



LUMIX Travel Zoom Digital Camera DC-TZ220

Metrics		Dimensions (W x H x D)	111.2 x 66.4 x 45.2 mm (4.38 x 2.61 x 1.78 inch)
		Weight	Approx. 340 g with Battery and SD Memory Card (0.75 lb)
		Weight	Approx. 298 g without Battery and SD Memory Card (0.66 lb)
Optics	Pixels	Camera Effective Pixels	20.1 Megapixels
	Sensor	Sensor Size / Total Pixels / Filter	1-inch High Sensitivity MOS Sensor / 20.9 Total 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	15x
		Focal Length	f = 8.8 - 132mm
		Focal Length	(26 - 390mm in 35mm equiv. in 4:3)
		Focal Length	(24 - 360mm in 35mm equiv. in 3:2)
		Focal Length	(25 - 375mm in 35mm equiv. in 16:9)
		Focal Length	(31 - 465mm in 35mm equiv. in 1:1)
		Focal Length	(36 - 540mm in 35mm equiv. in 4:3, 3:2, 16:9 4K PHOTO recording)
		Focal Length	(38 - 570mm in 35mm equiv. in 1:1 4K PHOTO recording)
		Focal Length	(36 - 540mm in 35mm equiv. in 4K video recording)
		Focal Length	(25 - 375mm in 35mm equiv. in 16:9 video recording / O.I.S. Off / Level Shot function Off)
		Focal Length	(27 - 405mm in 35mm equiv. in 16:9 video recording / O.I.S. On / Level Shot function Off)
		Focal Length	(30 - 450mm in 35mm equiv. in 16:9 video recording / O.I.S. On / Level Shot function On)
		Extra Optical Zoom (EZ)	21x (3:2 / 10M (M)), 30x (3:2 / 5M (S))
		Intelligent Zoom	30x
		Lens	LEICA DC VARIO-ELMAR
		Lens	13 elements in 11 groups
		Lens	(1 aspherical ED lens / 5 aspherical lenses / 3 ED lenses) (11 aspherical surfaces)

		Optical Image Stabilizer	5-Axis HYBRID O.I.S. +*
		Optical Image Stabilizer	*5-Axis compensation works in video recording except for 4K video or high-speed video recording.
		Digital Zoom	Max. 4x (Digital Zoom and Intelligent Zoom combine for a maximum of 4x.)
	Focus	Focusing Area	Normal: Wide 50 cm - infinity / Tele 100 cm - infinity
		Focusing Area	AF Macro / MF / Intelligent Auto / Motion Picture: Wide 3 cm - infinity / Tele 100 cm - infinity
		AF Assist Lamp	Yes (On / Off)
		Focus	AF / AF Macro / Macro Zoom
		Focus	*Each available with AFS (Single) / AFF (Flexible) / AFC (Continuous) Quick AF, Continuous AF (during motion picture recording),
		Focus	Touch AF/AE Function, Touch Shutter, Eye Sensor AF, Touch Pad AF, MF Assist, Touch MF Assist, AF+MF, Focus Peaking, One Shot AF (Set the Fn button in custom menu to AF-ON), Low Light AF, Starlight AF
		Post Focus	Yes
		Focus Stacking	Yes
		AF Metering	Face/Eye Detection / Tracking / 49-area / Custom Multi / 1-area / Pinpoint
		AF Metering	(Full area touch is available)
	Shutter	Shutter Speed [Still Image]	Approx. 60 - 1/2,000 sec (Mechanical Shutter)
		Shutter Speed [Still Image]	Approx. 1 - 1/16,000 sec (Electronic Shutter)
		Shutter Speed [Still Image]	Time (Approx. 120 sec)
		Shutter Speed [Motion Picture]	Approx. 1/25 - 1/16,000 sec
		Shutter Speed [Motion Picture]	Approx. 1/2 - 1/16,000 sec (Creative Video M Mode / MF Mode)
	Finder	Viewfinder	0.21" LVF (Live View Finder) (2,330k dots equiv.), Field of View: Approx. 100%
		Viewfinder	Magnification: Approx. 1.45x / 0.53x (35 mm camera equivalent)
Recording	File	File Format	Still Image: JPEG (DCF/Exif2.31) / RAW
		File Format	4K PHOTO: MP4

	File Format	Motion Picture: AVCHD (Audio format: Dolby Audio 2ch), MP4 (Audio format: AAC 2ch)
Recording Modes	Mode Dial	Intelligent Auto, P, A, S, M, Creative Video, C (Custom), Panorama Shot, Scene Guide, Creative Control
	Creative Control mode	Expressive / Retro / Old Days / High Key / Low Key / Sepia / Monochrome / Dynamic Monochrome / Rough Monochrome* / Silky Monochrome* / Impressive Art / High Dynamic / Cross Process / Toy Effect / Toy Pop / Bleach Bypass / Miniature Effect / Soft Focus* / Fantasy / Star Filter* / One Point Color / Sunshine* (22 filters) *For photos only.
	Scene Guide	Clear Portrait, Silky Skin, Backlit Softness, Clear in Backlight, Relaxing Tone, Sweet Child's Face, Distinct Scenery, Bright Blue Sky, Romantic Sunset Glow, Vivid Sunset Glow, Glistening Water*, Clear Nightscape, Cool Night Sky, Warm Glowing Nightscape, Artistic Nightscape, Glittering Illuminations*, Handheld Night Shot, Clear Night Portrait, Soft Image of a Flower*, Appetizing Food, Cute Dessert, Freeze Animal Motion, Clear Sports Shot, Monochrome *For photos only.
	Burst Shooting Mode (Approx.)	[AFS] H: 10 frames/sec, M: 7 frames/sec (with Live View), L: 2 frames/sec (with Live View)
	Burst Shooting Mode (Approx.)	[AFF/AFC] H: 6 frames/sec, M: 6 frames/sec (with Live View), L: 2 frames/sec (with Live View)
	4K Photo Mode (*2)	4K Burst: 30 frames/sec, max. 15 min
	4K Photo Mode (*2)	4K Burst (S/S): 30 frames/sec, max. 15 min
	4K Photo Mode (*2)	4K Pre-Burst: 30 frames/sec, approx. 2 sec
	4K Photo Mode (*2)	Exif Information: Yes (Each JPEG image cropped out of the 4K burst file complies with EXIF.)
	4K Photo Mode (*2)	Auto Marking Function: Auto / Face Priority / Motion Priority (in 4K Burst mode and 4K Burst (S/S) mode)
Motion Picture Recording (*2)	MP4	[4K]
	MP4	3840x2160 4K/30p: 100Mbps
	MP4	4K/25p: 100Mbps
	MP4	4K/24p: 100Mbps
	MP4	[Full HD]
	MP4	1920x1080 FHD/60p: 28Mbps
	MP4	FHD/50p: 28Mbps
	MP4	FHD/30p: 20Mbps
	MP4	FHD/25p: 20Mbps
	MP4	[HD]

	MP4	1280x720 HD/30p: 10Mbps
	MP4	HD/25p: 10Mbps
	AVCHD	[Full HD]
	AVCHD	1920x1080 FHD/50p: 28Mbps, 50p recording
	AVCHD	FHD/50i: 17Mbps, 50i recording
	AVCHD	FHD/25p: 24Mbps, 50i recording (sensor output is 25fps)
	AVCHD	FHD/24p: 24Mbps, 24p recording
	High Speed Video(*2)	[Full HD]
	High Speed Video(*2)	1920x1080 FHD/25p (Sensor Output is 100fps)
Continuous Recordable Time (Motion Pictures) (*2)	AVCHD	4K/30p, 4K/25p: Approx. 90 min
	AVCHD	FHD/60p, FHD/50p: Approx. 100 min
	MP4	FHD/50p: Approx. 100 min
	MP4	FHD/50i: Approx. 100 min
Actual recordable Time (Motion Pictures) (*2)	AVCHD	4K/30p, 4K/25p: Approx. 45 min
	AVCHD	FHD/60p, FHD/50p: Approx. 50 min
	MP4	FHD/50p: Approx. 50 min
	MP4	FHD/50i: Approx. 50 min
Exposure Parameters	Exposure	Program AE, Aperture Priority AE, Shutter Priority AE, Manual
	Exposure Compensation	1/3 EV step, +/-5 EV (+/-3 EV for motion picture / 4K PHOTO)
	Light Metering	Intelligent Multiple / Center Weighted / Spot
	ISO Sensitivity	Still Image: Auto / i.ISO / 80* / 100* / 125 / 200 / 400 / 800 / 1600 / 3200 / 6400 / 12800 / 25600* *Extended ISO
	ISO Sensitivity	Motion Picture: Auto / 80* / 100* / 125 / 200 / 400 / 800 / 1600 / 3200 / 6400 *Extended ISO
	ISO Sensitivity	(Changeable to 1/3 EV step)
Picture Quality	Still Picture Recording	[4:3] 4864x3648 (17.5M) (L) / 3456x2592 (9M) (M) / 2432x1824 (4.5M) (S)
	Still Picture Recording	[3:2] 5472x3648 (20M) (L) / 3888x2592 (10M) (M) / 2736x1824 (5M) (S)
	Still Picture	[16:9] 5472x3080 (17M) (L) / 3840x2160 (8M) (M) / 1920x1080 (2M) (S)

		Recording	
		Still Picture Recording	[1:1] 3648x3648 (13.5M) (L) / 2592x2592 (6.5M) (M) / 1824x1824 (3.5M) (S)
		Image Quality	RAW / RAW+Fine / RAW+Standard / Fine / Standard
		White Balance	AWB / AWBc / Daylight / Cloudy / Shade / Incandescent / Flash / White Set 1, 2, 3, 4 / Color temperature setting
		White Balance	(2-axis adjustable)
		Photo Style	Standard, Vivid, Natural, L. Monochrome, Monochrome, Scenery, Portrait, Custom
		Picture Adjustment	Contrast, Sharpness, Noise Reduction, Saturation*, Color Tone**, Filter Effect**
		Picture Adjustment	*Except for Monochrome mode. **For Monochrome mode only.
	Bracket	AE Bracket	3, 5, 7 images in 1/3, 2/3 or 1 EV step, Max. +/-3 EV
		Aperture Bracket	3 or all positions in 1 EV step
		Focus Bracket	1 to 999 frames, focus steps can be set in 10 levels
		White Balance Bracket	'3 images in blue/amber axis or in magenta/green axis
	Other	Digital Red Eye Correction (Red-Eye Removal)	Yes (On / Off)
		Wi-Fi	IEEE 802.11b/g/n
		Wi-Fi	2412 MHz - 2462 MHz (1-11 ch)
		Wi-Fi	WPA / WPA2
		Wi-Fi	Infrastructure Mode / WPS
		Bluetooth	'Bluetooth® v4.2 (Bluetooth Low Energy (BLE))
		Self Timer	2 sec / 10 sec / 10 sec (3 images)
Playback	Display	Playback Mode	All, Picture Only, Video Only, Slideshow (All / Picture Only / Video Only, duration & effect is selectable), Calendar
		Thumbnails / Zoomed Playback	12,30-thumbnails / Yes
		Rating / Rotate Image / Protect	Yes / Yes / Yes

		Show Histogram/ Show Highlights	Yes / Yes
	Edit	Retouch	Clear Retouch
		Image Composition	Light Composition, Sequence Composition
		Creating a Motion Picture from Still Pictures	Time Lapse Video, Stop Motion Video
		RAW Processing	Yes
		Resize/ Cropping	Yes / Yes
		Title Edit / Text Stamp	Yes / Yes
		Video Divide	Yes
		Direct Print	PictBridge compatible
Setup		OSD language	Japanese, English, German, French, Italian, Spanish, Chinese (Traditional), Chinese (Simplified)
Others	Monitor	LCD Monitor	3.0" (7.5cm) TFT Screen LCD Display (1240k dots)
		LCD Monitor	Static Touch Control
		LCD Monitor	Field of View: Approx. 100%, AF Coating
	Flash	Built- in-Flash	Auto*, Auto/Red-eye Reduction*, Forced On, Forced On/Red-eye Reduction, Slow Sync., Slow Sync./Red-eye Reduction, Forced Off *For iA, iA+ mode only.
		Built- in-Flash	0.6 - 6.8m (Wide / ISO Auto), 1.0 - 3.9m (Tele / ISO Auto)
	Media	Recording Media	SD Memory Card, SDHC Memory Card, SDXC Memory Card
		Recording Media	(Compatible with UHS-I UHS Speed Class 3 standard SDHC / SDXC Memory Cards)
		Built- in-Memory	-
	Audio	Microphone / Speaker	Stereo / Mono
	Interface	Interface	microHDMI typeD (*3), USB2.0 Micro-B
	Power	Power	Li-ion Battery Pack (7.2V, 1025mAh, 7.4 Wh) (Included)
		Power	USB power charging

		Battery life (Approx.)	Approx. 370 images (rear monitor), 250 images (LVF), 350 images (LVF eco30fps setting) (*1)
	Standard Package	Included Software	<ul style="list-style-type: none">The software to edit and playback images on computer is not bundled with this camera. To do this, PHOTOfunSTUDIO is available for download at Panasonic website using computer connected to the Internet.
		Included Software	http://panasonic.jp/support/global/cs/soft/download/d_pfs10ae.html (For Windows)
		Included Software	<ul style="list-style-type: none">The software to process RAW file on computer is not bundled with this camera. To do this, SILKYPIX Developer Studio is available for download at Ichikawa Soft Laboratory's website using computer connected to the Internet.
		Included Software	http://www.isl.co.jp/SILKYPIX/english/p/ (For Windows / Mac)
		Standard Accessories	Battery Pack, AC Adaptor, USB Cable, Hand Strap
		Standard Accessories	<ul style="list-style-type: none">Operating Instructions for advanced features is available for downloaded at Panasonic LUMIX Customer Support Site using PC, smartphone or tablet connected to the Internet.
NOTE			*1 "Recording conditions by CIPA standard
NOTE			- Temperature: 23 oC (73.4 oF) / Humidity: 50%RH when 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			"
NOTE			*2 "- Use a card with SD Speed Class with ""Class 4"" or higher when recording motion pictures.
NOTE			- Use a card with SD Speed Class with ""UHS-I Speed Class 3 (U3)"" when recording motion pictures with [MP4] in [4K] [High Speed Video] or [4K PHOTO].
NOTE			(SD speed class is the speed standard regarding continuous writing.)
NOTE			- Recording stops when the continuous recording time exceeds 29 minutes and 59 seconds with [AVCHD] in [FHD/50p] [FHD/50i].
NOTE			- Recording stops when the continuous recording time exceeds 15 minutes with [MP4] in [4K].
NOTE			- When using an SDHC memory card: You can continue recording without interruption even if the file size exceeds 4 GB,

NOTE	but the motion picture file will be divided and recorded/played back separately.
NOTE	- When using an SDXC memory card: You can record a motion picture in a single file.
NOTE	- Recording stops when the continuous recording time exceeds 29 minutes and 59 seconds with [MP4] in [FHD/60p] [FHD/50p] and [High Speed Video].
NOTE	You can continue recording without interruption even if the file size exceeds 4 GB,
NOTE	but the motion picture file will be divided and recorded/played back separately.
NOTE	- MP4 motion pictures with [MP4] in [FHD/30p] [FHD/25p] [HD]: You can continue recording without interruption
NOTE	even if the file size exceeds 4 GB or 30 minutes in length, but the motion picture file will be divided and recorded/played back separately.
NOTE	- These are standard times taken at a temperature of 23 °C (73.4 °F) 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	*3 For [4K] video output, use an HDMI cable that has the HDMI logo on it, and that is described as "4K compatible".