

Native 16:9 and XLRs in a handheld camcorder

DV-CAM Camcorders
Sony DSR-PDX10

by Peter Dudar

The DSR-PDX10, Sony's smallest DV-CAM/MiniDV camcorder, is a sleeper—like a movie that opens in just one theatre, builds by word of mouth, and is still on first run screens a year later.

The increasing interest in this camera has mostly to do with two outstanding features otherwise unavailable in its price range (CDN\$3,700)—native 16:9 picture and XLR sound. Other pluses include memory stick functionality and USB connectivity. And it all comes in a magnesium housing, weighing just 2 lb, 5 oz with battery and tape, and measuring a miniscule 3 3/4 x 4 x 8 inches.

1/4.7-INCH MEGAPIXEL CCDs

The PDX10 is a 3-CCD system, and its visual capabilities come by way of recently developed 1/4.7-inch advanced HAD CCD chips, each with a total of 1,070,000 pixels—that's right, I said 1,070,000 pixels *each*. (By comparison, the hugely successful and pricier Sony DSR-PD150 has 1/3-inch chips with 380,000 pixels each.)

Effective pixel usage depends on whether the CCDs are scanning inter-

laced for video or progressive for stills. Although proportioned differently, the 4:3 and 16:9 video modes each use an ample 690,000 pixels per CCD; still capture mode employs 1 million pixels per CCD.

The unit uses 14-bit analog to digital conversion with 14-bit digital processing to tweak the cam's dynamic range. The result is better contrast in both dark and light areas and subsequently less washout.

In conjunction with advanced HAD CCD technology, the 14-bit technology also reduces video noise in dark areas, which somewhat ameliorates the cam's main limitation, its low light performance compared to \$5,000 cams like the PD150 or Panasonic AG-DVX100. On the other hand, the PDX10's lux rating of 7 is pretty close to the 6 lux of the comparably priced Canon GL2.

Vertical smear can be provoked by shooting into an intense light source, but is generally not an issue.

SWITCHABLE 4:3 AND 16:9

Although the PDX10 produces quite decent 4:3 format video (530 lines of horizontal resolution), it's this cam's 16:9 format, with its attendant wider angle of view, that especially sets it apart. Other prosumer cams synthesize a 16:9 image by cropping the top and bottom of the 4:3 picture—effectively reducing the line count by 30 per

cent—and then processing the results. The PDX10 instead grabs more pixels horizontally. One would have to spend several times the price of the PDX10 to get a cam that shoots better 16:9.

CUSTOM PRESETS

The DSR-PDX10 provides direct access to custom presets via a button inside the LCD compartment. These camera parameters can be preset: Color Level, Sharpness, White Balance Shift, AE Shift and AGC Limit (+6 dB or +12 dB). There are no gamma or knee adjustment capabilities as on somewhat pricier cams.

With the AGC Limit set to Off, the camera can boost the gain up to 18dB. At that point, image degradation is apparent, so you'll only want to go to go there when necessary. Although you can see the gain setting used when playing back the tape, you can't monitor it while shooting.

The setup value can be set to either 0% or 7.5% IRE in the menus.

As with other Sony cams, the default presets and auto-functions (including the responsive auto-focus) consistently produce quite acceptable results.

Like the PD150, the PDX10 uses Sony's Super SteadyShot system for optical stabilization.

LENS AND ZOOM

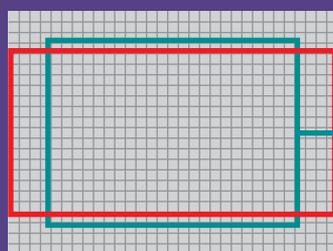
The PDX10 is equipped with a high quality 37 mm power zoom lens with a 12x optical zoom ranging from f3.6 mm (F1.6) to 43.2 mm (F2.8).

Its zoom rocker is touch-sensitive, so you can vary its speed. But the switch is made pretty small to fit this unit, so initializing a zoom and varying it smoothly can be challenging. And there's no means to customize its responsiveness.

I do most of my zooming with the rocker, but sometimes I really want to go manual—unfortunately, there's no manual zoom on this cam. Note, however, that the unit does have a LANC jack, so it doesn't require a proprietary zoom controller.

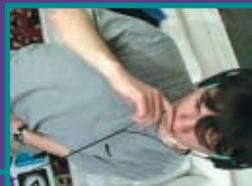
Like most prosumer cams, this unit has a perpetually turning focus ring (sigh!).

HIGHER RESOLUTION, WIDER ANGLE



4:3 IMAGE AREA

16:9 IMAGE AREA



The PDX10's three 1/4.7-inch CCDs each total 1,070,000 pixels. The 4:3 and 16:9 video modes use 690,000 pixels per CCD. The still capture mode employs the entire effective range of 1 million pixels.

Sony sells two appropriate wide conversion lenses: the VCL-HG0737X (0.7x, CDN\$329.99), and the VCL-MHG07A (0.7x, CDN\$299.99). There's also a tele conversion lens: the VCL-HG2037X (2.0x magnification, CDN\$329.99). Century Optics (www.centuryoptics.com) also lists a selection of add-ons.

Unlike the PD150, the PDX10 has no built-in Neutral Density (ND) filters. However, its relatively lower sensitivity makes them less necessary. Otherwise, Sony sells a VF-R37K ND filter (ND8) and protector kit for CDN\$49.99.

LCD TOUCH SCREEN

The camera's flip-out LCD touch screen measures 3.5 inches diagonally (an inch larger than the LCDs on the PD150 and Canon GL2) with a pixel count of 246,400.

The unit provides some operation buttons on the screen, including LCD Brightness, but the two most interesting features (because they take direct advantage of the LCD) are the Spot Focus and Spot Meter buttons. With both, you just touch the image where the adjustment is to be made, and the camera does the rest.

Like other DVCAMs, the PDX10 employs a black-and-white LCD viewfinder to facilitate manual focusing. The 180,000-dot viewer measures 0.44-inches and provides 500 lines of horizontal resolution.

THE LAYOUT

PD150 users will be familiar with the PDX10's three-position Auto Lock Selector located on the lower back corner of the cam. Position A is Auto, position B is for setting functions manually, and position C locks in your manually set functions.

Also, like the PD150, there's a vertical row of buttons and thumbwheel selector on the back of the cam. In this case, the five buttons are: Program AE, Shutter-speed, White Balance, Audio Level, and Exposure (there's no iris control).

I assume the Program AE button is present to make consumer-level purchasers happy—although I would have preferred a Manual Gain as on the 150. Unlike some

prosumer cams, including the much lauded Panasonic DVX100, this unit still has shutter speeds below 1/60—they range down to 1/4. And Manual white balancing is one-push.

A Zebra Pattern selector (100% or 70%) is located inside the LCD compartment, along with controls usually used in conjunction with the LCD, such as VCR playback. Nearby is a Bars button for instant access to full-field color bars. Plus there's a TC/U-BIT button for switching between timecode and user bits when shooting in DVCAM mode.

The Focus switch (up front by the lens) can be set to manual or auto, independent of other camera functions. And there's an accompanying Push Auto button for quick focusing in manual mode.

All the in/out connector ports (including AV, S-Video, USB, Firewire [aka i.LINK, IEEE 1394-1995] and LANC) are grouped under a flap just in front of the tape compartment.

The unit's adjustable handstrap sits on top of the cassette compartment, and Sony has cleverly integrated the memory stick slot into the cassette compartment door.

The PDX10 doesn't handle like a PD150, but it's not a matchbook cam either. It balances not badly (sans accoutrements) for overhand shooting. But flip open the LCD, cradle the cam in your fingers underhand, and you can shoot for eons tirelessly. Its size makes the DSR-PDX10 incredibly easy to take anywhere—but the tradeoff is that buttons are not as easy to access by feel as on a larger unit.

All in all, using the PD150 as a template, Sony has done a superb job of placing elements logically, despite the limited real estate. And this cam employs Sony's 3-column menu system (of course), which continues to outclass all others in both logic and efficiency.

REMOVABLE XLR 2-CH ADAPTER

The DSR-PDX10 is the only cam in its price range that is equipped with a dual XLR audio input adapter. (The Canon GL2 can accommodate XLRs, but the



SONY DSR-PDX10

Lens 12:1 Variable speed zoom lens; f 3.6 to 43.2 mm, F 1.6 to 2.8; Filter Diameter 37 mm

Focus Auto/Manual (ring)/Infinity/One push auto

Imaging Device Three 1/4.7-inch type CCDs, 1,070,000 pixels (gross)

White Balance Auto/One-push/Out door (5800 K)/Indoor (3200 K)

Shutter Speed 1/4 to 1/10,000

Minimum Illumination 7 lx

Horizontal Resolution 530 TV lines

Viewfinder 180,000-dot b&w LCD, Zebra Pattern

Audio Signal Rec 48 kHz/16-bit, 32 kHz/12-bit

LCD TFT Active Matrix, 3.5 in, 246,400 dots (1120 x 220)

Video Signal EIA Standard, NTSC color system

Connectors

- AUDIO (LINE)/VIDEO IN/OUT AV-mini jack x1
- S-VIDEO IN/OUT Mini-DIN 4-pin jack x1
- MIC IN Stereo mini jack x1
- i.LINK IN/OUT 4-pin jack x1
- HEADPHONE Stereo mini jack x1
- LANC Stereo mini-mini jack x1
- USB Mini-B x1
- XLR AUDIO ADAPTER XLR 3-pin female x2 (LINE/MIC/MIC+ATT)
- AUDIO IN +48 V (ON/OFF)

Power Requirements DC 7.2 V (Battery), DC 8.4 V (AC adapter)

Power Consumption 5.2 W view finder; 6.5 W LCD

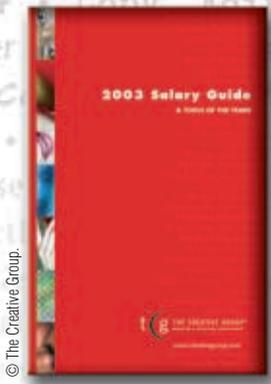
Dimensions (W x H x D) 93 x 99 x 202 mm (3 3/4 x 4 x 8 inches)

Mass 950 g (2 lb 1 oz) (camcorder only)

List Price CDN\$3,799, street price CDN\$3,699

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R E V I E W S

adapter is sold separately.) Sony also throws in the same mono ECM-NV1 shotgun mic that comes with the PD150.

The PD150-like XLR adapter slips onto the cam via an accessory shoe and intelligent accessory shoe. Likewise, it provides input level switches with Mic, Mic Attenuator, and Line positions; as well, there are +48 V DC mic power switches—plus it includes Low Cut switches for reducing wind sound.

In manual mode both channels can be adjusted to manual and auto separately, and the gain for both channels can be either linked or separated. Meters display in the LCD and viewfinder.

MEMORY STICK AND USB

As mentioned, the DSR-PDX10 exploits the full effective capacity of the CCDs for capturing stills, which can be downloaded via the USB jack. With a 128MB memory stick, it's possible to capture 205 Super Fine images (1152 x 864).

One of the more useful still capture options is Exposure Bracketing, which triggers three exposures for each shot taken.

This (or any) DV cam's images (16 x 12 inches at 72 dpi) are not up to par with output from current still cameras, but they're quite adequate for multimedia use. Also, with a 128MB stick, the PDX10 can shoot and capture 21 minutes and 21 seconds of video (320 x 240) as MPEG-1; and it can capture recorded data from tape to memory stick in the same format.

According to Sony's documentation, the PDX10 can also stream video and audio via USB, converting the output to motion JPEGs in real-time (Windows only).

Being able to use Sony batteries is a perk—the DSR-PDX10 uses Infolithium M series batteries and comes with an NP-FM50, which slips unobtrusively onto the back beneath the viewfinder. But thicker batteries are not a problem—Sony has cleverly put the viewfinder on a three-position slider, so you can ratchet it back as needed.

PRIORITIES

If unparalleled low light performance is more of a priority than 16:9, consider the Sony DSR-PD170 (due in December), the upgrade to the PD150. Its CCDs have been tweaked, pushing their sensitivity from lux 2 to an extraordinary lux 1. Sony is even adding a wide conversion lens (VCL-HG0758, 58mm) to the kit—yet pricing for the PD170 is the same as the PD150.

Mind you, that's still \$1,300 more than a DSR-PDX10, which has a fair number of its own advantages. For instance, the PDX10 can be a multimedia cam for low budget producers, or a backup for more upscale DVCAM productions; it can be a broadcast-quality take anywhere, anytime cam; a stealth cam; and, of course, the only true 16:9 camcorder for a price that's less than astronomical. 📺

Peter Dudar is a Toronto creative director and videographer/filmmaker. He can be contacted at pdudar@rogers.com.