	1	1	1	1
	Size		1-1/2" NB	3" NB	3" NB	3" NB	4" NB

Rating Conditions:

- 1) Condenser Entering Water Temperature at 85 F at the flow rate of 3 USGPM/TR
- 2) Cooler Leaving Water Temperature at 44 F at the flow Rate of 2.4 USGPM/TR
- 3) Cooler Fouling Factor 0.0001 Hr. Sq. ft. Deg. F/BTU
- 4) Condenser Fouling Factor 0.00025 Hr. Sq. ft. Deg. F/BTU

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