LUMIX Super Zoom Camera 30 x 70 DMC-TZ70

Metrics	**Dimensions (W x H x D)**	110.7 x 64.6 x 34.4 mm/(4.36 x 2.54 x 1.35 inch)
	Weight	Approx. 217 g without Battery and SD Memory Card (0.478 lb)/Approx. 243 g with Battery and SD Memory Card (0.536 lb)
Pixels	**Camera Effective Pixels**	12.1 Megapixels
Sensor	**Sensor Size / Total Pixels / Filter**	1/2.3-type High Sensitivity MOS Sensor / Total Pixel Number 12.8 Megapixels / Primary Color Filter
Lens	**Aperture**	F3.3 - 6.4 / Multistage Iris Diaphragm (F3.3 - 8.0 (W), F6.4 - 8.0 (T))
	Optical Zoom	30x
	Focal Length	f = 4.3 - 129mm (24 - 720mm in 35mm equiv.)/(28 - 840mm in 35mm equiv. in 16:9 video recording / Level Shot function Off)/(30 - 900mm in 35mm equiv. in 16:9 video recording / Level Shot function On)
	Extra Optical Zoom (EZ)	36.7x (4:3 / 8M), 46.9x (4:3 / 5M), 58.6x (4:3 / under 3M)
	Intelligent Zoom	60x
	Lens	LEICA DC VARIO-ELMAR/12 elements in 9 groups/(5 Aspherical Lenses / 10 Aspherical surfaces / 3 ED Lenses)
	2- Speed Zoom	Yes
	Optical Image Stabilizer/Five Axis Correction	HYBRID O.I.S. + (On / Off) / Yes
	Digital Zoom	Max. 4x (Max. 2x for TZ71)
	Conversion Lens Compatibility	-
Focus	**Focusing Area**	Normal: Wide 50cm - infinity / Tele 200cm - infinity/AF Macro / MF / Intelligent Auto / Motion Picture: Wide 3 cm - infinity / Tele 200 cm - infinity
	AF Assist Lamp	Yes (On/Off)
	Focus	Normal / AF Macro / Macro Zoom / MF/Quick AF On / Off (on in Intelligent Auto), Continuous AF (only for motion picture)/AF/AE Lock Button (Set the Fn button in custom menu to AF/AE lock)/Focus Peaking, One Shot AF (Set the Fn button in custom menu to AF-ON), AF Area Select, AF Tracking
	AF Metering	Face / AF Tracking / 23-area / 1-area (flexible / scalable)
Shutter	**Shutter Speed**	

		Approx. 4 - 1/2,000 sec/Starry Sky Mode: 15, 30, 60 sec
Finder	**Viewfinder**	0.20" LVF (Live View Finder) (1,166K dots equiv.), Field of View: Approx. 100%, Lens 19.6x/Magnification: Approx. 2.59x / 0.46x (35 mm camera equivalent)
File	**File Format**	Still Image: JPEG (DCF/Exif2.3) / RAW, DPOF/3D Image: MPO/Motion Picture: AVCHD, MP4
Recording Modes	**Mode Dial / Mode Button**	Intelligent Auto, P, A, S, M, C1 (Custom), C2 (Custom), Panorama Shot, Scene, Creative Control
	Creative Control mode	Expressive, Retro, Old Days, High Key, Low Key, Sepia, Dynamic Monochrome, Impressive Art, High Dynamic, Cross Process, Toy Effect, Miniature Effect, Soft Focus, Star Filter, One Point Color (15 filters)
	Still Image Scene Mode	Portrait, Soft Skin, Scenery, Sports, Night Portrait, Night Scenery, Handheld Night Shot, Food, Baby1, Baby2, Pet, Sunset, High Sensitivity, Glass Through, HDR, Starry Sky, High Speed Video, 3D Photo
	Continuous Shooting Mode	Full-Resolution Image: 10 frames/sec, Max. 6 images/with AF Tracking: 6 frames/sec, 3 frames/sec/Intelligent Burst Shooting/High-speed Burst: Approx. 60 frames / sec/(recorded in 2.5M / 0.3M for 4:3, 3M / 0.3M for 3:2, 3.5M / 0.2M for 16:9, 2M / 0.2M for 1:1)/Approx. 40 frames / sec/(recorded in 5M / 3M / 0.3M for 4:3, 4.5M / 2.5M / 0.3M for 3:2, 3.5M / 2M / 0.2M for 16:9, 3.5M / 2.5M / 0.2M for 1:1)/Flash Burst Shooting
Motion Picture Recording (*2)	**HD Video**	1920 x 1080 pixels, 50p (FHD: 28Mbps / AVCHD) (Sensor Output is 50fps)/1920 x 1080 pixels, 50i (FHD: 17Mbps / AVCHD) (Sensor Output is 50fps)/1280 x 720 pixels, 50p (HD: 17Mbps / AVCHD) (Sensor Output is 50fps)/1920 x 1080 pixels, 25p (FHD: 20Mbps / MP4) (Sensor Output is 25fps)/1280 x 720 pixels, 25p (HD: 10Mbps / MP4) (Sensor Output is 25fps)
	STD Video	640 x 480, 25p (VGA: 4Mbps / MP4) (Sensor Output is 25fps)
	High Speed Video	1280 x 720 pixels, 25p (HD: MP4) (Sensor Output is 100fps)/640 x 480 pixels, 25p (VGA: MP4) (Sensor Output is 200fps)
Continuous recordable time (motion pictures)	**AVCHD**	Approx. 75 min (FHD/50p), Approx. 80 min (FHD/50i)
	MP4	Approx. 90 min (FHD)
Actual recordable time (motion pictures)	**AVCHD**	Approx. 30 min (FHD/50p), Approx. 35 min (FHD/50i)
	MP4	Approx. 40 min (FHD)
Exposure Parameters	**Exposure**	Program AE, Aperture Priority AE, Shutter Priority AE, Manual
	Exposure Compensation	1/3 EV step, +/-2 EV
	Auto (AE) Bracketing	1/3-1EV step, Max. +/-1 EV, 3 frames
	Light Metering	Intelligent Multiple / Center Weighted / Spot
	ISO Sensitivity	Auto / i.ISO / 80 / 100 / 200 / 400 / 800 / 1600 / 3200 / 6400
Picture Quality	**Still Picture Recording**	[4:3] 4000x3000 (12M) / 3264x2448 (8M EZ) / 2560x1920 (5M EZ) / 2048x1536 (3M EZ) / 640x480 (0.3M EZ)/[3:2] 4000x2672 pixels (10.5M) / 3264x2176 (7M EZ) / 2560x1712 (4.5M EZ) / 2048x1360 (2.5M EZ) / 640x424 (0.3M EZ)/[16:9] 4000x2248 (9M) / 3840 x 2160 (8M EZ) /

		2560x1440 (3.5M EZ) / 1920x1080 (2M EZ) / 640x360 (0.2M EZ)/[1:1] 2992x2992 (9M) / 2448x2448 (6M EZ) / 1920x1920 (3.5M EZ) / 1536x1536 (2.5M EZ) / 480x480 (0.2M EZ)
	Image Quality	RAW / RAW+Fine / RAW+Standard / Fine / Standard/(3D Mode: MPO+Fine / MPO+Standard)
	White Balance	Auto / Daylight / Cloudy / Shade / Incandescent / White Set/White Balance Adjustment (Except Auto)
	Photo Style / Film Mode	-
	Color Mode / Color Effect / My color	-
	Picture Adjustment	-
	Aspect Bracketing	-
	Digital Red Eye Correction (Red-Eye Removal)	Yes (On/Off)
Other	**GPS**	-
	Wi-FI	IEEE 802.11b/g/n/2412 MHz – 2462 MHz (1-11 ch)/WPA / WPA2/Infrastracture Mode / WPS / Wi-Fi Direct/Wi-Fi Button
	NFC	ISO/IEC 18092 (NFCIP-1) NFC-F
	Zoom in Motion Picture	Yes
	Self Timer	2 sec / 10 sec
	Self Shot Mode	-
	Playback Mode	All, Slideshow, Filtering Play (Picture Only, Video Only, 3D Play, GPS Area Play*, Travel, Category Selection, Select Date, Favorite), Calendar/* Not available on products for China.
Display	**Thumbnails / Zoomed Playback**	12,30-thumbnails / Yes
	Calendar Display / Dual- Image Playback	Yes (Menu / Zoom Lever) / No
	Set Favorites / Rotate Image	Yes / No
	Show Histogram	Yes
	Show Highlights	-
	DPOF Print Setting / Set Protection	Yes / Yes
Edit	**Retouch**	Auto Retouch / Creative Retouch

	Resize / Cropping / Aspect Conv. / Leveling	Yes / Yes / No / No
	Copy / Title Edit / Text Stamp	Yes / Yes / Yes
	Cut Animation	Yes
	Video Divide	Yes
	PictBridge Support	Single / Multi / All / DPOF / Favorites
Setup	OSD language	Japanese, English, German, French, Italian, Spanish
Monitor	LCD Monitor	7.5cm (3.0") TFT Screen LCD Display (1,040K dots), AR Coating/Field of View: Approx. 100%, Wide Viewing-angle/Power Monitor mode, AUTO Power Monitor mode
Flash	Built- in-Flash	Auto, Auto/Red-eye Reduction, Forced On, Slow Sync./Red-eye Reduction, Forced Off/0.6 - 6.4m (Wide / ISO Auto), 2.0 - 3.3m (Tele / ISO Auto)
Media	Recording Media	Built-in Memory, SD Memory Card, SDHC Memory Card, SDXC Memory Card
	Built- in-Memory	Approx. 86MB * Approx. 86MB for China
Audio	Microphone / Speaker	Stereo / Mono
Interface	Interface	microHDMI, AV Output (PAL / NTSC), USB (AV/USB Multi)
Power	Power	Li-ion Battery Pack (3.6V, 1250mAh, 4.5 Wh) (Included)/AC Adaptor (Input: 110 - 240V AC) (Included, connect with USB cable)
	Battery life (approx.)	300 pictures (CIPA Standard)*1
Standard Package	Included Software	PHOTOfunSTUDIO 9.6PE/LoiLoScope (trial version)/Adobe Reader/・ The software to process RAW file on PC is not bundled with DMC-TZ70/To do this, SILKYPIX Developer Studio is available for download at Ichikawa Soft Laboratory's website using PC connected to the Internet.
	Standard Accessories	Battery Pack, AC Adaptor, USB Cable, Hand Strap, CD-ROM
NOTE		*1
NOTE		Recording conditions by CIPA standard
NOTE		- Temperature: 23 oC (73.4 oF) / Humidity: 50%RH when LCD monitor is on.
NOTE		- Using a Panasonic SDHC Memory Card
NOTE		- Using the supplied battery.
NOTE		- Starting recording 30 seconds after the camera is turned on. (When the optical image stabilizer function is set to [ON].)
NOTE		- Recording once every 30 seconds with full flash every second recording.
NOTE		

		- Rotating the zoom lever from Tele to Wide or vice versa in every recording.
NOTE		- The number of recordable pictures varies depending on the recording interval time.
NOTE		- If the recording interval time becomes longer, the number of recordable pictures decreases.
NOTE		- CIPA is an abbreviation of [Camera & Imaging Products Association].
NOTE		*2
NOTE		- These are standard times taken at a temperature of 23 oC (73.4 oF) and a humidity of 50%RH.
NOTE		- The time available for recording varies depending on the environment, the interval between recordings, and the manner of use.
NOTE		- Actual recordable time is the time available for recording when repeating actions such as switching the power supply [ON] / [OFF], starting/stopping recording, zoom operation etc.
NOTE		- Use a card with SD Speed Class with "Class 4" or higher when recording motion pictures.
NOTE		SD speed class is the speed standard regarding continuous writing.
NOTE		- Maximum time to record motion pictures continuously with [AVCHD] is 29 minutes 59 seconds.
NOTE		- Maximum time to record motion pictures continuously with [MP4] is 29 minutes 59 seconds or up to 4 GB.