

# Electroluminescence yield in pure krypton

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The krypton electroluminescence yield was studied, at room temperature, as a function of electric field in the gas scintillation gap. A large area avalanche photodiode has been used to allow the simultaneous detection of the electroluminescence pulses as well as the direct interaction of x-rays, the latter being used as a reference for the calculation of the number of charge carriers produced by the electroluminescence pulses and, thus, the determination of the number of photons impinging the photodiode. An amplification parameter of 113 photons per kV per drifting electron, a scintillation threshold of 2.7 Td and an ionisation threshold of 13.5 Td was obtained. The krypton amplification parameter is about 80% and 140% of those measured for xenon and argon, respectively. The electroluminescence yield in krypton is of great importance for modeling krypton-based double-phase or high-pressure gas detectors, which may be used in future rare event detection experiments.

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No, this is an entirely new submission.

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**Primary authors:** Mr MANO, R.D.P. (LIBPhys-UC); Dr MONTEIRO, C.M.B. (LIBPhys-UC)

**Presenter:** Mr MANO, R.D.P. (LIBPhys-UC)

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