

**CENTRAL ELECTRONICS CENTRE
INDIAN INSTITUTE OF TECHNOLOGY MADRAS
CHENNAI 600 036**

Ref. No.

Date: 23.12.2014

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DUE DATE: 16.01.2015

Technical Specification – Climatic Chamber

1. Chamber Design:

- (a) Volume -- 600 liters
- (b) Dimensions -- 800 mm ± 50mm (width)
-- 800mm ± 50mm (depth)
-- 900mm ± 50mm (height)
- (c) Chamber specimen -- 160kg (total)
loading 40 kg (per shelf)
- (d) Material -- Stainless steel grade 1.4301
(X5CrNi18-10/SUS304/ASI304)
- (e) Shelves -- 1
- (f) Entry ports -- 2 ports in total
(50 mm LHS, 125 mm RHS)
- (g) Observation window -- 450 mm ± 50mm (width) 600 mm ± 50mm (height)

2. Test Parameter – Temperature

- (a) Temperature range -- -70 °C to +180 °C
- (b) Temperature deviation -- ±0.1 K to ±0.5 K (in time)
(acc. IEC 60068-3-5) ±0.5 K to ±2.0 K (in space)
- (c) Temperature rate of change -- 4.0 K/min (Heating)
(acc. IEC 60068-3-5) 2.5 K/min (Cooling)
- (d) Heat compensation
at +20°C -- 2000 W
at -20°C -- 2000 W

3. Test Parameter – Humidity

- (a) Temperature range -- +10 °C to +95 °C
- (b) Humidity range -- 10% r.H to 98% r.H
- (c) Dew point temperature range -- -3 °C to +94 °C
- (d) Temperature Deviation -- ±0.1 K to ±0.3 K (in time)
(acc. IEC 60068-3-5) ±0.5 K to ±1.0 K (in space)
- (e) Humidity Deviation -- ±1% r.H to ±3% r.H (in time)
- (f) Heat compensation -- 400 W

4. Control and Programming

- (a) Program memory -- 100 programs

- (b) Segments -- 100 per/program
- (c) Program cycles -- > 1000
- (d) USB & Ethernet interface -- should be provided
- (e) The colour touch panel suitable for graphics with a resolution of 640 x 480 Pixel (VGA) should be provided
Touch panel should have the following features
 - Background-lit display
 - Operation by touching the function symbols
 - Graphic symbols for programming functions
 - Graphic display of actual test data
 - Programming of individual test programs
 - Safe storing of individual programs, which should be activated at any time
 - Activation of stored test programs
 - Standardized display of all parameters (temperature, humidity, digital channels incl. limit values, tolerances etc.)

5. Error Diagnostic system

- Error diagnostic system should be built in with control system to provide information on operating times and possible operating failures

6. Specimen Protection:

- The climate test cabinet should be equipped with a high and low temperature limit controller which can be adjusted digitally (specimen protection with separate sensor) according to EN 60519-2 (1993). A potential-free contact to switch off power supplies should be provided.

7. Calibration Certificate

- Certificate should be provided for two temperature values in temperature test mode and two humidity values in climatic test mode

8. Power Supply

- 3/N/PE AC 380/400V \pm 10%, 50Hz

9. Refrigeration system

- Air-cooled mechanical refrigeration system based on Freon R404A/R23 with a ozone depletion potential of zero (ODP = 0.00) (or) equivalent

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