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Rev.	Date	Page	Old Inspection Spec	New Inspection Spec
0	Apr.27, 2018	All		Preliminary Specification
1	May 8, 2018	5,8,9	Typo words	Preliminary Specification

_(Note 1) The revised inspection criteria is effective before the expiration of the IIS as specified

1. Scope:

1.1 The incoming inspection standards shall be applied to TFT-LCD Modules (hereinafter called ““Modules””) that supplied by AU Optronics Corporation (hereinafter called ““seller””).

1.2 Specifications contains

- Electrical inspection specification
- Appearance specification
- Outside dimension specification

2. Incoming inspection:

The buyer (customer) shall inspect the modules within twenty calendar days since the delivery date (the ““inspection period””) at its own cost. The results of the inspection (acceptance or rejection) shall be recorded in writing, and a copy of this writing will be promptly sent to the seller.

The buyer may, under commercially reasonable reject procedures, reject an entire lot in the delivery involved. Within the inspection period,if the samples of modules within a lot show a number of unacceptable defects in accordance with this incoming inspection standards, the buyer must notify the seller in writing of any such rejection promptly, and not later than within three business days in the end of the inspection period.

Should the buyer fail to notify the seller within the inspection period, the buyer's right to reject the modules shall be lapsed and the modules shall be deemed to have been accepted by the buyer.

3. Inspection sampling method:

Unless otherwise agree in writing, the method of incoming inspection shall be based on MIL-STD-105E.

3.1 Lot size: Quantity per shipment lot per model.

3.2 Sampling type: Normal inspection, single sampling.

3.3 Sampling level: Level II.

3.4 Acceptable quality level (AQL):

Major defect: AQL=1.0%.

Minor defect: AQL=2.5%.

Rig.1: Inspection Sampling standard for MIL-STD-105E :

Rig.2 Incoming inspection judgment method :

表14-2 MIL-STD-105E正常檢驗單次抽樣計畫

樣本代字	樣本數	允收品質水準（AQL，%）																									
		0.010	0.015	0.025	0.040	0.065	0.10	0.15	0.25	0.40	0.65	1.0	1.5	2.5	4.0	6.5	10	15	25	40	65	100	150	250	400	650	1000

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4. Inspection instruments:

4.1 Pattern generator: LD-2000 or equivalent model.

4.2 Video board: AU video board or equivalent. The output of the signal should comply with the specification provided by AU.

4.3 Luminance colorimeter: Topcon BM-7 or equivalent model

5. Inspection environment conditions:

5.1 Room temperature : **20 ~ 25** .

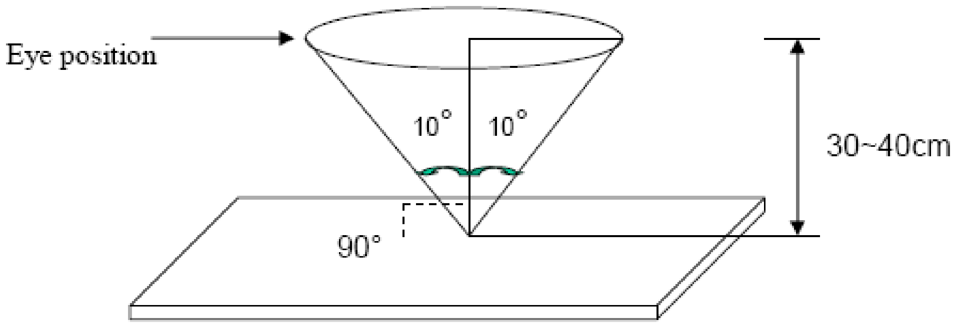
5.2 Humidity: **65±5**% RH.

5.3 Illumination: Fluorescent light (Day-Light Type) display surface illumination to be **300 ~ 700** lux. (standard **500** lux.)

5.4 To be a distance about **35 ± 5** cm in front of LCD unit, viewing line should be perpendicular to the surface of the module judge the visual appearance with human's eyes.

5.5 Take off the protector of polarizer while judging the display area.

5.6 If there is any question while judging, check the panel again while operating.



6. Classification of defects:

Defects are classified as major defects and minor defects according to the degree of defectiveness defined herein.

Major defects:

A major defect is a defect that is likely to result in failure, or to reduce materially the usability of the product for its intended purpose.

Minor defects:

A minor defect is either a defect that is not likely to reduce materially the usability of the product for its intended purpose, or a departure from an intended purpose with little bearing on the effective use or operation of the product.

6.1 Electrical inspection specification:

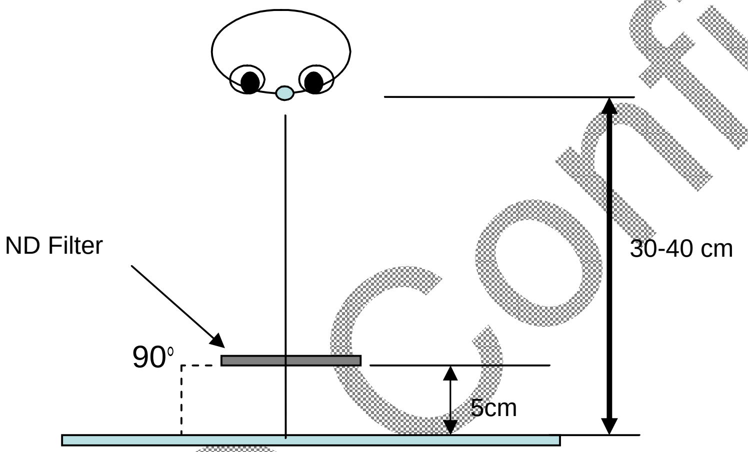
Inspection Item		Specification
Line defect		Not allowed
Bright dots		2 dots
Dark dots		4 dots
Total dots defect		6 dots
Continuous defect	Two continuous bright dots :	1 pair
	Over three continuous bright dots (vertical, horizontal, oblique) :	Not allowed
	Two continuous dark dots (vertical, horizontal, oblique) :	2 pair
	Over three continuous dark dots (vertical, horizontal, oblique) :	Not allowed
	Two continuous dark dots and bright dots	

	Over three continuous dots (vertical, horizontal, oblique) :	0 pair
	Distance between 2 Bright dots :	≥ 5 mm
	Distance between 2 Dark dots :	≥ 5 mm
	Distance between Dark dot and Bright Dot :	≥ 5 mm
Mura		Can't be seen through 5% ND filter or judged by equivalent sample

Note 1) For dot defect, one sub pixel is defined as one dot. Defect area (of dot defect) should be full area of one sub-pixel to be count as 1 dot defect.

Note 2) Judgment criteria (For Bright dot and Small Bright dot) : Using ND Filter 5% (distance : 30 cm). If it could be observed, dot defines as one bright dot. If not, dot defines as one small bright dot.

ND filter use method: The inspection method of ND Filter - holding ND filter in front of the panel around 5 cm and examine the panel from **35±5** cm in the front view for **3** seconds.



Note 3) A dot defect that is smaller than the defined dot defect will be treated as small bright dot.

The drawing of 1/2 area sub-pixel definition: The 1/2 area sub-pixel can be defined as below one or more of specific shapes (Fig.1). The small bright dots is less than or equal to 10 dots.

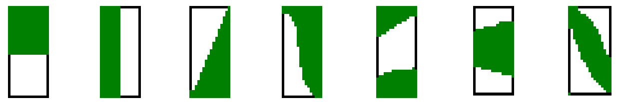
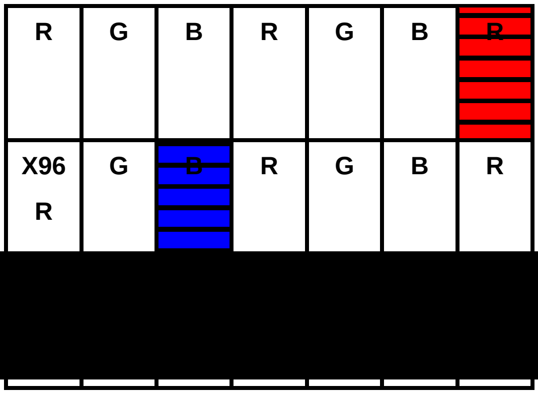


Fig.1

Note 4) All bright dot defects should not be noticeable by observer under specified inspection environment (Please refer to item 5).

- Definition of distance between defect dots as following



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Note 8) Unless otherwise specified by written document or limit samples, Mura (display un-uniformity) should inspected under the ND filter and shall be accepted when it is invisible 5% ND filter is applied.

Note 9) While operating over 50□ ambient temperature, there should be no function failure occur and Mura (display un-uniformity) should be invisible under 1% ND filter applied.

Note 10) Image Retention: 5secs Test pattern and Image sticking must be disappeared in 5secs after pattern changed.

6.2 Inspection specification

Judge area	Judge item	Inspection specification	Judge criterion	
			Major	Minor

			D 0.25	Disregarded		
			0.25 D 0.5	N 3		
			D > 0.5	N = 0		
Bezel	Gap between front and back bezel on all sides		W 1.0mm			○
	Scratches, Wrap and Sunken		Allowed (No harm, dangerous)			○
	Assembly Fail		Not allowed		○	
	Color Difference		Allowed (No harm, dangerous)			○
	No label		Not allowed		○	
	Invert label				○	
	Broken				○	
	Dirt		Allowed (Word can be read. Barcode can be scanned)		○	
	Not clear					○