

July 4, 2022

China Display Industry Trends Report

June, 2nd Report

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1. Trend by Panel Maker



Trend by Panel Maker

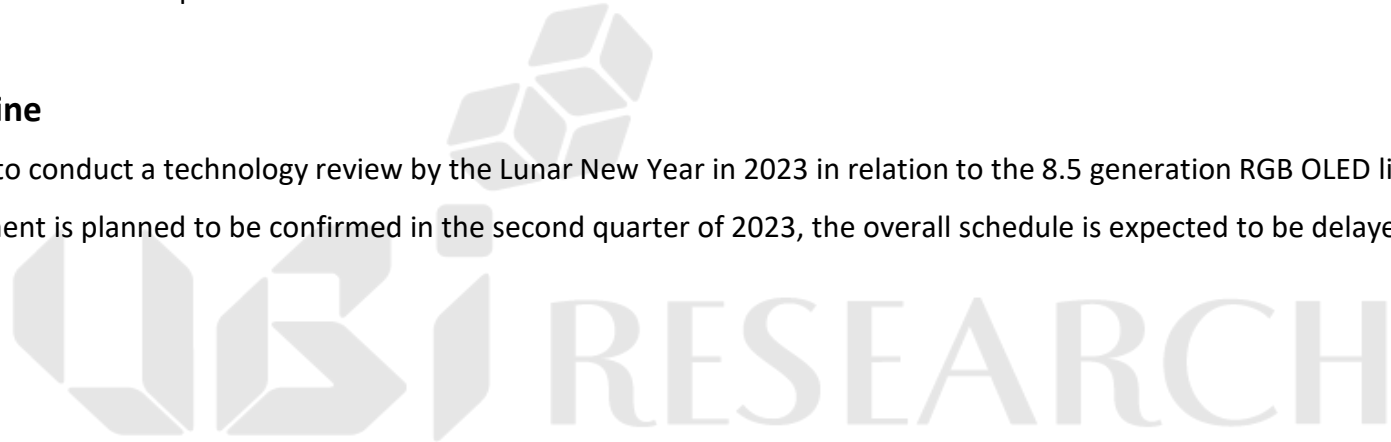
1.1 BOE

■ iPhone Quantity Status

- BOE's iPhone14 supply is expected to be about 5 million units. Production of 1 million units per month is expected starting in September.
- As Apple's iPhone 14 shipments have more than 20 million more units, BOE's shipments are likely to be added in the future.
- This year, BOE is forecasted to produce 10 million iPhone 13 and 15 million iPhone 12.

■ 8.5G RGB OLED Line

- BOE is expected to conduct a technology review by the Lunar New Year in 2023 in relation to the 8.5 generation RGB OLED line.
- Although equipment is planned to be confirmed in the second quarter of 2023, the overall schedule is expected to be delayed in relation to the overall business status.



Trend by Panel Maker

1.1 BOE

▀ Review of 6G LTPO LCD Line New Investment

- The LCD new line review mentioned in the first report in June is expected to receive investment confirmation in July.
- There is also possibility of investment in OLED-related equipment in new lines.

1.2 TCL CSOT

▀ T8 Inkjet Line

- The two-year technical cooperation contract with JOLED has almost expired. Any future plans have not yet been decided..
- In July, Li Dongsheng, chairman of TCL CSOT, is expected to visit Japan. It is also expected that he will visit Korean equipment makers at that time.
- The T8 line will most likely receive specific directions after Chairman Li Dongsheng's visit to Japan.

Trend by Panel Maker

1.3 OLED Line Operation Rate Trend by Panel Maker

Monthly Operation Rate of OLED Line by Chinese Panel Maker

Company	Line	Gen	Monthly Capacity	Operating Ratio [%]					
				Jan	Feb	Mar	Apr	May	June
BOE	B7	6	48	29	17	54	58	54	58
	B11	6	48	52	21	31	17	17	21
	B12	6	32	9	16	16	확인 중		
TCL CSOT	T4	6	45	33	33	33	33	33	33
Tianma	Wuhan	6	30	27	24	27	확인 중		
EDO	Shanghai	4.5	15	87	80	67	60	60	67
		6	30	57	50	50	43	40	43
Visionox	V1	5.5	15	87	73	47	40	40	33
	V2	6	15	53	40	27	33	53	47

Source: UBI Research DB

2. Foldable OLED Development Trend

2. Foldable OLED Development Trend

2.1 BOE

■ Huawei Mate X Series Development Trend

- BOE is developing foldable OLED for Huawei, Oppo, Honor, and Vivo.
- For Huawei, 6.45-inch in-folding OLED and 7.8-inch out-folding OLED are being developed for the Mate X series.
- BOE is the main supplier. Visionox is expected to supply small quantities as a secondary supplier.
- Mass production in the fourth quarter of 2022 is the target and mass production is to start in small quantities, around 100,000 units each.
- The cover window material has not been decided yet.

■ Foldable and Slideable Development Trend for Oppo

- For Oppo, a follow-up model of 'Find N' and a slideable OLED for R&D are in development.
- The foldable OLED for 'Find N' is targeted for mass production in the fourth quarter of 2022. The quantity is expected to be between 90,000 and 100,000 units.
- Oppo personnel reside on the B11 line and developing the panels.
- The size of the slidable OLED is in the mid 10-inch to early 20-inch range. The cover window is colorless PI.
- Samples are supplied by KOLON and Sumitomo Chemical.

2. Foldable OLED Development Trend

2.1 BOE

■ Foldable Development Trend for Honor

- For Honor, two panels for the follow-up model of 'Magic V' are in development.
- The first development panel is a 7.9-inch folding type foldable OLED in the same shape as its predecessor. UTG supplied by Token is expected to be applied.
- Mass production in the second half of 2022 is the target and the volume is expected to reach 100,000 units.
- The second development panel is a clam-shell type. The size is 6.45 inches and it is expected that the Token's UTG will be used for the cover window.
- The target schedule for mass production is the second half of 2022 and the volume is expected to be 100,000 units.

Foldable OLED In Development by BOE

Set Company	Folding Type	Size [inch]	MP Target	Cover Window	Note
Huawei	In-folding	6.45	4Q22	-	For Mate X' Series Clam-shell
Huawei	Out-folding	7.8	4Q22	-	For 'Mate X'
Oppo	In-folding	-	4Q22	-	-
Oppo	Slidable	13.9~20.6	-	CPI	Research and Development Project
Honor	In-folding	7.9	4Q22	UTG?	For 'Magic V' Series
Honor	In-folding	6.45	4Q22	UTG?	For 'Magic V' Series Clam-shell

Source: UBI Research DB

2. Foldable OLED Development Trend

2.2 Visionox

■ Foldable Development Trend for Honor

- Visionox's main customer is Honor. They are also developing foldable OLEDs for Huawei and Transsion.
- For Honor, an in-folding type 7.92-inch foldable OLED is in development.
- Mass production in the fourth quarter of 2022 is the target. Mass production is expected to reach 90,000 to 100,000 units.
- Both UTG + PET and colorless PI are being considered for cover window materials. It will be decided according to Honor's request.

■ Foldable Development Trend for Huawei

- 6.45-inch in-folding OLED and 7.8-inch out-folding OLED are being developed for Huawei's Mate X series.
- Mass production in the fourth quarter of 2022 is the target. As BOE is selected as the main supplier, mass production is expected to be 10,000 units each in small quantities.
- The cover window material has not yet been decided, but it is highly likely that colorless PI products will be used for out-folding products.

■ Foldable Development Trend for Transsion

- A 360° type 8-inch foldable OLED that folds both inside and outside is being developed for Transsion. The target schedule for mass production is the second quarter of 2023.
- Both UTG + PET and colorless PI are being considered as cover window materials.

2. Foldable OLED Development Trend

2.2 Visionox

▀ Visionox's Other Foldable Business Trends

- In addition to Transsion, Visionox is verifying products from a number of UTG-related companies such as KAI MAO, Token, and UTI in consideration of requests for UTG use by set companies such as Huawei.
- As a research and development project, G-folding and Z-folding OLEDs are in development, with a maximum size of 15 inches.
- Speculated for Xiaomi.

Foldable OLED In Development by Visionox

Set Company	Folding Type	Size [inch]	MP Target	Cover Window	Note
Huawei	In-folding	6.45	4Q22	UTG + PET / CPI	For Mate X Series
Huawei	Out-folding	7.8	4Q22	UTG + PET / CPI	For Mate X Series
Honor	In-folding	7.92	4Q22	UTG + PET / CPI	KAI MAO, Token, UTI Verification in Progress
Transsion	360°	8	2Q23	-	-
Xiaomi?	G and Z folding	15?	-	-	Research and Development Project <small>Source: UBI Research DB</small>

3. Miscellaneous Trend



3. Miscellaneous Trend

3.1 Ministry of Industry and Information Technology of China (工信部)

- Ministry of Industry and Information Technology of China (工信部) has designated FMM as the support item for domestic consumption in China, and the project is proceeding quickly.
- Not only FMM, but also the supporting process for evaporator and related equipment are in the process.
- Open metal mask was supported by the National Development Committee in 2021.



4. Chinese OLED Product Release in June

4. Chinese OLED Product Release in June

4.1 OLED Smartphone Product Launch by Chinese Companies

OLED Smartphone Product Launch in June by Chinese Companies

Company	Oppo	Oppo	Oppo	Oppo	Oppo	Realme	Xiaomi
Model	Reno7 Lite	Reno8	Reno8 Lite	Reno8 Pro	Reno8 Pro+	GT Neo 3T	Poco F4
Size [inch]	6.43	6.43	6.43	6.62	6.7	6.62	6.67
Resolution	1080 x 2400	1080 x 2400	1080 x 2400	1080 x 2400	1080 x 2412	1080 x 2400	1080 x 2400
ppi	409	409	409	397	394	398	395
Display Area [%]	85.3	84.7	85.3	89.0	90.3	85.7	86.6
Feature	Hole	Hole	Hole	Hole	Hole	Hole	Hole
Price	€ 350.00	€ 350	€ 389	€ 420	€ 520	€ 470	€ 400
Picture							

Source: GSMArena.com, UBI Research DB

4. Chinese OLED Product Release in June

4.1 OLED Smartphone Product Launch by Chinese Companies

OLED Smartphone Product Launch in June by Chinese Companies

Company	Honor	Honor	Honor	Motorola	Motorola	Motorola
Model	70	70 Pro	70 Pro+	Moto G42	Moto G71s	Moto G82
Size [inch]	6.67	6.78	6.78	6.4	6.6	6.6
Resolution	1080 x 2400	1200 x 2652	1200 x 2652	1080 x 2400	1080 x 2440	1080 x 2400
ppi	395	429	429	411	404	402
Display Area [%]	90.8	91.1	91.1	83.9	86.8	86.4
Feature	Hole	Hole	Hole	Hole	Hole	Hole
Price	€ 380	€ 520	€ 600	€ 210	€ 240	€ 330
Picture						

Source: GSMArena.com, UBI Research DB

5. Chinese Panel Maker Equipment Disclosure

Chinese Panel Maker Equipment Disclosure

5.1 BOE

B7

Bidding No.	Bidding Contents	Open-time of Bids	Manufacturer	Country	Qty
4197-214BOECQ0001/169	ADC System	2022-06-14 10:00	Beijing Zhongxiangying Technology Co.,Ltd.	China	1
4197-214BOECQ0001/170	EGIS	2022-06-14 10:00	HIROSE OPTOCO.,LTD	China	19

Source: chinabidding.com, UBI Research DB

B11

Bidding No.	Bidding Contents	Open-time of Bids	Manufacturer	Country	Qty
4197-214BOEMY0001/95	Dry Pump	2022-06-30 10:00	-	-	27
4197-214BOEMY0001/96	Linear Source Modification	2022-06-30 10:00	-	-	1
4197-214BOEMY0001/97	Ink Sealing&Conductive Ink	2022-06-30 10:00	-	-	7

Source: chinabidding.com, UBI Research DB

Micro OLED

Bidding No.	Bidding Contents	Open-time of Bids	Manufacturer	Country	Qty
4197-214BOEBMOT02/15	Lifetime Tester	2022-05-31 10:00	Xiamen Teyi Technology Co., Ltd	China	1

Source: chinabidding.com, UBI Research DB