

Blemish Specification

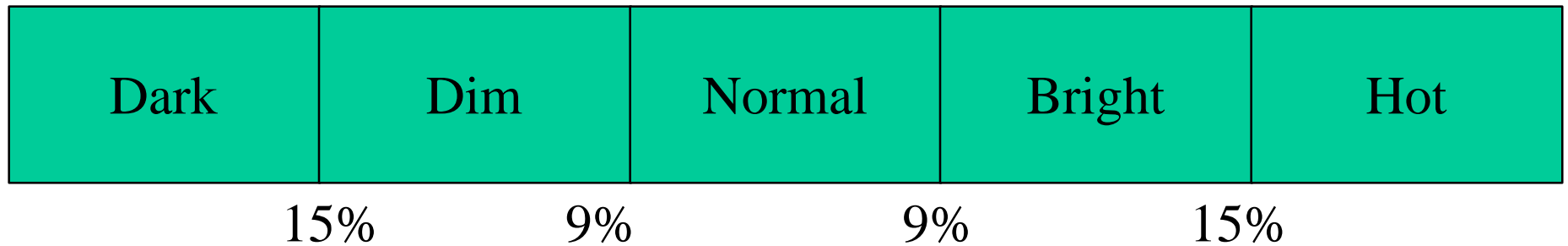
- This document describes the procedure and specification that Agilent Technologies uses to classify CMOS image sensors.
- Defects can be from a variety of sources:
 - Electrically variant pixels
 - Contaminants present within the package
 - Inclusions on the cover glass of the package

Definitions

- Pixels which are more than 15% brighter than than the mean pixel are label “hot”
 - Bright pixels are between 9% and 15% brighter than the mean
- Pixels which are more than 15% darker than than the mean pixel are label “dark”
 - Dim are between 9% and 15% less than the mean

Measuring Pixels

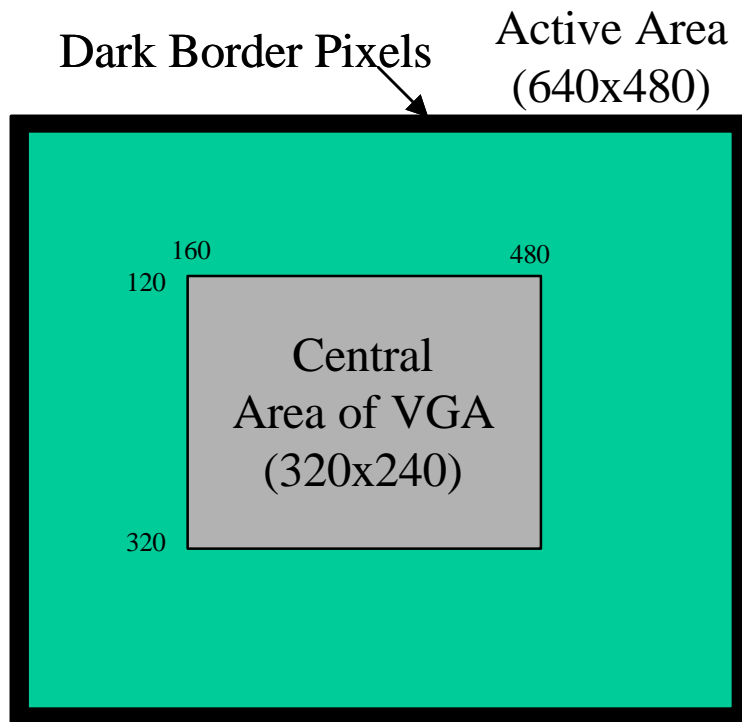
Distance from the mean pixel



Intensity Deviation from the Average Pixel

Definitions

- Defective pixels can be either too dark or too bright. These are treated similarly.
- A cluster is a group of adjacent pixels.
- A *spot* is a cluster with 5 or more hot or dark pixels.
- An *area* defect is a cluster of 25 or more dim pixels.
- Small Clusters are defined in the table below.
- *Large* cluster is any grouping larger than a small cluster



Small Cluster Definition *# of defective pixels allowed*

# Dark/Hot	#Dim/Bright	Total
4	0	4
3	0-2	5
2	0-3	5
1	2-5	3-6

Note Central Area on CIF part: 176x144 pixels

Allowable Blemishes

Spot	No
Area	No
Large Cluster	No
Small Cluster in Central Area	No (VGA) Yes (3 Allowed for CIF)
Small Cluster outside Central Area	Yes (3 Allowed)
Hot or Dark Pixels	Yes (10 allowed)