The world s first professional-spec
digital video camera
with 25P shooting capability

The full power of the Panasonic

AG-DVX100

Panasonic

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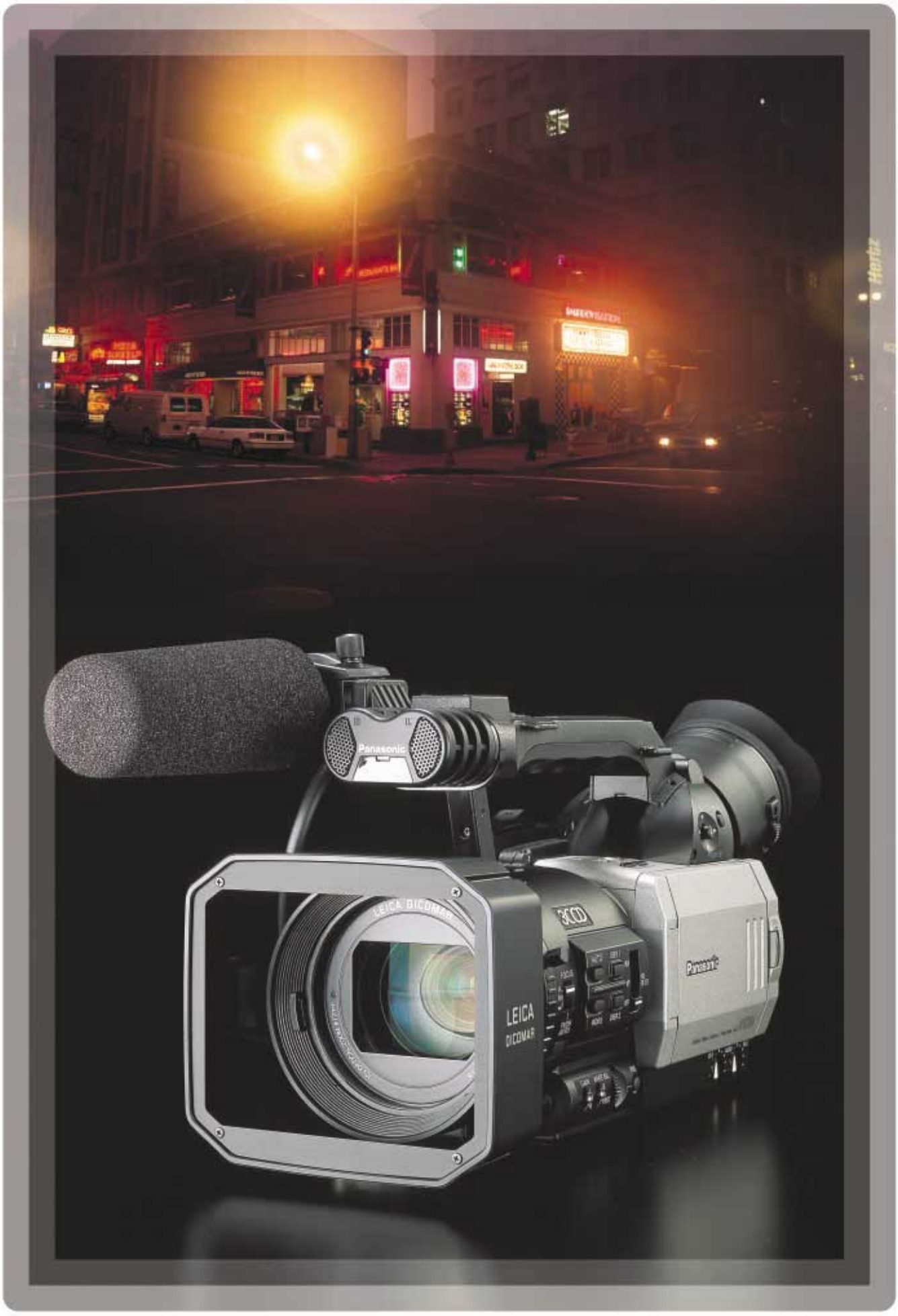
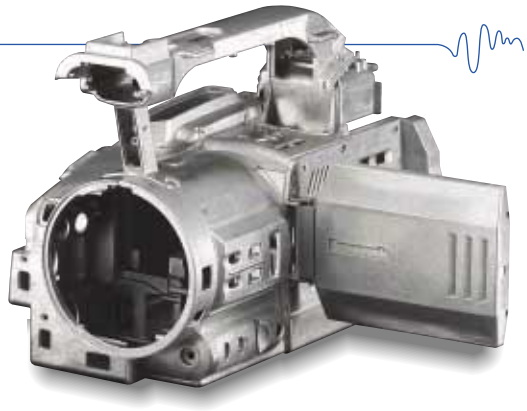

Panasonic
LEICA DICOMAR
3CD
LEICA
DICOMAR

Concept

25P shooting feature brings fresh excitement to digital video in the

DVX100,

the ultimate in digital video cameras



All-new design created not based on consumer models but created for professionals

The DVX100 is Panasonic's finest achievement in a compact, professional-use digital video (DV) camera. The first in its class to offer 25P shooting capability, the DVX100 has attracted so much excitement on this count alone that the purpose of its power and richness are sometimes overlooked. The arrival of 25P shooting opens up an entirely new market in image production, backed by the development of a high-performance 50i camera. Just looking at the DVX100 gives a clear sense of the incredible feats this DV camera can achieve. The main point to bear in mind is that the DVX100 is designed from the outset not for the consumer but to satisfy the needs of the video professional. First, despite the diminutive size of this camera, it offers the image quality and lens function expected of a 1/3 inch CCD. With 440,000 effective pixels (a total of 470,000 pixels), the DVX100's all-new design offers unparalleled accuracy and progressive format power. For a camera of its size, the new CCD generates incredibly little smear noise, one of the video professional's most notorious bugbears. Some recently arrived compact prosumer cameras suffer a lot from this problem, so professionals now have a compelling reason to choose the DVX100. In designing the DVX100 we endeavored to produce a handy, compact model that could nonetheless provide virtually all of the needs of the professional. In the viewfinder, for example, the exceptional eyepiece is the largest since the AG-EZ1. Although the built-in LCD panel is a general-purpose component, it is enlarged for easier viewing. The eyepiece sports multiple lenses, designed to cut down distortion to the furthest extent possible.

One of the unseen pleasures of the DVX100 is its superb balance, which gives the camera a completely natural feel in the palm of the hand. Though not readily visible to the eye, we know how important balance is to ease of use, so we spared no effort in achieving a comfortably centered weight distribution. The 25P mode, a new feature created for the DVX100, is described in detail later (see pages 16–17). Here we'll just say that the DVX100 is equipped with two shooting modes: 25P, in addition to the conventional 50i. We are extremely excited about the possibilities for progressive shooting using DV cameras.

The DV recording method adopted for these shooting modes is an adaptation to DV of a method developed for the high-end Varicam. Existing editing systems and monitors can be used easily with the DVX100 to realize cost-effective performance.

Large color LCD viewfinder

The viewfinder can be rotated 100°upward from horizontal and is large enough to check the view without having to get your eyes too close to it. Although the LCD is a color 0.44-inch, the sterling performance of the eyepiece sharply curtails peripheral distortion.

Inside the 3.5-inch LCD monitor is a series of switches that are set before shooting begins, rather than components that move during shooting. Audio control levels can be easily verified by checking external dials and switches.

Professional mini-DV mechanism

The DVX100 incorporates a mechanism combining an advanced cleaning head with automatic head cleaning, as used in DVCPRO for broadcasting. Opening and closing of the mechanism is smooth and swift.


LEICA
DICOMAR
FOCUS
PUSH AUTO
3CCD
INDEX
AUTO
USER 1
USER 2
OFF
ND FILTER
GAIN
WHITE BAL
IRIS
Panasonic
LEICA DICOMAR
INPUT 1
•LINE
•MIC
INPUT 2
•LINE
•MIC
SERVO
MANU
AWB
END SEARCH
SCENE FILE
CAMERA
VCR
POWER
ON
OFF
PHONES
CAM REMOTE
Panasonic

Features and operability give video professionals the power they demand-including cam-operated manual zoom

Meticulous attention to detail in basic operations such as zoom and focus

The single most compelling feature of the DVX100 is the body. Uniquely for DV cameras of its class, the DVX100 uses not a commonplace consumer-product exterior but a body tailor-made for professional needs. Yet it sports all of the productivity-enhancing advanced technology of consumer models.The first of the exterior features we need to mention is the newly developed zoom lens. Superior performance is only to be expected from the popular Leica Dicomar lens. What's remarkable is the sweeping view angle at the wide-angle position. Although a crowded field of prosumer models are in use in professional environments, the wide-angle position (in 35 mm terms) is typically in the 40–50 mm range, rendering a wide converter necessary. Unfortunately for these models, the mounting of a wide converter causes loss of image quality that is quite conspicuous when placed side- by-side with professional video. Hence as a professional tool, prosumer models are usually rather limited. In the DVX100,the wide angle is equivalent to 32.5 mm, matching competitors'wide-converter–assisted viewing angle without the attendant image deterioration. With an unusually large front lens, actual image quality is strikingly improved and offers a polished, professional look. The unique styling and dedicated lens hood add further notes of elegance.In manual zoom operation, the normal motor servo mechanism can be removed—another first for a prosumer DV camera. Zooming action is so prompt and smooth it seems to happen at the speed of thought, and the zooming rotation angle closely approximates that of broadcast cameras. Although the manual focus is not a completely mechanical assembly, focus position is indicated on the viewfinder using relative numbers. In professional environments, the distance must sometimes be determined before focusing. In such cases, an index is a useful accompaniment to manual focusing as a support function.

Another professional feature is the full-function microphone, provided as a standard specification. The DVX100 comes equipped with an XLR terminal as standard, so the professional microphone is fully usable without an adapter. The DVX100 is also equipped with a built-in stereo microphone suitable for high-end amateur users.To ensure first-rate usability, the DVX100 was designed with high priority on interoperability with the most popular equipment and accessories. Many of the operating buttons conform to the standards of professional-level equipment, while functions conform to those of the handy type for ease of use. This attention to detail yields a product that holds its own in professional settings without compromising compatibility with a wide variety of existing products.

Manual zoom and manual focus

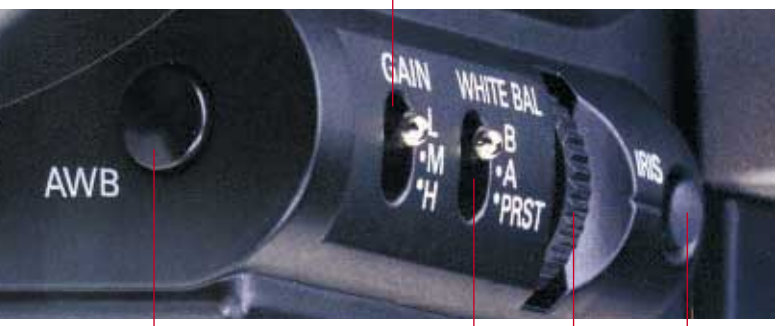
Rapid angle-of-view adjustment makes subtle focus tweaks a snap

The days of a manual zoom lever on consumer cameras were once a remote memory. In the DVX100, it's made a comeback. Although power zoom is convenient for smooth zooming, in practice this feature is mostly used for angle-of-view adjustment. When adjusting focus manually, the user can shift quickly to the telefocus position, adjust the focus on the subject, then tweak the angle of view. This procedure is followed as a matter of course in professional cameras. In consideration of this modus operandi, the DVX100 was equipped with a cam-driven zoom ring for highly responsive zoom movement. One convenient approach supported by the DVX100 is push-button autofocus, in which autofocus (AF) is activated only while the AF button is held down. This feature enables users to set the focus to the telefocus position, press push-button AF and adjust the angle of view as desired.Those who do not wish to use the zoom pin can remove it and fit a handle instead, illustrating one of the many fine touches that sophisticated users are sure to appreciate.

▲ DVX100 with zoom pin removed

Zoom switch

The servo switch used to alternate between power and manual zoom is located under the lens, in a convenient spot for left-hand manipulation. The photo shows the assembly with lens hood removed.



Gain

Gain
0 dB

Gain
6 dB

Gain
12 dB

Switch format avoids unintended increases in gain

The gain is preset for two switch positions, medium (M) and high (H), with a low (L) switch position providing mute (0 dB). M is preset to 6 dB, while H is preset to 12 dB.

White balance

Settings are split between A and B

To record white balance, simply set the WHITE BAL switch to the A or B position and press the AWB button. Pressing and holding this button adjusts the black balance. The PRESET positions are preset to 3200 K and 5600 K; pressing the AWB button switches between these values.

Iris

Dial regulation enabled even in full auto mode

The IRIS button on the right side switches between auto iris and manual iris. Rather than a series of click detents, the dial provides smooth modulation of brightness even during shooting. With auto iris, the dial enables exposure correction (one turn in either direction). This exposure correction is also available in AUTO mode.

Audio

XLR terminal compatible with 48 V phantom microphone

The DVX100 is equipped with two XLR terminals—essential equipment in a true professional camera. The terminals are positioned at the bottom of the camera, so that inserting the relatively large XLR plug does not disturb the DVX100's overall weight balance. The INPUT 1 and INPUT 2 terminals are staggered to enable the large plug to be pressed with ease. Of course, the XLR terminal can be used not only for external microphones but for line-in as well, and the switches for this purpose are located nearby for added convenience. The terminals support professional phantom microphones requiring a +48 V power supply. For the most commonly encountered use in journalistic camera work an external microphone is plugged into INPUT 2. For this reason, a cover is provided for the INPUT 1 terminal. Microphone input level via CH 1 and CH 2 can be adjusted independently, and the controls, which click at the center position, are placed at the bottom of the camera for convenient operation.

Inputs and recorded audio tracks

Input	During shooting	After-recording (12-bit mode)
Built-in microphone L	CH1	CH3
Built-in microphone R	CH2	CH4
INPUT 1(XLR)	CH1	CH3
INPUT 2 (XLR)	CH2(CH1)	CH4(CH3)
AUDIO IN OUT CH 1 (pin jack)	——	CH3
AUDIO IN OUT CH 2 (pin jack)	——	CH4

CH 1 and CH 2 can be recorded in parallel from XLR terminal INPUT 2, providing monaural audio on two channels.

Menu selection is used to turn the autolimiter ON and OFF. While an external microphone will normally be used for reporting purposes, a built-in stereo microphone is also supplied for practicality and convenience. With the audio in 32 kHz 12-bit mode, the DVX100 is after-recording-compatible. When this mode is in use, input from the RCA pin jack is recorded via CH 3 and CH 4.

Audio settings and volume

CH 1 and CH 2 each permit independent input level settings. When set to INT (L) and INT (R), audio from the built-in microphone is recorded in stereo.

AG-MC100G external optional microphone

Although supplied with a built-in stereo microphone, a supplied microphone holder can be fitted to connect a separately obtained microphone. Optionally available with the DVX100 is the AG-MC100G monaural gun microphone. This microphone conforms to XLR plug specifications and can be inserted into the DVX100's XLR terminal. The microphone is surprisingly lightweight so as not to compromise the weight balance of the camera.

User buttons

Most commonly used features are allocated to two user buttons

All user buttons are positioned on the camera for easy access.
For example, by setting spotlight correction and backlight correction using these buttons, rapid exposure corrections can be performed.
Gain of +18 dB can also be set.

Menu settings

Assignable Functions

COLOR BAR:	Display/hide the colour bar
SPOTLIGHT:	Turn auto iris spotlight correction ON/OFF
BACKLIGHT	Turn auto iris backlight correction ON/OFF
BACKFADE	Fade out to a black screen (linked with audio)
WHITEFADE	Fade out to a white screen (linked with audio)
MODECHECK	Display camera settings in viewfinder/monitor
ATW	Turn auto tracking white balance function ON/OFF
ATWLOCK	Lock/unlock white balance in ATW operation
GAIN 18dB	Switch the gain to +18 dB

Scene files

Image-quality settings can be stored according to conditions and retrieved as needed using the dial

File Descriptions

F1:	Standard settings
F2: FLUO	Indoor shooting under fluorescent lights
F3: SPARK	Highlighting subjects at receptions, dinners, and other gatherings
F4: B-STR	Enhanced gradation in dark portions of sunset shots
F5: SCENE 25P	25p mode + Cine-Like gamma + V Detail Freq: Thick
F6: SCENE CINE	25p mode + Cine-Like gamma + V Detail Freq:Thin

Scene-file dial

This handy utility enables favorite image-quality settings to be preset, so the perfect settings can be retrieved quickly for every situation.
Forprofessionals and accomplished amateurs alike, scene files provide a powerful andversatile tool. Settings are preset at the factory as shown in the photo at left, but can be reset and renamed freely by the user. For details,see page 12.

Battery

Same three types of lithium-ion batteries as in consumer models

Continuous operating time

	CGR-D16	CGP-D28	CGA-D54
Using EVF	Approx. 90 minutes	Approx. 160 minutes	Approx. 330 minutes
Using LCD	Approx. 80 minutes	Approx. 140 minutes	Approx. 290 minutes
EVF + LCD	Approx. 75 minutes	Approx. 130 minutes	Approx. 270 minutes

The DVX100 is supplied with the 1600 Ah battery. For improved capacity, however, the CGP-D28 (2800 mAh) and CGA-D54 (5400 mAh) batteries are optionally available. The QR-DVX100 adaptor, used to enable use of AntonBauer batteries, is expected to be available soon.

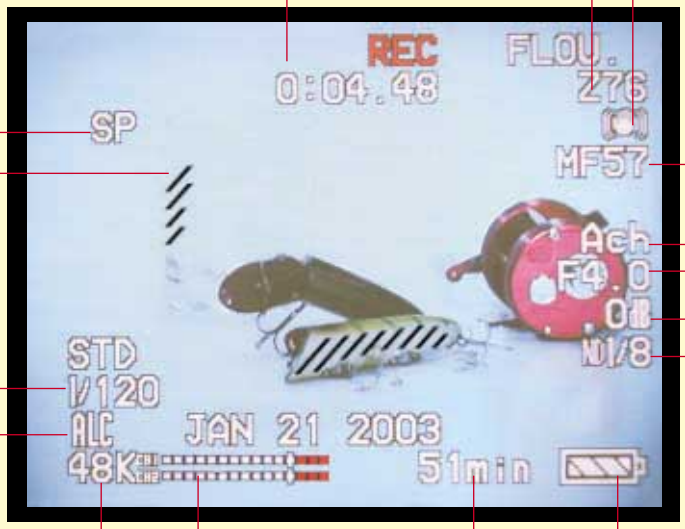
Wireless remote control for zooming and recording

The DVX100 is supplied with a wireless remote controller.
By connecting this third-party remote controller to the CAM REMOTE jack, zoom and record start/stop can be controlled at a distance. The zoom supports variable speed control.
For an example of the convenience of this feature, the DVX100 can be mounted on the Hitachi Instruments Service's RM-PV100 tripod (30,000 JP Yen). The camera can be operated at distances of up to 30 m for convenient live presentations.

The DVX100 s shooting features as seen in the screen and menu displays

3.5-inch LCD and screen display

The DVX100 far out shines its competitors with a generous 3.5-inch LCD monitor.
Identical information is also displayed in the viewfinder.
The picture shows when all available information is displayed.
Displayed information can be freely selected.



Zoom
Displays zoom (Repeatable Reference Number) from extreme wide-angle (00) to extreme telephoto (99). These figures are not to be confused with angle of view and focal distance.

Camera shake correction

Time code
Pressing the COUNTER button switches between time code, user speed, memory stop mode counter value and shooting frame rate data.

Focus
As in the case of zoom, this number is not a distance figure but a numerical index. The shortest shooting distance at extreme telephoto, which is 1 m, is set at 50, and the longest shooting distance is set at 99.

Record mode

White balance

Striped pattern
Areas that may be washed out due to overexposure are displayed in a stripedpattern.

Iris
Displays the f-stop number. This item is also displayed during auto iris operation.

Shutter speed
Displays shutter speed and synchronized scan values.

Gain
Displays the set gain value.

Microphone level automatic adjustment
Displayed when MIC ALC is ON in the menu.

ND filter
Displays the selected ND filter. If the camera is unable to focus during shooting, the recommended ND filter flashes.

Tape remaining

Audio record mode
Audio mode can be displayed as 48 kHz 16-bit mode or 32 kHz 12-bit mode.

Audio level meter
Audio enters the red zone at -12 dB or more. CH 1 and CH 2 are displayed independently.

Battery charge remaining
Remaining battery charge is displayed in four stages. When charge is close to zero, the display flashes.

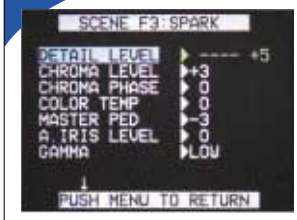
Customization for enhanced ease of use

A number of factors come into play when considering operability. While observing the exterior of the camera body is important, the viewfinder must also be clear and bright and the information displayed must be easy to check. Because users rely on the data displayed in the viewfinder and LCD to guide their operations, the accuracy of these displays is crucial to the product's ease of use. The DVX100 viewfinder provides a stunning wealth of information. Of particular note are the focus and zoom position figures—unprecedented features are found only in the DVX100.
While full-fledged TV cameras with CRT viewfinders can capture focus precisely, LCD displays of this size unavoidably introduce some limitations. Although accurate focusing depends on appropriate use of AF, the addition of a further numerical display offers the user a quantum increase in confidence. The zoom provides a similar story. The displayed data supplies valuable supporting information to supplement the accuracy of field-of-view adjustment. The user selects the information he or she wishes to monitor in the viewfinder, item by item. The menu settings can also be "customized" in this way, to deliver exactly the information the user needs. As you can see from the menu information on the right-hand page, this level of customization for a DV camera of this class puts the DVX100 in a league of its own.

To operate the menu, the user presses the MENU button, then moves the cursor while looking through the viewfinder. The cursor, a single button that can be moved up, down, left and right, is skillfully combined with the VTR operating section.

Camera mode menu

1. SCENE FILE



The file setting selected using the scene file dial is displayed. In this menu the setting can be changed, picture quality can be fine-tuned, or a completely new setting can be recorded, as shown on the first screen at left. On the second screen, the user can switch between progressive and matrix settings. For further details and specific examples of the effectsof these settings, see page 12.

2. CAMERA SETUP

At 16:9, only the letterbox appears.

The color bar is an SMPTE type.

SYNCRO SCAN is a feature that enables detailed adjustment of shutter speed when shooting a CRT screen, so that the CRT screen does not appear as a striped pattern. Settings are performed while looking through the viewfinder. ASPECT is set to standard 4:3. The user can select whether to display letterboxes at top and bottom, with no squeeze. Squeeze supports an optional anamorphic lens. The color bar display is a standard SMPTE type.

3. SW MODE

This mode is used to allocate gain values to the M and H gain switches and features to the user buttons. Users can also select whether to open the iris by turning the dial clockwise or counterclockwise.

4. AUTO SW

This item selects the automatic features activated when the AUTO button is pressed. Iris, gain, white balance and focus can all be selected ON or OFF.

5. RECORDING SETUP

MIC GAIN can be selected to –50 dB or –60 dB. TC MODE selects whether or not to drop frames. TCG selects whether to run the time code generator using FREE run or REC run.

FIRST REC TC selects whether or not to record continuously (regenerate) on the tape the time code recorded at start of recording. UB MODE sets the content recorded as the user's bit. Interval and frame-by-frame recording can also be selected.

6. DISPLAY SETUP

Two types of striped pattern can be selected, with levels of 80%, 85%, 90%, 95% or 100%. The preset values are 80% and 100%. Striped pattern 1 consists of diagonal lines leaning to the left; striped pattern 2 consists of diagonal lines leaning to the right. Display of numerical values for ZOOM and FOCUS can be selected ON/OFF.

SELF SHOOT sets whether or not to reverse the image in the LCD monitor left-to-right when shooting an interview. When EVF MODE is ON, the image is displayed simultaneously in the viewfinder and LCD monitor. When AUTO is selected, the image disappears from the viewfinder when the LCD monitor is opened.

7. OTHER FUNCTIONS

DV CONTROL selects the control method when a backup device is connected to the DV terminal In addition to simultaneous synchronized recording, this item permits CHAIN recording, in which continuous recording automatically begins onto the backup device during recording when the end of the DVX100's tape is near

TAPE PROTECT is a measure to protect the tape. This item can be selected to turn the power supply OFF automatically if recording is paused for five minutes with power supply ON, or to set the camera on standby when the cylinder heads are stopped.

The arresting picture quality of our new progressive CCD camera, together with Leica Dicomar Lens

Highest sensitivity in its class delivers a virtually smear-free picture

The basic performance of a video camera's picture is determined crucially by the CCD and lens. In the DVX100, both of these elements are radically re-designed expressly for this product. The eye is immediately attracted to the Leica Dicomar lens, which provides a 32.5 mm maximum angle of view (in 35 mm terms). As the example at left illustrates, the results are amazing. Although not as obvious at first glance, tests reveal the power of the CCD camera. Image capture is incredibly sensitive. This exceptionally bright camera adopts a two-ND configuration, with speeds of 1/8 and 1/64. This is in stark contrast to many models in the same class, which manage only 1/4 and 1/32 (in one test, 1/64 ND was used on an overcast autumn day).
The DVX100's virtually smear- free performance is another advantage to shout about. In a series of tests, even in cases where smear never failed to appear in 1/3-inch CCD cameras, the DVX100 produced images that were stunningly clear, marking a significant breakthrough in cameras of this type.
The 25P images are arresting. Normally, a simple switch in capture method to 25P does no more than change the sense of motion in the picture. When the 25P mode set in scene file F5 was used, however, the entire mood of the shot was transformed. This image, a little underexposed, is rich in colors, with the periphery clear and still. Tests showed that film-quality video was expertly reproduced, making the DVX100 a wonderful tool for filming human subjects. The DVX100 not only assures excellent picture quality but points the way to moods and expressions never before feasible on a DV camera.

Resolution

Resolution is sharp even at the edges of the image

Although this image may not appear high-resolution at first, look again at the trees and gravel on the edges. These peripheral details are rendered with incredible precision. Obviating the need for unnatural emphasis of the periphery, the DVX100's highresolutionproduces sharp, natural images. (f/2.8, 0 dB)

Blurring

Smooth blurring of out-of-focus objects, limpid color rendering Color rendering is vivid and generous, with smooth blurring of background objects. Images are unmarred by unnatural over-blurring. A six-bladed pinwheel left out of focus in a night scene appears as a natural-looking hexagon (see example below). (Open shutter, 0 dB)

Skin tones

Faithful rendering of skin tones

This image was shot in 25P using scene file F5. Note the faithful rendering of the natural warmth of the woman's skin tones. The image bears an unmistakable cinematic quality that no other DV camera can approach. (Open shutter, 0 dB)

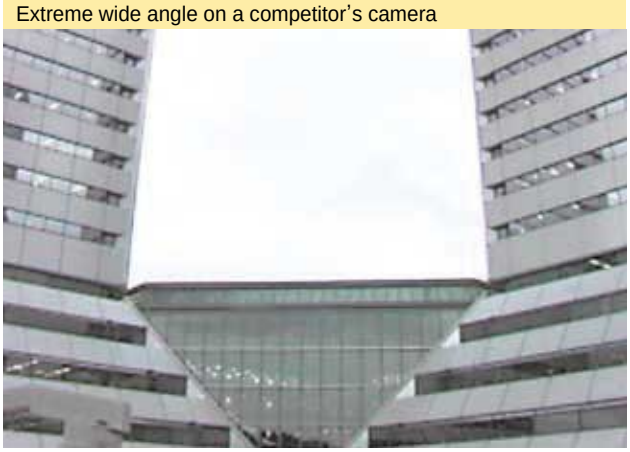
Power of description in extreme wide view angle

Extreme wide angle on the DVX100

32.5 mm (calculated in 35 mm terms)

At focal lengths of 50 mm or less (calculated in 35 mm terms), tiny variations can change the angle of view enormously.This descriptive power is one more field in which the DVX100 is leaps ahead of its rivals. Whereas other DV cameras require the fitting of a separate wide-angle converter to achieve focal lengths of 30 mm, the DVX100 achieves this focal length on a stand-alone basis as its maximum wide angle.
And because the DVX100 does not require the attachment of a wide-angle converter, its weight balance is undisturbed, picture quality remains excellent and resolution is sharp from center to periphery. The examples provided here throw the DVX100 difference into sharp relief.

Extreme wide angle on a competitor's camera



43.2 mm (calculated in 35 mm terms)

With 0.7 x wide-angle converter on a competitor's camera

30 mm (calculated in 35 mm terms)

Picture reproduction under dark conditions

Color rendering and S/N ratio in moderately dark conditions

The greatest sensitivity in its class

While some remarkably bright DV cameras are on the market today, the DVX100 enjoys a slight but unmistakable edge. Even under moderately dark conditions, the flesh tones and colors in the clothes are faithfully reproduced in this example. By increasing the gain, noise can be reduced for better S/N ration. (Open shutter, 6 dB)

Smear

Virtually smear-free performance defies belief

One of the most admired traits of the DVX100 is its near-total elimination of flare and smear. Smear levels are unbelievably low—more representative of a 1/2-inch CCD than a 1/3-inch CCD. When combined with the precision of the lens, the DVX100 wields an incredible power to express light sources naturally and accurately.

Other DV cameras require the fitting of a separate wide-angle converter.

Scene-file feature makes precise picture-quality settings available in an instant

Scene-file dial

The scene-file dial is positioned in a highly visible location at the back of the camera, enabling users to confirm which scene file is in use without looking through the viewfinder. Scene files F1 to F6 are factory settings, with F5 and F6 invoking progressive mode.

Handy features for professionals and amateurs alike

The single most compelling feature of the DVX100 is the DV cameras aimed at the consumer market typically offer only the picture quality settings assigned by the manufacturer. Broadcast cameras, on the other hand, allow open adjustment of picture-quality settings, but only trained video engineers are competent to make use of this. The DVX100's scene-file feature offers a happy medium between these two.

Many users will find that the six scene files preset by Panasonic are more than sufficient to select the picture-quality tuning for the scenes they desire. Yet because the parameters can be freely tuned, users can start with the preset values and tweak only the items they wish to change,

or set and record entirely new settings. Users can also assign names of their own choosing to these new scene files. Professionals can respond smartly to various shooting conditions by presetting scene files that anticipate a range of situations, so they can always shoot with optimal tuning already completed. Scene files also simplify the coordination of picture quality in shoots involving multiple cameras. For amateurs, scene files add another level of enjoyment, as camera buffs can tune and preset their cameras to the exact settings they like. Many users will want to achieve a cinematic feel in their work, but opinions differ from person to person as to what a cinematic appearance looks like. The ability to tweak the cinematography according to one's own unique vision is sure to appeal to a wide range of amateurs as well as professionals.

Comparison of the picture quality in each of the six preset scene files

F1:SCENE

Standard file with no special settings

Detail	0	Gamma	NOR
Chromatic scale	0	Skin detail	OFF
Chromatic phase	0	Matrix	NOR
Color temperature	0	V detail	THICK
Pedestal	0	Progressive	OFF
Auto iris	0		

F2:FLOU

File optimized for shooting under fluorescent light

Detail	0	Gamma	NOR
Chromatic scale	0	Skin detail	OFF
Chromatic phase	0	Matrix	FLOU
Color temperature	0	V detail	THICK
Pedestal	0	Progressive	OFF
Auto iris	0		

F3:SPARK

File for added accent on subjects (parties, etc.)

Detail	+ 5	Gamma	LOW
Chromatic scale	+ 3	Skin detail	OFF
Chromatic phase	0	Matrix	NOR
Color temperature	0	V detail	THICK
Pedestal	0	Progressive	OFF
Auto iris	0		

F4:B-STR

Setting for expanding tonation in night shots

Detail	0	Gamma	HIGH
Chromatic scale	+ 3	Skin detail	OFF
Chromatic phase	0	Matrix	NOR
Color temperature	0	V detail	THICK
Pedestal	0	Progressive	OFF
Auto iris	0		

F5:SCENE 25P

File for 25P shooting with cinematic mood

Detail	- 5	Gamma	CINE-LIKE
Chromatic scale	0	Skin detail	OFF
Chromatic phase	0	Matrix	CINE-LIKE
Color temperature	0	V detail	THICK
Pedestal	- 5	Progressive	25P
Auto iris	- 3		

F6:SCENE CINE

File for 25P shooting with advanced mode for linear editing

Detail	0	Gamma	CINE-LIKE
Chromatic scale	0	Skin detail	OFF
Chromatic phase	0	Matrix	CINE-LIKE
Color temperature	0	V detail	THIN
Pedestal	- 5	Progressive	25P
Auto iris	- 3		

* This scene file should be used when copying to Film (Celluloid). (This is optional)

For a detailed description of each feature, see pages 16–17.

How do changes in each of these features affect the image?

Detail level

The level of detail can be adjusted in a range from –7 to +7.

-7 · · · · · · · · · · · · · · · · 0 · · · · · · · · · · · · · · · · +7

Partial enlargements

Partial enlargements

Partial enlargements

Chromatic level

Chromatic level can be adjusted in a range from –7 to +7.

-7 · · · · · · · · -3 · · · · · · · · 0 · · · · · · · · +3 · · · · · · · · +7

Chromatic phase

Chromatic phase can be adjusted in a range from –7 to +7.

-7 · · · · · · · · -3 · · · · · · · · 0 · · · · · · · · +3 · · · · · · · · +7

Color temperature

Fine adjustments can be made in color temperature (after white-balance adjustment) in a range from –7 to +7.

-7 · · · · · · · · -3 · · · · · · · · 0 · · · · · · · · +3 · · · · · · · · +7

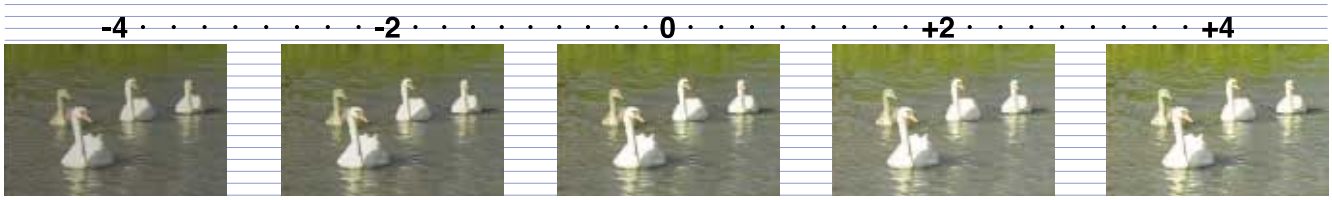
Master pedestal

The basic black level used in the image can be adjusted in a range from –15 to +15.

-15 · · · · · · · · -7 · · · · · · · · 0 · · · · · · · · +7 · · · · · · · · +15

Auto iris level

The auto iris target values can be set in a range from –4 to +4.



Gamma curve

The gamma curve can be selected from among four types.

NORM

CINE-LIKE

LOW

HIGH

The gamma curve is a critical element in determining the tone of the image. In the DVX100, any of four types of gamma curve can be selected.

NORM

This is the standard gamma curve.

CINE-LIKE

This gamma curve imparts a cinematic finish to the image.
For best results with this effect, it is recommended that lens aperture be restricted somewhat more than usual (approximately 1/2).

LOW

This gentle gamma curve provides low, indirect lighting for a subdued, quiet mood. The black is more solid,
and contrast is high for a sharp image.

HIGH

A sharp gamma curve is used in low, indirect lighting. This setting broadens the tone in dark conditions, creating a bright image. Contrast is lowered for a soft image.

Skin-tone detail

When selected ON, skin tone acquires an attractive sheen.

ON

OFF

V-DETAIL

Detail in the vertical direction

THIN : Details are rendered in thin relief.
THICK : Details are rendered in thick relief.

V-DETAIL sets details in the vertical direction during shooting in progressive mode.
With the THIN setting, normal interlaced TV reproduction generates horizontal and near-horizontal lines. The THIN setting reduces this effect when the image is reproduced in a progressive monitor, while the THICK setting creates a high-resolution image.

MATRIX

TA color matrix can be selected from between three tables.

NOR (Normal)

FLUO (Fluorescent)

CINE-LIKE (Cinematic)

How the DVX100 gives a cinematic appearance to your video

The camera captures in 25P and records with 2:2 pulldown

One of video's most celebrated new technologies, 25P, appears in a DV camera for the first time in the DVX100. Its roots can be traced to Varicam, a technology used in the broadcasting and film industries. From this original technique arose 720P, a hard disk–based version for DVCPRO. Whereas 720P supported variable frames, however, the DVX100, an SDTV device with 576 effective scanning lines, does not.

The reason for the film industry's excitement about 25P is its ability to render digital video with virtually the similar presence and tonal expression as conventional film, with the instant access, mobility and low cost of digital video—in short, the same characteristics that make the DVX100 so appealing. So what, in practical terms, are the differences between 50i in digital video and 25P? In 35 mm and 16 mm cinematic film, moving images are createdby presenting a succession of frames at a rate of 24 frames per second. In film, each frame shows the entire image at once. In 50i, however, 50 fields are interlaced on the TV screen every second. Interlacing is a process by which every other scanning line is skipped, so that two fields produce one frame. Unlike this interlacing of alternate scan lines, progressive display shows all scanning lines at once, but with increased resolution in the vertical direction to increase image density. If the number of frames is low, flicker becomes pronounced, making smooth presentation difficult for panning or moving subjects. The 25P approach enables almost the same sort of presentation format as film, because it uses progressive recording of 25 frames per second.

How DVX100 creates truly cinematic images

Progressive = frame recording

Whereas film produces moving images by displaying a series of still images, TV performs the same trick by interlaced display of alternate scanning lines. Progressive (P) scanning enables these scanning lines to be recorded as frames.

Motion = 25P

The DVX100 supports 25-frame-per-second progressive scanning.
Its scanning type produces the most cinematic appearance.

Latitude = cine-like gamma

By adopting a gamma curve that reproduces white and black tones in fine detail, 25P produces images remarkably close to cinema quality.

However, 25P has not yet been established as a DV format. In order to display 25P video on conventional monitors and editing systems, 25P is not recorded onto tape as is but is converted to 50i.

To accomplish this, a 2:2 pulldown format is used, similar to cinematic video software. To convert 25 frames into 50 fields, one frame is converted into two fields.

Gamma curves deliver cinematic tones

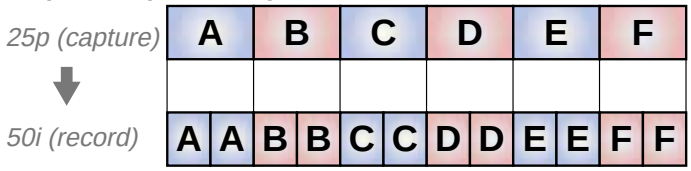
Another point of difference between video and film is the expression of tone. At the risk of oversimplification, film is best at displaying tones in dark areas and highlights. The cine-like gamma provided in the DVX100 reproduces film's unique tonal expression in digital video. Nonetheless, digital video lacks the dynamic range of film, so reproducing cinematic dark tones and highlights requires intentional raising cinematic dark tones and highlights requires intentional raising of gamma at the dark range and reducing it for highlights.

This process achieves reproduction across 100% of the video signal. These two technologies combine to produce remarkably cinematic images in the DVX100. Movement and vividness are supplied by 25P while cine-like gamma generates tonal expression approaching that of cinema.

Two types of 25P shooting and recording methods

• *50i Mode (Normal)*

• *25p Mode (Cine-Like)*



AG-DVX100 Specifications

GENERAL

Supply Voltage:	DC 7.2/7.9 V
Power Consumption:	6.8 W (when viewfinder is used)
	7.8 W (when LCD monitor is used) 9.2 W (max.)
Operating Temperature:	0°C to +40°C
Operating Humidity:	10% to 85% (no condensation)
Weight:	1.66 kg 1.83 kg with battery and cassette
Dimensions (WxHxD):	139 x 160 x 364 mm

CAMERA

Pick-up Device:	1/3-inch interline transfer type CCD x 3 (progressive modes supported)
Picture Elements:	Total: 470,000 pixels Effective: 440,000 pixels (horizontal pixel shift system)
Lens:	Leica DICOMAR lens with optical image stabilizer, motorized/manual mode switching, 10x zoom F 1.6 (f = 4.5 to 45 mm) (35 mm equivalent: 32.5to 325 mm)
Filter Diameter:	72 mm
Optical Colour Separation:	Prism system
Optical Filter:	ND Filters, 1/8ND, 1/64ND
Gain Selection:	0, +3, +6, +9, +12, +18 dB (50i mode only) 0, +3, +6, +9, +12, +18 dB (50i mode only)
Shooting Mode:	50i (625i) interlaced fields Progressive mode (25P)
Preset Shutter Speeds:	50i mode: 1/50 (OFF), 1/60, 1/120, 1/250,1/500,1/1000, 1/2000 sec. 25P mode: 1/25, 1/50 (OFF), 1/60, 1/120,1/250,1/500,1/1000 sec.
Synchro Scan Shutter Speeds:	50i mode: 1/50.3 to 1/250.0 sec. 25P mode: 1/25.1 to 1/250.0 sec.
Sensitivity:	F11.0 at 2000 lux
Minimum Illumination:	3 lux (F 1.6, 18 dB gain, 50% video output)

VTR

Recorded Audio Signals:	PCM digital recording 16 bits: 48 kHz/2 channels, 12 bits: 32 kHz/4 channels
Recording Tracks:	Digital video, audio signals: helical track Time code: helical track (sub-code area)
Tape Speed:	SP mode: 18.831 mm/sec., LP mode: 12.568 mm/sec.
Recording Time:	SP mode: 60 minutes, LP mode: 90 minutes (when AY-DVM63 is used)
Tape Used:	6.35 mm wide metal tape
FF/Rew Time:	Approx. 85 sec. (when AY-DVM60 is used)

VIDEO

Sampling Frequencies:	Y: 13.5 MHz, PB/PR: 6.75 MHz
Quantizing:	8 bits
Video Compression System:	DCT + variable length code
Error Correction:	Reed-Solomon product code

AUDIO

Sampling Frequency:	48 kHz/32 kHz
Quantizing:	16 bits/12 bits
Frequency Characteristics:	20 Hz to 20 kHz
Wow & Flutter:	Below measurable limits

CONNECTORS

VIDEO IN/OUT:	RCA x 1, analogue composite input/output, 1.0 Vp-p, 75Ω (input/output automatically switched)
S-VIDEO IN/OUT:	DIN 4pin x 1, Y/C separate signal input/output, Y: 1.0 Vp-p, C: 0.286 Vp-p, 75Ω(input/output automatically switched)
AUDIO IN/OUT:	RCA x 2 (CH1, CH2) Input: 316 mV, high impedance Output: 316 mV, 600Ω (input/output automatically switched)
DV:	4-pin, digital input/output, IEEE 1394 standard
MIC/LINE INPUT:	XLR (3 pins) x 2 (CH1, CH2) LINE/MIC switching, high impedance LINE : 0 dBu, MIC:–50dBu/–60 dBu (menu selection)
DC INPUT:	7.9 V
PHONES:	Stereo (3.5 mm diameter), 77 mV, 32Ω
CAM REMOTE:	Mini jack (2.5 mm diameter)

EQUIPMENTS

LCD Monitor:	3.5-inch LCD colour monitor, 200,000 pixels
Viewfinder:	0.44-inch LCD colour viewfinder, 180,000 pixels
Internal Microphone:	Stereo microphone
Internal Speaker:	20mm round shape, volume – or +

AC ADAPTER

Power Source:	110/120/220/240 V AC, 50/60 Hz
Power Consumption:	18 W
Weight:	0.16 kg
Dimensions (WxHxD):	70 x 44.5 x 116 mm

*The specifications given above were measured by playing back tapes recorded by the AG-DVX100 on standard VTRs.
Weight and dimensions shown are approximate.
Specifications are subject to change without notice.