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abstract

The Visible Light Photon Counter (VLPC) has the capability to discriminate photon number states, in contrast to conventional photon counters which can only detect the presence or absence of photons. We use this capability, along with the process of parametric down-conversion, to generate photon number states. We experimentally demonstrate generation of states containing 1, 2, 3 and 4 photons with high fidelity. We then explore the effect the detection efficiency of the VLPC has on the generation rate and fidelity of the created states.