

Phase One Industrial **4-Band Solution**



PHASE**ONE**
INDUSTRIAL

Capture 150MP 4-Band imagery

With the increasing demand for combined NIR and RGB aerial imagery for applications such as crop analysis for growth optimization, vegetation health and environmental contamination, as well as projects including city observation for green site monitoring, Phase One has developed a fully automatic solution for capturing and processing 4-Band multispectral imagery*. The 4-Band solution is specifically designed for the photogrammetric airborne market, using two high-resolution, Phase One aerial cameras.

Simplifying your workflow

The 4-Band solution includes two synchronized Phase One metric calibrated cameras (RGB and Achromatic) mounted side by side on a specially designed base plate, an iX Controller computer and the iX Capture software.

The software automatically generates distortion-free images and performs fine co-registration of pixels from the NIR to the RGB images, including processing different image sizes.

Aside from the horizontal mount, shown above, you also have the option of performing a vertical mount.

The cameras are calibrated separately. This means you can use any one of the cameras for other projects and later return it to the blue mounting plate.

The users can generate the following products:

- 4-Band combined NIR and RGB (RGBN) TIFF (4-Band CIR)
- 3-Band combined NIR and RGB (NRG) TIFF (3-Band CIR)
- NDVI (Normalized Difference Vegetation Index) TIFF
- Distortion-free / corrected RGB TIFF
- Distortion-free / corrected NIR TIFF
- RGB TIFF
- NIR TIFF

One solution for multiple applications

- The perfect choice for any 4-Band precise requirements.
- Cost effective solution
- Flexible: two cameras that can be used in different combinations (together or stand-alone) for varied simultaneous projects
- Lightweight and compact: easy to install in small aerial platforms
- Simple workflow, reducing hours spent post-processing
- Reliable output: accurate high resolution images

*Configuration options: 150MP / 100MP

Upgrade options available for existing camera customers

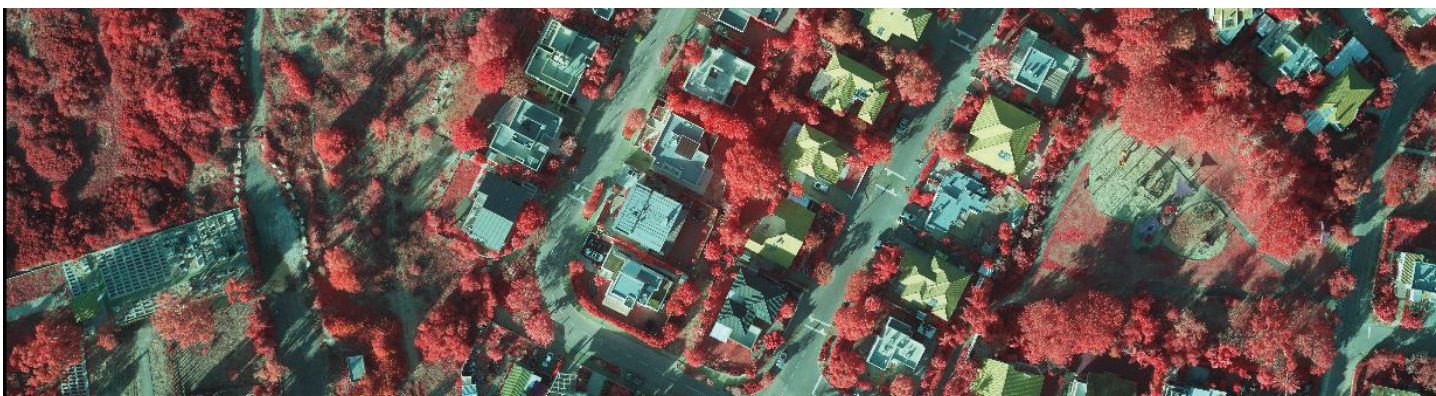
RGB Image



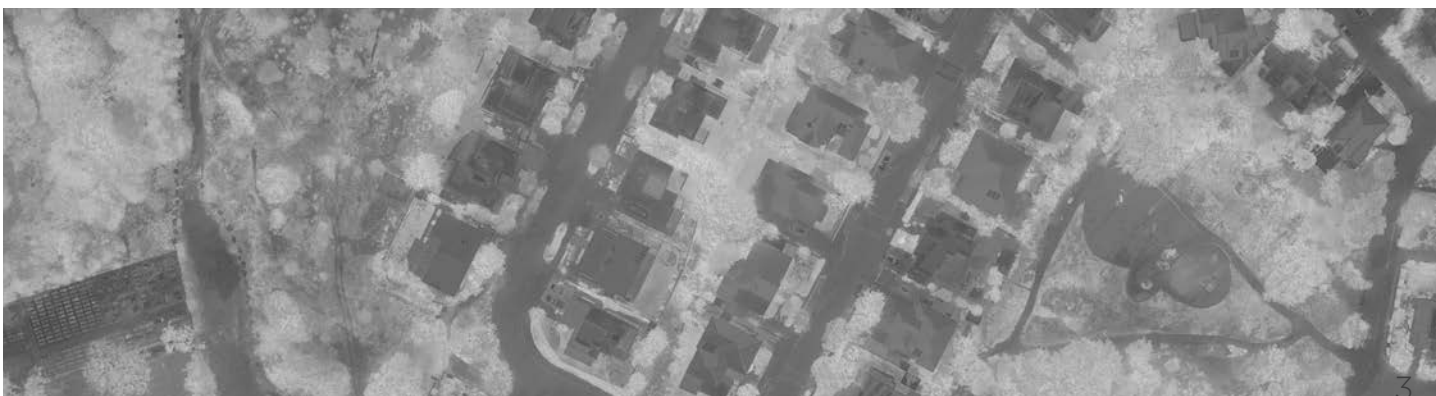
NIR Image



CIR Image



NDVI Image



Technical Specifications

	150MP	100MP
Frame geometry	Central projection	
Resolution	150MP 14204 X 10652	100MP 11608X8708
Sensor Type	CMOS	
Image formats	PhaseOne RAW IIQ-L, IIQ-S	
Output formats	Distortion Free RGB, NIR, CIR, RGBN, NVDI in TIFF 8 and 16 Bit or JPEG	
Pansharpen ratio	1:1	
Frame width for 10 cm GSD (m)	1420	1161
Frame height for 10 cm GSD (m)	1065	871
Frame area for 10 cm GSD (sq.km)	1.51	1.01
Typical image size (MB) for TIFF (8 Bit)	3 Band: 450 / 4 Band: 600	

Lenses type	Rodenstock / Schneider-Kreuznach							
Focal length (mm)	32	40	50	70	90	110	150 MK II	180
FOV - across flight (°)	77.8	65	54.6	41.8	33	27.6	20.2	16.9
FOV - along flight (°)	62.3	51	42.3	31.9	25.1	20.9	15.2	12.7
Aperture Range	f/5.6 - 22							f/6.3 - 22
Exposure principle	Leaf shutter							
Shutter speed (sec)	Up to 1/2500				1/2000	Up to 1/2500		1/2000
Capture rate (fps)	2.0				1.6			
Light Sensitivity (ISO)	50-6400							
Dynamic Range (dB)	83				84			



NIR Range (nm)	720 - 1000	
Events synchronization speed (μsec)	50	
	150MP	100MP
Flight Specifications		
Maximal ground speed for 5cm GSD at 1/2500 shutter speed with motion blur under 1 pixel (knot)	243	
Maximal forward overlap for 5cm GSD at 150 knot (%)	93	91
Maximal orthophoto angle for 20% side overlap (°)	27 for 90mm focal lens	
Flight altitude for 5cm GSD (Feet)	3925 for 90mm focal length	3200 for 90mm focal length
Operating Conditions		
Power input (V DC)	12-30	
Maximal Power consumption (W) – camera only	32	
Humidity - non-condensing (%)	15 to 80	
Temperature (°C)	-10 to 40	
Approvals	FCC (Class A), CE, RoHS	
iX Controller MK4		
Interfaces	USB3, Power and Control Ports for Camera, GNSS and Mount	
Storage capacity (TB)	1.0	
Storage type	SSD	
Storage exchangeability	Yes	
Optional System Specifications		
System weight (kg/Lb)	31 / 68.5	
System size (mm/In)	290 x 275 x 260 / 11.4 x 10.8 x 10.3	
Pilot monitor for navigation (In)	7	
Operator monitor for camera management (In)	15	
Gyro-stabilizer SOMAG	DSM400	
GNSS/IMU Applanix	POS AV 210 / POS AV 510	
Power consumption	6 Amp at 28V	



iX Capture

iX Capture is a professional Capture and processing application that was created exclusively for shooting with Phase One aerial camera systems.

Used together with Phase One aerial cameras, this professional capture and processing software enables full control over one or multiple cameras, enabling an operator to easily monitor and control every aspect of aerial digital data acquisition.

Designed for use with a touchscreen or mouse, iX Capture makes inflight camera changes as easy as tapping a button. It contains all of the essential tools for high-end performance in one package to enable you to capture, monitor and process images in a fast, flexible and efficient workflow.

iX Capture exports raw images to TIFF and JPG files, distortion corrected TIFF images and batch processes.



iX Controller MK4

Designed to enable rapid data transfer, the iX Controller MK4 has the ability to control up to six Phase One aerial cameras independently. Built as a workhorse, the system boasts a small footprint and easily integrates into any aircraft.

The iX Controller MK4 includes robust removable protective SSD tray for convenient and secure transfer and handling.

- 8th Generation Intel® Core™ i7 Processor
- Rugged construction
- Fanless system cooling
- Single power input and multiple power outputs for cameras
- Pre-installed with iX Capture, Capture One and iX Flight*
- Two removable SSDs with optional RAID system for data mirroring
- Supports triple monitors for parallel monitoring and observation of different views of the setu

**(on Aerial Systems only)*





RGB image taken with Phase One Aerial Solution



CIR image taken with Phase One Aerial Solution



About Phase One Industrial

Phase One Industrial is a division of Phase One A/S that researches, develops, and manufactures specialized industrial camera systems and imaging software solutions. The company focuses on specific applications such as aerial mapping; and surveying; ground and aerial inspection; agriculture; machine vision and homeland security.

Phase One Industrial is a registered trademark of Phase One A/S.

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