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Clean Room Robot Market with COVID-19 Impact Analysis by Type (Articulated, SCARA, Collaborative Robots), End User (Aerospace, Electrical & Electronics, Food & Beverage), Component (Robotic Arm, End Effector), and Region - Global Forecast to 2025

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Abstracts

“Clean room robot market is projected to grow at CAGR of 12.0% during 2020–2025”

The global clean room robot market (including prices of peripherals, software, and system engineering) is expected to grow from USD 4.8 billion in 2020 to USD 8.5 billion by 2025; it is expected to grow at a CAGR of 12.0% during the forecast period. The increasing demand for clean room robots from electronics & electrical industry is the main driver for clean room robot market. In the semiconductor industry, thin-film technology is used to manufacture microprocessors, sensors, and flash memory. A single particle finding its way into a hard drive or a CPU during manufacturing is enough to render the product useless. Therefore, companies are eager to minimize the risk and are opting for clean rooms, which must be ISO Class 4 or cleaner. Computer processors start out as silicon wafers, which are subjected to intense vacuums, high energy plasmas, and ultraviolet light. These processes are not human friendly; therefore, the demand for clean room robots is increasing in the semiconductor industry to help in moving the wafers from one processing station to another. The high installation cost of industrial clean room robots, especially for small and medium-sized enterprises, is the main restraint for the adoption of industrial clean room robots. Industrial robots, along with controllers and teach pendants, are priced in the range of USD 50,000 and USD 80,000. With the addition of application-specific peripherals, the robot system costs between USD 100,000 and USD 150,000. There are further costs in

setting up the robot. Robots require heavy-duty, purpose-built pedestals, which can cost several thousand dollars. Also, with increasing hygiene standards, due to COVID-19, demand for clean room robots is expected to increase in industries such as food & beverages and pharmaceutical.

“The robotic arm segment to hold the largest share of the clean room robot market in 2020”

The robotic arms segment held the largest share of the component market in 2019. The robotic arm is one of the most expensive hardware components in a robot, and its design can often be time-consuming and complex. The arm has to be built according to the ISO/TS 15066 standard and certified for the same. The designing of the robotic arm for collaborative robots is more detailed than it is for traditional industrial robots. When compared to traditional industrial robots, collaborative robots often have a curved arm to make it safe for human contact. Inside its complex design, the arm also has to house the drives, motors, and sensors, while providing the maximum level of dust and water resistance, which can often be challenging.

“Articulated robots to hold the largest share of clean room robot market in 2020”

Articulated robots held the largest share of the clean room robot market in 2019. This is because articulated robots have the highest number of joints and offer the highest degree of motion. Therefore, they can be adopted for a wide number of applications and can also be altered more easily if the product or the process changes. The market for SCARA robots is expected to grow at the highest CAGR during the forecast period. This is because they cost lesser than articulated robots and offer a considerable degree of freedom with 4 axes. Articulated robots can cost between USD 19,000 and USD 120,000, whereas SCARA robots can cost between USD 10,000 and USD 50,000. Also, SCARA robots occupy less space than cartesian and parallel robots and are therefore more adopted than cartesian and parallel robots.

“In 2020, APAC to hold the largest share of clean room robot market.”

In 2020, APAC to hold the largest share of clean room robot market. This is due to the presence of world’s most populous countries such as China and India. The large population gives rise to a huge demand for clean room robots in the manufacturing of fiber optics from the telecommunication industry. Also, APAC countries have a strong IT industry due to the availability of a cheap workforce. For instance, according to India’s Ministry of Commerce & Industry, in January 2020, Nippon Telegraph and Telephone, a

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Japanese tech announced its plans to invest a significant part of its USD-7-billion global commitment for a data center business in India over the next years. This is expected to further increase the demand for clean room robots in the optics industry. Due to the large population, the food & beverage industry is also flourishing in APAC. According to the Population Reference Bureau, in 2019, China had the largest population, followed by India. Also, countries such as Japan and South Korea are major manufacturers of robots; therefore, this further boosts the clean room robot market in APAC. The electronics industry is also booming in APAC due to the increasing buying capacity and cheap labor. For instance, according to the Ministry of Statistics and Programme Implementation, per capita income in India increased by 6.8% in 2019.

Even after the COVID-19 pandemic subsides, the regional trends might remain the same. Many industry experts expect the COVID-19 pandemic to mainly impact supply chains. However, considering the sizable backlog that key players such as FANUC (Japan) and KUKA (Germany) have, the manufacturing and delivery of clean room robots are expected to slow down for the first 2 or 3 quarters of the FY 2020. For instance, for the FY 2019, the Robotics business division of KUKA (Germany) had order backlogs worth USD 309 million (EUR 276 million). In APAC, electrical and electronics is the most important industry adopting industrial robots. However, with the adverse impact of COVID-19, the growth of the clean room robot market in countries such as China and India is expected to be delayed, impacting the overall growth of the market in APAC for the next 3–6 months. In February 2020, China’s manufacturing PMI was 35.7 points from 14.3 points in January 2020. Meanwhile, in February 2020, its production index was 27.8%, down by 23.5% from the previous month, thereby indicating a radical slowdown in manufacturing activities. The US–China trade war also added to this decline.

In the process of determining and verifying the market size for several segments and subsegments gathered through secondary research, extensive primary interviews have been conducted with key industry experts in the clean room robot marketspace. The break-up of primary participants for the report has been shown below:

By Company Type: Tier 1 – 40%, Tier 2 – 30%, and Tier 3 – 30%

By Designation: C-level Executives – 40%, Directors – 40%, and Others – 20%

By Region: North America – 40%, APAC – 30%, Europe – 20%, and RoW – 10%

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The report profiles key players in the global clean room robot market with their respective market ranking analysis. Prominent players profiled in this report are ABB (Switzerland), YASKAWA (Japan), FANUC (Japan), Kawasaki Heavy Industries (Japan), KUKA (Germany), Mitsubishi Electric (Japan), DENSO (Japan), NACHI-FUJIKOSHI (Japan), EPSON (Japan), OMRON Corporation (Japan), Universal Robots (Denmark), Aerotech (US), IAI (Japan), Staubli (Switzerland), Comau (Italy), Yamaha (Japan), Hirata (Japan), S T Robotics (US), Techman Robot (Taiwan) and Rethink Robotics (US)

Research Coverage:

This research report categorizes the global clean room robot market based on type, component, end user and geography. The report describes the major drivers, restraints, challenges, and opportunities pertaining to the clean room robot market and forecasts the same till 2025. Apart from these, the report covers leadership mapping and analysis of all the companies included in the clean room robot ecosystem. The report also covers qualitative information on impact of COVID-19 on clean room robot market.

Key Benefits of Buying the Report

The report would help leaders/new entrants in this market in the following ways:

1. This report segments the clean room robot market comprehensively and provides the closest market size projection for all subsegments across different regions.
2. The report helps stakeholders understand the pulse of the market and provides them with information on key drivers, restraints, challenges, and opportunities for market growth.
3. This report would help stakeholders understand their competitors better and gain more insights to improve their position in the business. The competitive landscape section includes competitor ecosystem, product developments and launches, partnerships, and mergers and acquisitions.
4. The analysis of the top 25 companies, based on the strength of the product portfolio, as well as the business strategy, will help stakeholders visualize the market positioning of these key players.
5. Geographic analysis and country-wise information that will shape the market in the coming years have also been covered in this report.

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