



## LUMIX TS7 Waterproof Tough Camera, 20.4 Megapixels, 4.6X Zoom Lens - BLACK - DC-TS7K DC-TS7K

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- **Metrics**

- Dimensions (W x H x D) 116.7 x 76.1 x 37.3 mm (4.59 x 2.99 x 1.46 inch)
  - Weight Approx. 319 g with Battery and SD Memory Card (0.70 lb)
  - Weight Approx. 293 g without Battery and SD Memory Card (0.65 lb)
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- **Optics**

- *Pixels*
- Camera Effective Pixels 20.4 Megapixels
- *Sensor*
- Sensor Size / Total Pixels / Filter 1/2.3-inch High Sensitivity MOS Sensor / 21.1 Total Megapixels / Primary Color Filter
- *Lens*
- Aperture F3.3 - 5.9 / 2-step (F3.3 / 10(W), F5.9 / 18(T))
- Optical Zoom 4.6x
- Focal Length f=4.9 - 22.8mm (28 - 128mm in 35mm equiv.)
- Focal Length (30-140mm in 35mm equiv. in video recording)
- Extra Optical Zoom (EZ) 6.4x (4:3 / 10M (M)), 9x (4:3 / 5M (S))
- Intelligent Zoom 9.1x
- Lens LUMIX DC VARIO
- Lens 8 elements in 10 groups
- Lens (5 aspherical lenses / 6 aspherical surfaces)
- Optical Image Stabilizer POWER O.I.S. (On / Off)
- Digital Zoom Max. 4x (When Digital Zoom is used simultaneously with Intelligent Zoom, you can only increase the zoom ratio 2x.)
- Conversion Lens Compatibility N/A
- *Focus*
- Focusing Area Normal: 30 cm - infinity
- Focusing Area AF Macro / Intelligent Auto / Motion Picture: Wide 5 cm - infinity / Tele 30 cm - infinity
- AF Assist Lamp Yes (On / Off)
- Focus AF / AF Macro / Macro Zoom
- Focus Continuous AF (during motion picture recording)
- Post Focus Yes
- Focus Stacking -
- AF Metering Face Detection / Tracking / 49-area / 1-area / Spot

- *Shutter*
- Shutter Speed [Still Image] Approx. 4 - 1,300 sec (Shutter Type: Mechanical Shutter)
- Shutter Speed [Still Image] Approx. 4 - 1/16,000 sec (Shutter Type: Auto)
- Shutter Speed [Motion Picture] Approx. 1/30 - 1/16,000 sec
- *Finder*
- Viewfinder 0.2" LVF (Live View Finder) (1,170k dots equiv.), Field of View: Approx. 100%
- Viewfinder Magnification: Approx. 2.53x / 0.45x (35 mm camera equivalent)

## • Recording

- *File*
- File Format Still Image: JPEG (DCF/Exif2.31)
- File Format 4K PHOTO: MP4
- File Format Motion Picture: MP4 (Audio format: AAC 2ch)
- *Recording Modes*
- Recording Mode Intelligent Auto, P, M, Scene Guide, Creative Control, Sports, Snow, Beach&Surf, Underwater, Panorama Sh
- Mode Dial N/A
- Creative Control mode Expressive / Retro / Old Days / High Key / Low Key / Sepia / Monochrome / Dynamic Monochrome / R 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 / Distinct Scenery / Bright Blue Romantic Sunset Glow / Vivid Sunset Glow / Glistening Water\* / Clear Nightscape / Cool Night Sky / Warm Glowing Nightsca Glittering Illuminations\* / Handheld Night Shot / Clear Night Portrait / Soft Image of a Flower\* / Appetizing Food / Cute Dess Freeze Animal Motion / Monochrome \*For photos only.
- Burst Shooting Mode (Approx.) H: 10 frames/sec, M: 5 frames/sec\*, L: 2 frames/sec\*
- Burst Shooting Mode (Approx.) \*AF Tracking
- 4K Photo Mode (\*2) 4K Burst: 30 frames/sec
- 4K Photo Mode (\*2) 4K Burst (S/S): 30 frames/sec
- 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.)
- *Motion Picture Recording (\*2)*
- MP4 [4K] 3840x2160
- MP4 4K/30p: 100Mbps
- MP4 4K/24p: 100Mbps
- MP4 [Full HD] 1920x1080
- MP4 FHD/60p: 28Mbps
- MP4 FHD/30p: 20Mbps
- MP4 [HD] 1280x720
- MP4 HD/30p: 10Mbps
- AVCHD -
- High Speed Video(\*2) [HD] 1280x720 HD/30p (Sensor Output is 120fps)
- *Continuous Recordable Time (Motion Pictures) (\*2)*
- Continuous Recordable Time (Motion Pictures) (\*2) FHD/60p: Approx. 80 min (rear monitor), 75 min (LVF)
- *Actual recordable Time (Motion Pictures) (\*2)*
- Actual recordable Time (Motion Pictures) (\*2) FHD/60p: Approx. 60 min (rear monitor), 60 min (LVF)
- *Exposure Parameters*

- Exposure Program 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 Auto / i.ISO / 80 / 100 / 200 / 400 / 800 / 1600 / 3200 / 6400\* \*Extended ISO
- *Picture Quality*
- Still Picture Recording 4:3 5184x3888 (20M) (L) / 3712x2784 (10M) (M) / 2624x1968 (5M) (S)
- Still Picture Recording 3:2 5184x3456 (17M) (L) / 3712x2480 (9M) (M) / 2624x1752 (4.5M) (S)
- Still Picture Recording 16:9 5184x2920 (14.5M) (L) / 3840x2160 (8M) (M) / 1920x1080 (2M) (S)
- Still Picture Recording 1:1 3888x3888 (14.5M) (L) / 2784x2784 (7.5M) (M) / 1968x1968 (3.5M) (S)
- Image Quality Fine / Standard
- White Balance AWB / Daylight / Cloudy / Shade / Incandescent / Flash / White Set
- White Balance (White Balance Adjustment)
- Photo Style Standard, Vivid, Natural, Monochrome, Scenery, Portrait
- Picture Adjustment Contrast, Sharpness, Noise Reduction, Saturation\*, Color Tone\*\*, Filter Effect\*\*
- Picture Adjustment \*Except for Monochrome mode. \*\*For Monochrome mode only.
- *Bracket*
- AE Bracket (Auto Bracket) 3, 5, 7 images in 1/3, 2/3 or 1 EV step, Max. +/-3 EV
- Aperture Bracket N/A
- Focus Bracket N/A
- White Balance Bracket N/A
- *Other*
- Digital Red Eye Correction (Red-Eye Removal) Yes (On / Off)
- GPS N/A
- Wi-Fi IEEE 802.11b/g/n 2412 MHz - 2462 MHz (1-11 ch) WPA / WPA2 Infrastructure Mode / WPS
- Bluetooth N/A
- NFC N/A
- Zoom in Motion Picture N/A
- Self Timer 2 sec / 10 sec / 10 sec (3 images)
- *Self Shot*
- Self Shot Mode N/A
- Shutter N/A
- Effect N/A

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## • 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
- Set Favorites / Rotate Image N/A
- Show Histogram/ Show Highlights Yes / -
- DPOF Print Setting / Set Protection N/A
- *Edit*

- Retouch N/A
- Image Composition N/A
- Creating a Motion Picture from Still Pictures Time Lapse Video
- RAW Processing N/A
- Resize/ Cropping Yes / Yes
- Title Edit / Text Stamp Yes / Yes
- Video Divide Yes
- Direct Print PictBridge compatible
- PictBridge Support N/A

- **Setup**

- OSD language Japanese, English, German, French, Italian, Spanish, Polish, Chinese (Traditional)

- **Others**

- *Monitor*
- LCD Monitor 3.0" (7.5cm) TFT Screen LCD Display (1040k dots) Field of View: Approx. 100%
- *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
- Built-in- Flash 0.3 - 5.6m (Wide / ISO Auto), 0.3 - 3.1m (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 (3.6V, 1250mAh, 4.5 Wh) (Included) USB power charging
- Battery life (Approx.) Approx. 300 images (rear monitor), 250 images (LVF) (\*1)
- *Standard Package*
- Included Software • The software to edit and playback images on computer is not bundled with this camera. Please use the software pre-installed to the PC or other general image viewing software to browse pictures.
- Standard Accessories Battery Pack, AC Adaptor, USB Cable, Hand Strap • Operating Instructions for advanced features is available for download at Panasonic LUMIX Customer Support Site using PC, smartphone or tablet connected to the Internet.

- **NOTES**

- 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 \*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 [4 [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 [4K].
  - NOTE - When using an SDHC memory card: You can continue recording without interruption even if the file size exceeds 4 GB, 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 except [4K].
  - NOTE You can continue recording without interruption even if the file size exceeds 4 GB, but the motion picture file will be divided and recorded/played back separately.
  - 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 [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".
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