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LCD Panel Defect Specifications - Warranty Replacement Criteria

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DESCRIPTION

This document is intended to provide HP support personnel with a detailed description of the various cosmetic and manufacturing defect conditions associated with LCD Panels, and the specific inspection criteria to be used when determining the need for replacement.

SCOPE

All HP notebook computers. Minor cosmetic imperfections are common to all LCD Panel vendors and are not specific to any HP model or product line.

RESOLUTION

HP procures LCD panel products from a variety of LCD suppliers, all of which are required to adhere to HP's strict quality and reliability specifications. Nevertheless, a small percentage of LCD Panels may have certain cosmetic defects which may appear as bright or dark dots in the viewable areas of the LCD Panel itself. Following are a few terms and definitions commonly used in association with LCD Panels and LCD Panel technology:

LCD Panel Technology Commonly Used Terms:

PIXEL: Picture element; A pixel consists of 1 Red, 1 Green and 1 Blue sub pixels - commonly referred to as dots.

DOT: Dots are one of three colors (R, G, or B). Sub pixel transistor or dot failures may manifest in different ways:

- ALWAYS ON - Bright dot on a dark background
- ALWAYS OFF - Dark dot on a bright background

SPOT: A spot is usually referring to some optical distortion due to foreign material contamination inside the cell. Spots are usually seen as small irregular dark areas.

LINES: Lines appearing in the display pattern of the LCD. Lines may appear dark or bright and may be displayed in a horizontal or vertical position.

POLARIZER DENT: Physical damage to the Polarizer, which does not damage the glass. Dents may be observed when the LCD is illuminated, and may appear as ghosted white lines or with dark display patterns. Polarizer dents are most likely to appear as pockmarks due to

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striking the display, which is considered a form of misuse and is not covered by the HP worldwide limited warranty.

POLARIZER BUBBLE: Tiny air pockets behind the Polarizer.

POLARIZER SCRATCH: Physical damage to the Polarizer, which does not damage the glass.

REPLACEMENT CRITERIA: HP uses the following set of criteria when damaged LCD's are submitted for warranty coverage:

IMPORTANT NOTE: All LCD panel defects should be examined at the highest possible resolution using both the brightest and darkest possible backgrounds, as some sub pixel failures may not be readily visible under certain conditions.

- For dots always on
 - XGA Panel (WXGA, WUXGA)
 - 6 or more dots any combination/any color always on
 - Any 2 dots within 1" of each other always on
 - More than 3 green dots always on
 - SXGA Panel (WSXGA, WSXGA+)
 - 9 or more dots any combination/any color always on
 - Any 2 dots within 1" of each other always on
 - More than 5 green dots always on
- For dots always off
 - 6 and more dots always off (XGA and SXGA)
 - 5 or more SPOTS (see definition above) greater than 0.5mm in diameter.
 - 2 or more adjacent defects within a minimum distance of 1" (25.4mm)

HARDWARE PLATFORMS AFFECTED:

COMPONENTS AFFECTED: LCD

OPERATING SYSTEMS AFFECTED: Non-OS Specific

SOFTWARE AFFECTED: Non-Software Specific

THIRD PARTY PRODUCTS AFFECTED: None

DOWNLOADABLE FILES: NONE

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