

Annexure-I:

1650 °C High Temperature Muffle Furnace with MoSi₂ heating elements

1. FEATURES		
1	Control zone	Single
2	Working temperature (°C)	1650
3	Hot zone W x H x D (minimum)	200 mm x 200 mm x 300 mm
4	Heating rate	Up to 4-5 °C/minute within the working temperature range of furnace
5	Temperature Uniformity within the furnace zone	+/- 2 °C
6	Special Feature: Gas Purging	There shall be a port at the rear side of the furnace for injection of Nitrogen/Argon and another port at the top for exit of the said gasses.
2. BODY		
1	Construction	MS Body fabricated from 16" and 18" MS sheet, Powder coated. Double layer steel body with outer fan cooling for low surface temperature and long life of refractory
2	Outer dimensions L x W x H (minimum)	550 mm x 600 mm x 750 mm
3	Skin temperature at 1650 °C	< 60 °C
4	Number of cooling fans	2
5	Number of air filters	1
3. INSULATION		
1	Insulation type	All vacuum formed latest technology fiber board insulation which is light weight and heats the furnace with lowest energy consumption
2	Number of insulation layers	3
3	Hot face insulation temperature rating (°C)	1800
4. HEATING ELEMENTS AND THERMOCOUPLE		
1	Heating element type	U Shaped MoSi ₂ heating elements rated for 1800 °C
2	Firing of heaters	Transformer based
3	Thermocouple type and number	B Type housed in protective High Alumina Tube, One number (for control)
5. CONTROL PANEL		
1	Temperature control system with auto tune function	Phase angle fired Thyristor based, driven by Programmable (PID) profile controller of (1 program of 30 steps)
2	Current limit with feedback	Yes (to extend the life of heating element)
3	Temperature control resolution/accuracy	+/- 1 °C
4	Power rating	Approx 4-5 KW, single phase, 230 Volts, 18 amps
6. Vendor should have supplied 1650 °C High Temperature Muffle Furnace with MoSi₂ heating elements at least 03 (three) organizations in India during last 05 (five) years		
7. One year comprehensive on-site warranty		

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