R80D SKYRAIDER™

The future of multi-mission sUAS for the U.S. DoD

APPLICATIONS

- IMMEDIATE ISR
- CLANDESTINE OPERATIONS
- PAYLOAD DELIVERY
- SITUATIONAL AWARENESS
- BEYOND LINE-OF-SIGHT RECONNAISSANCE
- FORCE PROTECTION
- ADVANCED TARGET RECOGNITION
- BATTLEFIELD EFFECTS
- MANNED/UNMANNED AIR STRIKES



Developed for U.S. Defense and Federal Government Customers, the R80D SkyRaider delivers a range of versatile Group 2-3 payload capabilities with the agility and single-operator deployment footprint of a proven Group 1 VTOL aircraft. With its ability to carry and deliver multiple payloads up to 7.7 lbs, an open architecture, and one of the fastest, most powerful embedded artificial intelligence (AI) computing devices available on a sUAS, the R80D is redefining what's possible with a man-packable UAS.

Built on a battle-tested UAS architecture, the R80D integrates specialized hardware and software to support the unique needs of the U.S. DoD and Federal Government users including proprietary hardware and software interfaces, ATAK/Nett Warrior integration and more.

The R80D's expanded carrying capacity, open payload architecture, and dynamic and responsive flight control, provides an unprecedented level of flexibility in a single sUAS.

Developed exclusively for U.S. DOD and Federal Agencies operating the R80D, RaiderOS adds enhanced communication channels designed to keep pace with both evolving mission requirements and cyber-security threats.

FEATURES

UPGRADED: AUTONOMOUS & INTELLIGENT

With multiple embedded NVIDIA processors, the R80D 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 R80D airframe - enable autonomous operations, landing on a moving target and flights in GPS-denied environments.

UPGRADED: CLASS LEADING IMAGING & MULTI-MISSION PAYLOADS UP TO 7.7lbs

With the StormCaster family of payloads, the R80D provides "Group 2 ISR in a Group 1 UAS". With the latest prop/motor updates R80D operators can now attach and deliver nearly any object up to 7.7 lbs (3.5 kg). The updated EO/IR Frontcam (320x240 LWIR, 1080p EO) 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 Teledyne FLIR imaging payloads benefit from Teledyne 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 R80D 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 R80D 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 R80D's carbon fiber and magnesium airframe is tested to IP-54 and military standards. In flight the R80D can withstand sustained winds up to 40 mph (65 kph), and operate up to 15,000' MSL. Mission success is underpinned by a robust digital MIMO communications link and two independent navigation subsystems. The R80D is able to execute semi-autonomous missions without an active command link for operations in RF-denied environments.

SPECIFICATIONS

Item Specification	
Height	17.7in (45cm)
Total Length	53in (1.35m)Propeller tip to propeller tip
Weight	11 lbs (5kg)
Compatible Teledyne FLIR Payloads	
Hot-Swappable	Yes
Custom	Supported through the Payload Development Kit (PDK)
Laser Target Designator	StormCaster-DX
Carry, Drop, Emplace	Osprey: Up to 7.7lbs (3.5kg)
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 pixels HDZoom 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 zoom HDZoom 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 EO/IR MK-II: 640 x 512 / 8.33 FPS H.264 recorded
Video Metadata	Embedded STANAG 4609 KLV metadata
Third Party Payloads: (See separate materials)	
Performance	
Typical Endurance	Over 40 minutes with standard propulsion system Tether Kit available Over 60 minutes with new XL Battery Packs
Max. Speed	Ground speed 31mph (50kph) Max ascent speed 13ft/s (4m/s) Max descent speed 9ft/s (3m/s)
Environment	
Temperature	-4°F to 122°F (-20°C to 50°C)
Wind	40mph sustained, 56mph gusting (65kph, 90kph)
Precipitation	Tested to IP-54 and military standards
Data Link	
Frequency	915Mhz, 922Mhz, 2.2Ghz + other frequencies and waveforms
Radio Range	Up to 5 miles (8km) with standard base station



Easily attach, carry and deliver payloads up to 7.7 lbs



Modular Multi-mission UAS platform



Object detection and classification

AMERICAS

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