



One-two-sided spraying unit NIKA-136



Universal unit for one or two-sided deposition of conductive and resistive layers of the NIKA-2013 series. Standard size chamber ($\text{Ø}700 \times 500 \text{ mm}$). The design allows spraying of substrates when changing the drum ($60 \times 48 \text{ mm}$) from one or both sides on one unit.

Loading can be installed on 2 types of carriers: for one-sided spraying 17 carriers, 6 pcs., Total load 102 substrates; for double-sided spraying 26 carriers of 3 pcs., total load of 78 substrates.

For the deposition of "thick" copper, an original design of a liquid-phase magnetron was used, which allows carrying out processes with a partial (half) load. The design and control systems of the installation allow for controlled heating of products up to 450 degrees and spraying with resistance control by witness in automatic mode.

Set of technological devices:

- Magnetron M-250 - 2 pcs.;
- Magnetron 2xD100K - 1 pc.;
- Ion source IBS -250 - 1 pc.;
- Substrate heater - 2 pcs.;
- Controlled damper - 1 pc.

All processes are automated. All operator actions, current process parameters are saved in the log. Remote control via the Internet is provided. A reliable interlocking system is provided.



IBS 250 - Ion source - 1 pc.



M-250 - magnetron - 2 pcs.



2x100K (Cu) - dual liquid phase magnetron



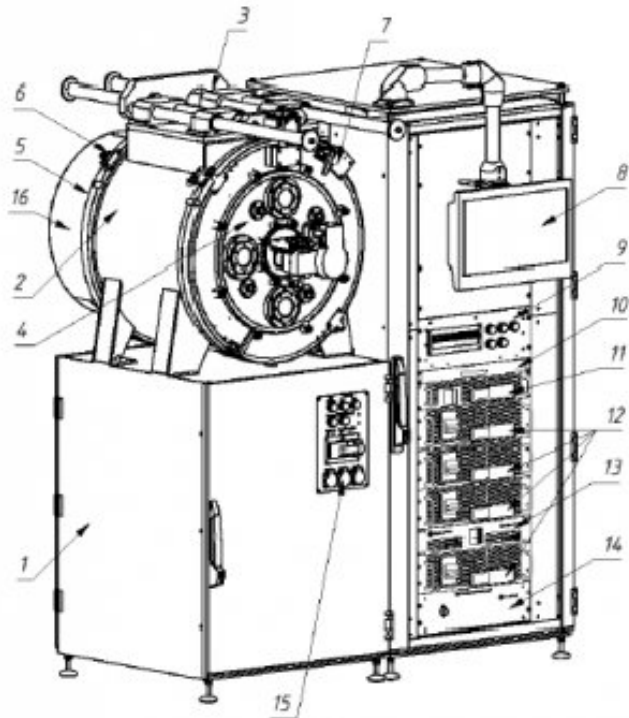
Heater L400 - Substrate heater - 2 pcs.

Parameters

Power	47 kW
Supply voltage	380V +10-15%
Time to reach working vacuum	not more than 2 h.
Number of gas injection channels	4
Maximum current consumption by phase	32 A
Mass	no more than 900 kg
Coolant solution	Distilled water, 20% ethyl alcohol in distilled water
Ultimate vacuum	no more than 3×10^{-4} Pa
Working gases	Ar, N ₂ , O ₂ , air
Overall dimensions	1618x1415x2053 mm (length x width x height)
Working vacuum	5×10^{-3} Pa

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Layout



- 1 - frame;
- 2 - vacuum chamber;
- 3 - side flange suspension system;
- 4 - drum flange;
- 5 - flange of technological devices;
- 6 - limit switch;
- 7 - flange locking electromagnet;
- 8 - monitor;
- 9 - vacuum system control unit;
- 10 - shelf with keyboard;
- 11 - ion source power supply unit;
- 12 - power supplies for magnetrons;
- 13 - heaters power supply unit;
- 14 - water distribution unit;
- 15 - control panel;
- 16 - FTU casing.

