


EMVA1288



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Standard for Measurement and Presentation of Specifications for Machine Vision Sensors and Cameras

Choosing the suitable camera for a given machine vision application often proves to be a challenging task. The data sheets provided by the manufacturers are difficult to compare. Frequently, vital pieces of information are not available and the user is forced to conduct a costly comparative test which still may fail to deliver all relevant camera parameters. This is where the EMVA 1288 Standard comes in. It creates transparency by defining reliable and exact measurement procedures as well as data presentation guidelines and makes the comparison of cameras and image sensors much easier.

EMVA has launched an initiative to define a unified method to measure, compute and present specification parameters for cameras and image sensors used for machine vision applications. Application of this standard will be at the benefit of the customers of vision components manufacturer. It will avoid misunderstanding and reduce pre and post support cycles.

The Standard is elaborated by a consortium of the industry leading Sensors and Camera manufacturers, Distributors and component customers. The Standard is organized in a linear Appendix. The first Module was officially released by the Working Group in October 2008.

December 2, 2010

EMVA 1288 standard release 3.0 is final and available for download

After the voting period for release 3.0 of the EMVA 1288 standard ended on November 26, 2010 and there were no objections against its publication, release 3.0 has now become final and is available for download.

EMVA 1288 provides the basis for an objective specification of cameras and image sensors. It characterizes image sensing equipment based on physical parameters and defines measurement procedures as well as data presentation guidelines.

Release 3.0 is a major revision and improvement over release A2.01.

It has been developed by a working group that unifies over 20 leading manufacturers, vision users and research institutes. Release 3.0 covers:

- Spectral sensitivity
- Signal/Noise Ratio (maximal SNR, dynamic range, dark noise)
- Inhomogeneities (DSNU, PRNU)
- Linearity
- Defect pixels
- Colour

The standard is applicable to line scan and area scan cameras/image sensors.

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Linear Signal Model

- Linear Signal Model

$$\mu_y = \mu_{y, dark} + K \eta \frac{\lambda A}{hc} Et_{exp}$$

- Analyzed by the photoresponse plot $\mu_y = f(E t_{exp})$
- A linear fit through the non-saturated (< max variance) data points gives $\mu_{y, dark}$ and

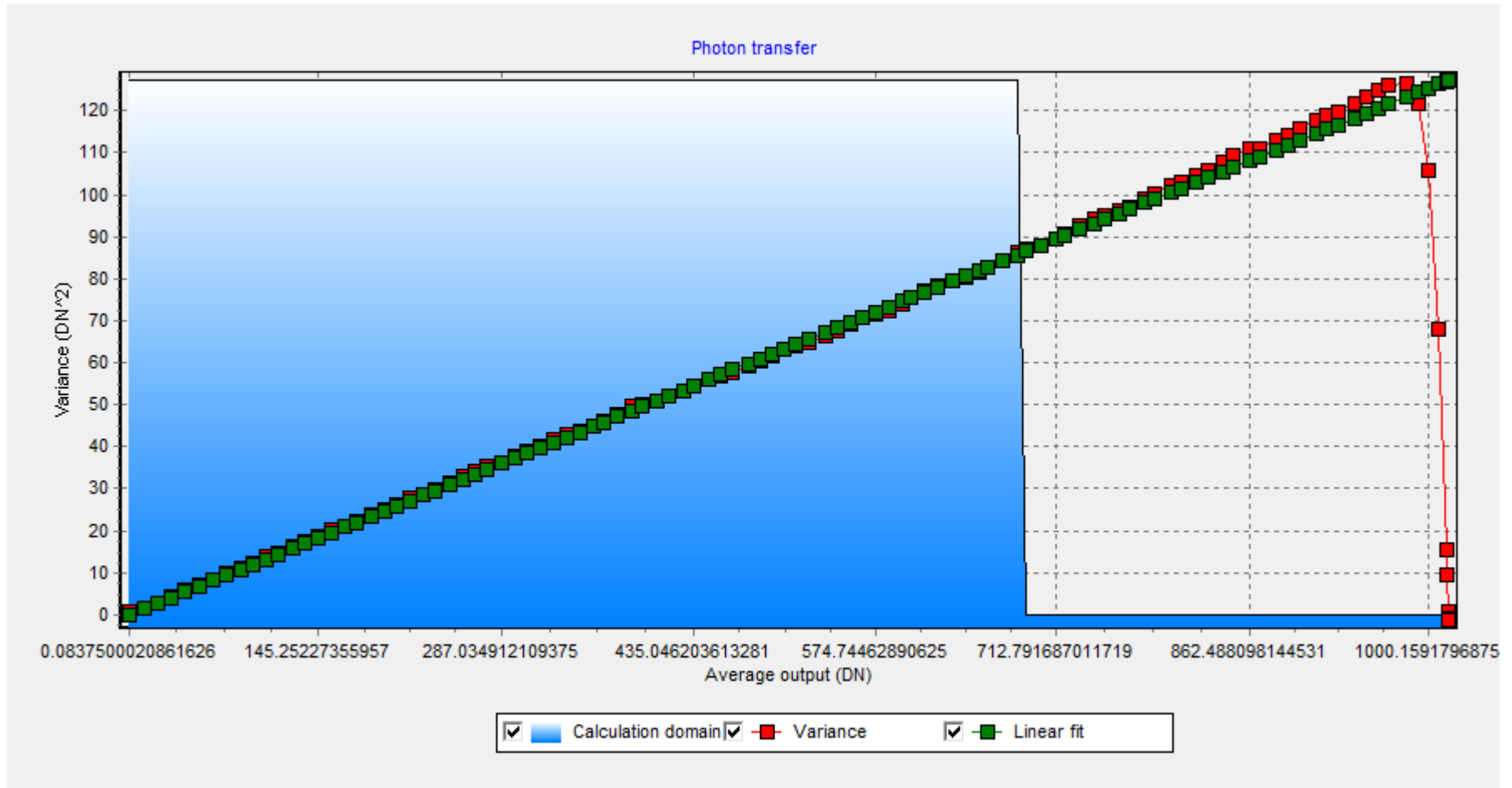
$$K \eta \frac{\lambda A}{hc}$$



Monochromatic Light Source



Defects found using the standard



Defects found using the standard

