Department of Bacteriology

Technical Specifications for -80^{o} Deep freezer

S.No	Technical specification	Complied (yes or No)	If compliance given, mention the page no. of your technical document where the details are provided
1	The freezer must be constructed using 1" thick vacuum panel insulation in conjunction with environmentally-friendly water blown foam		
2	Door gasket must provide 7 independent insulation zones along with 4 points of contact to ensure sample security.		
3	Freezer shall be painted with high-impact, scratch resistant powder coat finished interior and exterior to ensure long term viability and enhanced temperature uniformity.		
4	To reduce condensation, the perimeter heater shall be on the door side not on the cabinet side to limit heat introduction into the sample storage area.		
5	The thermal breaker shall be made of plastic to limit heat leakage into the cabinet		
6	Door latch allows one-handed opening and closing. Handle must include door key lock as well as padlock provision for added security		
7	Freezer shall have 4 compartments with a minimum of 4 polystyrene insulated inner doors to ensure sample security. Inner doors should have no latches or external magnets and must be removable for easy cleaning without the use of tools		
8	Freezer shall have an automatic heated pressure equalization port which allows for rapid re-entry to cabinet		
9	Freezer shall have two-1 inch access ports as standard		

10	Freezer shall have a RS485 output, dry contacts and 4-20mA output for remote monitoring purposes		
11	Freezer must have capability of being cloud connected for remote system monitoring		
12	Freezer door must open at least 180 degrees for easy sample access		
13	Appropriate accessary like Stainless Steel Racks 12 no's, Cryo gloves 2 pairs, Ice Scrapper 2 no's to be provided		
14	Capacity : 400-430 Liters		
	2" Box Capacity : 300		
	2mL Vial Capacity : 30000		
15	Freezer must incorporate H-drive Information Center (HIC).		
16	Freezer shall incorporate set point security		
17	Freezer interface shall incorporate icons to advise users of alarm status for warm or cold excursions, door ajar, or power failure		
18	Freezer interface shall have warm alarm test function		
19	Freezer interface shall include an icon to communicate service warnings		
20	Freezer interface shall have a numerical indication of operating temperature		
21	Freezer interface shall have a health status icon		
22	Freezer interface shall allow the user to adjust the operating and alarm set points		
23	Freezer interface shall allow for the use of an off-set value to be used for calibration		
24	Freezer shall have the option of either an liquid nitrogen or carbon dioxide back-up system		
25	Freezer shall have the option of a chart recorder		
26	Freezer shall record temperature excursions including actual temperature, warmest temperature and coldest temperature.		

27	Freezer must recognize if line voltage and frequency does not match freezer specification and alert user.		
28	Peak Variation : +5.0 / -4.0		
29	Door Opening Recovery : 16min		
30	Warm Up to -50C : 237min		
31	Freezers must maintain a sound level no louder than Sound [dB(A)] : 52		
32	Appropriate double booster Servo stabilizer to be provided		
33	Warranty: standard warranty of one year, CAMC for 2 nd and 3 rd year and AMC for the 4 th year.		
34	Freezer shall use only natural, commercially available refrigerants (Hydrocarbon) with no special blends required.		
35	Freezer shall utilize single speed controls to optimize temperature performance and energy.		
36	Freezer refrigeration system shall incorporate a brazed plate heat exchanger. Heat exchanger shall be placed in a thermal box in the deck of the freezer to optimize freezer storage capacity.		
37	Induction brazing shall be used on refrigeration connections to minimize leaks		
38	Refrigeration system shall contain a liquid line/suction line heat exchanger to ensure freezer temperature stability.		
39	Freezer must be built to and contain the registration mark for UL, cUL, and CE standards for safety and performance		