

review Phase One P25

Phase One P25



In this exclusive review, Rob Loveday takes the first look at the world's only fully self-contained digital back



■ This image shows just what the P25's 22-megapixel sensor is capable of. Purple fringing is nonexistent, and a large amount of detail can be pulled out of highlight areas

As unbelievable as it may seem, digital backs have been around for more than a decade. However, for much of their history, they've been more or less confined to the studio. Because they rely on a profusion of cables to transfer images back to a computer workstation, and also to supply power, digital backs are generally unwieldy beasts to use on location. Although many manufacturers have developed ways of enabling digital backs to be used on location, these too rely on peripherals such as separate storage devices, which again need to be wired up to the back.

Enabling a digital back to be used with the same degree of freedom as a digital SLR seemed therefore to be elusive. The first manufacturer to attempt a

So when Phase One announced at PMA earlier this year that it would be launching two self-contained digital backs, the world was bound to sit up and take notice. The P25 and its lower-resolution sibling the P20, capable of 22-megapixel and 16-megapixel resolution respectively, are Phase One's first digital backs capable of cable-free operation, and since the demise of the Kodak the only completely self-contained backs on the market. We managed to get hold of one of the first production P25 units to hit the UK to find out if its performance justifies the hype.

Superior build

Ironically, the P25 uses Kodak's 22-megapixel sensor to capture images, but that's where any similarities end. The build quality is far superior to the Kodak, with the body being constructed from a tough metal alloy. In

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completely self-contained digital back was Kodak, with its Pro Back series. However, although the Kodak backs had many advantages, they also had their fair share of problems; totally inadequate cooling (increasing the risk of image noise and card corruption) and poor battery life hindered their usefulness when being used in the great outdoors. Kodak discontinued its series of backs earlier this year, deciding instead to concentrate on medium-format sensor production.

fact, Phase One's engineers confidently informed us that the P25 is strong enough to be stood upon, though of course, given the asking price of the P25 this is one parameter we were unwilling to test. It's worth mentioning that there are four versions of the P25, each tailored specifically to fit Hasselblad, Mamiya and Contax camera bodies. For this test, we used the P25 coupled to a Mamiya 645 AFD, in addition to 80mm and 35mm f2.8 lenses.

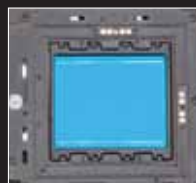
Phase One P25: focus on features



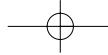
Memory card slot: The P25 uses CompactFlash cards to store images; Type I or II cards and Microdrives are compatible. On a 1Gb card, you can reckon on storing a maximum of roughly 40 shots at the maximum image-quality setting – it's better to use two 1Gb cards rather than one 2Gb card to give you extra backup.



Battery: The battery slides neatly into the P25, ensuring that the back's svelte body isn't marred by unsightly protrusions. Battery life was superb; it took more than two hours of continual use before the power indicator icon moved down a notch. This gives the P25 comparable performance with some digital SLRs.



Sensor: The 22-megapixel CCD sensor is shielded behind an IR filter, which can be kept free of dirt with the supplied cleaning kit. The total size of the imaging chip is 48.9 x 36.7mm, meaning that it's practically a full-frame medium-format sensor – no mean feat in itself, given that many digital backs only sport square sensors.



Compatible with a number of medium-format systems, the P25 is designed to be used not only inside a studio but also on location



■ Releasing this catch enables the back to be detached from the camera

■ There are four versions of the P25 available – this one is attached to a Mamiya 645 AFD

■ The menu is navigated via the four buttons on either side of the LCD

Supplied accessories

■ You'd expect a decent amount of accessories given the asking price of the P25, and sure enough Phase One has provided everything necessary to make the P25 a true digital solution. First of all, the back and all the accessories come supplied in a sturdy Pelii-like resin case, with a rubber O-ring seal and a pressure valve.

In addition to the back, the manual, and Capture One software, there is a metal plate which attaches to the back to protect the sensor when not in use, a pack of adhesive QP grey cards (for calibrating grey balance at the start of a shoot), a CCD cleaning kit consisting of two solution bottles and a cloth (the CCD is covered with an IR filter, so there are no worries about damaging the sensor), two battery units (though extra ones can be easily bought from dealers) plus the attendant charger and a range of plug adaptors that fit most of the world's major power sockets (the charger itself has a voltage range of 100-240V). The ground glass mask for the viewfinder is also supplied, as is a 4.5m FireWire cable. What might appear on first sight to be a bit of white Perspex is in fact the impressively named lens cast calibration tool, which corrects problems encountered when using view camera movements. Last but not least, a 1Gb SanDisk Ultra II CompactFlash card is included – perhaps the biggest bundled memory card we've ever seen.

Connectivity

■ The P25 is compatible with CompactFlash Type I and II cards, as well as Microdrives (though Phase One recommends that CF cards are used). A FireWire socket just below the LCD monitor screen is the only other port you'll need to use when shooting – the PC sync socket and remote port on the lower left-hand side are only used with the mechanical Hasselblad V series.

Four versions of the P25 are produced, which fit Mamiya, Contax and Hasselblad H/V systems. It's necessary to use a sliding adaptor plate in order to fit the P25 to view camera systems.

On the cards

Other elements of the P25's build are equally satisfying, especially the 2.2-inch LCD monitor which proved easy to read, even in bright sunlight conditions. The P25 uses CompactFlash cards for memory storage, which slot into place beneath a door on the left-hand side. Phase One recommends the use of SanDisk cards (though other brands are supported), and we used the supplied SanDisk 1Gb Ultra II for this review. It has to be said though that the door doesn't feel as well-built as the rest of the back, and that the back doesn't power down when it opens – Phase One also recommend powering the back down before removing the CF card to reduce the risk of corrupting the card. Also, the FireWire and other sockets aren't



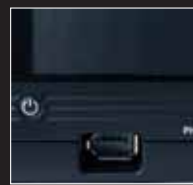
■ Viewed close up, it becomes clear that the P25 captures a simply astonishing amount of detail. There's practically no trace of moiré or aliasing into the bargain



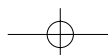
LCD monitor: The 2.2-inch monitor gives a good view of captures, even though like most digital cameras it can be occasionally hard to judge from the preview whether or not the shot's in the bag. A nice touch is the orientation sensor which automatically rotates images taken in portrait format to display them correctly.



Sync sockets: Although the P25 has a PC sync and remote socket on the left-hand side, this isn't for use when using electronic medium-format cameras. It's only for use with the Hasselblad V, Mamiya RZ67 and other purely mechanical cameras so that the back can communicate with the lens and capture images accordingly.



FireWire: The FireWire 400 connection on the rear of the P25 enables it to be used for tethered shooting inside a studio. When connected, the back draws its power through the cable and shoots straight to the hard drive, although preview images are still displayed on the P25's LCD.



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» covered by rubber plugs to protect them from the elements, as is the case with many SLRs.

Portable power

The battery arrangement has to be applauded, though; a single lithium-ion cell slots neatly into the right-hand side to lie flush with the body casing. The battery is actually an off-the-shelf model from Canon, and provides a pleasingly long life; Phase One quotes figures of 250 captures or four to six hours, and true to form, one battery on a single charge proves sufficient for a busy day's shooting. When shooting tethered however, the P25 is able to draw all the power it needs through a FireWire cable. Powering up the P25 takes only two or three seconds before the back is ready to shoot.

Perhaps most impressive of all, none of this power seems to translate into overheating. The P25 is the coolest digital back we've ever used, and yet it features none of the usual fans, heat sinks or Peltier cooling featured on its competitors. So what's its secret? The answer lies in what Phase One calls 'sleeping architecture'. What this means is that the back and the sensor are only fully powered when the shutter button is pressed – between captures, the back enters a low-power sleeping mode (though the menus can be accessed and images reviewed). This way, unnecessary heat generation is prevented. Very neat, very clever, and very effective.

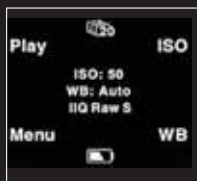
Behind the mask

The sensor itself is almost full-frame format; a ground glass mask has to be inserted into the camera viewfinder to correct image composition, but only around 5% of the imaging area is



■ For work inside the studio, the P25 can shoot tethered to a computer workstation saving RAW files to the hard drive, sparing you the hassle of swapping cards

Phase One P25: focus on menus



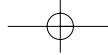
Main menu: This screen will show on the monitor during shooting if a preview image isn't being displayed. In addition to the menu headings on the side, there's also a reliable battery indicator and a shot counter showing the amount of images that will fit onto the memory card. 1Gb will store around 40 full-res shots.



Sensitivity: There's a fine ISO sensitivity range on the P25. The default setting is ISO 100, even though it's possible to go as high as ISO 800 (though you'll forfeit some resolution at that level due to the way the back calculates the settings). At the lower levels however, there was hardly a trace of noise.



White balance: Because white balance tweaking is mostly handled by the Capture One software, there isn't a manual WB setting as such – just capture a grey card at the beginning of a shooting session and it's possible to fine-tune the settings later. Tweaking the in-camera presets will make life easier and cut down on post-production time.



■ The LCD monitor lets you magnify captured images up to 1:1 scale

■ This socket enables a FireWire cable to be connected

■ The parent camera operates in exactly the same way as with a film cassette

■ The P25 is constructed from heavy-duty metal alloy

Factfile

■ Phase One is selling the P25 with two different warranty deals. The 'Classic' option will be supplied with Capture One DB (Digital Back), which will only support Phase One digital backs, but will be upgraded for life free of charge. It also comes with a one-year return-to-base warranty. The other 'Value Added' option comes with Capture One Pro (which can also handle RAW files from a number of digital SLRs), but only one year's worth of free upgrades. The warranty period however is increased to three years, during which a loan unit is shipped out if your back is faulty or becomes damaged.

“Operating the P25 is a piece of cake. Four buttons are used to navigate the various menus, and after about five minutes the system feels natural and intuitive”

lost. Write times are incredibly nippy – images are written to the card and displayed on the LCD monitor in slightly less than two seconds. As far as burst times go, the P25 can keep chugging along until the card (or hard drive, when shooting tethered) is full thanks to a huge buffer memory. The capture rate is around 35 frames per minute (roughly 0.6fps).

Buttoning up

Operating the P25 is a piece of cake. Four buttons alongside the LCD monitor are used to navigate the

various menus, and after about five minutes of using it the system feels natural and intuitive. The menu system is uncluttered and straightforward, mainly because there are few in-camera parameters to adjust. Among them however are ISO and white balance settings, as well as file format – yes, file format. In an extraordinary display of what appears to us to be black magic, Phase One has developed a proprietary file format which it calls IIQ RAW (IIQ standing for Intelligent Image Quality). What this means is that 16-bit image data from the sensor is

Technical data:

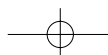
Sensor:	Full frame CCD
Total pixels:	5,488 x 4,145
Effective pixels:	5,436 x 4,080
CCD size (effective):	48.9 x 36.7mm
Pixel size:	9 x 9 microns
Image ratio:	4:3
Output:	48 bit (16 bits per colour)
Antiblooming:	8 f-stops
Colour depth:	16 bits per colour
Dynamic range:	12 f-stops
Sensitivity:	ISO 50, 100, 200, 400, 800
Burst speed:	35 captures per minute
Write speed:	Up to 16Mb/sec (depending on card)
File format:	Phase One IIQ RAW Large/Small
LCD monitor:	2.2-inch, 18-bit colour
Internal white balance:	Auto, Flash, Tungsten, Daylight, Fluorescent
Compatibility:	Medium format: Hasselblad V and H systems, Mamiya 645 AFD, Contax 645AF. Via adaptor: Mamiya RZ67 II/III, Hasselblad 555 ELD, 553 ELX, 503 CW, 501 CM, 903 SWC, Horseman DigiFlex. Large format: Arca Swiss, Cambo 4x5, Rolleiflex Xact, Linhof M679/4x5, Toyo, Sinar, Horseman
Computer requirements:	Mac: G4, 500Mb RAM, FireWire interface, Mac OS X PC: Pentium III, 500Mb RAM, FireWire interface, Windows XP/2000
Power:	1 x Lithium-Ion BP 911 cell – 72V, 2000 mAh
Memory slot:	CompactFlash Type I/II, Microdrive
Dimensions:	90 x 90 x 65mm
Weight (excl battery):	700g



Magnification: Images can be magnified in Playback mode up to a factor of 1:1 in much the same way as most digital cameras do this. There are only three zoom steps, but the system works well enough. It is also possible to scroll around the zoomed image in order to check sharpness and the like.



Histogram: The P25's histogram is a joy to behold, displaying individual RGB information plots in addition to an overall luminance graph display. Other image review options enable flashing overexposure hotspots to be displayed, as well as image capture information, in exactly the same way as a digital SLR.



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■ Colour tones are spot-on almost every time when using the Phase One. Should a colour cast appear, it can be removed with the click of a mouse when reviewing the image in Capture One

“The updated version of Capture One has a few new tricks up its sleeve”

► stored on the card in a completely lossless compact RAW file format, economising on storage space. This is the default setting, but it's possible to select a greater (and lossy) compression setting should you wish to squeeze even more images onto the card. File sizes top out at around 25Mb per RAW file (which translates as a 65Mb 8-bit TIFF when developed). Reviewing images on the P25 is also a joy: there are three levels of magnification up to 1:1, and the image can be scrolled around. In addition, flashing overexposure highlights can be enabled, as can a very detailed RGB histogram. There's even an SLR-like orientation sensor that



■ We used a Mamiya 645 AFD for our tests, but the P25 will also fit Contax and Hasselblad bodies

In detail: focus on software



Main window: Capture One is well thought-out and laid out, and although it's a complex bit of software it's nevertheless a delight to use. As seen here, the histogram displays curves and RGB information, enabling precise adjustments to be made and saved as a custom user profile.



Focus tool: To save on precious processing power, Capture One uses the Focus tool in order to blow up images to 1:1 magnification so that users can check image sharpness. This and many other new additions make it a very slick operator when it comes to streamlining post-capture workflow.

displays images in portrait or landscape format depending on how they were shot.

Streamlined software

No matter how well it operates, a digital back is only as good as the software included to convert its images into useable formats. Phase One has included an updated version of its Capture One software (version 3.5.1 to be precise), which has a few new tricks up its sleeve. Chief among them is the Focus tool, which will probably prove one the most useful. To cut down on processing time, images displayed in the main viewing window are essentially large thumbnails. The Focus tool blows up an area of the actual image to full size to look at a specific area of detail, thereby eating up less processing power. The arbitrary Rotator tool is another new addition; it enables users to keep a crop within the image area, and automatically resizes the crop at the same time.

Another great little innovation is the Overlay function, designed to assist in capturing still-life shots. It enables material such as a scanned art director's sketch to be placed on top of a captured image as a translucent layer, making it easy to exactly replicate a brief. Images can be batch processed into any number of different file formats simultaneously, with output possible in 8 or 16-bit.

DP

Verdict Digital Photographer

Manufacturer: Phase One
Model: P25
Price: £20,000
Web: www.phaseone.com
Phone: 01903 741821



Features 9/10

■ The combination of back and software has been perfectly thought out to cater for professional needs – no faults here

Build quality 9/10

■ Excellent. The P25 will easily stand up to the rigours of daily professional use both inside and outside the studio

Handling 9/10

■ The P25's menu navigation system is simple to learn and operate; although Capture One is far more complex, it's still well thought-out and intuitive

Quality of results 10/10

■ Faultless. We're prepared to say that images from the P25 are better in quality than drum-scanned medium-format film

Value for money 8/10

■ The asking price might look astronomical on paper, but offset this against savings in costs and its true value starts to look much better

Total 90%

■ In all, the P25 is an astounding achievement. Self-contained digital backs have been produced before, but none have shown the degree of sophistication, ease of use and sheer image quality shown here. It looks like the digital back has finally come of age – the P25 is a breakthrough product in every sense.