P+ Digital Back Overview

	P 65+		P 40+		P 45+	P 30+	Achromatic+
Description	World's first full frame medium format digital back, featuring **Sensor+** with a choice of 60.5 megapixels for finest resolution or scaled full frame captures for fast workflow and low light versatility.		Fastest digital back with up to 1.8 fps in Sensor+ mode. A choice of 40 or 10 megapixels and an ISO range from 50 to 3200 makes this digital back the mo st versatile tool in the range.		High resolution shooter with unlimited burst sequences and optimized for large format photography with live preview functionality for easy composition and focus checking.	The top quality fast fashion shooter with ISO 1600, with superior moiré control and well suited for harsh environments.	The Achromatic+ digital camera back is designed to be a high performance black and white only product with no color filters on the sensor.
Sensors	53.9 mm / 40.4 mm		43.9 mm / 32.9 mm		49.1 mm / 36.8 mm	44.2 mm / 33.1 mm	49.1 mm / 36.8 mm
Lens Factor	1.0		1.3		1.1	1.3	1.1
CCD size effective	53.9 x 40.4 mm		43.9 x 32.9		49.1 x 36.8	44.2 x 33.1	49.1 x 36.8
Active pixels	8984 x 6732		7320 x 5484		7216 x 5412	6496 x 4872	7216 x 5412
Pixel size (micron)	**Full res.** 6 x 6	**Sensor+** 12 x 12	**Full res.** 6 x 6	**Sensor+** 12 x 12	6.8 x 6.8	6.8 x 6.8	6.8 x 6.8
Resolution (megapixels)	60.5	15.0	40	10	39	31.6	39
Light sensitivity (ISO)	50-800	200-3200	50-800	200-3200	50-800	100-1600	50-800
Exposure time	1/10.000 sec. – 1 minute				1/10.000 sec. up to one hour with XPose+ technology		
Image quality	16bit-OptiColor+, 12 f-stops Dynamic+ and Lens+ technology						12 f-stops Dynamic+ & Lens+ technology
Capture time (frames per sec.)**	1.0	1.4	1.2	1.8	0.67	0.8	0.67
Battery Lifetime (up to captures/up to stand-by time*)	2000 / 3		2500 / 4		2500 / 4	3000 / 4	2500 / 4
Image buffer	1.3 GB High Speed RAM				640 MB high speed RAM		
Display	2.2" QVGA TFT with 230,000 pixels, high brightness and contrast both indoor and outdoor, very fine details						

Results are based on testing in Phase One's testing department. Variation may be expected due to specific camera set up. Battery used for test is new 2500mAh Li+.
*) standby Time will vary a lot depending on temperature, usage of battery and state of the back e.g. Zero Latency will increase power consumption significantly
**) Maximum expected performance. The actual performance will be dependent on the camera model and on the camera and digital back capture modes
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P 40+ Camera System

Capture Revolution

The Phase One P 40+ Camera system is designed to be a seamless extension of your creativity. Extraordinary capture becomes natural through ease of use and direct control.

Take advantage of the Phase One digital focal plane lenses or Schneider Kreutznach leaf shutter lenses. You can also use your Mamiya 645 AF/AFD or Hasselblad V lenses for an even broader choice.

The P 40+ is a capture revolution. With capture rates of up to 1,8 frames per second in Sensor+ mode and an ISO range from 50 to 3200, this digital back is truly revolutionary.

The Sensor+ technology allows you to switch between 40 and 10 megapixel captures, offering a unique tool for almost any job.

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what the world's best photography is made of

P 40+ Digital Back Specifications

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Inset photo by Steen Tronsgaard & Kajsa Björnberg

- Sensor+ technology solution
- Switch between 40 and 10 megapixel captures using Sensor+
- 40 megapixels for highest image quality and detail level
- 10 megapixels for higher sensitivity and faster workflow
- ISO range from 50 – 3200
- Fast capture rates - up to 1.8 fps.
- Extreme 12.5 f-stop dynamic range

Imaging technology	
Lens Factor	1.3
Resolution	40 megapixels
Active pixels	7320 x 5484 pixels
CCD size effective	44 mm x 33 mm
Pixel size	6 x 6 micron
Image ratio	4:3
Dynamic range	12.5 f-stops

P 40+ full resolution capture mode	
Resolution	40 megapixels
Pixel size	6 x 6 micron
RAW file compression	IIQ large: 40 MB IIQ small: 26 MB
ISO	50, 100, 200, 400, 800

Sensor+ capture mode	
Resolution	10 megapixels
Pixel size	12 x 12 micron
RAW file compression	IIQ large: 10 MB IIQ small: 7 MB
ISO	200, 400, 800, 1600, 3200

Output files	
Color depth	16 bit per color
Image file formats	All output formats of Capture One are possible: TIFF-RGB, TIFF-CMYK, JPEG
Color management	RGB, Embedded ICC profile, CMYK

LCD screen	
Size	2.2"
Resolution	230,400 pixels
Viewing angle	160°

Lighting
Supports all photographic lights: Flash, tungsten, daylight, fluorescent, HMI

Operating conditions	
Temperature	0° to 40°C (32° to 122°F)
Humidity	15 to 80% RH (non-condensing)

Computer minimum requirements	
Mac	Fast Intel Core™ 2 Duo or later CPU, 4 GB RAM, Fast HDD: RAID 0 configured systems for max performance, Nvidia 8800 series graphics card or newer
PC	Intel® Pentium® 4, 2 GB RAM, 10 GB free hard disk space, IEEE 1394 interface, Windows XP®, Service Pack 3 or Windows Vista®, Service Pack 1

P+ back mounts	
Phase One/ Mamiya	Phase One 645DF/AF Mamiya 645DF/ AFDIII
Phase One H101	Hasselblad H1 and H2
Hasselblad V	Hasselblad 555ELD, 553ELX, 503CW and 501CM Via adaptor: Mamiya RZ67 Pro II Mamiya RB67
Contax	Contax 645 AF

Wide angle & technical cameras
4 x 5" via FlexAdaptor: Arca Swiss, Cambo, Linhof, Toyo, Sinar, Plaubel, Horseman.

Storage files
Phase Ones IIQ RAW file format speeds up the image capture and file transfer. It increases the storage capacity by turning the full 16 bit image data into a compact RAW file format. The default IIQ RAW-large format is completely lossless.

Software
Capture One 4.8.3 or later

Certifications
CE

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645DF Camera Body Specifications

- Open platform for maximum choice and compatibility
- Durable, proven platform for secure operation
- Ergonomic handling and ease of use
- Use Phase One digital lenses, Mamiya AF/AFD lenses or Hasselblad V lenses
- Guaranteed up to 300.000 captures or 3 years (VA)
- Exposures from 1/4000s to 60 minutes
- Flash synchronization up to 1/1600 sec.

Shutter speed from 1/4000s to 60 minutes, B and X modes can match the extreme long exposure capability of the P+ digital backs or stop action with fast shutter speed or flash.

The mirror and viewfinder of the Phase One 645DF camera are almost three times larger than those of 35mm cameras, providing much greater control of focus and composition.

While hosting a complete list of features and custom functions, the Phase One 645DF camera is extremely easy to use. All settings important to the exposure are easily controlled by manual dials and soft buttons.

Camera type	Modular 645 AF SLR body
Lenses	Phase One Digital focal plane lenses, Schneider Kreutznach leaf shutter lenses and Mamiya 645 AFD lenses Compatible with Hasselblad V lenses
Backs	Open platform back mount
Auto focus	TTL phase-difference AF with 3 focus points Focus confirmation in manual mode Infrared AF assists for unfailing focus Auto focus lock for swift AF/ M shift
Shutter	1/4000s to 60 minutes Up to 2 fps Shutter speed bracketing
Flash	Focal plane shutter: Up to 1/125s Leaf shutter lenses: Up to 1/1600s' 1st and 2nd curtain flash synchronization X sync terminal and support for TTL flash
Light Metering	TTL metering (average, spot and auto) Programmable AEL button Exposure compensation: +/- 5EV
Mirror-Up	Electronically-activated by switch on grip

Viewfinder	Fixed prism viewfinder Exchangeable diopter from -5 to +3 LCD panel with full exposure information
Focusing Screen	Interchangeable focus screens Laser engraved mask for digital back Matte, Grid, Checker, Microprism
Selftimer	Self-timer from 2 to 60 sec
Remote	Screw-in cable release on shutter button Terminal for electronic triggering devices
Stop Down Preview	Stop down button on front of camera
Tripod Socket	1/4 inch and 3/8 inch included
Power Requirements	6 AA batteries (standard or rechargeable) External battery pack – 6 AA batteries External AC adapter
User configuration	3 Custom dial modes for capture settings 36 custom settings Customizable dials and buttons
Size	W, H, D // 6, 5, 7.2" // 153, 128, 184mm
Weight	35 oz. / 1030g. w/o batteries

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