LGD Confidential

Incoming Inspection Standard

Model : 27" for Gaming OLED

Customer : Forte

Aug. 3rd, 2025

This is a draft ver.
Both companies need to further discuss the detailed spec.

Customer's Approval

Reviewed & Approved by

(NAME) .....

(TITLE) .....

(Signatu .....

(Date) ...../ (DD)/ (YY) .....

☑ ***Please return this standard with your signature for approval***

Rev. 1.0 Aug.3rd,2025									

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Revision Status

Rev. No.	Chapter	Contents	Date
1.0	All	Originated by Jason Kang	Aug/3rd/2025

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1.0 Introduction

1.1. Scope

This Incoming Inspection Standard shall be applied to OLED Modules (hereafter called the "OMs") supplied by LG Display (hereafter called the "Supplier") to its Customer.

1.2. Incoming inspection Right

The Customer shall have the right to conduct at its own cost and expense, an incoming inspection of the OMs at the destination specified in the relevant B/L(Bills of Lading) in accordance with the OM's specifications separately agreed upon and the inspection criteria set forth in this article.

The Customer shall notify the Supplier in writing of the inspection results (acceptance or rejectance) in accordance with the said Incoming Inspection Standard within 40 days from the date of the B/L.

Should the Customer fail to notify the results to Supplier within 40 days period, the right to reject the OMs shall then lapse, and the said OMs shall be deemed to have been accepted by the Customer.

1.3. Handling Precautions

- OM Devices are made of fragile material such as Glass and plastic and may be broken or cracked if dropped it, so **PLEASE** handle them with care.
- **DO NOT** press the area covered with PET or such materials. These are weak point of OMs since of TCPs(Driver ICs) and PWBs.
- **PLEASE** support the Bezel with your finger when connecting the interface cable.
- Please **DO NOT** touch the surface of the Glass(Polarizer).
- **PLEASE** wear the Wrist Strap when handling.
  Semiconductive devices are included in the OMs and they should be handled with care to prevent any electrostatic discharge(ESD).
- **PLEASE** keep the OMs in the specified, original packing boxes when storage.
- **DO NOT** stack the OMs too high without wrapping material such as AIR CAP.
- Before use the OMs, **PLEASE** check the Engineering specification.

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2.0 Generals

2.1. Sampling Method

Unless otherwise agreed upon in writing, the sampling inspection shall be applied to the Customer's incoming inspection.

2.1.1. Lot size : Quantity per shipment lot (minimum lot size : 100 pieces)
2.1.2. Sampling type : Normal inspection, Single sampling
2.1.3. Inspection level : II
2.1.4. Sampling table : ANSI Z 1.4

2.2. Acceptable Quality Level(AQL)

The AQL for major and minor defects shall be respectively set forth below.

2.2.1. **Major = 0.65 %**
2.2.2. **Minor = 1.5 %**

2.3. Classification of defects

Defects are classified as either a major defect or a minor defect based on the degree of defect defined herein.

2.2.1. Major defect
The major defect is a defect that is likely to result in product failure, or reduction in the product's intended usage.

2.2.2. Minor defect
The minor defect is a defect that has little bearing on the effective use or operation of the product.

Specific criteria of judgment of major and/or minor defects or other related issues shall be in accordance with the Appendix A, "Classification of Defects".

2.4. Determination of acceptability and subsequent disposal

If the number of defects found in the OM sampling lot is equal to or less than the AQL(Acceptable Quality Level), the lot shall be accepted.

If the number of defects found in the OM sampling lot is greater than the AQL, the lot shall be rejected. The Customer shall inform the Supplier of the results of such inspection detailly within the time period stipulated in chapter 1.2. "Incoming inspection Right".

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2.4.1. Accepted lot

An acceptance under the above incoming inspection shall constitute an acceptance by the Customer of such lot of the OMs in terms of the landed quality thereof.

2.4.2. Rejected lot

If a shipment lot of products is rejected under the above incoming inspection due to any defects of which the Supplier is responsible and such a fact is clearly confirmed by the Supplier through a separate inspection or as otherwise decided, the Supplier shall choose one of the following three options which must be determined by mutual consent.

The Supplier shall advise the Customer of its choice not later than 10 working days(Monday through Friday) of receipt of the "Customer's notification of rejected lot" :

a. The Customer shall return the rejected lot to the place to be designated by the Supplier and the Supplier shall screen all of the products in the lot and repair or replace the defective OMs.

b. The Supplier shall screen all of the OMs in the lot and repair or replace the defective OMs within a reasonable time period at the Customer's facility.

c. The Customer shall screen the entire lot of OMs at the expense of Supplier's, and the expense must be agreed by the Supplier. The rejected OMs shall be returned to the place designated by the Supplier.

2.5. Inspection Method

2.5.1. Ambient conditions

a. Temperature : **20 ~25 ℃**
b. Humidity : **65 ±5 % RH**
c. Illumination : **Single 20W fluorescent lamp non-directive (300 to 700 Lux)**

2.5.2. Viewing distance : 100cm

2.5.3. Viewing Angle

The inspection shall be conducted within normal viewing angle range.
※ Refer to the CAS for viewing angle.

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3.0 Inspection Criteria

3.1. Dot Defect

3.1.1. Bright Dot

Dots (sub-pixels) which appeared brightly in the screen when the OM displayed with dark pattern.

Item	27"
1 dot	0
Adjacent 2 dots	0
Adjacent 3 dots	0
Total amount of Bright dots	0

3.1.2. Weak Bright Dot

The judgment of weak bright dot is as below.

Inspection Pattern	0~63 gray	64~255gray
Q'ty	Negligible	0

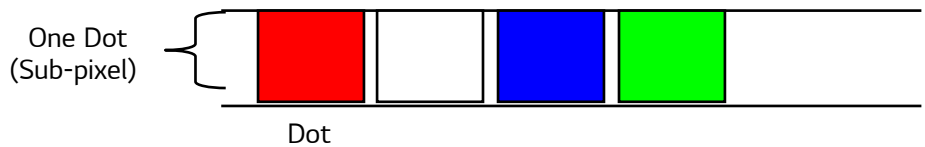
3.1.3. Dark Dot

Dots (sub-pixels) which appeared darkly in the screen when the OM displayed with bright pattern.

Item		27"
1 dot	R/G/B	35
	White	7
Adjacent 2 dots		15 (RR, BB, GG)
Adjacent 3 dots		0
Total amount of Dark dots		35
Weak Dot		If it is not visible R,G,B and White dot at 127Gray with Lupe, it should be negligible.
White Defect Detection (WDD)		In case of white pixel dead, circuit compensation will be applied. so WDD is not normal dark dot (Appendix C) → WDD is not defect
Min. Distance between dark dots		4ea or under within 20mm is accepted. (Weak dot to Weak dot distance is negligible) (Appendix D)
White 1dot criteria		In case of horizontal adjacent dark dots including white dark dot, It should be considered as a white dark dot, including adjacent 3 dark dots. (Appendix D)

3.1.4. Total amount of Dot Defects ----------Max 35

Note) a. Every dot herein means Sub-Pixel
b. The Dot defect should be inspected on Red , Green, Blue , White, or Black pattern.
c. Distance is applied to Center area and the others area is negligible.

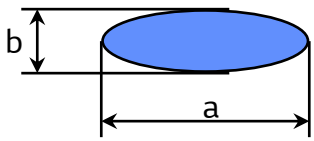


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3.2. Polarizer Defects

Item	27"	
	Size(mm)	Q'ty
Linear	0.1≤W≤0.3 0.4≤L≤12.0	N≤8
Circular	0.6≤D≤1.5	N≤8

Where, W : Width
L : Length
D : Average diameter =(a+b)/2



Note)
1.Linear : a > 2b , Circular : a≤2b
2.Extraneous substances which can be wiped out, like Finger Print, Particles are not considered as a defect.
3.Defects which is on the Black Matrix (outside of Active Area) are not considered as a defect.

3.3. Line Defect

All kinds of line defects such as vertical, horizontal or cross are not allowed.

3.4. Bezel Appearance

Scratches, minor bents, stains, particles on the Bezel frame are not considered as a defect.

3.5. Others

Issues which is not defined in this criteria shall be discussed with both parties, Customer and Supplier, for better solution.

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4.0 RMAs

4.1. Verification

The Supplier can verify the defective OMs to segregate the responsibilities at Customer's facility or can request the Customer to ship the defective OMs to assigned place for verification

This verification result shall be agreed mutually by the Customer and Supplier. This result can be corrected/changed after detail failure analysis at Supplier's facilities.

4.2. Supplier Induced Defects

All of the Supplier induced defective OMs shall be returned to the Supplier for repair or replacement.

Before return the defective OMs, the Customer needs Supplier's confirmation with RMA Number.

All of the returned OMs shall be returned to the Customer within agreed time period.

4.3. Customer Induced Defects

The Customer can return the customer induced defective OMs to the Supplier for repair.

The repair cost for Customer induced defective OMs shall be agreed with both parties, Customer and Supplier.

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5.0 Warranty

5.1. Warranty Period

The In-warranty is eighteen (18) Months from manufacturing month

Note) The manufacturing Month is on the OLED Module as Supplier's serial No.

5.2. Warranty avoidance

The warranty will be avoided in cases of below,

a. When the warranty period is expired
b. The Customer induced defective OLED
c. When the OLED were repaired by 3rd party without Supplier's approval.
d. When the OLED were treated like Disassemble and Rework by the Customer and/or Customer's representatives without Supplier's approval.

6. Others

If any problems arise with the OMs supplied by supplier, the Customer and Supplier will cooperate and make efforts to solve it with mutual confidence and respect.

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Appendix A. Classification of phenomenon

1. Classification by defect mode

Defect Mode	Critria on Defect	Class
Operating Frequency	Specified range in the CAS	Major
Power Consumption	Specified range in the CAS	Major
No Display	Not allowed	Major
Contrast Ratio	Specified range in the CAS	Major
Broken	Not allowed broken glass, PWB, Back Light wire, Connector	Major
Line Defect	Not allowed any Vertical, Horizontal and Cross Line	Major
Mottling (Mura)	Not allowed reliability related problem which means getting worse and worse as time goes by	Minor
Polarizer Defect	Shall be accordance with the item 3.0 "inspection Criteria" in this standard	Minor
Extraneous Substance	Shall be accordance with the item 3.0 "inspection Criteria" in this standard	Minor
Dot Defect	Shall be accordance with the item 3.0 "inspection Criteria" in this standard	Minor
Bezel Claw Forming	The bezel claw is not formed sufficiently	Minor

2. Others

Phenomenon	Explanation	Class
image retention	Refer to Appendix. B	-

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Appendix B. Precaution for image retention at store

1. About image retention phenomenon

Burn in or reduction in brightness phenomenon is not a malfunction, that's occurred due to the characteristics of the OLED material used in panel

2. To reduce the risk of image retention

2.1 Recommend shop to avoid

- Static images display
- Partial Masked images display (ex. Cinema aspect ratio)
- Images that remain static for a long time display
- Character or message displays to present settings or the status of TV(or Monitor)
- All kind of always on-screen displays

2.2 Recommend shop to do

- Use demo video for OLED which are investigated with LGD
- Do OFF-RS compensation at least one time per day
  (LGD recommend the auto OFF-RS function which is operated every first time turn on timing at store)
- Do JB compensation automatically when TV(or Monitor) set notice by pop-up window
- Apply the stand-by mode (Black pattern or excessive low luminance pattern) which is operated under almost static image displayed or no input signal conditions at set system

*** Guarantee for image retention (18 months) is possible under the conditions of faithful implementation of the Design Guide for minimizing the occurrence of OLED image retention in the market.**

*** If the Customer use it for other purposes,**
LGD disclaims all representations and warranties in connection with the image retention of OLED Panel, including the implied warranties of merchantability and fitness for a particular purpose

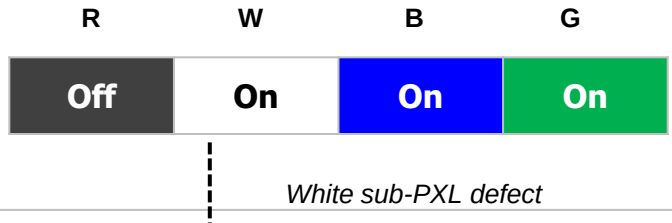
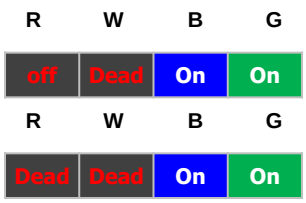
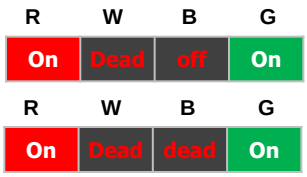
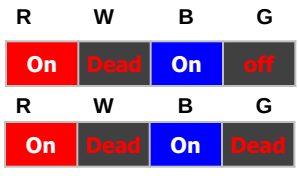
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Appendix C. Compensation for White Dark Dot

✓In case of WOLED,

white color is made with on 3 pixel (One white sub-PXL and the other 2 PXLs)

the other 2 pixels are determined according to each panel characteristics.

<table>
<tr><td>Normal Case
(White pattern)</td><td colspan="3">
</td></tr>
<tr><td>WDD Compensation
(white piexel Compensation)</td><td colspan="2">
</td><td>When W Pixel is dead, the pixel operates RGB except W pixel to display white color.
This is not considered as dark dot during WDD (RGB operation) works.</td></tr>
<tr><td></td><td>Case</td><td>Diagram</td><td>Judgment</td></tr>
<tr><td>WBG driving
(white pattern)</td><td>R</td><td>
</td><td>1) WDD Compensation function does not work (white is dead at the some pixel)
→ “R” PXL does not be turned on originally at white pattern (“R” is off)
2) In the case “R” is dead , the result is same (“R” is off or dead) in conclusion , It should be judged as “ White Dark Dot 1pcs”</td></tr>
<tr><td>RWG driving
(white pattern)</td><td>B</td><td>
</td><td>1) WDD Compensation function does not work (white is dead at the some pixel)
→ “B” PXL does not be turned on originally at white pattern (“B” is off)
2) In the case “B” is dead , the result is same (“B” is off or dead) in conclusion , It should be judged as “ White Dark Dot 1pcs”</td></tr>
<tr><td>RWB driving
(white pattern)</td><td>G</td><td>
</td><td>1) WDD Compensation function does not work (white is dead at the some pixel)
→ “G” PXL does not be turned on originally at white pattern (“G” is off)
2) In the case “G” is dead , the result is same (“G” is off or dead) in conclusion , It should be judged as “ White Dark Dot 1pcs”</td></tr>
</table>

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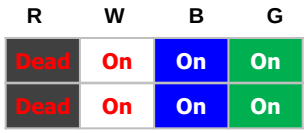
Appendix D. Adjacent Dark Dots Criteria

Horizontal Adjacent Dots incl. W pixel : Judged as W Pixel Dead

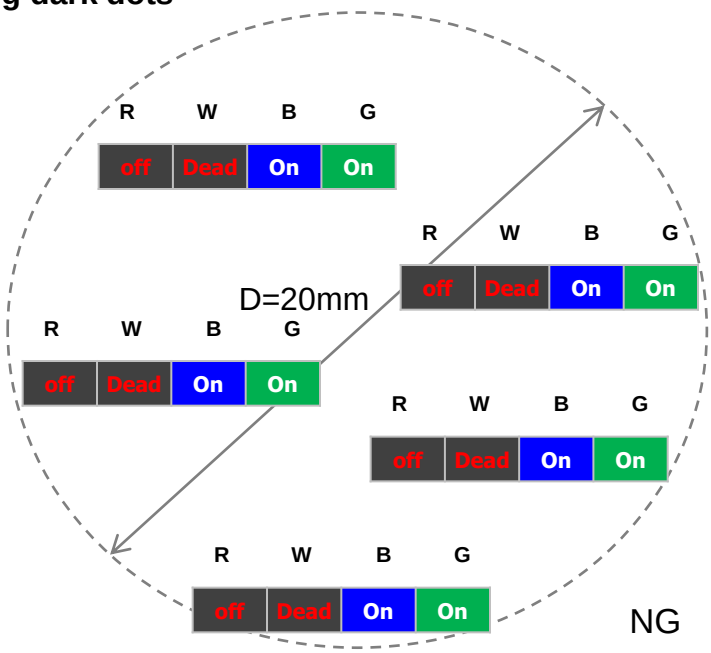
When 2~3 Adjacent dark dots including W pixel in 1 Pixel (RWGB) is found,
it could be considered as W dark dot 1 pcs. (Visibility is same)

Adjacent 2 Dark Dots Including White Dark Dot → not count as Adjacent	
Adjacent 3 Dark Dots Including White Dark Dot → not count as Adjacent	

Adjacent Dots (R/G/B)

Adjacent 2 Dark Dots	RR BB GG	R/G/B (each single pattern)	

Min distance among dark dots



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Appendix E. Mura Judgment Standard

1. Mura Criteria

Inspection PTN		Gray 64	Gray 127
Judgement Criteria	Level 1	OK	OK
	Level 2	OK	OK
	Level 3	OK	NG
	Level 4	NG	NG
	Level 5	NG	NG

※ General Mura will be judged by LGD Mura Criteria.
※ The judgment of common MURA should proceed after Off-RS compensation

2. Mura Level Definition

Classification	Definition of Mura
0	No Mura
1	Weak level Mura but hard to find out
2~3	Weak level Mura
4	Middle level Mura, potetial to return from field
5	Strong level Mura

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