

2022 Mid-Large OLED Display Semi-Annual Report

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1. Key Summary	5
2. Analysis of Mid-Large OLED Industry Issues	8
2.1 IT Line Investment Status and Prospect	
2.2 QD-OLED Additional Investment Possibility	
3. Analysis of the Mid-Large OLED Industry	14
3.1 Analysis of Exhibition Trends by Automotive OLED Companies	
3.2 OLED Trend Analysis for IT	
3.3 IT OLED Exhibition Trend Analysis	
3.4 OLED TV Trend Analysis	
3.5 OLED TV Exhibition Trend	
3.6 OLED Display Trend Analysis for TV	
4. Line Status by Panel Maker	83
4.1 Samsung Display	
4.2 LG Display	
4.3 Others	

5. OLED Mass Production Capacity Analysis and Forecast	88
5.1 Total Mass Production Capacity Analysis and Investment Timing Analysis	
5.2 Mass Production Capa Forecast	
5.3 Mass Production Capa Forecast by Company	
5.4 Mass Production Capa Forecast by Application	
5.5 Mass Production Capacity Forecast by Generation	
6. Semi-Annual OLED Market Performance Analysis	103
6.1 Overall Market Performance Analysis	
6.2 Market Performance Analysis by Company	
6.3 Performance Analysis by Application	
7. Quarterly OLED Market Performance Analysis	109
7.1 Overall Market Performance Analysis	
7.2 Market Performance Analysis by Company	
7.3 Market Performance Analysis by Application	
7.4 OLED Performance Analysis for TV	
7.5 Performance Analysis by Size of OLED for TV	

8. OLED Demand and Supply Analysis for TV	118
8.1 OLED Demand and Supply Analysis for TV by Year	
8.2 Quarterly OLED Demand and Supply Analysis for TV	
9. OLED Market Forecast	121
9.1 Overall Market Forecast	
9.2 Market Forecast by Panel Maker	
9.3 Market Forecast by Application	



2. Analysis of Mid-Large OLED Industry Issues

2.1 IT Line Investment Status and Prospect

■ Samsung Display

- *** RGB 2stack tandem **K line investment for IT is under consideration. The glass size is ****x****mm².
- The 8.7G vertical evaporation method and oxide TFT technology were first applied to the Ph-1, but there is a possibility that the 8.7G half-cut *****
***** and **** ** technology will be applied.
- **** ***** evaporator supplier is *****, and the ***** evaporator supplier is ***** *****. It is also being considered that ***** evaporator is placed on the ph-2, or that ***** evaporator is installed for both ph-1 and ph-2.
- Since ***** started developing evaporator later than *****, when ***** equipment is ordered, there is a possibility that the panel mass production time will be later than originally expected.
- The ph-1 is expected to be ordered in **** ***** and the ph-2 in **** ***** , but there is a possibility that it will be delayed depending on the development situation.
- Investment in the 6G RGB 2stack tandem line in the A4 (L7-2-2) site is also being considered.
- The existing A3 **** ** line was converted to an **** ** line, leaving a **K-scale deposition capper.
- In order to supplement the idol capper of the A3 evaporator, only the **** ** line was invested in the first **K scale in the first half of 2022 and has been partially operating from the third quarter.
- In the first half of 2023, an additional **K investment is planned for the **** ** line, and an evaporator for mass production of panels for Apple iPad is also expected to be invested.

3. Analysis of the Mid-Large OLED Industry

3.6 OLED Display Trend Analysis for TV

■ Samsung Display

- Samsung Display exhibited 65-inch QD-OLED TVs at SID 2022 and K-Display 2022 and exhibited 77-inch QD-OLED TVs for the first time at IMID 2022.
- The 77-inch QD-OLED TV had 4K resolution, a contrast ratio of 1,000,000:1, and a refresh rate of 120 Hz. Most of the specifications were similar to that of the previously released 65-inch QD-OLED TV, but there was some improvement *****

QD-OLED TV exhibited by Samsung Display

	55 / 65" QD-OLED TV	77" QD-OLED TV
Size [inch]	55 / 65	77
Resolution	3840 x 2160(80/68ppi)	3840 x 2160(57ppi)
Feature	<ul style="list-style-type: none"> - Color Gamut: 90% @BT2020 - Peak Luminance: 1,500nits - Luminance preservation rate: 81%(@60°) - Color shift: 0.0006(@60°) 	<ul style="list-style-type: none"> - Contrast ratio: 1,000,000:1 - Refresh rate: 120 Hz - Peak Luminance: > 1500nits
Picture		

Source: UBI Research DB

4. Line Status by Panel Maker

4.3 Others

■ BOE B6

- A monthly **K **** ** R&D line is in operation.
- The actual production volume is very small, ***** ** sheets per year.
- There is a panel reliability issue, and it was investigated that the panel lifetime is less than 50% of that of LG Display's Class A products even on the basis of LT50.

■ BOE B12

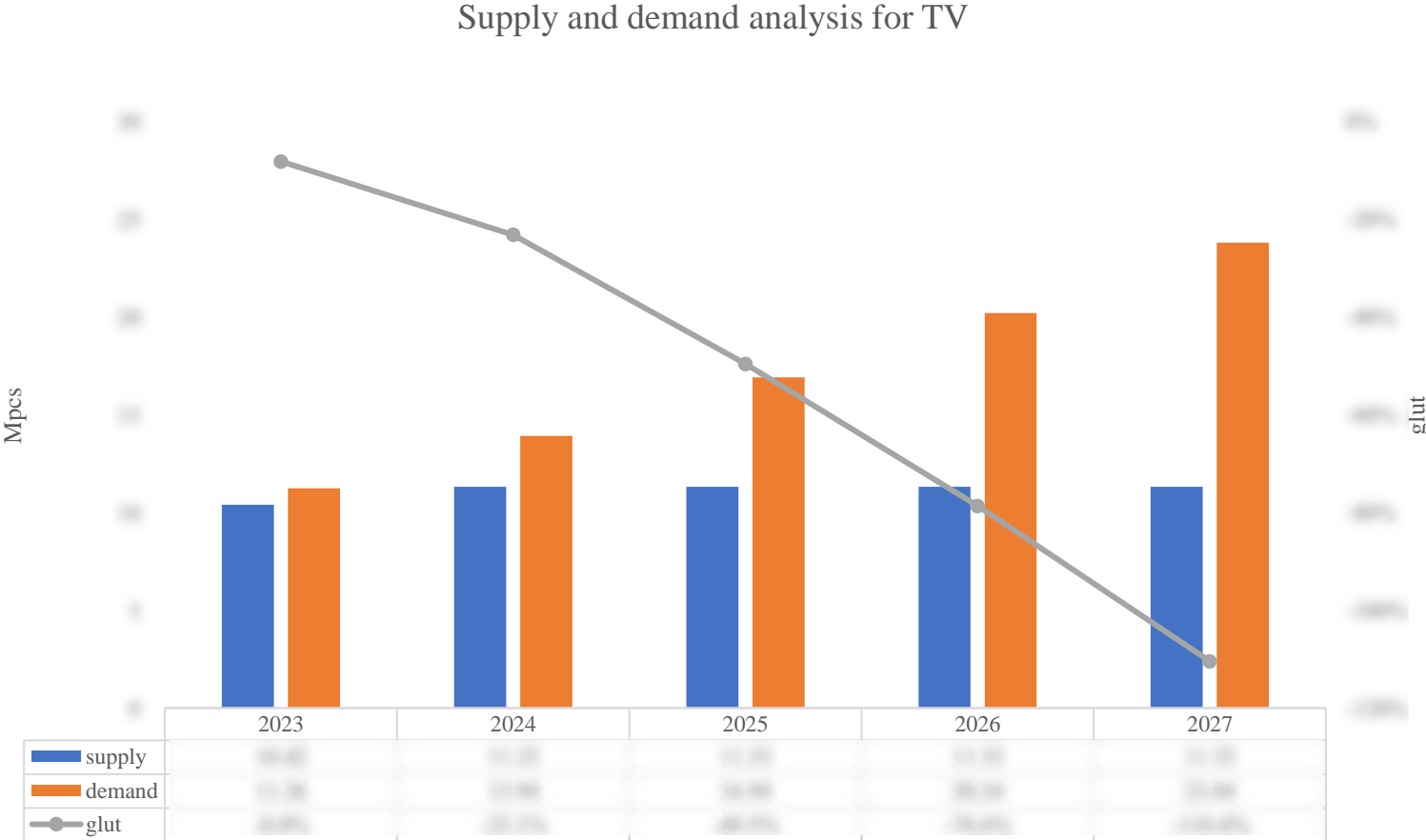
- The setup of the equipment for Ph-2 has been completed, and trial production began in ***** ***** *****.
- At Ph-2, displays for ***** will also be produced.
- The Ph-3 line is composed of Apple's RGB tandem for iPad concept.

■ Tianma Xiamen

- Ph-2 investment is being considered, and Ph-2 is likely to proceed in ***** *****. It is expected to target mid-size models such as *** and *****.

8. OLED Demand and Supply Analysis for TV

8.1 OLED Demand and Supply Analysis for TV by Year



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9. OLED Market Forecast

9.2 Market Forecast by Panel Maker

Sales forecast

> Revenue forecast

(US\$ million)

Company	Application	2022	2023	2024	2025	2026	2027
JOLED	Monitor	75	80	85	90	1,000	1,050
LG Display	Tablet	10	10	10	10	10	10
	TV	5,000	5,200	5,400	5,600	5,800	6,000
	Automotive	75	80	85	90	1,000	1,050
Samsung Display	Tablet	100	100	100	100	1,000	1,000
	TV	800	800	800	800	800	800
	Monitor	1,100	1,100	1,100	1,100	1,100	1,100
	Notebook	1,100	1,100	1,100	1,100	1,100	1,100
	etc	100	100	100	100	100	100
Total		8,000	8,200	8,400	8,600	8,800	9,000

Shipment forecast

> Shipment forecast

(M pcs)

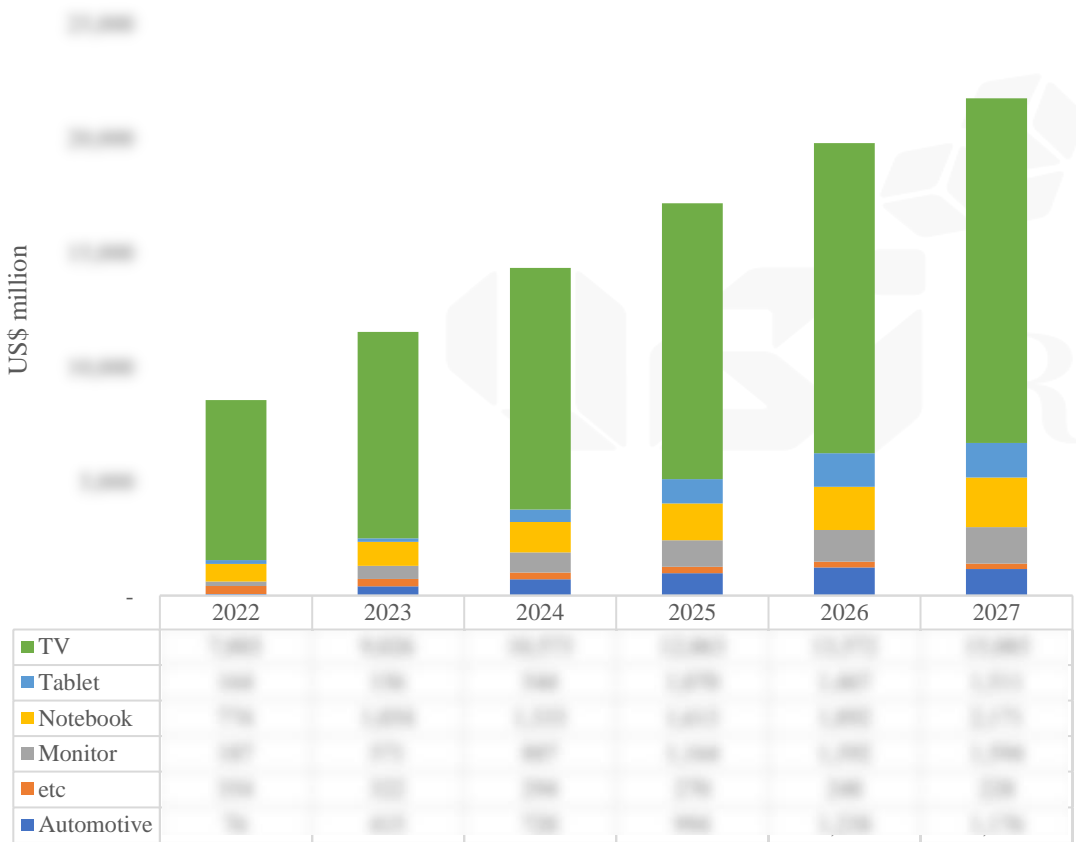
Company	Application	2022	2023	2024	2025	2026	2027
JOLED	Monitor	5.2	5.2	5.2	5.2	4.2	5.2
LG Display	Tablet	0.2	0.2	0.2	0.2	0.2	0.2
	TV	5.0	5.0	5.0	5.0	5.0	5.0
	Automotive	5.2	5.2	5.2	5.2	4.2	5.2
Samsung Display	Tablet	0.2	0.2	0.2	0.2	0.2	0.2
	TV	5.0	5.0	5.0	5.0	5.0	5.0
	Monitor	5.2	5.2	5.2	5.2	5.2	5.2
	Notebook	5.2	5.2	5.2	5.2	5.2	5.2
	etc	5.2	5.2	5.2	5.2	5.2	5.2
Total		26.2	26.2	26.2	26.2	26.2	26.2

9. OLED Market Forecast

9.3 Market Forecast by Application

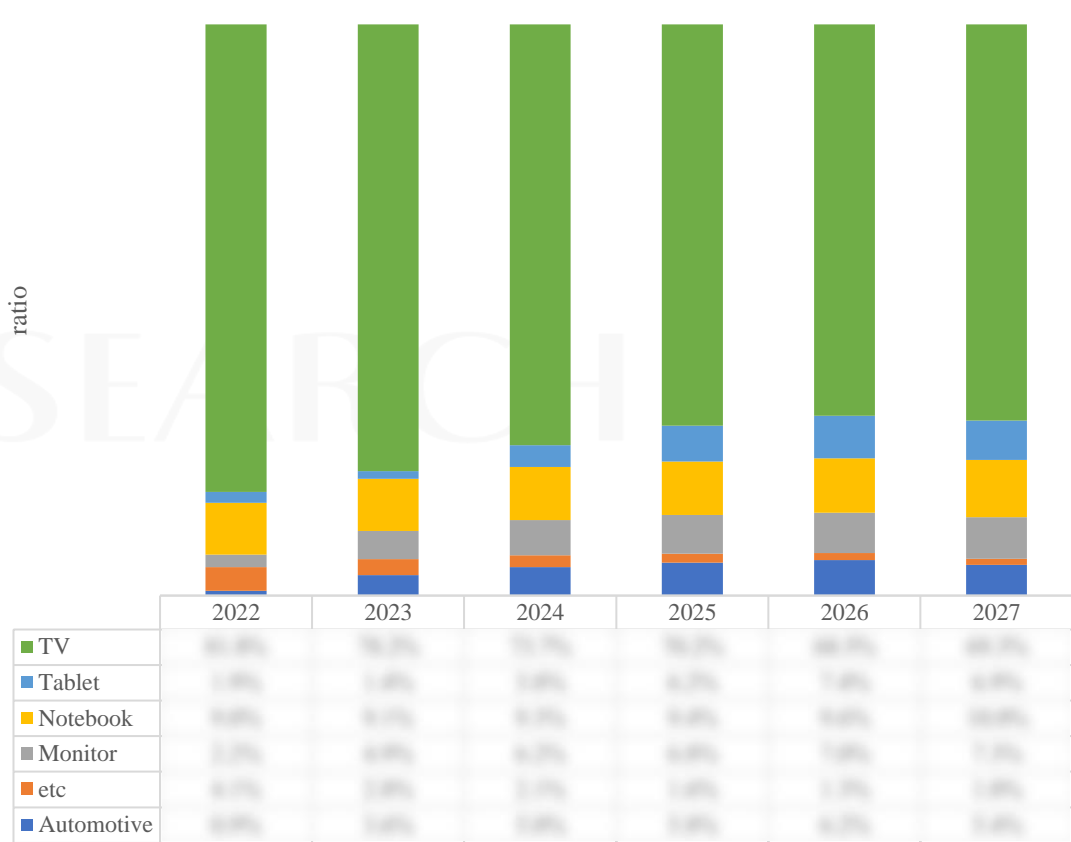
▀ Sales forecast

Revenue forecast by application



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Revenue ratio forecast by application



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