# Clifton Cameras Product Specification

## Panasonic LUMIX S1 Camera Full Spec

## General

**Type** Digital Single Lens Mirrorless Camera **Recording Media** XQD Memory Card, SD Memory Card / SDHC Memory Card\* / SDXC Memory Card\* \*Compatible with UHS-I/UHS-II UHS Speed Class 3 standard SDHC/SDXC Memory Cards and UHS-II Video Speed Class 90 standard SDXC Memory Cards **Lens Mount** Leica L Mount

## Image Sensor

**Type** 35mm full-frame (35.6mm x 23.8mm) CMOS sensor **Effective Pixels** 24.20 megapixels **Total Pixels** 25.28 megapixels **Aspect Ratio** 3:2 **Colour Filter** Primary color filter **Dust Reduction** Supersonic Wave

## Still Images

**File Formats** JPEG (DCF, Exif 2.31), RAW, HLG Photo (CTA-2072) **6K Photo/4k Photo** 6K PHOTO: MP4 (H.265/HEVC, Audio format: AAC (2ch)) **Aspect Ratio** 4:3 / 3:2 / 16:9 / 1:1 / 65:24 / 2:1 **Image quality** RAW / RAW+Fine / RAW+Standard / Fine / Standard **Colour Space** sRGB, Adobe RGB

## Video

**File Formats** MP4: H.264/MPEG-4 AVC (Audio format: LPCM (2ch 48kHz/16-bit), AAC (2ch)), MP4 HEVC: H.265/HEVC (Audio format: AAC (2ch)) AVCHD Progressive (Audio format: Dolby Audio (2ch)), AVCHD (Audio format: Dolby Audio (2ch)) **Continious Recording Time** Approx. 150 min (rear monitor), 140 min (LVF) in [AVCHD/FHD/60p] \*When using S-R24105 and SD Memory Card. **Actual Recording Time** Approx. 75 min (rear monitor), 70 min (LVF) in [AVCHD/FHD/60p] \*When using S-R24105 and SD Memory Card.

## Video Recording Formats

|  |  |  |  |
| --- | --- | --- | --- |
| MP4\*\* | | [4K] 3840x2160 | 59.94p, 150Mbps (4:2:0 8-bit LongGOP) (LPCM) 50.00p, 150Mbps (4:2:0 8-bit LongGOP) (LPCM) 29.97p, 100Mbps (4:2:0 8-bit LongGOP) (AAC) 25.00p, 100Mbps (4:2:0 8-bit LongGOP) (AAC) 23.98p, 100Mbps (4:2:0 8-bit LongGOP) (AAC) |
| [FHD] 1920x1080 | 59.94p, 28Mbps (4:2:0 8-bit LongGOP) (AAC) 50.00p, 28Mbps (4:2:0 8-bit LongGOP) (AAC) 29.97p, 20Mbps (4:2:0 8-bit LongGOP) (AAC) 25.00p, 20Mbps (4:2:0 8-bit LongGOP) (AAC) |
| MP4 HEVC\*\* | | [4K] 3840x2160 | 29.97p, 72Mbps (4:2:0 10-bit LongGOP) (AAC) (HEVC, HLG recording) 25.00p, 72Mbps (4:2:0 10-bit LongGOP) (AAC) (HEVC, HLG recording) 23.98p, 72Mbps (4:2:0 10-bit LongGOP) (AAC) (HEVC, HLG recording) |
| AVCHD Progressive\*\* AVCHD\*\* | | [FHD] 1920x1080 | 50.00p, 28Mbps (4:2:0 8-bit LongGOP) (Dolby Audio) 50.00i, 24Mbps (4:2:0 8-bit LongGOP) (Dolby Audio) (Sensor output is 25.00fps) 50.00i, 17Mbps (4:2:0 8-bit LongGOP) (Dolby Audio) (Sensor output is 50.00fps) 23.98p, 24Mbps (4:2:0 8-bit LongGOP) (Dolby Audio) |
| MP4\*\* | High speed video \*When Creative Video Mode is selected. | [4K] 3840x2160 | 29.97p (Sensor output is 60fps) 25.00p (Sensor output is 50fps) 23.98p (Sensor output is 48fps) |
| [FHD] 1920x1080 | 29.97p (Sensor output is 180fps / 150fps) 25.00p (Sensor output is 150fps / 125fps) |

## Focus System

**Type** Contrast AF System **DFD Technology** Yes **Focus Mode** AFS (Single) / AFC (Continuous) / MF **AF Modes** 'Auto Detection (Face, Eye, Body, Animal) / Tracking / 225-Area / Zone (Vertical/Horizontal) / Zone (Square) / Zone (Oval) / 1-Area+ / 1-Area / Pinpoint / Custom 1, 2, 3 (Full area touch is available) (Scalable AF frame size and flexible AF position) **AF Detective Range** EV -6 - 18 (F1.4, ISO100 equivalent, AFS) **AF Custom Setting** AF Sensitivity, AF Area Switching Sensitivity, Moving Object Prediction **AF Assist Lamp** Yes **AF Lock** Set the Fn button in custom menu to AF lock **Post Focus/Focus Stacking** Yes/Yes **Others** AF-ON, Shutter AF, Half Press Release, Focus/Shutter Priority, Quick AF, Continuous AF (during motion picture recording), Eye Sensor AF, AF-Point Scope Setting, AF+MF, MF Guide, MF Assist, Touch MF Assist, Focus Peaking, Touch AF/AE Function, Touch Pad AF, Touch Shutter, Focus Switching for Vert/Hor, Focus Ring Lock, Show/Hide AF Mode

## Viewfinder

**Type** OLED Live Viewfinder **Pixels** approx. 5760k dot **FOV/Magnification** Approx. 100% / Approx. 0.78x with 50 mm lens at infinity; -1.0 m-1, when the aspect ratio is set to 3:2 **Eye Point/Diopter Adjustment** Approx. 21 mm at infinity; -1.0 m-1 / -4.0 - +2.0 (dpt) **Eye Sensor** Yes **Display Speed** 120fps/60fps **Display Time Lag** Approx. 0.005sec

## Rear Display

**Type** TFT LCD monitor with static touch control **Size** Triaxial tilt, 3.2-inch (8.0cm), 3:2 aspect **Pixels** Approx. 2,100k dots **FOV** approx. 100%

## Exposure Control

**Light Metering System** 1,728-zone multi-pattern sensing system **Light Metering Mode** Multiple / Center Weighted / Spot / Highlight Weighted **Metering Range** EV0-18 (F2.0 lens, ISO100 equivalent) **Exposure mode** Program AE / Aperture Priority AE / Shutter Priority AE / Manual Exposure **ISO Sensitivity** Auto / 50\* / 100 / 200 / 400 / 800 / 1600 / 3200 / 6400 / 12800 / 25600 / 51200 / 102400\* / 204800\* (Changeable to 1/3 EV step) \*Extended ISO **Exposure Compensation** 1/3 EV step ±5EV (±3EV for motion picture) **AE Lock** Set the Fn button in custom menu to AE lock

## Image Stabilization

Image sensor shift type (5-axis / 5.5-stop\*) \*Based on the CIPA standard [Yaw/Pitch direction: focusing distance f=50mm when S-X50 is used.]

Dual I.S. (6.0-stop\* Dual I.S. 2 compatible) \*Based on the CIPA standard [Yaw/Pitch direction: focusing distance f=200mm when S-R70200 is used.]

## White Balance

**White Balance** AWB / AWBc / AWBw / Daylight / Cloudy / Shade / Incandescent / Flash / White Set 1, 2, 3, 4 / Color temperature setting 1, 2, 3, 4 **White Balance Adjustment** Blue/Amber bias, Magenta/Green bias **Colour Temperature Setting** 2500-10000K in 100K

## Shutter

**Type** Focal Plane Shutter **Shutter Speed** Still image: Bulb (Max. 30 minutes), 1/8,000 – 60 **Shutter Life** Still image: Bulb (Max. 30 minutes), 1/8,000 – 60 **Self Timer** 10sec, 3 images / 2sec / 10sec **Remote Control** Remote control by DMW-RS2 (sold separately) Silent **Mode/Shutter Type** Yes / Yes (Auto / Mechanical / Electronic front curtain / Electronic / Electronic+NR)

## Bracket

**AE Bracket** 3, 5, 7 images in 1/3, 2/3 or 1 EV step, max. ±3 EV, single/burst **Aperture Bracket** 3, 5 or all positions in 1 EV step **Focus Bracket** 1 to 999 images, focus steps can be set in 10 levels **White Balance Bracket** 3 images in blue/amber axis or in magenta/green axis, colour temperature setting.

## Burst Shooting

**Burst Speed – Mechanical Shutter** AFS/MF: H: 9 frames/sec, M: 5 frames/sec (with Live View), L: 2 frames/sec (with Live View) AFC: H: 6 frames/sec (with Live View), M: 5 frames/sec (with Live View), L: 2 frames/sec (with Live View) **Electronic Shutter** AFS/MF: H: 9 frames/sec, M: 5 frames/sec (with Live View), L: 2 frames/sec (with Live View) AFC: H: 5 frames/sec (with Live View), M: 5 frames/sec (with Live View), L: 2 frames/sec (with Live View)

**Number of recordable images** RAW 90+ Images

## Flash

**Type** TTL External Flash (Sold Seperately) **Modes** Auto\* / Auto/Red-eye Reduction\* / Forced On / Forced On/Red-eye Reduction / Slow Sync. / Slow Sync./Red-eye Reduction / Forced Off \*For iA only. **Synchronisation**1st Curtain Sync, 2nd Curtain Sync. **Output Adjustment** 1/3EV step ±3EV **Synchronisation Speed** Less than 1/320 second \*The guide number decreases at 1/320 second. Only when set to M mode or S mode. **Wireless Control** Yes (When using DMW-FL200L / FL360L / FL580L (sold separately)), Wireless Channel: 1ch/2ch/3ch/4ch **Sync Socket** Yes

## Extra Tele Conversion

2.0x (EX S), 1.4x (EX M) \*Only for still image recording.

## Photo Style

**Style** Standard / Vivid / Natural / Flat / Landscape / Portrait / Monochrome / L. Monochrome / L. Monochrome D / Cinelike D / Cinelike V / Like709 / Standard (HLG) / Monochrome (HLG) / Like2100 / My Photo Style 1-10 **Adjustment** Contrast / Highlight / Shadow / Saturation / Color Tone / Hue / Filter Effect / Grain Effect / Sharpness / Noise Reduction / ISO / WB

## Filter

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\*

\*For photos only.

## Interface

**USB** SuperSpeed USB 3.1 Gen1 Type-C **HDMI** Monitor Through - 4:2:2 8bit (Except for [4K/60p]/[4K/50p]) / 4:2:0 8bit, Playback - HDMI TypeA / VIERA Link **Audio Video output** No **Remote Input** φ2.5mm **External Mic/Audio Device** Input φ3.5mm for external microphone / external audio device, MIC (Plug-in Power) / MIC / LINE is selectable, Stereo/Lens Auto/Shotgun/Super Shotgun/Manual is selectable when attaching DMW-MS2 (sold separately). **Headphone Output** φ3.5mm **Microphone** Stereo, Wind Noise Canceller: OFF / Low\* / Standard / High \*When attaching DMW-MS2 (sold separately). **Speaker** Monaural **Card Slot** Slot 1: XQD Memory Card

Slot 2: SD Memory Card, SDHC Memory Card\*, SDXC Memory Card - Compatible with UHS-I/UHS-II UHS Speed Class 3 standard SDHC/SDXC Memory Cards and UHS-II Video Speed Class 90 standard SDXC Memory Cards.

## Wireless Connection

**Wifi** 2.4GHz (STA/AP) (IEEE802.11b/g/n) **Bluetooth** Bluetooth® v4.2 (Bluetooth Low Energy (BLE))

## Power

**Battery** Li-ion Battery Pack (7.4V, 3050mAh, 23Wh) (bundled) USB power supply, USB power charging **Battery Life – With XQD Card** Approx. 380 images (rear monitor), 360 images (LVF), 1,100 images (Power Save LVF mode\*) with S-R24105 \*Under the test conditions specified by Panasonic based on CIPA standard. When the time to get in the sleep mode is set to 1 sec. **– With SD Card** Approx. 400 images (rear monitor), 380 images (LVF), 1,150 images (Power Save LVF mode\*) with S-R24105 \*Under the test conditions specified by Panasonic based on CIPA standard. When the time to get in the sleep mode is set to 1 sec. **Battery Grip** DMW-BGS1 (sold separately)

## Dimensions

**Dimensions** (W x H x D) Approx. 148.9 x 110.0 x 96.7 mm / 5.86 x 4.33 x 3.81 inch (excluding protrusions)

**Weight** Approx. 1,021g / 2.25 lb (XQD Memory Card x 1, Battery, Body)