


HLL BIOTECH LIMITED							
INTEGRATED VACCINES COMPLEX, Chengalpattu							
nne pharmaplan®	Document Name:		Data Sheet for Water Cooled Chiller - Process & HVAC			 <small>HLL BIOTECH LIMITED            A Division of HLL Group Limited            A Government of India Company</small>	
	Data Sheet No.		NPI/120310/DS/U/CHW 01				
	Date / Revision		2014.05.16 / 01				
ACCESSORIES / SAFETIES / INTERLOCKS							
65	Relief valve	Required	73	Control Panel	Required		
66	Drain valve	Required	74	(System ON / OFF)	Required		
67	Air vent	Required	75	Solenoid valve	Required		
68	Motor overload relay	Required	76	Sensor Calibration	Required		
69	Power on Indicator	Required	77	Flow monitor	Required		
70	Stop valve	Required	78				
71	Motor over current	Warning / cut off	79				
72			80				
DATA TO BE TRANSFERRED FROM MICROPROCESSOR TO BMS							
81	Chilled water in & out temp.	Required	87	Chiller trip status	Required		
82	Condenser in & out temp.	Required	88	Chiller water flow status	Required		
83	Condenser refrigerant temp.	Required	89	Condenser flow status	Required		
84	Evaporator refrigerant temp.	Required	90	Chiller ON/OFF	Required		
85	Chiller RUN status	Required	91				
86			92				
MICROPROCESSOR OPERATION DETAILS							
93	Control system start up sequence	Required	99	Failure detection and recovery	Required		
94	Rapid recovery from chiller failure	Required	100	Failure reset	Required		
95	Chiller made available	Required	101	Chiller stop sequence	Required		
96	Soft starter	Required	102	System is enabled after satisfying permissive interlock like flow switch	Required		
97	Unload at start	Required	103				
98							
SPECIFIC POWER CONSUMPTION							
104	Sp.power consumption at inlet cooling water temperature.		105	Refrigeration capacity at inlet cooling water temperature.			
	34 Deg C	XX KW/TR		34 Deg C			
	33 Deg C	XX KW/TR		33 Deg C			
	32 Deg C	XX KW/TR		32 Deg C			
	31 Deg C	XX KW/TR					
	30 Deg C	XX KW/TR	106	Sp.power consumption at part load			
	29 Deg C	XX KW/TR		100%	XX		
	28 Deg C	XX KW/TR		90%	XX		
	27 Deg C	XX KW/TR		80%	XX		
	26 Deg C	XX KW/TR		70%	XX		
	25 Deg C	XX KW/TR		60%	XX		
				50%	XX		
				40%	XX		
				30%	XX		
				20%	XX		
PERFORMANCE							
107	Performance check		108	Target performance			
	Total refrigeration generation	XX TR		Sp.power consumption (Max)	0.680 KW/TR at full load Duty condition		
	Motor power consumption	XX TR		NPLY Value ( Max )	0.435 KW/TR		
	Condenser heat rejection	XX TR		COP @ AHRI Condition (Max)	6.4		
	Deviation	XX %					
SCOPE OF SUPPLY OF VENDOR							
109	First charge of refrigerant	Vendor's scope	117	Transportation from stores to exact location within site	Vendor's scope		
110	First charge of oil	Vendor's scope	118	Errction & commissioning at site	Vendor's scope		
111	Isolation pads	Vendor's scope	119	Performance testing at factory	Vendor's scope		
112	Holding down/Foundation bolts	Vendor's scope	120	Commissioning spares	Vendor's scope		
113	Cold insulation of chiller & Vendor to mention insulation material to be used for chiller parts.	Vendor's scope	121	2- year & 5 year running spares	Vendor's scope		
114	Painting	Vendor's scope	122	Material handling equipments	Vendor's scope		
115	Supply of chiller	Vendor's scope		Coordination with client while	Required		
116	Victaulic coupling for chilled water and cooling water Inlet & outlet	Vendor's scope	123	commissioning the chiller at site			
NOTES							
1)	The chiller equipment shall be complete with necessary pipings, isolation valves, control panel, sequence timer, control valves, pressure / temperature instruments, relief valves,solenoid valves, auto drain valves, safety interlocks, alarm hooters, etc.						
2)	All valves shall be supplied with relevant test certificates.						
3)	All instruments shall be supplied with relevant calibration certificates & traceability certificate from reputed Testing Lab.						
4)	<b>Asbestos based gasket material is prohibited.</b>						
5)	Vendor should mention makes of all components.						
6)	Vendor should submit the DQ, IQ & OQ documents to the client.						
7)	Communication port suitable to connect to the central BMS system to be provided						
8)	Vendor should provide software selection mode offered at duty conditions to prove the performance of chiller						
9)	Chiller should be capable of trouble free operation at 20% of full load condition at constant condenser entering temperature as per duty condition. Necessary software selection and technical documents like surge curve to be provided along with offer.						
10)	Pressure Drop at Condensor & Evaporator side may have a tolerance of 10%						
<b>PRE-DESPATCH / INSPECTION DOCUMENTS REQUIRED</b>							
1)	Complete operational test of the unit with FAT protocol						
2)	Operational and Maint. Manual in 3 set						
3)	GA drawing						
4)	Electric circuit diagram						
5)	Control logic						
6)	Dimensional drawing indicating size and location of nozzles						
7)	As built drawings						
8)	List of fast moving spares with part nos						
9)	Material test certificates						
10)	Foundation detail drawing						
AFI -- Approved for enquiry, AFO -- Approved for ordering							
01	2014.05.16	VSHI	SMBY	HBL	<input checked="" type="checkbox"/>	<input type="checkbox"/>	sheet:
Rev.	Date	Prepared by	Checked by	Approved by	AFI	AFO	2 / 2