



## Systems, Methods, And Media For High Dynamic Range Imaging Using Dead-Time-Limited Single Photon Detectors

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**WARF: P180115US01**

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### The Invention

In accordance with some embodiments, systems, methods and media for high dynamic range imaging using dead-time-limited single photon detectors are provided. In some embodiments, a system for high dynamic range imaging is provided, comprising: an image sensor comprising: a pixels comprising: a single photon detector having dead time  $\tau_d$ ; and a counter coupled to an output of the single photon detector, wherein the counter is configured to increment in response to a signal indicative of detection of a photon output by the single photon detector; and a processor that is programmed to: read out a value stored by the counter after an exposure time has elapsed; and calculate an intensity for the pixel based on the value and the dead time  $\tau_d$ .

### Additional Information

#### For More Information About the Inventors

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#### Tech Fields

- [Information Technology : Computing methods, software & machine learning](#)

For current licensing status, please contact Michael Carey at [mccarey@warf.org](mailto:mccarey@warf.org) or 608-960-9867