Beams & Plasmas
Laboratory of vacuum technologies plus, LLC

Ion-plasma spraying unit NIKA-148

Vacuum ion-plasma spraying unit Nika 2012-500-148 is designed for the deposition of metal-film coatings on dielectric substrates of various configurations, thickness:
titanium - (0.5-30) microns;
molybdenum - (0.1-5) microns.

The vacuum chamber of the installation is equipped with:

- two electric arc evaporators;
- heater;
- radio frequency plasma generator RFPG-128 (RPG);
- a damper for overlapping EDI;
- carousel with media rotation with substrates (12 pcs.);
- vacuum input of the carousel rotation;
- infrared pyrometer Optis CTlaser 3MH-SF-CB3.

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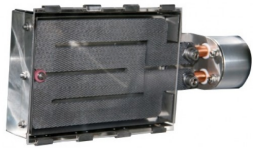
Layout and characteristics



Heater L200

RPG-128 (RPG) - radio frequency plasma generator

Electric arc evaporator – 2 pcs.

Power	24 kW
Maximum power consumption	no more than 8 kW
Supply voltage	380 V (+ 10-15)%
Connection	TN-S
Maximum current consumption on phases	32A
Weight (excluding OWL, foreline pump)	no more than 750 kg
Ultimate vacuum	no more than 7 10-5 Pa
Time to reach ultimate vacuum (from the moment the shutter is opened)	no more than 30 min
Maximum working temperature Heat treatment of substrates after spraying	350 ° C
Holding time during heat treatment	120 min
Working gases	argon, nitrogen
Number of gas injection channels	2
Coolant	(recommended) distilled water, 20% ethyl alcohol solution in distilled water
Coolant volume	15 l
Cooling liquid consumption	no more than 15 l / min

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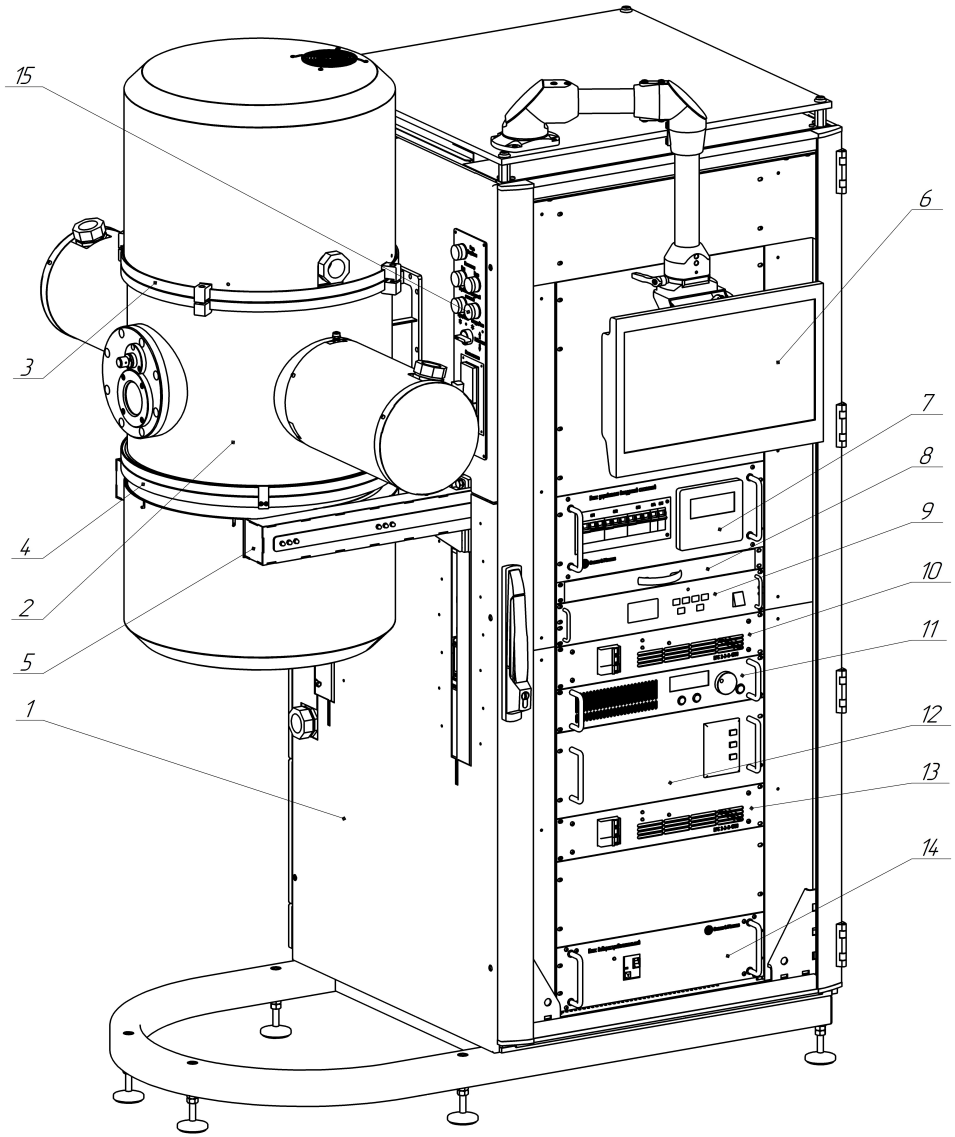
Components



1 - frame;
2 - vacuum chamber;
3 - upper flange;
4 - bottom flange;
5 - lifting frame;
6 - monitor;
7 - vacuum system control unit;
8 - shelf with keyboard and mouse;
9 - controller TMH TCDP-II;
10 - heater power supply unit;
11 - HF generator GA-13.1.A7;
12 - power supply for the arc evaporator IPD-70-2.0;
13 - bias potential power supply unit BPS 2-3-2-1500;
14 - water distribution block.
15 - control panel.

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Layout