

Understanding pixel and sub-pixel defects:

What is a pixel?

Short for picture element, a **pixel** is a single point in a graphic image. HP TouchSmart PCs, All-in-One PCs and LCD flat panel monitors display pictures by dividing the display screen into thousands (or millions) of pixels, arranged in rows and columns. The pixels are placed close together so that they appear connected.

A **full pixel** is a combination of one red, one green, and one blue **sub-pixel**.

What are pixel and sub-pixel defects?

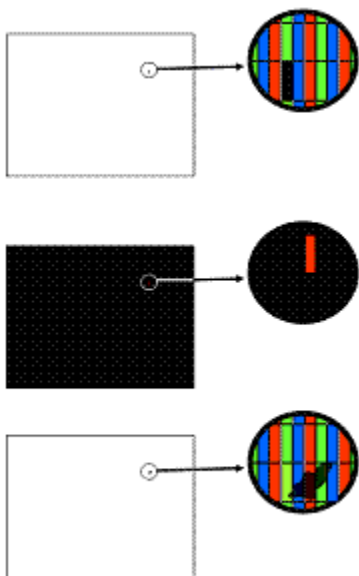
A **full pixel defect** is a bright white dot or very noticeable black dot on the display. No full pixel defects are allowed per HP's monitor specification.

A **sub-pixel defect** is also referred to as a dot defect.

Bright dot sub-pixel defects are permanently "on", displaying a colored red, green, or blue spot on the display at all times.

Dark dot sub-pixel defects are permanently "off", displaying a black dot on the display at all times.

A different type of defect caused by microscopic contaminants within the manufacturing process can also be found. Contamination results in a dark "stain" covering one or several sub-pixels. They are not pixel or sub-pixel defects per say. No contamination is allowed under HP policy.



Dark sub-pixel defect - In this image, a dark spot on a white background results from a green sub-pixel, which is in the "off" or dark state.

Bright sub-pixel defect - In this image, a bright spot on a black background is caused by sub-pixels (in this case, a red sub-pixel) in the "on" state.

Debris trapped within the LCD structure can result in dark spots, but under magnification these are distinguished from an "off" sub-pixel, as the shape of the contaminating particle is visible.

Understanding HP pixel policy

The policy that applies to your monitor depends on the date of manufacture of your display. The following policies apply during the HP limited warranty period:

Policy for HP monitors and All-in-One PCs manufactured in May 2009 or later:

Bright sub-pixel defects 2 maximum

Dark sub-pixel defects 5 maximum

Total combined bright and dark sub-pixel defects 5 maximum

Full Pixel Defects pixel defects: 0 allowed

Policy for HP monitors and All-in-One PCs manufactured before May 2009:

Bright sub-pixel defects 3 maximum

Dark sub-pixel defects 5 maximum

Total combined bright and dark sub-pixel defects 5 maximum

Full Pixel Defects pixel defects: 0 allowed

The manufacture date can be found on a label adhered to the back of the monitor or All-in-One PC.

HP's Zero Bright Dots Guarantee for Performance Displays

For most HP Performance displays, HP guarantees zero bright dots.

This policy applies to Z24i, Z27i, Z30i, Z22n, Z23n, Z24n, Z24nf, Z24nq, Z25n, Z27n, Z24x, Z27x, Z27s, Z27q, Z24s, Z34c, Z32x, HC240, HC270 (regardless of manufacture date):

Bright sub-pixel defects 0 maximum

Dark sub-pixel defects 4 maximum

Total combined bright and dark sub-pixel defects 4 maximum

Full Pixel Defects pixel defects: 0 allowed

[note:](#)

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