Beams & Plasmas
Laboratory of vacuum technologies plus, LLC

Magnetron sputtering unit NIKA-154

Magnetron sputtering unit NIKA-154 is intended for double-sided magnetron sputtering of contact metal layers of Cr, Ni, Ti, Ag, Cu with a thickness of 70-500 microns on silicon substrates of two standard sizes: ∅76 mm and ∅100 mm. The NIKA-154 unit is made on the basis of the NIKA-2013 vacuum station; pumping, control, cooling, technological devices and power supplies are located in a single structure.

Technological devices

- Ion source IBS-280;
- Dual liquid-phase magnetron 2x100K;
- Extended magnetron L300 (Cr, Ni, Ti) 2 pcs.;
- Two-position magnetron - 2x100K;
- Heater L300.

Simultaneously processed from 2 sides ∅76 mm (45 pcs.) Or ∅100 mm (30 pcs.). All process devices are located on the rear flange. Loading is carried out from the front (working) flange. The control system is equipped with: a system for monitoring the thickness of the sprayed layer (by the value of the resistivity) according to the resistance witness; a substrate heating temperature sensor; positioned damper. All processes are automated, control from the touch panel of the computer. Remote control via the Internet is provided.

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Layout and characteristics

IBS 280 – ion beam source - 1 pc.

L300 - extended magnetron - 2 pcs.

Dual liquidphased magnetron 2x100K

L300 - heater

Options	
Power	25.3 kW
Supply voltage	380 V
Mains connection Maximum power consumption	TN-S
Time to reach working vacuum	26 kW
Number of gas injection channels	no more than 20 minutes
Weight	2
Coolant volume	no more than 1000 kg
Coolant	no more than 15 l distilled water, 20% ethanol solution in distilled water
Ultimate vacuum is not more	2×10^{-4} Pa
Working gases	argon oxygen, air
Working vacuum	2×10^{-3} Pa

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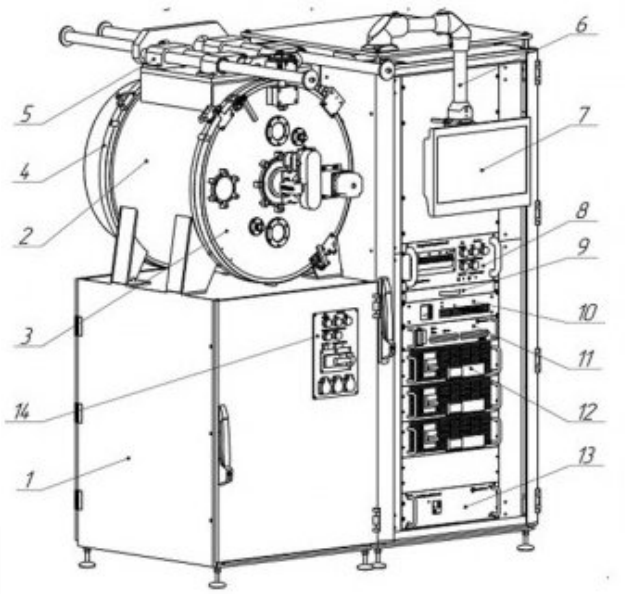
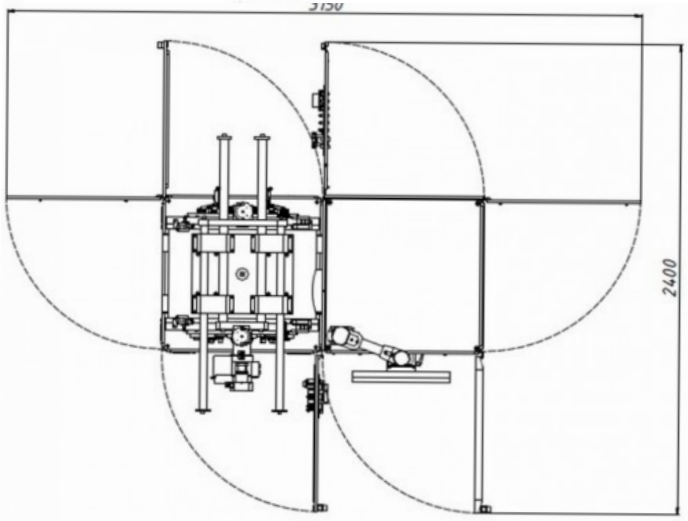
Components





1 - frame;
2 - vacuum chamber;
3 - drum flange;
4 - flange of technological devices;
5 - flange suspension;
6 - monitor arm;
7 - monitor;
8 - vacuum system control unit;
9 - shelf with keyboard;
10 - heater power supply;
11 - power supply unit of the ion source;
12 - magnetron power supply (3 pcs.) ;
13 - water distribution block;
14 - control panel;