



Magnetron sputtering unit NIKA-140



Classical unit for one-sided deposition of conductive and resistive layers of the 2013 series on substrates (60x48). Standard chamber ($\varnothing 700 \times 500$ mm), water-cooled. A single rack contains a camera, pumping equipment, power and control units, and technological devices.

The unit for the implementation of thin film spraying processes is equipped with:

- three L400 magnetrons for thin film deposition;
- Ion Beam Source II-400M for cleaning the surface of substrates;
- two heaters with a composite heating element;
- three channels for supplying working gases;
- drum with a set of carriers for substrates (60x48) mm.
- Total loading - 136 substrates, 1 to 0.5 mm thick.

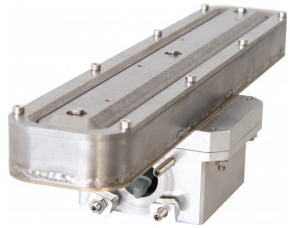
The control system is equipped with:

- 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.

Loading is carried out from the front (working) flange. All processes are automated, control from the touch panel of the computer. Remote control via the Internet is provided. All operator actions, current process parameters are saved in the log. Reliable interlocking system excludes accidental switching on of dangerous voltages, emergency situations. The NIKA-140 delivery set includes an automatic circulating water supply system (SOVA).

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Layout and characteristics



IBS 400 - Ion
Source - 1 pc.



Magnetron M 400
- 3 pcs.



Heater L400 - 2 pcs.



**Automatic water
recycling system
SOVA**

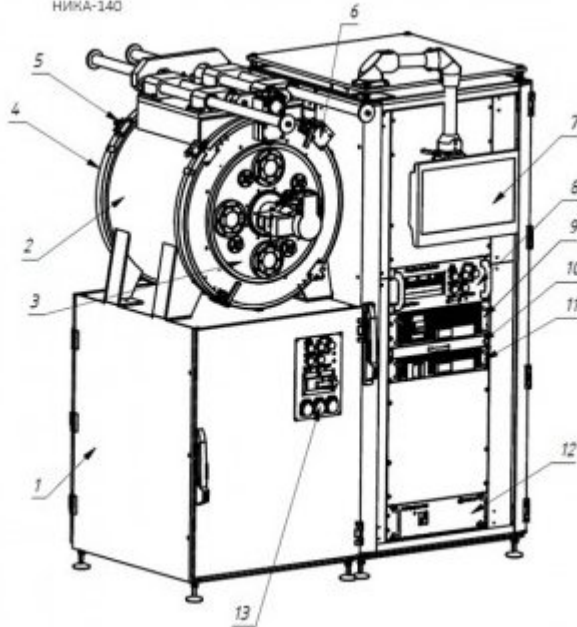
Parameter

Power	17 kW
Supply voltage	380 V +10-15 %
Time to reach ultimate vacuum	no more than 1 h.
Time to reach working vacuum	no more than 15 min.
Number of gas injection channels	3
Maximum current consumption by phase	32 A
Mass	no more than 900 kg
Coolant volume	no more than 12 l
Coolant	distilled water, 20% ethyl alcohol solution in distilled water
Ultimate vacuum no more than	3×10^{-4} Pa
Working gases	Ar, N ² , O ₂ , Air
Working vacuum	2×10^{-3} Pa



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Layout



- 1 - Frame with a vacuum system;
- 2 - vacuum chamber;
- 3 - drum flange;
- 4 - technological devices flange;
- 5 - limit switch;
- 6 - flange locking electromagnet;
- 7 - monitor;
- 8 - vacuum unit control system;
- 9 - power supply unit for magnetrons;
- 10 - shelf with keyboard;
- 11 - power supply unit for ion sources;
- 12 - water distribution block;
- 13 - control panel.

