

KLM VANTREL SERIES

COMPACT ONE-MAN ISR

PART OF THE VANTREL SERIES

VANTREL DUO

COMPACT ISR · TECHNICAL BROCHURE

The rapid-deploy, dual-spectrum reconnaissance platform — day and thermal imaging with AI target identification, on the backpack-portable Vantrel airframe. In the air in minutes, from a single case, with a single operator.

34 MIN
ENDURANCE

10 KM
RADIO RANGE

1.78 KG
ALL UP WEIGHT

DUAL
DAY + THERMAL

COMPACT ISR · MISSION PROFILE

LAUNCH FAST. SEE FAR.

Vantrel Duo is KLM Defense's one-man portable reconnaissance platform — a compact airframe, quick-swap battery and the KAT7 Pro controller in a single case one operator can carry, deploy and recover alone. The Spectra384 gimbal delivers dual-spectrum day and thermal imaging with AI-assisted target identification over an FHSS + AES encrypted, dual-band link.

34 MIN

MAX FLIGHT ENDURANCE

10 KM

MAX RADIO RANGE

27,000 FT

SERVICE CEILING AMSL

90 KM/H

MAX SPEED

55 KM/H

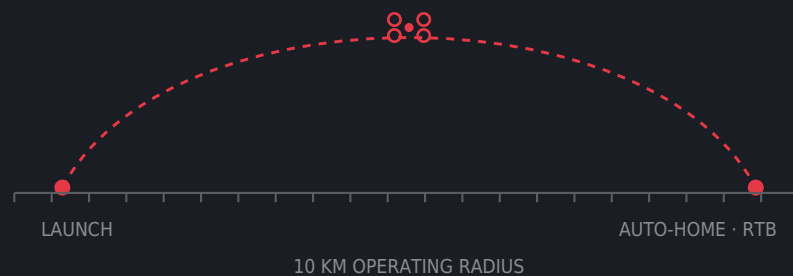
WIND RESILIENCE

<15 SEC

BATTERY SWAP TIME

MISSION PROFILE

ON-STATION · UP TO 34 MIN



VANTREL DUO · FIELD DEPLOYMENT

● LIVE AIRFRAME



LIVE AIRFRAME · UNEDITED FIELD PHOTOGRAPHY

CORE CAPABILITIES

BUILT FOR THE FIRST FIVE MINUTES

01 ONE-CASE, ONE-OPERATOR DEPLOYMENT

Carbon-fibre-and-polyurethane arms, quick-release props and a sub-15-second battery swap let a single operator unpack, power up and launch from one case — no tools, no ground crew.

02 SPECTRA384 · DUAL-SPECTRUM SENSOR

5 MP day sensor with 4× hybrid zoom plus a 384×288 thermal imager with up to 9 thermal colour palettes, 3-axis mechanical stabilisation plus EIS, and AI-assisted target identification and tracking for confident reconnaissance in any light.

03 ENCRYPTED, DUAL-BAND LINK

FHSS frequency-hopping with AES channel encryption across 2.4 and 5.8 GHz control and video links, with sub-20ms control latency, so the mission feed can't be intercepted or spoofed mid-flight.

04 ALL-WEATHER, GRAB-AND-GO READY

IP55-sealed airframe rated -20°C to +55°C, with a -15°C cold-soak launch capability from 21,000 ft, plus Auto-Home failsafe on link loss or low battery.

OPERATING ALTITUDE IN CONTEXT

MT. EVEREST SUMMIT

VANTREL DUO — SERVICE CEILING

29,032 FT

27,000 FT

VANTREL DUO — MAX LAUNCH ALTITUDE

21,000 FT

TYPICAL TACTICAL QUADCOPTER

15,000 FT

SEA LEVEL

0 FT

● ALTITUDE ENVELOPE

8-8

TECHNICAL SPECIFICATIONS

FLIGHT PERFORMANCE

SPECIFICATION	VALUE
Max Flight Endurance *1	34 Mins Max
Max Radio Range *2	10 km
Max Launch Altitude (AMSL)	21,000 ft
Service Ceiling (AMSL)	27,000 ft
Max Speed	90 kmph (Electronically Limited)
Max Climb Rate	3.6 m/s
Wind Resilience	55 km/h
ECM Suite	Level 1 ECM
Cockpit Video Link	1080p FHD
Payload Tilt Angle	−90° to +15°
Failsafe (Over Range / Link Loss / Low Battery)	Auto-Home
Transmission	FHSS + AES · Dual-Band

*1 Endurance measured at standard payload, no-wind, 20°C ambient. *2 Line-of-sight, unobstructed terrain.

VANTREL DUO

● LIVE PRODUCT RENDER



SPECTRA384 GIMBAL · FRONT VIEW

SPECTRA384 · GIMBAL PAYLOAD

ONE LOOK. EVERY SPECTRUM.

The Spectra384 gimbal pairs a 5 MP day sensor and 4x hybrid zoom with a 384x288 thermal imager at 30 Hz, stabilised across 3 mechanical axes plus EIS, with onboard AI handling target identification on every flight.

SPECIFICATION	VALUE
Day Sensor	5 MP · 2K stills · 2K video @ 30 FPS
Thermal Sensor	384 × 288 px · 30 Hz · up to 9 palettes
View Modes	Day / Thermal / Stitched Day+Thermal
Zoom	4× hybrid · 3-axis mechanical stabilisation + EIS
Feed Mode	1080p fully encrypted video
AI Lock	Target identification & tracking
Gimbal Rotation	±95° yaw
Sight ECM Rating	Level 1

SPECTRA384 · HYBRID ZOOM RANGE



ONBOARD INTELLIGENCE

- AI LOCK · TARGET TRACKING
- 1080P FULLY ENCRYPTED FEED
- 3-AXIS MECHANICAL + EIS

SPECTRA384

LIVE PRODUCT RENDER



GYRO-STABILISED · THREE-QUARTER VIEW

SPECTRA384 OPTICAL PAYLOAD · IN THE FIELD

ONE TARGET. 0x TO 4x.

SPECTRA384 · EO DAY SIGHT

● ZOOM ENVELOPE

0x · WIDE FOV



4x · HYBRID ZOOM



0x WIDE FOV (LEFT) · 4x HYBRID ZOOM (RIGHT) · SAME AERIAL VANTAGE

Both frames come from the same aerial vantage — nothing moved but the zoom. At 0x, the Spectra384’s wide field of view sweeps the whole valley for area search; at 4x, the same 5 MP day sensor — 2K video at 30 FPS — resolves the vehicle to identification level from stand-off. For reconnaissance, that difference is decisive: the Vantrel Duo can find, fix and positively identify a target without closing the distance — keeping the aircraft, and its operator, unseen and unheard.

DAY SIGHT

4x HYBRID ZOOM

FEED MODE

1080P ENCRYPTED

AI LOCK

TARGET TRACKING

STABILISATION

3-AXIS + EIS

SPECTRA384 THERMAL PAYLOAD · IN THE FIELD

ONE TARGET. ZERO LIGHT.

SPECTRA384 · IR NIGHT SIGHT

IR · NIGHT SIGHT

384 × 288 · 30 HZ

THERMAL ENVELOPE

SPECTRA384 NIGHT SIGHT · PERSONNEL HEAT SIGNATURES · TWO OF 9 SELECTABLE COLOUR PALETTES

Both frames come from the Spectra384’s Night Sight — a 384 × 288 px thermal imager refreshing at 30 Hz. Body heat cannot be camouflaged: personnel resolve as unmistakable hot signatures against the cool terrain, shown here in two of the sensor’s 9 selectable colour palettes. Paired with the 5 MP day sensor on the same gimbal, the Vantrel Duo holds one target from first light through total darkness — no illumination, no exposure, no gap in coverage.

THERMAL SENSOR	REFRESH RATE	COLOUR PALETTES	VIEW MODES
384 × 288 PX	30 HZ	UP TO 9	DAY · THERMAL · STITCHED

KLMFLY GROUND CONTROL SOFTWARE

ONE SCREEN. ONE OPERATOR.

Every Vantrel Duo mission runs over an FHSS + AES encrypted, dual-band link between aircraft and controller, so the mission map, live feed and telemetry can't be intercepted or spoofed mid-flight — controlled entirely from the KAT7 Pro.

SATELLITE / TERRAIN / HYBRID

Switch base map layers on the fly to match terrain, lighting and mission need.

ONE-CLICK MISSION

Plan a full waypoint mission and launch it with a single confirmed command.

WAYPOINT NAVIGATION

Drop, sequence and edit unlimited waypoints directly on the map.

TOUCH-TO-GO

Tap any point on the map and the aircraft flies there — no manual entry.

ONE-TOUCH TAKEOFF & LAND

Single-command autonomous takeoff and landing at the marked home point.

HOLD & HOVER

Command an instant position hold at any point for on-station observation.

IN-FLIGHT ALTITUDE CHANGE

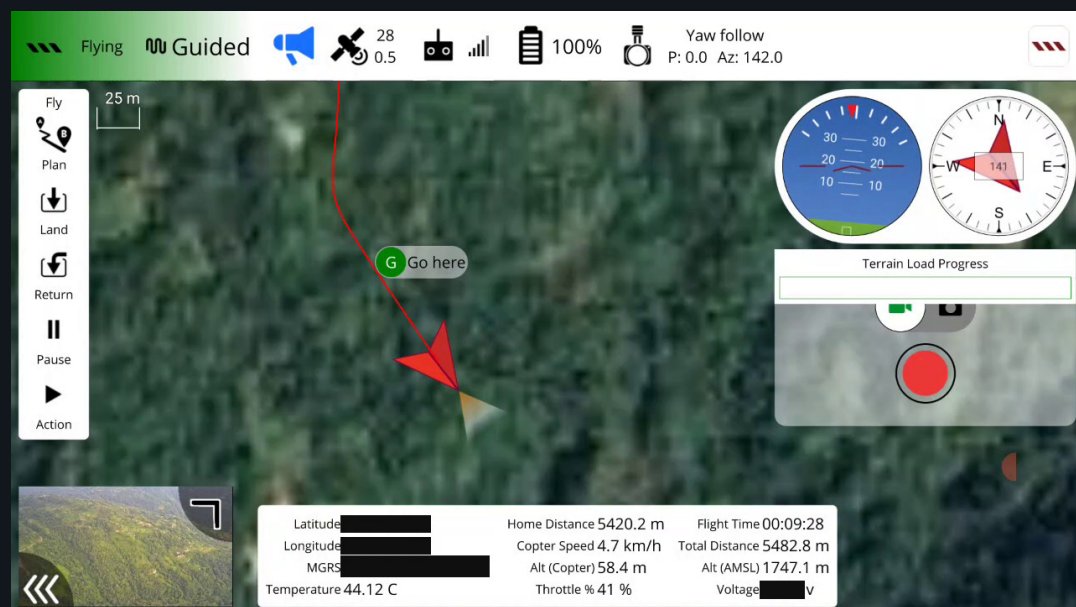
Raise or lower mission altitude live, mid-mission, without re-planning.

FULLY ENCRYPTED LINK

FHSS frequency-hopping with AES channel encryption end-to-end.

MISSION MAP · GUIDED

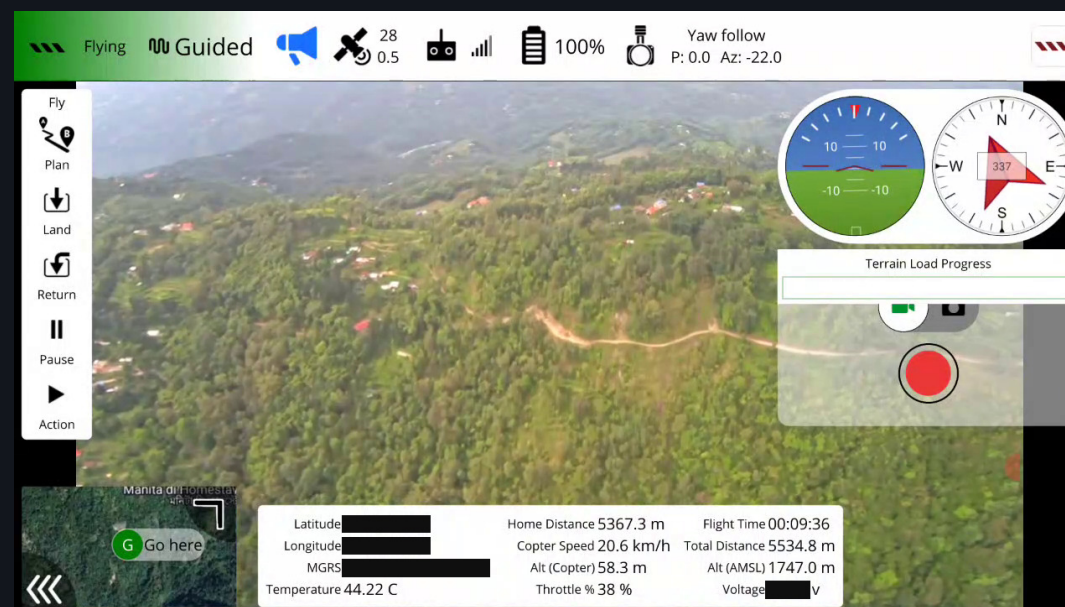
• TOUCH-TO-GO



ACTUAL KLMFLY COCKPIT CAPTURE

LIVE FEED · EN ROUTE

• FULL TELEMETRY HUD



ACTUAL KLMFLY COCKPIT CAPTURE

KAT7 PRO · VANTREL DUO CONTROLLER

ONE UNIT. FULL COMMAND.

The KAT7 Pro is a palm-sized, one-hand-operable controller running the KlmFly app — smart integrated aircraft control, live sensor feed and mission telemetry in a 5.5" FHD display, with dual-band radio diversity and 120 minutes of endurance on internal power.

SPECIFICATION	VALUE
Display	5.5" FHD
Control Architecture	KlmFly App — smart integrated aircraft control
Live View	KlmFly App — map + live sensor feed
Radio Diversity	Dual-band (2.4G + 5.8G)
Internal Battery Endurance	180 min
Cockpit Recording	64 GB
Failsafe (Over Range / Low Battery / Link Loss)	Auto-Home

OVER RANGE

AUTO-HOME

LOW BATTERY

AUTO-HOME

LINK LOSS

AUTO-HOME

KAT7 PRO

LIVE PRODUCT RENDER



OLIVE · VANTREL DUO CONTROLLER

TECHNICAL SPECIFICATIONS

BUILT TO CARRY, LAUNCH, SUSTAIN

PHYSICAL & POWER	VALUE
Diagonal / Footprint (unfolded)	231 × 231 × 57 mm
Maximum Take-Off Weight (MTOW)	1,780 g
Empty Weight	1,100 g
Frame Material	Carbon fibre + polyurethane
Number of Rotors	4
Propeller Size	9"
Battery Chemistry	Lithium Hybrid
Battery Capacity	12,000 mAh
Battery Swap Time	<15 sec
Charge Time (0-100%)	45 min fast · 90 min normal
Max Additional Payload Capacity	500 g

COMMS & ENVIRONMENTAL	VALUE
Control Link Frequency Band	2.4 & 5.8 GHz
Video Link Frequency Band	2.4 & 5.8 GHz
Control Link Latency	<20 ms
Video Latency	<100 ms
GNSS Constellations Supported	GPS · GLONASS · Galileo · QZSS
RTK / PPK Support	No
Onboard Recording Storage	64 GB
Operational Temperature	−20°C to +55°C
Cold-Soak Launch	−15°C from 21,000 ft
Weatherproofing	IP55
Operating Air Pressure	33 kPa
Operating Humidity Range	92% RH
Applicable MIL-STD Reference	MIL-STD-810G

ORDERING INFORMATION

DEPLOY THE VANTREL DUO

FIELD	DETAILS
Part Number	KLMPVT0002
Warranty Terms	2-year warranty
Included Accessories	Battery & spare props — FlyMore Combo
Training & Support Package	Included

Contact for Full Briefing

sales@klmpower.com — Subject: Vantrel Duo Briefing

