Mobile Camera Module Comparison 2019

Analysis and comparison of 28 different visible and infrared cameras in the Apple iPhone X/XS/XR, Samsung Galaxy S9, Huawei Mate 20 Pro and P20 Pro, Xiaomi Mi8 Explorer Edition, Oppo Find X and Vivo X21UD.

With a Compound Annual Growth Rate of 12% between 2017 and 2023, the mobile camera module semiconductor market is one of the most dynamic in the smartphone space. The $9 billion revenue of the CMOS Camera Module (CCM) industry in 2017 was shared between several companies, including LG Innotek, Samsung Electro-Mechanics and Sunny Optical Technology.

The CCM market has seen several innovations this year. The first is the multiple camera approach, seen on all seven of the models we study in this report. The average is around four cameras per smartphone. The second innovation is the generalization of Optical Image Stabilization (OIS) on the rear CCM. Thirdly, four out of seven smartphones have 3D cameras for face recognition.

This overview will tell you the main OEMs’ choices, and reveal the state of the art of camera modules for leading flagships in 2018.

We have conducted this comparative study to provide insight on the structure and the technology of 28 CCMs extracted from seven flagship smartphones from several major brands: the Apple iPhone X/XS/XR, Samsung Galaxy S9, Huawei P20 Pro, Huawei Mate 20 Pro, Xiaomi Mi8 Explorer Edition, Oppo Find X and Vivo X21UD.

Four years ago, only two cameras on average could be found in smartphone. Today this number has risen to four in order to add other features such as face recognition, with infrared camera modules, in the front camera or to improve the zoom in the rear camera.

We analyze rear and front-facing CCMs including standard mono modules, dual modules, iris scanners, 3D camera modules and triple modules. We also compare them in terms of structure overview, module integration, lens numbers and dimensions, CMOS Image Sensor resolution, pixel size and other parameters. Additionally, we have studied the costs of these camera modules to compare the economic choices of the manufacturers. We present a historical comparative review in the report for four players, Apple, Samsung, Huawei and Xiaomi, in order to show the evolution of their technological choices.

Yole Développement’s Status of the Camera Module Industry 2019 – Focus on WLO is accompanying this report.

COMPLETE TEARDOWN WITH

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LINKED REPORT

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