

SkyRanger® R70

The Future of Multi-Mission Small UASs



**detection
monitoring
identification**

radiation



Developed for the most demanding UAS operators within the defense, security, public safety and infrastructure inspection markets, the SkyRanger R70 defines the benchmark for small UAS performance and reliability. With its expanded carrying capacity, open architecture, and advanced autonomy and artificial intelligence, the R70 is redefining what's possible with a small VTOL UAS.

The R70's multi-mission payloads provide ISR and payload delivery capabilities previously limited to much larger UAS. Optical sensors include the StormCaster-T a longwave infrared, continuous zoom ISR payload with exceptional line of sight stabilization, range of motion and geolocation accuracy, the HDZoom 30 providing eyes-on-target at distances up to 8 km and the EO/IR Mk-II for high-fidelity daylight and thermal imagery streamed securely anywhere in the world. With the Osprey, R70 operators can rapidly attach, carry and deliver nearly any object up to 3.5 kg for forward resupply, asset extraction or other specialized missions.

Utilizing the payload development kit, third-party payload developers have integrated their payloads with the R70 platform extending the system's capabilities to support critical ISR, detection and ELINT missions.

APPLICATIONS

- IMMEDIATE ISR
- CLANDESTINE OPERATIONS
- PAYLOAD DELIVERY
- BEYOND LINE-OF-SIGHT
RECONNAISSANCE
- FORCE PROTECTION

FEATURES

UPGRADED: AUTONOMOUS & INTELLIGENT

With multiple embedded NVIDIA TX2 processors, the R70 is a flying supercomputer with an engine for real-time artificial intelligence at the network edge, including object detection and classification. Four dedicated computer vision cameras – upgraded to max available HD resolution on the latest R70 airframe - enable autonomous operations, landing on a moving platform and flights in GPS-denied environments.

UPGRADED: CLASS LEADING IMAGING & MULTI-MISSION PAYLOADS UP TO 3.5 KG

With the StormCaster family of payloads, the R70 provides "Group 2 ISR in a Group 1 UAS". With the latest prop/motor updates R70 operators can now attach and deliver nearly any object up to 3.5 kg (7.7 lbs). The updated EO/IR Frontcam (320x240 LWIR, 1080p EO 30Hz) provides domain awareness when carrying bottom-mounted, non-camera payloads, or can provide over 210° of simultaneous fore and aft situational awareness surveillance. The EO/IR Frontcam and all FLIR imaging payloads benefit from FLIR's integrated suite of AI tools and image analytics in both EO & IR, including Object Detection/Classification, Target Tracking, Moving Target Indication, Target Geolocation and Heading & Speed, and Augmented Reality Overlays.

UPGRADED: FLEXIBLE & MODULAR

The Unmanned Development Kits (UDK) further extend the R70 platform for end users, enabling complex integrations and rapid development of capabilities to meet tomorrow's evolving mission sets - integrate custom payloads and sensors, integrate C2 and deploy custom applications on UAS hardware. The latest R70 airframe includes a ruggedized connector providing access to aircraft power and communication networks, for persistent operations with the Tether Kit, and a rear-mount accessory port for Teledyne FLIR and 3rd party capabilities.

RESILIENT & BATTLE-TESTED

The R70's carbon fiber and magnesium airframe is tested to IP-54/MIL-810G environmental tolerances. In flight the R70 can withstand sustained winds up to 65 kph (40 mph), and operate up to 15,000' MSL. Mission success is underpinned by a robust digital MIMO communications link and two independent navigation subsystems. The R70 is able to execute semi-autonomous missions without an active command link for operations in RF-denied environments.

SkyRanger® R70

SPECIFICATIONS

Item Specification

Height	45cm (17.7")
Total Length	1.35m (53") Propeller tip to propeller tip
Weight	5kg (11 lbs)

Compatible Teledyne FLIR Payloads

Hot-Swappable	Yes
Custom	Supported through the R70 Payload Development Kit
Carry, Drop,	Osprey: Up to 3.5 kg (7.7lbs)
Day Imager	StormCaster-T, HDZoom30, EO/IR MK-II, HD40-XV
Night Imager	StormCaster-T, EO/IR MK-II
Image Stills	StormCaster-T: 640 x 512 pixelsHDZoom 30: 20 megapixels (5184 x 3888 pixels) HD40-XV -EO/IR MK-II: 13 megapixels (4192 x 3104 pixels) / (640 x 512 pixels)
Zoom	StormCaster-T: 5x optical, 15x digital HDZoom 30: 30x optical, 60x digital HD40-XV: 33x optical, 66x digital EO/IR MK-II: 4x digital
Field of View	StormCaster-T: 31° to 6° optical, 2° with digital zoomHDZoom 30: 68.6° to 2.6° (30x), 1.3° (60x)HD40-XV: 60 to 2.1 (33x), 1.0 with digital zoom (66x) EO/IR MK-II: 58° / 45° (13mm) or 32° (19mm)
Video Resolution	StormCaster-T: 640 x 512 60 FPS, H.264 recorded HDZoom 30: 1080p60 H.264 HD recorded HD40-XV: 720p30 H.264 recorded

Video Metadata	Embedded STANAG 4609 KLV metadata
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Third Party Payloads: (See separate materials)

Performance

Typical Endurance*	Over 40 minutes with standard propulsion system Tether Kit available
Max. Speed	Ground speed 50kph (31mph) Max ascent speed 4m/s (13ft/s) Max descent speed 3m/s (9ft/s)

Environment

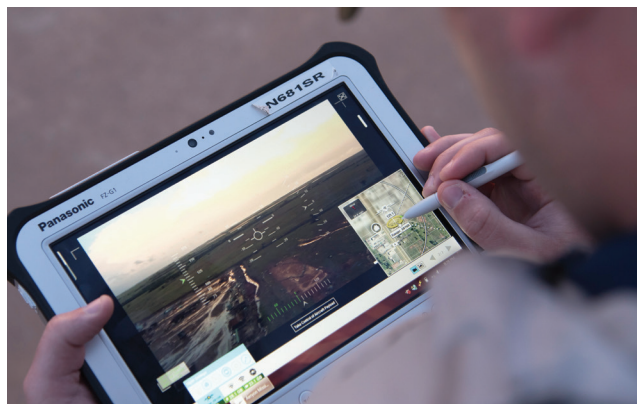
Temperature	-20°C to 50°C (-4°F to 122°F)
Wind	65kph sustained, 90kph gusting (40mph, 56mph)
Precipitation	IP-54, MIL-STD-810G

Data Link

Frequency	915Mhz, 922Mhz, 2.2Ghz + other frequencies and
Radio Range	Up to 8km (5 miles) with standard base station

Mission Data	AES encryption, with a 256-bit physical key exchange
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Launch Time	3-5 minutes
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Intuitive, tablet-based GCS



Object detection and classification



Modular Multi-mission UAS platform

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Laurus Systems, Inc. - Ph: 410-465-5558 - Fax: 410-465-5257 - www.LaurusSystems.com

