PHASEONE




# P5

The new standard for aerial engineering surveying

# The next-generation surveying instrument

With P5 you can experience the power of precision and performance, where every mission counts. Embrace uncompromised accuracy and revolutionize your engineering surveying projects only with P5.

The two-lens options of 35 mm, 80 mm and its 128 MP sensor enable you to capture crystal-clear, ultra-sharp images with minimal noise while achieving an exceptional accuracy down to 0.5 cm and GSD down to 0.2 cm.

P5 mini-UAV payload redefines drone-based surveying with unparalleled accuracy and reliability. Designed to meet the highest engineering surveying standards while seamlessly integrating with your day-to-day surveying tools. P5 sets a new standard for data precision, ensuring efficient surveying process without making any compromises.

At its core, P5 tackles data accuracy head-on by eliminating geometric distortion through meticulous metric calibration and ensuring a 100% accurate capture time stamp with mid-exposure triggering.



## Uncompromised absolute accuracy

- Exceptional accuracy down to 0.5 cm.
- Metrically calibrated camera free from geometric distortion, providing ultra-sharp images.
- Optimized for maximum coverage and maximum accuracy with 35 and 80 mm lens options.

## Robust data capture

- Faster and more accurate ground point selection.
- Low-geometric-distortion, less than 1 px.
- Electronic global shutter boosting fast frame rate of +4 f/s for high-speed flight without compromising on image overlap.

## Purpose built for readily available UAVs

- Engineered to provide end-to-end solutions for modern surveyors.
- Commercially available mini-fixed and transitional UAVs.

# Discover the revolution of surveying

P5 is the world's first purpose-built engineering survey grade camera for mini-UAVs. The camera combines cutting edge electronic global shutter technology with a size weight and power that enable readily available, portable, and easy to use mini-UAVs to support modern surveyors on even the most challenging jobs.

P5 payload comes in two versions, a 35 and 80 mm option. While both are optimized for maximum coverage and maximum accuracy, the 80 mm lens takes accuracy to a whole new level. P5 is ready for integration with off-the-shelf mini-UAVs with a payload capacity of ±700 g. The communication between the UAV and payload is based on the industry standard communication protocol MAVLink or Auterion.

P5 product is metrically calibrated in one of Phase One's calibration laboratories which are purpose built for achieving the industry leading accuracy. Each camera is provided with a calibration certificate that can be used by standard photogrammetry software.



Shot with P5 SL 35 mm
Speed: 18 m/s
Altitude: 120 m
GSD: 1.16 cm
Shutter speed: 1/2000



Shot with P5 SL 80 mm
Speed: 18 m/s
Altitude: 60 m
GSD: 0.26 cm
Shutter speed: 1/5000

# Step into the future of surveying

## Image sensor & camera

| | | |
|---|---|---|
| Sensor resolution | (MP) | 128<br>RGB |
| Sensor type | | CMOS |
| Shutter type | | Electronic global shutter |
| Frame size across track (long side) | | 13,468 |
| Frame size along track (short side) | | 9,564 |
| Pixel size | (µ) | 3.45 |
| Dynamic range | (dB) | 80 |
| Light sensitivity | (ISO) | 200 - 6,400 |
| Max. shutter speed | (sec) | 1/16,000 |
| Recommended max. operational shutter speed | (sec) | 1/10,000 |
| Max. frame rate | (fps) | 4 |

## Lenses

| | | |
|---|---|---|
| Lens | 35 mm | 80 mm |
| Lens composition | 12 elements in 8 groups | 8 elements in 5 groups |
| Minimum focusing range | 60 m | 60 m to 120 m<br>(customized focus available for a fee) |
| Aperture range | f/5.6 – f/22 | f/5.6 – f/22 |
| Filter diameter (mm) | 58 | 58 |
| Angle of view in long side (°) | 66 | 32 |
| Angle of view in short side (°) | 49 | 23 |
| Entrance pupil to image plane (mm) | 72 | 85 |
| Metrically calibrated | Yes - Seven australis adjustment parameters | Yes - Seven australis adjustment parameters |

## Interfaces & storage

| | | |
|---|---|---|
| Electrical interfaces | | 1 G Ethernet, JST-ZE 14 pin |
| Communication interface | | MAVLink, Auterion & IQP |
| Power consumption | (W) | 16 |
| Storage type | | CF express |
| Storage size | (TB) | up to 2 TB |

## Operating conditions

| | | |
|---|---|---|
| Operating temperature (ambient) | | - 10°C to + 40°C<br>(passive or active cooling such as airflow is required when the camera is not in idle mode.) |
| IP rating | | 22 |
| Max ground speed @ 70% overlap | 80 mm | 60 m : 25 m/s (0.26 cm/px) |
| | 80 mm | 120 m : 51 m/s (0.51 cm/px) |
| | 35 mm | 60 m : 57 m/s (0.58 cm/px) |
| | 35 mm | 120 m : 115 m/s (1.16 cm/px) |
| Weight & dimensions | 35 mm | 690 g / h : 11.8 w : 9 b : 9 cm |
| | 80 mm | 620 g / h : 12.5 w : 9 b : 9 cm |

## Compliance

| | |
|---|---|
| ITAR-free | Yes |
| NDAA compliant | Yes |




## About Phase One

Phase One is the global leader in digital imaging technology. Our commitment to imaging quality spans for a wide spectrum of applications, from professional photography to heritage digitization, industrial inspections, aerial mapping, security and space.

With over three decades of innovation, Phase One has pioneered core imaging technologies and a range of digital cameras and imaging modules, setting new standards for image quality in terms of resolution, dynamic range, color fidelity and geometric accuracy. Together with its customers, technology partners and its global network of distributors, Phase One drives the imaging industry forward.

We deliver Imaging Beyond Imagination.
**www.phaseone.com**

Contact your Phase One representative regarding availability of Phase One products in your region.

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