Panasonic
ideas for life

2008
DIGITAL VIDEO CAMERA

Capture All the Beauty in Every Scene. The Panasonic

HD Camcorder
HIGH DEFINITION

For Scenes You'll Want to Enjoy Forever

FULL HIGH DEFINITION

AVCHD

SD9

World's smallest and lightest*1 FHD model
Record full high-definition images onto a convenient SD card

FULL HD 1920×1080p *
*Progressive 1080/25p

3CCD | O.I.S. | LEICA DICOMAR | HD CRYSTAL ENGINE | DOLBY DIGITAL 5.1 CREATOR | 10x Optical Zoom

FACE DETECT | PRE-REC. | 2.7" Wide Viewing Angle LCD | 0.6 sec Quick Start | Easy Copying and Playback with the BN1E

*32GB worth of SD/SDHC Memory Card is included, which may come as 1 x32GB SDHC Memory Card, or 2 x 16GB SDHC Memory Cards.

*1 For 3CCD camcorders complying with AVCHD standards, as of January 6, 2008.

HS9

Hybrid HD model with 60GB hard disk holds over 7.5 hours*2 of recording
Record full high-definition images onto an SD card or hard disk

HDD + SD Card Hybrid!

60GB HDD

*

FULL HD 1920×1080p *
*Progressive 1080/25p

3CCD | O.I.S. | LEICA DICOMAR | HD CRYSTAL ENGINE | DOLBY DIGITAL 5.1 CREATOR | 10x Optical Zoom

FACE DETECT | PRE-REC. | 2.7" Wide Viewing Angle LCD | 0.6 sec Quick Start | Easy Copying and Playback with the BN1E

•SD/SDHC Memory Card is not included.

*2 In Highest Quality (HA) mode

SD Camcorder
Card

*1 *2

Bring the Fun of Shooting Video Everywhere You Go

STANDARD DEFINITION

MPEG2

SW20

An SD card model that is tough, waterproof and shockproof

-Silver   -Red

SD Card

4GB

Included

| Waterproof up to 1.5 m*3 | Shockproof up to 1.2 m*4 | Dustproof*5 | 10x Optical Zoom |
| 0.6 sec Quick Start | Easy Copying to DVD Disc with the BN1 | 2.7" Wide LCD | MPEG 2 (DVD Quality) |

www.tuv.com *6
TÜVRheinland
ID 0000002227A

•4GB SD/SDHC Memory Card is included.

S7

A stylish, smart SD card model you'll want to take everywhere

-Silver   -Black

SD Card

4GB

Included

| 10x Optical Zoom | 0.6 sec Quick Start | One-Touch DVD Copying | 2.7" Wide LCD |
| MPEG 2 (DVD Quality) | | | |

•4GB SD/SDHC Memory Card is included.

*1 32GB Optional *2 Usable capacity will be less. *3 IEC60529 IPX8 *4 MIL-STD-810F METHOD 516.5 SHOCK *5 IEC60529 IP5X
*6 Waterproof and dustproof characteristics have been evaluated by TUV Rheinland. *7 IEC60529/EN60529 IPX4 Splash proof

Camcorder Line-up.

HDD Camcorder
Hard Disk Drive

Enjoy Longer Non-Stop Shooting Fun

MPEG2

H280

HDD + SD Card Hybrid!

30GB HDD *

• SD/SDHC Memory Card is not included.

30GB hard disk model lets you keep on shooting with up to 7 hours* of recording time, and captures beautiful 3CCD images

3CCD | O.I.S. | LEICA DICOMAR | CRYSTAL ENGINE

| 10x Optical Zoom | 3.1M Still Picture Recording | 2.7" Wide LCD | LED Video Light |

* In Highest Quality (XP) mode

H60

HDD + SD Card Hybrid!

60GB HDD *

• SD/SDHC Memory Card is not included.

60GB hard disk model lets you keep on shooting with up to 14 hours* of recording time, plus 50x zoom power with image stabilisation

O.I.S.

| 50x Optical Zoom | One-Touch DVD Copying | 2.7" Wide LCD | 2.1 sec Quick Start |

* In Highest Quality (XP) mode

H40

HDD + SD Card Hybrid!

40GB HDD *

• SD/SDHC Memory Card is not included.

40GB hard disk model for extended shooting fun with up to 9 hours* of recording time, plus 42x zoom power and image stabilisation

O.I.S.

| 42x Optical Zoom | One-Touch DVD Copying | 2.7" Wide LCD | 2.1 sec Quick Start |

* In Highest Quality (XP) mode

DVD Camcorder

Easy to Shoot, Easy to View, Easy to Enjoy

MPEG2

D50

8-cm DVD   SD Card *

Still Only

• SD/SDHC Memory Card and DVD disc are not included.

DVD model with powerful 42x zoom and image stabilisation

O.I.S.

| 42x Optical Zoom | 2.7" Wide LCD |

Mini DV Camcorder

Have More Fun with the Videos You've Already Made

Mini DV

GS330

miniDV Tape   SD Card *

Still Only

• SD/SDHC Memory Card and miniDV tape are not included.

DV tape model that captures beautiful 3CCD images

3CCD | O.I.S. | LEICA DICOMAR | CRYSTAL ENGINE

| 10x Optical Zoom | 3.1M Still Picture Recording | 2.7" Wide LCD | 1.7 sec Quick Start |

FULL HD
1920×1080ₚ
*Progressive 1080/25p

* The remarkable clarity and detail of Full-HD progressive* images give you the beautiful memories you'll enjoy forever

High Definition – A Future of Beautiful Memories

High Definition vs. Standard Definition: What's the Difference?

HD images contain 5 times as much information as standard images. HDTV has 1,080 horizontal scan lines, SDTV has 576. That translates into much higher resolution and much finer detail. With HD images on an HDTV, pictures are so clear and sharp that you can see textures. The shift in the industry from SDTV to HDTV is well under way. For shooting once-in-a-lifetime scenes that you want to capture in full beauty and enjoy forever, an HD camcorder is the best choice.

Standard Definition

High Definition
Each strand of hair and individual eyelash is captured in clear, distinct detail.

AVCHD

• AVCHD is a new standard for recording HD signals onto memory cards, DVD discs, and hard disks. It uses the H.264 standard to achieve more than twice the compression of conventional MPEG2 and MPEG4 standards. • AVCHD motion images recorded onto an SD Memory Card or a DVD disc cannot be played from a device that does not support the AVCHD standard. • Do not insert a disc containing AVCHD-recorded images into a device that does not support the AVCHD standard. The disc cannot be played on such a device, and it may not be possible to remove the disc once inserted.

*In HG (high image quality) mode. 1920 x 1080 full-HD recording with a Panasonic home-use camcorder refers to recording with 1,920 pixels in the horizontal direction and 1,080 pixels in the vertical direction.

The most precious scenes in life – those you want to enjoy again and again – deserve the beauty only a Full-HD camcorder can provide. Whether it's a glorious sunset that lights up the sky, a bunch of balloons that fill the air with dancing colour, or a perfect moment reflected in a loved one's face, you want a camcorder that captures all the beauty in clear, vivid detail. With their Full-HD 1920 x 1080 progressive images, Panasonic Full HD camcorders give you the beauty of today's most advanced technology. Whether you choose an SD card model or hard disk drive model, you can count on beautiful memories that will remain fresh forever. *Progressive scanning refers to the 1080/25p (25 pictures per second) recording format.

HDC-HS9

HDC-SD9

Simply Breathtaking: Full-HD 1920 x 1080 Progressive* Images

Why Is the Image Quality So Much Better?

Panasonic Full-HD camcorders record horizontal pixels at Full-HD resolution of up to 1,920 pixels, which results in a total of around 2,070,000 pixels. Panasonic Full-HD camcorders use progressive scanning, which provides twice as much data per picture as conventional interlace scanning. This means you get images with exceptional resolution and detail. The 1080/25p format used by Panasonic Full-HD camcorders lets you capture scenes with a rich, film-like quality. Add it up and you can see why Panasonic Full-HD camcorders, with their Full-HD 1920 x 1080 progressive* recording, take visual expression a leap ahead. <See page 8 for details.>

Progressive Scanning
Reproduces all of the image data in a single picture. Patterns in fabric are crisp and clear, with no colour bleeding.

Interlace Scanning
Only half of the image data is reproduced in each picture. Fabric patterns run together, and flickering appears.

*Progressive scanning refers to the 1080/25p (25 pictures per second) recording format.

Pick up the world's smallest and lightest*
3CCD Full-HD camcorder –
and enjoy a world of beauty

*For 3CCD camcorders complying with AVCHD standards, as of 6 January, 2008.

SD9
SD Card
Full-HD Camcorder

*1*2

See page 11 for the SD9 Full-High Definition Video Camera Kit - perfect for the complete home cinema experience.

HDC-SD9

2.7" WIDE LCD   Included

*1

Optical Zoom	Maximum Highest Quality Recording Time	Battery Life (Continuous Recording Time using supplied battery)
10x	4 h*3	1 h 45 min*4

FULL HD *
1920×1080p
*Progressive 1080/25p
AVCHD

3CCD Superb colour reproduction for natural colour

O.I.S Precise hand-shake compensation for blur-free image

LEICA DICOMAR Capture even delicate, subtle nuances

HD CRYSTAL High-speed processing and noise reduction

FACE DETECTION Capture clear, beautiful faces

DOLBY DIGITAL 5.1 CREATOR Capture voices over a wide area

**PRE-REC.** Record even before you begin shooting

0.6 sec Quick Start No more missed shooting opportunities

World's Smallest and Lightest*

Use of the super-small SDHC/SD Memory Card helped us create the world's smallest, lightest 3CCD Full-HD camcorder. The SD9 fits comfortably in the hand and can be used for long periods without causing fatigue.

*For 3CCD camcorders complying with AVCHD standards, as of 6 January, 2008.

67 mm

65 mm   126 mm
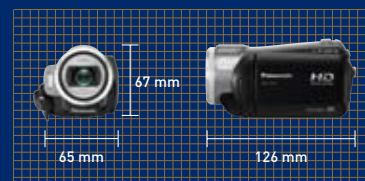
*1 32GB worth of SD/SDHC Memory Card is included, which may come as 1 x32GB SDHC Memory Card, or 2 x 16GB SDHC Memory Cards. *2 Usable capacity will be less. *3 This is an approximate figure when using the 32GB SDHC Memory Card and shooting in HA mode. *4 When using the supplied battery.

The 60GB hard disk holds over 7 hours* of Full High Definition memories. When it comes to beauty, the 3CCD camera system makes a world of difference

*In HA mode.

HS9

HDD/SD Card Hybrid
Full-HD Camcorder

60GB HDD

Panasonic
HDC-HS9
HD 1920×1080

HDC-HS9

2.7" WIDE LCD

HDD + SD Card Hybrid

*Optional

FULL HD
1920×1080p
*Progressive 1080/25p
AVCHD

Optical Zoom	Maximum Highest Quality Recording Time	Battery Life (Continuous Recording Time using supplied battery)
10x	7 h 40 min *3 + 4 h *4	1 h 35 min *5

3CCD Superb colour reproduction for natural colour

O.I.S. Precise hand-shake compensation for blur-free image

LEICA DICOMAR Capture even delicate, subtle nuances

HD CRYSTAL ENGINE High-speed processing and noise reduction

FACE DETECTION Capture clear, beautiful faces

DOLBY DIGITAL 5.1 CREATOR Capture voices over a wide area

PRE-REC. Record even before you begin shooting

0.6 sec Quick Start No more missed shooting opportunities

Motion-Image Recording Times (Approx.) (SD9/HS9)

Mode (rec. pixels) / Bit rate	HDD*1 60GB	SDHC Memory Card 32GB*2	16GB*2	8GB*2	4GB*2
HA (1920 x 1080) / 17 Mbps	7 h 40 min	4 h	2 h	1 h	30 min
HG (1920 x 1080) / 13 Mbps	10 h 10 min	5 h 20 min	2 h 40 min	1 h 20 min	40 min
HX (1920 x 1080) / 9 Mbps	15 h 20 min	8 h	4 h	2 h	1 h
HE (1440 x 1080) / 6 Mbps	23 h	12 h	6 h	3 h	1 h 30 min

*1 HDD (60GB) : HS9 only *2 Usable capacity will be less.
•These figures vary depending on the pictures being recorded.

*1 Optional *2 Usable capacity will be less. *3 This is an approximate figure when using the 60GB HDD and shooting in HA mode. *4 This is an approximate figure when using the 32GB SDHC Memory Card and shooting in HA mode. *5 When using the supplied battery.

Film-like beauty: Captures more data to deliver richer images
SD9 HS9

Digital Cinema Mode

FULL HD *
1920×1080p
*Progressive 1080/25p

### 1920 x 1080 progressive 1080/25p

Set the SD9 or HS9 to Digital Cinema mode and shoot in the 1920 x 1080 progressive 1080/25p format (25 pictures per second). Progressive scanning captures clear, vibrant images with intricate detail. You also get lifelike images in film-like quality.

Images are rich and vibrant, just like at the movies.

Digital Cinema Colour*

This mode automatically switches the camcorder to the Digital Cinema Colour range, which approaches the digital cinema colour range used in Hollywood digital movie production. Colours recorded in this mode look more vivid than those recorded using the conventional Panasonic standard. For example, the subtle reds and yellows of flowers, and the greens of leafy trees are remarkably true to life.

— Digital cinema colour range
— HDTV standard
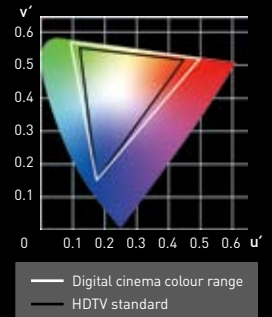
*When using a TV that is compatible with x.v.Color, images that are recorded in Digital Cinema Colour mode will have a wider colour range than conventional images. *The colour range varies depending on the TV.
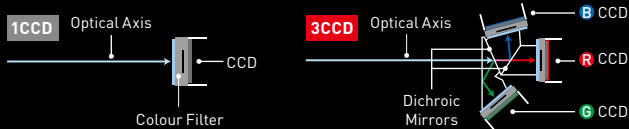
Superb colour reproduction – faithful, natural colours with delicate nuances
SD9 HS9

3CCD Camera System

3CCD PROFESSIONAL TECHNOLOGY SYSTEM

Most professional broadcasting cameras use the 3CCD camera system, with its superior colour reproduction. In a 1CCD system, all of the incoming light information is processed by the same CCD. The more advanced 3CCD system uses three distinct CCDs for processing, so there is absolutely no light loss. The 3CCD camera system draws out the full potential of full-HD image quality.

1CCD Optical Axis — CCD — Colour Filter

3CCD Optical Axis — Dichroic Mirrors — B CCD / R CCD / G CCD

1CCD The skin tone and vegetables don't look natural, they look artificial.

3CCD The skin tone and vegetables have natural colour and look real.

Precise hand-shake compensation: Prevents blurry images caused by unsteady hands as you shoot
SD9 HS9

# Advanced O.I.S. (Optical Image Stabiliser)

ADVANCED O.I.S.

Panasonic's Advanced O.I.S. suppresses the effects of hand shake as you shoot. The system uses gyrosensors to detect hand shake, then shifts a lens and adjusts the optical axis to compensate. This all happens a remarkable 4,000 times per second. And because the system is optical, no image quality is lost. Thanks to Advanced O.I.S., the images you capture look incredibly clear, sharp and beautiful on a big TV screen.

O.I.S. Lens
The lens moves up/down or left/right and bends the incoming light to correct handshake.
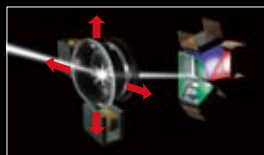
50" Display (Advanced O.I.S. OFF)

Blurry!

Clear!

Advanced O.I.S. ON

Both the smiling faces and the background are crisp and razor-sharp. Even on a big screen, the images are virtually blur-free.

A superb optical system that captures even delicate, subtle nuances
SD9 HS9

Leica Dicomar Lens

LEICA DICOMAR

The HD camcorders boast a Leica Dicomar lens. Developed specifically for Full-HD digital camcorders, this lens system is made using a multi-coating process that prevents light reflection and glare, which can make colours bleed and images appear washed out. It also prevents rings of light, or "ghosts." *Leica is a registered trademark of Leica Microsystem IR GmbH, and Dicomar is a registered trademark of Leica Camera AG.

Washed-out image due to strong light

Multi-coated lens: clear image with no colour bleeding

NEW

Panasonic's face detection function for recording moving pictures with a video camera
Faces are beautiful - Even in backlit or dark places

SD9 | HS9

Face Detection

It's difficult to shoot scenes with deep shadows or large differences between light and dark areas. The subject often looks too dark, and faces can be hard to see. Panasonic solves this problem with Face Detection, a function that automatically adjusts the exposure according to the ambient brightness, so faces are bright and easy to see. When the camcorder detects a face in the scene, a square frame appears around it in the LCD monitor and the exposure is adjusted to correct the brightness level. The skin tone is also smoothed. Face Detection can detect up to five faces at once. With Face Detection – offered for the first time for recording moving pictures with a video camera – Panasonic makes it easy to capture beautiful faces and clear backgrounds even in dim or backlit scenes.

The backlit faces are hard to make out.

Faces are bright and sharp.
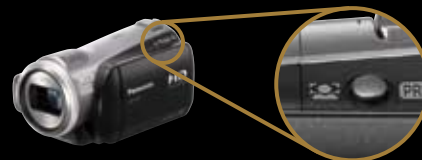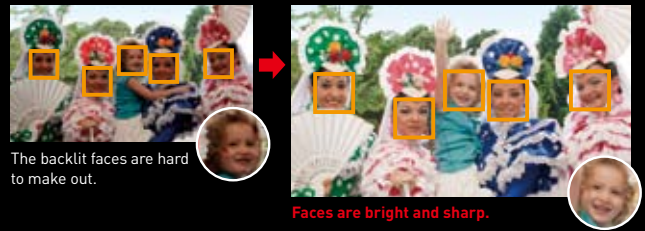
NEW

Magnificent shots every time – when shooting, when viewing

SD9 | HS9

Intelligent Shooting Guide / Selection Playback

INTELLIGENT SHOOTING GUIDE

When Shooting ⟩ **Intelligent Shooting Guide**

This convenient function helps you choose the best shooting settings. It displays a text message in the LCD monitor, telling you which settings are best for the current conditions.

	Fast Pan/Tilt: CAMERA PANNING IS TOO FAST		Hand Swing: USE O.I.S.
	Backlighting: USE INTELLIGENT CONTRAST		Cancel Backlighting: CANCEL INTELLIGENT CONTRAST
	Low Light: USE LOW LIGHT MODE		Cancel Low Light: CANCEL LOW LIGHT MODE

It is so dark, the subject looks dull and unattractive.

A message is displayed telling you to use Low Light mode.

When set to Low Light mode, the shot is beautiful.

In Playback ⟩ **Intelligent Shooting Selection Playback**

Poor or accidental shots (such as shots of the ground or overly dark scenes) are skipped, and all normal scenes are played.

OFF

ON

Cut | Cut

Examples of detectable shooting mistakes:
•Dark scenes •Fast panning/tilting •Hand swinging •Low light
•Ground shooting •Poorly focused shots

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Images are recorded
even before you begin shooting

SD9 | HS9

Pre-Rec Function

PRE-REC.

This clever function records three seconds of images even before you actually begin shooting. The images are held temporarily in the camcorder's internal memory, before recording onto the SDHC/SD Memory Card or hard disk begins. This ensures that you won't miss the start of a moment you want to record, such as when an event begins all of a sudden.

Without Pre-Rec. ⟩

The starting scene is missing.

3 seconds prior | **REC Button On!** | Time
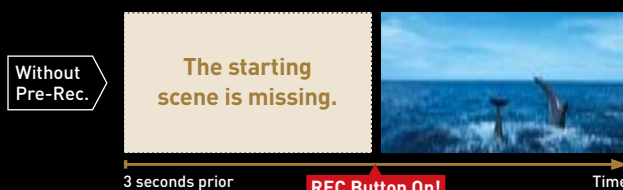
With Pre-Rec. ⟩

Starts backing up in the internal memory
*The camera must be aimed at the subject in advance.

NEW

Easy time setting –
Both on the road and at home

SD9 | HS9

World Timer

With the SD9 and HS9, setting the time is as easy as selecting a city from the displayed map. The World Timer function lets you set the time for two cities, home and destination. You don't have to figure out the time difference at your destination, and it's easy when you get home.

No more missed shooting opportunities!

SD9 | HS9

0.6 sec Quick Start

In Quick Start mode*, the SD9 and HS9 are ready to record 0.6 second after the LCD is opened. You're always ready to capture the moment, even when the unexpected occurs. *This mode can be selected from the menu.

OFF | ON

Open

Power turns on automatically when you open the LCD!

Capturing voices over a wide area for a more lifelike sound

SD9 | HS9

5.1-Channel Surround Sound System & Zoom Microphone

5 Microphones and 5.1-Channel Surround Sound

DOLBY DIGITAL 5.1 CREATOR

Panasonic Full-HD camcorders are equipped with five electret condenser microphones. The centre microphone helps capture the sound source and distance accurately, so you get a more 3-dimensional effect than you get with conventional systems, which capture all sounds from the front. You get a realistic sound space that's a perfect match with the true-to-life Full-HD images. *Manufactured under licence from Dolby Laboratories. "Dolby" and the double-D symbol are registered trademarks of Dolby Laboratories.

Zoom Mode

In Zoom mode the microphones are linked to the lens action. When you zoom in on a subject, the microphones focus on the sound in that same direction.

Focus Mode

In this mode the microphones focus on sounds coming from right in front of you, even when the lens is not zooming.

Wide Mode

1x

Zoom Mode

10x

Look Mum! Such beautiful dancing!

The sound zooms together with the image.

Focus Mode

Look Mum! Such beautiful dancing!

The sound zooms even when the image dosen't.

NEW | Capture those spur-of-the-moment scenes

SD9 | HS9

25 Frames/Second High-Speed Burst Shooting

Both the SD9 and HS9 feature high-speed burst shooting at a fast 25 frames per second. In three seconds, you can shoot up to 72 still shots. High-speed burst shooting is especially useful for shooting fast-moving objects or capturing spontaneous moments, such as in sports events and car races. Or use it to analyse your golf swing or tennis stroke.
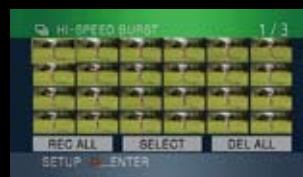
The detail is so fine, you can even check the club head angle as it strikes the ball.

Prevents wash-out to provide more natural contrast

SD9 | HS9

# Intelligent Contrast Control

INTELLIGENT CONTRAST CONTROL

By detecting the intensity of the ambient light and adjusting the exposure accordingly, Intelligent Contrast Control prevents blown highlights and blocked shadows. This helps render natural-looking, high detailed images with proper contrast. Even when you're shooting directly toward the light source – a very challenging situation in photography – Intelligent Contrast Control lets you capture clear images with enhanced depth.

Without Intelligent Contrast Control

Blocked shadow (no distinguishable features)

Visible

The man facing the sun is fine, but the woman under the umbrella is in a shadow - you can't see anything there.

**With Intelligent Contrast Control**

Visible

Visible
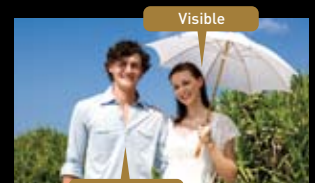
The contrast looks natural. The woman under the umbrella has been brightened without making the background appear washed out.

The LCD is easy to see from any angle

SD9 | HS9

Wide Viewing Angle

With 300,000 dots and exceptional detail, the new LCD is among the best in the industry. The viewing angle is 170° both vertically and horizontally, so everyone can gather around and easily see the images you just shot. The wide viewing angle is also a big help when you're taking high-angle or low-angle shots.

170°

170°
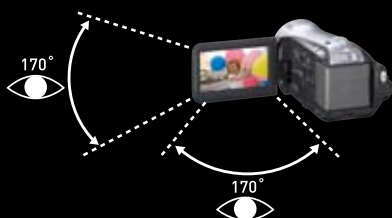
High-speed processing: An imaging engine that handles the vast amount of data in full-HD images

SD9 | HS9

HD Crystal Engine

HD CRYSTAL ENGINE

Panasonic took the advanced imaging circuitry used in our professional equipment and adapted it for home use. The result is the HD Crystal Engine – a high-speed processing unit that not only handles huge volumes of data, but also suppresses noise to deliver exceptionally smooth images.

HD Crystal Engine

FULL
HD
1920×1080P
*Progressive 1080/25p

FULL HIGH DEFINITION
SD CARD VIDEO CAMERA KIT
Perfect for the complete home cinema experience

FULL HIGH DEFINITION SD CARD VIDEO CAMERA KIT INCLUDES:

HDC-SD9
FULL HIGH DEFINITION
SD CARD VIDEO CAMERA
+
(PINNACLE)
STUDIO PLUS
EDITING SOFTWARE
+
VW-BN1E
DVD BURNER
+
1.5M MINI
HDMI
CABLE
+
32GB OF
SD MEMORY^

DVD BURNER VW-BN1E

PORTABLE & LIGHTWEIGHT
ARCHIVING & VIEWING
WATCH & PLAY

ARCHIVING

High speed USB
(USB 2.00)

VW-BN1E

Simply connect the SD9 to the BN1 using the included
USB cable and with the touch of a button archive your
Full High Defintion footage to a 12 cm DVD.

VIEWING

High speed USB
(USB 2.00)

VW-BN1E

MINI
HDMI
(INCLUDED)

HD-TV

To view the disc you just burned and enjoy your
Full High Definition footage, simply connect the
SD9 to a HDTV via the included Mini HDMI cable.

View Images in Beautiful Full-HD, and Archive Your Recordings Easily

Viewing   SD9/HS9

Connect to an HDTV via an HDMI mini Cable – For Breathtaking HD

Just connect your video camera to an HDTV and you're ready for high-definition viewing. If your TV is HDMI*[1] compatible, a single HDMI mini cable is all you need. When using a video component cable, you need a separate audio cable. *1 HDMI, the HDMI logo and High-Definition Multimedia Interface are trademarks or registered trademarks of HDMI Licensing LLC.

HDC-SD9
HDMI mini Terminal
HDMI mini cable (optional)
Video component cable and AV cable (included)
HDTV
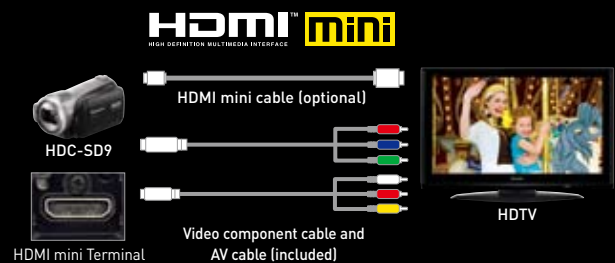
Viewing   SD9/HS9

View Recordings by Simply Inserting the SD Card into an SD Card Slot

Simply take the SDHC/SD Memory Card from your Full-HD camcorder and slip it into the card slot on your selected Panasonic VIERA PZ series Plasma Television, and you're ready to view Full-HD images recorded in the AVCHD format. *With other SD card slot-equipped VIERA models, you can view JPEG format still images.

VIERA (PZ) series
HDC-SD9

Connect your SD9 or HS9 to a VIERA TV or compatible Blu-ray Disc player via an HDMI mini cable, and you can control both units in synchronised operation with a single remote control. This kind of simple, easy operation makes it even more fun to view your recordings. *With VIERA Link, a control signal sent through the HDMI cable allows linked operation of a VIERA TV, compatible DIGA recorder, and the SD9 or HS9. Please note that this function applies only to equipment that is compatible with VIERA Link, and that VIERA Link does not let you control every function of all connected equipment.

Motion-Image Recording Times (Approx.) (SD9/HS9)

	HDD*[1]	SDHC Memory Card			
Mode (rec. pixels) / Bit rate	60GB	32GB*[2]	16GB*[2]	8GB*[2]	4GB*[2]
HA (1920 x 1080) / 17 Mbps	7 h 40 min	4 h	2 h	1 h	30 min
HG (1920 x 1080) / 13 Mbps	10 h 10 min	5 h 20 min	2 h 40 min	1 h 20 min	40 min
HX (1920 x 1080) / 9 Mbps	15 h 20 min	8 h	4 h	2 h	1 h
HE (1440 x 1080) / 6 Mbps	23 h	12 h	6 h	3 h	1 h 30 min

*1 HDD (60GB) : HS9 only *2 Usable capacity will be less.
•These figures vary depending on the pictures being recorded.

Number of Recordable Still Pictures (Approx.) (SD9/HS9)

Capacity Image Quality	HDD	SDHC Memory Card		
	60GB*	16GB*	8GB*	4GB*
1920 x 1080 pixels (16:9) 2.1 Mega (High)	55470	13470	6690	3290
(Normal)	87170	21170	10520	5160

• High Picture Quality   Normal Picture Quality
• These figures vary depending on the subject being photographed. *Usable capacity will be less.

*We recommend using SD Memory Cards and SDHC Memory cards conforming to class 2 or higher of the SD Speed Class Rating or the following SD Memory Cards made by Panasonic for motion-image recording.
*Please confirm the latest information about SD/SDHC Memory Cards that can be used for motion-image recording, on the following website. http://panasonic.co.jp/pavc/global/cs/e_cam (This website is in English only.)
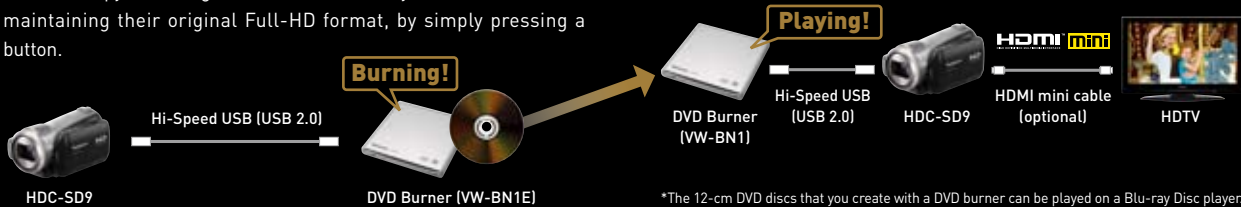
Archiving and Viewing SD9/HS9

Use a DVD Burner to Create and Play Back a DVD

Archiving The SD9's USB Host function lets you connect directly to a DVD burner via a USB cable. You can then copy recordings from the SD Memory Card to a DVD disc, maintaining their original Full-HD format, by simply pressing a button.

Viewing To view the disc you just burned, simply connect the SD9 or HS9 to an HDTV via an HDMI mini cable.

Burning!

Playing!

HDC-SD9 — Hi-Speed USB (USB 2.0) — DVD Burner (VW-BN1E)

DVD Burner (VW-BN1) — Hi-Speed USB (USB 2.0) — HDC-SD9 — HDMI mini cable (optional) — HDTV

*The 12-cm DVD discs that you create with a DVD burner can be played on a Blu-ray Disc player.

Editing and Archiving SD9/HS9

Archive Recordings by Selecting the Format with a PC and Burning Them onto a DVD

The software included with the HD camcorder lets you burn Full-HD recordings from an SD Memory Card onto a DVD disc, using your PC. You can make a copy either in the original high-definition AVCHD format, or in the standard-definition DVD-Video format. Choose the one that matches your playback equipment.

HDC-SD9 — Hi-Speed USB (USB 2.0)

AVCHD High Definition → Blu-ray Disc Player

DVD-VIDEO Standard Definition → DVD Player

Easy Editing Gives You More Ways to Enjoy Video HD Writer 2.5E SD9/HS9

The SD9 and HS9 also come with software that makes it easy to edit your recordings using a PC. When editing, mistaken photos such as shots of the ground or shots with hand-shake can be automatically cut* to speed up the process. After editing, you can copy the results to a DVD disc in either the AVCHD or the MPEG2 format. Choose the one that best suits your playback equipment or how you intend to use your recordings. This easy-to-use software gives you more creative ways to enjoy the recordings you make. * HD Writer2.5E is able to read the shooting information detected by the Intelligent Shooting Guide/Selection Playback function.

Quick & Easy!

The software guides you through the simple steps. You'll find editing easy to do, even if it's your first time.

System Requirements (SD9, HS9)

	HD Writer 2.5E	Card Reader Function (Mass Storage)
Interface	USB port (Hi-Speed USB (USB 2.0))	USB port
OS	Windows® 2000 SP4 Windows® XP SP2 Windows Vista® Home Basic/Home Premium/Ultimate/Business	Windows® 2000 SP4 Windows® XP SP2 Windows Vista®
CPU	Intel® Pentium® III 1.0 GHz or higher <When using playback function and MPEG2 conversion function> Intel® Core™2 Duo 2.16 GHz or higher, Intel® Pentium®D 3.2 GHz or higher recommended. AMD Athlon™ 64 X2 Dual-Core 5200+ or higher	Windows® 2000 / Windows® XP: Intel® Pentium® III 450 MH Hz or higher or Intel® Celeron® 400 MHz or higher Windows Vista® : 32-bit (x86) processor, 1 GHz or higher
Mac OS X 10.4	—	○

•Even if the system requirements mentioned in these operating instructions are fulfilled, some personal RP-CDHM15 (1.5 m) computers cannot be used. •This software is not compatible with Microsoft Windows 3.1, Windows 95, Windows 98, Windows 98 SE, Windows Me and Windows NT. • The supplied CD-ROM is available for Windows only. •Operation on an upgraded OS is not guaranteed. •When 2 or more USB devices are connected to a PC, or when devices are connected through USB hubs or by using extension cables, proper operation is not guaranteed. •Operation on an OS other than the one pre-installed is not guaranteed. •This software does not support the multi-boot environments. This software does not support the multi-monitor environments. •Operation is not guaranteed on Microsoft Windows Vista® Enterprise,Windows XP Media Center Edition, Tablet PC Edition and not compatible with 64-bit operating systems. •Available with administrator account in Windows 2000 and Windows XP •Available with administrator account or standard account in WindowsVista® (Installation and uninstallation of the software requires an administrator account.) •Microsoft and Windows and WindowsVista® are either registered trademarks or trademarks of Microsoft Corporation in the United States and/or other countries. •Intel®, CoreTM and Pentium® are registered trademarks or trademarks of Intel Corporation in the United States and the other countries. Other names of systems and products mentioned in these instructions are generally the registered trademarks or trademarks of the manufacturers who developed the system or product concerned.

Battery Life (Approx.) (SD9/HS9)

		Continuous Recording Time				Actual Recording Time			
		HA	HG	HX	HE	HA	HG	HX	HE
VW-VBG 130	SD9 (SD Card)	1 h 45 min	1 h 45 min	1 h 45 min	1 h 45 min	1 h 5 min	1 h 5 min	1 h 5 min	1 h 5 min
	HS9 (HDD)	1 h 35 min	1 h 35 min	1 h 35 min	1 h 35 min	1 h	1 h	1 h	1 h
	HS9 (SD Card)	1 h 45 min	1 h 45 min	1 h 45 min	1 h 45 min	1 h 5 min	1 h 5 min	1 h 5 min	1 h 5 min
VW-VBG 260	SD9 (SD Card)	3 h 20 min	3 h 20 min	3 h 20 min	3 h 20 min	2 h	2 h	2 h	2 h
	HS9 (HDD)	3 h	3 h	3 h	3 h	1 h 50 min	1 h 50 min	1 h 50 min	1 h 50 min
	HS9 (SD Card)	3 h 10 min	3 h 10 min	3 h 10 min	3 h 10 min	2 h	2 h	2 h	2 h
VW-VBG 6	SD9 (SD Card)	8 h 10 min	8 h 10 min	8 h 10 min	8 h 10 min	5 h 5 min	5 h 5 min	5 h 5 min	5 h 5 min
	HS9 (HDD)	7 h 30 min	7 h 30 min	7 h 30 min	7 h 35 min	4 h 35 min	4 h 35 min	4 h 35 min	4 h 40 min
	HS9 (SD Card)	8 h	8 h	8 h	8 h	4 h 55 min	4 h 55 min	4 h 55 min	4 h 55 min

•This is a guideline that includes time for operations such as starting and stopping the recording, turning the power on and off, and zooming. •The actual time is shorter.

SD Camcorder
*Included SD Card

Bring the Fun of Shooting Video Everywhere You Go

SDR-SW20

Water-proof up to 1.5 m | Shock-proof up to 1.2 m | Dust-proof

-Silver | 2.7" WIDE LCD | -Red | Included

Optical Zoom	Recording Time	Recording Time	Battery Life (Continuous Recording Time)
10 x	**32GB SD** **6** h **40** min*	**4GB SD** **50** min*	**1** h **10** min

• 4GB SDHC Memory Card is included. * In highest quality mode (XP Mode)

SDR-S7

Included

-Silver | 2.7" WIDE LCD | -Black

Optical Zoom	Recording Time	Recording Time	Battery Life (Continuous Recording Time)
10 x	**32GB SD** **6** h **40** min*	**4GB SD** **50** min*	**1** h **10** min

• 4GB SDHC Memory Card is included. * In highest quality mode (XP Mode)

The Smart, Compact SD Card Camcorder
S7

Built tough so you can shoot in places never before possible

SW20 Triple Proofing

SW20

*Waterproof and dustproof characteristics have been evaluated by TUV Rheinland.

Waterproof up to 1.5 m*

Take the SW20 underwater* as deep as 1.5 m and get some great video shots in the pool or ocean. Swim along with tropical fish, capture shots of a beautiful coral reef, or get action footage of a friend snorkeling. Waterproofing also means you can shoot in the rain or snow with no worries. * Do not use underwater continuously for more than 30 minutes. IEC60529 IPX8

Shockproof up to 1.2 m*

The SW20 is designed to resist damage even if dropped from a height of up to 1.2 m. We fortified the outer body casing, making it thicker for increased rigidity and strength. Additionally, there is an inner resin chassis to cushion and protect the main circuit board and lens. *MIL-STD-810F METHOD 516.5 SHOCK

Dustproof*

A dustproof design keeps the SW20 safe even if handled with dirty hands or used in a place with swirling dust. The SW20 is protected against sand too, so you can take it to the beach or sports field with no worries. And it's waterproof, so if the body gets dirty you can simply wash it off with water. *IEC60529 IP5X

Fun to carry around every day!

Stylish & Compact

SW20 S7

Conveniently slips in a pocket or bag. Compact enough to take everywhere you go. This is one stylish camcorder you'll never want to be without.

Dimensions (W x H x D)	**Weight**
S7: 41.0 x 59.0 x 102.0 mm	**S7:** 165 g
SW20: 33.8 x 63.4 x 115.4 mm	**SW20:** 224 g

No more missed shooting opportunities!

0.6 sec Quick Start

SW20 S7

The SD camcorder starts up to record quickly. In Quick Start mode*, the SW20 and S7 begin recording in just 0.6 second from the time the LCD is opened. This lets you catch those sudden shooting opportunities. *This mode can be selected from the menu.


LCD OPEN

POWER ON!

Capture even complex motion with precision

MPEG2 Engine

SW20 S7

Panasonic's MPEG2 engine is a wide-range, high-precision engine that produces smooth, beautiful moving pictures. Because it precisely records the differences in each frame, it can render fast, complex motions with exceptional precision. The MPEG2 engine also uses the Variable Bit Rate system that Panasonic adopted for the high-end DIGA DVD recorder. Giving LP (long play mode) recordings nearly twice the resolution captured with previous Panasonic MPEG2 recording video cameras, this lets the SD camcorder record clear, smoothly flowing pictures.
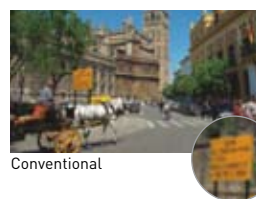

Conventional

Model with MPEG2 engine

15

Images are recorded even before you begin shooting
Pre-Rec Function

S7

PRE- REC. This clever function records three seconds of images even before you actually begin shooting. The images are held temporarily in the camcorder's internal memory, before recording onto the SDHC/SD Memory Card begins. This ensures that you won't miss the start of a moment you want to record, such as when an event begins all of a sudden.

Without Pre-Rec.

The starting scene is missing.

3 seconds prior **REC Button On!** Time

With Pre-Rec.
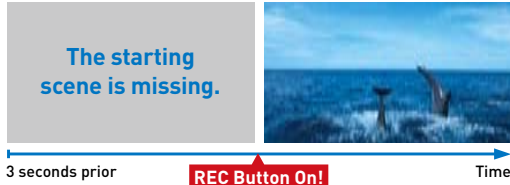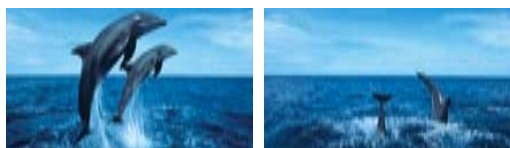
Starts backing up in the internal memory
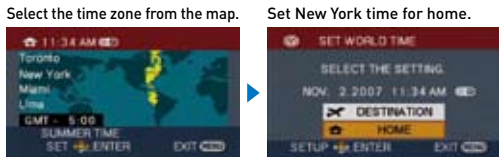*The camera must be aimed at the subject in advance.

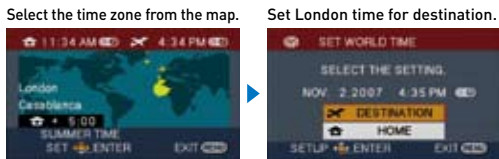## Easy time setting – Both on the road and at home
World Timer

SW20 **S7**

With the SW20 and S7, setting the time is as easy as selecting a city from the displayed map. The World Timer function lets you set the time for two cities, home and destination. You don't have to figure out the time difference at your destination, and it's easy when you get home.

Select the time zone from the map. Set New York time for home.

Home

Select the time zone from the map. Set London time for destination.

Destination

The times for the two registered locations can be switched with the press of a button.

Easy shooting at high or low angles
Sub Rec Button

SW20 **S7**

You can freely adjust the angle of the LCD monitor for comfortable viewing no matter how you're holding the camera. The Sub Rec button on the side makes it easy to shoot when you're holding the camera low. The buttons are laid out simply and logically for easy one-hand operation.
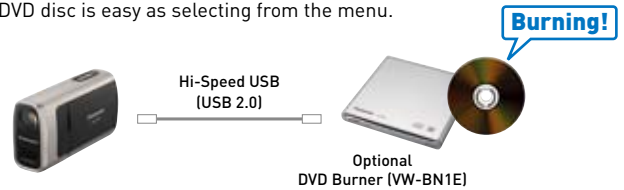

Sub Rec button

High Angle Low Angle

Easy archiving with a DVD burner
Easy Copying to a DVD Disc

SW20 **S7**

The SD camcorder has a USB port (host function) that lets you connect directly to a DVD burner. Copying a recording from an SD card to a DVD disc is easy as selecting from the menu.

Burning!

Hi-Speed USB (USB 2.0)

Optional DVD Burner (VW-BN1E)

For TVs or DVD players with an SD card slot
View Recordings Easily – No Cable to Connect

SW20 **S7**

Just take the SDHC/SD card from your SD-Card camcorder and slip it into selected Panasonic VIERA TVs* or DIGA DVD players*, and you're ready to view the beautiful video you shot. There are no cables to worry about.
*MPEG2-compatible model with SDHC/SD Memory Card slot. *On other SD slot-equipped VIERA models you can view still images.

VIERA

DVD player

TV
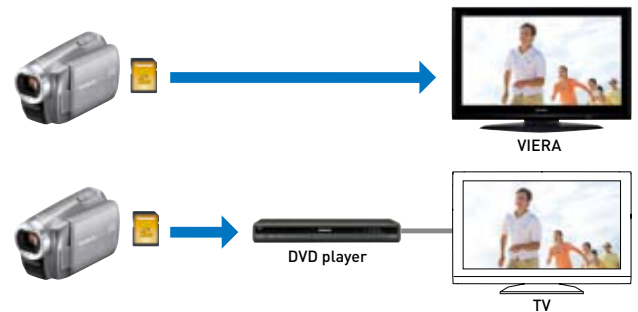
Anyone can enjoy easy, versatile video editing!

MotionSD STUDIO 1.3E

SW20 S7

1 Transfer Data
Transfer the motion images to your PC

SD Camcorder

You can transfer the motion-image data from the SDHC/SD Memory Card right to your PC.
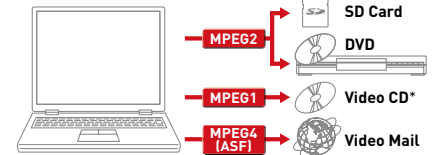
2 Edit
Quick and easy

It's easy to put scenes in a different order and delete the ones you don't want. This software also includes a wide variety of video effects.

3 Save the Results
Choose how you want to save it

MPEG2 → SD Card
MPEG2 → DVD
MPEG1 → Video CD*
MPEG4 (ASF) → Video Mail

You can burn your video production onto a DVD disc. Or you can convert it to MPEG4 and attach it to e-mail or post it on a Website.
*Requires CD writing software.

System Requirements (SW20/S7)

	MotionSD STUDIO 1.3E	Card Reader Function (Mass Storage)
Interface	USB port (Hi-Speed USB (USB 2.0) recommended)	USB port
Windows® 2000	○ (SP4)	○ (SP4)
Windows® XP	○ (SP2)	○ (SP1/SP2)
Windows Vista®	○ (Home Premium / Home Basic)	○
CPU	Intel® Pentium® III 800MHz or higher	Intel® Pentium® III 450MHz or higher
	(including compatible CPUs. Intel® Pentium® 4 1.6GHz or higher recommended)	(including compatible CPUs. Intel® Pentium® 4 1.6GHz or higher recommended)
Mac OS X 10.4	-	○

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Motion-Image Recording Times (Approx.) (SW20/S7/S9)

Image Quality	Capacity SDHC Memory Card				SD Memory Card	
	32GB*	16GB*	8GB*	4GB*	2GB*	1GB*
XP (Super Fine)	6 h 40 min	3 h 20 min	1 h 40 min	50 min	25 min	12 min
SP (Fine)	13 h 20 min	6 h 40 min	3 h 20 min	1 h 40 min	50 min	25 min
LP (Normal)	26 h 40 min	13 h 20 min	6 h 40 min	3 h 20 min	1 h 40 min	50 min

*Usable capacity will be less. •These figures vary depending on the pictures being recorded.

Number of Recordable Still Pictures (Approx.) (SW20/S7/S9)

Image Quality	Capacity	SDHC Memory Card			SD Memory Card	
		16GB*	8GB*	4GB*	2GB*	1GB*
640 x 480 pixels	(High)	99999*1	55260	27150	13820	6790
	(Normal)	99999*1	99999*1	54290	27640	13580

• ▦ High Picture Quality ▦ Normal Picture Quality
• These figures vary depending on the subject being photographed. *Usable capacity will be less.
*1 These models cannot record more than 99,999 still pictures onto an SD/SDHC Memory Card.

Battery Life (Approx.) (SW20/S7/S9)

	Continuous Recording Time	Actual Recording Time
VW-VBJ10	1 h 10 min	40 min

*This is a guideline that includes time for operations such as starting and stopping the recording, turning the power on and off, and zooming. •The actual time is shorter.

*We recommend using SD Memory Cards and SDHC Memory cards conforming to class 2 or higher of the SD Speed Class Rating or the following SD Memory Cards made by Panasonic for motion-image recording.*Please confirm the latest information about SD/SDHC Memory Cards that can be used for motion-image recording, on the following website.
http://panasonic.co.jp/pavc/global/cs/e_cam (This website is in English only.)

Take it on the road. Hard disk offers extended recording time
50x Zoom and Advanced O.I.S.

(Optical Image Stabiliser)

ADVANCED O.I.S.

Advanced O.I.S. **ON**

50x

1x

Advanced O.I.S. **OFF**

SDR-H60

HDD Camcorder
Hard Disk Drive

Enjoy Longer Continuous Shooting

SDR-H280
30GB HDD

*Optional

2.7" WIDE LCD

3CCD · CRYSTAL ENGINE · LEICA DICOMAR

Optical Zoom	Maximum Highest Quality Recording Time	Battery Life (Continuous Recording Time)
10x	30GB HDD **7** h *1	**2** h *2

*1 In highest quality (XP) mode *2 When using the supplied battery.

SDR-H60
60GB HDD

*Optional

50x Optical Zoom

2.7" WIDE LCD

Optical Zoom	Maximum Highest Quality Recording Time	Battery Life (Continuous Recording Time)
50x	60GB HDD **14** h *1	**1** h **35** min *2

*1 In highest quality (XP) mode *2 When using the supplied battery.

SDR-H40
40GB HDD

*Optional

42x Optical Zoom

2.7" WIDE LCD

Optical Zoom	Maximum Highest Quality Recording Time	Battery Life (Continuous Recording Time)
42x	40GB HDD **9** h *1	**1** h **35** min *2

*1 In highest quality (XP) mode *2 When using the supplied battery.

60GB*1 hard disk holds up to 54 hours

Holding as much data as 43 DVD discs, the internal hard disk lets you record continuously for up to 54 hours*2 without changing a disc, tape or other recording media.
*1 A 60GB hard disk utilizes a portion of the storage space for formatting and other purposes. Usable capacity will be less. 1 GB means 1,000,000,000 bytes."   *2 In LP mode

Anti-Shock Shield: Helps protect recorded video data from damage due to jolts and impact

Anti-Shock Shield

1 The Drop Detect function senses if the camera is falling and moves the head away from the hard disk.

2 The Floating Structure protects the hard disk should the camera fall or be dropped.

3 The Buffer Memory automatically backs up data, while the camera is falling.

If you have a powerful zoom, you need optical image stabiliser
# Advanced O.I.S. and up to 50x Optical Zoom

H60 | H40

The 50x zoom lens on the H60 has the power you need to take dramatic close ups or get remarkable shots of even distant subjects. But with long-distance zoom shots, even a tiny bit of hand shake has a huge effect on picture quality. That's where image stabilisation comes in. Panasonic's Advanced O.I.S. (Optical Image Stabiliser) shifts a corrective lens as you shoot to eliminate the effects of hand shake, so you get clear, sharp, blur-free shots even at high zoom levels. It's an essential feature for getting the most out of this incredible zoom lens. *The H40 has a 42x optical zoom lens
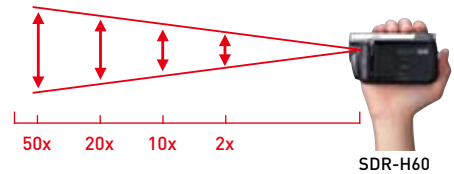
50x   20x   10x   2x

SDR-H60

Advanced O.I.S. (Optical Image Stabiliser)

Panasonic's Advanced O.I.S. is a new image stabilising function that achieves around eight times higher precision than our previous system. The system uses gyro-sensors to detect hand-shake, then shifts a lens and adjusts its optical axis to compensate. Advanced O.I.S. enables finer, more effective hand-shake compensation.
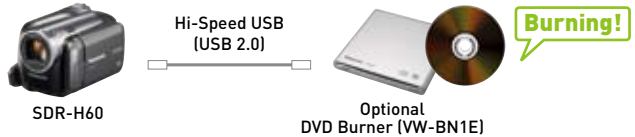
Advanced O.I.S. OFF

Advanced O.I.S. ON
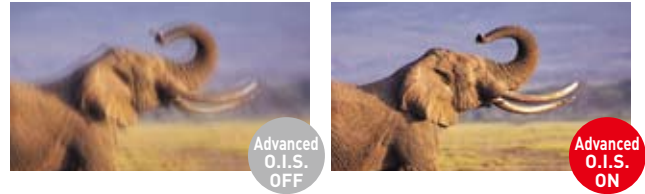
Easy archiving with a DVD burner
One-Touch DVD Copying

H60 | H40

The HDD camcorder's USB Host function lets you connect directly to a DVD burner via a USB cable. You can then copy recordings from the hard disk to a DVD disc by simply pressing a button.

Hi-Speed USB (USB 2.0)

SDR-H60

Optional
DVD Burner (VW-BN1E)

Burning!

Anyone can enjoy easy, versatile editing!
VideoCam Suite 1.0

H280 | H60 | H40

1 Transfer Data
Transfer the motion images to your PC.

HDD Hard Disk Drive Camcorder

Hi-Speed USB (USB 2.0)

You can transfer the motion-image data from the SDHC/SD Memory Card or hard disk right to your PC.

2 Edit
Quick and easy

It's easy to put scenes in a different order and delete the ones you don't want.

3 Save the Results
Save it onto a DVD disc

MPEG2 → SD Card / DVD

When you're finished with your video production, you can resave the edited version onto an SD Memory Card and a DVD disc.

System Requirements (H60/H40)

	Built-in SD Drive*1	Built-in HDD Drive*1	VideoCam Suite 1.0
Interface	USB port (Hi-Speed USB (USB 2.0) recommended)	USB port (Hi-Speed USB (USB 2.0) recommended)	USB port (Hi-Speed USB (USB 2.0) recommended)
Windows® 2000 Professional	○*2	○*2	○ (SP4)
Windows® XP Home Edition/ Professional	○*2	○*2	○ (SP2)
Windows Vista® Home Premium/ Home Basic	○*2	○*2	○
CPU	Windows® 2000 / XP: Intel® Pentium® II 300MHz or higher Windows Vista® : Intel® Pentium® III 1.0GHz or higher		Intel® Pentium® III 800MHz or higher
Mac OS® X v10.4	○*2	○*2	-
CPU	PowerPC G5 (1.8GHz or higher), Intel® Core Duo, Intel® Core Solo		-

*1 The drive operates as Read Only. *2 USB equipment operates with the driver installed as standard in the OS •The supplied software can not be used on Macintosh. •DirectX will be installed automatically during installation of the supplied software. •Microsoft®, Windows® and Windows Vista® are either registered trademarks or trademarks of Microsoft Corporation in the United states and/or other countries. •Apple ® and Mac OS® are either registered trademarks or trademarks of Apple Inc. in the United States and/or other countries. •Other names of systems and products mentioned in this brochure are usually the registered trademarks or trademarks of the manufacturers who developed the system or product concerned. •Operation is not guaranteed on Microsoft® Windows® XP Media Center Edition, Tablet PC Edition.

Motion-Image Recording Times (Approx.) (H280/H60/H40)

Capacity	HDD			SDHC Memory Card			SD Memory Card	
Image Quality	60GB*	40GB*	30GB*	16GB*	8GB*	4GB*	2GB*	1GB*
XP (Super Fine)	14 h	9 h	7 h	3 h 20 min	1 h 40 min	50 min	25 min	12 min
SP (Fine)	27 h	18 h	13 h 30 min	6 h 40 min	3 h 20 min	1 h 40 min	50 min	25 min
LP (Normal)	54 h	36 h	27 h	13 h 20 min	6 h 40 min	3 h 20 min	1 h 40 min	50 min

*Usable capacity will be less. •These figures vary depending on the pictures being recorded.

Battery Life (Approx.) (H280)

Capacity	Continuous Recording Time		Actual Recording Time	
Battery	HDD	SD	HDD	SD
CGA-DU12	2 h 05 min	2 h 20 min	55 min	1 h
CGA-DU14	2 h 30 min	2 h 45 min	1 h 05 min	1 h 15 min
CGA-DU21	3 h 45 min	4 h 10 min	1 h 40 min	1 h 50 min
VW-VBG130	2 h	2 h 15 min	55 min	1 h
VW-VBG260	4 h 05 min	4 h 35 min	1 h 50 min	2 h
VW-VBG6	9 h 25 min	10 h 35 min	4 h 15 min	4 h 45 min

Battery Life (Approx.) (H60/H40)

Capacity	Continuous Recording Time		Actual Recording Time	
Battery	HDD	SD	HDD	SD
VW-VBG070A	1 h 35 min	1 h 45 min	50 min	55 min
VW-VBG130	2 h 55 min	3 h 10 min	1 h 30 min	1 h 45 min
VW-VBG260	5 h 50 min	6 h 20 min	3 h 05 min	3 h 35 min
VW-VBG6	13 h 25 min	14 h 30 min	7 h 10 min	8 h 15 min

•This is a guideline that includes time for operations such as starting and stopping the recording, turning the power on and off, and zooming. •The actual time is shorter.

Number of Recordable Still Pictures (Approx.) (H280)

Capacity	SDHC Memory Card	SD Memory Card		
ImageQuality	4GB*	2GB*	1GB*	512MB*
2048 x 1512 pixels (3.1 MB) ▦	2520	1280	630	310
▦	3950	2010	990	490
1920 x 1080 pixels [16:9] (2 MB) ▦	3290	1670	820	410
▦	5170	2630	1290	640
1280 x 960 pixels (1 MB) ▦	6200	3160	1550	770
▦	9870	5030	2470	1230
640 x 480 pixels (0.3 MB) ▦	27150	13820	6790	3390
▦	54290	27640	13580	6780

Number of Recordable Still Pictures (Approx.) (H60/H40)

Capacity	SDHC Memory Card		SD Memory Card	
ImageQuality	8GB*	4GB*	2GB*	1GB*
640 x 480 pixels (0.3 MB) ▦	55260	27150	13820	6790
▦	99999	54290	27640	13580
640 x 360 pixels [16:9] (0.2 MB) ▦	55260	27150	13820	6790
▦	99999	54290	27640	13580

• ▦ High Picture Quality ▦ Normal Picture Quality •These figures vary depending on the subject being photographed. *Usable capacity will be less.

•We recommend using SD Memory Cards and SDHC Memory cards conforming to class2 or higher of the SD Speed Class Rating or the following SD Memory Cards made by Panasonic for motion-image recording. Please confirm the latest information about SDHC/SD Memory Cards that can be used for motion-image recording, on the following website. **http://panasonic.co.jp/pavc/global/cs/e_cam** (This website is in English only.)

Easy viewing with a DVD player
42x Zoom and Advanced O.I.S.

(Optical Image Stabiliser)

ADVANCED O.I.S.

Advanced O.I.S. **ON**

42x

Advanced O.I.S. **OFF**

VDR-D50

1x

DVD Camcorder

Easy to Shoot, Easy to View, Easy to Enjoy

VDR-D50

42x Optical Zoom

ADVANCED O.I.S.

2.7" WIDE LCD

Optical Zoom	Maximum Highest Quality Recording Time	Battery Life (Continuous Recording Time)
42x	**DVD RAM** 36 min*1	**1** h **5** min*2

*1 In highest quality mode (XP) *2 When using the supplied battery.

Multi-Format Recording
(DVD-RAM, DVD-RW, DVD-R DL, DVD-R)

You can choose whichever type of disc works best with your DVD player or recorder.

DVD -RAM   DVD -RW   DVD -R DL   DVD -R
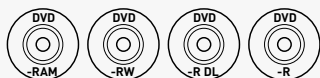
Easy Shooting, Easy Viewing

1 **Quick, easy operation.**

The DVD camcorder automatically finds a blank section on the disc for recording. The index screen makes it easy to search for a particular scene. You can view, delete and edit quickly and easily.
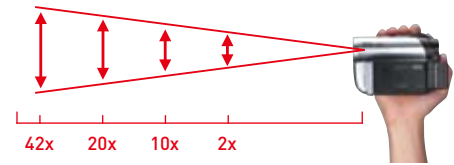
2 **Easy, direct networking.**

When you finish shooting, just take the disc from your DVD camcorder and slip it right into your DVD player or recorder. There's no need to connect any cables and you can start viewing right away.

If you have a powerful zoom, you need optical image stabiliser
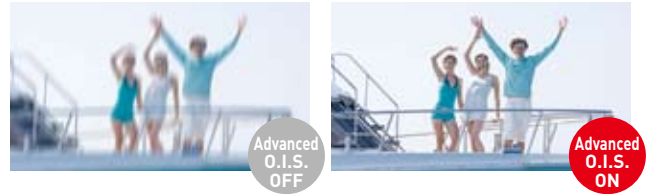# Advanced O.I.S. and 42x Optical Zoom

D50

This 42x zoom lens has the power you need to take dramatic closeups or get remarkable shots of even distant subjects. But with long-distance zoom shots, even a tiny bit of hand shake has a huge effect on picture quality. That's where image stabilisation comes in. Panasonic's Advanced O.I.S. (Optical Image Stabiliser) shifts a corrective lens as you shoot to eliminate the effects of hand shake, so you get clear, sharp, blur-free shots even at high zoom levels.

42x   20x   10x   2x

Advanced O.I.S. (Optical Image Stabiliser)

Panasonic's Advanced O.I.S. is a new image stabilising function that achieves around eight times higher precision than our previous system. The system uses gyro-sensors to detect hand-shake, then shifts a lens and adjusts its optical axis to compensate. Advanced O.I.S. enables finer, more effective hand-shake compensation.

Advanced O.I.S. OFF

Advanced O.I.S. ON

Using your familiar DVD player makes it so easy
View Your Recordings on a DVD Player

D50

Simply slip the DVD disc into the DVD player. There are no cables to connect. It's that easy. *The disc must be finalised prior to playback.

VDR-D50   →   DVD player   TV

Anyone can enjoy easy, versatile editing!
VideoCam Suite 1.0

D50

1 Transfer Data
Transfer the motion images to your PC.

DVD Camcorder   Hi-Speed USB (USB 2.0)

Just slip the DVD disc right into your PC. Or use the USB cable (included) to connect your DVD camcorder to your PC and transfer the motion-image data that way.

2 Edit
Quick and easy

It's easy to put scenes in a different order and delete the ones you don't want.

3 Save the Results
Resave it onto a DVD disc

MPEG2   SD Card   DVD

When you're finished with your video production, you can resave the edited version onto an SD Memory Card and a DVD disc.

System Requirements (D50)

	Built-in SD Drive*1	VideoCam Suite 1.0
Interface	USB port (Hi-Speed USB (USB 2.0) recommended)	USB port (Hi-Speed USB (USB 2.0) recommended)
Windows® 2000 Professional	○*2	○ (SP4)
Windows® XP Home Edition/ Professional	○*2	○ (SP2)
Windows Vista® Home Premium/ Home Basic	○*2	○
CPU	Windows® 2000 / XP: Intel® Pentium® II 300MHz or higher / Windows Vista® : Intel® Pentium® III 1.0GHz or higher	Intel® Pentium® III 800MHz or higher
Mac OS® X v10.4	○*2	-
CPU	PowerPC G5 (1.8GHz or higher), Intel® Core Duo, Intel® Core Solo	-

*1 The drive operates as Read Only. *2 USB equipment operates with the driver installed as standard in the OS •The supplied software can not be used on Macintosh. •DirectX will be installed automatically during installation of the supplied software. •Microsoft®, Windows® and Windows Vista® are either registered trademarks or trademarks of Microsoft Corporation in the United states and/or other countries. • Apple® and Mac OS® are either registered trademarks or trademarks of Apple Inc. in the United States and/or other countries. •Other names of systems and products mentioned in this brochure are usually the registered trademarks or trademarks of the manufacturers who developed the system or product concerned. •Operation is not guaranteed on Microsoft® Windows® XP Media Center Edition, Tablet PC Edition.

Motion-Image Recording Times (Approx.) (D50)

Mode	XP (Super Fine)	SP (Fine)	LP (Nomal)
DVD-RAM (dual-sided)	36 min	74 min	150 min
DVD-RW (dual-sided)	36 min	74 min	150 min
DVD-R DL (dual-layer)	35 min	69 min	138 min
DVD-R (single-sided)	18 min	37 min	75 min

•These figures vary depending on the pictures being recorded.

Number of Recordable Still Pictures (Approx.) (D50)

Capacity / Image Quality		SDHC Memory Card 8GB*	SDHC Memory Card 4GB*	SD Memory Card 2GB*	SD Memory Card 1GB*
640 x 480 pixels (0.3 MB)	▦	55260	27150	13830	6800
	▤	99999	54310	27660	13600
640 x 360 pixels (16:9) (0.2 MB)	▦	55260	27150	13830	6800
	▤	99999	54310	27660	13600

• ▦ High Picture Quality ▤ Normal Picture Quality •These figures vary depending on the subject being photographed. * Usable capacity will be less.

Battery Life (When Using for DVD-RAM disc) (Approx.) (D50)

	Continuous Recording Time						Actual Recording Time					
	XP mode		SP mode		LP mode		XP mode		SP mode		LP mode	
	EVF	LCD	EVF	LCD	EVF	LCD	EVF	LCD	EVF	LCD	EVF	LCD
VW-VBG07A	1 h 05 min	1 h	1 h 15 min	1 h 10 min	1 h 20 min	1 h 15 min	40 min	35 min	40 min	40 min	40 min	40 min
VW-VBG130	1 h 55 min	1 h 45 min	2 h 10 min	2 h	2 h 20 min	2 h 05 min	1 h 10 min	1 h 05 min	1 h 15 min	1 h 05 min	1 h 15 min	1 h 05 min
VW-VBG260	4 h 05 min	3 h 45 min	4 h 35 min	4 h 10 min	4 h 55 min	4 h 30 min	2 h 30 min	2 h 15 min	2 h 35 min	2 h 25 min	2 h 40 min	2 h 25 min
VW-VBG6	9 h 25 min	8 h 40 min	10 h 40 min	9 h 40 min	11 h 25 min	10 h 20 min	5 h 50 min	5 h 20 min	6 h 10 min	5 h 35 min	6 h 15 min	5 h 40 min

•This is a guideline that includes time for operations such as starting and stopping the recording, turning the power on and off, and zooming. •The actual time is shorter.

• We recommend using the DVD discs made by Panasonic for motion-image recording. We recommend using SD Memory Cards and SDHC Memory cards conforming to class2 or higher of the SD Speed Class Rating or the following SD Memory Cards made by Panasonic for motion picture recording. Please confirm the latest information about DVD discs and SDHC/SD Memory Cards that can be used for motion-image recording, on the following website. **http://panasonic.co.jp/pavc/global/cs/e_cam** (This website is in English only.)

Superb miniDV image quality

3CCD and Mega O.I.S.
(Optical Image Stabiliser)

1CCD

3CCD

Without O.I.S.

With O.I.S.

Beautiful, blur-free images with vibrant colour from the 3CCD system!

To fully enjoy viewing your own moving video images on a large-screen TV, you need a camera with optical image stabilisation. Panasonic's O.I.S. system eliminates blurring caused by shaky hands, so both the subject and background are clear and crisp. A 3CCD camera can capture beautiful images with vivid colours. Make sure the images are sharp and blur-free too, with O.I.S.

Mini
DV *Camcorder*

Have More Fun with the Videos You've Already Made

NV-GS330

2.7" WIDE LCD

Optical Zoom	Battery Life (Continuous Recording Time)
10x	**1** h **15** min*

* When using the supplied battery.

Triple beauty — remarkable colour, detail and gradation
GS330
3CCD Camera System

Most professional broadcasting cameras use the 3CCD camera system, with its superb colour reproduction. The advanced 3CCD camera system uses three distinct CCDs for processing, so there is absolutely no light loss. You can see the results in beautifully rendered images with vivid colour, fine detail, and rich gradation.

Exceptional Leica-certified image quality
GS330
Leica Dicomar Lens

The GS330 boasts a Leica Dicomar lens. Developed specifically for digital video cameras and featuring original optical technology from Leica, this advanced lens captures clear, crisp, finely nuanced images with outstanding detail and contrast. Also, the lens was manufactured using a multi-coating process that reduces flare and ghosts. *Leica is a registered trademark of Leica Microsystem IR GmbH, and Dicomar is a registered trademark of Leica Camera AG.

Helps prevent wasted shots
GS330
AGS (Anti-Ground Shooting mode)

The O.I.S. linear motor system can detect when the camera is in an unusual shooting position – when you've inadvertently left it on in recording mode. In these cases, the camera automatically stops recording, saving both battery power and tape space.
*This mode can be selected from the menu.

Records normally

Automatically stops recording
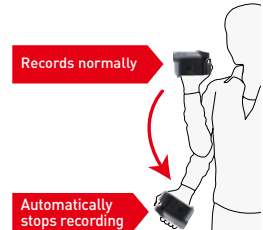
Anyone can enjoy easy, versatile editing!
GS330
SweetMovieLife 1.1E & MotionDV STUDIO 6.0E LE for DV

1 **Transfer Data**
Transfer the motion images to your PC

MiniDV Camcorder → Hi-Speed USB (USB 2.0)

A USB cable lets you connect your camera to your PC, making it easy to transfer the motion images.

2 **Edit**
Quick and easy

[For Beginners]
SweetMovieLife 1.1E
Step-by-step instructions are shown right on the monitor.

[For Advanced Users]
MotionDV STUDIO 6.0E LE for DV
This includes a wide variety of titles, video effects and transition.

3 **Save the Results**
Choose how you want to save it

MPEG1   AVI (DV) AVI
MPEG4 (ASF)   MPEG2* DVD

You can save the results in AVI format, convert it to the MPEG1 format or convert it to MPEG4 format. You can also burn your video productions onto a DVD disc*. *Requires DVD writing software.

System Requirements (GS330)

	SweetMovieLife 1.1E & MotionDV STUDIO 6.0E LE for DV	Web Camera Function	Card Reader Function (Mass Storage)	iMovie® 4/iMovie® HD/iMovie® '08
Interface	USB 2.0 (High Speed recommended)/DV (IEEE1394)	USB 1.1 or later	USB 1.1 or later	DV (FireWire®)
Windows® 2000	○(SP4)*1	○(SP4)	○	
Windows® XP	○(SP2)*1	○(SP1/SP2)	○	
Windows Vista®	○(Home Premium/Home Basic)	○		
CPU	Intel® Pentium® III 800MHz or higher	Intel® Pentium® III 450MHz or higher		
	(including compatible CPUs. Intel® Pentium® 4 1.6GHz or higher recommended)			
Mac OS X v 10.4	—	—	○	○*2
CPU			PowerPC G5 (1.8GHz or higher), Intel® Core Duo, Intel® Core Solo	PowerPC G5 (1.8GHz or higher), Intel® Core Duo, Intel® Core Solo

<About MotionDV STUDIO LE / SweetMovieLife> •This software is not compatible with a multi-boot environment. •This software is not compatible with a multi-CPU environment. •Operation is not guaranteed on Microsoft® Windows® XP Media Center Edition, Tablet PC Edition and not compatible with 64-bit operation systems. •In USB connection: Capturing images to a PC is available. •In DV connection: Capturing images to a PC & Recording to a digital video camera are available. *1 With NV-GS330EG/EF/E/EP/EB, Recording images from a PC to a digital video camera is not available. <About iMovie 4 / iMovie HD/ iMovie '08> •In DV (FireWire) connection: Capturing images to a PC & Recording to a digital video camera are available. *2 With NV-GS330EG/EF/E/EP/EB, Recording images from a PC to a digital video camera is not available. •DV (IEEE1394, FireWire) cable is sold separately. <About Web Camera Function> When this function is used, MSN Messenger 7.0 (for Windows 2000) or Windows Live Messenger 8.1 (for Windows Vista/XP) is necessary. (not included) •Supplied CD-ROM is available for Windows only. •Microsoft Windows 3.1, Windows 95, Windows 98, Windows 98 SE, Windows Me and Windows NT are not compatible. •Microsoft, Windows and Windows Vista are either registered trademarks or trademarks of Microsoft Corporation in the United States and / or other countries. •Apple, Mac OS, iMovie / iMovie HD / iMovie '08, FireWire are either registered trademarks or trademarks of Apple Inc. in the United States and/or other countries. •Other names of systems and products mentioned in these instructions are generally the registered trademarks or trademarks of the manufacturers who developed the system or product concerned.

Number of Recordable Still Pictures (Approx.) (GS330)

	Capacity	SDHC Memory Card	SD Memory Card			
Image Quality		4GB*1	2GB*1	1GB*1	512MB*1	256MB*1
2048 x 1512 pixels (3.1 MB)	⊞	2530	1290	630	320	160
	▪	3950	2010	990	490	250
2048 x 1152 pixels (16:9) (2.4 MB)	⊞	3290	1680	820	410	210
	▪	5170	2630	1290	650	330
1600 x 1200 pixels (2.0 MB)	⊞	4020	2050	1010	500	250
	▪	6210	3160	1550	780	390
1280 x 960 pixels (1.0 MB)	⊞	6210	3160	1550	780	390
	▪	9870	5030	2470	1230	620
640 x 480 pixels (0.3 MB)	⊞	28160	14080	7040	3520	1760
	▪	56320	28160	14080	7040	3520
640 x 360 pixels (16:9) (0.2 MB)	⊞	28160	14080	7040	3520	1760
	▪	56320	28160	14080	7040	3520

• ⊞ High Picture Quality   ▪ Normal Picture Quality
•These figures vary depending on the subject being photographed. *1 Usable capacity will be less.

Battery Life (Approx.) (GS330)

	Continuous Recording Time		Actual Recording Time	
	EVF	LCD	EVF	LCD
CGR-DU06	1 h 15 min	1 h 10 min	30 min	30 min
VW-VBG130	2 h 10 min	2 h	55 min	55 min
VW-VBG260	4 h 25 min	4 h 05 min	1 h 55 min	1 h 50 min
VW-VBG6	10 h 10 min	9 h 25 min	4 h 30 min	4 h 10 min

We recommend using SD Memory Cards and SDHC Memory cards conforming to class2 or higher of the SD Speed Class Rating or the following SD Memory Cards made by Panasonic for motion-image recording. Please confirm the latest information about SDHC/SD Memory Cards that can be used for motion-image recording, on the following website. **http://panasonic.co.jp/pavc/global/cs/e_cam** (This website is in English only.)

Functions that Give You More Shooting Flexibility

High-performance image processing
Crystal Engine and Pure Colour Engine

Crystal Engine	Pure Colour Engine	
H280	SW20	S7
GS330	H60	H40
		D50

The Crystal Engine is a special image processing circuit for 3CCD camera systems. It processes the R,G and B signals from the three CCDs individually, so it gives both moving and still pictures exceptional quality. And the Pure Colour Engine converts the CCD output signal from a complementary colour signal into an RGB signal at an early stage and extracts the low-frequency luminance component from the RGB signal. This innovative engine also achieves truly superb colour reproduction for high-zoomed pictures.

Without Crystal Engine

With Crystal Engine
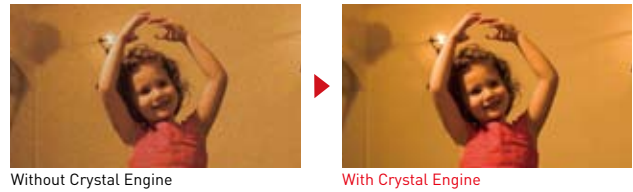
For easy, intuitive setting and shooting without taking your eyes off the subject

`ALL`

One-Touch Navigation

With One-Touch Navigation, just press the centre of the joystick to display an operating menu. The operations you use most often are right on the monitor, so it's easy to change settings or operate the camera without looking away from your subject.

One-Touch Navigation

HS9

Operation Icon Examples (HS9)

	Backlight Compensation		FadeIN/FadeOUT
	Help Mode		Soft Skin Mode
	Contrast Mode		Colour Night View

*Icon display varies depending on the model.

HDD Recording Mode
Card Recording Mode
Playback Mode

Mode Dial

Just turn the dial and you're ready to shoot or to view the images afterward. Rotate the dial with your fingertip to select the icon that corresponds to the mode you want.

## An LCD that's easy to see - indoors or out

Power LCD	Power LCD Extra		Power LCD Plus	
GS330	SD9	HS9	H280	H60
	SW20	S7		H40

Power LCD

Simply press the Power LCD button and the LCD becomes brighter, making it easier to see outdoors or in other bright locations.

Power LCD Extra

Power LCD Extra lets you adjust the LCD brightness in two steps by simply pressing the Power LCD button. Plus 1 mode increases brightness by 80% for easy outdoor viewing, and Plus 2 mode emphasises contrast when shooting in strong sunlight conditions such as when skiing or at the beach.

Power LCD Extra **Off**

Power LCD Extra **+1 mode**

Power LCD Extra **+2 mode**
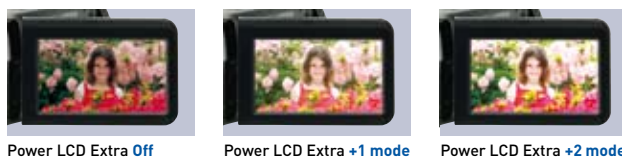
Power LCD Plus

You can set the LCD to any of five brightness levels for optimal viewing in a variety of lighting conditions. When shooting outdoors on a sunny day, make the LCD brighter. When shooting indoors, lower it. This not only makes the LCD easier to see, it's also easier on your eyes.

Normal   (outdoor)   Level +2

Normal   (indoor)   Level -2
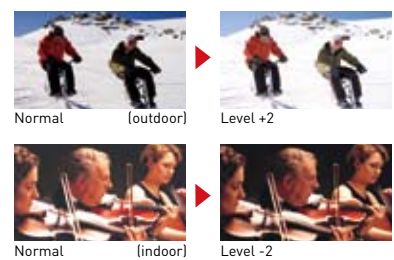
Give your subjects smoother looking skin
`ALL`
Soft Skin Detail

When this function detects skin tones, it softens the focus in that area. This has a skin beautifying effect, which makes wrinkles and lines appear less noticeable. When turned on, this function makes blemishes and moles look less conspicuous, while preserving resolution in areas of the picture outside of the skin.
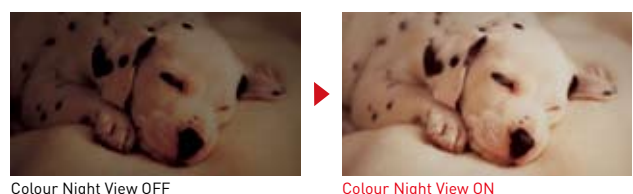

Soft Skin Mode ON   Soft Skin Mode OFF

Capture crisp, vivid images, even in low lighting
`ALL`
Colour Night View

Leave the light off. Colour Night View gives you images with colour even in dim lighting (1 lux). Light from the LCD is gentle and easy on the eyes, so you can snap shots of sleeping children without waking them up.

Colour Night View OFF

Colour Night View ON

FEATURE COMPARISON

	HD Camcorder		SD Camcorder		HDD Camcorder			DVD Camcorder	Mini DV Camcorder
	HDC-SD9	HDC-HS9	SDR-SW20	SDR-S7	SDR-H280	SDR-H60	SDR-H40	VDR-D50	NV-GS330
High-Quality Pictures									
Media	SDHC/SD Memory Card	60-GB HDD SDHC/SD Memory Card	SDHC/SD Memory Card	SDHC/SD Memory Card	30-GB HDD SDHC/SD Memory Card	60-GB HDD SDHC/SD Memory Card	40-GB HDD SDHC/SD Memory Card	8-cm DVD Disc	mini DV Tape
Recording Format	AVCHD	AVCHD	MPEG2	MPEG2	MPEG2	MPEG2	MPEG2	MPEG2	DV
3CCD Camera System	Yes	Yes	No	No	Yes	No	No	No	Yes
O.I.S. (Optical Image Stabilisation)	Advanced O.I.S.	Advanced O.I.S.	No	No	O.I.S.	Advanced O.I.S.	Advanced O.I.S.	Advanced O.I.S.	O.I.S.
Leica Dicomar Lens	Yes	Yes	No	No	Yes	No	No	No	Yes
Image Processing LSI	HD Crystal Engine	HD Crystal Engine	Pure Colour Engine	Pure Colour Engine	Crystal Engine	Pure Colour Engine	Pure Colour Engine	Pure Colour Engine	Crystal Engine
MPEG2 Engine	No	No	Yes	Yes	Yes	Yes	Yes	Yes	No
Optical Zoom	10x	10x	10x	10x	10x	50x	42x	42x	10x
5.1-ch Surround Sound System and Zoom Mic	Yes	Yes	No	No	No	No	No	No	No
Still Picture Recording	2.1 MEGA	2.1 MEGA	VGA	VGA	3.1 MEGA	VGA	VGA	VGA	3.1 MEGA
Simultaneous Motion-Image and Still Picture Recording	2.1 MEGA	2.1 MEGA	No	No	No	No	No	No	1.2 MEGA
Ease and Versatility									
Waterproof	No	No	1.5 m	No	No	No	No	No	No
Shockproof	No	No	1.2 m	No	No	No	No	No	No
Dustproof	No	No	Yes	No	No	No	No	No	No
LCD	2.7" Wide	2.7" Wide	2.7" Wide	2.7" Wide	2.7" Wide	2.7" Wide	2.7" Wide	2.7" Wide	2.7" Wide
Power LCD	Yes (Extra)	Yes (Extra)	Yes (Extra)	Yes (Extra)	Yes (Plus)	Yes (Plus)	Yes (Plus)	No	Yes
Wide Viewing Angle LCD	Yes	Yes	No	No	No	No	No	No	No
Face Detection	Yes	Yes	No	No	No	No	No	No	No
Intelligent Shooting Guide/ Selection Playback	Yes	Yes	No	No	No	No	No	No	No
World Timer	Yes	Yes	Yes	Yes	No	No	No	No	No
Pre-Rec Function	Yes	Yes	No	Yes	No	Yes	No	No	No
Intelligent Contrast Control	Yes	Yes	No	No	No	No	No	No	No
One-Touch Navigation	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Built-in Flash	Yes	Yes	No	No	No	No	No	No	No
Colour Night View	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Built-in LED Light	No	No	No	No	Yes	No	No	No	No
Soft Skin Mode	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Tele Macro	50 cm	50 cm	No	No	50 cm	No	No	No	50 cm
AGS	Yes	Yes	No	No	Yes	No	No	No	Yes
Quick Start	0.6 sec	0.6 sec	0.6 sec	0.6 sec	No	2.1 sec	2.1 sec	1.7 sec	1.7 sec
Burst Shooting	2.1 Mega (25 fps)	2.1 Mega (25 fps)	No	No	No	No	No	No	No
Lens Cover	Auto	Auto	No	Manual	Manual	Manual	Manual	Manual	Lens Cap
Accessory Shoe	No	No	No	No	No	No	No	No	Cold
Networking									
One Touch DVD Copying (USB Host)	Yes *1	Yes *1	Yes *1	Yes *1	No	Yes *1	Yes *1	No	No
USB2.0	High Speed Mode	High Speed Mode	High Speed Mode	High Speed Mode	High Speed Mode	High Speed Mode	High Speed Mode	High Speed Mode	High Speed Mode
SDHC/SD Memory Card Compatible	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
PictBridge Compatible	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
DV IN/OUT	No	No	No	No	No	No	No	No	Yes
Analogue OUT	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

*1 When using a DVD burner (VW-BN1), data from an SDHC/SD Memory Card can be copied to a 12-cm DVD disc.

SPECIFICATIONS

	HD Camcorder		SD Card Camcorder		
	SD9	**HS9**	**SW20**	**S7**	**H280**
GENERAL					
Power Supply	DC7.2 V/9.3 V	DC7.2 V/9.3 V	DC3.6 V/5.0 V	DC3.6 V/5.0 V	DC7.9 V/ 7.2 V
Power Consumption	5.8 W	6.8 W	2.9 W	2.9 W	5.7 W
Weight (w/o Battery)	275 g	390 g	224 g	165 g	450g
Dimensions (W x H x D)	65 x 67 x 126 mm	75 x 74 x 126 mm	33.8 x 63.4 x 115.4 mm	41 x 59 x 102 mm	70.1 x 73 x 120.8 mm
Media	SD/SDHC Memory Card	HDD, SD/SDHC Memory Card	SD/SDHC Memory Card	SD/SDHC Memory Card	30GB HDD, SD/SDHC Memory Card
LENS SECTION					
Image Sensor	1/6"CCD x 3 Total pixels: 560 k x 3 Effective pixels: 520k x 3 [16:9] (Motion Image / Still Image)	1/6"CCD x 3 Total pixels: 560 k x 3 Effective pixels: 520k x 3 [16:9] (Motion Image / Still Image)	1/6"CCD (800 k pixels, Total/400 k [4:3], 350 k [16:9](Motion Image) /410 k [4:3] (Still Picture)Effective	1/6"CCD (800 k pixels, Total/400 k [4:3], 350 k [16:9](Motion Image) /410 k [4:3] (Still Picture)Effective	1/6" CCD x 3 (800 k x 3 pixels, Total/630 k x 3 [4:3], 540 k x 3 [16:9] (Motion Image)/710 k x 3 [4:3], 540 k x 3 [16:9] (Still Picture) Effective
F Value	F1.8 (WIDE)/F2.8 (TELE)	F1.8 (WIDE)/F2.8 (TELE)	F1.8 (WIDE)/F2.4 (TELE)	F1.8 (WIDE)/F2.4 (TELE)	F1.8 (WIDE)/F2.8 (TELE)
Optical Zoom	10x Variable Speed Zoom	10x Variable Speed Zoom	10x Variable Speed Zoom	10x Variable Speed Zoom	10 x Variable Speed Zoom
Focal Length	3.0–30.0 mm	3.0–30.0 mm	2.3–23 mm	2.3–23 mm	3.0–30 mm
Filter Diameter	37 mm	37 mm	—	—	37 mm
35mm Film Camera Equivalent	42.9–429 mm [16:9] (Motion Image / Still Picture)	42.9–429 mm [16:9] (Motion Image / Still Picture)	44.1–441mm [4:3], 44.4–444mm [16:9](Motion Image)/ 43.4–434mm [4:3](Still Picture)	44.1–441mm [4:3], 44.4–444mm [16:9](Motion Image)/ 43.4–434mm [4:3](Still Picture)	46.1–461 mm [4:3]/47.1 – 471 mm [16:9] (Motion Image) 43.4 – 434 mm [4:3]/47.0 – 470 mm [16:9] (Still Picture)
Lens Brand	Leica Dicomar	Leica Dicomar	Panasonic	Panasonic	Leica Dicomar
CAMERA SECTION					
Minimum Illumination	5 Lux (1/25 Low Light Mode), 1 Lux (Colour Night View Mode)	5 Lux (1/25 Low Light Mode), 1 Lux (Colour Night View Mode)	6 Lux (1/25 Low Light Mode), 2 Lux (Colour Night View Mode)	2 Lux (Colour Night View Mode)	1 lux (Colour Night View Mode)
Focus	AF/Manual	AF/Manual	AF/Manual	AF/Manual	AF/Manual
White Balance	Auto/Indoor/Outdoor/White Set	Auto/Indoor/Outdoor/White Set	Auto/Indoor/Outdoor/White Set/Underwater (with IR Sensor)	Auto/Indoor/Outdoor/White Set (with IR Sensor)	Auto/Indoor/Outdoor/White Set (with IR Sensor)
Shutter Speed	Motion Image/ 50i : Auto Slow Shutter ON : 1/25–1/8000, OFF : 1/50–1/8000 25p : Auto Slow Shutter ON : 1/25–1/8000, OFF : 1/50–1/8000 Still Picture/ 50i : Auto Slow Shutter ON : 1/25–1/8000, OFF : 1/50–1/8000 (Progressive : 1/25–) 25p : Auto Slow Shutter ON : 1/25–1/8000, OFF : 1/50–1/8000 (Progressive : 1/25–)		1/25–1/8000 (Motion Image), 1/25–1/500 (Still Picture)	1/25–1/8000 (Motion Image), 1/25–1/500 (Still Picture)	1/50–1/8000 (Motion Image) 1/25–1/2000 (Still Picture)
Iris	Auto/Manual	Auto/Manual	Auto/Manual	Auto/Manual	Auto/Manual
Scene Mode	Sports/Portrait/Low Light/ Spot Light/Surf & Snow	Sports/Portrait/Low Light/ Spot Light/Surf & Snow	Sports/Portrait/Low Light/ Spot Light/Surf & Snow	Sports/Portrait/Low Light/ Spot Light/Surf & Snow	Sports/Portrait/Low Light/ Spot Light/Surf & Snowa
Backlight Compensation	Yes	Yes	Yes	Yes	Yes
EVF	—	—	—	—	—
Monitor	2.7" Wide LCD (300,252 dots)	2.7" Wide LCD (300,252 dots)	2.7" Wide LCD (123,200 dots)	2.7" Wide LCD (123,200 dots)	2.7" Wide LCD (123,200 dots)
Microphone	Dolby Digital / 5.1ch, Zoom Microphone	Dolby Digital / 5.1ch, Zoom Microphone	Stereo Zoom Mic, Wind Noise Reduction	Stereo Zoom Mic, Wind Noise Reduction	Stereo Zoom Mic, Wind Noise Reduction
Date Recording	Auto Date (in Date Code)	Auto Date (in Date Code)	Auto Date (in Date Code)	Auto Date (in Date Code)	Auto Date (in Date Code)
Fade In/Out	Yes	Yes	Yes	Yes	Yes
Rec. Review	—	—	—	—	—
On-Screen Display Language	English / Chinese (Traditional) / Russian / Arabic / Persian / Thai / Hindi	English / Chinese (Traditional) / Russian / Arabic / Persian / Thai / Hindi	English / Chinese (Traditional) / Russian / Arabic / Persian / Thai / Hindi	English / Chinese (Traditional) / Russian / Arabic / Persian / Thai / Hindi	English / Chinese (Traditional) / Russian / Arabic / Persian / Thai / Hindi
Image Stabiliser	Advanced O.I.S.	Advanced O.I.S.	E.I.S. (Electronic Image Stabilizer)	E.I.S. (Electronic Image Stabilizer)	O.I.S.
Digital Zoom	25 x–700 x	25 x–700 x	10 x–700 x	10 x–700 x	25 x–700 x
LED Video Light	—	—	—	—	Yes
Flash	1 m–2.5 m (approx.)	1 m–2.5 m (approx.)	—	—	—
Web Camera Function	—	—	—	—	—
DISC SECTION					
Applicable Disc	—	—	—	—	—
Cue/Review	—	—	—	—	—
Skip	—	—	—	—	—
CARD SECTION					
Card Slot	SD/SDHC	SD/SDHC	SD/SDHC	SD/SDHC	SD/SDHC
Still Picture	JPEG Picture size: 1920x1080 [16:9] 2.1 Megapixels	JPEG Picture size: 1920x1080 [16:9] 2.1 Megapixels	JPEG Picture size: 640 x 480 [4:3] 0.3 Megapixels	JPEG Picture size: 640 x 480 [4:3] 0.3 Megapixels	JPEG Picture size: 2048 x 1512 [16:9] 3.1 Megapixels or 1920 x 1080 [16:9] 2.0 Megapixels or 1280 x 960 [4:3] 1.0 Megapixels or 640 x 480 [4:3] 0.3 Megapixels
DPOF	Max.999 stills	Max.999 stills	Max.999 stills	Max.999 stills	Max 999 stills
PictBridge	Yes	Yes	Yes	Yes	Yes
RECORDING SECTION					
Format	AVCHD (Motion Image)	AVCHD (Motion Image)	MPEG2 (Motion Image)	MPEG2 (Motion Image)	MPEG2 (Motion Image)
Recording Mode	HD*: HA (17 Mbps / VBR), HG (13 Mbps / VBR), HX (9 Mbps / VBR), HE (6 Mbps / VBR)	HD*: HA (17 Mbps / VBR), HG (13 Mbps / VBR), HX (9 Mbps / VBR), HE (6 Mbps / VBR)	XP (10Mbps/VBR), SP (5Mbps/VBR), LP (2.5Mbps/VBR)	XP (10Mbps/VBR), SP (5Mbps/VBR), LP (2.5Mbps/VBR)	XP (10Mbps/VBR), SP (5Mbps/VBR), LP (2.5Mbps/VBR)
Playback Mode	HD*: HA (17 Mbps / VBR), HG (13 Mbps / VBR), HX (9 Mbps / VBR), HE (6 Mbps / VBR)	HD*: HA (17 Mbps / VBR), HG (13 Mbps / VBR), HX (9 Mbps / VBR), HE (6 Mbps / VBR)	XP (10Mbps/VBR), SP (5Mbps/VBR), LP (2.5Mbps/VBR)	XP (10Mbps/VBR), SP (5Mbps/VBR), LP (2.5Mbps/VBR)	XP (10Mbps/VBR), SP (5Mbps/VBR), LP (2.5Mbps/VBR)
Variable Speed Search	—	—	—	—	—
Audio Recording System	Dolby Digital (Dolby AC3) / 5.1-channel	Dolby Digital (Dolby AC3) / 5.1-channel	MPEG1-Layer2	MPEG1-Layer2	Dolby Digital (2 ch) / MPEG1 AudioLayer2
Audio Dubbing	—	—	—	—	—
Counter	Yes	Yes	Yes	Yes	Yes
Media Remaining Indication	Yes	Yes	Yes	Yes	Yes
INTERFACES					
AV	Out	Out	Out	Out	Out
HDMI	Yes (mini)	Yes (mini)	—	—	—
S-Video	—	—	—	—	Out
Microphone (stereo mini)	—	—	—	—	—
Headphones	—	—	—	—	—
DV Input/Output (IEEE1394)	—	—	—	—	—
USB	Hi-Speed USB (USB 2.0) (mini AB)	Hi-Speed USB (USB 2.0)(mini AB)	Hi-Speed USB (USB2.0) (mini AB)	Hi-Speed USB (USB2.0) (mini AB)	Hi-Speed USB (USB2.0) (mini B)
Video Component	Yes	Yes	—	—	—
Accessory Shoe	—	—	—	—	—
STANDARD ACCESSORIES					
AC Adaptor	Yes	Yes	Yes	Yes	Yes
AC Cable	Yes	Yes	Yes	Yes	Yes
DC Cable	Yes	Yes	Yes	Yes	Yes
Rechargeable Barrery Pack	Lithium-Ion	Lithium-Ion	Lithium-Ion	Lithium-Ion	Lithium-Ion
Strap	—	—	Yes (Hand Strap)	Yes (Hand Strap)	—
Video Component Cable	Yes	Yes	—	—	—
AV Cable	Yes	Yes	Yes	Yes	Yes
Lens Cap	—	—	—	—	—
IR Remote	Yes	Yes	—	—	Yes
USB Cable	Yes	Yes	Yes	Yes	Yes
SD Memory Card	—	—	—	—	—
CD-ROM	HD Writer 2.5E	HD Writer 2.5E	Motion SD STUDIO 1.3E	Motion SD STUDIO 1.3E	VideoCam Suite 1.0

*HD: High-Definition/STD: Standard-Definition •The remaining battery capacity is displayed in minutes when using the applicable Panasonic battery. •When using batteries made by other companies the remaining battery capacity will not be shown. •We cannot accept any liability whatsoever for damages to the unit or accidents caused by non-genuine Panasonic batteries (including those that have been certified by Panasonic).

HDD/SD Card Hybrid Camcorder		DVD Camcorder	Mini DV Camcorder
H60	**H40**	**D50**	**GS330**
DC7.2 V/9.3 V	DC7.2 V/9.3 V	DC7.2 V/ 9.3 V	DC7.2 V/7.9 V
4.0 W	4.0 W	5.9 W	5.2 W
340 g	340 g	400 g	450 g
67 x 70 x 116 mm	67 x 70 x 116 mm	52.8 x 89.5 x 128.6 mm	83.6 x 76.5 x 145.1 mm
60GB HDD, SD/SDHC Memory Card	40GB HDD, SD/SDHC Memory Card	8-cm DVD Disc, SD/SDHC Memory Card	miniDV, SD/SDHC Memory Card
1/6″CCD (800 k pixels, Total/400 k [4:3], 370 k [16:9] (Motion Image)/410 k [4:3], 380 k [16:9] (Still Picture) Effective)	1/6″CCD (800 k pixels, Total/400 k [4:3], 370 k [16:9] (Motion Image)/410 k [4:3], 380 k [16:9] (Still Picture) Effective)	1/6″CCD (800 k pixels, Total/400 k [4:3], 370 k [16:9] (Motion Image)/410 k [4:3], 380 k [16:9] (Still Picture) Effective)	1/6″ CCD x 3 (800 k x 3 pixels, Total/630 k x 3 [4:3], 540 k x 3 [16:9] (Motion Image)/710 k x 3 [4:3], 540 k x 3 [16:9] (Still Picture) Effective)
F2.0 (WIDE)/F5.0 (TELE)	F1.9 (WIDE)/F4.3 (TELE)	F1.9 (WIDE)/F4.3 (TELE)	F1.8 (WIDE)/F2.8 (TELE)
50 x Variable Speed Zoom	42 x Variable Speed Zoom	42 x Variable Speed Zoom	10 x Variable Speed Zoom
1.8 — 90 mm	1.8 — 75.6 mm	1.8—75.6 mm	3.0—30 mm
—	—	—	37 mm
34.5 — 1725 mm [4:3]/ 33.8 — 1690 mm [16:9] (Motion Image) 33.9 — 1696 mm [4:3]/ 33.2 — 1658 [16:9] (Still Picture)	34.5 — 1449 mm [4:3]/ 33.8 — 1420 mm [16:9] (Motion Image) 33.9 — 1425 mm [4:3]/ 33.2 — 1393 [16:9] (Still Picture)	34.5 — 1449 mm [4:3]/ 33.8 — 1420 mm [16:9] (Motion Image) 33.9 — 1425 mm [4:3]/ 33.2 — 1393 [16:9] (Still Picture)	46.1—461 mm [4:3]/47.1 — 471 mm [16:9] (Motion Image) 43.4 — 434 mm [4:3]/47.0 — 470 mm [16:9] (Still Picture)
Panasonic	Panasonic	Panasonic	Leica Dicomar
2 lux (Colour Night View Mode)	2 lux (Colour Night View Mode)	2 lux (Colour Night View Mode)	1 lux (Colour Night View Mode)
AF/Manual	AF/Manual	AF/Manual	AF/Manual
Auto/Indoor/Outdoor/White Set (with IR Sensor)	Auto/Indoor/Outdoor/White Set (with IR Sensor)	Auto/Indoor/Outdoor/White Set (with IR Sensor)	Auto/Indoor/Outdoor/White Set (with IR Sensor)
1/25 - 1/8000 (Motion Image), 1/25 - 1/500 (Still Picture)	1/25 - 1/8000 (Motion Image), 1/25 - 1/500 (Still Picture)	1/25—1/8000 (Motion Image) 1/25—1/500 (Still Picture)	1/50—1/8000 (Motion Image) 1/25—1/2000 (Still Picture)
Auto/Manual	Auto/Manual	Auto/Manual	Auto/Manual
Sports/Portrait/Low Light/ Spot Light/Surf & Snow	Sports/Portrait/Low Light/ Spot Light/Surf & Snow	Sports/Portrait/Low Light/ Spot Light/Surf & Snow	Sports/Portrait/Low Light/ Spot Light/Surf & Snow
Yes	Yes	Yes	Yes
—	—	0.33″ Colour (113,578 dots)	0.33″ Colour (113,578 dots)
2.7″ Wide LCD (123,200 dots)	2.7″ Wide LCD (123,200 dots)	2.7″ Wide LCD (123,200 dots)	2.7″ Wide LCD (123,200 dots)
Stereo Zoom Mic, Wind Noise Reduction	Stereo Zoom Mic, Wind Noise Reduction	Stereo Zoom Mic, Wind Noise Reduction	Stereo Zoom Mic, Wind Noise Reduction
Auto Date (in Date Code)	Auto Date (in Date Code)	Auto Date (in Data Code)	Auto Date (in Date Code)
Yes	Yes	Yes	Yes
—	—	—	Yes
English / Chinese (Traditional) / Russian / Arabic / Persian / Thai / Hindi	English / Chinese (Traditional) / Russian / Arabic / Persian / Thai / Hindi	English / Chinese (Traditional) / Russian / Arabic / Persian / Thai / Hindi	English / Chinese (Traditional) / Russian / Arabic / Persian / Thai / Hindi
Advanced O.I.S.	Advanced O.I.S.	Advanced O.I.S.	O.I.S.
50 x—2500 x	42 x—2000 x	42 x—2000 x	10 x—700 x
—	—	—	—
—	—	—	—
—	—	—	Motion JPEG 320 x 240 approx. 6 fps
—	—	8-cm DVD-RAM Ver. 2.1/ 8-cm DVD-R for General Ver. 2.0/ 8-cm DVD-RW Ver. 1.1 2 x-speed (2 x/1 x)/ DVD-R for DL Ver. 3.0	—
—	—	Forward/Reverse	—
—	—	Forward/Reverse	—
SD/SDHC	SD/SDHC	SD/SDHC	SD/SDHC
JPEG Picture size: 640 x 480 [4:3] 0.3 Megapixels or 640 x 360 [16:9] 0.2 Megapixels	JPEG Picture size: 640 x 480 [4:3] 0.3 Megapixels or 640 x 360 [16:9] 0.2 Megapixels	JPEG Picture size: 640 x 480 [4:3] 0.3 Megapixels or 640 x 360 [16:9] 0.2 Megapixels	JPEG Picture size: 2048 x 1512 [4:3] 3.1 Megapixels or 2048 x 1152 [16:9] 2.4 Megapixels or 1600 x 1200 [4:3] 2.0 Megapixels or 1280 x 960 [4:3] 1.0 Megapixels or 640 x 480 [4:3] 0.3 Megapixels or 640 x 360 [16:9] 0.2 Megapixels
Max 999 stills	Max 999 stills	Max 999 stills	Max 999 stills
Yes	Yes	Yes	Yes
MPEG2 (Motion Image)	MPEG2 (Motion Image)	MPEG2 (Motion Image)	DVC-SD
XP (10Mbps/VBR), SP (5Mbps/VBR), LP (2.5Mbps/VBR)	XP (10Mbps/VBR), SP (5Mbps/VBR), LP (2.5Mbps/VBR)	XP (10Mbps/VBR), SP (5Mbps/VBR), LP (2.5Mbps/VBR)	SP/LP
XP (10Mbps/VBR), SP (5Mbps/VBR), LP (2.5Mbps/VBR)	XP (10Mbps/VBR), SP (5Mbps/VBR), LP (2.5Mbps/VBR)	XP (10Mbps/VBR), SP (5Mbps/VBR), LP (2.5Mbps/VBR)	SP/LP
—	—	—	Max. 20 x Speed
Dolby Digital (2 ch) / MPEG1 AudioLayer2	Dolby Digital (2 ch) / MPEG1 AudioLayer2	Dolby Digital (2 ch)	PCM 12 bit 4 ch/ 16 bit 2 ch
—	—	—	Yes (only inner mic)
Yes	Yes	Yes	Time Code
Yes	Yes	Yes	Yes
Out	Out	Out	Out
—	—	—	—
—	—	—	Out
—	—	—	—
—	—	—	—
—	—	—	In/Out
Hi-Speed USB (USB 2.0)(mini AB)	Hi-Speed USB (USB 2.0)(mini AB)	Hi-Speed USB (USB2.0) (mini B)	Hi-Speed USB (USB2.0) (mini B)
—	—	—	—
—	—	—	Yes (Cold)
Yes	Yes	Yes	Yes
Yes	Yes	Yes	Yes
Yes	Yes	Yes	Yes
Lithium-Ion	Lithium-Ion	Lithium-Ion	Lithium-Ion
—	—	—	—
—	—	—	—
Yes	Yes	Yes	Yes
—	—	—	Yes
—	—	—	Yes
Yes	Yes	Yes	Yes
VideoCam Suite 1.0	VideoCam Suite 1.0	VideoCam Suite 1.0	Sweet Movie Life 1.1E/ MotionDV STUDIO 6.0E LE for DV

OPTIONAL ACCESSORIES

Rechargeable Lithium-Ion Battery Pack[1]	AC Adaptor	Battery Pack Holder Kit Extends recording time	Tele Conversion Lens	Wide Conversion Lens
VW-VBG130E VW-VBG260E VW-VBJ10E CGA-DU12E/1B CGA-DU14E/1B CGA-DU21E/1B	VW-AD21E	VW-VH04E *Use together with the optional VW-VGB6 Battery. **Battery for VW-VH04E** VW-VBG6 (7.2 V/5800 mAh)	VW-LT3714HE	VW-LW3707HE

Stereo Zoom Microphone	Video DC Light Video shooting in the dark	Shoe Adaptor Foldable design and compact size	DVD Burner	HDMI mini Cable (for SD9/HS9)
VW-VMH3E	VW-LDC102E	VW-SK12E	VW-BN1E	RP-CDHM15 (1.5 m) RP-CDHM30 (3.0 m)

DV Cable	SDHC/SD Memory Card[2]	Mini DV Tape	DVD Disc
PV-DDC9	32GB RP-SDV32G / 16GB RP-SDV16G / 8GB RP-SDV08G / 4GB RP-SDV04G / RP-SDM04GB / 2GB RP-SDV02G / RP-SDM02GB / 1GB RP-SDR01G	AY-DVM80YE AY-DVM60YE / AY-DVM80FF AY-DVM60FF	DVD-RAM LM-AF60E/LM-AF30E DVD-R LM-RF60E/LM-RF30E DVD-RW LM-RW60E/LM-RW30E DVD-R-DL LM-RF55EV

Accessory	Model No.	Description	HD Camcorder SD9	HS9	SD Camcorder SW20	S7	HDD Camcorder H280	H60	H40	DVD Camcorder D50	Mini DV Camcorder GS330
Rechargeable Lithium Ion Battery Pack / Battery Pack Holder Kit	VW-VBG130E	1320 mAh	●	●			●	●	●	●	●
	VW-VBG260E	2640 mAh	●	●			●	●*3	●*3	●	●
	VW-VBGJ10E	1000 mAh			●	●					
	CGA-DU12E/1B	1150 mAh					●				●
	CGA-DU14E/1B	1360 mAh					●				
	CGA-DU21E/1B	2040 mAh					●				●
	VW-VBG6E	5800 mAh (Battery for VW-VH04)	●	●			●	●	●	●	●
AC Adaptor	VW-AD21	AC Adaptor with AC Cable and DC Cables	●	●			●	●	●	●	
Tele Conversion Lens	VW-LT3714HE		●	●							
Wide Conversion Lens	VW-LW3707HE		●	●							
Stereo Zoom Microphone	VW-VMH3										
Video DC Light	VW-LDC102		●*4	●*4	●*4	●*4		●*4	●*4	●*4	●
Shoe Adaptor	VW-SK12-K		●	●	●	●	●	●	●	●	●
DVD Burner	VW-BN1		●	●	●	●		●	●		
HDMI mini Cable	RP-CDHM15	1.5 m	●	●							
	RP-CDHM30	3.0 m	●	●							
SDHC/SD Memory Card	RP-SDV32G	Class6 32GB up to 20MB/s	●	●	●	●	●	●	●		
	RP-SDV16G	Class6 16GB up to 20MB/s	●	●	●	●	●	●	●		
	RP-SDV08G	Class6 8GB up to 20MB/s	●	●	●	●	●	●	●	●	
	RP-SDV04G	Class6 4GB up to 20MB/s	●	●	●	●	●	●	●	●	●
	PR-SDM04G	Class4 4GB UP to 10MB/s	●	●	●	●	●	●	●	●	●
	RP-SDV02G	Class6 2GB up to 20MB/s	●	●	●	●	●	●	●	●	●
	PR-SDM02G	Class4 2GB UP to 5MB/s	●	●	●	●	●	●	●	●	●
	RP-SDV01G	Class6 1GB up to 20MB/s	●	●	●	●	●	●	●	●	
	RP-SDR01G		●	●	●	●	●	●	●	●	
DVD-RAM Disc	LM-AF60E	Double-sided 60 Minute								●	
	LM-AF30E	Single-sided 30 Minute								●	
DVD- RW Disc	LM-RW60E	Single-sided 60 Minute								●	
	LM-RW30E	Single-sided 30 Minute								●	
DVD-R Disc	LM-RF60E	Double-sided 60 Minute								●	
	LM-RF30E	Single-sided 30 Minute								●	
DVD -R DL Disc	LM-RF55E	Dual Layer on single side								●	

•Weight and dimensions shown are approximate. •Design, functions, and specifications are subject to change without notice. •All monitor and TV pictures are simulated. •Some accessories are not available in some countries. •1GB=1 billion bytes. Usable capacity will be less. •You are not allowed to reproduce (copy), or transfer to a network, any part of the software applications supplied with this product for commercial purposes without written authorisation. •Panasonic will in no way be liable for any damages sustained directly or indirectly from the use of this product or from any trouble occurring therein. •Panasonic will also in no way be liable for any losses of data caused by this product. •SDHC Logo is a trademark. •SD Logo is a trademark. • Microsoft®, Windows® and DirectX® are either registered trademarks or trademarks of Microsoft Corporation in the United States and/or other countries.•Leica is a registered trademark of Leica Microsystems IR GmbH. •Dicomar is a registered trademark of Leica Camera AG. •Microsoft product screen shot(s) reprinted with permission from Microsoft Corporation. •Other names of systems and products mentioned in this brochure are generally the registered trademarks or trademarks of the manufacturers who developed the system or product concerned. •Microsoft®, Windows®, and NetMeeting® are registered trademarks of Microsoft Corporation of the U.S.A. •All other company and product names are trademarks of their respective corporations. While every effort has been made to represent product colours accurately, slight variation may occur due to the printing process.

*1 • The VW-VBG130-K and VW-VBG260-K come with a function to check whether the battery and unit can be safely used together. • Batteries made by other companies which have been certified by Panasonic may be used with these units, but we offer no guarantee as to the quality, performance or safety of such batteries. • Exercise care when purchasing batteries. Many fake or imitation batteries have been found among those sold at unusually low prices and those which customers cannot check for themselves before purchasing. • Please confirm the latest information about batteries on the following website. **http://panasonic.co.jp/pavc/global/cs/info/battery.html** (This website is in English only.)
*2 • An SDHC/SD Memory Card utilises a portion of the storage space for formatting and other purposes. •Usable capacity will be less.
*3 Use in combination with the separately purchased VW-VH04 Battery Pack Holder *4 Shoe adaptor required.