Thermal and magnetron sputtering unit NIKA-138-01

The unit is designed for the deposition by resistive evaporation of thin layers of metals up to 3 microns thick with thickness control at the time of layer application, with preliminary cleaning of the substrate surface before spraying and the possibility of preheating.

Set of technological devices:

- Thermal evaporator - 2 pcs;
- Ion Beam SourceIBS-145;
- Magnetron - 100K;
- Sector heater;
- vibrating hopper with adjustable supply of powder of the sprayed material;
- positionable damper for closing technological devices;
- carousel for 60x48 mm substrates - 15 pcs. with a resistance witness and a temperature sensor (SS and DT);
- vacuum inlet of rotation of the carousel and dampers;

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Layout and characteristics

Thermal Evaporator for Resistive Evaporation – 2 pcs.

IBS-145 for surface cleaning – 1 pc.

Powder feeder – 1 pc.

Magnetron-100K – 1 pc.
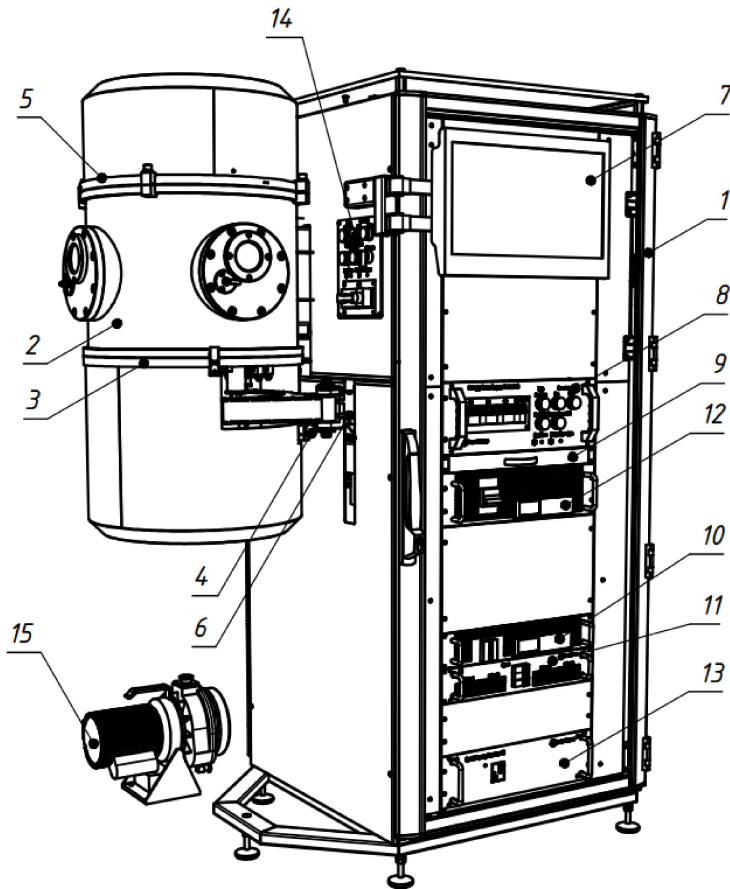
Sector heater – 1 pc.

Parameter	
Power	22 kW
Supply voltage	380V +10-15 %
Time to reach ultimate vacuum	no more than 2 h.
Time to reach working vacuum	no more than 10 min
Number of gas injection channels	3
Maximum current consumption by phase	32 A
Mass	800 kg (+ 100kg compressor unit, 4kg foreline pump)
Coolant	2 Distilled water, 20% ethyl alcohol solution in distilled Coolant
Ultimate vacuum	no more than 3×10^{-4} Pa
Working gases	Ar
Working vacuum	5×10^{-3} Pa

Beams & Plasmas
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1 - frame;

2 - vacuum chamber;

3 - bottom flange;

4 - retainer;

5 - upper flange;

6 - lift;

7 - monitor;

8 - vacuum system control unit;

9 - shelf with keyboard;

10 - power supply unit of the ion source;

11 - power supply unit for thermal evaporators and heater;

12 - power supply unit of the magnetron;

13 - water distribution unit;

14 - control panel;

15 - foreline pump.