

Global and China 3D Glass Industry Chain Report, 2016-2020

Oct. 2016

STUDY GOAL AND OBJECTIVES

This report provides the industry executives with strategically significant competitor information, analysis, insight and projection on the competitive pattern and key companies in the industry, crucial to the development and implementation of effective business, marketing and R&D programs.

REPORT OBJECTIVES

- ◆ To establish a comprehensive, factual, annually updated and cost-effective information base on market size, competition patterns, market segments, goals and strategies of the leading players in the market, reviews and forecasts.
- ◆ To assist potential market entrants in evaluating prospective acquisition and joint venture candidates.
- ◆ To complement the organizations' internal competitor information gathering efforts with strategic analysis, data interpretation and insight.
- ◆ To suggest for concerned investors in line with the current development of this industry as well as the development tendency.
- ◆ To help company to succeed in a competitive market, and

METHODOLOGY

Both primary and secondary research methodologies were used in preparing this study. Initially, a comprehensive and exhaustive search of the literature on this industry was conducted. These sources included related books and journals, trade literature, marketing literature, other product/promotional literature, annual reports, security analyst reports, and other publications. Subsequently, telephone interviews or email correspondence was conducted with marketing executives etc. Other sources included related magazines, academics, and consulting companies.

INFORMATION SOURCES

The primary information sources include Company Reports, and National Bureau of Statistics of China etc.

Abstract

3D glass, mainly relative to traditional 2D glass and 2.5D glass, refers to curved glass with arc design either in the middle or at the edge. It advances along with the development of flexible AMOLED industry.

In 2016, global 3D glass market is worth approximately USD190 million, with an estimated growth rate of over 60.0% year on year; the Chinese market contributes RMB170 million (about USD30 million) and occupies 15.8%. With the maturity of 3D glass production technology and higher penetration in the downstream application markets, the global market is expected to show a CAGR of 102.1% in 2016-2020.

The Chinese 3D glass market is now in a state of oligopolistic competition with more than 95.0% market share together seized by the early entrants Biel Crystal Manufactory and Lens Technology that have developed mature production technologies and advanced 3D glass processing & production equipment e.g. hot bending machine.

Besides, Samsung Galaxy S6/S7 and Xiaomi 5 pioneered in the use of 3D glass, and iPhone intends to adopt glass shell in 2017. Driven by this, many domestic enterprises such as O-Film Tech, Weibai Technology and Firstar Panel Technology have made their presence in 3D glass field.

3D glass is primarily used in smartphone, wearable device, VR, automobile and other fields. Among them, smartphone is the biggest application market.

Smartphone: In 2016, global demand for smartphone 3D glass is approximately seven million pieces, including one million pieces from China. So far, Samsung, LG, Xiaomi and Vivo have launched smartphones with 3D cover glass or back glass. Along with the trend, the penetration of 3D glass is expected to rise from 0.5% in 2015 to 23.1% in 2020.

Wearable Device (the second largest application of 3D glass, mainly relatively mature smartwatch field): Global wearable device shipments reached 79 million units in 2015, are expected to outnumber 100 million units in 2016, and register a growth rate of more than 20% in 2016-2020. China's wearable device market growth is slightly higher than the global average.

VR: The industry is in its infancy with relatively small demand for 3D glass and concentrated primarily in head-mounted VR. In 2016, global head-mounted VR shipments total three million units or so, accounting for roughly 30% of the total VR equipment shipments.

The report covers the following:

- ⇒ Global 3D glass industry (supply, demand, market structure, etc.);
 - ⇒ 3D glass industry in China (market size/structure, patent, market price, competitive landscape, market driver, etc.);
 - ⇒ 3D glass production materials (glass substrate, polishing materials, coating materials, ink) (market size, competitive landscape, etc.);
 - ⇒ 3D glass processing equipment (hot bending machine, CNC engraving machine, flat grinding machine) (market size, competition, processing technology, etc.);
 - ⇒ Applications (smartphone, wearable device, and VR)(market status, demand for 3D glass, etc.);
- Sixteen 3D glass manufacturers worldwide (operation, 3D glass business, etc.)

3D Glass Industrial Distribution of Major Chinese Companies, 2016

Company	Profile	3D Glass Technology	Capacity Layout
Biel Crystal Manufactory	Supply of mobile phone& watch covers, mobile phone cover shipments make up 60% global market share; core customers include Apple and Samsung	A global leader in curved (2.5D, 3D) glass processing	Yonghu Project Phase II construction kicked off in Oct. 2015
Lens Technology	The world's second largest cover glass manufacturer; core customers include Apple and Samsung	Mastery of 3D glass hot bending & forming technology and 3D glass hot melting & forming technology; major customers include Samsung and Xiaomi	3D curved glass production project is expected to be put into production in June 2017 when 27 million pcs/a 3D curved glass will be added.
O-Film Tech	The subsidiaries Nanchang O-Film Tech Co., Ltd. and Jiangxi Precision Thin Film Engineering Center are responsible for producing window cover glass.	Covering 2D, 2.5D, 3D glass product lines; major customers include Samsung, Huawei, Lenovo, Xiaomi, LeECO	
Firststar Panel Technology	Mainly engaged in mobile phone, tablet PC covers, structural parts, touch screen, etc.	Mature production technologies in terms of 3D prototyping, 3D curved surface printing, curved surface fitting, etc.	Focusing on enhancing 3D curved glass production efficiency and yield in 2016
Triumph Science & Technology	Mainly relying on technical superiorities of Bengbu Glass Industry Design & Research Institute	2.5D glass yield of above 95%	24 million pcs/a 2.5D mobile phone cover glass production line was built at the end of Mar. 2016; existing capacity hits 80% of designed capacity

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