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# A method for measuring digital camera noise by automatic segmentation of a striped target

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## Abstract

Currently, cameras are widely used in scientific, industrial and amateur tasks. Thus, one needs to be able to quickly evaluate characteristics and capabilities of a particular camera. A method for measuring noise components of the camera photosensor is proposed. It allows one to estimate shot noise, dark temporal noise, photo response non-uniformity and dark signal non-uniformity. For noise measurement, just two images of the same scene need to be registered. The scene consists of several stripes (quasihomogeneous regions). Then the images are processed by automatic signal segmentation. The performance and accuracy of the proposed method are higher than or equal to other fast methods. The experimental results obtained are similar to those derived using a time-consuming standard method within a measurement error.

**Keywords:** digital cameras; sensors; digital image processing; image segmentation; shot noise; photo response non-uniformity.

**Citation:** Evtikhiev NN, Kozlov AV, Krasnov VV, Rodin VG, Starikov RS, Cheremkhin PA. A method for measuring digital camera noise by automatic segmentation of a striped target. *Computer Optics* 2021; 45(2): 267-276. DOI: 10.18287/2412-6179-CO-815.

**Acknowledgements:** This work was supported by the MEPhI's Competitiveness Growth Program.

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*Received September 25, 2020. The final version – December 16, 2020.*

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