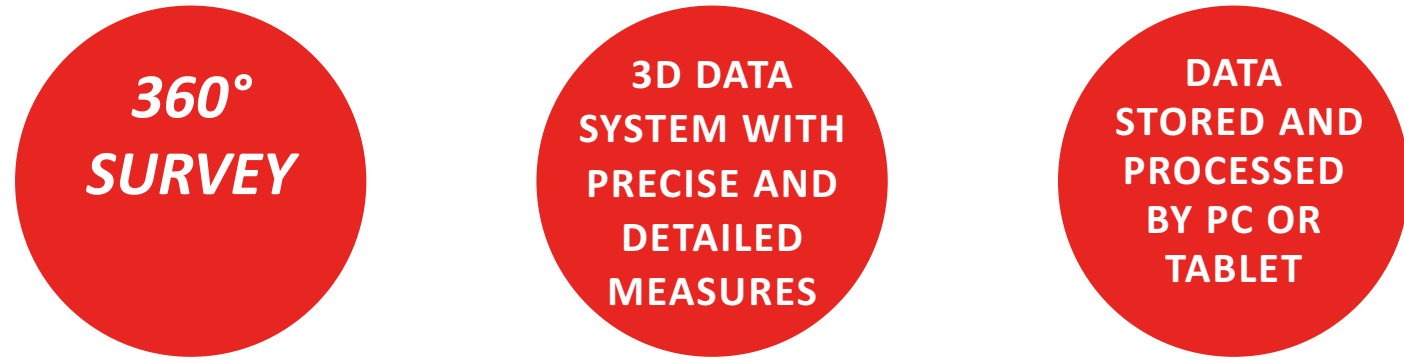# FAGIOLI

SCANFLY PANORAMIC 360° CAMERA WITH 3DT SMART PROCESSING FOR ACCURATE SURVEY

THE WORLD... OUR PASSION
SINCE 1955

TECHNICAL BROCHURE

THE SYSTEM

Scanfly uses an Inertial Navigation System (INS), composed by an Inertial Measurement Unit (IMU) and two GNSS receivers to obtain the smoothed best estimate of its own trajectory in the geographic reference frame.

At the same time, Scanfly records the accurately timestamped profiles from a Velodyne Puck series Lidar head.

SmartProcessingLidar software allows processing the data recorded in the field to obtain accurate and georeferenced point clouds of the environment around the device.

360° SURVEY

3D DATA SYSTEM WITH PRECISE AND DETAILED MEASURES

DATA STORED AND PROCESSED BY PC OR TABLET

MAIN FEATURES

The main features of Scanfly are:

- Tightly coupled, accurate Inertial Navigation System, with IMU and dual GNSS receiver
- RTK or PPK processing for the estimation of the trajectory
- Industry-leading Velodyne Puck Lite, Ultra Puck or Hesai Pandar XT-32 Lidar integration
- Multiple profiles, dual return, calibrated reflectivity technologies on Lidar head
- Integrated control unit with configurable internal storage
- Unique cantilever design for the Lidar tilt setting
- SmartProcessing Lidar software for sensor data fusion
- Customized mounting interface for easy installation on any aerial, terrestrial and marine vehicle
- Multisensor integration interface
- IP55 Ingress Protection

APPLICATIONS

Topography	DTM	Precision farming	Forestry survey	Coast survey	Road cadaster
Monitoring	BIM	Tactical survey	Asset Management	Virtual tour	3D reconstructions

HOW IT WORKS

ACQUISITION OF DATA THROUGH THE CAMERA CONNECTED TO GPS SATELLITES → **DATA STORAGE** INTO A DEDICATED SYSTEM → **POST-PROCESSING** OF DATA THROUGH A DEDICATED SOFTWARE

DATA ACQUISITION

Scanfly can be mounted on any vehicle: on motor vehicles for road cadaster or 3D reconstructions; on boats for coast or riverbeds survey; on quad to survey barely accessible paths. The revolutionary 98mpixel panoramic 360° camera (optional) adds wider view and greater resolution: it is the ideal solution for those who have to colorize the point cloud and automatically extract features with 3DT Smart Processing software.
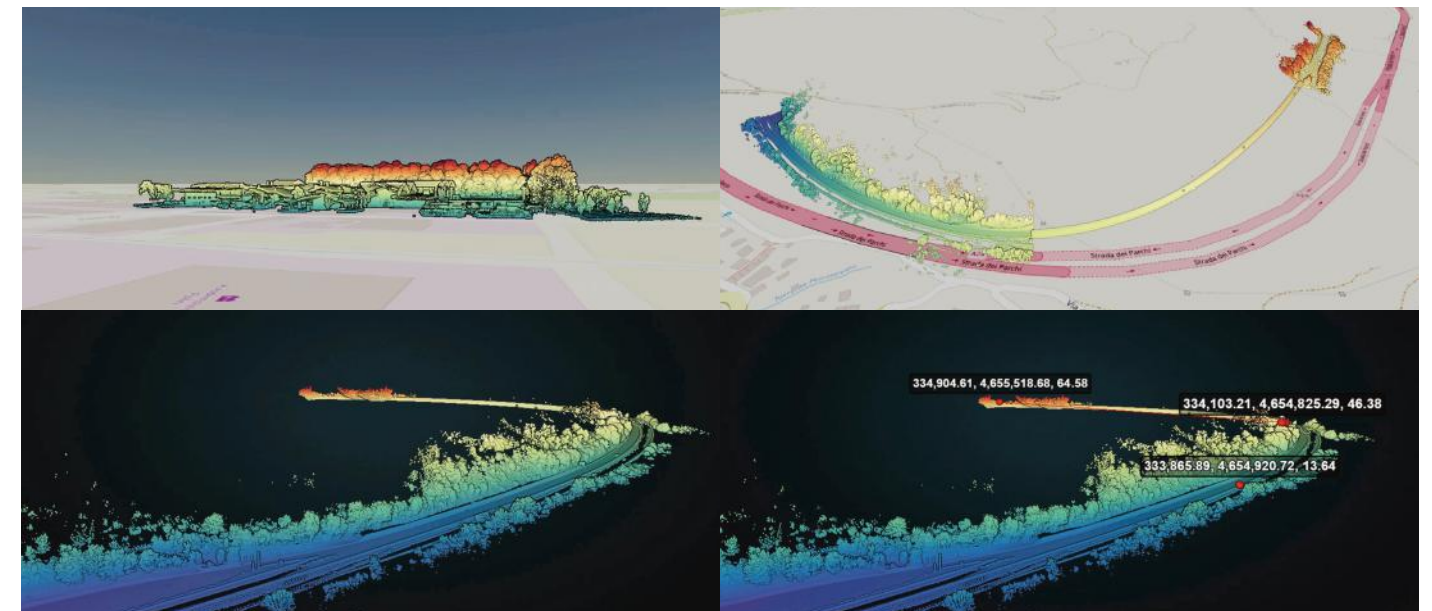
DATA STORAGE / POST-PROCESSING

A dedicated Post-Process software is used to store and elaborate the trajectory of the INS (*Inertial Navigation System*) acquired by Scanfly. The trajectory output is imported in SmartProcessing Lidar. The post-processing procedure involves two different steps: initially, the best estimation of the trajectory is sampled with NAVsolve; then the point cloud is extracted using a direct geo-referencing procedure with SmartProcessing Lidar.
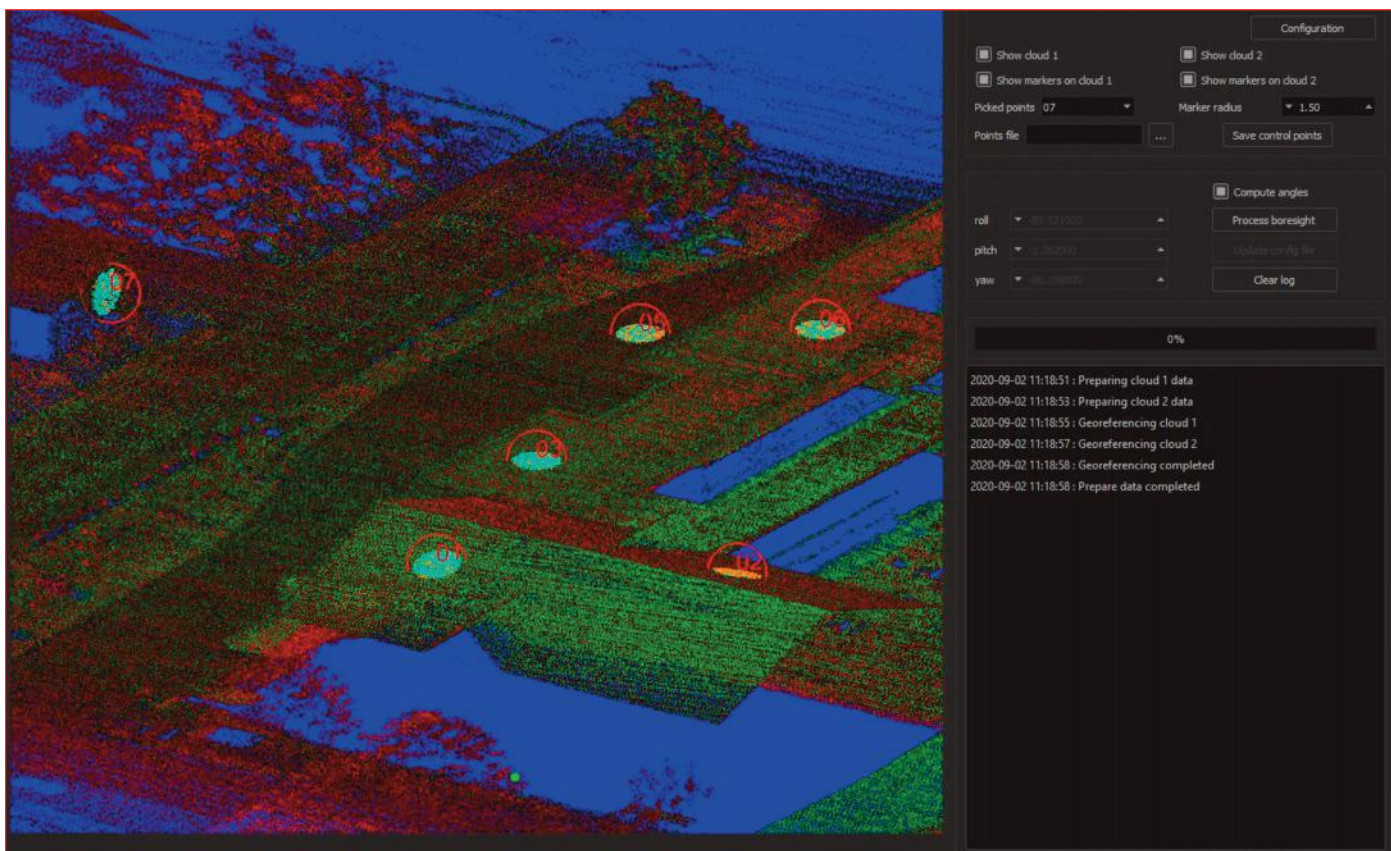
CAMERA MAIN FEATURES

The specifications of the camera and lens combinations and the relative mounting adapters included in the Scanfly external camera mirrorless kits are summarized in the following table:

Camera	Sony α6000	Sony α7R III
Part number	ILCE-6000	ILCE-7MR3
Sensor	APS-C	Full frame
Resolution	24.3 MP	42.4 MP
Dimensions	120 x 66.9 x 45.1 mm	126.9 x 95.6 x 73.7 mm
Weight	344 g	657 g
Lens	Samyang 12mm f/2.0	Voigtlander 21mm f/3.5
Part number	12mm F2.0 NCS CS	21mm/1:3.5 Color Skopar E
FOV	99°	100°
HFOV	89°	82°
VFOV	66°	59°
Dimensions	72.5 x 59.1 mm	62.8. x 39.9 mm
Weight	245 g	230 g
Mounting adapters		
Weight	98 g	148 g
Total weight	687 g	1035 g