



Chunghwa Picture Tubes, Ltd. Inspection Specification

To :
Date : 2007/12/19

CPT TFT-LCD
Incoming Inspection Standards

Model : CLAA150XP01Q Z

ACCEPTED BY :

APPROVED BY	CHECKED BY	PREPARED BY
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Doc.No		Issue Date	2007/12/19
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INCOMING INSPECTION STANDARDS

Incoming Inspection Clause

- (1) The Incoming Inspection Standard will be agreed and signed by both sides (Customer and CPT) before CPT receives the PO (Purchase Order) *forward 7 days*.
- (2) If there are any external fail statuses on the LCD Panel after Customer assembled, it will be judged to *Customer Responsibility*.

Warranty Period:

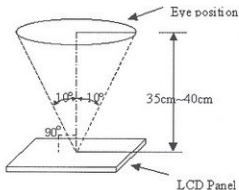
The warranty period is 2 month after arriving customer's factory.

DOA (Dead on Arrival):

DOA case is to be closed within ETA 30 days or it shall not be traced back. (for further handling)

1. Inspection conditions is as follows:

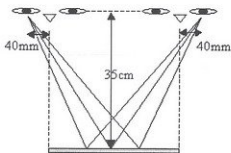
- (1) Viewing distance is approximately 35 ~ 40 cm
 - (1-1) Viewing distance is close for inspection of adjacent dots and distance between defect dots.
- (2) Viewing angle is normal to the LCD panel as Fig_1 (10°)
- (3) Ambient temperature is approximately $25 \pm 5^\circ\text{C}$
- (4) Ambient humidity is $60 \pm 5\% \text{ RH}$
- (5) Ambient illuminance is from 300 ~ 500 Lux.
- (6) Input signal timing should be typical value.



Fig_1

2. Special condition

- (1) Viewing distance is close for inspection of adjacent dots and distance between defect dots.
- (2) Viewing condition of "Shot block non-uniformity from oblique angle" is as Fig _2.
- (3) Exceptional case: View angle $\pm 40^\circ$ while inspected image-sticking.



LCD Panel

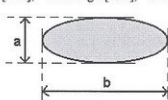
Fig _2

2. Inspection Criteria

DEFECT TYPE		LIMIT		Note	
VISUAL DEFECT	SCRATCH	$0.1\text{mm} \leq W \leq 0.3\text{mm}$ $L \leq 20\text{mm}$	$N \leq 8$	-	
	INTERNAL	SPOT	$1.5\text{mm} \leq \varphi \leq 10\text{mm}$	$N \leq 8$	Note1
		FIBER	$W \leq 3\text{mm}, L \leq 30\text{mm}$	$N \leq 6$	Note1
		POLARIZER BUBBLE	$\varphi \leq 10\text{mm}$	$N \leq 8$	Note1
		TOTAL	$N \leq 16$		-
ELECTRICAL DEFECT	BRIGHT DOT & DARK DOT	$N \leq 16$		Note2	
	TOTAL DOT	Not limited		Note2	
	TEN OR MORE ADJACENT DOT	≤ 10 PAIRS		-	
	LINE DEFECT	NOT ALLOWED		-	

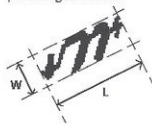
One pixel consists of 3 sub-pixels, including R,G, and B dot.(Sub-pixel = Dot)

[Note1] W : Width[mm], L : Length[mm], N : Number, ϕ : Average Diameter



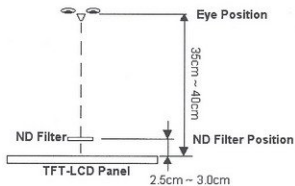
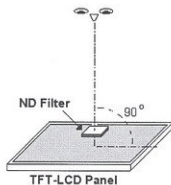
$$\phi = (a + b) / 2$$

1. (White, black) Spot
2. Polarizer Bubble

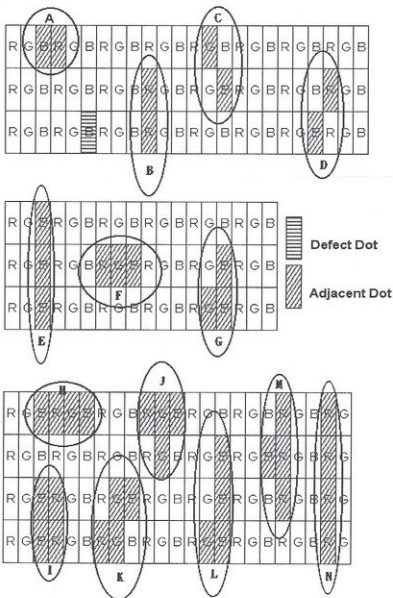


1. Fiber

[Note2] Bright dot is defined through 5% transmission ND Filter as following.



[Note3] Judge defect dot and adjacent dot as following. Allow below (A and B status) adjacent dot, including bright and dart adjacent dot. And they will be counted 2 defect dots in total quantity.



Allow above (as E, F and G status) three adjacent defect dots, including bright and dart dot. And they will be counted 3 defect dots in total quantity. Allow above (as H, I, J, K, L, M and N status) four adjacent defect dots, including bright and dart dot. And they will be counted 4 defect dots in total quantity.

[Note4] Other

- (1) The defects that are not defined above and considered to be problem shall be reviewed and discussed by both parties.
- (2) Defects on the Black Matrix, out of Display area, are not considered as a defect or counted.
- (3) The performance of display isn't judged.

3. Mechanical :

Regarding the mechanical dimension, please refer the Technical Specification.

- a. The tolerance of mechanical dimension is $\pm 0.5\text{mm}$.
- b. And the tolerance of length of lamp cable is $\pm 5.0\text{mm}$.

4. Handling precaution

- (1) Don't disassemble and reassemble the module by self. (禁止自行拆解。)
- (2) Acid, alkali, alcohol or touched directly by hand will damage the display.
(酸性、鹼性、酒精或手的直接接觸將會損傷顯示面。)
- (3) Static electricity will damage the module. Please configure grounding device.
(靜電會損傷模組。請裝配接地設備。)
- (4) The strong vibration, shock, twist or bend will cause material damage, even module broken.
(強烈的衝擊、震動、扭轉或彎曲將會造成原材損傷，甚至面板破裂)
- (5) It is easy to cause image sticking while displaying the same pattern for very long time.
(長期顯示同一畫面亦造成影像殘留。)
- (6) The response time, brightness and performance will vary from different temperature.
(反應時間、亮度與均勻性會因溫度而有所變化)