

A WIDE-BAND ELECTRODISCHARGE SOURCE
OF RADIATION AT LOW PRESSURE ON
MIXTURE OF INERT GASES WITH
MOLECULES OF CHLORINE

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S u m m a r y

The results of optimization of the output characteristics of a wide-band source of radiation at low pressure, which works in the spectral range 170 - 310 nm are presented. The working mixtures Ar/Kr/Cl₂, Ar/Xe/Cl₂, and Kr/Xe/ Cl₂ were excited in the longitudinal glow discharge of a direct current. It was established that, at a pressure of gas mixtures $P \leq 3 - 4$ kPa and a partial pressure of chlorine 0.16 - 0.4 kPa, the spectrum of radiation of a discharge represents one broad band, which was formed on the basis of the electron-oscillatory bands of monochlorines Ar, Kr, Xe and band with $\lambda = 258$ nm from Cl₂ ($D' - A'$). The optimization of the value of brightness UV - VUV depending on both pressure and the composition of working mixtures and the value of a discharge current was conducted. The power of the short-wave radiation from all lateral area of a discharge tube was within the limits of 3 - 5 W at an efficiency of 10 - 15%. Wide-band sources of continuous operation on chlorines Ar, Kr, and Xe can be used in photometry, microelectronics, and medicine.