Sr. No.	Description	UOM (Wherever	Data (Common For All Models)	KWS055.17	KWS070.17	KWS095.17	KWS110.17	KWS135.17	KWS180.17	KWS205.17 K	WS230.17	KWS110.27	KWS130.27	KWS150.27	KWS180.27	KWS215.27	KWS270.27	KWS315.27 KV	VS360.27 KWS	S385.27
		Applicable)																		
Α	General Points		I																	
1	Cooling Capacity	ton _R	Refer KCPL Chiller Selection System Software	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	Power Consumption Specific Power Consumption	kW/ton _R	Refer KCPL Chiller Selection System Software Refer KCPL Chiller Selection System Software	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-
4	Co-Efficient of Performance (COP)	kW/kW	Refer KCPL Chiller Selection System Software	_	_	-			-	-	-	-	-	-	-	-	_	-		
5	No. of Compressors	Nos.	>	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2		2
6	No. of Individual Refrigerant Circuits	Nos.	\rightarrow	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	2
7	Refrigerant																			
i	Name Quantity	- kg	R407C Refer KCPL Chiller Selection System Software	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Technical Specifications	- Kg	Refer ESP-18-19-005	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8	Sound Pressure Level		Neici 23/ 10 13 003																	
i	Noise Level	dB	Refer ESP-18-19-001	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
l li	Measuring Standard	-	ANSI/AHRI Standard 575-2008	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9 :	Insulation Details Material		Closed Cell Nitrile Foam	_	-	-	_	-	_	-	_	-	_	_	-	_	-	-	-	-
	Insulation Thickness on Various Parts	-	For Standard Temperature Range (LWT upto -10 0C)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-
	Evaporator Shell	mm	32	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Evaporator Tubesheet	mm	19	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Evaporator Pass Partition Assembly	mm	19	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-
	Evaporator Support Plate	mm	32	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-
	Evaporator Support Plate Compressor Motor Body	mm	19	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-
	Suction Line Assembly	mm	19	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-
	Liquid Line Assembly	mm	9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-
iii	Insulation Thickness on Various Parts	-	For Brine Temperature Range (LWT below -10 0C)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Evaporator Shell	mm	51 (32+19)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Evaporator Tubesheet	mm	32	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-
+++	Evaporator Pass Partition Assembly Evaporator Head Cover	mm	51 (32+19)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-
 	Evaporator Nead Cover Evaporator Support Plate	mm	32	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-
	Compressor Motor Body	mm	28 (19+9)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-
	Suction Line Assembly	mm	28 (19+9)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Liquid Line Assembly	mm	19	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
iv	Density	kg/m³	76.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
V	Thermal Conductivity	W/m.K	0.035 (at 0 0C Mean Temperature)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-
vi		-	IS 14164	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-
vii	Adhesive Insulation Specifications	-	Blend of Synthetic Polymers and Synthetic Resin Refer ESP-18-19-004	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-
10	Vibration		NCICI ESI 10 13 004																	
i	Vibration Level	mm/sec	Less than 1.5 mm/sec	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ii	Vibration control	-	Rubber Pads (Standard) / Spring Isolators (At an Additional Cost)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
iii	Standard	-	IS 12075	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11	Painting Specification Paint Type		RAL 7035	1																
 	Standard	-	Coating as per KCPL Standards	_	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
12	Overall Dimensions		counting as per ner estamanas																	
i	Approx. Length	mm	Refer KCPL Chiller Selection System Software	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ii	Approx. Width	mm	Refer KCPL Chiller Selection System Software	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Approx. Height	mm	Refer KCPL Chiller Selection System Software	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13	Space Clearances Required Plain End Side (For Tube Cleaning)	mm		1900	2900	2900	2900	2900	2900	3800	3800	2900	2900	2900	2900	3800	3800	3800	3800 3	3800
l li	All Other Sides	mm	\rightarrow	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000		1000
iii		mm	├	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500			1500
	Weight																			
i	Approx. Shipping Weight	kg	Refer KCPL Chiller Selection System Software	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-
l li	Approx. Operating Weight Cable Sizes	kg	Refer KCPL Chiller Selection System Software	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15 i	Aluminum Cable		Refer ESP-14-15-01	_	-	_	_	_	_	_	_	-	-	-	-	_	-	-	-	-
	Copper Cable	-	Refer ESP-14-15-01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-
В	Compressor Details		<u> </u>	•																
1	Make	-	Kirloskar Chillers Private Limited																	
2	Type / Description	-	Semi-Hermetic Twin Screw Compressor	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-
3	Model Drive	-	Refer KCPL Chiller Selection System Software	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-
5	Capacity Control Percentage	- %	Direct Driven by Rotor Shaft	100-25%	100-25%	100-25%	100-25%	100-25%	100-25%	100-25%	100-25%	100-12 5%	100-12.5%	100-12 5%	100-12.5%	100-12.5%	100-12.5%	100-12.5% 10		- 0-12.5%
6	Type of Capacity Control	-	Stepless	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-
7	Capacity Control Mechanism	-	Slide Valve Mechanism	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-
8	Volumetric Ratio	-	Fixed Ratio (3.2)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9	Design and Test Parameters																			
i	Design Pressure	bar	30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-
	Test Pressure (Pneumatic)	bar °C	33	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-
	Design Temperature	<u>°C</u>	120	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-
10	Max. Allowable Discharge Temperature Bearings	L	120	-	-		-	-	-	-	-	-	-	-	-		-	-	-	-
			Roller Bearings - For Radial Load	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1 1 1 1	Types of Rearings	-																		

Sr. No	,	Description	UOM (Wherever	Data (Common For All Models)	KWS055 17	KWS070 17	KWS095 17	KWS110 17	KW\$135 17	KWS180 17	KW\$205.17	KW/\$230 17	KWS110 27	KWS130 27	KWS150 27	KWS180 27	KW/\$215.27	KW\$270.27	KWS315.27 KWS36	50 27 KWS385 27
31.140	<i>"</i>	· ·	Applicable)		KW3033.17	KW3070.17	KVV3033.17	KW3110.17	KW3133.17	KW3100.17	KW3203.17	KW3230.17	KW3110.27	KW3130.27	KW3130.27	KW3100.27	KW3213.27	KW3270.27	KW3313.27 KW330	0.27 KW3363.27
	Ľ	Types of bearings	- ' - '	Angular Contact Roller Bearing - For Axial Load	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-
	ii	Material of Construction	-	Steel	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
 	iv	Life of Bearing Class of Bearing	Hours -	50,000 Proprietary Data	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
11	_	Lubrication		Troprictary Data																
	i	Туре	-	Lubrication by Differential Pressure Mechanism	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-
	ii I	Lubricating Oil	-	Synthetic Oil	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-
		Grade of Lubricating Oil Quantity	Liter	Proprietary Data	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
12		Compressor Components MOC	Liter	Refer KCPL Chiller Selection System Software	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-
		Screw	-	Alloy Steel	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-
	ii (Casing	-	Cast Iron	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-
	iii S	Shaft	-	Alloy Steel	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
13	iv	Rotor Physical Data of Compressor	-	Aluminum Alloy	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-
13	_	Screw Construction	_	Twin Screw	_	-	_	_	-	-	-	_	_	-	-	-	_	-		-
		No. of Lobes Male Rotor	Nos.	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
	iii	No. of Lobes Female Rotor	Nos.	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-
	_	Male Rotor Diameter (mm)	mm	Proprietary Data	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
\vdash		Female Rotor Diameter (mm)	mm	Proprietary Data	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
14	_	Driving Rotor Oil Filter	-	Male Rotor	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-
14		Micron Rating	Micron	10	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-
		Material of Construction	-	Resin Impregnated Fibres	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
		Quantity	Nos.	1 No. per Compressor	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-
15	_	Copressor Isolation Type		0 11 0 11 1																
		At Suction	-	Butterfly Valve Shut-off Valve	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
	_	At Discharge Compressor Motor Details	-	Shut-off valve	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-
1	_	Make	-	Kirloskar Approved Vendor	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-
2	ı	Motor Type	-	Semi-Hermetic Squirrel Cage Induction Motor	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-
3		Type of Duty	-	Continuous	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-
4		Motor Rating	kW	Refer KCPL Chiller Selection System Software	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-
5		Motor Speed (Synchronous)	RPM	3000	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
7	- '	Ingress Protection (IP) GD ² of Rotor	<u> </u>	NA, Being Semi-Hermetic Type Proprietary Data	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
8		Whether SPDP or TEFC?	-	NA, Being Semi-Hermetic Type	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
9		Power Supply Details (Standard)		1 , 3															'	
	i S	Supply Voltage	V	400	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-
		Permissible Voltage Variation	%	±10%	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
		Frequency Parmissible Frequency Variation	Hz %	50 ±3%	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
		Permissible Frequency Variation Phase	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
10		Performance Indicators		1-																
	i I	Motor Efficiency Class	-	NA	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-
		Motor Power	kW	Refer KCPL Chiller Selection System Software	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-
		Motor Efficiency	-	Consult with Engineering Department on Case to Case Basis	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
	_	Power Factor Class of Insulation	-	Consult with Engineering Department on Case to Case Basis Class F	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
11		Motor Cooling	-	Naus I				-				-			-				-	
	_	Motor Cooling Type		Refrigerant Cooled	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-
		Cooling Mechanism	-	Suction Gas	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-
		Temperature at full load	°C	10 to 15 (At Normal Condtions)	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-
12	_	Current Details																		
\vdash	_	Rated Load Current	Α	Refer KCPL Chiller Selection System Software	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
 		Full Load Current Inrush/Starting Current	A A	Refer KCPL Chiller Selection System Software Refer KCPL Chiller Selection System Software	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
		Locked Rotor Current	A	Refer KCPL Chiller Selection System Software	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
	vi S	Starting Torque	N.m	→	88	104	104	172	172	260	260	338	88 + 88	104 + 104	104 + 104	104 + 104	172 + 172	172 + 172	260 + 172 260 +	260 260 + 260
		No Load Current	Α		31.1	36.5	36.5	45.7	45.7	72.3	72.3	101	31.1 + 31.1	36.5 + 36.5			45.7 + 45.7	45.7 + 45.7	72.3 + 45.7 72.3 +	
<u> </u>		Acceleration Time to Reach Rated Speed	Sec	2 to 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-
13	_	Control Settings No. of Starts per Hour	Nos.	4	_	_	_	_	_	_	-	_	_	_	-	_	_	-		_
	_	Time Between STOP to START	Sec	300	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
	_	Time Between START to START	Sec	900	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
D		Power Supply (Standard-Chiller Icomer)																		
1		Supply Voltage	V	415	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
2		Permissible Voltage Variation	%	±10%	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
3		Frequency Permissible Frequency Variation	Hz %	50 ±3%	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
5	_	Permissible Frequency variation Phase	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
			V	230 (Standard)	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
6	\bigsqcup'	Control Voltage	V	110 (Special-Optional)	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-
7		Supply Wire System		3 Phase - 4 Wire System (Standard)	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
	\perp			3 Phase - 3 Wire System (Special-Optional)	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
- 8 	_	Fault Level at Busbar Oil Separator Details	kA	As per KCPL Standard Practice	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-
C	<u> </u>	on Jeparator Details																		

			UOM																		
Sr.	No.	Description	(Wherever		KWS055.17	7 KWS070.17	KWS095.17	KWS110.17	KWS135.17	KWS180.17	KWS205.17	/ KWS230.17	KWS110.27	KWS130.27	KWS150.27	KWS180.27	KWS215.27	KWS270.27	KWS315.27 KW	VS360.27 KW	VS385.27
	1	Туре	Applicable)	Dome Type (Built in Compressor)	_	_	-	-	-	-	-	_	_	-	-	-	-	-	-	-	
 		Internal Structure	-	Demister Arrangement	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	,	Method of Oil Separation	_	Differential Mass Between Oil and Gas, Impact with Surfaces, Filtering of					_		_		_		_					_	_
	3		-	Oil-Gas Mixture	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-		Oil Heater Details	I	Wide law Aggregative de																	
		Make Quantity	Nos.	Kirloskar Approved Vendor	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	2
		Power Supply	V V	230	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	iv	Rating	W	250	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
F		Oil Cooler	-	If Applicable	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		Type	-	Plate Type	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		Quantity Heat Duty	Nos. kW	One per Compressor Depends on Working Conditions	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		Method of Cooling	-	Refrigerant Cooled																	
	5	Material of Construction	-	Brazzed PHE, Plate Material - SS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	_	Pressure Drop			•																
		Oil Side	bar	less than 0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6		Refrigerant Side Evaporator Details	bar	Proprietary Data	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
G	-	Model Petalis	l -	Refer KCPL Chiller Selection System Software	-	-	-	-	-	-	_	_	-	-	-	-	-	_	-	-	-
		Design Code	-	As per KCPL Standards	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		Туре	-	Shell and Tube DX Design	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		Tube Side (Fluid)	-	Refrigerant	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		Shell Side (Fluid)	-	Chilled Water	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
+		Design Parameters	n.	cr.																	
\vdash		Design Temperature (Refrigerant Side)	°C	65	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
+		Max. Operating Pressure (Refrigerant Side) Design Pressure (Refrigerant Side)	bar bar	Refer ESP-07-08-107 Refer ESP-07-08-107	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
\vdash		Test pressure (Refrigerant Side)	bar	Refer ESP-07-08-107 Refer ESP-07-08-107	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		Testing method (Refrigerant Side)	-	Refer ESP-07-08-107	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	vi	No. of Passes (Refrigerant Side)	Nos.	→	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	vii	Design Temperature (Water Side)	°C	65	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	_	Max. Operating Pressure (Water Side)	bar	Refer ESP-07-08-107	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	_	Design Pressure (Water Side)	bar	Refer ESP-07-08-107	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-		Test pressure (Water Side) Testing method (Water Side)	bar	Refer ESP-07-08-107	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
												1									
\vdash			- Nos	Refer ESP-07-08-107	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ħ	xii	No. of Passes (Water Side)	Nos.	Single Pass	- - -		-	- -	- - -	-	-	- - -	-	-	-	- -	- - -	-	-	-	-
	xii xiii					-	-	-	-	-		- - -	-	-	-	-	-		-		-
	xii xiii xiv	No. of Passes (Water Side) Water Velocity	Nos. m/s	Single Pass Less than 3 m/s	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	xii xiii xiv xv	No. of Passes (Water Side) Water Velocity Inlet Pressure Evaporating Temperature Physical Data of Evaporator	Nos. m/s bar °C	Single Pass Less than 3 m/s Depends on Site Piping Layout (Maximum Allowable - 9.4 bar)	- - -	-	-	-	- -	-	- - -	-	- - -	- - -	- - -	- - -	- - -	- -	- - -	-	- - -
	xii xiii xiv xv 7 i	No. of Passes (Water Side) Water Velocity Inlet Pressure Evaporating Temperature Physical Data of Evaporator Overall Length of Evaporator	Nos. m/s bar °C	Single Pass Less than 3 m/s Depends on Site Piping Layout (Maximum Allowable - 9.4 bar)	- - - -	- - - -	- - - -	- - - -	- - - -	9	- - - -	12	- - - -	- - - -	- - - -	- - - -	- - - -	12		12	12
	xii xiii xiv xv 7 i	No. of Passes (Water Side) Water Velocity Inlet Pressure Evaporating Temperature Physical Data of Evaporator Overall Length of Evaporator Shell Diameter	Nos. m/s bar C ft inch	Single Pass Less than 3 m/s Depends on Site Piping Layout (Maximum Allowable - 9.4 bar)	- - - - - 6 14	9	- - - - - 9	- - - - - 9	- - - - - 9 18	- - - - - 9 20	- - - - 12 20	- - - 12 20	- - - - 9 16	- - - - 9 18	- - - - - 9	- - - - 9 20	- - - - 12 20	- - - - 12 20	12 22	12 24	12 24
	xii xiii xiv xv 7 i ii iii	No. of Passes (Water Side) Water Velocity Inlet Pressure Evaporating Temperature Physical Data of Evaporator Overall Length of Evaporator Shell Diameter Shell Thickness	Nos. m/s bar °C ft inch mm	Single Pass Less than 3 m/s Depends on Site Piping Layout (Maximum Allowable - 9.4 bar)	- - - - - 6 14 8	9 12 8	9 16 8	9 16 8	- - - - - 9 18 8	9 20 8	12 20 8	12 20 8	- - - - 9 16 8	- - - - 9 18 8	- - - - - 9 18 8	- - - - 9 20 8	- - - - 12 20 8	- - - - 12 20 8	- - - - - 12 22 8	12 24 8	- - - - 12 24 8
	xii xiii xiv xv 7 i ii iii	No. of Passes (Water Side) Water Velocity Inlet Pressure Evaporating Temperature Physical Data of Evaporator Overall Length of Evaporator Shell Diameter	Nos. m/s bar C ft inch	Single Pass Less than 3 m/s Depends on Site Piping Layout (Maximum Allowable - 9.4 bar)	- - - - - 6 14	9	- - - - - 9	- - - - - 9	- - - - - 9 18	- - - - - 9 20	- - - - 12 20	- - - 12 20	- - - - 9 16	- - - - 9 18	- - - - - 9	- - - - - 9 20	- - - - 12 20	- - - - 12 20	- - - - - 12 22 8	12 24 8	- - - - 12 24
	xiii xiii xiv xv 7 i iii iii iv v	No. of Passes (Water Side) Water Velocity Inlet Pressure Evaporating Temperature Physical Data of Evaporator Overall Length of Evaporator Shell Diameter Shell Thickness Approx. Shell Length	Nos. m/s bar C ft inch mm mm	Single Pass Less than 3 m/s Depends on Site Piping Layout (Maximum Allowable - 9.4 bar) Consult with Engineering Department on Case to Case Basis	6 14 8 1753	9 12 8 2666	9 16 8 2666	9 16 8 2666	9 18 8 2666	9 20 8 2660	- - - - 12 20 8 3546	12 20 8	9 16 8 2666	9 18 8 2666	9 18 8 2666	9 20 8 2660	12 20 8 3546	- - - - - 12 20 8 3546	- - - - 12 22 8 3546	- - - - 12 24 8 3534	- - - 12 24 8 3534
	xii xiii xiv xv 7 i ii iii iv v	No. of Passes (Water Side) Water Velocity Inlet Pressure Evaporating Temperature Physical Data of Evaporator Overall Length of Evaporator Shell Diameter Shell Thickness Approx. Shell Length Material of Construction of Shell Material Standard of Shell	Nos. m/s bar C ft inch mm mm	Single Pass Less than 3 m/s Depends on Site Piping Layout (Maximum Allowable - 9.4 bar) Consult with Engineering Department on Case to Case Basis	6 14 8 1753	9 12 8 2666	9 16 8 2666	9 16 8 2666	9 18 8 2666	9 20 8 2660	12 20 8 3546	12 20 8 3546	9 16 8 2666	9 18 8 2666	9 18 8 2666	9 20 8 2660	- - - - 12 20 8 3546	12 20 8 3546	12 22 8 3546	12 24 8 3534	12 24 8 3534
	xiii xiii xiv xv 7 i ii iii iv v vi vii	No. of Passes (Water Side) Water Velocity Inlet Pressure Evaporating Temperature Physical Data of Evaporator Overall Length of Evaporator Shell Diameter Shell Thickness Approx. Shell Length Material of Construction of Shell Material Standard of Shell Tube Type/ Nature of Tube Surface	Nos. m/s bar C ft inch mm m	Single Pass Less than 3 m/s Depends on Site Piping Layout (Maximum Allowable - 9.4 bar) Consult with Engineering Department on Case to Case Basis	- - - - - - 6 14 8 1753 - -	9 12 8 2666	9 16 8 2666	9 16 8 2666 -	9 18 8 2666 -	9 20 8 2660	12 20 8 3546	12 20 8 3546	- - - - 9 16 8 2666 - -	9 18 8 2666	- - - - - - - - - - - - - - - - - - -	9 20 8 2660	- - - - 12 20 8 3546 - -	12 20 8 3546	12 22 8 3546 -	12 24 8 3534 :	12 24 8 3534
	xiii xiii xiv xv 7 i ii iii iv v vi viii	No. of Passes (Water Side) Water Velocity Inlet Pressure Evaporating Temperature Physical Data of Evaporator Overall Length of Evaporator Shell Diameter Shell Thickness Approx. Shell Length Material of Construction of Shell Material Standard of Shell Tube Type/ Nature of Tube Surface Tube Length	Nos. m/s bar C ft inch mm mm	Single Pass Less than 3 m/s Depends on Site Piping Layout (Maximum Allowable - 9.4 bar) Consult with Engineering Department on Case to Case Basis	- - - - - - - - - - - - - - - - - - -	9 12 8 2666	9 16 8 2666	9 16 8 2666 -	9 18 8 2666 -	9 20 8 2660	12 20 8 3546	12 20 8 3546	9 16 8 2666	9 18 8 2666	9 18 8 2666 -	9 20 8 2660	- - - - 12 20 8 3546 - -	12 20 8 3546	12 22 8 3546 -	12 24 8 3534 :	12 24 8 3534 -
	xiii xiii xiv xv 7 i ii iii iv v vi vii viii ix	No. of Passes (Water Side) Water Velocity Inlet Pressure Evaporating Temperature Physical Data of Evaporator Overall Length of Evaporator Shell Diameter Shell Thickness Approx. Shell Length Material of Construction of Shell Material Standard of Shell Tube Type/ Nature of Tube Surface Tube Length Tube Diameter	Nos. m/s bar C ft inch mm mm mm mm mm	Single Pass Less than 3 m/s Depends on Site Piping Layout (Maximum Allowable - 9.4 bar) Consult with Engineering Department on Case to Case Basis		9 12 8 2666 -	9 16 8 2666	9 16 8 2666	9 18 8 2666 -	9 20 8 2660	12 20 8 3546	12 20 8 3546	9 16 8 2666	9 18 8 2666	9 18 8 2666	- - - - - 9 20 8 2660 - - -	- - - - 12 20 8 3546 - -	12 20 8 3546		12 24 8 3534	12 24 8 3534 -
	xiii xiii xiv xv 7 i iii iii iv v vi vii viii ix x	No. of Passes (Water Side) Water Velocity Inlet Pressure Evaporating Temperature Physical Data of Evaporator Overall Length of Evaporator Shell Diameter Shell Thickness Approx. Shell Length Material of Construction of Shell Material Standard of Shell Tube Type/ Nature of Tube Surface Tube Length Tube Diameter Tube Diameter Tube Thickness	Nos. m/s bar C ft inch mm mm	Single Pass Less than 3 m/s Depends on Site Piping Layout (Maximum Allowable - 9.4 bar) Consult with Engineering Department on Case to Case Basis	- - - - - - - - - - - - - - - - - - -	9 12 8 2666	9 16 8 2666	9 16 8 2666 -	9 18 8 2666 -	9 20 8 2660	12 20 8 3546	12 20 8 3546	9 16 8 2666	9 18 8 2666	9 18 8 2666 -	9 20 8 2660	- - - - 12 20 8 3546 - -	12 20 8 3546	12 22 8 3546 -	12 24 8 3534 :	12 24 8 3534
	xiii xiiii xiv xv 7 i iii iii iv v vi viii vii	No. of Passes (Water Side) Water Velocity Inlet Pressure Evaporating Temperature Physical Data of Evaporator Overall Length of Evaporator Shell Diameter Shell Thickness Approx. Shell Length Material of Construction of Shell Material Standard of Shell Tube Type/ Nature of Tube Surface Tube Length Tube Diameter	Nos. m/s bar C ft inch mm mm mm mm mm	Single Pass Less than 3 m/s Depends on Site Piping Layout (Maximum Allowable - 9.4 bar) Consult with Engineering Department on Case to Case Basis	- - - - - - - - - - -	9 12 8 2666 -	9 16 8 2666	9 16 8 2666	9 18 8 2666	9 20 8 2660 -	12 20 8 3546 -	12 20 8 3546 -	9 16 8 2666 -	- - - - 9 18 8 2666 - - -		- - - - - 9 20 8 2660 - - -		12 20 8 3546 -		12 24 8 3534	12 24 8 3534 -
	xii xiii xiiv xiv xv 7 i ii iii iiv v vi vi	No. of Passes (Water Side) Water Velocity Inlet Pressure Evaporating Temperature Physical Data of Evaporator Overall Length of Evaporator Shell Diameter Shell Thickness Approx. Shell Length Material of Construction of Shell Material Standard of Shell Tube Type/ Nature of Tube Surface Tube Length Tube Diameter Tube Thickness Material of Construction of Tube Material Standard of Tube Material Standard of Tube Material Standard of Tube Water Volume in Evaporator	Nos. m/s bar C ft inch mm mm mm mm mm	Single Pass Less than 3 m/s Depends on Site Piping Layout (Maximum Allowable - 9.4 bar) Consult with Engineering Department on Case to Case Basis		9 12 8 2666 -	9 16 8 2666 -	9 16 8 2666 -	9 18 8 2666 -	9 20 8 2660 -	12 20 8 3546 -	12 20 8 3546 - - -	9 16 8 2666 -	9 18 8 2666		9 20 8 2660 -		12 20 8 3546 - -		12 24 8 3534	12 24 8 3534 -
	xii xiii xiiv xiv xv 7 i iii iii iiv v vi vi	No. of Passes (Water Side) Water Velocity Inlet Pressure Evaporating Temperature Physical Data of Evaporator Overall Length of Evaporator Shell Diameter Shell Thickness Approx. Shell Length Material of Construction of Shell Material Standard of Shell Tube Type/ Nature of Tube Surface Tube Length Tube Diameter Tube Thickness Material of Construction of Tube Material Standard of Tube Water Volume in Evaporator Water Box Details	Nos. m/s bar C ft inch mm mm mm mm - Liter	Single Pass Less than 3 m/s Depends on Site Piping Layout (Maximum Allowable - 9.4 bar) Consult with Engineering Department on Case to Case Basis	6 14 8 1753 -	9 12 8 2666 	9 16 8 2666 - - -	9 16 8 2666 - - - - -		9 20 8 2660 - - - -				9 18 8 2666 - - -		9 20 8 2660 - - - -		12 20 8 3546 - - - -		12 24 8 8 3534	
	xii xiii xiiv xiv xv 7 i iii iiv v vii viii iix x xii xiii xiii xiii xiii xiii x x	No. of Passes (Water Side) Water Velocity Inlet Pressure Evaporating Temperature Physical Data of Evaporator Overall Length of Evaporator Shell Diameter Shell Thickness Approx. Shell Length Material of Construction of Shell Material Standard of Shell Tube Type/ Nature of Tube Surface Tube Length Tube Diameter Tube Thickness Material of Construction of Tube Material of Construction of Tube Water Volume in Evaporator Water Box Details	Nos. m/s bar C ft inch mm mm mm Liter	Single Pass Less than 3 m/s Depends on Site Piping Layout (Maximum Allowable - 9.4 bar) Consult with Engineering Department on Case to Case Basis		9 12 8 2666 	9 16 8 2666 - - - - -	9 16 8 2666 - - - - -		9 20 8 2660 - - - - -	12 20 8 3546 			9 18 8 2666 - - - -		9 20 8 2660 - - - -		12 20 8 3546 - - - -		12 24 8 8 3534	12 24 8 3534 - - -
	xii xiii xiiv xiv xv 7	No. of Passes (Water Side) Water Velocity Inlet Pressure Evaporating Temperature Physical Data of Evaporator Overall Length of Evaporator Shell Diameter Shell Thickness Approx. Shell Length Material of Construction of Shell Material Standard of Shell Tube Type/ Nature of Tube Surface Tube Length Tube Diameter Tube Diameter Tube Thickness Material of Construction of Tube Material Standard of Tube Water Volume in Evaporator Water Box Details Type Material	Nos. m/s bar C ft inch mm mm mm mm - Liter	Single Pass Less than 3 m/s Depends on Site Piping Layout (Maximum Allowable - 9.4 bar) Consult with Engineering Department on Case to Case Basis		9 12 8 2666 - - - - - -	9 16 8 2666 - - - - -	9 16 8 2666 - - - - - -	9 18 8 2666 - - - - - -	9 20 8 2660 - - - - -	12 20 8 3546 - - - - -		9 16 8 2666	9 18 8 2666 				12 20 8 3546 - - - - - -		12 24 8 3534 :	12 24 8 3534 - - - -
	xii xiii xiiv xiv xv 7	No. of Passes (Water Side) Water Velocity Inlet Pressure Evaporating Temperature Physical Data of Evaporator Overall Length of Evaporator Shell Diameter Shell Thickness Approx. Shell Length Material of Construction of Shell Material Standard of Shell Tube Type/ Nature of Tube Surface Tube Length Tube Diameter Tube Thickness Material of Construction of Tube Material of Construction of Tube Water Volume in Evaporator Water Box Details	Nos. m/s bar C ft inch mm mm mm Liter	Single Pass Less than 3 m/s Depends on Site Piping Layout (Maximum Allowable - 9.4 bar) Consult with Engineering Department on Case to Case Basis		9 12 8 2666 	9 16 8 2666 - - - - -	9 16 8 2666 - - - - -		9 20 8 2660 - - - - -	12 20 8 3546 			9 18 8 2666 - - - -		9 20 8 2660 - - - -		12 20 8 3546 - - - -		12 24 8 8 3534	12 24 8 3534 - - -
	xii xiii xiiv xiv xv 7	No. of Passes (Water Side) Water Velocity Inlet Pressure Evaporating Temperature Physical Data of Evaporator Overall Length of Evaporator Shell Diameter Shell Thickness Approx. Shell Length Material of Construction of Shell Material Standard of Shell Tube Type/ Nature of Tube Surface Tube Length Tube Diameter Tube Diameter Tube Thickness Material of Construction of Tube Material Standard of Tube Water Volume in Evaporator Water Box Details Type Material Standard (Material)	Nos. m/s bar C ft inch mm mm mm mm Liter	Single Pass Less than 3 m/s Depends on Site Piping Layout (Maximum Allowable - 9.4 bar) Consult with Engineering Department on Case to Case Basis			9 16 8 2666 	9 16 8 2666 		9 20 8 2660 	12 20 8 3546 	12 20 8 3546 	9 16 8 2666	9 18 8 2666 				12 20 8 3546 		12 24 8 3534	12 24 8 3534 - - - - -
	xii xiii xiiv xiv xv 7	No. of Passes (Water Side) Water Velocity Inlet Pressure Evaporating Temperature Physical Data of Evaporator Overall Length of Evaporator Shell Diameter Shell Thickness Approx. Shell Length Material of Construction of Shell Material Standard of Shell Tube Type/ Nature of Tube Surface Tube Length Tube Diameter Tube Thickness Material of Construction of Tube Water Inchess Material of Construction of Tube Water Volume in Evaporator Water Box Details Type Material Standard (Material) Nozzle size End connection MOC of Water Side Gasket	Nos. m/s bar C ft inch mm mm mm mm mm - Liter	Single Pass Less than 3 m/s Depends on Site Piping Layout (Maximum Allowable - 9.4 bar) Consult with Engineering Department on Case to Case Basis			9 16 8 2666 	9 16 8 2666		9 20 8 2660 	12 20 8 3546 	12 20 8 3546 								12 24 8 3534	
	xii xiii xiiv xv xv xv xv	No. of Passes (Water Side) Water Velocity Inlet Pressure Evaporating Temperature Physical Data of Evaporator Overall Length of Evaporator Shell Diameter Shell Thickness Approx. Shell Length Material of Construction of Shell Material Standard of Shell Tube Type/ Nature of Tube Surface Tube Length Tube Diameter Tube Thickness Material of Construction of Tube Water Volume in Evaporator Water Box Details Type Material Standard (Material) Nozzle size End connection MOC of Water Side Gasket MOC of Refrigerant Side Gasket	Nos. m/s bar C ft inch mm mm mm mm - Liter NB	Single Pass Less than 3 m/s Depends on Site Piping Layout (Maximum Allowable - 9.4 bar) Consult with Engineering Department on Case to Case Basis			9 16 8 2666 											12 20 8 3546 - - - - - - - -			
	Xii Xiii Xiiv Xiv Xi	No. of Passes (Water Side) Water Velocity Inlet Pressure Evaporating Temperature Physical Data of Evaporator Overall Length of Evaporator Shell Diameter Shell Thickness Approx. Shell Length Material of Construction of Shell Material Standard of Shell Tube Type/ Nature of Tube Surface Tube Length Tube Diameter Tube Thickness Material of Construction of Tube Waterial Standard of Tube Water Volume in Evaporator Water Box Details Type Material Standard (Material) Nozzle size End connection MOC of Water Side Gasket MOC of Refrigerant Side Gasket Accessories Provided	Nos. m/s bar C ft inch mm mm mm mm - Liter NB	Single Pass Less than 3 m/s Depends on Site Piping Layout (Maximum Allowable - 9.4 bar) Consult with Engineering Department on Case to Case Basis							- 12 20 8 3546 										
	xii xiii xiiv xv xv xv xv	No. of Passes (Water Side) Water Velocity Inlet Pressure Evaporating Temperature Physical Data of Evaporator Overall Length of Evaporator Shell Diameter Shell Thickness Approx. Shell Length Material of Construction of Shell Material Standard of Shell Tube Type/ Nature of Tube Surface Tube Length Tube Diameter Tube Thickness Material of Construction of Tube Material of Construction of Tube Water Volume in Evaporator Water Box Details Type Material Standard (Material) Nozzle size End connection MOC of Water Side Gasket MOC of Refrigerant Side Gasket Accessories Provided Pressure Relief Valve	Nos. m/s bar C ft inch mm mm mm mm mm NB	Single Pass Less than 3 m/s Depends on Site Piping Layout (Maximum Allowable - 9.4 bar) Consult with Engineering Department on Case to Case Basis			9 16 8 2666 			9 20 8 2660 	12 20 8 3546 								- 12		12 24 8 3534
	xii xiii xiiv xv xv xv xv	No. of Passes (Water Side) Water Velocity Inlet Pressure Evaporating Temperature Physical Data of Evaporator Overall Length of Evaporator Shell Diameter Shell Thickness Approx. Shell Length Material of Construction of Shell Material Standard of Shell Tube Type/ Nature of Tube Surface Tube Length Tube Diameter Tube Thickness Material of Construction of Tube Waterial Standard of Tube Water Volume in Evaporator Water Box Details Type Material Standard (Material) Nozzle size End connection MOC of Water Side Gasket MOC of Refrigerant Side Gasket Accessories Provided	Nos. m/s bar C ft inch mm mm mm mm - Liter NB	Single Pass Less than 3 m/s Depends on Site Piping Layout (Maximum Allowable - 9.4 bar) Consult with Engineering Department on Case to Case Basis							- 12 20 8 3546 										
	xii xiii xiiv xv xv xv xv	No. of Passes (Water Side) Water Velocity Inlet Pressure Evaporating Temperature Physical Data of Evaporator Overall Length of Evaporator Shell Diameter Shell Thickness Approx. Shell Length Material of Construction of Shell Material Standard of Shell Tube Type/ Nature of Tube Surface Tube Length Tube Diameter Tube Thickness Material of Construction of Tube Material Standard of Tube Water Volume in Evaporator Water Box Details Type Material Standard (Material) Nozzle size End connection MOC of Water Side Gasket MOC of Refrigerant Side Gasket Accessories Provided Pressure Relief Valve Drain/Vent Valves	Nos. m/s bar C ft inch mm mm mm mm mm NB	Single Pass Less than 3 m/s Depends on Site Piping Layout (Maximum Allowable - 9.4 bar) Consult with Engineering Department on Case to Case Basis			9 16 8 2666 			9 20 8 2660 	12 20 8 3546 								- 12		
Н	xii xiii xiiv xiv xv 7	No. of Passes (Water Side) Water Velocity Inlet Pressure Evaporating Temperature Physical Data of Evaporator Overall Length of Evaporator Shell Diameter Shell Thickness Approx. Shell Length Material of Construction of Shell Material Standard of Shell Tube Type/ Nature of Tube Surface Tube Length Tube Diameter Tube Thickness Material of Construction of Tube Material Standard of Tube Water Volume in Evaporator Water Box Details Type Material Standard (Material) Nozzle size End connection MOC of Water Side Gasket MOC of Refrigerant Side Gasket Accessories Provided Pressure Relief Valve Drain/Vent Valves Condenser Details Model Design Code	Nos. m/s bar C ft inch mm mm mm mm - Liter NB - Inch	Single Pass Less than 3 m/s Depends on Site Piping Layout (Maximum Allowable - 9.4 bar) Consult with Engineering Department on Case to Case Basis			9 16 8 2666 													12 24 8 3534	
H	Xii Xiii Xiiv Xiv Xi	No. of Passes (Water Side) Water Velocity Inlet Pressure Evaporating Temperature Physical Data of Evaporator Overall Length of Evaporator Shell Diameter Shell Thickness Approx. Shell Length Material of Construction of Shell Material Standard of Shell Tube Type/ Nature of Tube Surface Tube Length Tube Diameter Tube Thickness Material of Construction of Tube Material Standard of Tube Water Volume in Evaporator Water Box Details Type Material Standard (Material) Nozzle size End connection MOC of Water Side Gasket MOC of Refrigerant Side Gasket Accessories Provided Pressure Relief Valve Drain/Vent Valves Condenser Details Model Design Code Type	Nos. m/s bar C ft inch mm mm mm mm mm - Liter NB - Inch	Single Pass Less than 3 m/s Depends on Site Piping Layout (Maximum Allowable - 9.4 bar) Consult with Engineering Department on Case to Case Basis						9 20 8 2660 											
H	Xii Xiii Xiiv Xiv Xi	No. of Passes (Water Side) Water Velocity Inlet Pressure Evaporating Temperature Physical Data of Evaporator Overall Length of Evaporator Shell Diameter Shell Thickness Approx. Shell Length Material of Construction of Shell Material Standard of Shell Tube Type/ Nature of Tube Surface Tube Length Tube Diameter Tube Thickness Material of Construction of Tube Material Standard of Tube Water Volume in Evaporator Water Box Details Type Material Standard (Material) Nozzle size End connection MOC of Water Side Gasket MOC of Refrigerant Side Gasket Accessories Provided Pressure Relief Valve Drain/Vent Valves Condenser Details Model Design Code Type Tube Side (Fluid)	Nos. m/s bar C ft inch mm mm mm mm - Liter NB Inch	Single Pass Less than 3 m/s Depends on Site Piping Layout (Maximum Allowable - 9.4 bar) Consult with Engineering Department on Case to Case Basis							- 12 20 8 3546										
H	Xii Xiii Xiiv Xiv Xiv Xiv Xiv Xiv Xiv Xiv Xiv Xiii Xi	No. of Passes (Water Side) Water Velocity Inlet Pressure Evaporating Temperature Physical Data of Evaporator Overall Length of Evaporator Shell Diameter Shell Thickness Approx. Shell Length Material of Construction of Shell Material Standard of Shell Tube Type/ Nature of Tube Surface Tube Length Tube Diameter Tube Thickness Material of Construction of Tube Material Standard of Tube Water Volume in Evaporator Water Box Details Type Material Standard (Material) Nozzle size End connection MOC of Water Side Gasket MOC of Refrigerant Side Gasket Accessories Provided Pressure Relief Valve Drain/Vent Valves Condenser Details Model Design Code Type Tube Side (Fluid) Shell Side (Fluid)	Nos. m/s bar C ft inch mm mm mm mm - Liter NB - Inch	Single Pass Less than 3 m/s Depends on Site Piping Layout (Maximum Allowable - 9.4 bar) Consult with Engineering Department on Case to Case Basis																	
H	Xii Xiii Xiiv Xiv Xi	No. of Passes (Water Side) Water Velocity Inlet Pressure Evaporating Temperature Physical Data of Evaporator Overall Length of Evaporator Shell Diameter Shell Thickness Approx. Shell Length Material of Construction of Shell Material Standard of Shell Tube Type/ Nature of Tube Surface Tube Length Tube Diameter Tube Thickness Material of Construction of Tube Material Standard of Tube Water Volume in Evaporator Water Box Details Type Material Standard (Material) Nozzle size End connection MOC of Water Side Gasket MOC of Refrigerant Side Gasket Accessories Provided Pressure Relief Valve Drain/Vent Valves Condenser Details Model Design Code Type Tube Side (Fluid) Shell Side (Fluid) Design Parameters	Nos. m/s bar C ft inch mm mm mm mm mm Liter NB Inch	Single Pass Less than 3 m/s Depends on Site Piping Layout (Maximum Allowable - 9.4 bar) Consult with Engineering Department on Case to Case Basis							- 12 20 8 3546										
H	Xii Xiii Xiiv Xiv Xi	No. of Passes (Water Side) Water Velocity Inlet Pressure Evaporating Temperature Physical Data of Evaporator Overall Length of Evaporator Shell Diameter Shell Thickness Approx. Shell Length Material of Construction of Shell Material Standard of Shell Tube Type/ Nature of Tube Surface Tube Length Tube Diameter Tube Thickness Material of Construction of Tube Material Standard of Tube Water Volume in Evaporator Water Box Details Type Material Standard (Material) Nozzle size End connection MOC of Water Side Gasket MOC of Refrigerant Side Gasket Accessories Provided Pressure Relief Valve Drain/Vent Valves Condenser Details Model Design Code Type Tube Side (Fluid) Shell Side (Fluid) Design Parameters Design Temperature (Refrigerant Side)	Nos. m/s bar °C ft inch mm mm mm mm mm Liter NB Inch	Single Pass Less than 3 m/s Depends on Site Piping Layout (Maximum Allowable - 9.4 bar) Consult with Engineering Department on Case to Case Basis							- 12 20 8 8 3546								- 12		
H	Xiii Xiiii Xiiv Xiv	No. of Passes (Water Side) Water Velocity Inlet Pressure Evaporating Temperature Physical Data of Evaporator Overall Length of Evaporator Shell Diameter Shell Thickness Approx. Shell Length Material of Construction of Shell Material Standard of Shell Tube Type/ Nature of Tube Surface Tube Length Tube Diameter Tube Thickness Material of Construction of Tube Material Standard of Tube Water Volume in Evaporator Water Box Details Type Material Standard (Material) Nozzle size End connection MOC of Water Side Gasket MOC of Refrigerant Side Gasket Accessories Provided Pressure Relief Valve Drain/Vent Valves Condenser Details Model Design Code Type Tube Side (Fluid) Shell Side (Fluid) Design Parameters	Nos. m/s bar C ft inch mm mm mm mm mm Liter NB Inch	Single Pass Less than 3 m/s Depends on Site Piping Layout (Maximum Allowable - 9.4 bar) Consult with Engineering Department on Case to Case Basis							- 12 20 8 3546										

Sr.	No.	Description	UOM (Wherever Applicable)	Data (Common For All Models)	KWS055.17	KWS070.17	KWS095.17	KWS110.17	KWS135.17	KWS180.17	KWS205.17 KWS2	30.17 KWS110.27	KWS130.27	KWS150.27	KWS180.27	KWS215.27	KWS270.27	KWS315.27 KWS36	0.27 KWS385.27
		Test pressure (Refrigerant Side)	bar	Refer ESP-07-08-107	-	-	-	-	-	-			-	-	-	-	-		-
	_	Testing method (Refrigerant Side)	- N	Refer ESP-07-08-107	-	-	-	-	-	-			-	-	-	-	-		
\vdash		No. of Passes (Refrigerant Side) Design Temperature (Water Side)	Nos.	Single Pass 100	-	-	-	-	-	-			-	-	-	-	-		
		Max. Operating Pressure (Water Side)	bar	Refer ESP-07-08-107	-	-	-	-	-	-			-	-	-	-	-		
		Design Pressure (Water Side)	bar	Refer ESP-07-08-107	-	-	-	-	-	-			-	-	-	-	-		
	х	Test pressure (Water Side)	bar	Refer ESP-07-08-107	-	-	-	-	-	-			-	-	-	-	-		-
		Testing method (Water Side)	-	Refer ESP-07-08-107	-	-	-	-	-	-			-	-	-	-	-		
-		No. of Passes (Water Side) Water Velocity	Nos. m/s	Two Pass Less than 3 m/s	-	-	-	-	-	-			-	-	-	-	-		
		Inlet Pressure	bar	Depends on Site Piping Layout (Maximum Allowable - 9.4 bar)	-	-	-	-	-	-			-	-	-	-	-		
	xv	Total Heat Rejection	ton _R	Formula - THR = Chiller Cooling Capacity + (3.51685/Input Power)	-	-	-	-	-	-			-	-	-	-	-		-
	xvi	Condensing Temperature	°C	Consult with Engineering Department on Case to Case Basis	-	-	-	-	-	-			-	-	-	-	-		-
		Physical Data of Condenser				_		_	_										
	_	Overall Length of Condenser Shell Diameter	ft		6 12	9	9 16	9	9 16	9 20	20 2	2 9 0 12	9	9 14	9	12 14	12 16	12 12 16 20	
		Shell Thickness	mm	· →	8	8	8	8	8	8	8 8		8	8	8	8	8	8 8	
		Shell Length	mm	→	1755	2668	2668	2668	2668	2662	3548 35		2668	2668	2668	3554	3554	3554 354	
		Material of Construction of Shell	-	Mild Steel	-	-	-	-	-	-			-	-	-	-	-		-
\vdash	vi	Material Standard of Shell	-	Refer "MOC" Sheet	-	-	-	-	-	-			-	-	-	-	-		-
	vii	Tube Type/ Nature of Tube Surface	-	Integral Helical Fins on the Outside Surface and Integral Helical Ridges on the Inside Surface	-	-	-	-	-	-	- -	- -	-	-	-	-	-		-
	viii	Tube Length	mm	Refer "HX Details" Sheet	-	-	-	-	-	-			-	-	-	-	-		-
	ix	Tube Diameter	mm	Refer "HX Details" Sheet	-	-	-	-	-	-			-	-	-	-	-		
		Tube Thickness	mm	Refer "HX Details" Sheet	-	-	-	-	-	-			-	-	-	-	-		
+	_	Material of Construction of Tube Material Standard of Tube	-	Cu Refer "MOC" Sheet	-	-	-	-	-	-			-	-	-	-	-		
+		Water Volume in Condenser	Liter	Refer KCPL Chiller Selection System Software	-	-	-	-	-	-		- <u>-</u>	-	-	-	-	-		-
	3	Water Box Details										'							1
	i	Туре	-	Standard - Dish Ends (M.W.Box - Optional)	-	-	-	-	-	-			-	-	-	-	-		-
\vdash		Material Manager de la company	-	Mild Steel	-	-	-	-	-	-			-	-	-	-	-		-
		Material Standard Nozzle size	NB	Refer "MOC" Sheet Refer KCPL Chiller Selection System Software	-	-	-	-	-	-			-	-	-	-	-		-
		End connection	-	Standard - Victaulic Conn. (Flanged Conn Optional)	-	-	-	-	-	-			-	-	-	-	-		
	vi	MOC of Water Side Gasket	-	NAM AF 120	-	-	-	-	-	-			-	-	-	-	-		-
		MOC of Refrigerant Side Gasket	-	NAM AF 159	-	-	-	-	-	-			-	-	-	-	-		-
H-		Accessories Provided Pressure Relief Valve	_	Spring Loaded (For Safety Valve Set Pressure Refer ESP)		_	_	_	_	_		<u> </u>	_	-	_	_	_		_
		Drain/Vent Valves	Inch	Plugged Connection Provided (3/8" NPT)	-	-	-	-	-	-			-	-	-	-	-		-
1		Suction Line										•							
	L	Design Code	-	ASME B31.3	-	-	-	-	-	-			-	-	-	-	-		-
		Isolation Valve Material of Construction	-	Butterfly Valve Carbon Steel	-	-	-	-	-	-			-	-	-	-	-		-
		Material Standard	-	Refer "MOC" Sheet	-	-	-	-	-	-			-	-	-	-	-		-
!	5	Angle Valve	-	Provided on Suction Line For Service Purpose	-	-	-	-	-	-			-	-	-	-	-		-
J		Discharge Line		1															
	L	Design Code Isolation Valve	-	ASME B31.3 Shut-off Valve	-	-	-	-	-	-		· -	-	-	-	-	-		-
+	_	Material of Construction	-	Carbon Steel	-	-	-	-	-	-		 	-	-	-	-	-		
- 4		Material Standard	-	Refer "MOC" Sheet	-	-	-	-	-	-			-	-	-	-	-		
!		Skin Type Thermowell	-	Provided on Discharge Line For Discharge Temp. Sensor	-	-	-	-	-	-		-	-	-	-	-	-		-
K		Liquid Line Design Code	_	ASME B31.3	_				_										_
		Design Code Expansion Valve	-	MOINIC DOILO	-	-	-	-	-	-	-	-	_	-	_	-	-	-	-
	i	Туре	-	Electronic Expansion Valve	-	-	-	-	-	-			-	-	-	-	-		-
		Make	-	Kirloskar Approved Vendor	-	-	-	-	-	-			-	-	-	-	-		
		Quantity	Nos.	Inbuilt	1	1	1	1	1	1		1 2	2	2	2	2	2	2 2	
+		Sight Glass Moisture Indicator	-	NA	-	-	-	-	-	-			-	-	-	-	-		
		Filter Drier	-	Provided	-	-	-	-	-	-			-	-	-	-	-		
-		Material of Construction	-	Copper	-	-	-	-	-	-			-	-	-	-	-		-
1		Material Standard	-	Refer "MOC" Sheet	-	-	-	-	-	-			-	-	-	-	-		-
L	_	Desuperheater Type	_	Plate Type	_	_	_	_	_	_	_		_	_	_	_	_		_
 	_	Quantity	Nos.	One per Compressor	-	-	-	-	-	-	-		-	-	-	-	-		
	_	Operating Conditions			•										<u> </u>				
H		Heat Duty	kW	Depends on Working Conditions	-	-	-	-	-	-			-	-	-	-	-		-
		Hot Water Inlet Temperaure	°C	Depends on Site Conditions (Max. Possible - 50)	-	-	-	-	-	-			-	-	-	-	-		
\vdash		Hot Water Outlet Temperaure	°C	Max. Possible - 55	-	-	-	-	-	-			-	-	-	-	-		
1	_	Hot Water Flow Rate Material of Construction	L/s	Depends on Working Conditions Brazzed PHE, Plate Material - SS	-	-	-	-	-	-		- <u>-</u>	-	-	-	-	-		-
		Water Side End connection Details	-	Diazzed File, Flate Waterial - 33	-	-		-	-	-	-	-	-	-	_	-	-	-	-
		Water Inlet Connection	NB	Consult with Engineering Department on Case to Case Basis	-	-	-	-	-	-			-	-	-	-	-		-
		Water Outlet Connection	NB	Consult with Engineering Department on Case to Case Basis	-	-	-	-	-	-			-	-	-	-	-		-
	_	Pressure Drop		live there 0.5															
	l í	Water Side	bar	less than 0.5	-	-	-	-	-	-			-	-	-	-	-		-

Sr. No).	Description	UOM (Wherever Applicable)	Data (Common For All Models)	KWS055.17	KWS070.17	KWS095.17	KWS110.17	KWS135.17	KWS180.17	KWS205.17	KWS230.17	KWS110.27	KWS130.27	KWS150.27	KWS180.27	KWS215.27	7 KWS270.27	KWS315.27 KWS360.2	7 KWS385.27
	ii F	Refrigerant Side	bar	Proprietary Data	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-
М	6	Economizer																		
1		Гуре	-	Plate Type	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-
2		Quantity	Nos.	One per Compressor	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-
3		Heat Duty	kW	Proprietary Data	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-
N 4		Material of Construction Starter and Control Panel	-	Brazzed PHE, Plate Material - SS	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-
1	_	Panel Enclosure	_	Starter and Control Panel Integrated in Single Fabricated Box	_	-	-	_	-	-	-	-	-	-	-	-	_	-		-
2		Vake	-	Kirloskar Approved Vendor													-	-		-
		Makadal of Englassia		Rittal Enclosure - Sheet Steel																
3		Material of Enclosure	-	Fabricated Enclosure - CRCA Sheet	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-
				Rittal Enclosure - (For Single Circuit Chillers)																
				Enclosure - 1.5 mm																
		Fhistoness of Foodsones		Door - 2 mm																
4		Thickness of Enclosure	mm	February Francisco (For Dual Circuit Chillers)	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-
				Fabricated Enclosure - (For Dual Circuit Chillers) Load Bearing Member - 2 mm																
				Non-Load Bearing Member - 1.6 mm																
5		ngress Protection (IP)	-	IP54	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-
6		Painting Specification	.																	
	-	Paint Type	-	RAL 7035	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-
	ii S	Standard	-	Coating as per KCPL Standards	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-
7		Mounting Arrangement	-	Mounted on Chiller	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-
8	1	Type of Starter	-	Star-Delta Starter (Soft Starter - Optional)	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-
9	1	Type of Isolation	-	MCCB for Star-Delta Starter FSD for Soft Starter	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-
10	-	Type of Protection	-	MCCB for Star-Delta Starter	_	_	_	_	_	_	_	_	_	_	_	_	_	_		_
				FSD for Soft Starter																
11	9	Switchgear Make	-	Siemens	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-
12	E	Electrical and Control Cables	-	Power - PVC Insulated Single Core (Vtg. Grade 1.1 kV) Control- PVC Insulated Single Core, Multicore Cable (Vtg. Grade 1.1 kV)	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-
				Signal- Shielded Cable																
13	-	Optional Features																		
		Phase Indicating Lamps	-	Special-Optional	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-
		Hooter	-	Special-Optional	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-
\vdash		Energymeter Coast London	-	Special-Optional	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-
		Door Handle LOTO Arrangement	-	Special-Optional Special-Optional	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-
0		Controller		Бресіаі Орцонаі																
1		Make	-	Refer "Make List" Sheet	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-
2		Fransmitters	-	NA NA	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-
3	(Oil Level Switch	-	NA	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-
4		Oil Level Failure Trip	-	NA	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-
5		LP Switch and Gauge	-	No, Controller Program will Take Care of Low Pressure	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-
6		HP Switch and Gauge	-	No, Controller Program will Take Care of High Pressure	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-
7 8		Chilled Water Flow Failure Cooling Water Flow Failure	-	Yes	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-
9		Reverse Rotor Protection	-	Yes No	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-
		High/Low Voltage Trip	-	Yes	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-
		Low Current Trip (Current Based-Analog)	-	Yes	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-
12		High Current Trip (Current Based-Analog)	-	Yes	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-
13	F	Phase Failure/Reverse Phasing Trip	-	Yes	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-
14		Earth Fault Trip	-	No	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-
15		Communication Through RS232/RS485	-	RS485	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-
16		Display of Microprocessor	-	Yes	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-
		Type of Display	-	PGD0 Screen	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-
18		Remote Monitoring Facility	-	Yes	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-
19	(Output to DCS	-	Applicable (Only if RS485 is Available)	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-

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-	-	-
-	-	-
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