HLL BIOTECH LIMITED

INTEGRATED VACCINES COMPLEX, Chengalpattu

nne pharmaplan®	**Document Name:**	**Data Sheet for Water Cooled Chiller - Process & HVAC**
	Data Sheet No.	**NPI/120310/DS/U/CHW 01**
	Date / Revision	**2014.05.16 / 01**

HBL HLL BIOTECH LIMITED (Subsidiary of HLL Lifecare Limited) (A Government of India Enterprise)

OPERATION DATA

1	Make	XX	12	Design Data/Duty Condition		
2	Model No	XX		Summer DBT	39.4	o C
3	Location	Indoor ☑		Rainy DBT	29	o C
		Outdoor ☐		Winter DBT	18.3	o C
4	Capacity of water chiller	750 TR		Max R H	88	%
5	Quantity	6 Nos.		Min. R H	41	%
6	Type	Centrifugal type		Altitude (above MSL)	30	Feet
7	Compressor	Semi-Hermetically / Hermetically sealed / Open	13	Refrigerant	R-134a	
			14	Chiller temperature Outlet	4	Deg C
8	Operation	Continuous ☑		Inlet	11.5	Deg C
		Dis-continuous ☐	15	Chilled water outlet temp.control band	±0.2	Deg C
9	Cooling	Water ☑	16	Time gap betw.start to next start	----	Min
		Air ☐	17	Time gap betw.stop to next start	----	Min
10	Sound level	<85 db(A)	18	Design condenser temp. Inlet	32	° C
11	Chilled water flow	XX USGPM/Chiller		Outlet	37	° C

MANUFACTURER DATA

19	Chiller source country	XX	33	Heat Exchanger data	Evaporator	Condenser
20	Overall Dimension (LXWXH), Mtr	XX		Model	XX	XX
21	Operating weight, MT	XX		Design code	TEMA C, ASME,Sec VIII, Div-1 latest edition	
22	Rigging weight, MT	XX		Type	Shell & Tube	Shell & Tube
23	Shipping weight, MT	XX		Tube side (fluid)	XX	XX
24	Clearence (Front/back/top), Mtr	XX		Shell side (fluid)	XX	XX
25	Tube replacement length, Mtr	XX		Flow rate, CMH	XX	XX
26	Gap between two chillers, Mtr	XX		Pressure drop in (ft)	< 15	< 25
				Water velocity, M/Sec	XX	XX
				Design temp. Deg C	XX	XX
27	**Compressor :**			Design Pressure, Psi	XX	XX
				In/out temperature	XX	XX
	No.of impeller stages	XX		Fouling factor, Ft^2-F/Btu (fps units)	0.00025	0.001
	Compressor speed, RPM	XX		Water side pressure diff, MWG	XX	XX
	Impeller tip speed, m/s	XX		No: of passes	XX	XX
	Suction temperature, Deg C	XX		Tube material / size/thk/Length	XX	XX
	Suction pressure, PSI	XX		Shell materia/ size	XX	XX
	Discharge temp., Deg C	XX		Types of tubes (plain/finned)	XX	XX
	Discharge pressure, PSI	XX		Nos.of tube bundle	XX	XX
	Total refrigerant charge/unit, Kgs	XX				
	Refrigeration cap.at design cond, TR	XX	34	Economiser		
	Power consumpt. at design cond, KW	XX		Type	XX	
	Type of capacity control	XX		Qty	XX	
	Min.capacity (TR) %	XX		Orifice size	XX	
			35	Oil coolers		
28	**Compressor motor details**			Type	Shell & Tube	
	Make	XX		Qty	XX	
	Motor type	XX		Heat duty, Kcal/Hr	XX	
	Motor rating, kW	XX				
	Motor, RPM	XX	36	Lube oil pump		
	Volts / Hz/Phase	415±10% V, 50±3% Hz, 3Ph		Type	XX	
	Encl:	XX		Make/Source	XX	
				Qty	XX	
29	Part load IKW/TR (100%,70%,40%)	XX		Discharge press., PSI	XX	
				Motor rating, kW	XX	
30	Refrigeration capacity at inlet cooling water temp, TR	XX		Volts / Hz/Phase	XX	
			37	Electrical		
31	Oil heater			Starter	Unit mounted / Free Standing, factory Calibrated VFD	
	Make	XX		Isolation switch	XX	
	Qty	XX		Wiring from panel to motor	XX	
	Rating, Watts	XX		Full load current, Amps	XX	
32	Variable speed drive	Required		Starting current, Amps	XX	
				Running current, Amps	XX	
				Current transformer	XX	

INSTRUMENTATION

48	Flow switch for chilled water	Required	55	Deep freeze temperature cut	Required
			56	Low oil flow	Required
49	Temp.senser for chilled water inlet/outlet	Required	57	High oil temp.	Required
50	Diffr.Pressure gauge for chilled water	Required	58	High compressor discharge temp.	Required
51	Diffr.Pressure gauge for condenser water	Required	59	High bearing temperature	Required
52	Low evaporator refrigerant temp.	Required	60	High motor winding temperature	Required
53	High condenser refrigerant temp.	Required	61	BMS Connectivity	Required
54	Low evaporator/condenser diff.pressure	Required	62		
			63		

64 **Remarks**

1) The chiller shall be supplied as a skid mounted unit with drive and cooling arrangement.VFD shall be integrated part of chiller and shall be unit mounted.
2) Chiller shall be designed & fabricated as per ASME code for unfired pressure vessels.
3) Material test certificate is required for H / Exchanger shell & tubes.
4) Heat exchanger shall be pressure tested for leakages.
5) Finger touch membrane type start/ stop, load, un-load, display selector button required in panel.
6) Vendor should clearly mention the number of starts and stops permissible with the motors.
7) **XX VENDOR TO SPECIFY**

AFI -- Approved for enquiry, AFO -- Approved for ordering

01	2014.05.16	VSHI	SMBY	HBL	☑	☐	sheet:
Rev	Date	Prepared by	Checked by	Approved by	AFI	AFO	1 / 2