

Corrigendum 3

Date: 24.06.2024

Sub: Supply, Installation, Commissioning and Testing of 10kN (1000kgf) Electro Dynamic Vibration Shaker System and Environmental Chamber.

Ref: CMTI/PUR/06/2023-24/BS/SMPM

With reference to the above E-Tender, the following changes are being made to the tender document titled “**Supply, Installation, Commissioning and Testing of 10kN (1000kgf) Electro Dynamic Vibration Shaker System and Environmental Chamber**”, Tender No. **CMTI/PUR/06/2023-24/BS/SMPM**. The price bid may be read in conjunction with the corrigendum and may please be quoted accordingly. Kindly go through the same before submission of the bid. The due date for submitting the bid has been **extended upto 01.07.2024 by 02.00PM**

In Chapter-4 of Tender Document: Part-A

Sl. No. in Tender	Page No.	Features Description	As notified in the tender document	Read As
229	49	Temperature Range	-70 to 180 deg C	-70 ± 1°C to 180 ± 1°C Overall Temperature Range.
230	49	Rate of change of heating	3 deg C per minute (Linear). Compliance to IEC 60068-3-5, Without load and IEC 60068-3-7 With load	Programmable Ramp Rate from 3 deg C per minute to 15 deg C per minute (Linear). With a load of 50 kg of MS.
231	49	Rate of change of cooling	3 deg C per minute (Linear). Compliance to IEC 60068-3-5, Without load and IEC 60068-3-7, With load.	Programmable Ramp Rate from 3 deg C per minute to 15 deg C per minute (Linear). With a load of 50 kg of MS.
257	51	Permitted load (kg)	The supplier to specify	The maximum load of the DUT, the environmental chamber platform can withstand should be 300kgs.
258	51	Load per rack (kg)	The supplier to specify	Each rack should have load bearing capacity of 100kgs.
237	50 & 51	Instrumentation & Control	<ul style="list-style-type: none"> • Flame retardant cables shall be used for main and control unit. • USB provision for fast downloads, Data logging information, • Internal memory for data logging (> 50 GB or better) • Real Time trend graph to be viewed on the screen (temperature, Humidity versus time) • IP65 protected touch panel/touchscreen • PLC based system 	<ul style="list-style-type: none"> • Flame retardant cables shall be used for main and control unit. • USB provision for fast downloads, Data logging information, • Internal memory for data logging (> 8 GB or better) • Real Time trend graph to be viewed on the screen (temperature,

			<ul style="list-style-type: none"> • User friendly test programming and test sequence • Instant program profile preview in graphical format • Internal Fault alerts to be displayed on the monitor with HELP menu • Fault diagnostics with history • Low water indication for humidity system on the monitor 	<p>Humidity versus time)</p> <ul style="list-style-type: none"> • IP65 protected touch panel/touchscreen • PLC based system • User friendly test programming and test sequence • Instant program profile preview in graphical format • Internal Fault alerts to be displayed on the monitor with HELP menu • Fault diagnostics with history • Low water indication for humidity system on the monitor
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Additional Points related to Environmental Chamber

395		RRU has to be considered.	-----	The distance between chamber and RRU shall be 3 meters.
396		Chamber test space movement	-----	Motorized horizontal and vertical movement shall be provided
397		Low humidity application	-----	Desiccant air dryer shall be provided for performing low humidity and low temperature applications
398		NABL Calibration of the Thermal chamber with dead load of 50kg's of MS.	-----	Essential Specify.
399		Temperature accuracy of $\pm 1^{\circ}\text{C}$ during ramp as well as soak.	-----	The temperature accuracy of $\pm 1^{\circ}\text{C}$ will be maintained during soak and in the linear ramp rate test cycles.

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Additional Points related to Environmental Chamber

PART- D

Factory Acceptance Test (FAT) Plan at factory prior to dispatch

25	The following acceptance tests (to be done in empty chamber) also will be conducted to ensure the chamber performance. All the test has to be conducted with a dead load of 50 Kg of Mild Steel.
26	Chamber should run continuously for a period of 24 hours for following set points for high and low temperature: 180°C±1°C and -70°C ±1°C.
27	High temperature test as per following profile to be demonstrated: 155°C for 6 hours followed by 120°C for 4 hours, followed by 90°C for 6 hours, 1 cycle with ramp rate 3°C/min linear 1 cycle with ramp rate 15°C/min linear
28	Low temperature test as per following profile to be demonstrated: -45°C for 6 hours followed by -25°C for 4 hours, followed by -10°C for 6 hours 1 cycle with ramp rate 3°C/min linear 1 cycle with ramp rate 15°C/min linear.
29	Thermal cycling test as per following profile to be demonstrated: -45°C to + 115°C, 5 cycles Ramp rate: 15°C/min linear. Dwell Time: 30 min Above test to be repeated with ramp rate of 3°C/min linear and 10°C/min linear.
30	Thermal cycling test as per following profile to be demonstrated: -40°C to + 85°C, 5 cycles Ramp rate: 10°C/min linear. Dwell Time: 30 min Above test to be repeated with ramp rate of 3°C/min linear and 15°C/min linear.
31	Thermal cycling test as per following profile to be demonstrated: 55°C to -20°C, 5 cycles Ramp rate: 5°C/min linear. Dwell Time: 30 min Above test to be repeated with ramp rate of 10°C/min linear.
32	Thermal cycling test as per following profile to be demonstrated: -45°C to + 125°C, 5 cycles Ramp rate: 6°C/min linear. Dwell Time: 15 min Above test to be repeated with ramp rate of 9°C/min linear.
33	Damp Heat test as per following profile to be demonstrated: Temperature: 40°C ± 1°C Relative Humidity: 93 ± 3% RH Duration: 6 Hours.
34	Damp Heat test as per following profile to be demonstrated: Temperature: 85°C ± 1°C Relative Humidity: 85 ± 3% RH Duration: 6 Hours.
35	Humidity test as per following profile to be demonstrated: Temperature: 85°C± 1°C, Relative Humidity: 60± 3% RH Duration: 4 Hours.
36	Humidity test as per following profile to be demonstrated: Temperature: 60°C± 1°C, Relative Humidity: 95± 3% RH Duration: 4 Hours.
37	Humidity test as per following profile to be demonstrated: Temperature: 10°C± 1°C, Relative Humidity: 10± 3% RH Duration: 4 Hours.
38	Humidity test as per following profile to be demonstrated: Temperature: 25°C± 1°C, Relative Humidity: 5± 3% RH Duration: 4 Hours.

Additional Points related to Environmental Chamber

PART- E**Site Acceptance Test (SAT) Plan at factory prior to dispatch**

27	The following acceptance tests (to be done in empty chamber) also will be conducted to ensure the chamber performance. All the test has to be conducted with a dead load of 50 Kg of Mild Steel.
28	Chamber should run continuously for a period of 24 hours for following set points for high and low temperature: 180°C±1°C and -70°C ±1°C.
29	High temperature test as per following profile to be demonstrated: 155°C for 6 hours followed by 120°C for 4 hours, followed by 90°C for 6 hours, 1 cycle with ramp rate 3°C/min linear 1 cycle with ramp rate 15°C/min linear
30	Low temperature test as per following profile to be demonstrated: -45°C for 6 hours followed by -25°C for 4 hours, followed by -10°C for 6 hours 1 cycle with ramp rate 3°C/min linear 1 cycle with ramp rate 15°C/min linear.
31	Thermal cycling test as per following profile to be demonstrated: -45°C to + 115°C, 10 Cycles Ramp rate: 15°C/min linear. Dwell Time: 30 min Above test to be repeated with ramp rate of 3°C/min linear and 10°C/min linear.
32	Thermal cycling test as per following profile to be demonstrated: -40°C to + 85°C, 10 Cycles Ramp rate: 10°C/min linear. Dwell Time: 30 min Above test to be repeated with ramp rate of 3°C/min linear and 15°C/min linear.
33	Thermal cycling test as per following profile to be demonstrated: 55°C to -20°C, 10 Cycles Ramp rate: 5°C/min linear. Dwell Time: 30 min Above test to be repeated with ramp rate of 10°C/min linear.
34	Thermal cycling test as per following profile to be demonstrated: -45°C to + 125°C, 10 Cycles Ramp rate: 6°C/min linear. Dwell Time: 15 min Above test to be repeated with ramp rate of 9°C/min linear.
35	Damp Heat test as per following profile to be demonstrated: Temperature: 40°C ± 1°C Relative Humidity: 93 ± 3% RH Duration: 12 Hours.
36	Damp Heat test as per following profile to be demonstrated: Temperature: 85°C ± 1°C Relative Humidity: 85 ± 3% RH Duration: 12 Hours.
37	Humidity test as per following profile to be demonstrated: Temperature: 85°C± 1°C, Relative Humidity: 60± 3% RH Duration: 12 Hours.
38	Humidity test as per following profile to be demonstrated: Temperature: 60°C± 1°C, Relative Humidity: 95± 3% RH Duration: 12 Hours.
39	Humidity test as per following profile to be demonstrated: Temperature: 10°C± 1°C, Relative Humidity: 10± 3% RH Duration: 12 Hours.
40	Humidity test as per following profile to be demonstrated: Temperature: 25°C± 1°C, Relative Humidity: 5± 3% RH Duration: 12 Hours