LAPIS HAVACILIK

GIMBAL SYSTEMS · PRODUCT FAMILY

EO / IR STABILIZED PAYLOAD FAMILY

A scalable line of gyro-stabilized EO, thermal and multi-sensor payloads for UAV, UGV and autonomous platforms — from 400 g micro-gimbals to cooled MWIR and long-range laser designation. One integration interface across the range.

13+	<0.2 mrad	Ethernet	Dual-Use
PAYLOAD VARIANTS	STABILIZATION	H.264 · PLUG-IN	CIVIL & DEFENSE

SECTION 01 — SELECTION MATRIX

Payload Family — FY-01 to FY-07

FY-01 to FY-07 · EO, thermal, multi-sensor and optical-zoom payloads · shared Ethernet / H.264 interface · 24 VDC

	FY-01 FY-01-EO	FY-02 FY-02-IR	FY-03 FY-03-EOIR	FY-04 FY-04-LWIR-KD	FY-05 FY-05-EO-KD	FY-06 FY-06-MWIR-KD	FY-07 FY-07-EO-TRO
Configuration	3-Axis EO	3-Axis LWIR	3-Axis EO + LWIR	2-Axis LWIR · Zoom	3-Axis EO + LRF · Long-range	2-Axis MWIR · Cooled · Zoom	3-Axis EO · Micro
Stabilization	3-axis · <0.2 mrad	3-axis · <0.2 mrad	3-axis · <0.2 mrad	2-axis · <0.2 mrad	3-axis · <0.2 mrad	2-axis · <0.2 mrad	3-axis · <0.2 mrad
Weight [1]	< 700 g	< 650 g	< 800 g	< 1200 g	< 1500 g	< 1800 g	< 400 g
Dimensions (mm)	< 159×158×126	< 159×158×126	< 159×158×126	< 140×140×200	< 140×200×225	< 140×200×225	< 120×84×124
Power (24 VDC)	30 W	30 W	30 W	50 W	50 W	50 W	30 W
Daylight (EO) channel	CMOS · 720p/1080p · 30× FOV 63.7°–2.3°	—	CMOS · 720p/1080p · 30× FOV 63.7°–2.3°	—	CMOS · 720p/1080p · 30× FOV 63.7°–2.3°	—	CMOS · 720p · 10× zoom FOV 62°–6.5°
Thermal (IR) channel	—	Uncooled LWIR · 640×512 7.5–13.5 µm · 35 mm · FOV 18°×14°	Uncooled LWIR · 640×512 7.5–13.5 µm · 35 mm · FOV 18°×14°	Uncooled LWIR · 640×480 8–12 µm · 15–75 mm zoom · FOV 43.4°–8.2°	—	Cooled MWIR · 640×512 3–5 µm · 20–275 mm zoom · FOV 27°–2°	—
Laser Range Finder	—	—	—	—	1.5 µm · max 32,000 m NATO 8,600 m · ±0.1–1 m	—	—

All models: 3-axis gyro-stabilized (2-axis where noted) · 360° continuous pan (slipring) on 3-axis units · tilt –120° / +50° · stabilization <0.2 mrad standard (≈ <0.01°) · Ethernet video, H.264 compression · [1] Weight excluding optional modules.

SECTION 01 — SELECTION MATRIX

Payload Family — FY-08 to FY-14

FY-08 to FY-14 · EO/IR, HD thermal and long-range LRF variants for extended-standoff missions

	FY-08 FY-08-EO-LRF	FY-09 FY-09-IR-LRF	FY-10 FY-10-HDIR-LRF	FY-12 FY-12-HDIR-LRF	FY-13 FY-13-EOIR-KD	FY-14 FY-14-EOIR-LRF
Configuration	3-Axis EO + LRF	2-Axis IR + LRF	2-Axis HD IR + LRF	3-Axis HD LWIR + LRF	3-Axis EO + LWIR	3-Axis EO + LWIR + LRF
Stabilization	3-axis · <0.2 mrad	2-axis · <0.2 mrad	2-axis · <0.2 mrad	3-axis · <0.2 mrad	3-axis · <0.2 mrad	3-axis · <0.2 mrad
Weight [1]	< 730 g	< 1400 g	< 1400 g	< 700 g	< 1200 g	< 1200 g
Dimensions (mm)	< 170×150×130	< 155×152×241	< 132×182×213	< 180×181×217	< 169×136×210	< 155×136×190
Power (24 VDC)	35 W	35 W	35 W	30 W	35 W	35 W
Daylight (EO) channel	CMOS · 720p/1080p · 30× FOV 63.7°–2.3°	—	—	—	CMOS · 1080p · 30× FOV 63.7°–2.3°	CMOS · 1080p · 30× FOV 63.7°–2.3°
Thermal (IR) channel	—	Uncooled LWIR · 640×480 7.5–13.5 µm · 75 mm · FOV 12.1°	Uncooled LWIR · **1280×1024** 7.5–13.5 µm · 50 mm · FOV 12.1°	Uncooled LWIR · **1280×1024** 8–12 µm · 50 mm · FOV 12.1°	Uncooled LWIR · 640×512 8–14 µm · 50 mm · FOV 8.7°	Uncooled LWIR · 640×512 8–14 µm · 50 mm · FOV 8.7°
Laser Range Finder	1.5 µm · max 5,000 m NATO 2,800 m · ±0.01–0.5 m	1.5 µm · max 5,000 m NATO 2,800 m · ±0.01–0.5 m	1.5 µm · max 5,000 m NATO 2,800 m · ±0.01–0.5 m	1.5 µm · max 5,000 m NATO 2,800 m · ±0.01–0.5 m	—	1.5 µm · max 5,000 m NATO 2,800 m · ±0.01–0.5 m

FY-10 / FY-12 provide 1280×1024 HD thermal · FY-14 combines EO + LWIR + LRF in one head · all LRF variants: NATO target 2,800 m. [1] Weight excluding optional modules.

SECTION 02 — OPERATIONAL SCENARIOS

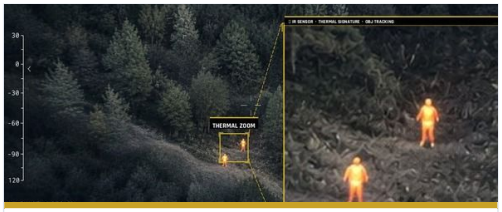
Use Cases

Dual-use missions enabled across the payload family · defense · civilian · industrial · environmental

01
ENERGY · DAM · STRATEGIC

Critical Infrastructure

Perimeter surveillance of dams, hydroelectric plants and energy facilities — continuous high-altitude



02
THERMAL NIGHT OPERATIONS

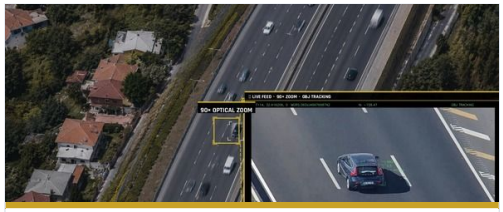
Search & Rescue

Detection of missing persons in mountainous and dark environments inaccessible to conventional

03
EARLY IGNITION & SPREAD

Wildfire

Detection of early-stage fire points and real-time coordinate relay to response teams, dramatically



04
SPEED & VEHICLE TRACKING

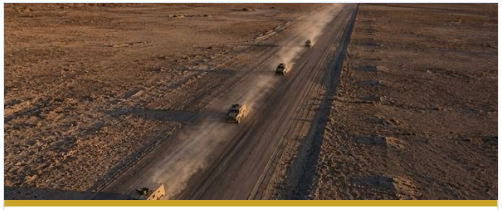
Traffic Surveillance

Aerial speed measurement, plate recognition and vehicle tracking — sharp EO imagery to plate level

05
PUBLIC ORDER MONITORING

Crowd & Event

Live video coordination at events, demonstrations and gatherings, letting command centers decide



06
ROUTE RECON & THREAT SCAN

Convoy & Escort

Aerial escort for ground convoys with threat scanning along the route and perimeter monitoring around

07
COAST GUARD PATROL

Coastal & Maritime

Coastal patrol, illegal-fishing control and pollution detection — a critical aerial view for maritime search-

ONE PLATFORM MANY SCENARIOS

Defense · Civilian
Industrial · Environmental

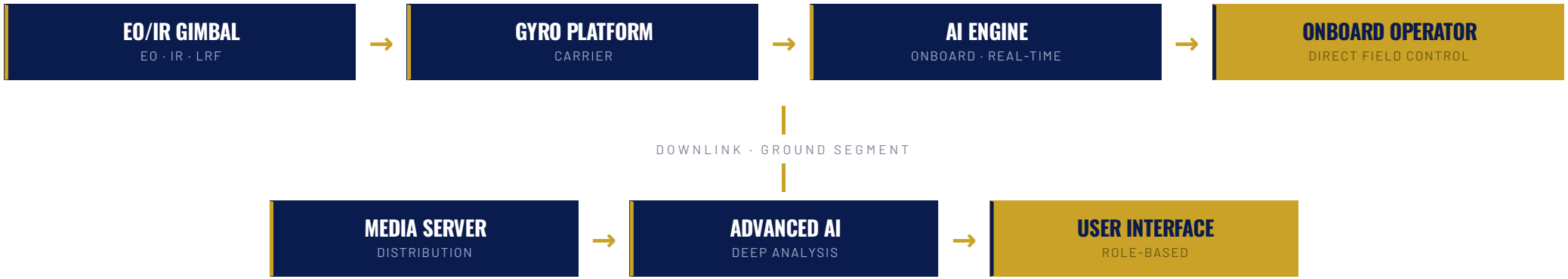
Seamless integration on a single EO/IR payload family.

90×	3–32 km	3-Axis	24/7	<0.01°	EO + IR
OPTICAL ZOOM	LASER RANGE	STABILIZATION	OPERATION	PRECISION	HD IMAGING

SECTION 03 — INTEGRATION ARCHITECTURE

Data Flow Architecture

Two-tier AI — onboard real-time analysis + server-side advanced processing · common infrastructure across the FY-series payload family



01

Media Server

EO/IR video stream routed to a central media server and distributed simultaneously to multiple screens.

- Low-latency streaming
- Multi-screen distribution
- Multi-protocol support
- Command-field sync

02

Role & Privilege

User profiles fully separate image access from control privileges for secure multi-operator use.

- Operator / Authorized / Viewer
- Profile-based view
- Fully auditable access
- Data-leak protection

03

AI Engine

Two-tier onboard and server-side AI providing scenario-driven operational support.

- Vehicle & plate detection
- Pedestrian & object detection
- Crowd density
- Thermal anomaly alerts

FLAGSHIP · OPERATIONAL · ACTIVELY DEPLOYED

FY-16

3-axis EO / IR / LRF platform with onboard + server-side AI, media-server distribution and role-based operator access.

90× OPTICAL ZOOM	**4×** IR ZOOM	**3 km** LASER RANGE
1280×720 HD THERMAL	**<0.01°** PRECISION	**24/7** OPERATION

FY-16 Capabilities

- Automatic target tracking
- Scene & target tracking
- Image exploitation
- HD live streaming
- Role-based access
- Vehicle & plate detection
- Pedestrian & object detection
- AI module ready

PAYLOAD **Airframe Integration**

FIELD **Operational Fleet**

FY-16 is the flagship of the Lapis EO/IR payload family — operational and actively deployed. A dedicated FY-16 datasheet with full integration architecture and use-case detail is available on request.

Request a datasheet or evaluation unit

DEMO · INTEGRATION SUPPORT · ICD ON REQUEST

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