Description of SPC³ characterization files

SPC³ cameras are fully characterized before shipping by MPD. Some characterization files are included in the provided USB key. This document describes how to read and understand them.

Dark counting rate cumulative distribution - BG_CumDistribGraph.tif

This file shows the cumulative distribution of the dark counts over all the pixels of the imager. The distribution is obtained ordering in ascending order the dark counting rate of all the pixels and normalizing the x axis to 100%. It has to be read as follows. Given a desired maximum dark counting rate, represented on the y axis, the percentage of pixels below that value is given by the corresponding x value.

Dark counting rate map – DCR_50ns_averaged.spc3

This file shows a map of the dark counting rate over all the pixels of the imager when measured with a dead-time of 50ns and averaging the acquired data over 100 frames 104 ms long. The DCR is thus shown in counts per frame (of 104ms). The file can be opened using ImageJ with the provided SPC3 plugin.

Detection efficiency map – SPC3_SNxx_PDE_50nm_efficiency.spce

This file contains the map of the detection efficiency over all the pixels of the imager. xx refers to the serial number of the module. The file is a movie composed by 13 frames, each corresponding to a different wavelength, starting from 400 nm and ending at 1000 nm in 50 nm steps. For each pixel, the value reported corresponds to the measured PDE percentage multiplied by 100, i.e. a value of 3856 corresponds to a PDE of 38.56%. The file can be opened using ImageJ with the provided SPC3 plugin.

Detection efficiency average – SPC3_SNxx_PDE.xlsx

This file contains the SPC3 detection efficiency averaged over all the pixel of the imager as a function of the wavelength. xx refers to the serial number of the module.

Note on ImageJ processing

We found out that some ImageJ processing plugins, in particular *Stack 3D Surface Plot*, may contain some bugs, depending on your ImageJ version. Imported data from spc3 files are correct as far as no processing is applied. Please be careful when applying any processing, since other bugs may be present. For further details, contact MPD at info@micro-photon-devices.com

Copyright and disclaimer