# Hovermap VF1 Specification


| | |
|---|---|
| **Sensors** | |
| **Lidar** | Velodyne VLP-16 Lite<br>- 100 metre range<br>- 16 Channel<br>- Dual return<br>- 300,000 point per second<br>Class I Laser Product (21 CFR 1040.10 and 1040.11)<br>Rotating to give 360° x 360° field of view |
| **GPS (Optional)** | External GPS data recorded when available e.g. from DJI drone |
| **Mapping** | |
| **SLAM** | Simultaneous Localisation and Mapping (SLAM) based LiDAR mapping |
| **Scan Range Noise** | ±30mm<br>±15mm post processed for typical underground and indoor environments |
| **LiDAR Data Format** | Post processing data output in .laz and .ply point cloud formats |
| **Georeferencing** | Above Ground: Georeferenced point clouds via GPS when available (in WGS84)<br>Underground: via survey control points (LiDAR survey spheres) or via scan-to-scan registration |
| **Autonomy Functions** | |
| **Collision Avoidance** | Omni-directional collision avoidance using LiDAR data<br>Adjustable minimum distance collision avoidance threshold |
| **GPS-Denied Flight** | GPS-denied position hold and velocity control |
| **Aircraft Integration** | |
| **Mapping only** | Any VTOL drone that can lift the payload<br>Any ground vehicle or platform<br>Carried by hand or on a backpack |
| **Autonomy Functions** | Compatible with drones equipped with DJI A3 autopilot such as M600, M210, etc. |
| **User Interface** | |
| **Tablet Application** | Pre-flight configuration;<br>Online command and operation of the system;<br>Obstacle situational awareness;<br>Live camera video stream and control; |
| **Telemetry** | |
| | WiFi and DJI Lightbridge |
| **Data Management** | |
| **USB3** | High Speed data offload |
| **Storage** | 480 Gigabytes – approximately 12 hours of sensor data |
| **Power** | |
| **Power** | Powered from a battery or auxiliary power input (12V – 54V)<br>Max 50W |
| **Physical** | |
| **Size** | 215 x 155 x 200mm (L x W x H) |
| **Weight** | 1.8kg |
| **Mounting** | Quick-release mounting mechanism |