

# Tersus

# MetaVerse Painter 400

# Mobile Mapping System

## Overview

MVP 400 is a high-performance airborne LiDAR mapping system designed to deliver centimetre-level precision in complex environments. Equipped with a powerful laser scanner capable of high pulse rates and multiple returns, it captures dense, ground-level point clouds even beneath canopy or across steep terrain. The system integrates a tightly coupled GNSS/INS navigation module and interchangeable high-resolution cameras, providing reliable georeferenced data across a wide range of mapping scenarios.

Delivered as a ready-to-deploy solution, MVP 400 combines the LiDAR unit, industrial camera, mounting system and software suite—streamlining the full workflow from mission planning to point-cloud post-processing.

With high-precision spatial data, dense point clouds and high-resolution imagery, MVP 400 is ideal for applications including terrain mapping, agriculture and forestry surveys, power line inspection and emergency response. It also supports smart city modelling, BIM documentation and transportation infrastructure measurement—anywhere accurate, georeferenced 3D data is required.

## Key Features

- ✓ **Long range** — Typical flying height up to 400 m
- ✓ **High efficiency** — 100 – 1 000 kHz, 90 ° FoV, 300 lines/s
- ✓ **Strong penetration** — With 7 echo returns, it can penetrate into vegetation to acquire ground points easily
- ✓ **Survey-grade precision** — 5 mm ranging error and 3 cm vertical / 5 cm horizontal accuracy
- ✓ **All-in-one design** — LiDAR, camera, storage and SkyPort quick-release
- ✓ **Lightweight** — Highly integrated design—only 1.4 kg with camera
- ✓ **Two configurations** — MVP400 (26 MP APS-C camera + standard-grade IMU) or MVP400Pro (45 MP full-frame camera + high-precision IMU).
- ✓ **Real-time QC** — Live point-cloud preview via MVP Pilot app



# Technical Specifications

## System Platform

|                            |   |
|----------------------------|---|
| Weight                     | 1.21kg (Camera not Included)  |
|                            | 1.40 kg (including 26MP camera)                                       |
| Dimensions                 | L 156 × W 90 × H 115 mm   |
| Power Supply / Consumption | 9 – 36 V DC / 45 W (typ.)   |
| Operating / Storage Temp.  | –20 °C ~ 50 °C / –30 °C ~ 60 °C                                       |
| Dust & Waterproof          | IP54  |
| Data Storage               | 256 GB USB flash (up to 512GB optional)                               |
| Interfaces                 | DJI SkyPort / MVP Quick-release / custom (TTL × 2, LAN, RF, I/O, PWR) |
| System Accuracy            | 3 cm V, 5 cm H @150 m AGL, PPK processed                              |
| Compatible Platforms       | DJI M300/M350, other UAVs   |

## Laser-Scanning Unit

|                            |                                      |
|----------------------------|--------------------------------------|
| Scanning Principle         | Mechanical rotation (rotative prism) |
| Laser Class / Wavelength   | Class 1 eye-safe / 1 550 nm          |
| Measurement Range          | 500 m @ 20 % R / 1 000 m @ 80 % R    |
| Operating Height (typ.)    | 350 m @ 20 % R / 450 m @ 35 % R      |
| Ranging Accuracy           | 5 mm                                 |
| Field of View              | 90 °                                 |
| Angular Resolution         | 0.0018 °                             |
| Scan Speed                 | 300 lines/s                          |
| Pulse Repetition Frequency | 100 – 1 000 kHz                      |
| Echoes                     | 7 returns                            |

## GNSS / IMU Performance

|                                    |                                     |                                    |
|------------------------------------|-------------------------------------|------------------------------------|
| GNSS Constellations                | GPS, BDS, GLONASS, Galileo, QZSS    |                                    |
| Position Accuracy (PPK)            | 1 cm + 1 ppm (H) / 2 cm + 1 ppm (V) |                                    |
| INS Data Rate                      | 500 Hz (Opiton Up to 1000Hz)        |                                    |
| IMU Attitude Accuracy (post-proc.) | <b>MVP400</b>                       | <b>MVP400Pro</b>                   |
|                                    | Heading 0.04 °, Pitch/Roll 0.008 °  | Heading 0.02 °, Pitch/Roll 0.005 ° |
| IMU Data Rate                      | 1 000 Hz                            |                                    |

## Camera Options

|                  |                |                  |
|------------------|----------------|------------------|
| Configuration    | <b>MVP400</b>  | <b>MVP400Pro</b> |
| Camera Kit       | 26 MP APS-C    | 45 MP Full Frame |
| Effective Pixels | 6 240 × 4 168  | 8 192 × 5 468    |
| Sensor Size      | 23.5 × 15.6 mm | 36 × 24 mm       |
| Focal Length     | 16 mm          | 18 mm            |
| FoV              | 73 °           | 90 °             |
| GSD @ 100 m      | 2.3 cm         | 2.1 cm           |