HAMiLab-V3000

Detailed Product Description

1. temp. up to 1600 degree
2. heating speed up to 50degree per min.
3. microwave heating.
4. no pollution to material

HAMiLab-V system

high temperature microwave sintering furnace

Description

HAMiLab-V is our 3rd generation high temperature microwave laboratory system. It's eloquent and sophisticated design accents this system's advanced state-of-the-art technology. It is composed of 4 sub-systems that are integrated to create a truly hands-off experience of processing materials and metals, chemical and biological samples. The only standard in manufactured high-temperature, high-power research furnaces. HAMiLab-V is composed of a double-layer, water-cooled, vacuum sealed, stainless steel heating chamber that is attached to vacuum and gas-infiltration systems that provides a highly controlled environment for processing samples. Energy is delivered to the sample loads by direct energy transfer form a high precision micro head, capable of delivering up

to 6kw of microwave power to heat samples to temperatures only limited by the state-of-the-art in insulation materials.

Application field:

1. compounding and sintering of inorganic powder
1). Carbide: SiC, CrC, VC, etc
2). Nitride: Si3N4, MnxNy, AlN, VN, CrN, etc
3). Electronic ceramic powder: barium titanate, barium-strontium titanate, strontium titanate, barium zirconate titanate, etc.
4). Fluorescent powder (LED powder, three primary colors, long after glowing phosphor powder, etc)
5). Lithium-ion battery material: lithium cobaltoxide, lithium manganate, LiFePO4, etc, anode and cathode carbon materials.
6). Multi colors ceramic pigment, glaze material, ceramic raw material, etc.
2. inorganic material/products sintering
1). Electronic ceramic: BaTiO3, SrTiO3, ZnO piezoelectric ceramics, PTC thermo-sensitive components, etc.
2). bio medical ceramic: man-made bones, teeth, MgO, Al2O3, ZrO2, SiC, Y2O3, Si3N4, SiO2, etc high performance structure ceramic.
3). Daily-used ceramics, arts and crafts ceramic.
3. incinerating
4. melting and thermal treatment
5. melt oxidized ore carbon thermal reduction

Configuration and performance:

1. Using stepless adjustable, high stability and long lifetime, CW industry level microwave source to make sure that the system can run continuous and stable for long time.
2. Use high accuracy IR thermometer to measure sample temperature directly.
3. Equipped with 2nd level high vacuum machine unit and multi channels gas way, atmosphere in the furnace can be controlled accurately.
4. Equipped with embeded computer control system, provide 3 operation mode: manual, auto and constant temperature which can be free switched.
5. multi original special crucible can be chosen, material placed in the crucible will not be polluted.
6. Materials with different coupling degree with microwave source can be processed—with high universality.
7. Set anticorrosion exhaust way to exhaust gas produced in the heating process quickly.
8. Real time temperature chart display can dynamic monitor the heating process.
9. Secure and reliable microwave shielding chamber design, multi leakage-proof protection.

Technical specification:

Technical specification	
Model	HAMiLab-V3000
Voltage	AC 380 plus/minus 10V/50Hz,
Rating power	6KW
Microwave output power	0.3-2.85KW continuously variable
Microwave frequency	2.45GHzplus/minus 25MHz
Max working temperature	1600 celsius degree
Temperature measuring way	IR thermometer (U.S.A. Raytek),
Temperature range	450 celsius degree -2250 celsius degree.
Temperature accuracy	plus/minus 0.5%
Static vacuum degree	less than100Pa
Atmosphere system	air, oxygen, nitrogen, argon, weakly reducing atmospheres, etc
Max loading space	Ø150*160mm
Cycle cooling water flow	more than 1.5m^3/h
Cycle cooling water pressure	more than 0.15MPa
Cycle cooling water total hardness	less than 60mg/L(tap water can replace it)
Control system	embeded system and touch screen, connected with PC, with data memory and printing function
Microwave leakage	less than 1mw/cm^2, (national standard is less than 5 mw/cm^2)
System outside dimension	2200*800*1800mm(L*W*H)