FOTOKITE
SIGMA

Built for Firefighters

Safe & Simple Situational Awareness

www.fotokite.com
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“Fotokite.
Launch and forget.

Having the kite be able to stay up during the duration of the incident without worrying about batteries, flight regulations or assigning a full-time operator is invaluable.”

Larry Young, Battalion Chief
Kansas City Fire Department

Fotokite Sigma. A Situational Awareness Tool for First Responders.

Fotokite Sigma is a vehicle-integrated aerial camera system that provides Public Safety teams with mission-critical situational awareness. Fotokites save team resources by launching, flying, and landing with the single push of a button. Authorized for Public Safety team operations, no piloting is necessary and no pilot license is required.

Kite

The Kite is built with an ultra-light 1.2 kg carbon fiber frame providing a robust, durable, and transport-ready solution. It is also equipped with the emergency power supply for safe landing, in case ground power is disrupted.

Ground Station

The Ground Station is both a power supply for the Kite, as well as a high-bandwidth data connection for video and controls communication. Built-in Wi-Fi & 4G LTE modems are included for on-site and remote video streaming capabilities.

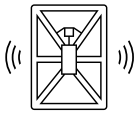
Tablet

A ruggedized and daylight-readable tablet runs the Fotokite Live app, which allows operators to control the Kite altitude and camera heading.

Video streaming

Real-time video is streamed to the tablet from the Ground Station, and made available remotely via a 4G LTE modem. Thermal video resolution is **320 x 240 / 27 fps.** Radiometric feature can measure absolute temperature in range -40°C - 400°C, accuracy ± 5%. Low light RGB video resolution is **1920 x 1080 / 30 fps / 12 MP / 16x Hybrid Zoom** (0.5x widest - 16x most zoomed)

Single-Button Operation



Autonomous Flight

24+ Hour Flight Time

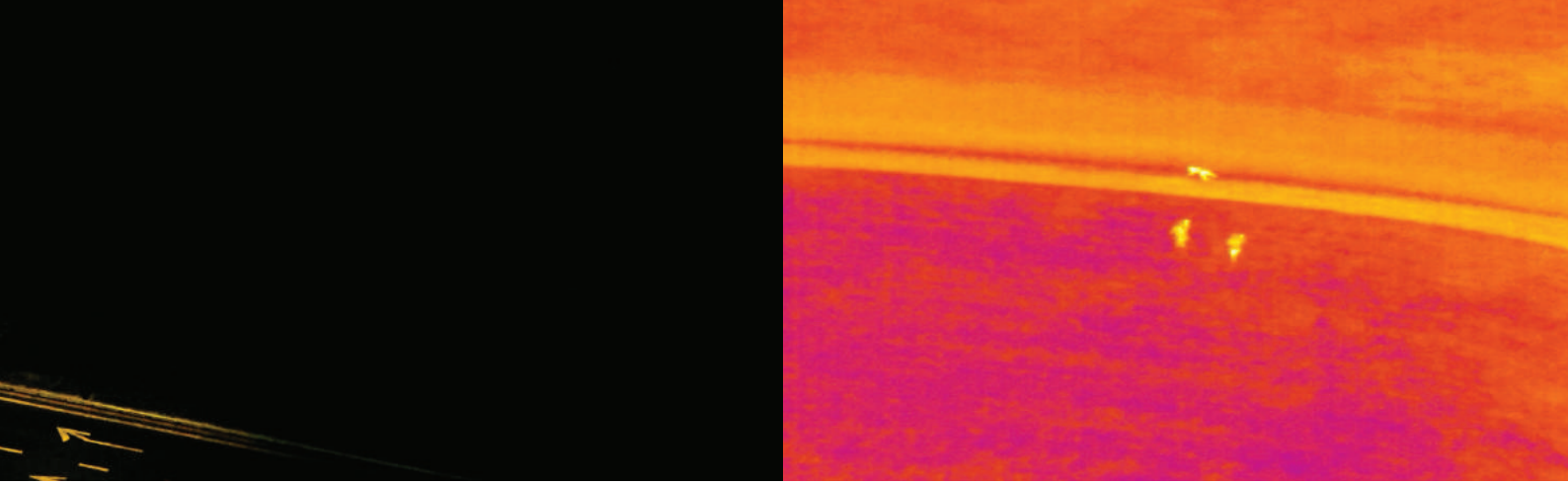
IP55 All-Weather Rating

4G LTE Video Streaming

Fotokite Live: Easy to Use

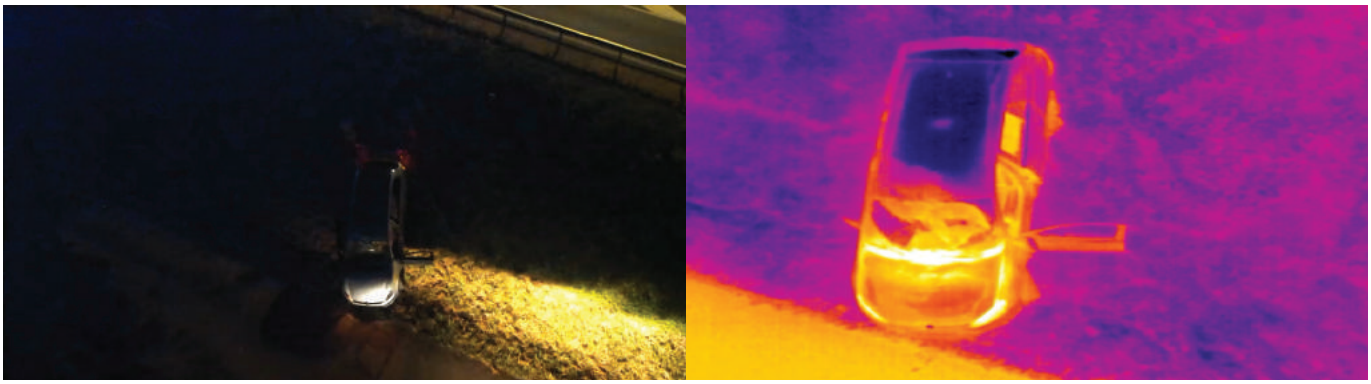
Fotokite Live is Fotokite's native operating software that helps you keep your team safe while saving resources on every response. Mission-critical situational awareness information is continuously available on included rugged-gedized tablets and allows teams to make increasingly information-driven decisions through a simple, straightforward interface. Live, continuous, and instantly available bird's-eye views of your scene with secure Thermal IR and Low-Light EO video streams give you access to the information you need, whenever you need it.

Fotokite Live user interface

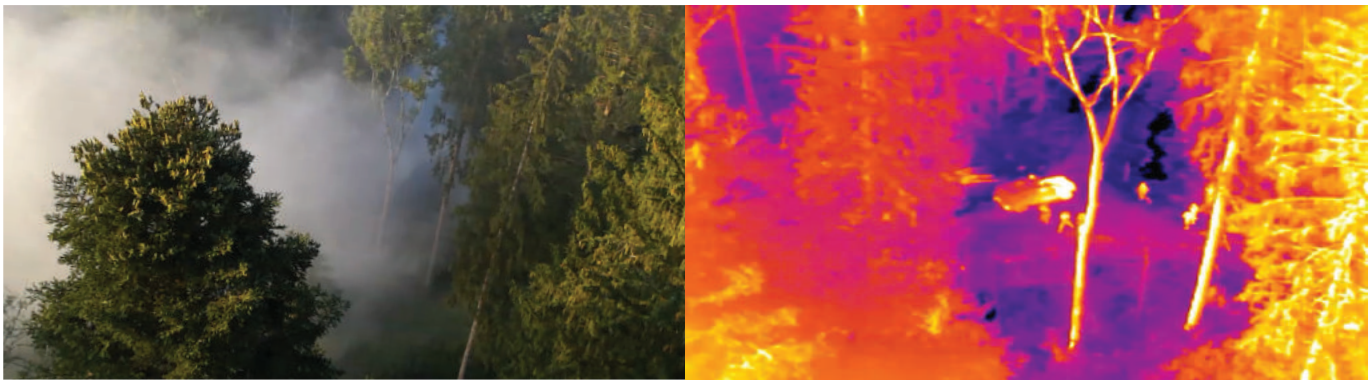


Shared Awareness. On and Off Site.

Live video delivery on site comes standard and can be shared with team members for control hand-off and mutual aid responses. Optional remote video streaming via an integrated 4G LTE data modem enables off-site collaborators to review and provide remote incident support from anywhere. Teams can optionally and automatically maintain all response scene records for post-incident use such as training and evidence locker documentation.



Fotokite at the traffic accident scene helps gain aerial situational awareness



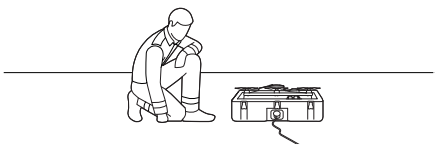
Fotokite during forest fires helps locate missing persons and coordinate team resources

How Does the Fotokite Sigma Work?

Developed together with first responders, Fotokite Sigma is ready to set up and use in seconds. Easy to power and fly, Fotokites do not require extensive piloting skills. The system is made to fly autonomously; no pilot training is necessary at all. Once in the sky, dual video streams of thermal and regular light cameras are available on the rugged tablet, enabling teams to make decisions with live aerial intelligence.

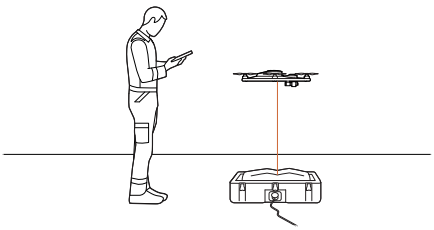
Deployment

The Fotokite Sigma is ready to deploy the instant you arrive on scene. Open the protective casing (transport case configuration), power the system either via a regular wall socket, car power or a generator, and Fotokite Sigma is ready to go. The hands-free automatic launch sequence is ready at the push of a button.



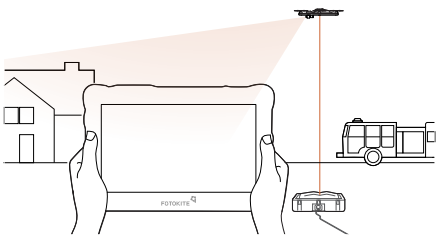
Size-Up

The included ruggedized Fotokite tablet automatically displays aerial intelligence in real-time. Forget joysticks; control your camera view with simple double-tap gestures to snap and center to any object in sight. Tap on the screen to swap between the thermal and regular camera picture-in-picture feeds. Record videos and take snapshots of the mission all from the palm of your hand.



Elevated Situational Awareness

The intelligence provided from simple and persistent aerial overviews will help you with the information you need when you need it the most. Fotokite Sigma flies as long as your mission needs (powered from your vehicle), to provide you with the real-time mission-critical information.



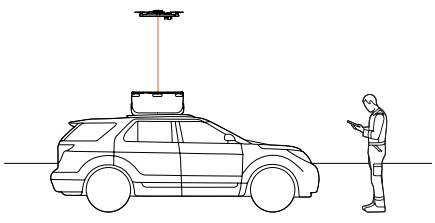
Rooftop Box

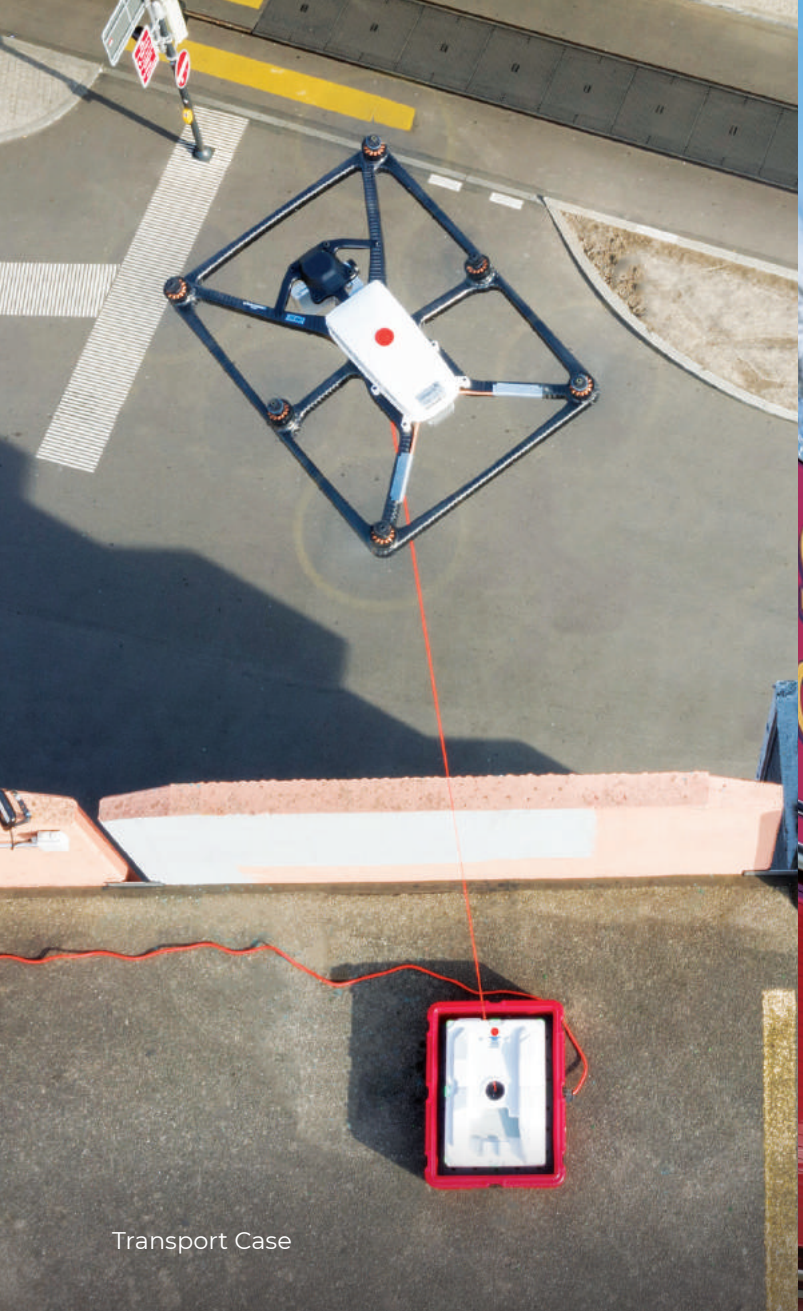
Configurations

Fotokite Sigma is an industrial-grade tool for Firefighters and is offered in Rooftop, Tray Mount, and Transport Case configurations. In each configuration, Fotokite Sigma integrates seamlessly into new and existing vehicles with various mounting options available.

Rooftop Box

The Rooftop Box configuration is Fotokite's flagship configuration, enabling elevated situational awareness immediately and completely hands-free. Designed for integration into SUV and larger vehicle classes, the Rooftop Box configuration deploys with the single push of a button within 15 seconds of arriving on scene.



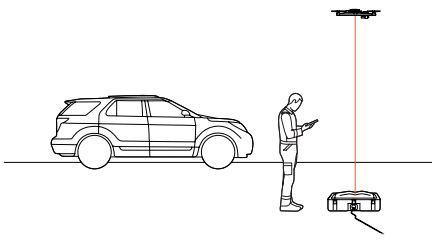


Transport Case

Tray Mount

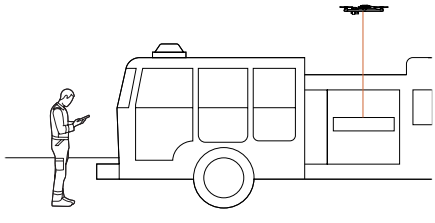
Transport Case

The Transport Case configuration allows the use of the Fotokite Sigma interchangeably between vehicles and offers incident response scene flexibility when deploying the system. This portable solution allows for more precise positioning of the unit at the incident with a setup time of approximately 90 seconds.



Tray Mount

The Tray Mount configuration allows the close integration of Fotokite systems into the side or back compartments of any command vehicle. Pre-wired to your vehcile's power, the Transport Case is ready for deployment within 30 seconds of arriving on scene.



How Can Fotokite Improve Your Mission?

The Fotokite Sigma is purpose-built to meet the needs of Public Safety teams in everyday missions. Every system is delivered with the following features engineered to improve your safety-critical missions without added complexity.

Safe and Simple Situational Awareness

Deployed with the single push of a button, Fotokite Sigma does not require any setup time, calibration, or piloting. Within seconds, you and your team will be able to access aerial overviews of your incident scene up to heights of 45 m / 150 ft with the safety and reliability that Public Safety teams require.

24 h Intelligence, On-Site and Remotely

With 24 hour flight time and without any piloting needed, Fotokite allows for true, everyday autonomous flight. This gives teams actionable information throughout their missions and unlocks the ability to capture full incident response records without interruption. An integrated mobile data modem also optionally streams both camera streams remotely to user-specified IP addresses.

Redundancy, Safety, and Reliability

Safety comes standard. Fotokite provides an industrial-grade tool with propulsion, power, and autopilot redundancy built in. This provides Public Safety teams with the reliability and dependability they need in their everyday mission-critical tools.

Low Training Threshold

Launch, fly, and land the Fotokite Sigma with a single button push. Height is controlled with a scroll-bar on the included rugged tablet, and camera heading is controlled with a simple double-tap gesture to snap and center to your objective.

GPS-Independent

Patented use of the tether cable enables GPS-independent flight and provides safe, reliable, autonomous operation throughout every mission. Fotokite's technology uniquely provides the capability to reliably launch and land from small vehicle-based enclosures day-in and day-out.

Use Cases

Whether you are first on scene or arriving mid-response, you can access secure and reliable aerial overviews within seconds. On-scene response records are easy to review and collaborate on, giving you and your team access to mission-critical information for as long as you need it.

Fire Response

Safely size up a roof for hot spots, easily visualize and direct hose lines, or gain perspective from the front line of a forest fire. At the push of a button, without the need for piloting, and without drawing team resources.

Search & Rescue

Immediate elevated situational awareness helps to detect and direct team resources in SAR missions with significant efficiency gains. Quick scanning capabilities enable a scene-overview snapshot in seconds, even at night and through smoke and fog.

Post-Fire Inspection & Monitoring

Continuous monitoring of the incident scene helps easily detect heat concentration points to eliminate flare-ups. Without the need to swap batteries or pilot the system, you'll have uninterrupted monitoring of the incident for hours at a time.

Infrastructure & Event Security

Long-endurance situational awareness from elevated perspectives helps to detect developing incidents and direct team resources in crowded environments, where coordination and documentation are critical.

Emergency Response

You'll have immediate and hands-free deployment for everyday on-scene response coordination and post-scene documentation.

Traffic Management

Quickly and easily visualize traffic flow and bottlenecks from the safety and convenience of your vehicle.

Technical Highlights

Rain or shine, Fotokite Sigma is built for reliability and performance. Fotokite combines patented technology, key functionality and robust design to bring uninterrupted performance in harsh weather conditions.

IP55 Rated

Proven performance and reliability in everyday weather conditions, day or night. Fotokite Sigma is IP55 rated and operates regularly through rain, snow, and wind, allowing for uninterrupted mission feed.

Advanced Cameras

Dual infrared and low-light RGB video is securely delivered down the tether. Thermal video resolution is 320 x 240 / 27 fps. Radiometric feature can measure absolute temperature in range -40°C - 400°C, accuracy ± 5%. Low light RGB video resolution is 1920 x 1080 / 30 fps / 12 MP /16x Hybrid Zoom (0.5x widest - 16x most zoomed).

45 m / 150 ft Max Height

Situational awareness is delivered down the tether from altitudes of up to 45 m / 150 ft. The system includes automatic altitude reduction if the wind surpasses the threshold to operate safely.

Built for Safety & Reliability

Fotokite Sigma's Kite is built with an ultra-light 1.2 kg carbon fiber frame providing a robust, durable, and high performance solution.

Robust Wind Performance & Intelligent Redundancy

Made for performance even in harsh conditions, the Fotokite Sigma has been operated in winds up to **25 mph (40 km/h)**. For safety and peace of mind, Fotokite Sigma is built with automatic detection of hazardous wind conditions and will automatically adjust height down to safe operating altitudes so station-keeping can be maintained without the need to monitor or pilot the system.

Remote Streaming Intelligence

Securely stream aerial intelligence back to command centers to provide remote ISR and coordination capabilities throughout a response.

Testimonials

“In today’s fire service we consistently look for new innovations and modern technology to improve our safety and performance on the ground. At times, this technology hinders our ability to perform at the same speed and efficiency that is needed. Fotokite accomplished integrating modern technology without interfering with the speed that we need to maintain to carry out the missions. The ease of launching and using the kite allows on-scene personnel to deploy the unit then pass off the tablet to the IC and proceed with their on-scene tasks without any compromise of precious minutes. Having the kite be able to stay up during the duration of the incident without worrying about batteries, FAA regulations or assigning a full-time operator is invaluable. The payoff for the short set up time is a bird’s-eye view of the incident, crystal clear video, FLIR video and full documentation of the event. The launch and forget ability of the Fotokite can and will change how we operate not only fire scenes but all Tech rescue disciplines and hazmat events. As an Incident Commander, having this capability without compromising resource numbers on scene is invaluable.”

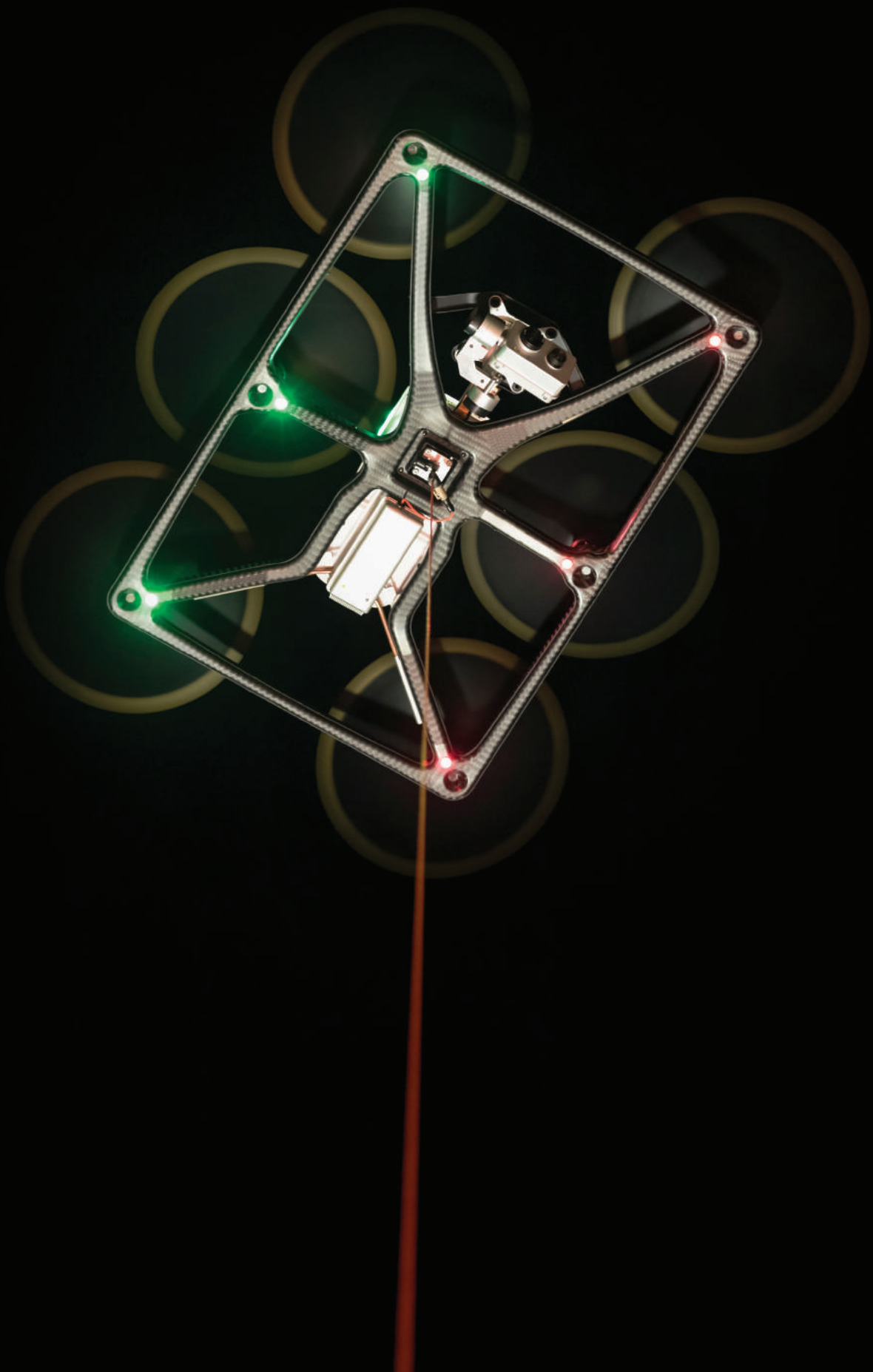
- Battalion Chief Larry Young, Kansas City Fire Dept.

“We used the Fotokite for crowd and traffic monitoring and overall aerial situational awareness on a large-scale mass gathering event this summer. As the unit brought was portable, we also used it as a rapid response capability on a few short missions. The Fotokite provided a bird’s-eye view to the incident commander and other critical decision makers which allowed them to make more informed and educated decisions in the successful management of the event. We found the Fotokite to be a great capability that can provide situational awareness of a progressing incident and/or the over-watching for the safety of firefighters and other emergency workers operating at an incident. The fact that no FAA remote pilot certification or Certificate of Authorization (COA) is needed to deploy or operate the tethered aircraft makes it available for deployment by any emergency personnel trained on the unit. Additionally, the simple controls, functions and programed autonomous actions of the aircraft make it easy to operate even under stressful conditions and austere weather environments.”

- Deputy Chief Chris Sadler, York County Department of Fire & Life Safety

“This technology will no doubt be part of our specifications when planning future apparatus purchases. Our industry is constantly changing and this system allows us to have eyes in the sky from the time we arrive on scene in a unique and unparalleled way. This is definitely a game changer.”

- Chief O’Leary, Fond du Lac Fire Dept.



Specifications

Flight Time	24 hours continuous (as long as truck is running or plugged into shore power)
Safety & Regulations / FAA Compliant	No piloting necessary; fully-autonomous launch, flight, & landing
System Reliability	Auto pre-flight system checks, single-motor failure redundancy, controlled descent, backup flight power system for up to 120 seconds, backup Ground Station power system for control & recovery in power blackouts, redundant flight control, tether separation detection, automatic maintenance alerts
Operating Temperature Range	IP55 environmental rating, ready to operate in rain, snow, and wind. Operating temperature: -10°C to 40°C / 14°F to 104°F
Range	Max height of 45 m / 150 ft from the Ground Station
Tether	Reinforced load-rated ultra-thin cable
LTE Modem & Video Streaming	Ethernet + WPA2 encrypted Wi-Fi access point for live video streaming, plus integrated LTE Modem to stream live video remotely for mutual-aid and remote incident command
Cameras	Thermal stream resolution of 320 x 240 / 27 fps. Can measure absolute temperature in range -40°C - 400°C, accuracy ± 5%. Low-light RGB stream resolution of 1080p (1920 x 1080) / 30 fps / 12 MP / 16x Zoom (0.5x widest - 16x most zoomed)
Kite	1.2 kg / 2.6 lbs take-off weight, weather sealed carbon fiber & advanced composites
Flight Control	Fotokite Autopilot with no GPS dependency
Transport Case	Configuration (Kite and Ground Station in the Transport Case) weight and size: 21 kg / 46 lbs, 63.5 x 48.3 x 31 cm / 25 x 19 x 12.19 in
Servicing Log Storage	Over-the-air firmware upgrades with auto flight log & service documentation 24 hour capacity, single button-push upload to optional cloud account at the station
Security	Secure video streaming & control link to the Ground Station via tether cable
Warranty	1-yr / 200 flight hours

Fotokite AG
Heinrichstrasse 235, 8005 Zurich, Switzerland

www.fotokite.com
sales@fotokite.com
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