



Olorin AB pixel malfunction warranty

Olorin LCD products are warranted to follow the below ISO 13406-2 standard for pixel malfunctions. It is warranted to be in accordance with Class II product.

ISO 13406-2 Scan Guidelines

TFT monitors are precise units made up of a set number of pixels. Unfortunately this can be seen as a weakness. Pixels are made up the three sub-pixels being red, green and blue each consisting of their own transistors that controls whether or not it lights up. Due to the way in which panels are made, defects can unfortunately appear resulting in 'dead pixels' which cannot be repaired neither can it be predicted when the failure may occur.

The monitor can be working at 100% however can consist of pixels or sub-pixels which are either:

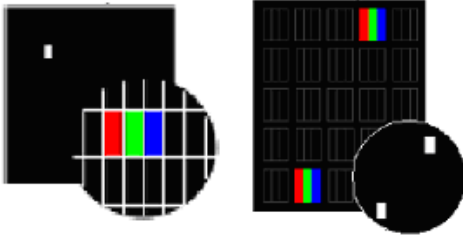
- a) Permanently dark or light which is not always evident OR
- b) A constant flash which is more noticeable.

Fortunately there is an ISO 13406-2 (Class II) standard which covers the maximum number pixels on any given panel.

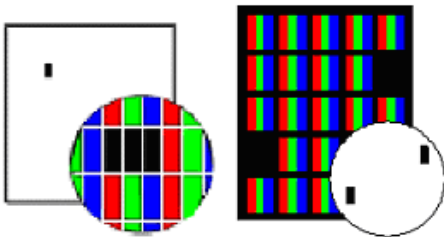


The pixel faults are defined in the following way:

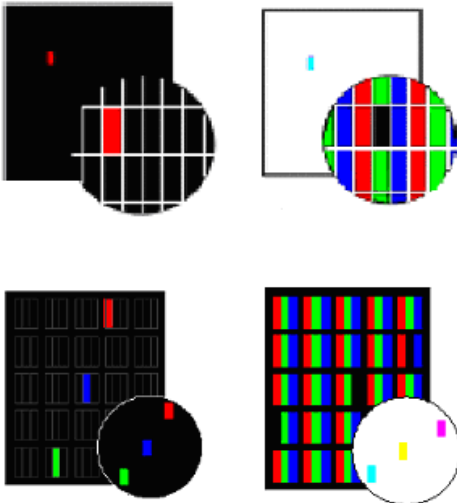
Type 1) constant bright pixel



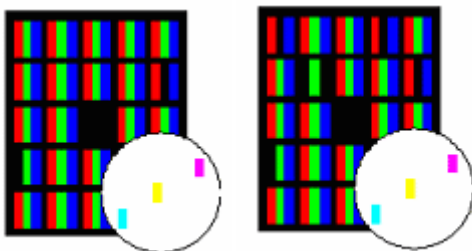
Type 2) constant dark pixel



Type 3) defect pixel, either constantly bright (red, green, blue or constantly dark)



Type 4) fault cluster, the number of defective pixels in a 5 x 5 pixel square.





Class I monitors are guaranteed products which do not have any defects at all however it is rare to find a manufacturer offering such high quality products.

Class II specification consists of the following faults permissible: 2 x Type 1, 2 x Type 2, 5 x Type 3 and 2 x Type 4.

The number of permissible pixel faults can be calculated with the following function:
 (number of errors = number of pixels of the physical resolution x number of errors in the pixel fault category / 1.000.000) with rounding up upward (there is no half errors gives).

The following table defines the maximum permissible number of pixel faults for the respective resolution types validly for the pixel error class II.

Panel type	Physical Resolution	Number of pixel	Maximally permissible number of errors for the pixel error classII in accordance with ISO 13406-2				
			Type 1	Type 2	Type 3	Cluster fault (all types)	Cluster fault Typ 1 & Typ2
15" XGA	1024 x 768	768 432	2	2	4	2	2
17"-19"	SXGA 1280 x 1024	1 310 720	3	3	7	3	3
20.1"	UXGA 1600 x 1200	1 920 000	4	4	10	4	4

Based on the standard ISO 13406-2 the customer can use the tables explained above as basis for the evaluation of the pixel error tolerance, excess of one of the specified border criteria leads to the entry into force of the warranty claim.