Specifications
PEN-F

Type

Body material	Aluminium
Lens mount	Micro Four Thirds

Image Sensor

Effective pixels	20.3 Megapixels

Engine

Type	TruePic VII

Filter

Dust reduction filter	Supersonic Wave Filter

Viewfinder

Type	Electronical Viewfinder
Pixel number	2.360 K dots
Diopter adjustment	-4.0 - +2.0 diopters / built-in type
Field of view	Approx. 100 %
Magnification	Max. 1.23 x with a 50mm lens set to infinity at -1 dioptre (depending on selected viewfinder style)
Eye point	20 mm at -1 dioptre from eyepiece lens
Style	3 styles selectable
Brightness adjustment	Adaptive Brightness Technology / Manual settings: +/- 2 levels
Correction of colour temperature	+/- 3 levels
S-OVF	Expands the Live View dynamic range
	*Available in the EVF when in P, A, S and M modes. Art filter, WB and exposure are not reflected in EVF.

Live View

Displayed information	Aperture, Shutter speed, Auto bracket, AE lock, Focus mode, Shooting mode, Battery check, IS activating mode, Face / Eye detection mode, Record mode, ISO, Sequential shooting mode , White Balance, Metering mode, Exposure compensation value, AF frame display, AF confirmation mark, Shooting information, Spot metering area, Super FP, Flash status, Touch Panel Condition, Focal length, Flash mode, Histogram, Level Gauge, Highlight & Shadow, Focus peaking, Number of storable pictures, Custom, Face detection, Flash intensity, WiFi
100% field of view	Approx. 100 %
Magnification levels	3 / 5 / 7 / 10 / 14 x
Dynamic range expansion	When in HDR1 or HDR2
Display modes	Standard information, Histogram, Level Gauge, Off

Image Stabiliser

Type	Sensor shift
Modes	Five-dimensional, vertical or horizontal activation, automatic
	Up to 5 EV steps (CIPA)

Focusing System

Method	Contrast Detection AF system
Focus areas	81 points / All target, Group target (9-areas), Single target (normal), Single target (small)
	800 points / Manual selection in Magnified View Mode
AF lock	Yes, Locked by first position of shutter release button in single AF mode, AE/AF lock button (customised)
Modes	Manual focus, Single AF, Continuous AF, Single AF + MF, AF Tracking
AF illuminator	Yes
AF targeting pad	Yes (activate/deactivate with double tap on rear monitor)
Full time AF	Yes

Focusing System

Manual focus	Yes, With enlarged focusing area or focus peaking
Face Detection extension	Eye Detect AF: Off, Left side priority, Near side priority, Right side priority
Predictive AF	Yes
AF tracking	Yes, Available in continuous AF mode

Focus peaking

Colour selection	White, black, red, yellow
Intensity	High / Normal / Low
Back light effect	On / Off

Focus Bracketing Mode

Number of images	3 - 999 shots
Step size	10 levels
	Compatible with: All Micro Four Thirds AF lenses

Exposure System

Modes	Programme automatic, Aperture priority, Shutter priority, Manual, Bulb, Time, Live Composite, i-Auto, Scene Modes, Art Filter, Photo Story, Movie, HDR, My Mode
Exposure compensation	+/- 5 EV (1, 1/2, 1/3 steps)
	Note: Monitor and EVF displays only up to ±3 EV.
Exposure bracketing	2 / 3 / 5 frames (+/- 1/3, 2/3, 1 EV steps)
	7 frames (+/- 1/3, 2/3 EV steps)
ISO bracketing	3 frames (1/3, 1/2, 1 EV steps)
AE lock	Yes
My Mode	4 settings storable
Enhancement function	Digital Shift
	Shadow Adjustment Technology
HDR bracketing	3 / 5 frames (+/- 2 / 3 EV steps)
	7 frames (+/- 2 EV steps)

Scene Modes

Number of scene modes	24
Modes	Portrait, e-Portrait, Landscape, Landscape with Portrait, Macro, Sports, Night Scene, Night Scene with portrait, Children, High key, Low key, Digital Image Stabilisation, Nature Macro, Candle, Sunset, Documents, Panorama, Fireworks, Beach and Snow, Fisheye converter, Macro converter, 3D*, Wide converter, Hand-held Starlight**, Panning
	* Only for stills and with usage of 3D lens (H-FT012)
	** 8 images automatically shot and combined into a single image composite

Multi-Exposure

Max. number of frames	2 frames (shooting)
	3 frames (editing)
Auto gain control	Yes
Frame assistance	Live View

Light Metering

Method	TTL open aperture light metering
Zones	324 zones Multi-pattern Sensing System
Detection range	-2 - 20 EV (17mm f2.8, ISO 100)
Modes	ESP light metering, Spot metering, Centre weighted metering, Highlight, Shadow

Art Filter

Modes	Pop Art, Soft Focus, Pale & Light Colour, Light Tone, Grainy Film, Pin Hole, Diorama, Cross Process, Dramatic Tone, Gentle Sepia, Key Line, Water colour, Vintage, Partial Colour*

Art Filter

Variation / Effect	Available
Art Filter bracketing	Art Filters selectable

Photo Story

Modes	Fun Frame, Standard, Speed, Zoom in / out, Layout

Sensitivity

Auto	ISO LOW* - 25600 (customisable, default ISO LOW - 1600)
Manual	ISO LOW - 25600 in 1/3 or 1 EV ISO steps
	*approx. 80

Shutter

Shutter type	Computerised focal-plane shutter
Self timer	2 s / 12 s / Custom

Shutter Speeds

Shutter speed range	1/8000 - 60 s (in 1/3, 1/2, 1 EV steps)
Bulb mode	Up to 30 minutes (selectable longest time in the menu, default: 8 minutes)
Composite mode	Max. shooting time: 3 h

High res shot

Shutter type	Electronic shutter
Shutter speed	1/8000 - 8 s
Start delay	0, 1/8, 1/4, 1/2, 1, 2, 4, 8, 15. 30 s
Resolution	JPEG: 8160 x 6120 / RAW: 10368 x 7776
	Equivalent to 50M pixel sensor (8 shots combined into a single JPEG using sensor shift)
	Available in P/A/S/M mode

Anti shock mode

Shutter type	Electronic first curtain shutter
Shutter speed	1/320* - 60 s
Start delay	0, 1/8, 1/4, 1/2, 1, 2, 4, 8, 15, 30 s
	* For speeds over 1/320 sec., mechanical shutter will automatically be selected.

Silent mode

Shutter type	Electronic shutter
Shutter speed	1/16000 - 60 s
Start delay	0, 1/8, 1/4, 1/2, 1, 2, 4, 8, 15. 30 s

White Balance

AUTO WB system	Advanced detection system with Live MOS sensor
Manual White balance (One-Touch)	Yes
White balance bracketing	3 frames / +/- 2, 4, 6 mired steps
One-touch white balance	2 custom settings can be registered
Custom WB	1 setting can be registered at Kelvin temperature (2000K - 14000K)
Preset values	Tungsten, Flourescent 1, Sunlight, Flash, Overcast, Shade, Underwater
Auto Flash adjustment	Off / Auto WB / Flash
Keep warm colour	On / Off

Sequence Shooting

Speed (H)	Approx. 10 fps
Speed (L)	5 fps
Max. number of frames	16 frames (RAW)
	Up to card capacity (JPG / Large Normal mode)
Conditions	Memory card: TOSHIBA SDHC UHS-II R95 W90 EXCERIA™

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Specifications and appearances are subject to change without any notice or obligation on the part of the manufacturer.

Sequence Shooting

	When using the M.ZUIKO DIGITAL ED 12-50mm 1:3.5-6.3 EZ

Image Processing

Colour space	sRGB / AdobeRGB
Sharpness + Contrast	5 levels
Contrast	5 levels
Saturation	5 levels
Gradation	4 levels (auto, high key, normal, low key)
Engine	TruePic VII
Picture mode	i-Enhance, Vivid, Natural, Muted, Portrait, Monotone, Custom, e-Portrait, Colour creator, Art Filter, Colour Profile Control, Monochrome Profile Control
Art Filter bracketing	Available
Tele converter effect	2 x
Highlight & Shadow control	Highlight / Shadow / Midtone +/- 7 steps

Colour Profile Control

Saturation	+/- 5 levels 12 colours
Custom preset values	3 (Highlight and Shadow can be combined)

Monochrome Profile Control

Black & White filter	Red, Orange, Yellow, Yellow-green, Green, Cyan, Blue, Magenta
Intensity	3 levels
Shading effect	+/- 5
Film grain effect	Low / Medium / High
Black & White toning	Sepia, Blue, Purple, Green
Custom preset values	3 (Highlight and Shadow can be combined)

Internal Flash

Flash compensation	+/- 3 EV / 1/3, 1/2, 1 EV steps
Guide number	12.9 (ISO 200)
X-sync speed	1/250 s / 1/8000 s (Super FP Mode)

External Flash Control

X-sync speed	1/250 s / 1/8000 s (Super FP Mode)
	< 1/20 s (Silent Mode)
Type	TTL AUTO, AUTO, MANUAL, FP TTL AUTO, FP MANUAL
Modes	Auto, Red-eye reduction, Slow synchronisation, 2nd curtain and slow synchronisation, Fill-in for exclusive flash, Manual
Intensity	+/- 3 EV (1/3, 1/2, 1 EV steps)
	Note: Some functions are only available if they are supported by the external flash.

Wireless Flash Control

Number of channels	4 channels
Compatible external flash	FL-36R, FL-50R, FL-300R, FL-600R
Control method	Triggered and controlled by bundled flash
Group setting	4 groups
	Available when used together with cameras compatible with the Olympus wireless RC flash system.

Monitor

Monitor type	Vari-angle LCD - Touch Panel
Monitor size	7.6 cm / 3.0 '' (3:2)
Resolution	1,037 K dots
Brightness adjustment	+/- 7 levels
Colour balance	+/- 7 levels Vivid (default) / Natural

Monitor

Touch Control fucntions	AF area enlargement, AF area selection, Art Filter, Enlargement, Enlargement playback, Frame forward/backward, Live Guide, Scene Modes, Shooting mode, Shutter release, Super Control Panel, Wifi connection

Level Gauge

Detection	2-axis
Display	Rear display and viewfinder

Recording Formats

RAW	12 bit
RAW & JPEG	Yes, parallel recording
JPEG	Yes
Aspect ratio	4:3 / 3:2 / 16:9 / 6:6 / 3:4
MPO (3D)	Yes

Image Size

RAW	5184 x 3888	
	5184 x 3888 Fine	(compression: 1/4)
	5184 x 3888 Normal	(compression: 1/8)

Still Image Recording

EXIF	2.2
PIM	III
DPOF	Yes
DCF	Yes

Movie Recording System

Recording format	MOV(MPEG-4AVC/H.264), AVI(Motion JPEG)
Time code	Rec run / Free run
	Drop frame / Non-drop frame
Image Stabilisation Mode	Yes, Sensor shift (5-axis)
	M-IS1 (Image sensor shift and electronic image stabilizer with multi motion IS)
	M-IS2 (Image sensor shift with multi motion IS)
HD Movie quality	Full HD 1920 x 1080 (16:9) / 30p, 25p, 24p / ALL-I(A-I), IPB(SF, F, N) (MOV)
	Full HD 1920 x 1080 (16:9) / 60p, 50p / IPB(SF, F, N) (MOV)
	HD 1280 x 720 (16:9) / 60p, 50p, 30p, 25p, 24p / ALL-I(A-I), IPB(SF, F, N) (MOV)
	ALL-I (A-I: ~ 77Mbps)
	IPB (SF: ~52Mbps, F: ~30Mbps, N: ~18Mbps)
	HD 1280 x 720 (16:9) / 30p (MOV)
Movie quality	640 x 480 / 30p (AVI Motion JPEG®)
Maximum Recording Time	29 min (MOV)
	14 min (SD) / 7 min (HD) (AVI Motion JPEG®)*
Max. file size	4 GB (AVCHD)
	2 GB (Motion-JPEG)
Exposure Modes	Aperture priority, Art Filter, Manual, Programme automatic, Shutter priority
	Class 10 or higher SD card is recommended for movie shooting
	UHS-II or UHS-I U3 card is recommended for ALL-I shooting

Movie Specialties

Time lapse	4k, 1080p, 720p (AVI Motion JPEG®)
Fast motion	Yes
Slow motion	Yes

Movie Specialties

Movie clips	1, 2, 4, 8 s
	(Extension up to 16s by pressing record button before clip ends.)
Movie effects	Multi shot echo, One shot echo, Art fade, One push tele-converter, Old Film
Art Filter	Cross Process, Diorama, Dramatic Tone, Gentle Sepia, Grainy Film, Key Line, Light Tone, Pale & Light Colour, Pin Hole, Pop Art, Soft Focus, Vintage, Partial Colour*
	* 18 colours selectable
	Frame rate limited to 30fps or lower
HDMI Live View	Yes (GUI* is shown on connetced device only and peaking is not available)
	* GUI can be hidden for recording on external drive under following condition. Movie type: YCbCr 4:2:2 / Frame rate: as set / Sound: no

Sound Recording System

Internal microphone	Stereo
Recording format	Stereo PCM/16bit, 48kHz, Wave Format Base
Image footage	30 s
Speaker	Yes
Microphone functions	Wind Noise Reduction, Recording Volume, Volume limiter, Audio Dubbing

View Images

Modes	Index, Calendar, Zoom, Slide show, Movie, Single
Light box	Yes
Histogram in playback mode	Yes
Shooting information	Off / On
Highlight/Shadow point warning	Yes

Erase / Protect / Copy Function

Erase modes	Single, All, Selected
Image protect mode	Single frame, Selected frames, All Frames, Release protect (Single/All selected)

Menu

Menu languages in camera	English, French, German, Spanish, Italian, Russian, Czech, Dutch, Danish, Polish, Portuguese, Swedish, Norwegian, Finnish, Croatian, Slovenian, Hungarian, Greek, Slovak, Turkish, Latvian, Estonian, Lithuanian, Ukrainian, Serbian

Customisation Options

Fn Button	Yes
My Mode	4 settings storable (Can be set to mode dial.)
Programmable button	Yes

Interface

Hot shoe	Yes
Media	SD Memory Card (SDHC, SDXC, UHS-I/II compatible
HDMI™	Yes, Micro connector (Type D) *
USB 2.0 High Speed	Yes
Combined V & USB output	Yes, NTSC or PAL selectable
Wireless connectivity	WiFi
	* "HDMI", the HDMI logo and "High-Definition Multimedia Interface" are trademarks or registered trademarks of HDMI Licensing LLC.

Wi-Fi Functions

Easy Connection	QR code setting
Wireless Shooting	Live View, Power off, Rec View, Self timer, Touch AF & Shutter, P/A/S/M exposure modes, Bulb mode, Zoom, Movie recording, Live Composite

Power Supply

Battery	BLN-1 Lithium-Ion Battery
Sleep mode	1, 3, 5, 10 min. and off selectable.
Battery life	Approx. 330 shots (using BLN-1 and TOSHIBA SD with IS ON, based on CIPA test standards)
Movie recording	80 min (standard JEITA conditions) 140 min (when zoom and other operational functions are not used)

Environment

Temperature	0 - 40 °C Operating temperature / -20 - 60 °C storage temperature
Humidity	30 - 90 % operation humidity / 10 - 90 % storage humidity

Size

Dimensions (W x H x D)	124.8 x 72.1 x 37.3 mm (without protrusions)
Weight	427 g (including battery and memory card)

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