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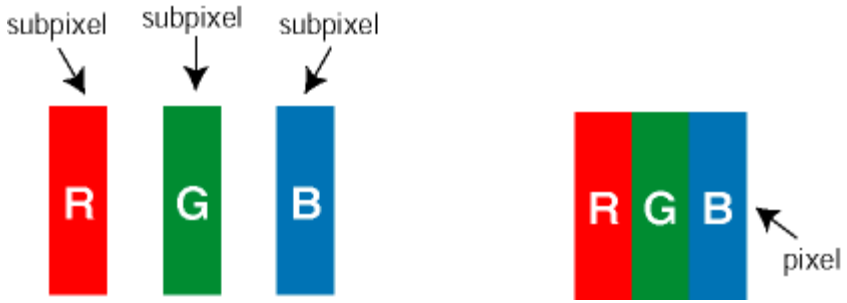
Philips' Flat Panel Monitors Pixel Defect Policy

Philips strives to deliver the highest quality products. We use some of the industry's most advanced manufacturing processes and practice stringent quality control. However, pixel or subpixel defects on the TFT LCD panels used in flat panel monitors are sometimes unavoidable. No manufacturer can guarantee that all panels will be free from pixel defects, but Philips guarantees that any monitor with an unacceptable number of defects will be repaired or replaced under warranty. This notice explains the different types of pixel defects and defines acceptable defect levels for each type. In order to qualify for repair or replacement under warranty, the number of pixel defects on a TFT LCD panel must exceed these acceptable levels. For example, no more than 0.0004% of the subpixels on a 15" XGA monitor may be defective. Additionally, because some types or combinations of pixel defects are more noticeable than others, Philips sets even higher quality standards for those.



Pixels and Subpixels

A pixel, or picture element, is composed of three subpixels in the primary colors of red, green and blue. Many pixels together form an image. When all subpixels of a pixel are lit, the three colored subpixels together appear as a single white pixel. When all are dark, the three colored subpixels together appear as a single black pixel. Other combinations of lit and dark subpixels appear as single pixels of other colors.

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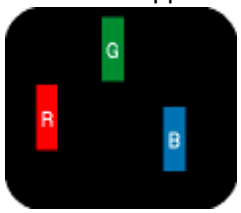
Types of Pixel Defects

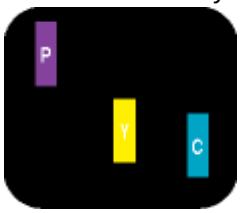
Pixel and subpixel defects appear on the screen in different ways. There are two categories of pixel defects and several types of subpixel defects within each category.

Bright Dot Defects

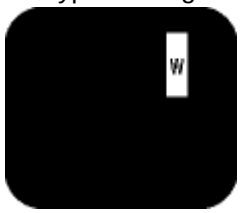
Bright dot defects appear as pixels or subpixels that are always lit or "on". These are the types of bright dot defects:



One lit red, green or blue subpixel



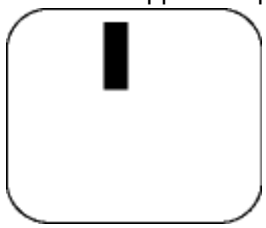
Two adjacent lit subpixels:
- Red + Blue = Purple
- Red + Green = Yellow
- Green + Blue = Cyan (Light Blue)



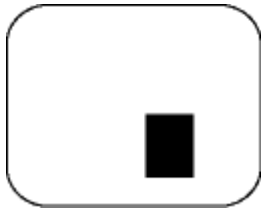
Three adjacent lit subpixels (one white pixel)

Black Dot Defects

Black dot defects appear as pixels or subpixels that are always dark or "off". These are the types of black dot defects:



One dark subpixel



Two or three adjacent dark subpixels

Proximity of Pixel Defects

Because pixel and subpixels defects of the same type that are nearby one another may be more noticeable, Philips also specifies tolerances for the proximity of pixel defects.

Pixel Defect Tolerances

In order to qualify for repair or replacement due to pixel defects during the warranty period, a TFT LCD panel in a Philips flat panel monitor must have pixel or subpixel defects exceeding the tolerances listed in the following tables.

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BRIGHT DOT DEFECTS	Perfect Panel	ZERO Bright-Dot	ZERO Bright-Dot					
MODEL	170X5** 170X6 190X5** 190B6 170B6 190P6 170P6 190X6	170X5	190X5	150C5 150S6 170C5 170S6 170C6	190S6 190V6	200W6	200P6	230W5
1 lit subpixel	0	0	0	≤ 4	≤ 3	≤ 3	≤ 4	≤ 3
2 adjacent lit subpixels	0	0	0	≤ 2	≤ 1	≤ 1	≤ 2	≤ 1
3 adjacent lit subpixels (one white subpixel)	0	0	0	0	0	0	0	0
Distance between two bright dot defects*	0	0	0	≥ 15 mm	≥ 25 mm	≥ 15 mm	≥ 15 mm	≥ 25 mm
Bright dot defects within 20mm circle*	0	-	-	-	-	N/A	-	-
Total bright dot defects of all types	0	0	0	≤ 4	≤ 3	≤ 3	≤ 4	≤ 3

BLACK DOT DEFECTS								
MODEL	170X5** 170X6 190X5** 190B6 170B6 190P6 170P6 190X6	170X5	190X5	150C5 150S6 170C5 170S6 170C6	190S6 190V6	200W6	200P6	230W5
1 dark subpixel	0	≤ 4	≤ 4	≤ 4	≤ 5	≤ 5	≤ 4	≤ 5
2 adjacent dark subpixels	0	≤ 1	≤ 2	≤ 2	≤ 2	≤ 2	≤ 2	≤ 2
3 adjacent dark subpixels (one white subpixel)	0	0	0	0	0	0	0	1
Distance between two bright dot defects*	0	≥ 15 mm	≥ 15 mm	≥ 15 mm	≥ 15 mm	≥ 15 mm	≥ 15 mm	≥ 15 mm
Black dot defects within 20mm circle*	0	-	-	-	-	N/A	-	-
Total black dot defects of all types	0	≤ 4	≤ 4	≤ 4	≤ 5	≤ 5	≤ 4	≤ 5

TOTAL DOT EFFECTS								
MODEL	170X5** 170X6 190X5** 190B6 170B6 190P6 170P6 190X6	170X5	190X5	150C5 150S6 170C5 170S6 170C6	190S6 190V6	200W6	200P6	230W5
Total bright or black dot defects of all types	0	≤ 4	≤ 4	≤ 5	≤ 5	≤ 5	≤ 5	≤ 5

* 1 or 2 adjacent subpixel defects = 1 dot defect
** From March production onwards

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Perfect Panel Warranty

hilips Perfect Panel™ warranty ensures that your new Philips monitor is free from bright and dark dot defects * and is our way of assuring you unsurpassed product quality. Under the Philips Perfect Panel™ warranty, Philips industry-leading warranty service network will repair or replace any panel that has a single bright or dark dot defect *. Philips Perfect Panel™ warranty coverage begins from the day you buy your monitor for one year.

* Pixel defects as defined in the ISO 13406-2 Class I standard

Note: Philips worldwide service centers have the right to return to you any monitor turned-in for repair or exchange if they are found to be defect-free under the Philips Perfect Panel Warranty policy.