

Firefighting Drone Market Forecasts to 2030 – Global Analysis By Drone Types (Fixed-Wing Drones, Multirotor Drones, and Hybrid Drones), Payload Capacity, Technology, Size, Propulsion, Application, End User and By Geography

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Abstracts

According to Statistics MRC, the Global Firefighting Drone Market is accounted for \$2.03 billion in 2024 and is expected to reach \$4.23 billion by 2030 growing at a CAGR of 13.0% during the forecast period. A firefighting drone is an unmanned aerial vehicle (UAV) equipped with specialized technology to assist in firefighting operations. These drones are designed to monitor, detect, and suppress fires, particularly in hard-to-reach areas. They can carry payloads such as water, fire retardants, or foam, and are often equipped with thermal imaging cameras for detecting hotspots. Firefighting drones provide real-time data, enhance situational awareness, and improve the speed and effectiveness of emergency response, especially in wildfires and industrial fire scenarios.

Market Dynamics:

Driver:

Rising frequency of wildfires

Advanced firefighting technologies are desperately needed, particularly in areas like California, Australia, and portions of Europe where wildfires are becoming more catastrophic. Drones with fire suppression and thermal imaging capabilities are quickly becoming indispensable instruments for more effective wildfire detection and management. With real-time data and accurate water or retardant drops, they can reach

hazardous and isolated locations that are challenging for conventional firefighting techniques. Thus, the increasing frequency and severity of wildfires across the globe are propelling the use of drones, propelling market expansion and innovation in firefighting technologies.

Restraint:

Limited payload capacity

The usefulness of firefighting drones in large-scale fire suppression operations may be severely constrained by their limited payload capacity. Drones with smaller payloads unable transport enough water, fire retardants, or suppression chemicals to combat big fires, especially industrial or wildfires. This restriction reduces their capacity to significantly influence fire containment, particularly in regions with high fuel loads or wide-ranging fire fronts. Drones' potential as an essential firefighting tool is further limited by the requirement for frequent reloading or repeated drone deployments, which raises operational complexity and costs and prevents widespread adoption.

Opportunity:

Growing demand for remote monitoring

Advanced sensors aboard drones, such as infrared cameras and high-definition photography, provide real-time surveillance capabilities that let firefighters keep an eye on flames from a safe distance. This remote monitoring plays a critical role in giving situational awareness, detecting hotspots, and tracking the spread of fires in both urban and wildland environments. Drones are able to fly over vast, difficult-to-reach regions and provide vital information that aids in prompt decision-making, response strategy improvement, and the reduction of hazards to human firefighters. Drones are an essential tool for remote monitoring, which improves fire control efforts and safety as the need for quicker, more effective firefighting techniques grows.

Threat:

Public perception and privacy concerns

The use of firefighting drones is severely hampered by privacy issues and public perception. Drones flying above public areas make many individuals nervous for fear of abuse or privacy infringement. Communities may oppose this skepticism, which could

lead to more stringent laws or restrictions on the use of drones in firefighting. Furthermore, protests or legal challenges may be sparked by worries about drone surveillance and data collecting. The potential advantages of drones in speeding up reaction times, monitoring flames, and increasing overall firefighting efficiency may be limited by such public fear, which might hinder the use of drones into firefighting operations.

Covid-19 Impact

The COVID-19 pandemic had both challenges and opportunities for the firefighting drone market. Initially, the industry faced production delays, supply chain disruptions, and a temporary reduction in demand due to lockdowns and economic uncertainty. However, the pandemic underscored the need for contactless, remote firefighting solutions, increasing interest in drone technology. As the focus on automation and remote monitoring grew, the demand for firefighting drones surged in the post-pandemic era, especially in wildfire-prone regions and industrial sectors, accelerating their adoption and market growth.

The fixed-wing drones segment is expected to be the largest during the forecast period

The fixed-wing drones segment is estimated to be the largest, due to their capacity to swiftly cover broad regions, which makes them perfect for monitoring and putting out wildfires. Compared to multirotor drones, fixed-wing drones have longer flight times and a wider range, which enables them to monitor large areas that are prone to fires and deliver fire retardants or monitoring data. Fixed-wing drones are a useful tool for managing wildfires and identifying fire hazards early on because of their effectiveness in covering large regions and their sophisticated sensors for real-time surveillance.

The aerial firefighting segment is expected to have the highest CAGR during the forecast period

The aerial firefighting segment is anticipated to witness the highest CAGR during the forecast period, due to the need for rapid response and efficient fire suppression in hard-to-reach or dangerous areas. Drones provide real-time data, allowing for better situational awareness and quicker decision-making. They can deliver water, fire retardants, or suppressants over large areas, significantly improving firefighting efforts. Aerial firefighting also reduces the risk to human life by minimizing direct exposure to hazardous fire conditions, making drones a crucial tool in modern firefighting strategies, especially in wildfires.

Region with largest share:

Asia Pacific is expected to have the largest market share during the forecast period driven by increasing wildfire risks, rapid urbanization, and growing industrial activities. Countries like Australia, Japan, and China face frequent wildfires, creating a strong demand for advanced firefighting solutions. Additionally, the region's focus on technological advancements, improving disaster management, and reducing firefighting costs is fueling drone adoption. Drones offer efficient monitoring, suppression, and rescue operations in remote or densely populated areas, driving the region's growing interest in integrating aerial firefighting technologies.

Region with highest CAGR:

During the forecast period, the North America region is anticipated to register the highest CAGR, owing to the growing frequency and intensity of wildfires, particularly in the U.S. and Canada. Drones offer efficient surveillance, real-time monitoring, and precise fire suppression, reducing response times and improving safety. Regulatory support, such as government funding and approval for drone use in emergency response, further boosts market growth. Additionally, the focus on cost-effective and sustainable firefighting methods, alongside advancements in drone technology, is accelerating the adoption of firefighting drones across the region.

Key players in the market

Some of the key players profiled in the Firefighting Drone Market include DJI Innovations, Parrot SA, AeroVironment, Inc., Kespry, Inc., Quantum Systems GmbH, Teledyne FLIR, Delair, Elistair, Zapata Racing, FireScout UAV, Embraer (EVE), XAG, AgEagle Aerial Systems Inc., Liteye Systems, SkyFire Consulting, Pix4D, DroneShield, Sentera, Unify, and EagleView Technologies.

Key Developments:

In September 2023, DJI launched the Matrice 300 RTK, a drone equipped with enhanced payload capacity and advanced thermal imaging capabilities, making it ideal for firefighting operations. It also includes attachments for carrying fire retardants and water, improving operational efficiency in wildfire response and fire surveillance.

In June 2022, Teledyne FLIR introduced a new thermal imaging drone system

specifically designed for fire detection and monitoring. The drone features high-resolution thermal cameras to detect hotspots and monitor fire behavior in real-time, helping firefighters make informed decisions during firefighting operations.

Drone Types Covered:

Fixed-Wing Drones

Multicopter Drones

Hybrid Drones

Payload Capacities Covered:

Low Payload Drones

Medium Payload Drones

Heavy Payload Drones

Technologies Covered:

Water Dropping Drones

Fire Suppression Drones

Thermal Imaging Drones

Rescue Drones

Sizes Covered:

Micro Drones

Macro Drones

Propulsions Covered:

Electric Motor

Gasoline

Piston Engine

Solar Powered

Applications Covered:

Fire Detection and Monitoring

Fire Suppression

Search and Rescue

Surveillance and Mapping

Post Fire or Disaster Assessment

Aerial Firefighting

Other Applications

End Users Covered:

Urban Firefighting

Fire Departments

Emergency Services

Industrial Enterprises

Forestry Departments

Military and Defense

Other End Users

Regions Covered:

North America

US

Canada

Mexico

Europe

Germany

UK

Italy

France

Spain

Rest of Europe

Asia Pacific

Japan

China

India

Australia

New Zealand

South Korea

Rest of Asia Pacific

South America

Argentina

Brazil

Chile

Rest of South America

Middle East & Africa

Saudi Arabia

UAE

Qatar

South Africa

Rest of Middle East & Africa

What our report offers:

- Market share assessments for the regional and country-level segments
- Strategic recommendations for the new entrants
- Covers Market data for the years 2022, 2023, 2024, 2026, and 2030
- Market Trends (Drivers, Constraints, Opportunities, Threats, Challenges, Investment Opportunities, and recommendations)
- Strategic recommendations in key business segments based on the market estimations
- Competitive landscaping mapping the key common trends

- Company profiling with detailed strategies, financials, and recent developments
- Supply chain trends mapping the latest technological advancements

Free Customization Offerings:

All the customers of this report will be entitled to receive one of the following free customization options:

Company Profiling

Comprehensive profiling of additional market players (up to 3)

SWOT Analysis of key players (up to 3)

Regional Segmentation

Market estimations, Forecasts and CAGR of any prominent country as per the client's interest (Note: Depends on feasibility check)

Competitive Benchmarking

Benchmarking of key players based on product portfolio, geographical presence, and strategic alliances

Contents

1 EXECUTIVE SUMMARY

2 PREFACE

- 2.1 Abstract
- 2.2 Stake Holders
- 2.3 Research Scope
- 2.4 Research Methodology
 - 2.4.1 Data Mining
 - 2.4.2 Data Analysis
 - 2.4.3 Data Validation
 - 2.4.4 Research Approach
- 2.5 Research Sources
 - 2.5.1 Primary Research Sources
 - 2.5.2 Secondary Research Sources
 - 2.5.3 Assumptions

3 MARKET TREND ANALYSIS

- 3.1 Introduction
- 3.2 Drivers
- 3.3 Restraints
- 3.4 Opportunities
- 3.5 Threats
- 3.6 Technology Analysis
- 3.7 Application Analysis
- 3.8 End User Analysis
- 3.9 Emerging Markets
- 3.10 Impact of Covid-19

4 PORTERS FIVE FORCE ANALYSIS

- 4.1 Bargaining power of suppliers
- 4.2 Bargaining power of buyers
- 4.3 Threat of substitutes
- 4.4 Threat of new entrants
- 4.5 Competitive rivalry

5 GLOBAL FIREFIGHTING DRONE MARKET, BY DRONE TYPES

- 5.1 Introduction
- 5.2 Fixed-Wing Drones
- 5.3 Multicopter Drones
- 5.4 Hybrid Drones

6 GLOBAL FIREFIGHTING DRONE MARKET, BY PAYLOAD CAPACITY

- 6.1 Introduction
- 6.2 Low Payload Drones
- 6.3 Medium Payload Drones
- 6.4 Heavy Payload Drones

7 GLOBAL FIREFIGHTING DRONE MARKET, BY TECHNOLOGY

- 7.1 Introduction
- 7.2 Water Dropping Drones
- 7.3 Fire Suppression Drones
- 7.4 Thermal Imaging Drones
- 7.5 Rescue Drones

8 GLOBAL FIREFIGHTING DRONE MARKET, BY SIZE

- 8.1 Introduction
- 8.2 Micro Drones
- 8.3 Macro Drones

9 GLOBAL FIREFIGHTING DRONE MARKET, BY PROPULSION

- 9.1 Introduction
- 9.2 Electric Motor
- 9.3 Gasoline
- 9.4 Piston Engine
- 9.5 Solar Powered

10 GLOBAL FIREFIGHTING DRONE MARKET, BY APPLICATION

- 10.1 Introduction
- 10.2 Fire Detection and Monitoring
- 10.3 Fire Suppression
- 10.4 Search and Rescue
- 10.5 Surveillance and Mapping
- 10.6 Post Fire or Disaster Assessment
- 10.7 Aerial Firefighting
- 10.8 Other Applications

11 GLOBAL FIREFIGHTING DRONE MARKET, BY END USER

- 11.1 Introduction
- 11.2 Urban Firefighting
- 11.3 Fire Departments
- 11.4 Emergency Services
- 11.5 Industrial Enterprises
- 11.6 Forestry Departments
- 11.7 Military and Defense
- 11.8 Other End Users

12 GLOBAL FIREFIGHTING DRONE MARKET, BY GEOGRAPHY

- 12.1 Introduction
- 12.2 North America
 - 12.2.1 US
 - 12.2.2 Canada
 - 12.2.3 Mexico
- 12.3 Europe
 - 12.3.1 Germany
 - 12.3.2 UK
 - 12.3.3 Italy
 - 12.3.4 France
 - 12.3.5 Spain
 - 12.3.6 Rest of Europe
- 12.4 Asia Pacific
 - 12.4.1 Japan
 - 12.4.2 China
 - 12.4.3 India
 - 12.4.4 Australia

- 12.4.5 New Zealand
- 12.4.6 South Korea
- 12.4.7 Rest of Asia Pacific
- 12.5 South America
 - 12.5.1 Argentina
 - 12.5.2 Brazil
 - 12.5.3 Chile
 - 12.5.4 Rest of South America
- 12.6 Middle East & Africa
 - 12.6.1 Saudi Arabia
 - 12.6.2 UAE
 - 12.6.3 Qatar
 - 12.6.4 South Africa
 - 12.6.5 Rest of Middle East & Africa

13 KEY DEVELOPMENTS

- 13.1 Agreements, Partnerships, Collaborations and Joint Ventures
- 13.2 Acquisitions & Mergers
- 13.3 New Product Launch
- 13.4 Expansions
- 13.5 Other Key Strategies

14 COMPANY PROFILING

- 14.1 DJI Innovations
- 14.2 Parrot SA
- 14.3 AeroVironment, Inc.
- 14.4 Kespry, Inc.
- 14.5 Quantum Systems GmbH
- 14.6 Teledyne FLIR
- 14.7 Delair
- 14.8 Elistair
- 14.9 Zapata Racing
- 14.10 FireScout UAV
- 14.11 Embraer (EVE)
- 14.12 XAG
- 14.13 AgEagle Aerial Systems Inc.
- 14.14 Liteye Systems

14.15 SkyFire Consulting

14.16 Pix4D

14.17 DroneShield

14.18 Sentera

14.19 Unifyly

14.20 EagleView Technologies

List Of Tables

LIST OF TABLES

- Table 1 Global Firefighting Drone Market Outlook, By Region (2022-2030) (\$MN)
- Table 2 Global Firefighting Drone Market Outlook, By Drone Types (2022-2030) (\$MN)
- Table 3 Global Firefighting Drone Market Outlook, By Fixed-Wing Drones (2022-2030) (\$MN)
- Table 4 Global Firefighting Drone Market Outlook, By Multirotor Drones (2022-2030) (\$MN)
- Table 5 Global Firefighting Drone Market Outlook, By Hybrid Drones (2022-2030) (\$MN)
- Table 6 Global Firefighting Drone Market Outlook, By Payload Capacity (2022-2030) (\$MN)
- Table 7 Global Firefighting Drone Market Outlook, By Low Payload Drones (2022-2030) (\$MN)
- Table 8 Global Firefighting Drone Market Outlook, By Medium Payload Drones (2022-2030) (\$MN)
- Table 9 Global Firefighting Drone Market Outlook, By Heavy Payload Drones (2022-2030) (\$MN)
- Table 10 Global Firefighting Drone Market Outlook, By Technology (2022-2030) (\$MN)
- Table 11 Global Firefighting Drone Market Outlook, By Water Dropping Drones (2022-2030) (\$MN)
- Table 12 Global Firefighting Drone Market Outlook, By Fire Suppression Drones (2022-2030) (\$MN)
- Table 13 Global Firefighting Drone Market Outlook, By Thermal Imaging Drones (2022-2030) (\$MN)
- Table 14 Global Firefighting Drone Market Outlook, By Rescue Drones (2022-2030) (\$MN)
- Table 15 Global Firefighting Drone Market Outlook, By Size (2022-2030) (\$MN)
- Table 16 Global Firefighting Drone Market Outlook, By Micro Drones (2022-2030) (\$MN)
- Table 17 Global Firefighting Drone Market Outlook, By Macro Drones (2022-2030) (\$MN)
- Table 18 Global Firefighting Drone Market Outlook, By Propulsion (2022-2030) (\$MN)
- Table 19 Global Firefighting Drone Market Outlook, By Electric Motor (2022-2030) (\$MN)
- Table 20 Global Firefighting Drone Market Outlook, By Gasoline (2022-2030) (\$MN)
- Table 21 Global Firefighting Drone Market Outlook, By Piston Engine (2022-2030) (\$MN)

Table 22 Global Firefighting Drone Market Outlook, By Solar Powered (2022-2030) (\$MN)

Table 23 Global Firefighting Drone Market Outlook, By Application (2022-2030) (\$MN)

Table 24 Global Firefighting Drone Market Outlook, By Fire Detection and Monitoring (2022-2030) (\$MN)

Table 25 Global Firefighting Drone Market Outlook, By Fire Suppression (2022-2030) (\$MN)

Table 26 Global Firefighting Drone Market Outlook, By Search and Rescue (2022-2030) (\$MN)

Table 27 Global Firefighting Drone Market Outlook, By Surveillance and Mapping (2022-2030) (\$MN)

Table 28 Global Firefighting Drone Market Outlook, By Post Fire or Disaster Assessment (2022-2030) (\$MN)

Table 29 Global Firefighting Drone Market Outlook, By Aerial Firefighting (2022-2030) (\$MN)

Table 30 Global Firefighting Drone Market Outlook, By Other Applications (2022-2030) (\$MN)

Table 31 Global Firefighting Drone Market Outlook, By End User (2022-2030) (\$MN)

Table 32 Global Firefighting Drone Market Outlook, By Urban Firefighting (2022-2030) (\$MN)

Table 33 Global Firefighting Drone Market Outlook, By Fire Departments (2022-2030) (\$MN)

Table 34 Global Firefighting Drone Market Outlook, By Emergency Services (2022-2030) (\$MN)

Table 35 Global Firefighting Drone Market Outlook, By Industrial Enterprises (2022-2030) (\$MN)

Table 36 Global Firefighting Drone Market Outlook, By Forestry Departments (2022-2030) (\$MN)

Table 37 Global Firefighting Drone Market Outlook, By Military and Defense (2022-2030) (\$MN)

Table 38 Global Firefighting Drone Market Outlook, By Other End Users (2022-2030) (\$MN)

Note: Tables for North America, Europe, APAC, South America, and Middle East & Africa Regions are also represented in the same manner as above.

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