

6.15. LASER INSTALLATION BASED ON COPER VAPORS

Lasers based on copper vapors (LCV), generating radiation in the visible spectrum with wavelengths of 510.6 and 578.2 nm (green and yellow), are used in medicine, biology, show business, advertising, navigation, scientific instruments, etc. With increasing the generation power, LCV can be used in the technologies of extremely-precise processing and obtaining of ultrapure materials, in technological processes of isotope selection.



The main types of magnetic-semiconductor generators (MSG) for LCV, as well as for electric discharge treatment of water and other electropulse technologies, are developed at the Institute. The indicated MSGs can be scaled by power, voltage, frequency of output pulses and other MSG parameters.

MSG advantages:

- during operation, a periodic replacement of the switching element is not required (the thyatron is absent);
- the service life of a magnetic-semiconductor generator is not less than 20,000 hours.

Main technical specifications:

Power supply, V / Hz	single-phase, 220/50
Average radiation power , W	1,5*
Pulse-repetition frequency, kHz	16...18
Power consumption, kW	1,2
Weight, kg	15

* when using more powerful active laser elements, the executions on 3...5 and 7...10 W are possible.