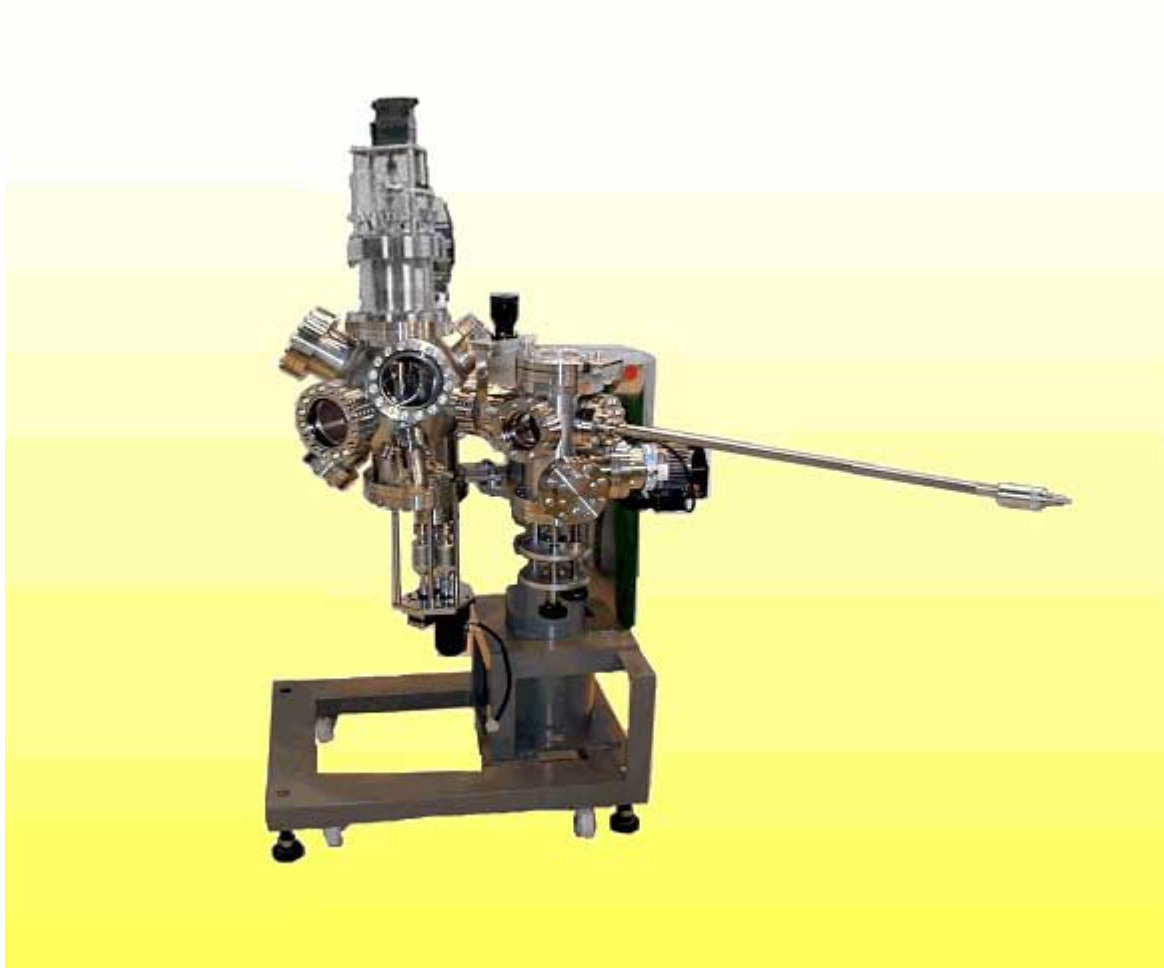


Standard Laser MBE system

Model:ST-LMBE

Spherical chamber brings to compact system and easy-to-use



<Outline>

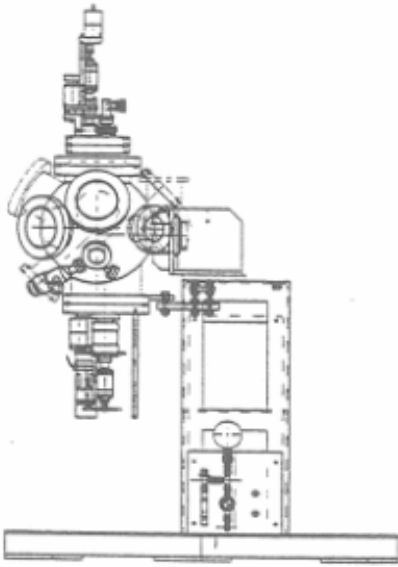
The main body of this apparatus is an ultrahigh vacuum(UHV) system that contains samples and targets; the latter is irradiated by a laser for abrasion from outside the UHV chamber to deposit the target material on a sample. This apparatus consists mainly of a deposition chamber and its pumping system.

Customer can select a wide variety of options we have prepared.

(These are listed on the last page.)

An Infra-red lamp heating that featured our apparatus can bring a sample temperature up to 800°C and afford to deposit even in a high oxygen partial pressure.

In addition,our design advantage of a spherical chamber brings compactness and easy-to-use.



<Feature>

1. A compact body due to a spherical UHV chamber of 260–mm diam.
2. A lamp heating unit for 1–inch sample.(Standard equipped)
3. High expandability of the system due to many auxiliary ports that can be used for combining optional devices or user customized purposes.
4. Easier operation by a load locked transfer unit.(Optional device)

<Specification>

1. Growth chamber	Arrival Pressure	$\leq 9.3 \times 10^{-6} \text{Pa}$ ($7 \times 10^{-8} \text{Torr}$ 以下)
	Chamber	260mm diam. Spherical.(SUS304)
	Exhaust	$\leq 10^{-4} \text{Pa}$ (10^{-6}Torr) in 30 minutes
	Laser irradiation	via synthesized quartz window(CF4.5") at an angle of 45° to a target
	Substrate heating	Radiation heating by infrared lamp Heating temperature $\geq 800^\circ\text{C}$ Substrate size : 25mm diam. max.

Substrate rotation : 360°

Substrate elevation

		Power control : PID controlled DC power supply Thermocouple : Type R
	Target holder with revolver	Target loading : 20mm diam. × 4 Target spin mechanism : AC motor driven Revolution mechanism : Stepping motor driven
	Vacuum gauges	Ionization gauge : CF2.75" UHV nude ionization gauge Pirani gauge : CF1.33" Thermocouple gauge : NW25 for fore-line
	Pumps	Main pump :300L/s TMP 150L/m Rotary pump Fore-line trap(NW25)and Oil mist trap(NW25)
	Valve	Main valve : CF6" Gate valve or Angle valve Gas inlet : Variable-leak valve
	Ports	for exhaust : CF6" for sample transfer : CF4.5" for target : CF6" for substrate heating : CF8" for RHEED : CF2.75"(gun)and CF6"(screen) for gas inlet : CF2.75" for cells : CF4.5" × 2 for laser irradiation : CF6" for fore-line : CF2.75"
2. Control system and power supply		JIS standard rack
3. Utilities		AC100V 1φ 40A AC200V 3φ 40A AC200V 1φ 10A Cooling water 5L/min ≥ 2kg/cm ² Dry O ₂ etc. N ₂ for vent Compressed air 2kg/cm ²

< Options >

- Differentially pumped RHEED gun
- Scanning RHEED gun
- RHEED pattern processing system
- Laser diode heating component
- Target-laser synchronizer (PC and software)
- Load-lock transfer component
- Radical beam source
- Ozone source (of ozonizer component)
- Pyrometer
- Laser for ablation; Nd:YAG (3ω 355nm)
- Laser for ablation; Excimer (KrF 248nm)
- Optical devices and optical box

● Specifications may subject to change for improvement without notice.

PASCAL CO.,LTD.

HEAD OFFICE

TOKO BLD,2-2 SANADAYAMA-CHO,
TENNOJI-KU,OSAKA 543-0015,JAPAN

PHONE:81-6-6765-1321

FAX:81-6-6765-1323

KANTO BRANCH

2-34-14,TOHOKU,NIIZA-CITY,
SAITAMA 352-0001,JAPAN

PHONE:81-48-476-8741

FAX:81-48-476-8713