

# DJI Enterprise Product Comparison

## Products

Mavic		Matrice				
<b>Mavic 3 Enterprise</b>	<b>Mavic 3 Thermal</b>	<b>Matrice M30</b>	<b>Matrice M30 Dock Version</b>	<b>Matrice M30T</b>	<b>Matrice M30T Dock Version</b>	<b>Matrice M300 RTK</b>

## Survey-grade Photogrammetry Solution Comparison

Survey-grade Photogrammetry Solution	Small-size	Mid-size	
	<b>Mavic 3 Enterprise with RTK module (Wide Camera)</b>	<b>Matrice M300 RTK + Zenmuse P1</b>	<b>Matrice M300 RTK + Zenmuse L1</b>
Surveying Grade	Yes	Yes	Yes
RTK/PPK Support	Yes	Yes	Yes
GSD (cm)	H(m)/36.5	<b>24mm: H(m)/55 35mm: H(m)/80 50mm: H(m)/120</b>	H(m)/36.5
Sensor Size	4/3" 5280 × 3956 (4:3)	<b>Full-frame (35.9×24mm) 8192 × 5460 (3:2)</b>	1" 5472 × 3648 (3:2)
Still Resolution	20MP	<b>45MP</b>	20MP
Pixel Size	3.3μm	<b>4.4μm</b>	2.4μm
Lens Option	12mm/24mm Equivalent FOV 84.0°	<b>DL 24mm; FOV 84.0° DL 35mm; FOV 63.5° DL 50mm; FOV 46.8°</b>	8.8mm/24mm Equivalent FOV 84.0°
Mechanical Shutter	Yes (1/2000-8s)	Yes (1/2000-1s)	Yes (1/2000-8s)
Minimum Photo Interval	<b>0.7s</b>	<b>0.7s</b>	2.5s

Flight Time	Up to 42mins (With RTK Module)	<b>Up to 44mins</b>	Up to 42mins
Memory Requirement	microSD UHS-I Speed Grade 3 rating or above Max Capacity: 512GB	SD UHS-I rating or above Max Capacity: 512GB	microSD UHS-I Speed Grade 3 rating or above Max Capacity: 256GB
Maximum Wind Resistance	Up to 26mph	<b>Up to 33mph</b>	<b>Up to 33mph</b>
Smart Oblique Support	<b>(Support Planned)</b>	<b>Yes</b>	No
Realtime Terrain-follow	<b>(Support Planned)</b>	No	No
SDK & 3rd Party app Support	Yes	Yes	Yes

M3E, P1, and L1 are survey-grade photogrammetry solutions that can achieve centimeter-level accuracy at a scale of 1:500 without installing site ground controls. These products can effectively increase the efficiency of mapping and surveying work compared to other non-survey optimized drones lacking RTK/PPK and DJI TimeSync support.

When comparing these three photogrammetry solutions in general, the P1 outperforms the M3E, which outperforms the L1. **(P1 > M3E > L1)** This conclusion is made mainly because of the camera resolution and pixel size; a high-resolution image can correspond to a high-resolution map or highly detailed model.

Larger pixels can ensure a better image's dynamic range and quality under low light conditions, leading to a more extended operation window on site. In addition, the P1 provides multiple lens options for the user to select based on the flight scenario, whereas L1 and M3E have a fixed focal length with a fixed field of view.

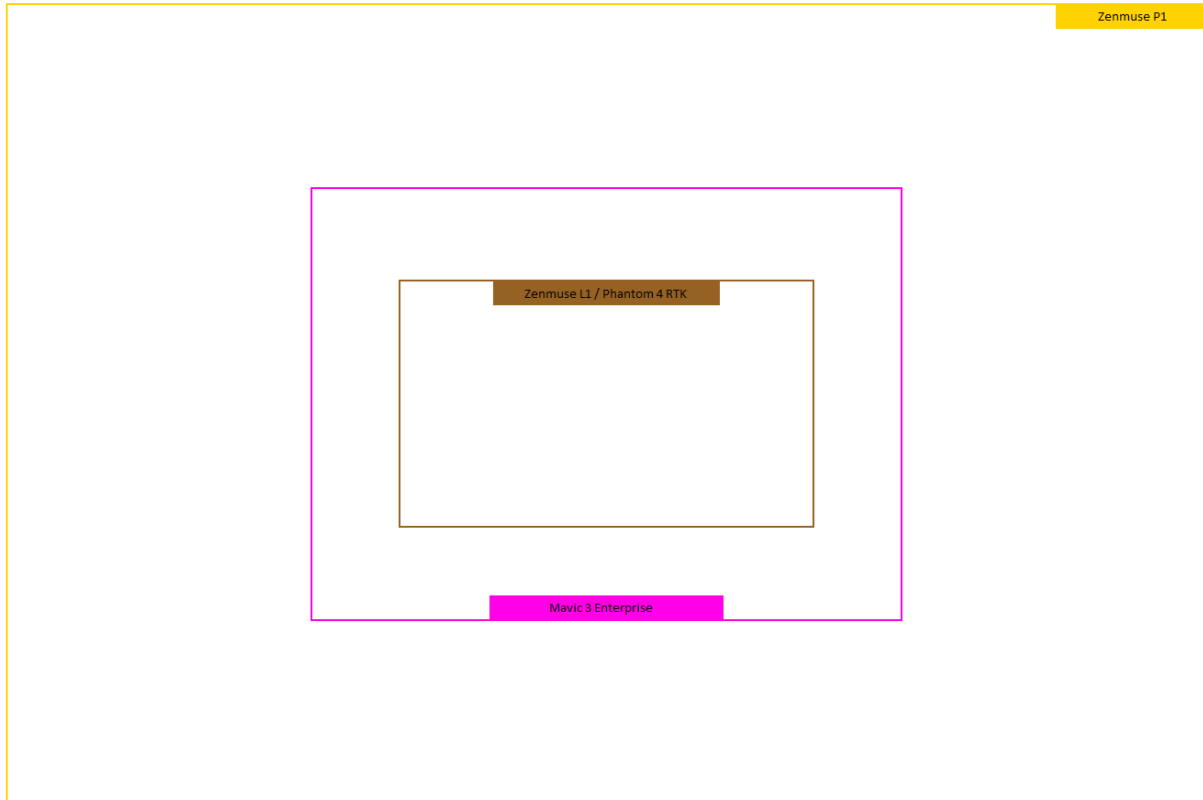


Figure: Camera Sensor Size (yellow = P1, Pink = Mavic 3 E, Brown = L1/Phantom 4 RTK)

## User Profiles:

**Matrice M300 RTK + Zenmuse P1 (Top-tier):** For customers who want the ultimate photogrammetry camera for effective reality capture and survey projects which requires survey-level accuracy.

**Mavic 3 Enterprise (Mid-tier):** For customers who want a compact, quick-to-deploy reality capture solution for daily work with preferred survey-level accuracy.

**Matrice M300 RTK + Zenmuse L1 (Low-tier):** For customers who want an airborne LiDAR solution but need to do visible photogrammetry mapping projects that require survey-level accuracy.

# Infrared Solutions for Public Safety & Inspections Comparison

Infrared Solution	Small-size	Mid-size		
	Mavic 3 Thermal	Matrice M30T	Matrice M300 RTK + H20T	Matrice M300 RTK + H20N
Image Format	R-JPEG	R-JPEG (16 bit)	R-JPEG (16 bit)	R-JPEG (16 bit)
Scene Range	-4° to 302° F (High Gain) 32° to 932° F (Low Gain)	-4° to 302° F (High Gain Mode) 32° to 932° F (Low Gain Mode)	-40° to 302° F (High Gain) -40° to 1022° F (Low Gain)	Wide Infrared Camera: -4° to 302° F (High Gain Mode) 32° to 932° F (Low Gain Mode) Tele Infrared Camera: -4° to 302° F (High Gain Mode) 32° to 932° F (Low Gain Mode)
Thermal Camera(s)	640x512; 30Hz Digital zoom up to 14x	640x512; 30Hz Super-resolution Mode 1280x1024 Digital zoom up to 20x	640x512; 30Hz Digital zoom up to 8x	640x512; 30Hz Wide infrared camera digital zoom up to 4x Tele infrared camera digital zoom up to 32x
Visual Cameras	Wide: 1/2" CMOS, 48MP Zoom: 1/2" CMOS, 12MP, 56x Hybrid Zoom	<b>Wide: 1/2" CMOS, 12MP</b> Zoom: 1/2" CMOS, 48MP, 5-16x Optical Zoom, 200x Max Zoom	Wide: 1/2.3" CMOS, 12MP <b>Zoom: 1/1.7" CMOS, 20MP, 23x Hybrid Zoom, 200x Max Zoom</b>	Wide: 1/2.7" CMOS, 2MP Zoom: 1/1.8" CMOS, 4MP, 20x Hybrid Zoom, 128x Max Zoom

Focal Length	<p>Wide Visual Camera: 24mm Equivalent</p> <p>Tele Visual Camera: 162mm Equivalent</p> <p>Infrared Camera: 9.1mm/40mm Equivalent</p>	<p>Wide Visual Camera: 4.5mm/24mm Equivalent</p> <p>Tele Visual Camera: 21-75mm/113-405mm Equivalent</p> <p>Infrared Camera: 9.1mm/40mm Equivalent</p>	<p>Wide Visual Camera: 4.5mm/24mm Equivalent</p> <p>Tele Visual Camera: 6.83-119.94mm/31.7-556.2mm Equivalent</p> <p>Infrared Camera: 13.5mm/58mm Equivalent</p>	<p>Wide Visual Camera: 4.5mm/29mm Equivalent</p> <p>Tele Visual Camera: 6.8-119.9mm/32.7-574.5mm Equivalent</p> <p>Wide Infrared Camera: 12mm/53mm Equivalent</p> <p>Tele Infrared Camera: 44.5mm/196mm Equivalent</p>
Laser Rangefinder	Not Supported	<p><b>Supported Wavelength: 905nm</b></p> <p><b>Measurement Range: 3-1200m (to a vertical surface with <math>\geq 12m</math> diameter and 20% reflection rate)</b></p> <p><b>Measurement Accuracy: <math>\pm 0.2 m + target distance \times 0.15\%</math></b></p>	<p><b>Supported Wavelength: 905nm</b></p> <p><b>Measurement Range: 3-1200m (to a vertical surface with <math>\geq 12m</math> diameter and 20% reflection rate)</b></p> <p><b>Measurement Accuracy: <math>\pm 0.2 m + target distance \times 0.15\%</math></b></p>	<p><b>Supported Wavelength: 905nm</b></p> <p><b>Measurement Range: 3-1200m (to a vertical surface with <math>\geq 12m</math> diameter and 20% reflection rate)</b></p> <p><b>Measurement Accuracy: <math>\pm 0.2 m + target distance \times 0.15\%</math></b></p>
Maximum Wind Resistance	Up to 26mph	<b>Up to 33mph</b>	<b>Up to 33mph</b>	<b>Up to 33mph</b>
Flight Time	<b>Up to 45mins</b>	Up to 41mins	Up to 43mins	Up to 43mins

IP Rating and Operating Temperature	Not IP Rated 14° to 104° F	<b>Aircraft &amp; Payload: IP55 RC: IP54 -4° to 122° F</b>	<b>H20T: IP44 Aircraft: IP45 Standard Enterprise RC: Not IP Rated Enterprise RC Plus: IP54 -4° to 122° F</b>	<b>H20N: IP44 Aircraft: IP45 Standard Enterprise RC: Not IP Rated Enterprise RC Plus: IP54 -4° to 122° F</b>
Memory Requirement	microSD UHS-I Speed Grade 3 rating or above Max Capacity: 512GB	microSD	microSD UHS-I Speed Grade 3 rating or above Max Capacity: 256GB	microSD UHS-I Speed Grade 3 rating or above Max Capacity: 128GB
Dual RC Control Mode	Not Supported	<b>Supported</b>	<b>Supported</b>	<b>Supported</b>
Panorama	Supported	Supported	Supported	Supported
High-resolution Grid Photo	Not Supported	<b>Supported</b>	<b>Supported</b>	<b>Supported</b>
PSDK	Supported Maximum Takeoff Weight: 1,050g	Supported Maximum Takeoff Weight: 3,998g	<b>Supported Maximum Takeoff Weight: 9,000g</b>	<b>Supported Maximum Takeoff Weight: 9,000g</b>
Temperature Alert	Supported	Supported	Supported	Supported
Isotherms	Supported	Supported	Supported	Supported
Temperature Measurement	Spot Meter and Area Measurement Accuracy: $\pm 2^{\circ}\text{C}$ or $\pm 2\%$ (using the larger value)	Spot Meter and Area Measurement Accuracy: $\pm 2^{\circ}\text{C}$ or $\pm 2\%$ (using the larger value)	Spot Meter and Area Measurement	Spot Meter and Area Measurement
RTK	Supported	<b>Supported (Dual RTK Built in)</b>	<b>Supported (Dual RTK Built in)</b>	<b>Supported (Dual RTK Built in)</b>
Night Scene for Zoom Camera	Not Supported	<b>Supported</b>	<b>Supported</b>	<b>Supported</b>
RC Support	RC Pro Enterprise	<b>RC Plus</b>	Smart Controller Ent (RC Plus support planned)	Smart Controller Ent (RC Plus support planned)

The M3T, M30T, H20N, and H20T are all multi-sensor payloads. While all four sensors come a suite of features including: Security Encryption, Panorama Mode, Live Mission Planning, and Quick View Switch between different cameras. However, there are some main differences.

The M3T lacks a laser rangefinder sensor; because of this it does not support the range measurement, and coordinate calculation features with Pilot2 and FlightHub2. The laser range finder is also used for smart-track, high-res grid, and focusing the visual zoom camera which the M3T lacks. The M3T can drop “pins” but only at the location of the drone.

When comparing the M3T, M30T, and H20T solutions, generally, the visual zoom of the H20T slightly outperforms the M30T, which then outperforms the M3T. **(H20T > M30T > M3T)**.

The infrared modules are all very similar and have 640x512 resolution. The M30T does have a unique feature of upscaling infrared photos four times its original, making the image sharper, but this simply can be a bit nicer for the operators live view and does not affect the end-data.

**(H20T > M30T > M3T)** is also true because of the M300+H20T & M30T support for:

- Night scene (easier to see with visual camera at night in low-light scenarios)
- IP rating (operations in rain and other adverse conditions)
- Higher wind resistance (safely operate in higher winds)
- Additional aircraft component redundancy
- Built in FPV camera (additional view point when utilizing dual operators)
- RC Plus compatibility (**currently for M30 only**, M300 support is planned)
- Dual RTK modules (helps with electromagnetic interference)
- Dedicated battery station for faster charging
- Laser range finder (smart track, drop a pin, high-res grid, helps zoom camera to focus). with the M30T and H20T when compared with the M3E.
- Higher payload capacity for more powerful PSDK payloads (M300 >M30T>M3T).
- Dual Remote Controller Option (1 to fly 1 to operate payload or handoff of drone)

The H20N is a unique sensor compared to the others. It is a unit specifically designed for nighttime operations, and its starlight visual sensors provide outstanding low light performance; however, this also results in low-resolution photos. H20T or M30T outcompetes the H20N for detailed visual inspection due to the lack of sensor resolution, max zoom capability, and the high-resolution grid photo feature. The H20N is also not recommended for thermal inspections. Thus, it is not fair to compare the H20N to the rest. It is a fusion sensor explicitly designed to optimize the efficiency of nighttime operations while still performing well during the day for public safety.

Notes:

- H20N does not support the AI Spot-check feature as it is not recommended to be used for inspections.
- H20T does not support the Simultaneous Zoom feature. The visual and thermal cameras must be zoomed in and out individually.

## **User Profiles:**

### **M300 Aircraft (Top-Tier)**

For customers who want the ability to swap in different payloads such as the P1 for mapping, L1 for LIDAR/mapping, U10 for methane gas detection, or custom solutions.

### **M300 + H20N (Top-Tier)**

For Public Safety customers who want the ultimate air support system with DJI's flagship public safety payload H20N alongside payload capability to add the most powerful speaker and spotlight options through the PSDK.

### **M300 + H20T (Top-Tier)**

For Inspection customers who want to utilize the highest resolution visual zoom camera for inspection photos alongside thermal data with the H20T

### **M30T (Mid-Tier)**

For public safety and inspection customers who require a quick-to-deploy and fairly portable system with greater visual zoom capability and flagship enterprise features that are lacking in the entry level system, which leads to better data collection and ability to operate in tougher conditions.

### **M3T (Entry Level):**

Entry level portable thermal with longer flight time and improved visual zoom in comparison to the previous M2EA series.