

## Global and China Optical Component & Subsystem Industry Report, 2009



Optical components include two categories -- subsystem and Passive component. Subsystem consists of optical fiber amplifier, optical transceiver, optical transponder and optical line protection subsystem; and passive component is primarily composed of wavelength division multiplexer, optical connector and optical integrated device.

In optical component industry, there are a variety of products, which can be divided into dozens of types. They differ in performance, application and special requirement, so each type has hundreds of models. As a result, the production of optical components is commonly determined by orders; therefore, the flexibility of the production lines is highly required in a relative way. Production lines involve basic part production and processing, chip fabrication, coupled device packaging, module & subsystem design and production as well as many other basic segments, so that the internal industrial chain including sub-components, components, modules and subsystems is formed. In addition, there is an increasingly evident tendency for the division of labor based on specialization in every chain segment. In optical component industry, products are still handmade and machined, and a large number of skilled workers are needed, so China is the largest optical component production base in the world.

After technology stock bubble collapsed in 2001, optical component industry plummeted. But, it regained from 2004. The gross profit margin increased year by year, even peaked in 2007 and 2008. In 2009, the influence of the global economic crisis on optical component industry was not as serious as that in 2001; most companies only suffered a little decline. Optical component industry has been used to the economic crisis, and it has very strong cost control power.

New technologies develop rapidly in optical component industry. Every company spends heavily in research and development of new technologies. Mergers and acquisitions frequently occur in this industry. For large enterprises, there are 4 to 5 M&A cases each year; while, for small enterprises, 1 or 2 M&A cases each year.

Currently, the world's top 10 optical component manufacturers are independent of communications system equipment manufacturers who have separated or sold their optoelectronic sectors. Cases in this regard include: Lucent Technologies made Agere Systems be listed on New York Stock Exchange independently in 2001;

Marconi and Nortel Networks sold their optical component business to Bookham respectively in 2002; Corning and Alcatel sold their optical component business to Avanex respectively in 2003; Ericsson announced it would sell its optical component business to OrthLight in 2003.

### Merger and Acquisition in Global Optical Component Industry, 2008-2009

Date	Initiator	Target Party	Business of Target Party	Fund or Stock
Jan. 2008	Ciena	WWP		US\$1.1 billion
Apr. 2008	Emcore	Assets and storage business of Intel's optical platform division		Additional issuing of 2.7 million shares
May 2008	Finisar	Optium		US\$213 million
Jul. 2008	Opnext	Startlight	40Gbps photon systems and advanced Dispersion Compensation Modules	
Jul. 2008	TranSwitch	Centillum	PON chip	
Nov. 2008	JDSU	Circadiant	SFP+, 10GbE and emergency signal testing solution	
Nov. 2008	JDSU	Optical Fiber Business of Westover Scientific	Fiber inspection and cleaning solution provider	US\$50 million
Jan. 2009	Bookham and Avanex merged to be Oclaro			
Feb. 2009	Sanmina-SCI	JDSU Plant in Shenzhen		
Mar. 2009	JDSU	Metconnex's WSS technology and patent		US\$2.5 million
Mar. 2009	Aegis Lightwave	AOFR, a subsidiary of Arazor International Ltd.	Optical Fiber Coupler	
Jun. 2009	Oclaro's NEW FOCUS	NEWPORT		Asset Swap
Jul. 2009	JDSU	Network Tools Business Sector of Finisar Corporation		US\$40.60 million
Nov. 2009	Ciena	Nortel Fiber Network		US\$769 million
Nov. 2009	Ignis and Gemfire announced to postpone the merger in January 2010			
Dec. 2009	3S Photoelectric	Avensys of Avensys and ITF Lab		EUR6.5 million
Dec. 2009	Oclaro	Xtellus	Xtellus made use of Liquid Crystal and MEMS technology to develop WSS products	
Jan. 2010	II-VI	Photop Technologies, Inc.	Products in the fields of communications, display, laser and optics.	US\$45.6 million

### Revenue of 20 Optical Component Manufacturers in the World, 2008-2009

(US\$: million)	2008	2009
JDSU	614	481
Finisar	541	520
OPNEXT	283	319
Hisense	43	47
Oclaro	202	211
Oplink	176	144
WTD	35	42
Genuine-Optm	24	38
Neo Photonics	134	147
MRV	202	208
Star Opto	34	37
Hi-Optel	24	25
Photop Technologies	06	55
O-netcom	56	60
Wuxi ZTE	50	54
Emocre	171	114
Accelink	93	114
AVAGO	279	260
EXCELIGHT	326	302
Fujitsu	139	110

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