

OCTOPLUS 500 / MBE SYSTEM

- 2", 3", 4" or 6" substrate size
- N₂ lq cooling shroud
- 5×10^{-11} mbar base pressure
- 11 source flanges
- 3 additional sources on request
- III-V, II-VI or other materials
- RHEED, BFM, Quartz, Pyrometer etc.
- Soft-acting Rotary or Linear Shutters



OctoPlus 500 MBE System



System control rack

The OctoPlus 500 series is a state-of-the-art MBE system with up to 14 effusion cell flanges. High quality epitaxial layers on substrates up to 6" in diameter can be deposited.

The OctoPlus 500 provides convenient source access and excellent service-ability due to its open design. It is ideally suited and field proven for cutting edge research on a large variety of materials including GaAs, phosphides, antimonides, nitrides and topological insulator deposition.

The MBE process control software integrates easy recipe writing, automated growth control and extensive data recording.

All our MBE products are designed and manufactured by Dr. Eberl MBE-Komponenten GmbH. The products are cleaned and assembled in our own clean room environment. Each component is tested and outgassed under UHV conditions. Helium leak testing and operation at maximum conditions are performed to reach the high standard of our products.

Dr. Eberl MBE-Komponenten GmbH is specialized on customized products. Due to our 25 year experience in MBE technology we are able to offer individually designed system solutions which follow our customers' needs.

The MBE systems are installed and acceptance tested by experienced MBE PhD experts. Extensive customer training is offered as an additional option.

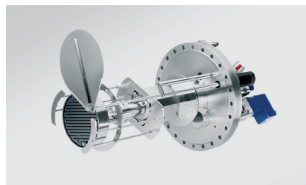
Technical Data

Size of deposition chamber	550 mm ID
Base pressure	< 5x10 ⁻¹¹ mbar
Pumping	TSP, Ion getter, Cryo and/or Turbo pump
Cooling shroud	N ₂ lq or other cooling liquid on request
Substrate heater temperature	up to 800°C, 1000°C or 1400°C
Substrate size	up to 6" diameter or 7x2" wafer
Bakeout temperature	up to 200°C
Sources flanges	11 flanges (+3 on request), DN 63 and DN 100 CF
Source types	Effusion Cells, E-Beam-Evaporators, Sublimation Sources, Valved Cracker Sources, Gas Sources
Shutters	Soft-acting Linear or Rotary Shutters
In-situ monitoring	Ion-gauge, quartz, pyrometer, RHEED, QMA
Sample transfer	linear transfer rod, manual or semi-automatic in face-down geometry
Load-lock	Magazin with 6 or more substrates turbo-pumped
MBE control software	Epi-soft or other
System installation and acceptance testing	included
MBE training	by MBE expert

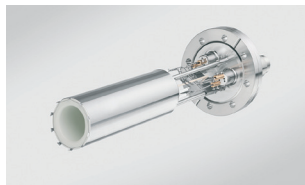
Examples for applications and corresponding sources

Application	Effusion Cell	Sublimation Source	Valved Source	Plasma Source	E-Beam Evaporator
Source type	WEZ/NTEZ OME/HTEZ	SUKO, SUSI HTS, DECO	VACS, VGCS VCS, VSCS		EBVV
III/V (As, Sb, P)	Ga, In, Al, Be	C, Si doping	As, P, Sb		
II/VI	Zn, Cd, Be		S, Se, Te	N-doping	
IV	Ge, Sn, Pb	B, P, Sb doping			Si, Ge
GaN	Ga, In, Al			N	
Metals / Magnetics	Cu, Al, Ni, Co, ...				Pt, Ta, Pd, ...
Topological Insulators	Ge, Sb, Te, Bi, GeSb		Se, Te		B
Graphene		C, Si			
Oxides	Fe, Ni, Mn, Bi, Eu, Ga, ...			O	
Thin Film Solar Cell	Cu, Ga, In, Zn, NaF, Fe, Sn		S, Se		

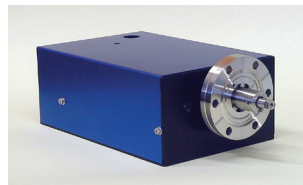
MBE Components typically used in the Octopus 500



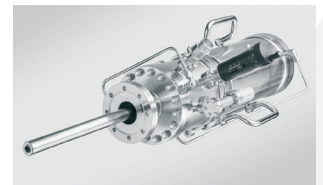
Substrate Manipulator



Effusion Cell



Linear Shutter



Valved Cracker Source

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