

# **Global and China CMOS Camera Module (CCM) Industry Report, 2020-2026**

**May 2020**

## 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

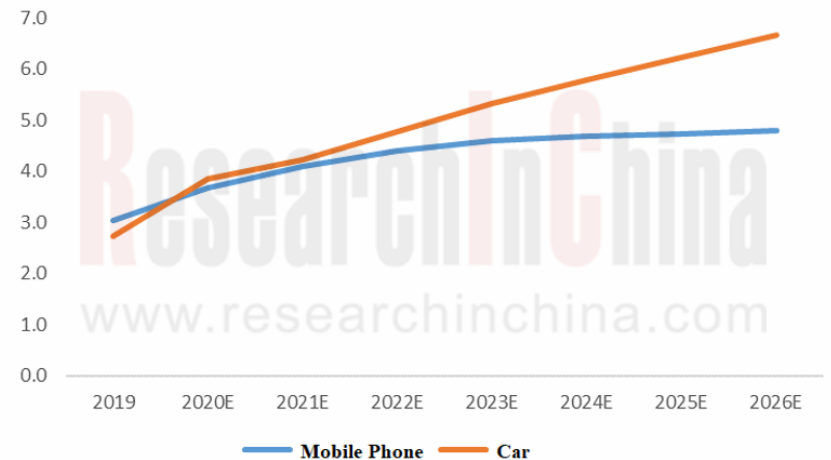
The global CCM market has been ballooning thanks to expeditious penetration of multi-camera phones and advances in automotive ADAS, being worth \$22.723 billion with a year-on-year spike of 16.6% in 2019, a figure projected to sustain growth at a compound annual rate of 6.1% between 2019 and 2026.

Nowadays, single-camera, dual-camera and triple-camera mobile phones prevail globally, of which dual rear camera mobile phones share 40%. However, the upcoming triple-camera, four-camera and five-camera mobile phones will undoubtedly beat dual-camera ones, and triple-camera and four-camera phone models will become the mainstream alongside the burgeoning demand for mobile phone camera modules.

The global shipments of automotive camera modules reached 250 million units in 2019. The automotive camera module market is facilitated amid a faster rise in ADAS penetration due to the incentive policies and robust consumer demand. By 2026, the global automotive camera module shipments would expectedly hit 600 million units.

In the next few years, a growing number of camera modules will be mounted onto each mobile phone and every car.

Average Number of Camera Modules Mounted on Each Mobile Phone/Car Worldwide, 2019-2026E



Source: ResearchInChina

The world camera module market is now firmly held by Sunny Optical, O-Film, LG Innoteck, LUXVISIONS, etc. O-Film has become the mainstream supplier of dual-camera and multi-camera modules in the industry by its self-developed AA focusing process, highly automated production lines and mass-production competence, delivering 6.6 billion camera modules and leading the pack worldwide in 2019.

Compared with those for consumer electronics, automotive cameras pose higher requirements for shock resistance, stability, continuous focus, thermal compensation, and resistance to interference of stray light and strong light, thus with a sophisticated process of module assembly and rather high technical barriers. The leading suppliers are Panasonic, Magna, Valeo, Continental, LG INNOTEK, to name a few.

Chinese mobile phone camera module vendors are aggressively expanding the automotive camera module business. Sunny Optical has successfully developed a variety of surround-view, front-view and in-cabin camera modules, some of which have already been spawned. Q Technology has been qualified as a Tier2 supplier of automotive camera modules for many Chinese carmakers. Competition pricks up in automotive camera modules.

Meanwhile, 3D sensing and periscope camera solutions are gaining ground among mobile phone vendors amid consumers' ever higher requirements on mobile phone cameras. In respect of 3D sensing, the multi-scenario use of ToF enjoys a rosy prospect and is more favored by mobile phone vendors.

Here are the highlights of the report:

- ◆ Global CCM industry (market size, competitive landscape and development trend);
- ◆ Global CCM market segments (mobile phone CCM, automotive CCM);
- ◆ CCM technology orientations of mobile phone rear multi-camera, 3D Imaging, periscope cameras);
- ◆ 22 global CCM-related companies (operation, camera module business, etc.).

### **1. CMOS Camera Module Industry**

- 1.1 CMOS Camera Module Industry Chain
- 1.2 Technology Route

### **2 CMOS Camera Module Industry**

- 2.1 Overall Market Size
- 2.2 Competitive Landscape
- 2.3 Development Trend

### **3 Global CMOS Camera Module Market Segments**

- 3.1 Mobile Phone CCM Market
  - 3.1.1 Global & China Mobile Phone Market
  - 3.1.2 Mobile CCM Market Size
  - 3.1.3 Competitive Landscape
  - 3.1.4 Supply Relationship
  - 3.1.5 Development Trend
- 3.2 Automotive CCM Market
  - 3.2.1 Global and Chinese Automotive Markets
  - 3.2.2 Status Quo
  - 3.2.3 Market Size
  - 3.2.4 Competitive Landscape

### **4 Trend of Cutting-edge CMOS Camera Module Technology**


- 4.1 Multiple Rear Cameras for Mobile Phones
  - 4.1.1 Overview

### **4.1.2 Market Analysis**


- 4.2 3D Imaging
  - 4.2.1 Overview
  - 4.2.2 Market
  - 4.2.3 Competition Pattern
- 4.3 Periscope Camera

### **5. Camera Module Vendors**


- 5.1 Chicony
  - 5.1.1 Profile
  - 5.1.2 Operation
  - 5.1.3 Revenue Structure
  - 5.1.4 Operation in China
- 5.2 O-film Tech Co., Ltd.
  - 5.2.1 Profile
  - 5.2.2 Operation
  - 5.2.3 Revenue Structure
  - 5.2.4 Output & Sales Volume
  - 5.2.5 M&As
- 5.3 Q-TECH
  - 5.3.1 Profile
  - 5.3.2 Business Performance
  - 5.3.3 Sales
- 5.4 LG INNOTEK
  - 5.4.1 Profile



5.4.2 Operation	5.9.5 Production Layout
5.4.3 Revenue Structure	5.10 SEMCO
5.4.4 Camera Module Business	5.10.1 Profile
5.4.5 Production	5.10.2 Business Performance
5.5 Cowell	5.10.3 Revenue Structure
5.5.1 Profile	5.10.4 Tianjin Samsung Electro-Mechanics Co., Ltd.
5.5.2 Business Performance	5.11 Partron
5.5.3 Revenue Structure	5.11.1 Profile
5.5.4 Shipment	5.11.2 Business Performance
5.6 Truly International	5.11.3 Revenue Structure
5.6.1 Profile	5.11.4 Production Layout
5.6.2 Operation	5.12 Sunny Optical
5.6.3 Revenue Structure	5.12.1 Profile
5.6.4 Main Business	5.12.2 Business Performance
5.7 BYD (Holitek)	5.12.3 Revenue Structure
5.7.1 Profile	5.12.4 Output & Sales Volume
5.7.2 Major Products	5.13 CAMMSYS
5.8 LUXVISION Inno (Former LITE-ON CCM business)	5.13.1 Profile
5.8.1 Profile	5.13.2 Business Performance
5.8.2 CCM Business	5.13.3 Production
5.9 Primax	5.13.4 SUNYANG DNT
5.9.1 Profile	5.14 Powerlogics
5.9.2 Operation	5.14.1 Profile
5.9.3 Revenue Structure	5.14.2 Business Performance
5.9.4 Output & Sales Volume	5.14.3 Production



5.14.4 Layout	5.21 OmniVision
5.15 MCNEX	5.21.1 Profile
5.15.1 Profile	5.21.2 Operation
5.15.2 Business Performance	5.22 PixArt
5.15.3 Revenue Structure	5.22.1 Profile
5.15.4 Production	5.22.2 Operation
5.15.5 MCNEX (Shanghai) Electronics Co., Ltd.	5.22.3 Revenue Structure
5.16 Globaloptics	5.22.4 Major Products
5.16.1 Profile	
5.16.2 Operation	
5.17 Shine Tech	
5.17.1 Profile	
5.17.2 Operation	
5.18 LCE-Optics	
5.18.1 Profile	
5.18.2 Operation	
5.18.3 Development Strategy	
5.19 ON Semiconductor	
5.19.1 Profile	
5.19.2 Operation	
5.19.3 CMOS Products	
5.20 Sony	
5.20.1 Profile	
5.20.2 Operation	
5.20.3 CMOS Products	




Basic Composition of Typical CMOS Camera Module  
Composition of Camera Module  
Value Structure of Mobile Phone Camera Module Industry Chain Links  
Differences of CMOS Module Technologies  
Packaging of CMOS Module by Technology  
Global CMOS Camera Module Market Size, 2017-2026E  
Capacity and Shipments of Global Major CCM Vendors, 2018-2019  
Supply Relationship of CCM Supply Chain  
Camera Module Revenue of Global Major Camera Module Vendors, 2018-2019  
Camera Module Technology and Application Trends  
Average Number of Camera Modules Mounted on Each Mobile Phone/Car Worldwide, 2019-2026E  
Global Smartphone Shipments, 2012-2019  
Global Smartphone Shipments, 2019-2026E  
Market Share of Global Smartphone Vendors, 2018-2019  
China's Smartphone Shipments, 2014-2019  
Global Demand for Mobile Phone Cameras, 2017-2026E  
Global Mobile Phone CCM Market Size, 2017-2026E  
Global Mobile Phone CCM Shipment Structure, 2019  
Distribution of Samsung's Camera Module Suppliers, 2019  
Distribution of Apple's Camera Module Suppliers, 2019  
Distribution of Huawei's Camera Module Suppliers, 2019  
Distribution of Xiaomi's Camera Module Suppliers, 2019  
Distribution of OPPO's Camera Module Suppliers, 2019  
Distribution of VIVO's Camera Module Suppliers, 2019  
Future Development Path of Mobile Phone CCM





Global Automobile Output, 2010-2020  
Global Automobile Output (by Region), 2010-2019  
Top 20 Countries by Automobile Output, 2019  
China's Automobile Output, 2011-2020  
Installation Arrangement of Automotive Cameras (in KIA K9's Case)  
Distribution and Functions of Automotive ADAS Cameras  
ADAS-related Requirements in Vehicle Safety Regulations of Major Countries  
Autonomy and Camera Use of Various models  
Global Automotive Camera Module Shipment, 2017-2026E  
Market Share of Major Global Automotive CCM Vendors, 2019  
Global Major Automotive Camera Module Suppliers  
Global Release Timeline of Mobile Phones with Multiple Rear Cameras  
Four-camera Mobile Phones Launched by Main Mobile Phone Vendors, 2019  
Global Smartphone Shipment Structure (by Number of Rear Cameras), 2017-2019  
Mobile Phone Camera Module Penetration, 2017-2026E  
Average Number of Cameras Mounted on Each Mobile Phone Worldwide, 2019-2026E  
3D Structured Light Vision Product Structure  
3D Structured Light Schematic  
ToF Imaging Schematic  
Comparison among Three Mainstream 3D Imaging Solutions  
Main Mobile Phone Models Packed with TOF  
Major Global Companies in 3D Imaging Industry Chain  
Global Mobile Phone 3D Imaging Market Size, 2017-2026E  
OPPO's Periscope Camera Structure  
Chicony Electronics' Revenue and Gross Margin, 2013-2020



Chicony Electronics' Quarterly Revenue, 2016-2020  
Chicony Electronics' Revenue Breakdown by Region, 2017-2020  
Chicony Electronics' Revenue Breakdown by Product, 2017-2019  
Profile of Chicony Electronics (Suzhou) Co., Ltd.  
Revenue and Operating Income of Chicony Electronics (Suzhou) Co., Ltd., 2013-2018  
Profile of Chicony Electronics (DongGuan) Co., Ltd.  
Revenue and Operating Income of Chicony Electronics (DongGuan) Co., Ltd., 2013-2018  
Development Course of O-film Tech  
O-film Tech's Main Businesses and Products  
O-film Tech's Key Subsidiaries  
O-film Tech's Revenue and Operating Margin, 2013-2020  
O-film Tech's Revenue Breakdown by Product, 2018-2019  
O-film Tech's Gross Margin by Product, 2018-2019  
O-film Tech's Revenue Structure by Region, 2016-2019  
Capacity and Output of O-film Tech's Main Products, 2014-2019  
Acquisitions of O-film Tech in Recent Years  
Milestones of Q-Tech  
Main Business of Q-Tech  
Q-Tech's Revenue and Gross Margin, 2013-2019  
Q-Tech's Revenue Breakdown, 2015-2019  
Quarterly Shipment and Average Price of Q-Tech's Camera Modules, 2017-2019  
Q-Tech's Monthly Shipment of CCM, 2017-2019  
CCM ASP by Pixels of Q-TECH, 2018-2019  
Q-Tech's Top5 Clients, 2017-2019  
Q-Tech's Miniaturization Strategy



Q-Tech's Vertical Integration Strategy  
LG Innotek's Main Camera Modules  
LG Innotek's Revenue and Operating Margin, 2013-2020  
LG Innotek's Revenue Breakdown by Business, 2018-2020  
Distribution of LG Innotek's Main Businesses by Sales Region, 2016-2019  
LG Innotek's Optical Revenue by Quarter, 2017-2020  
LG Innotek's Automotive Components Order, 2015-2019  
Prices of LG Innotek's Main Products, 2014-2018  
Output of LG Innotek's Main Products, 2016-2019  
Materials List and Cost Structure of LG Innotek's Main Products, 2016-2019  
Cowell E's Main Businesses  
Cowell E's Revenue and Gross Margin, 2013-2019  
Cowell E Revenue breakdown by Segment, 2015-2019  
Cowell E Revenue breakdown by Region, 2015-2019  
Shipments and ASP of Camera Module of Cowell, 2013-2019  
Holding Structure of Truly International's Subsidiaries  
Truly International's Revenue and Operating Margin, 2013-2019  
Truly International's Gross Margin and Net Margin, 2010-2019  
Truly International's Revenue Breakdown by Product, 2015-2019  
Truly International's Revenue Breakdown by Region, 2015-2019  
Truly International's Mobile Phone LCD Clients  
Truly International's Car Display Capacity  
Truly International's Car Display Clients  
Truly International's CCM Clients  
BYD's Optical Lenses

BYD's Camera Modules

Lite-on Technology's CCM Technology Roadmap

Profile of Lite-On Electronics (Tianjin) Co., Ltd.

Primax's Main Businesses

Primax's Organizational Structure

Primax's Global Layout

Primax's Revenue and Operating Margin, 2013-2020

Primax's Revenue Breakdown by Product, 2015-2020

Primax's Revenue Breakdown by Region, 2017-2020

Production Value and Volume of Primax, 2017-2018

Sales Value and Volume of Primax, 2017-2018

Primax's Production Layout in Mainland China

SEMCO's Global Layout

SEMCO's Revenue and Operating Margin, 2013-2020

SEMCO's Revenue Breakdown by Segment, 2017-2020

SEMCO's Operating Income by Segment, 2017-2019

Profiles of Samsung High-Tech Electro-Mechanics (Tianjin) Co., Ltd.

Revenue and Profits of Tianjin Samsung Electro-Mechanics Co., Ltd., 2014-2019

Patron Organization

Patron's Revenue and Operating Margin, 2013-2020


Patron's Revenue Breakdown by Business, 2016-2020

Patron's Production Layout


Main Divisions of Sunny Optical

Business Models of Sunny Optical


Milestones of Sunny Optical



Revenue and Gross Margin of Sunny Optical, 2013-2019  
Financial Summary of Sunny Optical, 2013-2019  
Business Layout of Sunny Optical  
Revenue Breakdown of Sunny Optical by Product Applications, 2017-2019  
Revenue of Sunny Optical by Division, 2010-2019  
Gross Margin of Sunny Optical by Division, 2013-2019  
Shipments of Sunny Optical by Product, 2013-2019  
Automotive LENS Shipments and ASP of Sunny Optical by Pixel, 2014-2019  
Mobile Phone Lens Shipments and Proportion of Sunny Optical by Pixel, 2016-2019  
Mobile Phone Camera Module Shipments and Proportion of Sunny Optical by Pixel, 2016-2019  
Main Customers of Sunny Optical  
Factories of Sunny Optical  
Milestones of Cammsys  
Organizational Structure of CAMMSYS  
Development Strategy of CAMMSYS in 2020  
Revenue and Operating Margin of CAMMSYS, 2013-2020  
Revenue of CAMMSYS from Main Products, 2015-2020  
Production and R&D Layout of CAMMSYS  
Camera Module Product Line of CAMMSYS  
Camera Module Capacity, Output and Capacity Utilization of CAMMSYS, 2015-2020  
Profile of SUNYANG DNT  
Organizational Structure of Powerlogics  
Revenue and Operating Income of Powerlogics, 2013-2020  
Revenue of Powerlogics by Product, 2017-2020  
Revenue of Powerlogics by Region, 2017-2020



Capacity of Powerlogics by Product, 2016-2020  
Output of Powerlogics by Product, 2016-2020  
CCM Component ASP of Powerlogics, 2017-2020  
Main Camera Modules of Powerlogics  
Global Business Layout of Powerlogics  
Profile of POWERLOGICS (Tianjin)  
MCNEX's Main Products for Mobile Phones  
MCNEX's Main Products for Automobile  
Revenue and Operating Profit of MCNEX, 2013-2020  
Revenue of MCNEX by Business, 2016-2020  
Revenue of MCNEX by Business/Region, 2016-2020  
Average Selling Price of MCNEX's Camera Modules, 2015-2018  
Average Purchase Price of Major Materials for MCNEX's Camera Modules, 2015-2020  
Camera Module Capacity of MCNEX, 2016-2020  
Camera Module Output of MCNEX, 2016-2020  
Revenue of MCNEX by Customer, 2015-2020  
MCNEX's Capacity by Region  
Profile of MCNEX (Shanghai)  
Organizational Structure of Global Optics  
Global Optics Business Structure  
Profile of Shenzhen Shine Tech  
Main Customers of Shine Tech  
Automotive Lens of LCE-Optics  
LCE-Optics' Revenue and YoY, 2015-2020  
Main Customers of LCE-Optics



Revenue of ON Semiconductor by Market, 2020  
Status of ON Semiconductor in Automotive CMOS Market  
ADAS Image Sensors of ON Semiconductor  
Automotive Camera System Architecture and CMOS Product System of ON Semiconductor  
Automotive CMOS Products of ON Semiconductor  
Sony's Key Financial Indicators, FY2018-FY2019  
Revenue of Sony by Business, FY2018-FY2019  
Sony's Technical Superiority in CMOS  
Sony's Camera Module System  
History of Sony's Automotive CMOS  
Sony's Automotive CMOS Pedigree  
Sony's Automotive CMOS Products  
Sony's Latest Visual CMOS Products  
Parameters of OmniVision's Image Sensors  
Classification of OmniVision's Image Sensors  
Revenue and Net Income of PixArt, 2018-2020  
Revenue of PixArt by Product, 2018-2020  
Revenue of PixArt by Region, 2018-2020  
Image Sensors of PixArt CMOS  
Image Sensor Chip PAC7366 of PixArt CMOS  
PixArt's Automotive Vision Application System  
PixArt's Automotive Gesture Control IC

**You can place your order in the following alternative ways:**

1. Order online at [www.researchinchina.com](http://www.researchinchina.com)
2. Fax order sheet to us at fax number: +86 10 82601570
3. Email your order to: [report@researchinchina.com](mailto:report@researchinchina.com)
4. Phone us at +86 10 82600828

<b>Party A:</b>			
Name:			
Address:			
Contact Person:		Tel	
E-mail:		Fax	

<b>Party B:</b>			
Name:	Beijing Waterwood Technologies Co., Ltd (ResearchInChina)		
Address:	Room 2-626, 6th Floor, No.1, Shanyuan Street, Haidian District, Beijing, 100080		
Contact Person:	Liao Yan	Phone:	86-10-82600828
E-mail:	<a href="mailto:report@researchinchina.com">report@researchinchina.com</a>	Fax:	86-10-82601570
Bank details:	Beneficial Name: Beijing Waterwood Technologies Co., Ltd Bank Name: Bank of Communications, Beijing Branch Bank Address: NO.1 jinxiyuan shijicheng, Landianchang, Haidian District, Beijing Bank Account No #: 110060668012015061217 Routing No #: 332906 Bank SWIFT Code: COMMCNSHBJG		

Title	Format	Cost
<i>Total</i>		

**Choose type of format**

- PDF (Single user license) .....3,000 USD
- Hard copy ..... 3,000 USD
- PDF (Enterprisewide license)..... 4,500 USD

**※ Reports will be dispatched immediately once full payment has been received.**  
**Payment may be made by wire transfer or credit card via PayPal.**



### About ResearchInChina

ResearchInChina ([www.researchinchina.com](http://www.researchinchina.com)) is a leading independent provider of China business intelligence. Our research is designed to meet the diverse planning and information needs of businesses, institutions, and professional investors worldwide. Our services are used in a variety of ways, including strategic planning, product and sales forecasting, risk and sensitivity management, and as investment research.

### Our Major Activities

- *Multi-users market reports*
- *Database-RICDB*
- *Custom Research*
- *Company Search*

**RICDB** (<http://www.researchinchina.com/data/database.html>), is a visible financial data base presented by map and graph covering global and China macroeconomic data, industry data, and company data. It has included nearly 500,000 indices (based on time series), and is continuing to update and increase. The most significant feature of this base is that the vast majority of indices (about 400,000) can be displayed in map.

After purchase of our report, you will be automatically granted to enjoy 2 weeks trial service of RICDB for free.

After trial, you can decide to become our formal member or not. We will try our best to meet your demand. For more information, please find at [www.researchinchina.com](http://www.researchinchina.com)

For any problems, please contact our service team at: