

**TOUGH Camera for Active Outdoor Photography: New DMC-FT1  
The World's First Waterproof, Shockproof, Dustproof Camera  
AVCHD Lite Motion Image Recording\***

**\*as of 1/27/2009**

Panasonic today introduced the Lumix DMC-FT1, a new concept camera geared for active outdoor photography. The FT1 is shockproof, waterproof and dustproof in design with the capability to record high-definition movie in AVCHD Lite. Featuring a 28mm wide angle lens, 4.6x optical zoom and iA (Intelligent Auto) mode, this versatile camera lets you capture your moments no matter the intended shooting terrain.

Tested with the same standards used to assess Panasonic's acclaimed TOUGHBOOK series computers, the FT1 is waterproof to a depth of 3.0m, shockproof from falls up to 1.5m, and dust-proof – so you take this camera to places thought not possible before.

The FT1 features a new 28mm wide-angle, 4.6x optical zoom LEICA DC VARIO-ELMAR lens with 12.1-megapixel resolution. Starting at the 28mm wide angle, and zooming up to a useful 128mm in telephoto, this camera gives you the flexibility for virtually all shooting scenes – especially underwater, where movement is often restricted and the angle of view becomes important for composing your shots.

HD motion-image recording is available in AVCHD Lite allowing longer video recordings with breathtaking HD visual and audio quality, making it a true hybrid -- a single model that performs admirably as both camera and camcorder while achieving smooth, easy operation in both modes.

Panasonic's Intelligent Auto mode -- a hallmark of Lumix cameras -- is now also available in movie recording. It automatically selects the most suitable Scene mode and helps to correct handshake, focus and brightness problems - making iA mode your one-stop solution to capturing beautiful still and motion images. It features Face Recognition, a function that "remembers" faces from previous shots. When a familiar face appears in the frame, the camera will prioritize focus and exposure to capture it beautifully. This clever function makes it easy to get sharp and clear photos of loved ones in a group of people.

The adoption of AVCHD Lite lets users enjoy watching not only still images but also HD movies just inserting the SDHC/SD memory card from the camera in the VIERA Image Viewer(Built-in SDHC/SD Memory Card slot) on a VIERA HDTV to start playback\*. Alternatively, simply connect the camera via an optional mini-HDMI cable to a VIERA Link-equipped TV and use the TV's remote control to run slideshows including both still and motion images in the timeline. The FT1 features a 2.7-inch, 230,000-dot Intelligent LCD with a wide viewing angle, improving visibility during recording and playback by automatic brightness control according to the situation.

Enjoy stunning photos and HD videos with tremendous ease on land and under sea - the FT1 is the ideal partner for your outdoor adventures.

\*The "AVCHD" is a high definition (HD) digital video recording / playback format jointly established by Panasonic Corporation and Sony Corporation. The "AVCHD Lite" is a subset of the "AVCHD format" for HD digital video cameras with HD video recording restricted to 720P. The new "AVCHD Lite" Logo and the "AVCHD Lite" License are restricted to devices within the AVCHD Video Camera category. Digital cameras have been added to the AVCHD Video Camera category.

\*The "AVCHD Lite" and the "AVCHD Lite" logo are trademarks of Panasonic Corporation and Sony Corporation.

\*AVCHD Lite 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.

### **1. 3m Waterproof, 1.5m Shockproof and Dustproof – A Perfect Gear for Active Outdoor Shooting**

The FT1 is drop proof from a height up to 1.5m in accordance with the "MIL-STD 810F Method 516.5-Shock" test standard. In addition to reinforcing the exterior of the camera with shock-resistant material, the FT1 uses folded optics to prevent its lens unit from taking damage when dropped during operation. The lens unit is further protected by a supplementary damper to absorb the force from shock impact.

The FT1 is waterproof to a depth of 3m and dustproof equivalent to the "IP58" standard. Thanks to rubber padding and reinforced glass and carbon resins inside the camera, the FT1 features an airtight body protected against water immersion, dust and sand. FT1's LCD panel is also deliberately thickened for protection against pressure, allowing the display to operate with clear visibility even underwater.

The FT1 is an extremely versatile camera that you can take with you wherever the action calls. Swim along with tropical fish and capture shots of a beautiful coral reef, or take recordings of your friend around a camp fire. FT1 is an ideal camera to bring with you to the beach or on hiking trips.

## **2. Take Motion Picture Recording to the Next-Level with New Generation AVCHD Lite and iA (Intelligent Auto) Mode**

In addition to Motion JPEG images, the DMC-FT1 can record high-definition motion picture in AVCHD Lite. It features almost doubling the recording time in HD quality compared with the conventional Motion JPEG format. The DMC-FT1 also features Dolby Digital Creator to record high quality audio, so you can match the beautiful motion images with outstanding sound.

Now on the DMC-FT1, the popular iA (Intelligent Auto) is also available in motion image recording. Optical Image Stabilizer (O.I.S.) helps prevent handshake when using high-powered zoom. Face Detection automatically detects a face in the frame and adjusts focus, exposure, contrast, and skin complexion on it so it always turns out beautifully. Intelligent Exposure continually checks the ambient light level and adjusts the exposure setting as conditions change to prevent blown highlights and blocked shadows. And Intelligent Scene Selector automatically switches between Normal, Portrait, Macro, Scenery, and Low Light modes according to the situation to optimize visual quality.

Motion image recording can be started by pressing a dedicated button on the camera's back panel -- an extremely quick, convenient way to start motion image recording. Most of the camera's settings will be carried over when switched to motion picture recording. The 4.6x optical zoom is available in movie recording, too. A Wind Cut function is also available to block out most of the noise from background wind. The FT1 also provides a Color mode and carries over 17 different scene modes from photo scene modes in movie recording.

In AVCHD Lite recording, you can select from three levels of motion image quality: SH (17 Mbps), H (13 Mbps) and L (9 Mbps). In dark places such as night camping, the built-in LED light automatically turns on while recording motion images.

Still or motion images recorded in AVCHD Lite on SD Memory Cards are easy to view on a Panasonic VIERA TV. Simply insert the card into the VIERA Image Viewer (SDHC/SD Memory Card slot) on VIERA TV or DIGA Blu-ray Disc Player to playback your contents. Alternatively, you can use an optional Mini HDMI cable to

output the still and motion images you took from the FT1 directly to the TV for VIERA Link. You can take maximum advantage of Lumix camera's playback functions including the slideshow in which both still and motion images integrated in the timeline, category playback according to the scene mode you used or calendar display and so on. All control is possible using only the TV's remote control.

In addition, with the included software PHOTOfunSTUDIO HD Edition, it is easy to view and edit your recorded contents. You may also choose to upload your videos to YouTube or burn them to a DVD disc for archiving.

\*When you set the picture quality to HD, WVGA or VGA, we recommend using a high-speed card with "10MB/s" or greater displayed on the package.

\*Motion pictures can be recorded continuously for up to 15 minutes in some countries.

\*Continuous recording exceeding 2GB is not possible when recording motion JPEG. Remaining time for continuous recording is displayed on the screen.

\*AVCHD Lite 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.

### **3. Newly Added Face Recognition Makes the iA (Intelligent Auto) Further Evolved for More Beautiful Still Picture Recording**

With the FT1, taking great photos is that easy. Panasonic incorporated the Intelligent Auto mode in pursuit of the ultimate ease of operation and the reduction of misshots. This mode is now further advanced with the inclusion of Face Recognition and AF Tracking features for FT1. In iA mode the camera does all the work, leaving you free to compose shots and capture moments. Just press aim, and shoot.

The FT1 features Face Recognition, a function that "remembers" faces. When a familiar face is recorded several times, the camera will prompt you to register the face. Once complete, if the familiar face appears into your frame again, the camera will display the name you specified for that person and prioritize focus and exposure so that the registered face is bright and in sharp focus. During registration, you can change the icon that indicates when the registered subject is in focus. You can also specify the age of the registered subject and have both the name and the age of the subject stamped onto your photos. When babies under 3 years-old are registered, the camera will automatically switch to Baby Scene mode if the baby appears into the frame. In playback, you can choose to display only photos that contain a specific registered face using Category Playback. You can also view image slideshows of only a selected person. Face recognition makes sorting archiving incredibly easy. This advanced face detection system also digitally corrects unwanted red-eye during recording.

With AF Tracking, the FT1 can lock onto any subject and keep it in focus even if it moves – making it easy to get beautiful, clear shots when a great photo opportunity suddenly arises. Simply aim, lock, and shoot.

In addition to the advanced functions mentioned above, the iA mode inherits fundamental functions users need in a good digital still camera. These include Mega O.I.S., which helps prevent blurring from hand-shake, and Intelligent ISO Control, which reduces motion blur by adjusting the ISO sensitivity if the subject moves as the shot is taken. The Mega O.I.S. now has an AUTO mode to select between the conventional Mode 1 and 2 depending on which mode best suits the zoom ratio being used. Intelligent Exposure optimizes the exposure for each part of an image, preventing blocked shadows and blown highlights and helping ensure that gradation and details are reproduced beautifully. It now features an automatic backlight compensation function that activates whenever the subject is in backlight. Intelligent Scene Selector automatically detects the five most common shooting situations – Portrait, Night Portrait, Scenery, Night Scenery and Macro - and switches to the appropriate Scene mode.

The Quick AF system helps keep focus on the subject while the camera is in recording mode even before pressing the shutter button halfway. This improves the result out of a shutter chance because the focus is always near the subject and AF time is minimized.

The user can activate all of these useful, convenient shooting-assist functions by simply selecting iA mode.

#### **4. 28mm Ultra-Wide-Angle LEICA DC Lens with 4.6x Optical Zoom Extends the Shooting Possibilities in Both Still and Motion Image Shooting**

The FT1 features a high-quality LEICA DC VARIO ELMAR 28mm wide-angle lens with a 4.6x optical zoom. The folded optics of shaft guide method is adopted to secure the toughness of the lens unit. Comprising 9 elements and a prism unit in 8 groups, including 1 ED lenses and 5 aspherical lenses with 6 aspherical surfaces, a difficult feat even by today's standards, this advanced lens unit passes Leica's stringent standards to deliver exceptional optical performance to the edges even adopting the folded optics.

Further, in 3-megapixel resolution mode, the Extra Optical Zoom function provides additional magnification, extending the zoom power to 9.0x (252mm\*) by using the centre part of the 12.1-megapixel large CCD.

\*Equivalent to 35mm film camera.

#### **4. Venus Engine HD Assures High Picture Quality for Both Still and Motion Picture**

The high-speed, high-performance Venus Engine HD has been re-engineered to support the recording of beautiful, high-definition motion images in AVCHD Lite. With its twin CPUs, Venus Engine HD boasts approx. 2.4x processing capability, greatly improving the speed of camera operations..

This high performance LSI elevates the artificial intelligence of the camera by introducing new circuitry making it possible to “recognize” human faces individually. It also supports high definition output through HDMI.

In image processing, luminance noise and chromatic noise are reduced separately before and after signal processing. This is further refined by separating noise two-dimensionally into high-frequency and low-frequency noise. The circuits then effectively reduce only the low-frequency noise to minimize the unwanted noise and help produce beautiful, sharp still and motion images.

This multi-task image-processing engine has a super-fast response time. The camera starts up quickly in 1.3 seconds. Shutter release time lag is as short as approx. 0.005 seconds, making it easy to capture sudden, spur-of-the-moment photo opportunities. In burst shooting mode, the FT1 can snap approx. 2.3 shots per second at 12.1-megapixel full resolution\*<sup>1</sup>. In High-Speed Burst shooting mode, it fires off an incredible approx. 10 shots per second\*<sup>2</sup>. Unlimited consecutive shooting is also available to let you shoot until the memory card is full\*<sup>3</sup>.

Despite its outstanding performance, the high performance engine is also more energy efficient compared with the conventional Venus Engine IV, extending the battery life up to 340 shots (CIPA) per a single charge.

\*Max.5 images in standard mode / 3 images in fine mode.

\*<sup>2</sup> 3-megapixel (4:3), 2.5-megapixel (3:2), 2-megapixel (16:9) recording.  
(10fps in Speed Priority mode / 6fps in Picture Priority mode)

\*<sup>3</sup> The consecutive shooting speed varies with the memory card, image size, and image compression mode. The number of shots depends on the memory card size, battery life, image size and image compression mode.

### **5. A 2.7-inch, Super High Resolution 230,000-dot LCD for Easy Playback**

The FT1 is equipped with a 2.7-inch, 230,000-dot Intelligent LCD with super high resolution and a wide viewing angle. The screen brightness automatically adjusts in 11 steps as the surrounding brightness level changes, ensuring easy visibility at all times.

Menus are now cleaner and easier to navigate, even for seniors, thanks to the new "Display Size" option. Thanks to the Venus Engine HD, smooth image playback at very high speeds is now available approx.17x faster for thumbnail and approx. 4x for single image even the image resolution is as high as 12.1-megapixel.

### **6. Other Versatile Functions Adding to the Photographic Enjoyment**

Lumix functions continue to evolve. Scene modes, which are optimized for a variety of still-image shooting situations, are now available for motion images as well. Thanks to a rich variety of 26 scene modes for still image and 17 for motion image (Portrait, Soft Skin, Transform, Self portrait, Scenery, Low light, Food, Party, Candle light, Sunset, Beach & Surf, Snow, Aerial, Pin hole, Film grain, Underwater and High Sensitivity.), capturing beautiful videos is effortless with the FT1. The most commonly used scene modes for outdoor photography including Sports, Snow, and Beach & Surf can be accessed directly via the mode dial.

The new scene mode for shooting still images includes the Beach & Surf and Panorama Assist mode. Beach & Surf mode is perfect for your beach activities, allowing you to use a single mode with optimized auto white balance both on the beach and in shallow water. Panorama Assist mode allows you to create powerful panoramic images - both vertically and horizontally. Simply align your shots according to a guide which overlaps the frame when you shoot, then use the included PanoramaMaker software to create your panorama images.

The minimum shooting distance has been shortened to 3 cm on the FT1. Using the extra 3x digital magnification in the Macro Zoom function\*, you can pull subjects even closer than the closest point possible in the wide-angle setting, and capture dramatic close-ups.

\* 3-megapixel (4:3), 2.5-megapixel (3:2), 2-megapixel (16:9) recording.

### About Included Software PHOTOfunSTUDIO 3.0 HD Edition

The latest version of the exciting bundled software PHOTOfunSTUDIO 3.0 HD Edition allows you to view, edit and archive your captured contents with greater ease and fun.

Still and motion images can be transferred to the PC via a USB cable for viewing and archiving on the PC with the PHOTOfunSTUDIO 3.0 HD Edition installed. Using PHOTOfunSTUDIO 3.0 HD Edition, you can edit and remove unwanted portions of your video clips recorded in AVCHD Lite. Contents recorded in AVCHD Lite can be burned directly onto a DVD disc for viewing on a DIGA Blu-ray Disc player\*. Alternatively, you can use the software to convert your contents to MPEG2 format to burn onto a DVD disc.

The portrait images taken with the camera's Face Recognition function are organized neatly in the folder of the name registered with the camera. Not only that, the software also features an independent Face Recognition function that recognizes the faces in the picture stored in your PC to sort the photos by the face. You do not have to pick out each photo one by one out of thousand of photos when you only want pictures of a specific person. With PHOTOfunSTUDIO 3.0 HD Edition, the software automatically sorts your images into virtual folders based on the faces you registered. You can also enjoy slideshows with a variety of effects and use your iTunes music library as background music. Motion pictures can be uploaded directly to YouTube using the built-in YouTube uploader.

\*AVCHD Lite 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.

#### ■ About Waterproof / Dustproof performance of the camera

This camera is waterproof / dustproof equivalent to "IP58", and is possible to record at a maximum of 3.0 m depth/60 min. This does not guarantee non-destruction, non-malfunction, and water-proofing in all conditions. Please observe specified precautions and avoid product-use beyond the guaranteed underwater duration, or beyond the guaranteed depth of water.

#### - Attention -

To prevent water leakage, confirm that there is no foreign object near card/battery door then close door by pressing until it clicks. ● Use underwater up to 3.0 m depth and not longer than 60 minutes continuously. ● Do not leave under low temperature in the cold climate, or where the temperature is above 40°C for a long period of time. ● When the unit is splashed with detergent, soap, hot spring, bath additive, sun oil, sunscreen, chemical, etc., wipe it off immediately. ● After use at the seaside or underwater, soak the unit in fresh water pooled in a shallow container for 10 minutes or less. Do not leave uncared for more than 60 minutes after using underwater. It may cause deterioration of the waterproof performance. ● Foreign materials may be attached if the zoom lever or mode dial does not move smoothly. Soak the unit in fresh water, shake it well and then wash the zoom lever and mode dial with tap water. ● To maintain the waterproof performance, it is recommended that the waterproof seal (with fee) is replaced at least once every 1 year at the retail store where you have bought the camera.

#### ■ About Shockproof performance of the camera

This camera has passed a drop test from 1.5 m in height in accordance with "MIL-STD 810F Method 516.5-Shock", but this does not guarantee non-destruction, non-malfunction, and water-proofing in all conditions. Water-proofing is not guaranteed if the unit is subject to an impact as a result of being hit or dropped etc.

– Drop Test –

Test standard: MIL-STD 810F Method 516.5–Shock ●Drop height: 1.5m ●Drop surface: 5cm thick plywood ●Number of units tested: 5 ●Drop orientations: 26 (each face, edge and corner) ●Number of drops: 1 (for each orientation) ●Unit inspected after each drop and found to be operating within product specifications. Change of appearance – paint–loss or deformation not measured.

\*Dynamic tracking function may fail to lock, lose the subject in AF Tracking, or track different subject depending on the recording conditions.

\*Depending on background and facial expression, camera may not recognize a registered person.

\*Leica is a registered trademark of Leica Microsystems IR GmbH.

\*The LEICA DC VARIO-ELMAR lenses are manufactured using measurement instruments and quality assurance systems that have been certified by Leica Camera AG based on the company's quality standards.

\*The "AVCHD" is a high definition (HD) digital video recording / playback format jointly established by Panasonic Corporation and Sony Corporation. The "AVCHD Lite" is a subset of the "AVCHD format" for HD digital video cameras with HD video recording restricted to 720P. The new "AVCHD Lite" Logo and the "AVCHD Lite" License are restricted to devices within the AVCHD Video Camera category. Digital cameras have been added to the AVCHD Video Camera category.

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\*YouTube is a trademark of Google Inc.

\*Dolby and the double-D symbol are trademarks of Dolby Laboratories.

\*HDMI, the HDMI logo and High-Definition Multimedia Interface are trademarks or registered trademarks of HDMI Licensing LLC.

\*All other company and product names are trademarks of their respective corporations.

\*This unit is compatible with both SD Memory cards and SDHC Memory cards. You can only use SDHC Memory cards on devices that are compatible with them. You cannot use SDHC Memory cards on devices that are only compatible with SD Memory cards. (When using a SDHC Memory card on another device, be sure to read the operating instructions for that device.)

\*The use of recorded or printed materials that are protected by copyright for any purpose other than personal enjoyment is prohibited, as it would infringe upon the rights of the copyright holder.

\*Some accessories are not available in some countries.

\*Design and specifications are subject to change without notice.

### DMC-FT1 Specifications

S-Silver, D-Orange, G-Green : Actual Selling Price at RM 1,499.00

<b>Metrics</b>	<b>Dimensions (W x H x D)</b>	98.3 x 63.1 x 23.0 mm (3.87 x 2.49 x 0.91 in)	
	<b>Weight</b>	Approx. 162.5g (0.36 lb) Approx. 183.8g with Battery and SD Memory Card (0.41 lb)	
<b>Optics</b>	<b>Pixels</b>	<b>Camera Effective Pixels</b> 12.1 Megapixels	
	<b>CCD</b>	<b>Sensor Size / Total Pixels / Filter</b> 1/2.33-inch / 12.7 Total Megapixels / Primary Color Filter	
	<b>Lens</b>	<b>Aperture</b>	F3.3 - 5.9 / 2-Step (F3.3 - 11 (W) / F5.9 - 18 (T))
		<b>Optical Zoom</b>	4.6x
		<b>Focal Length</b>	f=4.9-22.8mm (28-128mm in 35mm equiv.)
		<b>Extra Optical Zoom (EZ)</b>	5.6x (4:3 / 8M), 7.2x (4:3 / 5M), 9.0x (under 3M)
		<b>Lens</b>	LEICA DC VARIO-ELMAR 10 elements in 8 groups (5 Aspherical Lenses / 6 Aspherical surfaces, 1 ED lens)
		<b>Optical Image Stabilizer</b>	MEGA O.I.S. (Auto / Mode1 / Mode2)
		<b>Digital Zoom</b>	4x ( Max. 18.4 x combined with Optical Zoom without Extra Optical Zoom ) (Max.36.0x combined with Extra Optical Zoom)
	<b>Focus</b>	<b>Focusing Area</b>	Normal: 30cm - infinity Macro / Intelligent AUTO : Wide 5cm / Tele 30cm - infinity
		<b>Focus Range Display</b>	Yes
		<b>AF Assist Lamp</b>	Yes
		<b>Focus</b>	Normal / Macro, AF Tracking (On / Off), Pre-AF (Off / Quick AF / Continuous AF) Continuous AF (On / Off) in motion image recording
	<b>Shutter</b>	<b>AF Metering</b>	Face / AF Tracking / Multi (11pt) / 1pt HS / 1pt / Spot
<b>Shutter Speed</b>		8-1/1300 sec (Selectable minimum shutter speed) Starry Sky Mode : 15, 30, 60sec.	
<b>Recording</b>	<b>iA</b>	<b>Face Recognition</b>	Photo
		<b>Optical Image Stabilizer</b>	Photo & Movie
		<b>Intelligent ISO Control</b>	Photo
		<b>Face Detection</b>	Photo & Movie
		<b>Intelligent Scene Selector</b>	Photo (Portrait, Scenery, Night Portrait, Night Scenery, Macro), & Movie (Portrait, Scenery, Low Light, Macro)
		<b>Intelligent Exposure</b>	Photo & Movie
		<b>AF Tracking</b>	Photo
		<b>Digital Red Eye Correction</b>	Photo
	<b>File</b>	<b>File Format</b>	Still Image: JPEG (DCF / Exif2.21) Image with Audio: JPEG (DCF / Exif2.21) + QuickTime

		Motion picture: AVCHD Lite, QuickTime Motion JPEG
Interface	AVCHD Lite REC	NTSC / PAL (Depends on Region)
	Mode Switch	[Playback]
	One-Touch Movie Button	Yes
Recording Modes	Mode Dial	Intelligent AUTO, Normal Picture, SCN, Beach & Surf, Snow, Sports, Clipboard
	Still Picture Scene Mode	Portrait, Soft Skin, Transform, Self-Portrait, Scenery, Panorama Assist, Night Portrait, Night Scenery, Food, Party, Candle Light, Baby1, Baby2, Pet, Sunset, High sensitivity, Hi-Speed Burst (Image Priority / Speed Priority), Flash Burst, Starry Sky, Fireworks,  Aerial photo, Pinhole, Film Grain, Underwater
	Movie Scene Mode	Portrait, Soft Skin, Transform, Self-Portrait, Scenery, Low Light, Food, Party, Candle Light, Sunset, Beach & Surf, Snow, Aerial, Pinhole, Film Grain, Underwater, High Sensitivity (Activated by selecting Still Picture Scene Mode then pressing movie button. Still Picture Scene Modes without corresponding Movie Scene Mode is recorded in Normal Mode)
	Continuous Shooting Mode	Full-Resolution Image, 2.3 frames/sec Max. 5 images (Standard mode), Max 3 images (Fine Mode)  High-speed Burst Mode: approx. 6.0 frames/sec (image priority) approx. 10 frames/sec (speed priority) (recorded in 3M for 4:3, 2.5M for 3:2, 2M for 16:9)
	Unlimited consecutive shooting	1.8 frames/sec
Exposure Parameters	Motion Picture Recording	4:3 VGA: 640 x 480 pixels, 30fps (Motion JPEG) QVGA: 320 x 240 pixels, 30 fps (Motion JPEG)
		16:9 WVGA: 848 x 480 pixels, 30 fps (Motion JPEG)
		HD Movie 1280x720, 60P (AVCHD Lite, SH: 17Mbps / H:13Mbps / L:9Mbps) / 30fps (Motion JPEG)
	Exposure	Program AE
	Exposure Compensation	1/3 EV step, +/-2 EV
	Auto (AE) Bracketing	+/- 1/3 EV ~1EV step, 3 frames
	Light Metering	Intelligent Multiple
	ISO Sensitivity	Auto / 80 / 100 / 200 / 400 / 800 / 1600 High Sensitivity (ISO 1600-6400)
Image Parameters	Aspect Ratio	4:3 / 3:2 / 16:9
	Still Picture Recording	4:3 4000 x 3000(12M) / 3264 x 2448 (8M EZ) / 2560 x 1920 (5M EZ) / 2048 x 1536 (3M EZ) / 1600 x 1200 (2M EZ) / 640 x 480 (0.3M EZ)
		3:2 4000 x 2672(10.5M) / 3264 x 2176 (7M EZ) / 2560 x 1712 (4.5M EZ) / 2048 x 1360 (2.5M EZ)
		16:9 4000 x 2248(9M) / 3264 x 1840 (6M EZ) / 2560 x 1440 (3.5M EZ) / 1920 x 1080 (2M EZ)
Image Quality ..	Fine / Standard	
	White Balance	Auto / Daylight / Cloudy / Shade / Halogen / White Set White Balance Adjustment (±10steps, except for auto set)

		(Selectable at Portrait, Soft Skin, Transform, Self-Portrait, Sports, Baby, Pet, High Sensitivity, Highspeed Burst, Pinhole, Panorama Assist mode)	
Others	Quick Menu	Yes	
	Color Mode	Standard, Natural, Vivid, Black & White, Sepia, Cool, Warm	
	Still Image with Audio Recording	5 sec	
	Audio Dubbing	Max. 10sec	
	Flip Animation	-	
	Real-time histogram	Yes	
	Composition Guide line	Yes (2 patterns)	
	Auto Review	1sec, 2sec, Hold, Zoom	
	Easy Zoom / Zoom Resume	No / No	
	Optical Zoom in Motion Picture	Yes	
	Zoom Macro	Yes	
	Orientation Detector	Yes	
	Scene Mode Help Screen	Yes	
	Self Timer	2sec / 10sec	
Focus Icon Select	Yes (in Face Recognition only)		
Playback	Display	Playback Mode	Normal Playback, Slideshow, Mode Playback, Category Playback, Favorites Playback
		Thumbnails / Zoomed Playback	12,30-thumbnails / Max 16x
		Calendar Display / Dual-Image Playback	Yes / No
		Set Favorites / Rotate Image	Yes / No
		Playback Still Images with Audio	Yes
		Playback Motion Picture	Yes (Motion JPEG / AVCHD Lite)
	Slideshow Mode	All / Still Images Only / Motion Picture Only / Favorites / Category BGM Effect (Natural / Slow / Swing / Urban / OFF)	
	Delete Edit	Show Histogram	Yes
		Delete Image	Single / Multi / All / All except Favorites
		DPOF Print Setting / Set Protection	Yes / Yes
		Resize / Trim / Aspect Conv. / Leveling	Yes / Yes / No / Yes
		Copy / Title Edit / Text Stamp	Yes / Yes / Yes
PictBridge Support		Single / Multi / All / Favorites / DPOF	
Setup	OSD language	English, German, French, Italian, Spanish, Polish, Czech, Hungarian, Russian, Chinese (Traditional), Chinese (Simplified), Netherlandic, Thai, Korean, Turkish, Portuguese, Arabic, Persian, Japanese, Swedish, Danish, Finnish	
	Viera Link	Yes	
	HDMI Output	Video: Auto / 1080i / 720p / 480p (NTSC), 576p (PAL) Audio: Dolby Digital Creator (Dolby AC3)	
	Movie REC Guide	Yes	
	Wind-Cut in Motion	Yes	

		<b>Picture</b>	
		<b>Travel Date / World Time</b>	Yes / Yes
<b>Others</b>	<b>Monitor</b>	<b>LCD Monitor</b>	2.7" TFT LCD Display (230K dots) Field of View : approx. 100%, Wide Viewing Angle AUTO Power LCD mode, Power LCD mode
		<b>Tough</b>	<b>Water Proof</b>
	<b>Dust Proof</b>		Yes (IEC60529 IP5X compliant)
	<b>Shock Proof</b>		1.5m (MIL-STD810F Method 516.5-Shock compliant)
	<b>Flash</b>	<b>Built-in-Flash</b>	Auto, Auto/Red-eye Reduction, Forced On, Slow Sync./Red-eye Reduction, Forced Off 0.3 - 5.1m (Wide/ISO Auto), 0.3 - 2.8m (Tele/ISO Auto)
		<b>Media</b>	<b>Recording Media</b>
	<b>LED Illumination</b>		Yes
	<b>Built-in-Memory</b>		approx. 40MB
	<b>Audio Interface</b>	<b>Microphone / Speaker</b>	Mono / Yes
		<b>Interface</b>	miniHDMI, USB2.0 High speed AV Output NTSC model (NTSC), PAL model (PAL/NTSC) DC Input (requires Multi Conversion Adapter DMW-MCA1*) *Optional
	<b>Power</b>	<b>Power</b>	ID-Security Li-ion Battery Pack (3.6V, 940mAh) (Included) AC Adaptor DMW-AC5* (Input: 110-240V AC) with Multi Conversion Adapter DMW-MCA1* *Optional
		<b>Standard Package</b>	<b>Battery life (approx.)</b>
	<b>Included Software</b>		PHOTOfunSTUDIO v3.0 HD Edition ArcSoft (MediaImpression / Panorama Maker) USB Driver, QuickTime
	<b>Standard Accessories</b>		Battery Charger, Battery Pack, Battery Case AV Cable, USB Connection Cable, AC Cable Hand Strap (with stopper), CD-ROM

\*Based on the CIPA standard. Shooting conditions: 23°C with 50% humidity; LCD on; using SD Memory Card; starting to shoot 30 seconds after turning on the power; shooting once every 30 seconds with the flash in full operation for every other shot; changing the zoom setting from telephoto to wide, or wide to telephoto, for each shot; and temporarily turning the power off after each 10 shots (long enough to lower the battery temperature).

\*The number of recordable pictures decreases in Auto Power LCD mode or Power LCD mode.

### **About Panasonic Malaysia Sdn Bhd**

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