# Research Bulletin

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## Sensor/Actuator and Discrete Sales Surge in 2021, Not So for Opto

*Shortages, tight supplies, and higher prices drive up most O-S-D products in the economic rebound while CMOS image sensor sales are muted by U.S.-China disputes and softness in some systems, says report.*

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Worldwide sales of optoelectronics, sensors and actuators, and discrete semiconductors (O-S-D) each climbed to record-high levels during the 2021 global economic rebound from the Covid-19 virus crisis and lockdowns aimed at slowing the spread of the deadly pandemic. According to IC Insights' January *Semiconductor Industry Flash Report*, total O-S-D revenues crossed $100 billion for the first time ever in 2021, growing 18% to $104.2 billion compared to $88.3 billion in 2020, when combined sales in the three markets increased by less than 3% as the virus first took hold (Figure 1).

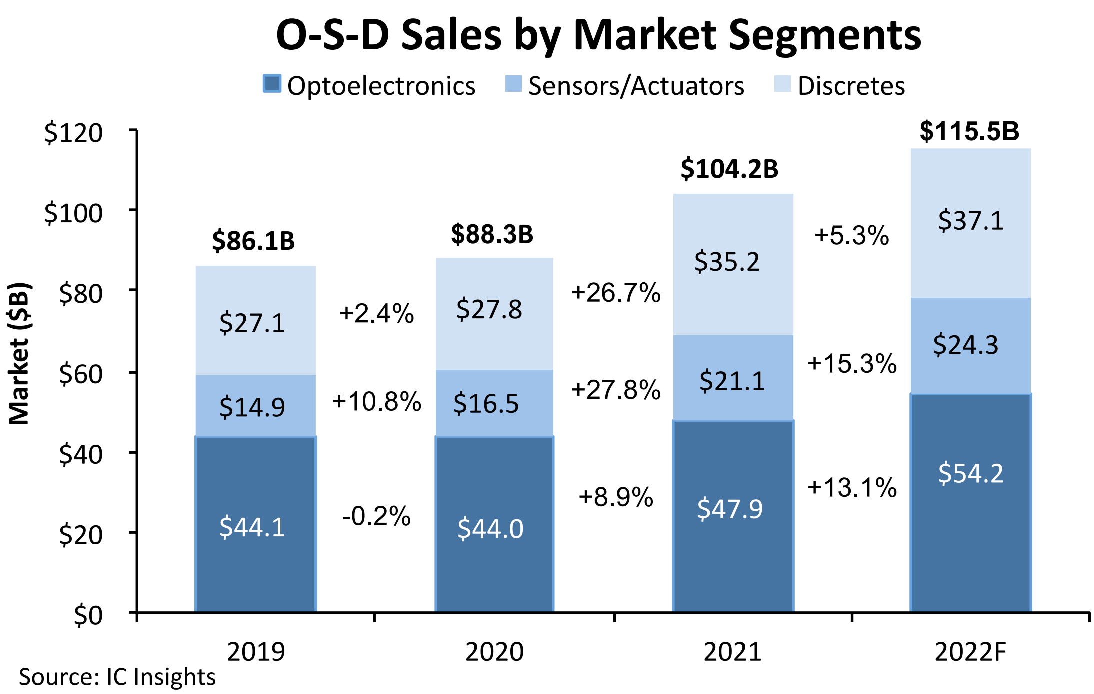


**Figure 1**

O-S-D sales—which accounted for 17% of the world's $613.9 billion total semiconductor market in 2021 (the rest being ICs)—were primarily driven last year by sharp increases in unit demand for widely used discrete devices, tight supplies of sensors and actuators, higher average selling prices (ASPs), long lead times for deliveries, and delays in restocking factory inventories by system makers, according to the January *Flash Report* of IC Insights' 2022 *McClean Report* service. Fueled by purchases of power transistors, diodes, and many commodity devices, total discrete semiconductor sales surged 27% in 2021—more than 5x the annual average growth rate in the last three decades—to $35.2 billion. Meanwhile, revenues climbed 26% in 2021 for sensors (including pressure and microphone chips, accelerometers and gyroscope devices, magnetic-field sensors and compasses, and temperature sensors), and actuators sales jumped by 31% last year. The total sensor/actuator market grew 28% in 2021 to a record-high $21.1 billion, according to data in the recently released report.

Optoelectronics sales growth was muted in the 2021 rebound due to the lack of a surge in CMOS image sensors, which were held back by trade frictions and technology disputes between the U.S. and China, fluctuations in some key end-use applications, and shortages of ICs and other components used in digital-imaging systems. Optoelectronics sales increased 9% in 2021 to a record-high $47.9 billion, and the large CMOS image sensor category only grew 6% to $20.3 billion last year, says the January report.

IC Insights now forecasts that total O-S-D sales will increase 11% in 2022 to $115.5 billion with optoelectronics rising 13% to $54.2 billion, sensors/actuators expanding 15% to $24.3 billion, and the discretes segment easing back to more normal growth of 5% to $37.1 billion this year.

## Report Details: *The 2022 McClean Report*

The January *Semiconductor Industry Flash Report* to the 2022 edition of *The McClean Report—A Complete Analysis and Forecast of the Semiconductor Industry,* has been released and the *1Q Update* is scheduled to be released later this month. A subscription to *The McClean Report* service includes the January *Semiconductor Industry Flash Report*, which provides clients with IC Insights' initial overview and forecast of the semiconductor industry for this year through 2026. In addition, *Quarterly Updates* to the report will be released in February, May, August, and November of this year. An individual user license to the 2022 edition of *The McClean Report* is available for $5,390 and a multi-user worldwide corporate license is available for $8,590. The Internet access password and the information accessible to download will be available through November 2022.

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