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High Current High Voltage Gas Discharge Tube. W. R. BAKER, Q. A. KERNS, JACK REIDEL, R. F. EDWARDS. University of California, Radiation Laboratory, Berkeley, California.--

This paper describes a high current, high voltage gas discharge tube developed at the Radiation Laboratory of the University of California under the auspices of the Atomic Energy Commission, for use on a high voltage pulse generator to drive the 184-inch Cyclotron Electric Deflector. The tube is continuously pumped and is filled with helium or hydrogen at 200 to 1000 microns pressure. An unorthodox arrangement of electrodes, in which the firing mechanism is outside the two main electrodes, results in a tube with the following performance; peak current, 50,000 amperes, plate voltage, variable from several hundred volts to 20 kv. time jitter of less than 0.005 μs, lead inductance, less than 0.005 μh, repetition rate, 180 pulses per second, pulse length 0.1 μs, for above data, but longer at reduced currents.

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