
FLIR
THE FUTURE OF MULTI-MISSION UAS FOR THE U.S. DOD
FLIR R80D SKYRAIDER™

YOUR SPECIALIZED sUAS DEFENSE CONTRACTOR

R80D SKYRAIDER

MULTI-MISSION UAS

Rugged & Reliable

Carbon fiber and magnesium airframe, tested to IP-54 / MIL-810G

Intelligent & Autonomous

Multiple NVIDIA TX2 processors for AI on the edge

Payloads up to 4.4 lbs

Easily attach, carry and deliver payloads up to 4.4 lbs

Flexible & Modular

New Application and Payload Development Kits

R80D SKYRAIDER

YOUR SMALL UAS MULTI-TOOL

Adaptive. Ruggedized. Innovative.

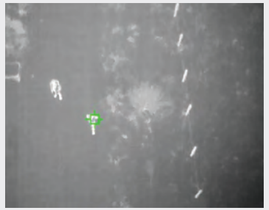
The R80D SkyRaider is FLIR's most advanced military UAS, delivering a range of versatile Group 2-3 payload capabilities with the agility and single-operator deployment footprint of a proven Group 1 VTOL aircraft.

One Platform, Many Missions

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

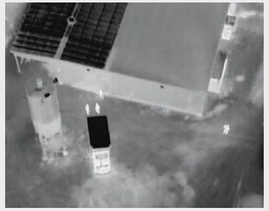
Persistent Overwatch

With Automatic In-Air Replacement (AIR) and an optional field-installable power tether, SkyRaider operators can deliver sustained eyes on target for fixed-location overwatch and surveillance.



Tactical ISR

The SkyRaider carries a suite of long-range, stabilized daylight and IR imaging payloads. These are supplemented with a front-mounted EO/IR payload for day and night situational awareness and secondary view-angle ISR when carrying non-optical payloads.



Payload Delivery

With the new Osprey carry and delivery payload, SkyRaider operators can rapidly attach, carry, and deliver nearly any object up to 4.4 lbs for forward resupply, asset extraction or other specialized missions.

KEY FEATURES & TECHNOLOGY

Carbon Fiber + Magnesium IP-Rated Airframe

Compact design is deployable in minutes by a single operator

4x Redundant Batteries

Maintain safe flight, even under single battery failure

< 99Wh batteries enable transport on commercial aircraft

2x Redundant Navigation Systems

Two distinct flight control computers and multiple sensor redundancy

Front-Facing EO/IR Camera

Provides ISR when carrying non-optical payloads and situational awareness for safe flight in urban and BVLOS operations

Next-Generation Comms Link

MIMO antennas for maximum throughput, and multi-stage failover technology

Modular Propulsion System

Optimize SkyRaider for different missions (high-altitude, clandestine, long-endurance) by simply switching arms and props

4 Downward-Facing Computer Vision Cameras

Provide flight control input for future autonomous navigation capabilities

Multi-Use Payload Architecture

Payload Development Kit enables FLIR, partners, and users to quickly develop and deploy sophisticated, integrated payloads

Laser Altimeter

Maintains consistent altitude over uneven terrain

R80D SKYRAIDER

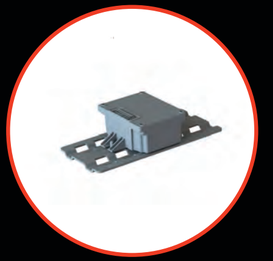
MULTI-ROLE PAYLOADS

HDZoom 30 and EO/IR Mk-II

Evolutionary successors to SkyRanger R60 payloads; weight reduction, connectivity improvements, and advanced Vector™ features.

Forward EO/IR

Front-mounted EO/IR payload, including image fusion. Provides day and night situational awareness when carrying non-optical payloads, and secondary view-angle ISR.



Osprey

Carry and drop payloads up to 4.4 lbs. Osprey's simple mechanical claw and mounting plate makes it easy to attach payloads in the field using zip ties.

Payload Development Kit

Extends payload development to end-users and third-party integrators, enabling the rapid development of application-specific payloads.

IMAGING PAYLOAD

HDZoom 30

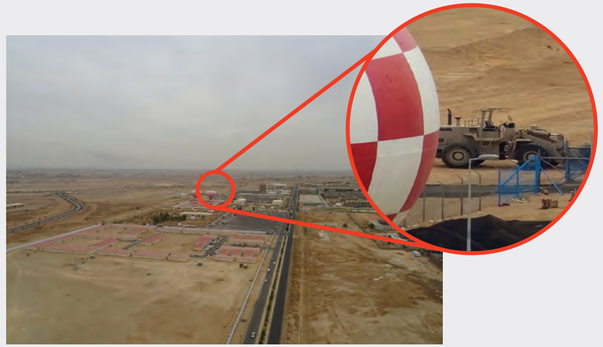
Long-Range Zoom

See Without Being Seen. The HDZoom 30 provides up to 30x optical zoom and 60x enhanced digital zoom for eyes-on-target at distances up to 3 miles (5 km).

PERFORMANCE SPECIFICATIONS

SHUTTER TYPE	Mechanical
IMAGE STILLS	20 megapixels (5184 x 3888 pixels)
ZOOM	30x optical 60x digital
FIELD OF VIEW	68.6° to 2.6° (30x), 1.3° (60x)
VIDEO RESOLUTION	1080p60 H.264 HD Recorded
REMOVABLE MEMORY	SDHC, SDXC
VIDEO METADATA	Embedded STANAG 4609 KLV Metadata
GIMBAL STABILIZATION	3-Axis
RANGE OF MOTION	Roll: +/- 20° Pitch: +20 to -120° Yaw: +/- 20°
ENVIRONMENTAL TOLERANCES	IP-54, MIL-STD-810G for salt mist/rain
WEIGHT	24 oz (670 g)

ACTUAL IMAGE FROM 300 METERS



ACTUAL IMAGE FROM 2KM

IMAGING PAYLOAD

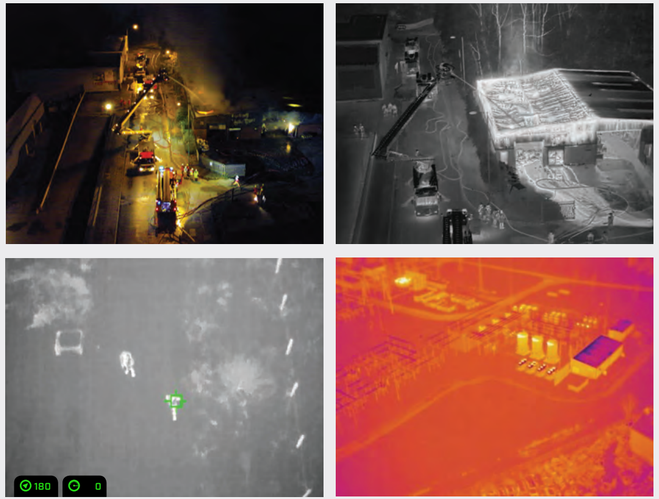
EO/IR Mk-II

High-Fidelity Infrared

The FLIR EO/IR Mk-II delivers high-fidelity daylight and thermal imagery in a weather-resistant, 3-axis stabilized gimbal.

PERFORMANCE SPECIFICATIONS

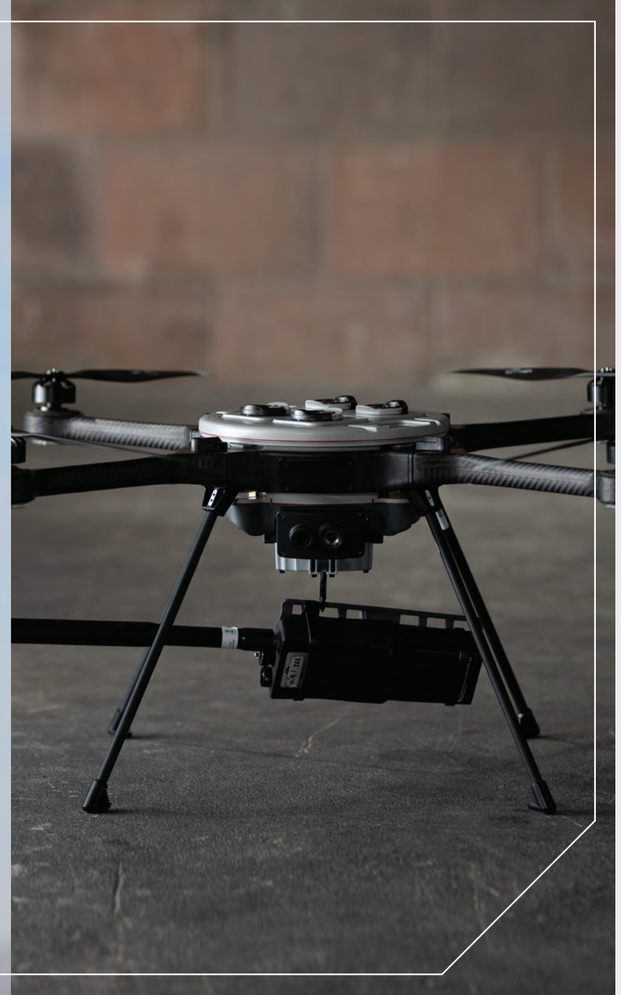
MAKE & MODEL	SONY FCB_MA132 + FLIR TAU2
IMAGE STILLS	EO: 13 Megapixels (4192 x 3104 pixels) IR: (640 x 512 pixels)
FIELD OF VIEW	58° / 45° (13mm) or 32° (19mm) Forward EO/IR: 90° / 57°
ZOOM	4x digital
VIDEO RESOLUTION	640 x 512 / 8.33 FPS H.264 recorded Forward EO/IR: 1920 x 1080 / 160 x 120
COLOR PALETTES	White-hot, Black-hot, Rainbow, Ironbow
GIMBAL STABILIZATION	3-Axis
RANGE OF MOTION	Roll: +/- 20° Pitch: +/- 60° Yaw: +/- 20°
VIDEO METADATA	Embedded STANAG 4609 KLV Metadata
DIGITAL ENHANCEMENTS	Active Contrast Enhancement (ACE) Digital Detail Enhancement (DDE) Information Based Histogram Equalization (IBHEQ) Isotherms
ENVIRONMENTAL TOLERANCES	IP-54, MIL-STD-810G for salt mist/rain
WEIGHT	20 oz (575 g)



CAPTURE DAYLIGHT AND THERMAL IMAGERY AT THE SAME TIME.

Ideal for both day and night operations, the EO/IR Mk-II imaging payload provides:

- Enhanced thermal (IR) imagery in a range of color palettes – white-hot, black-hot, rainbow, and ironbow
- Secure HD 1080p video streaming to the pilot and remote personnel anywhere in the world
- Choice of IR lenses – 19 mm focal length (tactical applications) and 13 mm (thermal mapping or SAR applications)
- Advanced radiometric temperature measurement, accurate to +/- 90° F (50° C)



OSPREY - CARRY & DELIVERY PAYLOAD

CARRY ALMOST ANYTHING UP TO 4.4lbs (2kg)

Individual First Aid Kit (IFAK)

Life Vest

Water

Unattended Ground Sensor (UGS)

Water Purification Kit

Smaller UAS

Small Pelican Case

Tactical Radio

FLEXIBLE PAYLOAD ARCHITECTURE

Payload Development Kit (PDK)

Extends payload development to end-users and third-party integrators, enabling the rapid development of application-specific payloads for the SkyRaider platform.

Leverage a Full Set of Payload Development Tools

ELECTRICAL + MECHANICAL + SOFTWARE INTEGRATION

Enables full integration with the SkyRaider airframe, including:

- Mechanical mounting
- Power from aircraft batteries
- Sensor data from aircraft (e.g. GPS)
- Secure IP networking for payload data

Vibration-Isolating Mechanical Airframe Design

Minimizes the need to deploy dedicated stabilization into the payload

Supplementary EO/IR Payload

Provides day/night ISR capability while flying non-optical payloads

Expanded Payload SWaP Envelope

Able to carry integrated payloads up to 4.4lbs

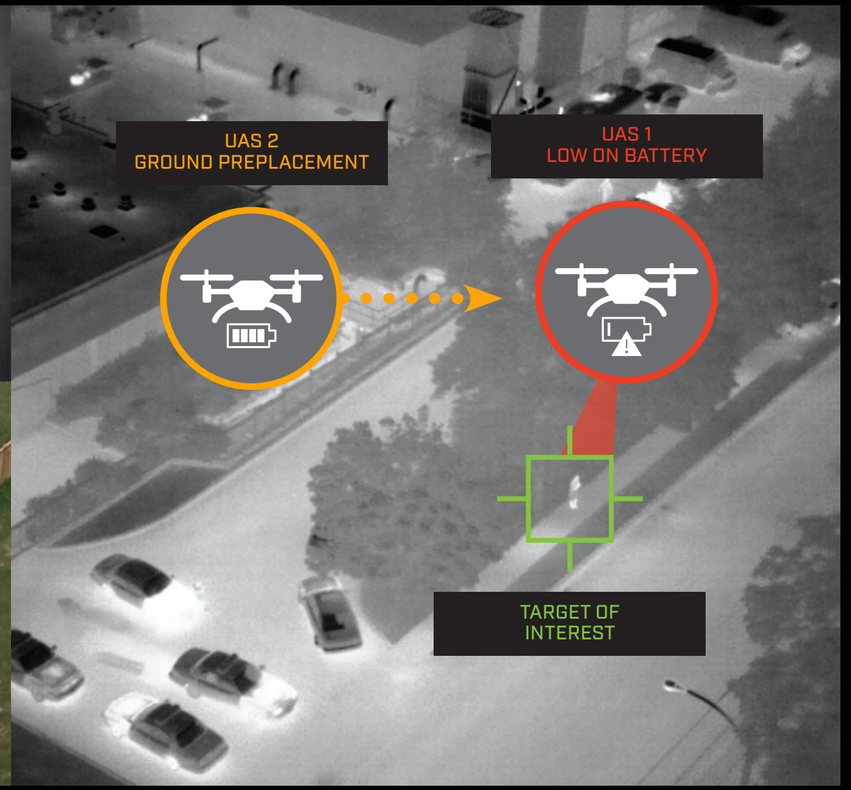
IDENTIFY, TRACK AND ANALYZE MOVING OBJECTS

Moving Target Identification in Both EO and IR

Integrated into the HDZoom 30 and EO/IR Mk-II Imaging payloads, FLIR Vector™ real-time video processing software automatically targets and tracks moving objects up to 3 miles away. The tracking algorithm adapts in real-time to changes in target shape and maintains a hold on the target even when its position changes or another object obstructs the view.

- Automatically track targets
- Identify up to 10 moving objects
- Calculate target geolocation, heading and speed

VECTOR'S MOVING TARGET INDICATOR automatically annotates up to 10 moving objects within the camera's field of view and can provide real-time calculation of target heading and speed in both EO and IR.



Automatic target handoff scenario in IR between multiple SkyRaiders using AIR

KEEP EYES ON TARGET FOR HOURS

Gain Persistent Eyes on Target with Automatic In-Air Replacement (AIR)

AIR allows a fully charged, ready to launch SkyRaider to automatically replace another airborne SkyRaider when its battery is depleted or it needs to land.

AIR also provides real-time payload swaps for when conditions or operational requirements change (daylight into night operations) where a SkyRaider flying an EO/IR Mk-II replaces a SkyRaider flying a HDZoom 30 for improved nighttime ISR.

RaiderOS Cyber-Security

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

SKYRAIDER SOFTWARE

STATE-OF-THE-ART SOFTWARE

Dark Mode

SkyRaider is able to execute semi-autonomous flight plans without the benefit of an active C2 link. This capability will evolve to enables applications such as:

- BVLOS payload emplacement
- Clandestine ISR in non-permissive environments, with a contested electromagnetic spectrum

Multi-Aircraft Control

Building on AIR (Automatic In-Air Replacement), SkyRaider will allow for the operation of multiple aircraft from a single GCS, with each aircraft executing a unique, semi-autonomous flight plan. This enables applications such as:

- Coordinated, multi-sensor ISR
- Large-area reconnaissance and mapping

TYPICAL CONFIGURATION

ACCESSORIES

SkyRaider Rucksack

SkyRaider Joystick Controller

R80D SKYRAIDER

PERFORMANCE SPECIFICATIONS

SIZE	31.5 in wide (80 cm) 13.5 in high (34 cm)
ENDURANCE	50 minutes with high-endurance propulsion system Over 40 minutes with standard propulsion system ** Endurance specifications measured with Forward EO/IR payload; actual flight time varies based on payload and operating conditions*
MAX RANGE	Up to 5 miles (8km) with standard base station
MAX GROUND SPEED	31 mph (50 kph)
MAX ASCENT, MAX DESCENT SPEED	13ft/s (4m/s) 9ft/s (3m/s)
PAYLOAD CAPACITY	4.4 lbs (2.0 kg) with standard propulsion configuration
MAX CEILING	15,000' MSL with standard propulsion
WIND TOLERANCE	40mph sustained, 56mph gusting (65kph, 90kph)
OPERATING TEMPERATURES	-22°F to 122°F (-30°C to 50°C)
FREQUENCY CONFIGURATION (Wideband + Narrowband)	900MHz + 5.8GHz, + Other frequencies and waveforms
GROUND CONTROL STATION	FLIR Mission Control Station (MCS) Software v4.x Interoperable with FLIR SkyRaider R80D on Panasonic FZG-1
VIDEO METADATA	Embedded STANAG 4609 KLV metadata
ENCRYPTION	AES 256 bit encryption with secure key exchange
ENVIRONMENTAL TOLERANCE	IP-54, MIL-STD-810G for salt mist/rain
WEIGHT	Aircraft 9.9lbs (4.5kg) – Airframe, arms, legs, 4 batteries, no payload Standard pack 18.7lbs (8.5kg) – Aircraft, Base Station, HDZoom 30

LONGER FLIGHT TIMES, BIGGER PAYLOADS, MORE MISSIONS.

HIGHLIGHTS

MISSION COVERAGE

Sustained Persistence

With FLIR's Multi-Aircraft Autonomous Flight Controls

EXPANDABLE PAYLOAD

Up to 4.4lbs

With FLIR's Payload Development Kit for Enhanced Payload Flexibility

INGRESS RATING

IP-54/MIL-STD-810G

FLIR UAS are Reliable and Proven in the Harshest of Battlefield Conditions

REQUEST A QUOTE

READY TO ADD SKYRAIDER TO YOUR FLEET?

Send us an email with your contact information to:
surveillance_sales@flir.com

We look forward to working with you.

For more information and videos on the R80D SkyRaider visit visit: **flir.com/r80d**

We're Not Your Typical Drone Provider

- 10 Years of UAS experience
- Hands-on flight training
- Dedicated support team
- Made in North America

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