Thread
for rover or survey rod

Ground laser
Rover function with laser for precise distance measurement to the ground. Straight and up to an angle of 20°

8 hours of battery operation.

The viDoc is connected to the smartphone via Bluetooth.

GNSS antenna
Ensures the satellite connection

On and off switch

USB charging cable

RTK function
Enables high precision in the measurement up to 1cm+1ppm

viDoc®

Product Description

vigram | PIX4D

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viDoc®

Technical Data

Laser

Measurement accuracy	± 2 mm
Measuring range	Ground laser: 0.5 – 40 m Front laser: 0.5 – 20m
Laser class	2
Laser type	635 nm, < 1 mW
Measurement times	0.1 up to 4 sec.
Supply voltage	2.5 – 3.3 V
Operating temperature	0 up to 40 °C

Model accuracy[6] absolute position and height (relativ)

– with EXIF data	< 10 cm (<2 cm)
– with CSVdata	< 10 cm (<2 cm)
– with CSV+GCP data	< 2 cm
– with EXIF+GCP data in cloud processing	< 2 cm

Positioning services[2]

Device type	Multi-band GNSS high precision receiver
Accuracy of pulse signals	RMS 30 ns 99% 60 ns
Frequencies of pulse signals	0.25 Hz up to 10 MHz
Convergence time	RTK < 10 sec.
Static survey	POSITION 1cm + 1ppm HIGHT 1cm + 1ppm
RTK run up/ramp up time3	Cold start (Sec.) 24 sec. At operating temperature 2 sec.
RTK-Position accuracy RMS4 5 (repeatability for static measurement)	POSITION 7mm at 15 min HIGHT 8 mm at 15 min POSITION 15 mm at 30 min HIGHT 21mm at 30 min
Speed accuracy	0.05 m/s
System limits	Height 5.000 m Acceleration < 4 g Speed 500 m/s
IMU	Prepared

viDoc

	Smartphone	Tablet
Measurements	153x72x19mm	253x184x29mm
Weight	242g	484g
Temperature range	–5 up to +35°C	
Humidiy	5–95% (not condensing)	

Performance specifications

Constellation-independent, flexible signal tracking, improved positioning under challenging environmental conditions1 with multi-satellite use. Reduced downtime in the event of loss of signal (up to 5 seconds).

The following satellite signals are used simultaneously:

GPS:	L1C/A (1575.42 MHz); L2C (1227.60 MHz)
BeiDou:	B1I (1561.098 MHz); B2I (1207.140 MHz)
Galileo:	E1-B/C (1575.42 MHz); E5b (1207.140 MHz)
GLONASS:	L1OF (1602 MHz + k*562.5 kHz, k = –7,..., 5, 6) L2OF (1246 MHz + k*437.5 kHz, k = –7,..., 5, 6) QZSS

Power supply

Smartphone operating times in continuous operation:

	Smartphone	iPad
receive and send	max. 9 hours	max. 9 hours
with active Lasermodule	max. 6 hours	max. 6 hours
under real conditions	max. 8 hours	max. 8 hours
battery pack	2.400 mAh	3.200 mAh

GNSS antenna

Measurements	55.6mm x 27.5mm	Coverage	360°
Weight	< 19 g	Supply voltage	3–16 VDC
Temperature range	–40 up to + 80°C	Power consumption	< 35 mA
Humidiy	Up to 95%	Gain	36 ± 2 dB
Polarization	RHCP	Noise figure	< 1.5 dB
Satellite signals	GPS: L1/L2 GLONASS: G1/G2 Beidou: B1/B2/B3 Galileo: El/E5b	V.S.W.R.	< 2.0

1 Challenging GNSS environments are places where there is sufficient satellite availability for the receiver as a prerequisite for minimum accuracy, but where the signal can be partially shaded or reflected by trees, buildings and other objects. The actual results may vary due to the location and atmospheric activitiy, due to strong flickering, the condition and availability of the satellite system and the degree of multipath scattering and signal coverage.

2 Precision and reliability can be affected by certain factors such as multipath scattering, obstacles, satellite geometry and atmospheric conditions. The stated specifications require stable setups, a clear view of the sky, an environment free of electromagnetic interference and multipath scattering, optimal GNSS configurations and, in addition, surveying methods as they are usually used for surveys of the highest order with occupation times adapted to the base lengths. Baselines over 30 km in length require ephemeris accuracy and occupation times of up to 24 hours may be necessary to achieve high-precision static specification.

3 Can be influenced by atmospheric conditions, multipath signals, shadowing and satellite geometry.
The reliability of the initialization is permanently monitored to ensure the highest quality.

4 RMS efficiency is based on repeatable on-site measurements. The achievable accuracy and the initialization time can vary depending on the type and performance data of the receiver and antenna, the geographic location of the user, atmospheric conditions, scintillation intensity, the status and availability of the GNSS constellation, the degree of multipath scatteing and the proximity to shading (e.g. from large trees and buildings) vary.

5 Measurement iterations based on 1 minute. Better position accuracy through error rate filtering.

6 The models were mapped with a Vigram Rover and an iPhone 13 Pro.
The model accuracy depends on the environmental conditions and the calculation settings.
The results may vary depending on the software provider.

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