



2024 Small OLED Display Annual Report

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1. Key Summary-----	4	5. Analysis of OLED line status by company-----	45
		5.1 Samsung Display	
2. Analysis of OLED Industry Issues-----	6	5.2 LG Display	
2.1 iPhone 16 Panel Supplier Expected in 2024		5.3 BOE	
2.2 Samsung Display's Rigid OLED shipments for smartphones rise again		5.4 TCL CSOT	
2.3 Increased OLED shipments for mid- to low-end smartphones		5.5 EverDisplay Optronics	
		5.6 Tianma	
3. Product Trends in OLED Applications -----	10	5.7 Visionox	
3.1 Smartwatches			
3.2 Smartphones		6. Small OLED Production Capa Analysis and Forecast -----	58
3.3 Foldable Phone		6.1 Total Mass Production Capacity Analysis and Investment Timing Analysis	
		6.2 Mass Production Capacity Forecast	
4. Analysis of OLED business and product trends by company-----	23	6.3 Mass Production Capacity Forecast by Company	
4.1 Samsung Display		6.4 Mass Production Capacity Forecast by Generation	
4.2 LG Display		6.5 Mass Production Capacity Forecast by Substrate	
4.3 BOE		6.6 Mass Production Capacity Forecast by Nation	
4.4 TCL CSOT			
4.5 Tianma			
4.6 Visionox			

7. Annual OLED Market Performance Analysis	76	9. Analysis of OLED Demand and Supply for Smartphones ----	182
7.1 Small OLED Overall Performance Analysis		9.1 Analysis of OLED Demand and Supply for Smartphones by Year	
7.2 Small OLED Performance Analysis by Company		9.2 Quarterly Smartphone OLED Demand and Supply Analysis	
7.3 OLED Performance Analysis by Application			
7.4 OLED Performance Analysis by Substrate		10. OLED Market Forecast	185
7.5 OLED Performance Analysis by Nation		10.1 Overall Market Forecast	
7.6 OLED Performance Analysis for Smartphones and Foldable Phones		10.2 Market Forecast by Panel Maker	
7.7 OLED Performance Analysis for Smartphones by Company		10.3 Market Forecast by Application	
7.8 OLED Performance Analysis for Smartphones by Substrate		10.4 Market Forecast by Nation	
7.9 OLED Performance Analysis for Smartphones by Size			
7.10 OLED Performance Analysis for Watch		11. Appendix	193
8. Quarterly OLED Market Performance Analysis	120		
8.1 Overall Market Performance Analysis			
8.2 Performance Analysis by Company			
8.3 Performance Analysis by Application			
8.4 Analysis of OLED Performance for Smartphones and Foldable Phones			
8.5 OLED Performance Analysis for Watch			
8.6 OLED Performance Analysis by Substrate			
8.7 OLED Performance Analysis by Nation			

2. Analysis of OLED Industry Issues

2.3 Increased OLED shipments for mid- to low-end smartphones

- Starting in 2024, Samsung Electronics will expand the application of Rigid OLED to its low-end Galaxy A series, a mid- to low-priced model that was previously equipped with LCD.
- The lower-end model of the Galaxy A15, is also the first to feature a Super AMOLED display. The Galaxy A15 is expected to be Samsung's highest volume smartphone in terms of shipments.
- Samsung used LCD panels from its LCD supplier in its low- and mid-range smartphones, but stopped using them due to a LCD shortage.
- Rigid OLED shipments in '24 are expected to reach 1.18B units, up more than 28% from '23, driven by increased OLED adoption in mid- to low-priced models. Rigid OLED shipments in '23 were down 28% to 118M units compared to 164M units in '22.
- Apple is also planning to use OLEDs in the entry-level iPhone 16, which is expected to launch in early 2025, and is negotiating delivery prices between its LCDs and OLEDs.
- In order to respond to cheap Chinese OLED panels, Samsung Display is requesting companies to make the most of existing process lines that have been depreciated, recycle existing material sets, and discover low-cost materials.

Changes in Display Specifications of Samsung Galaxy A1X Models

	Samsung Galaxy A15 (2024)	Samsung Galaxy A14 (2023)
Display type	AMOLED, 90Hz	LCD, 90Hz
Size dimensions	6.5"	6.6"
Resolution	2340 x 1080	1080 x 2408

4. Analysis of OLED business and product trends by company

4.4 TCL CSOT

■ Foldable OLED

- TCL CSOT is supplying foldable OLED panels from the *** line to *** and ***.
- For ***, TCL produce 6.9-inch clam-shell type and 7.85-inch book type products, and the cover window is ***.
- A 6.9-inch panel costs about \$***, and a 7.85-inch panel costs about \$***.
- For ***, TCL produce panels for *** and ***, which are clam-shell type, and the cover window is ***.
- The panel for the *** costs about \$***.
- TCL CSOT supplied approximately *** million panels for foldable phones in 2023.

Foldable phones with panels supplied by TCL CSOT



Phantom V Flip



Phantom V Fold



RAZR 40



RAZR 40 Ultra

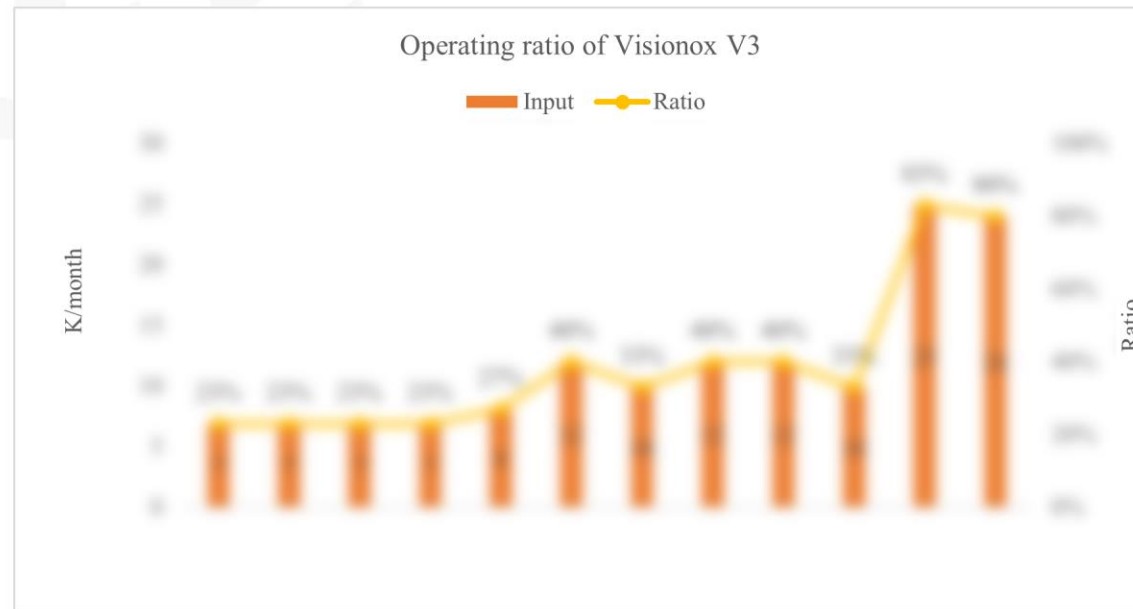
5. Analysis of OLED line status by company

5.7 Visionox

■ Hefei V3

- It is a *** OLED line with a capa of ***/month.
- Panels are being produced for smartphones by ***, ***, ***, ***, ***, ***, and others.
- Visionox is promoting its low-cost *** OLED panels to *** and *** to increase the Operating Ratio of the V3.
- The Hefei municipal government was coordinating a merger with ***, but the timeline has been delayed.

Visionox's V3 line utilization in 2023



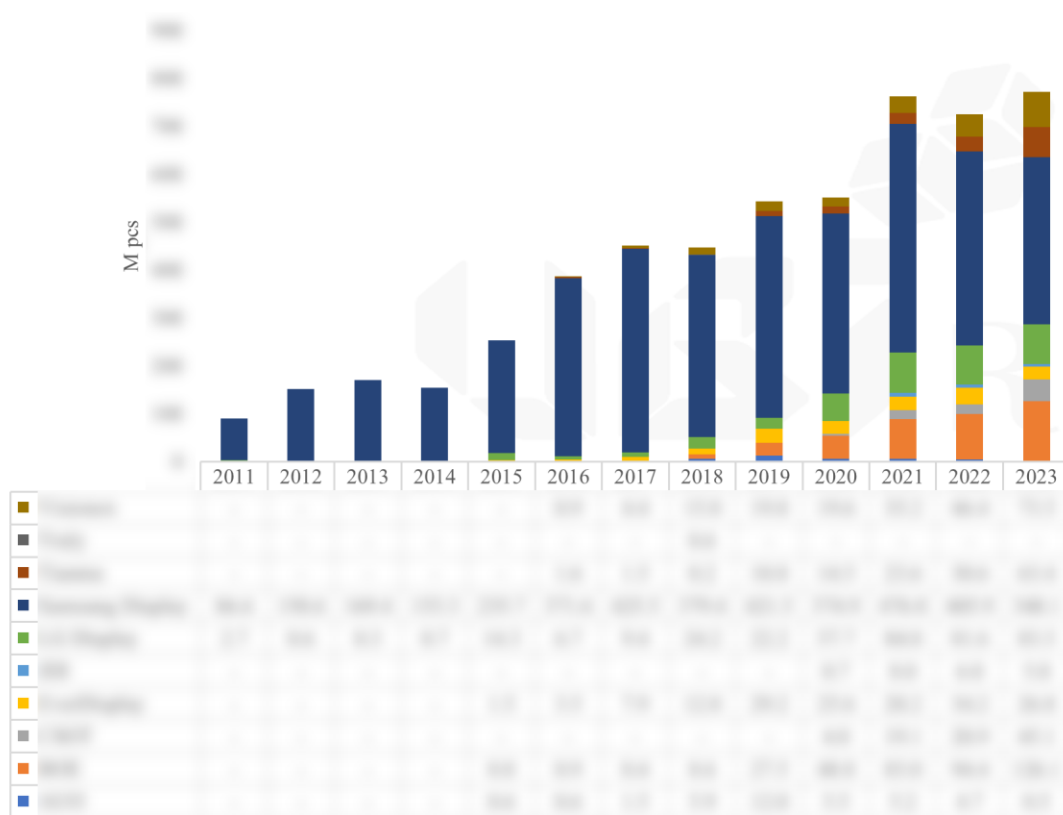
Source: UBI Research DB

7. Annual OLED Market Performance Analysis

7.2 Small OLED Performance Analysis by Company

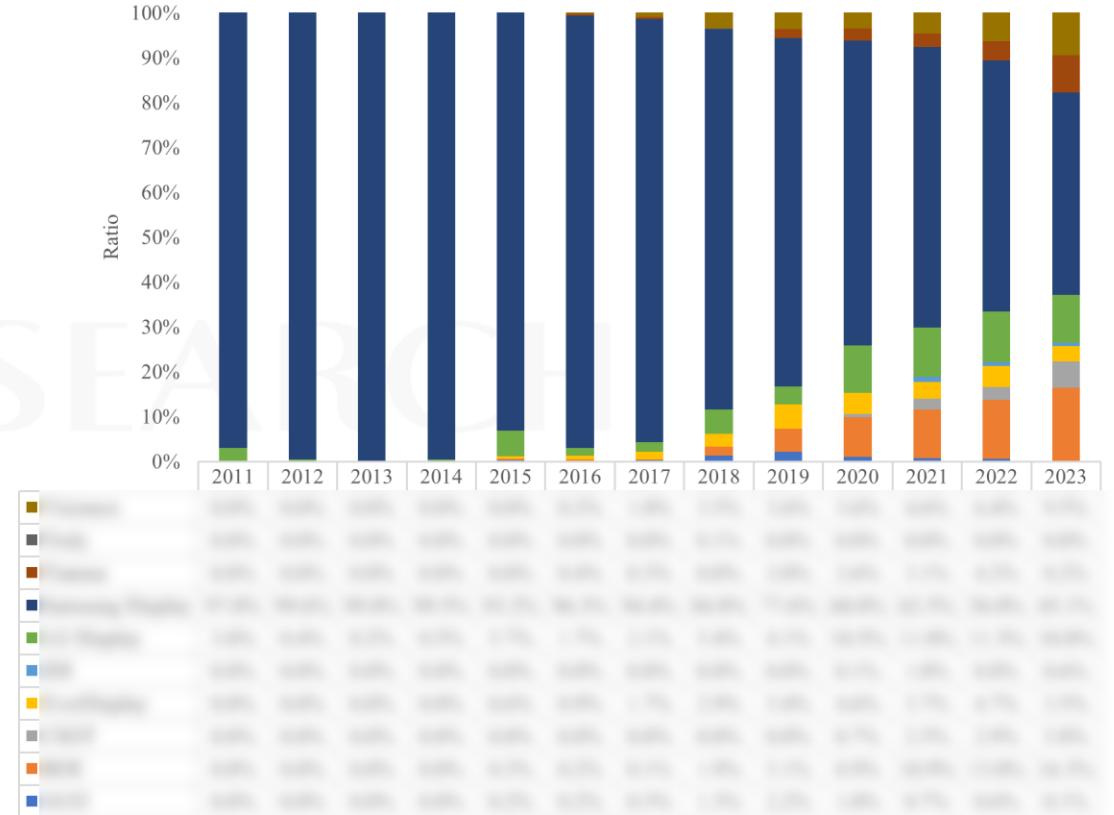
Annual Shipment Analysis

Shipment by Company



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Shipment Ratio by Company



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10. OLED Market Forecast

10.2 Market Forecast by Panel Maker

Revenue Forecast

(US\$ million)

Company	Application	2024	2025	2026	2027	2028
AUO	Watch	1,000	1,000	1,000	1,000	1,000
BOE	Foldable Phone	1,000	1,000	1,000	1,000	1,000
	Smart Phone	1,000	1,000	1,000	1,000	1,000
	Watch	1,000	1,000	1,000	1,000	1,000
CSOT	Foldable Phone	1,000	1,000	1,000	1,000	1,000
	Smart Phone	1,000	1,000	1,000	1,000	1,000
EDO	Smart Phone	1,000	1,000	1,000	1,000	1,000
	Watch	1,000	1,000	1,000	1,000	1,000
JDI	Watch	1,000	1,000	1,000	1,000	1,000
LG Display	Smart Phone	1,000	1,000	1,000	1,000	1,000
	Watch	1,000	1,000	1,000	1,000	1,000
Samsung Display	Foldable Phone	1,000	1,000	1,000	1,000	1,000
	Game	1,000	1,000	1,000	1,000	1,000
	Smart Phone	1,000	1,000	1,000	1,000	1,000
	Watch	1,000	1,000	1,000	1,000	1,000
Tianma	Smart Phone	1,000	1,000	1,000	1,000	1,000
	Watch	1,000	1,000	1,000	1,000	1,000
Visionox	Foldable Phone	1,000	1,000	1,000	1,000	1,000
	Smart Phone	1,000	1,000	1,000	1,000	1,000
	Watch	1,000	1,000	1,000	1,000	1,000
Total		10,000	10,000	10,000	10,000	10,000