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Design of constant gradient TW linac tubes for the Iranian Light Source Facility (ILSF)

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The Iranian Light Source Facility (ILSF) is a 3 GeV low-emittance synchrotron light source laboratory for scientific research with a very bright X-ray source in various applications. ILSF's pre-injection system consists of a 2~3 MeV thermionic RF gun with an alpha compressor magnet and six constant gradient TW linac tubes. Each linac tube is 3 meters long with a minimum field gradient of 10 MV/m. To evaluate the design method of the constant gradient linac tubes, a smaller section of such tubes is designed and tuned to the desired operating frequency. The design of this short tube is presented in this report.

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