

## BenQ LCD Monitor Dead Pixel Policy

Panel manufacturers set limits as to how many defective dots (or sub-pixels) are deemed to be acceptable on any LCD panel.

BenQ's manufacturer warranty covers any defects that exceed the defect specifications described in this document.

LCD displays are made of pixels. Each pixel is made up of a red, green and blue sub-pixel, and each sub pixel is driven by an individual transistor. If a transistor becomes defective, the corresponding dot may be permanently light (bright) or may not light (dark). Independently of the brand and the manufacturer, it is common for one or more sub-pixels to become fixed in an unchanging state.

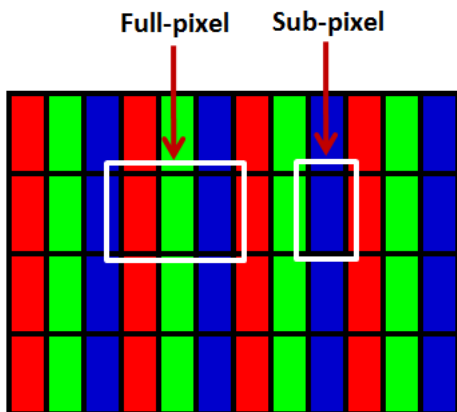
The defective sub-pixel phenomenon is as follows:

- (1) Color white - a bright/hot sub-pixel (always ON)
- (2) Color black - a dark/dead sub-pixel (always OFF)
- (3) Color red, green or blue - a stuck sub-pixel (always ON or always OFF)

### Pixel Structure with Illustrations:

- **Full-pixel vs. sub-pixel**

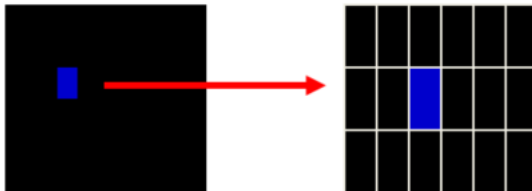
A full pixel consists of one red, green, and blue sub-pixel.



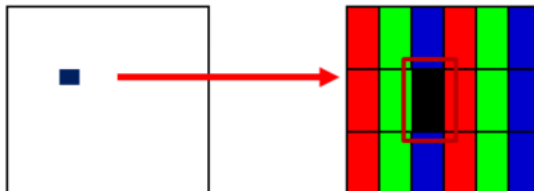
- **Bright and Dark Sub-pixel**

A bright sub-pixel is one that is fully lit. In the following example the blue sub-pixel remains lit even when the surrounding sub-pixels are unlit.

Bright sub-pixel:



Dark sub-pixel - A sub-pixel that is always colored on a white background.



- **Criteria of a Sub-Pixel Defect**

Sub-Pixel Defect	Criteria
Definition of Sub-Pixel Defect	<ul style="list-style-type: none"> <li>● A red, blue, and green sub-pixel that is always lit on a black background of an LCD screen is deemed a bright sub-pixel.</li> <li>● A pixel that is always dark or colored on a white background of an LCD screen is deemed a dark pixel. Dark sub-pixels are not covered by this policy.</li> </ul>
Usage Conditions	<ul style="list-style-type: none"> <li>● Ambient illuminance is more than 200 lux (or typical office environment)</li> <li>● Viewing distance is more than 35 cm</li> </ul>

## Maximum Number of Defects

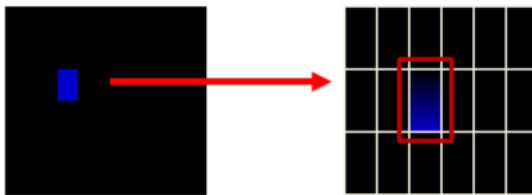
Based on the Criteria of a Sub-Pixel Defect, the specification for the number of defects that is deemed to be acceptable for each size of LCD panel are:

Panel Type	Native Resolution	Bright sub-pixel	Dark sub-pixel	Total Allowable Sub-pixel
Smaller than FHD	Smaller than 1920x1080	3	3	5
Full HD (FHD)	1920x1080 (1080p)	2	5	5
Quad HD (QHD)	2560x1440 (1440p)			
Ultra HD (UHD)	3840x2160 (4K)			

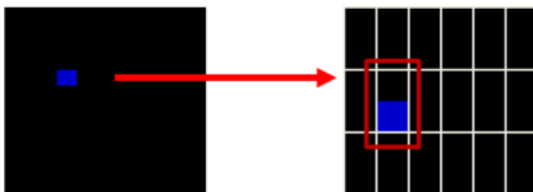
Note: BenQ reserves the right to make final judgement of warranty claim after closer examination or evaluation of the LCD panel of your BenQ LCD Product based on the specification aforementioned.

## Symptoms Not Considered as a Sub-Pixel Defect

Bright sub-pixel that is partially lit – type A



Bright sub-pixel that is partially lit – type B



Foreign substance

