

The Podium Finishers

15 Fastest Growing and Largest Sensors

INSIGHTS FOR SUCCESS | IDEAS TO EXECUTE

January 2021

Key takeaways

High growth sensors

15 sensors exhibit high growth and contributed

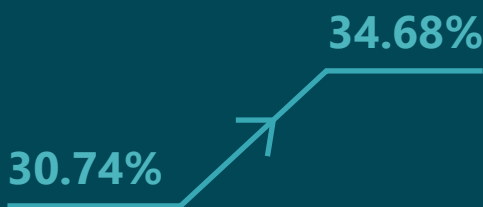
\$52.04B
in 2020



The spectrum of growth for 15 high growth sensors varies with the sensor type and ranges from CAGR of 13.6% for rain sensors to a high of 20.3% for distance sensors. **The total revenue of these 15 high growth sensors is likely to grow at a CAGR of 14.9% for the period 2020-2023.**



Due to the high growth of these 15 sensors their revenue market share is estimated to jump from 30.74% in 2020 to 34.68% in 2023.



Largest revenue generating sensors

Individual revenue generated by these 15 sensors ranges from a **minimum of \$3.42B by gas sensors to \$23.45B by biosensors.**



Replacement and Upgrades are key drivers for revenue growth.

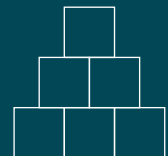


Most of these sensors, plus few combined sensors like temperature+humidity, flow+pressure, position+displacement and RFID are part of this trend.



Another group of 15 sensors are the **highest revenue generators**. In 2020, these 15 sensors contributed a total of \$135.2 billion and accounted for almost 80% share.

The 15 largest revenue sensors dominate with the **largest installed base**.



This class of sensors is the growing with an estimated CAGR of 10.2 % during 2020-2023.

Growing Sensors

10.2%
CAGR (2020-2023)



Top High Growth Sensors

15 sensors from the total of 119 are classified as high growth sensors. These sensors are estimated to grow at a CAGR ranging from 13.6% to 20.3% during the period 2020-2023. In 2020 these 15 high growth

sensors generated a total of \$52.05B in revenue which comprised of 30.74% revenue share. The high growth sensors are expected to add \$27.0B to the total revenue in 2023.

Growth Drivers

The key reasons for

High growth

New and expanding applications.

Integration with other sensors to enable control

Upgradation of legacy systems



Replacements due to technology upgradation like wireless, higher intelligence, miniaturization, and remote connectivity through IoT.

Measuring more than one parameter



Extensive shift to self-powered sensors to ensure uninterrupted functioning for integrated and standalone sensors.

Use of common technology platforms like optical, laser, image and reflective for developing multiple sensors like biosensors, gesture, Lidar, touch, distance and combined.

Growth of smart farms, precision agriculture and use of robots.

Flexibility of sensors like LiDAR for use in diverse applications like ADAS, autonomous vehicles, aerospace, surveying and ground applications.

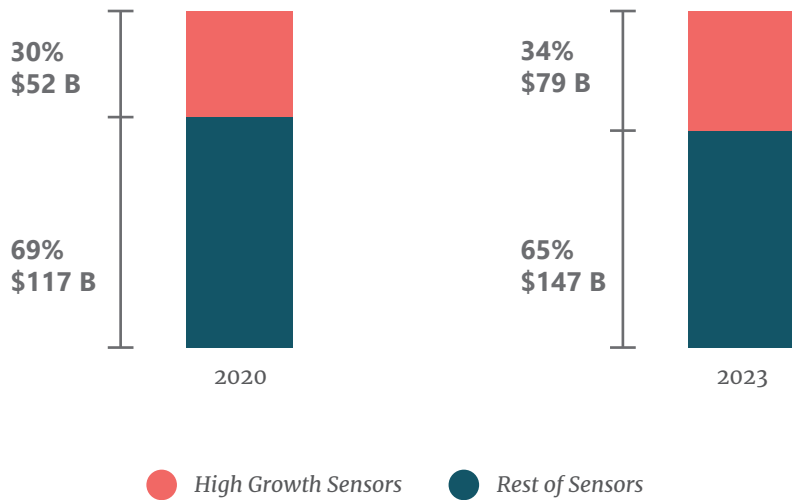
Source: Twimbit

Note: All figures are rounded. The base year is 2020

Market Revenue Share

15 High Growth Sensors - Revenue Share

Chart 4.1: Total Global Sensors, Market Revenue Share of 15 High Growth Sensors, 2020 – 2023



The high growth of 15 sensors is likely to boost their revenue share from 30.74% in 2020 to 34.68% in 2023.

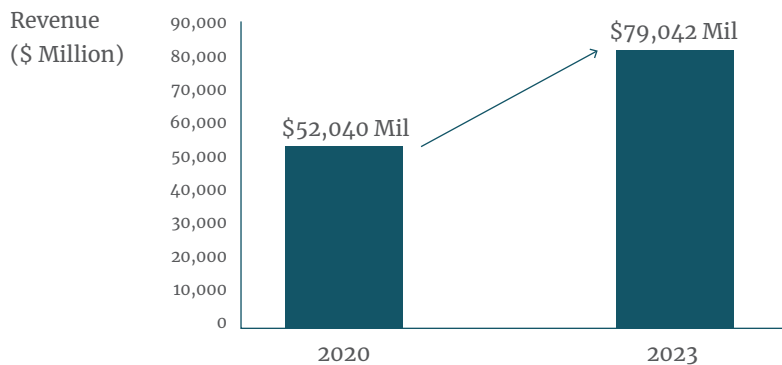
Cumulative Revenue Growth

15 high growth sensors generated in 2020 cumulative revenue of \$5.72B. Biosensors, touch, LiDAR, DAQ and rain sensors are the top five revenue generators which alone contributed \$38.57B

in 2020. The total cumulative revenue is estimated to grow to \$79.04B in 2023 growing at a CAGR of 14.9%.

15 High Growth Sensors - Total Revenue Contribution

Chart 4.2: Total Global Sensors, Revenue of Top 15 High Growth Sensors, 2020 CAGR, (2020-2023) = 14.9%



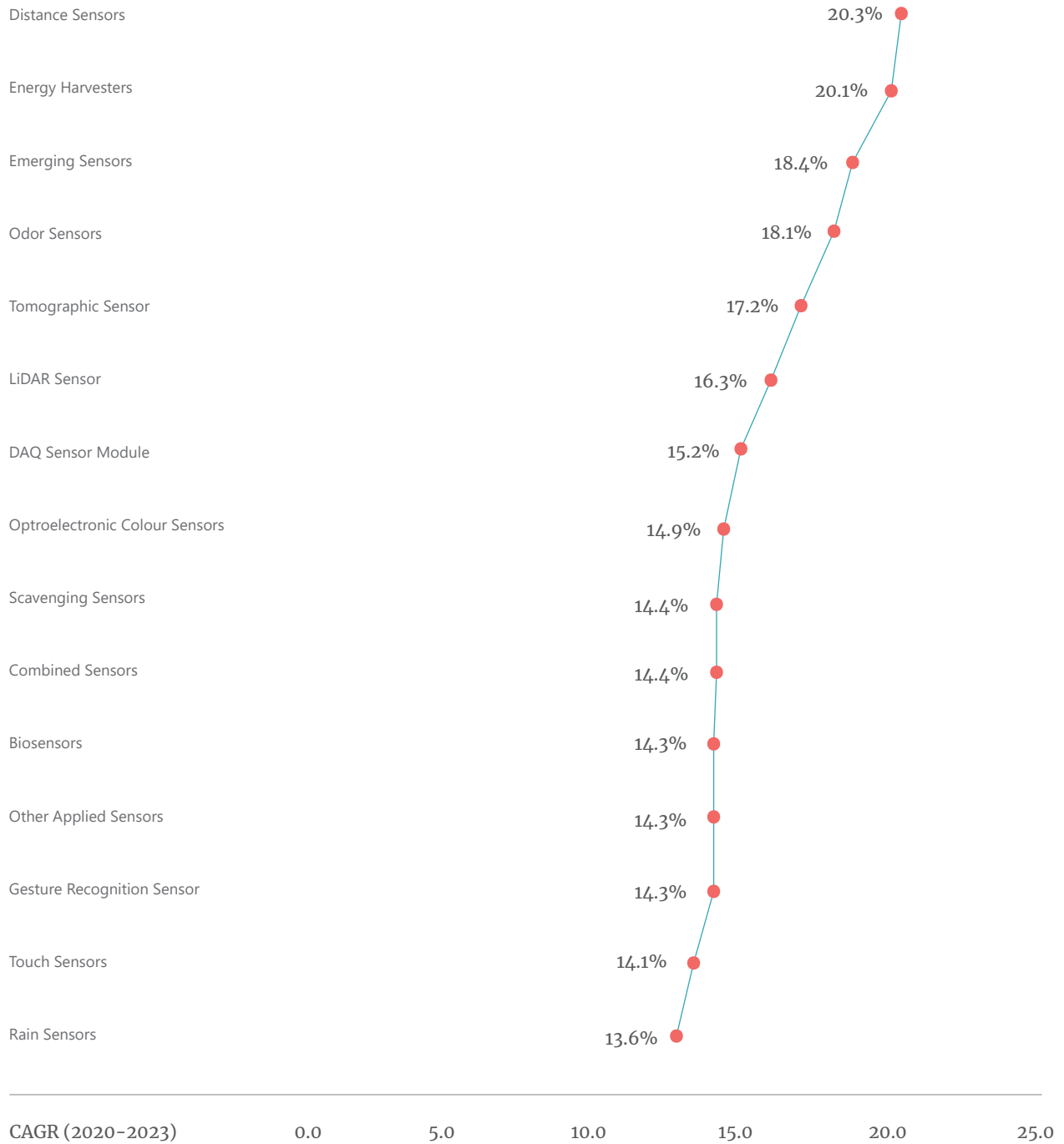
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High Growth Spectrum by Product Type

Top 15 High Growth Sensors

Figure 4.1: Total Global Sensors, CAGR of Top 15 High Growth Sensors by Product Type, 2020 - 2023



Source: Twimbit

Note: All figures are rounded. The base year is 2020

High Growth Spectrum by Product Type

Total Global Sensors: Growth and Revenue Analysis of Top 15 High Growth Sensors by Product Type, 2020–2023

Figure number		2020	2023	2020-2023
Rank By Growth	Product Type	Revenue	Revenue	CAGR
		\$Mil	\$Mil	%
1	Distance Sensors	764	1,330	20.3%
2	Energy Harvesters	169	293	20.1%
3	Emerging Sensors	4,009	6,659	18.4%
4	Odor Sensors	421	695	18.1%
5	Tomographic Sensor	99	159	17.2%
6	LiDAR Sensor	1,807	2,844	16.3%
7	Data Acquisition (DAQ)	7,079	10,822	15.2%
8	Optoelectronic Color Sensors	858	1,302	14.9%
9	Scavenging Sensors	547	821	14.4%
10	Combined Sensors	547	819	14.4%
11	Biosensors	23,453	35,023	14.3%
12	Other Sensors	5,586	8,344	14.3%
13	Gesture Recognition Sensor	470	701	14.3%
14	Touch Sensors	5,071	7,528	14.1%
15	Rain Sensors	1,160	1,703	13.6%
	Total	52,040	79,042	14.9%

At the lowest ebb of growth at CAGR of 13.6% is rain sensor. Irrigation and farm applications are driving growth of rain sensors. Rain sensor is integrated with flow sensors and moisture to actuate and control water supply to large organized agriculture and horticulture farms. Other applications include automotive (wiper), forestry, oceanography, shipping and environmental applications.

Biosensors are the largest revenue generator and its high growth is driven by shift to preventive health monitoring both in point of care and home diagnostic user segments. Biosensors cater to over 52 different diagnostic test types.

At the height of growth ebb is distance sensors estimated to grow at CAGR of 20.3%. This growth is driven by growing application landscape. Growing applications include assembly lines in automotive, aerospace, electronics, construction, and military. Its applications include measurement of distance, thickness, position, runout and profiling. They are based on multiple technologies like ultrasonic, infrared, optical, piezoelectric crystals and laser (LiDAR) for both short-range and long-range applications.

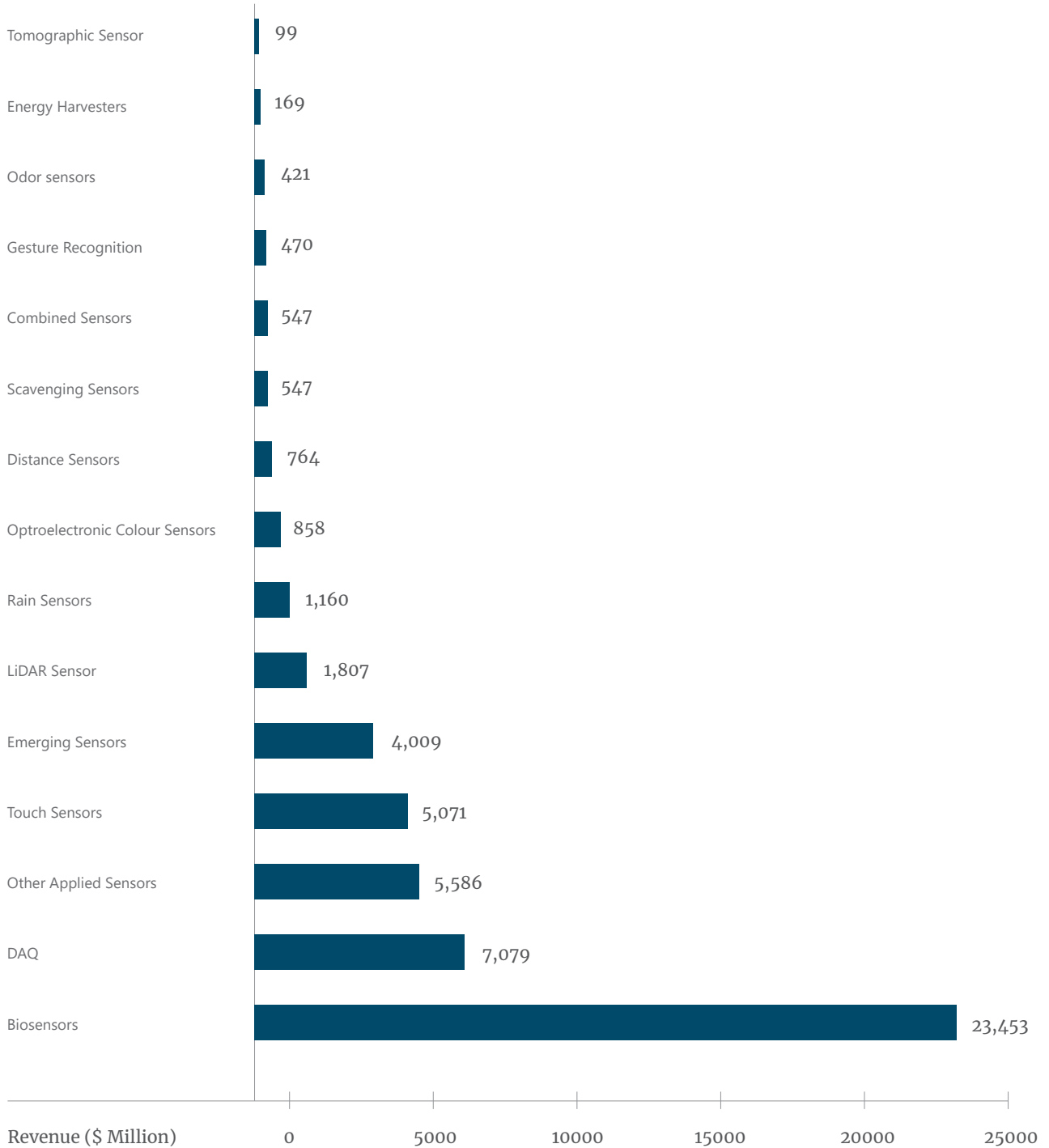
Source: Twimbit

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High Growth Spectrum by Product Type

15 High Growth Sensors - Revenue by Product Type

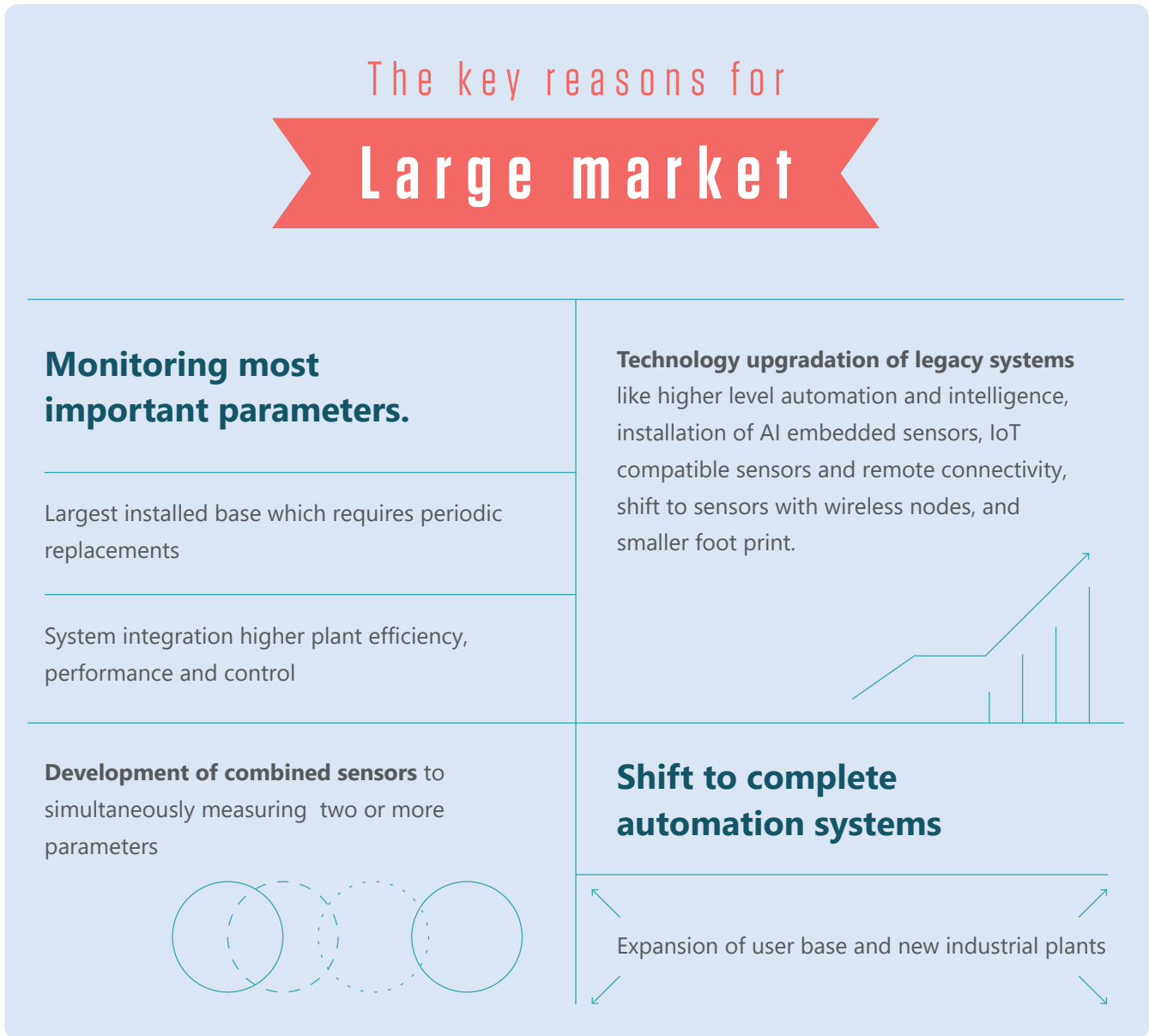
Figure 4.2: Total Global Sensors, Revenue of Top 15 High Growth Sensors by Product Type, 2020 CAGR, (2020 - 2023) = 14.9%



Largest revenue generating sensors

Another group of 15 identified as largest revenue generators with contribution of 79.88% total revenue of sensors in 2020.

Growth Drivers



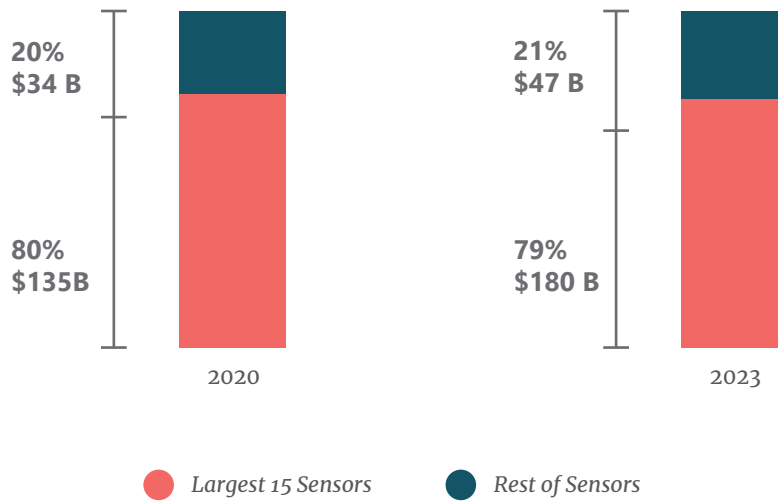
Source: Twimbit

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Market Revenue Share

15 Largest Sensors - Revenue Share

Chart 4.3: Total Global Sensors Market, Revenue Share of 15 Largest Sensors, 2020 - 2023

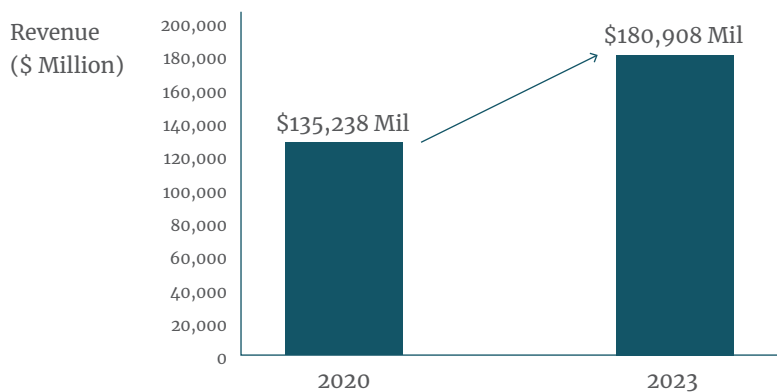


Largest 15 sensors are likely to continue to dominate with revenue share of 79.88% in 2020 and 79.38% in 2023.

Cumulative Revenue and Growth

15 Largest Sensors - Total Revenue Contribution

Chart 4.4: Total Global Sensors, Total Revenue of Top 15 Largest Sensors, 2020 CAGR, (2020-2023) = 10.2%



15 largest sensors are cumulatively largest revenue contributors by generating \$135B revenue in 2020 which is estimated to increase to \$180B in 2023.

Source: Twimbit

Note: All figures are rounded. The base year is 2020

Large Revenue Spectrum by Product Type

Total Global Sensors: Growth and Revenue Analysis of 15 High Largest Sensors by Product Type, 2020–2023

Figure number		2020	2023	2020-2023
Rank By Market Size	Type of Sensor	Revenue	Revenue	CAGR
		\$Mil	\$Mil	%
1	Biosensors	23,453	35,023	14.3%
2	Image Sensors	17,960	25,232	12.0%
3	RFID Sensors	15,646	21,223	10.7%
4	Accelerometers	9,588	12,102	8.1%
5	Flow Sensors	9,181	11,123	6.6%
6	Pressure Sensors	9,169	11,020	6.3%
7	Optical Sensors	8,552	10,748	7.9%
8	DAQ Sensors	7,079	10,822	15.2%
9	Temperature	6,464	7,819	6.6%
10	Encoders	5,707	6,459	4.2%
11	Level Sensors	5,609	6,306	4.0%
12	Touch Sensors	5,071	7,528	14.1%
13	Position & Displacement Sensors	4,318	5,152	6.1%
14	Emerging Sensors	4,009	6,659	18.4%
15	Gas Sensors	3,432	3,692	2.5%
	Total	135,238	180,909	10.2%

The top largest 15 sensors are estimated to grow at a CAGR ranging from 2.5% (gas sensors) to 15.2% (DAQ) during the forecast period 2020-2023.

Image sensors, RFID sensors, accelerometers, biosensors and flow sensors are the top five revenue generators in the sensors market. These 5 top largest sensors alone generated \$75.8B in 2020 which is estimated to increase to \$104.7B in 2023.

The Cumulative CAGR of these 5 Top sensors is 11.4% for the period 2020-2023.

At the lowest ebb of growth at CAGR of 2.5% is gas sensor which is used in multiple end-user markets like, oil & gas, chemicals, mining, power generation, building automation, HVAC, food processing, pharmaceuticals, healthcare and environmental.

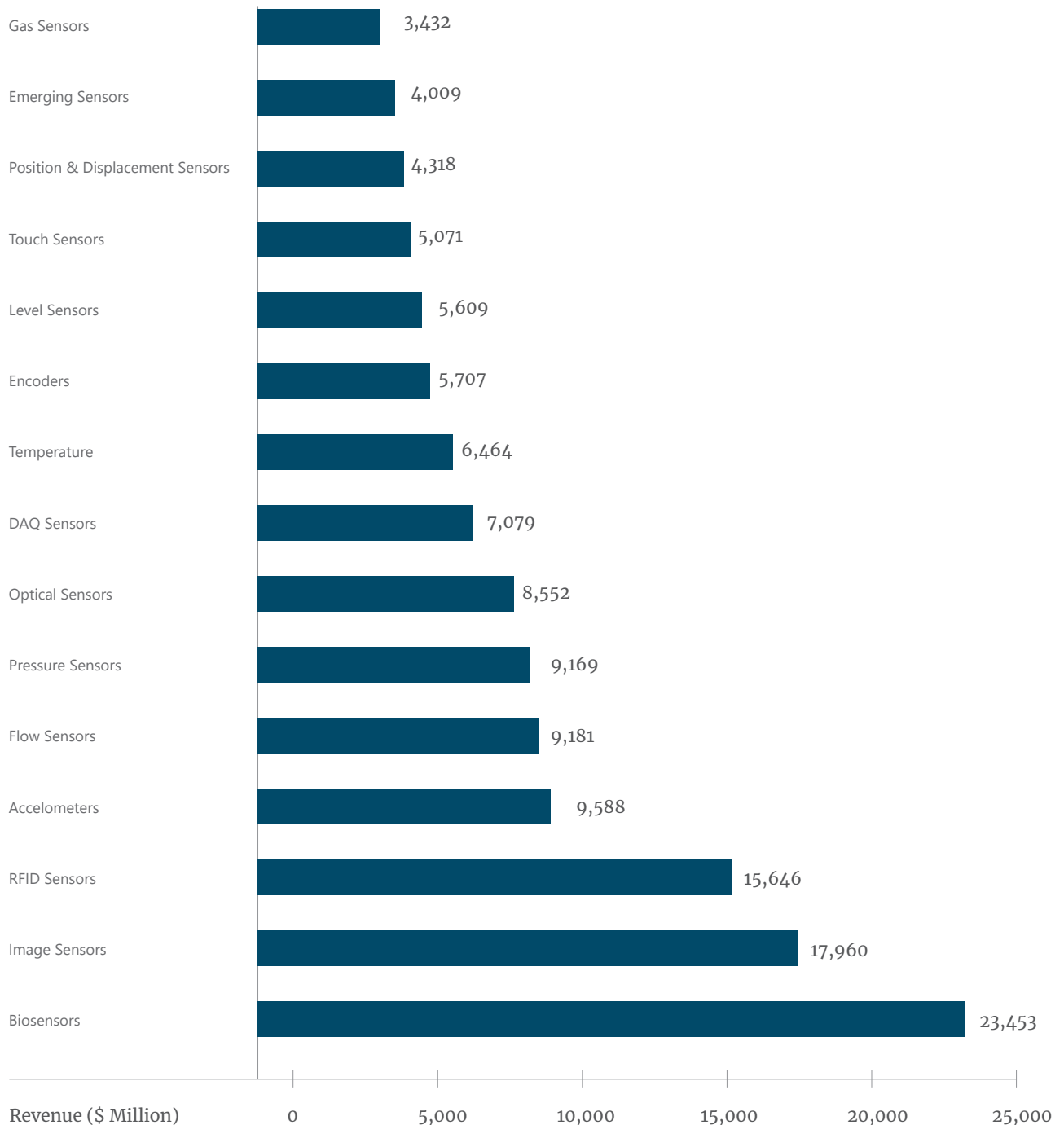
Source: Twimbit

Note: All figures are rounded. The base year is 2020

Large Revenue Spectrum by Product Type

15 Largest Sensors - Revenue by Product Type

Figure 4.3: Total Global Sensors Market, Revenue of Top 15 Largest Sensors by Product Type, 2020 CAGR, (2020 - 2023) = 10.2%



Biosensors is both largest revenue generator with revenue of \$23.4B and its high growth of 14.3% CAGR is driven by shift to preventive health monitoring both in point of care and home diagnostic user segments. Biosensors cater to over 52 different diagnostic test types. There are number of different biosensors and the largest being glucose detection and monitoring.

Source: Twimbit

Note: All figures are rounded. The base year is 2020



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