

# THERMAL CVD FURNACE

**MODEL : MCVD-11/14**

## TECHNICAL SPECIFICATIONS

1. Number of zone : One / Two / Three Zone (as per user requirement)
2. Heating temperature range : Upto 1200 °C/1400°C
3. Heating Element: Kanthal A-1 / Silicon Carbide
4. Temperature accuracy :  $\pm 1^\circ\text{C}$
5. Furnace tube size : ID = 60 mm OD = 65mm, length = 1200mm.
6. Quartz tube with flanges : High purity fused quartz  
Size: ID = 60mm, OD = 65mm, length = 1200 (for temp upto 1100°C).
7. Flanges : Stainless steel 304 flanges on both ends, these are high vacuum flanges with double silicon 'O' ring and metal ring. On one end provision for gas purging through valve and hinge door or ease of placing sample. At other end vacuum KF-25 connection for vacuum pump, KF-10 connection for vacuum gauge and release valve.
8. Heating rate : 15°C per Minute (max.) or user stable Each Hot Zone length : 200 mm length.
9. Display : 7" LCD Touch Screen HMI to control all vital operation of CVD i.e. temperature and gas flow. With Data logging of temperature and gas flow.
10. Construction : Horizontal and split type
11. Insulation : Vacuum formed Zirconia fiber
12. Shell Construction : MS body fabricated from heavy gauge sheet, powder coated for superior finish. Double layer body for low surface temp.
13. Temperature control : ( 1x30=30 segment) PID programmable Digital Temperature controller X 3 no. (separate for each zone)
14. Temperature sensor : 3 numbers (K type-1200°C / R type -1400°C)
15. Power control : Through the phase angle controlled SSR Unit/Thyristor Unit
16. Vacuum pump and gauge : In the range of  $10^{-2}$  torr by using Direct of Drive Rotary pump of capacity 200ltr/min with SS 1" dia bellow and Analogue Pirani Gauge Range upto  $10^{-3}$  torr with sensor having KF-10 fitting.
17. Gas purging arrangement.
18. Gas flow control : Through MFC / Rotameter (optional)
19. Gas mixing chamber : One unit kept between the Rotameters and the furnace
20. Furnace stand to height of 1 meter
21. Safety: Over current and short current protection, Thermocouple break down alarm, high temperature alarm.



## OPTIONAL :

- 1) Chiller with Circulation Pump
- 2) Gas Cylinder With Regulator
- 3) Mass flow controller for different gases, flow rate upto 500 sccm or as required with digital display
- 4) Rotameter for different gases with needle valve.
- 5) Digital vacuum gauge (imported) with vacuum display upto  $10^{-4}$  torr.