

GPixel Sensor MFG's Blemish Definitions: G400BSI Device

Defect Name	Defined Definition
Bad Pixel in half-saturation images	Any pixel deviating more than 15% from the mean value of the half-saturation images (either HG or LG channel)
Bad Pixel in saturation images	Any pixel deviating more than 10% from the mean value of the saturation image (LG channel)
Total Defect Pixels	The total number of non-overlapping bad pixels in half saturation images and in saturation images
Cluster	The defect pixels that are adjacent (horizontal, vertical or diagonal) are considered a cluster.
Cluster (3x3)	Any cluster with size of 3-9 pixels is considered a cluster (3x3)
Cluster (5x5)	Any cluster with size of 10-25 pixels is considered a cluster (5x5)
Defect Row	Any row with its mean value deviating more than 5% from the mean value of the half-saturation images (either HG or LG channel). Any row with its mean value deviating more than 5% from saturation image of the LG channel Or a row with more than 100 defect pixels
Defect Column	Any column with its mean value deviating more than 5% from the mean value of the half-saturation images (either HG or LG channel). Any column with its mean value deviating more than 5% from saturation image of the LG channel Or a column with more than 100 defect pixels

GPixel Sensor MFG's Defect Limits: G400BSI Device

Defect Name	Grade 1 Sensor
Defect Pixel	30
Cluster (3x3)	1
Cluster (5x5)	0
Cluster (>5x5)	0
Defect row/column (total)	0
2 Adjacent rows/columns (total)	0
> 2 Adjacent rows/columns (total)	0

Notes:

1. Any cluster with size > 25 pixels is considered as a cluster (>5x5).
2. Sensor manufacturer's defect limits above guaranteed under rolling shutter HDR Mode operation with PGA Gain of 1.29X for LG and 7.25X for HG.

GPixel Sensor MFG's Blemish Testing Protocol: G400BSI Device

GPixel Factory Testing Process for Blemish Specification Adherence

Definition of Collected Test Data for Sensor Blemish Requirements

Image Level	Definition
Dark	In a dark environment and with an exposure time of 1-line time, 20 images are grabbed and averaged, for HG and LG individually.
Grey	10 images at half-saturation are grabbed and averaged, for HG and LG channel individually.
Saturation	2 images at saturation are grabbed and averaged, for LG channel only.
Half-saturation images for HG and LG Channels	The half-saturation image for the HG channel is constructed by subtracting the HG Dark image from the HG Grey image. The half-saturation image for the LG channel is constructed by subtracting the LG Dark image from the LG Grey image.
Saturation image	Saturation image is constructed by subtracting the LG Dark image from the LG Saturation image.

Notes:

1. All test images generated using GPixel's GSENSE400BSI evaluation system with a light source of uniformity better than 98%.
2. GSENSE400BSI sensor unit under test is configured in HDR mode with default settings.
3. No image correction algorithms are applied to any acquired test images.
4. All test image data taken at room ambient +25C (no active cooling applied to sensor)