Category: Display

Distribution: Service Partner Number: SB-DIS-15001

Version: 1.0



Date; September 7th, 2015

Service Facts SB-DIS-150011 Information about Pixel Failures According to ISO 9241-307

Affected Product(s): Affected Operating System(s): Affected Version(s):	Monitor N/A N/A
Attachment(s):	N/A
Reference:	N/A
Change History:	N/A
Related Support Bulletin(s):	SB-DIS-09006

Problem / Question

The information mentioned in the product data sheet for monitors pixel failures are regulated according to the international standard ISO 9241-307 (Class I). For the maximum permitted number of faulty pixel s please handle service and warranty assignments in accordance to these information

Reason / Cause

Replace displays only when the maximum permitted number of faulty pixels is exceeded

Solution / Workaround

According to ISO 9241-307 (Class I) panels permit any or all of the following (per million pixels):

- 1. More than 1 full bright pixel
- 2. More than 1 full dark pixel
- 3. More than 3-5 bright and dark sub-pixel constellations (more than 5 dark subpixels are permitted generally)

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Mulliper: 36-DI3-13

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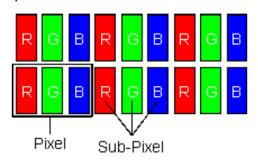


Date; September 7th, 2015

			defec	aximum Number of ects per million pixels dpm) ISO 9241-307			
ISO 9241- 307 (New	307 (New (Previous) Comment Typ 1 fu brigl	Type	Type 2	Type 3 sub pixel			
		bright pixel	full dark pixel	Bright	Dark		
0	I	Absolutely 0 pixel failures	0	0	0	0	
I		For critical content (e.g. observation)	1	1	2 1 0	1 3 5	
II	II	For Office use	2	2	5 5-n* 0	0 2n* 10	
III	III	Not acceptable for office use	5	15	Up to 50		
IV	IV	Not acceptable for office use	50	150	Up to 500		

^{*}n = 1....5

A pixel is the smallest element that can be generated by complete functionality of the display. A subpixel is a separately addressable internal structure within a pixel that enhances the pixel function.



Pixel fault types:

Type 1 = all 3 sub pixel are bright

Type 2 = all 3 sub pixel are dark

Type 3 = only one sub pixel is bright/black

Example:

A diplsay with a nativel panel resolution of 1920 x 1200 has 2.304.000 pixels. According to ISO 9241-307 (class I), a maximum of 2 lit and 2 unlit pixels and, additionally, 4 bright plus 2 dark sub pixels are allowed

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Table of Current resolutions and maximum permitted faulty pixels:

Native Panel Resolution	Type 1 full bright	e 1 full bright Type 2 full dark		Type 3 sub pixel		
	pixel	pixel	Max. faulty pixel			
	Max. faulty pixel	Max. faulty pixel	Bright	Dark		
	8	8	16	8		
UHD - 3840 x 2160			8	24		
			0	40		
QHD - 2560 x 1440	3	3	6	1		
			3	9		
			0	15		
WUXGA - 1920 x 1200	2	2	4	2		
			2	6		
			0	10		
Full HD - 1920 x 1080	2	2	4	2		
			2	6		
			0	10		
WSXGA+ - 1680 x 1050	1	1	2	1		
			1	3		
			0	5		
SXGA – 1280 x 1024	1	1	2	1		
			1	3		
			0	5		

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