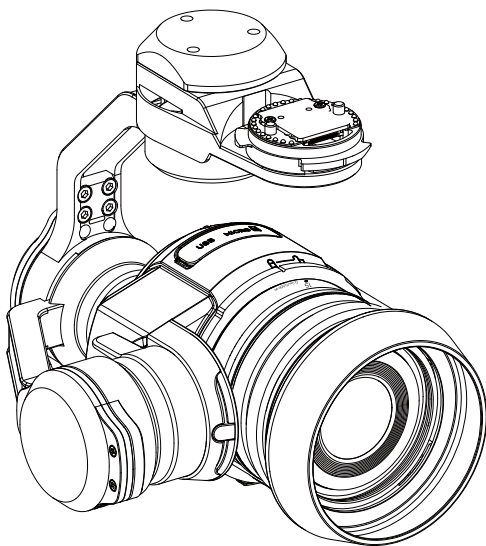# ZENMUSE X5

User Manual V1.2

2016.05

> ### 🔍 Searching for Keywords
>
> Search for keywords such as "battery" and "install" to find a topic. If you are using Adobe Acrobat Reader to read this document, press Ctrl+F on Windows or Command+F on Mac to begin a search.
>
> ### 🖑 Navigating to a Topic
>
> View a complete list of topics in the table of contents. Click on a topic to navigate to that section.
>
> ### 🖨 Printing this Document
>
> This document supports high resolution printing.

Using this manual

Legends

⊘ Warning   ⚠ Important   ☼ Hints and Tips   📖 Reference

Before Flight

Read the following documents before using the Zenmuse X5:
1. Zenmuse X5 In the Box
2. Zenmuse X5 User Manual
3. Zenmuse X5 Safety Guidelines and Disclaimer

Check that all of the items are included in the package. We recommend that you watch all tutorial videos on the official DJI website and read the Disclaimer and Safety Guidelines before you fly. Refer to the User Manual for more detailed information.

Watch the video tutorials

Please watch the tutorial videos at the link below, which demonstrates how to use Zenmuse X5 safely:

http://www.dji.com/product/zenmuse-x5s/video

Contents

Product Profile

Overview

The Zenmuse X5 offers advanced photographers a high-performance, robust gimbal and camera system with an M4/3 interchangeable lens. The Type 4/3 CMOS sensor supports video recording in 4K and 16MP still photos. It can be mounted onto designated DJI devices such as the Inspire 1.

The Zenmuse X5 lens kit comes with the DJI MFT 15mm f/1.7 ASPH that provides a 72 degree field of view and a manually adjustable f/1.7-f/16 aperture range. The camera can shoot burst, AEB or time-lapse in JPEG and DNG RAW, and output video in MP4 and MOV formats. Live HD video from the camera can be viewed on your mobile device through the DJI GO app .

The 3-axis gimbal provides an incredibly stable platform for the camera to capture clear shots even during high speed maneuvers. The gimbal tilts the camera across a -90° to +30° pitch angle and pans a full 360 degrees, independent of its carrier's movement.

In the Box

Check that all of the following items are in your package. If any items are missing, please contact DJI or your local dealer.

Gimbal and Camera Body ×1
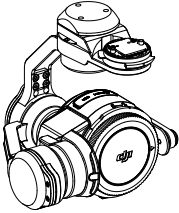
DJI MFT 15mm f/1.7 ASPH Lens* ×1

Balancing Ring (BR-Φ46-10)* ×1

Lens Hood* ×1

16GB Micro SD Card ×1

Manuals

ZENMUSE X5 In the Box
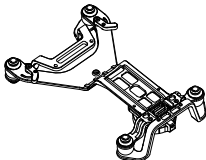*ZENMUSE X5 Disclaimer and Safety Guidelines*

* The original lens, balancing ring and lens hood are only included in the Zenmuse X5 lens kit. Accessories for other supported lenses can be purchased separately on the DJI Store.

Optional Accessories

The Zenmuse X5 can be mounted on the Inspire 1 aircraft with the following accessory which is available on the DJI Store.

Inspire 1 Gimbal Mounting Plate ×1

Components

Zenmuse X5 Gimbal and Camera
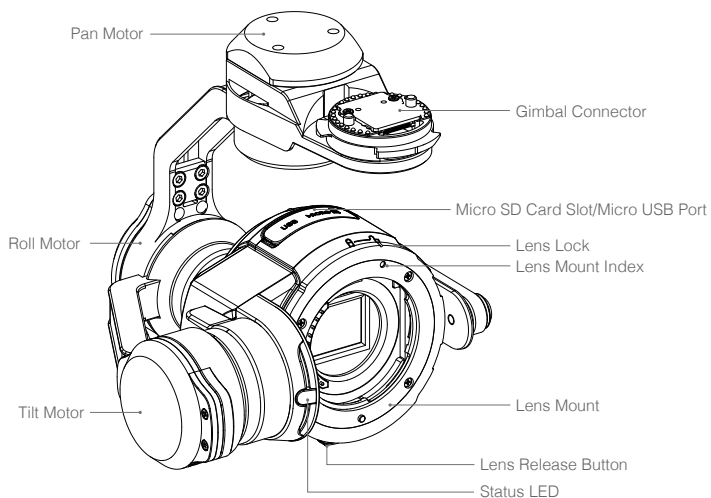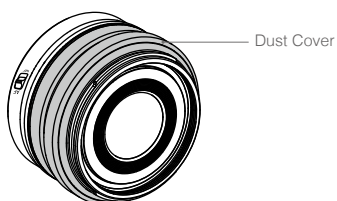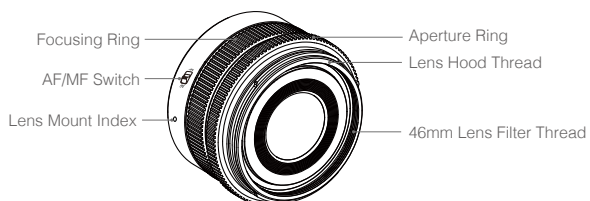
Pan Motor

Gimbal Connector

Micro SD Card Slot/Micro USB Port

Roll Motor

Lens Lock
Lens Mount Index

Tilt Motor

Lens Mount

Lens Release Button
Status LED

DJI MFT 15mm f/1.7 ASPH Lens

Focusing Ring

Aperture Ring
Lens Hood Thread

AF/MF Switch

Lens Mount Index

46mm Lens Filter Thread

Dust Cover

Getting Started

Supported Devices

The Zenmuse X5R can be attached to the following device, Zenmuse X5R may be compatible with other DJI devices in future.
DJI Inspire 1

Supported Lenses for the Inspire 1

The Zenmuse X5 currently supports the following lenses, and will continue to support more lenses in the future.
DJI MFT 15mm f/1.7 ASPH
Panasonic Lumix G Leica DG Summilux 15mm f/1.7 ASPH
Olympus M.Zuiko Digital ED 12mm f/2.0
Olympus M.Zuiko Digital ED 17mm f/1.8
Olympus M.Zuiko Digital ED 25mm f/1.8
Olympus M.Zuiko Digital ED 45mm f/1.8 (For still photography)
Olympus M.Zuiko Digital ED 14-42mm f/3.5-5.6 EZ (For still photography)

Required Lens Accessories

The following table shows the recommended DJI Balancing Ring and filter and lens hood requirement for each lens model.

Attach either a DJI Balancing Ring or filter only. Attach a lens hood only if required. The listed Balancing Rings can be purchased on the DJI Store.

Model	DJI Balancing Ring	Filter		Lens Hood
		Thread Size	Weight	
DJI MFT 15mm f/1.7 ASPH	BR-Φ46-10	46 mm	10 g	Required
Panasonic Lumix G Leica DG Summilux 15mm f/1.7 ASPH	BR-Φ46-10	46 mm	10 g	Required
Olympus M.Zuiko Digital ED 12mm f/2.0	BR-Φ46-10	46 mm	10 g	Not required
Olympus M.Zuiko Digital ED 17mm f/1.8	BR-Φ46-33	46 mm	33 g	Not required
Olympus M.Zuiko Digital ED 25mm f/1.8	Not required	46 mm	10 g	Not required
Olympus M.Zuiko Digital ED 45mm f/1.8	Not required	37 mm	14 g	Not required
Olympus M.Zuiko Digital ED 14-42mm f/3.5-5.6 EZ	BR-Φ37-23	37 mm	23 g	Not required

The thread size and weight of the Balancing Ring are included in the model number (i.e. BR-Φ46-10 has a thread size of 46mm and a weight of 10g).

⚠️   The Balancing Ring must be installed on the camera lens when a filter is not used.

Supported Micro SD Cards

The Zenmuse X5 comes with a 16GB Micro SD card, but also supports Micro SD cards with a capacity of up to 64GB. We recommend using a UHS-1 Micro SD card to minimize the delay when reading and writing high resolution video data.

⊘   DO NOT remove the Micro SD card from the Zenmuse X5 when it is powered on.

Installing the Camera Lens

The following steps use the DJI MFT 15mm f/1.7 ASPH as illustration of how to mount the camera lens to the camera body. Be sure to power off the battery before installation.
1. Remove the camera body cap.
2. While holding down the Lens Release Button, rotate the Lens Lock clockwise to unlock it.
3. Remove the lens cap and rear cap.

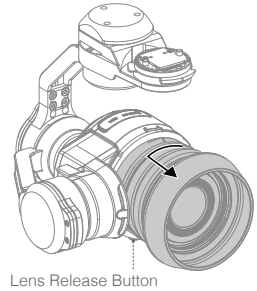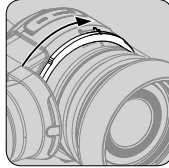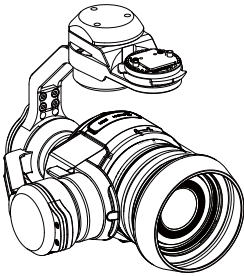Lens Release Button
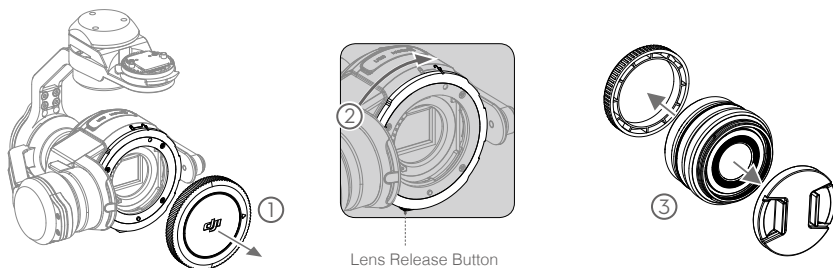
4. Align the two Lens Mount Indexes on the camera body and camera lens, and insert the camera lens into the body of the camera.
5. Rotate the camera lens clockwise until you hear a click.
6. Rotate the Lens Lock counterclockwise to lock it.
7. Mount the Balancing Ring (or a filter) and the Lens Hood.
8. Insert the Micro SD card.

Micro-SD

Balancing Ring (or Filter)

Lens Hood
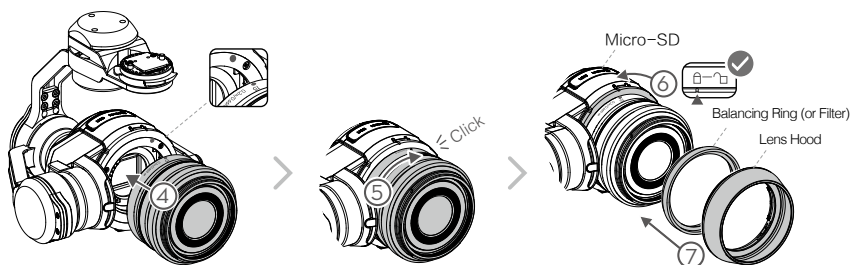
To remove the camera lens, power off the battery and then:
1. While holding down the Lens Release Button, rotate the Lens Lock clockwise to unlock it.
2. While holding down the Lens Release Button, rotate the camera lens counterclockwise to detach it.

Lens Release Button

⚠
- It is recommended to wrap a dust cover around the lens to prevent contamination. DJI produces dedicated dust covers for the DJI MFT 15mm f/1.7 ASPH and the Panasonic Lumix G Leica DG Summilux 15mm f/1.7 ASPH. Other lenses may require you to purchase a third-party dust cover.
- It is important to tighten the Lens Lock after attaching the camera lens, as this can reduce the vibrations of the lens when the aircraft is moving in flight. Always loosen the Lens Lock before attaching and detaching the camera lens.
- A filter can be installed in place of the Camera Balancing Ring. Remember to use a filter that fulfills the weight requirement.
- Some lenses must not be used with a lens hood. Be sure to check the table above for accessory requirements for your lens.
- Be sure to set the lens to AF mode.
- Always hold down the Lens Release Button before rotating the Lens Lock to unlock it.


Mounting the Zenmuse X5 to the Inspire 1

(Watch Video: http://www.dji.com/product/inspire-1/video)
Ensure the aircraft is installed with Landing Gear Risers.

Replace the Inspire 1 Gimbal Mounting Plate

1. Remove the two black dampers at the front.
2. Disconnect the 10-PIN cable and 8-PIN cable in order. Be careful not to damage the gimbal cables.
3. Remove the other two black dampers.
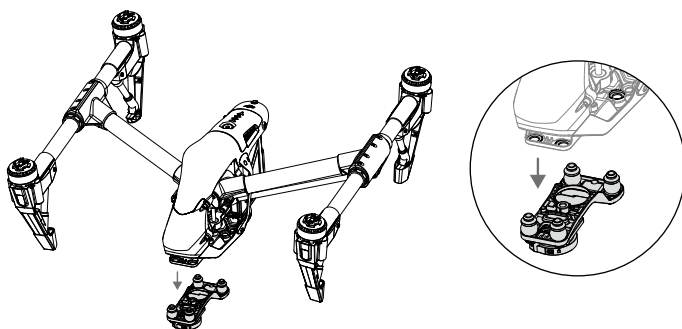
4. Attach the new gimbal mounting plate as shown below. With their flat sides facing outwards, align the rear mounting plates with the rear bracket's screw holes. Tighten the screws with a screwdriver.
5. Connect the 8-PIN cable and 10-PIN cable in order.
6. Place the front mounting bracket to the front bracket with its grooved side facing inwards. Adjust the 8-PIN cable and 10-PIN cable to avoid protrusion, and then tighten the screws.

Rear Mounting Plate

Front Mounting Plate

Mounting Position
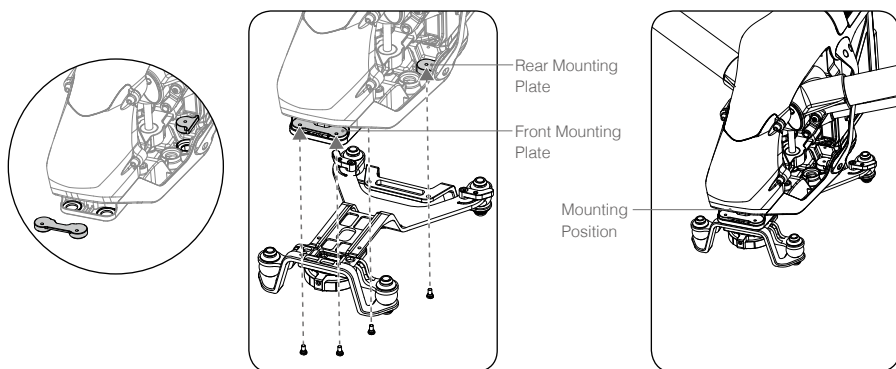
Attach the Zenmuse X5

Ensure to power off the aircraft.

1. Rotate the Gimbal Lock to the unlocked position.
2. Align the key on the damping plate with the slot on the gimbal's pan motor.
3. While aligning the white lines on the Gimbal Connector and Gimbal Lock, insert the Gimbal Connector.
4. Rotate the Gimbal Lock to the locked position.
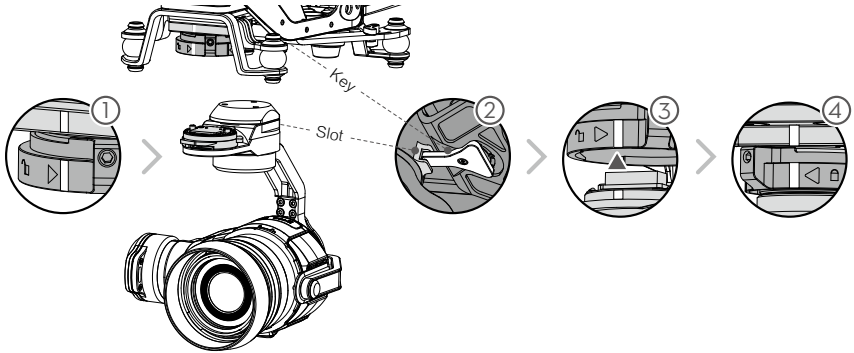
⚠ Be careful not to damage the Gimbal Connector and its metal contacts when attaching or storing the Zenmuse X5.

Mechanical Range

The 3-axis gimbal provides a incredibly stable and mobile platform for the camera system to capture completely smooth images and video. The gimbal can tilt the camera up to 120 degrees and pan 320 degrees in either direction, providing 640 degrees of yaw rotation.
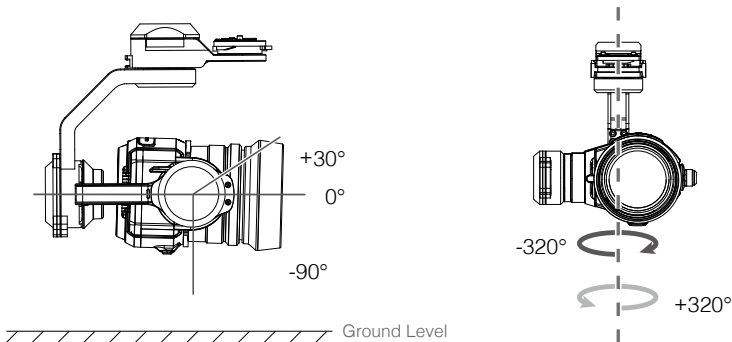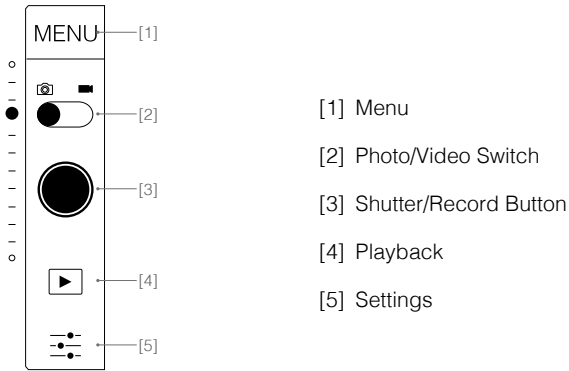

⚠ • DO NOT attach or detach the Zenmuse X5 when the aircraft is powered on.
   • Take off from a flat, open area and protect the gimbal after powering up.

Operating the Camera

Camera Panel

All camera operations are done on the Camera Panel in Camera View of the DJI GO app.

MENU —— [1]

[2]

[3]

[4]

[5]

[1] Menu

[2] Photo/Video Switch

[3] Shutter/Record Button

[4] Playback

[5] Settings

⚠ Always set the camera lens to AF mode. The focus and aperture will be controlled by the DJI GO app digitally.

Basic Shooting

Taking Photos

Slide the Photo/Video Switch to the ⃝ position. Tap the ● button or the shutter button on the remote controller to take a single photo. Choose from one of the shooting modes by tapping "MENU" ->⃝ -> Photo.

1. Burst Mode
   Take 3, 5, or 7 shots in a row.

2. AEB (Auto Exposure Bracketing)
   Take 3 or 5 bracketed frames with ±0.7EV steps for exposure compensation.

3. Time-lapse
   Take photos in 5, 7, 10, 20 or 30 second intervals.

Recording Videos

Slide the Photo/Recording Switch to the ▬ position. Tap the icon or the Record Button on the remote controller to start or stop recording video.

Advanced Settings

Exposure Modes

Tap ⚏ to choose from the following exposure modes:

1. AUTO

   The shutter speed and aperture are set automatically to obtain the correct exposure.

2. S (Shutter Priority)

   Set your desired shutter speed, while the camera chooses the aperture automatically. This mode is ideal for freezing action, creating motion blur or low-light shots.

3. A (Aperture Priority)

   Set your desired aperture, while the camera chooses the shutter speed automatically. This mode provides a wider depth of field and can be used to blur out backgrounds.

4. M (Manual Exposure)

   In general, increase the ISO for low light environments, and decrease the ISO if the surrounding is very bright.

Photo Styles

Tap MENU -> 📷 -> Style to choose from the following styles:

1. Standard

   A general-purpose style for most scenes.

2. Landscape

   The camera will focus on as much of the scene as possible by using a large depth of field.

3. Soft

   Suitable for scenes with natural or soft colors.

4. Custom

   Sharpness: -3 to +3
   Contrast: -3 to +3
   Saturation: -3 to +3

White Balance

Tap MENU -> 📷 ->White Balance to choose from the following modes:

1. Auto

   The camera adjusts the white balance automatically.

2. Sunny / Cloudy / Incandescent / Neon

   Choose one of these modes if natural-looking colors cannot be achieved through photo styles.

3. Custom (2000K~10000K)

   Set a value between 2000K and 10000K to compensate for a specific light source.

List of Settings

Photo	
Shooting Modes	Single Shot, HDR Shot, Burst Mode (3/5/7), AEB (3/5 bracketed frames), Timed-lapse(5s/7s/10s/20s/30s)
Image Format	JPEG, DNG, JPEG+DNG
Image Size	4:3, 16:9
White Balance	Auto, Sunny, Cloudy, Incandescent, Neon, Custom (2000K~10000K)
Style	Standard, Landscape, Soft, Custom (Sharpness/Contrast/ Saturation)
Color	LOG, None, Vivid, Black White, Art, Film, Beach, Dream, Classic, Nostalgia
Video	
Video Size	UHD:4K (4096×2160) 24/25p, 4K (3840×2160) 24/25/30p, 2.7K (2704×1520) 24/25/30p; FHD:1920×1080 24/25/30/48/50/60p
Video Format	MOV, MP4
NTSC/ PAL	PAL, NTSC
White Balance	Auto, Sunny, Cloudy, Incandescent, Neon, Custom (2000K~10000K)
Style	Standard, Landscape, Soft, Custom (Sharpness/Contrast/ Saturation)
Color	LOG, None, Vivid, Black White, Art, Film, Beach, Dream, Classic, Nostalgia
General	
Quick Preview	Off, 1s, 2s, 3s, 4s, 5s
Anti-Flicker	Auto, 60Hz, and 50Hz
Show Grid	Off, Grid Line, Grid + Diagonal, Center Point
File Index Mode	Reset, Continuous
Others	Histograms, Video Captions, Over Exposure Warning, AF Assisted Focus, MF Assisted Focus, Lens Profile, Calibration*, Reset Settings, Format SD Card

* Be sure to calibrate the camera lens in the DJI GO app for manual zoom to work properly.
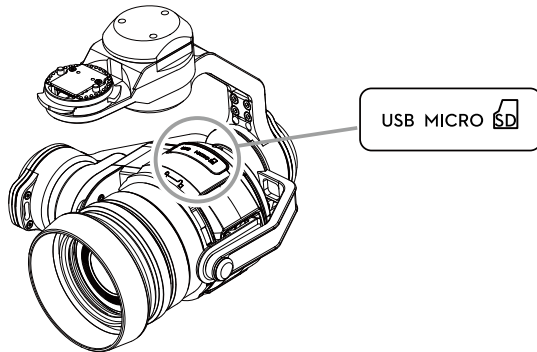
Managing your Photos and Videos

Playback

Tap ▶ in the DJI GO app or press the Playback Button on the remote controller to review photos and videos that you have captured. Press the same button again to return to capturing images.

Downloading your Files

Download your photo and video files to your PC via the Micro USB Port or using a Micro SD card reader.

⚠ The camera must be powered on to access the files.

Appendix

Specifications

General	
Name	Zenmuse X5
Dimensions	120 (W) x 135 (H) x 140 (D) mm
Weight	530 g (Including original lens, balancing ring, lens hood, Micro SD card)
Operating Temperature	32° to 104° F (0° to 40° C)
Camera	
Lens	Replaceable lens M43 mount supporting auto-focus

Supported Lenses	DJI MFT 15mm f/1.7 ASPH Panasonic Lumix G Leica DG Summilux 15mm f/1.7 ASPH Olympus M.Zuiko Digital ED 12mm f/2.0 Olympus M.Zuiko Digital ED 17mm f/1.8 Olympus M.Zuiko Digital ED 25mm f/1.8 Olympus M.Zuiko Digital ED 45mm f/1.8 (For still photography) Olympus M.Zuiko Digital ED 14-42mm f/3.5-5.6 EZ (For still photography)
Sensor	Type 4/3 CMOS sensor
Effective Pixels	16 M
Max Resolution	4608x3456
ISO Range	100 to 25600
Electronic Shutter Speed	8 to 1/8000 s
Field of View	DJI MFT 15mm f/1.7 ASPH 72°
Still Photography Modes	Single shot Burst shooting:3/5/7 frames Auto Exposure Bracketing (AEB):3/5 bracketed frames at 0.7EV bias Time-lapse
Video Resolution	UHD:4K (4096×2160) 24/25p, 4K (3840×2160) 24/25/30p, 2.7K (2704×1520) 24/25/30p; FHD:1920×1080 24/25/30/48/50/60p
Max Video Bitrate	60 Mbps
Supported File Systems	FAT32 ($\leq$ 32 GB), exFAT (> 32 GB)
Photo Formats	JPEG, DNG
VideoFormats	MP4/MOV (MPEG-4 AVC/H.264)
Supported Storage Devices	Class 10 or UHS-1 or above Micro SD cards Max capacity of 64 GB
Default Lens	
Name	DJI MFT 15mm f/1.7 ASPH
Focal length	f=15 mm (35 mm format equivalent 30 mm)
Aperture type	7 diaphragm blades/circular aperture diaphragm
Maximum aperture	F1.7
Minimum aperture value	F16
Lens construction	9 elements in 7 groups (3 aspherical lenses)
In focus distance	0.2 m to ∞ (from the focus distance reference line)
Mount	Micro Four Thirds Mount

Angle of view	72°
Max. diameter	Approx. 2.26 inches (57.5 mm)
Overall length	Approx. 1.42 inches (36 mm)
Mass	115 g
Gimbal	
Angular Vibration Range	±0.02°
Mount	Detachable
Controllable Range	Pitch:-90° to +30° Pan:±320°
Max Controllable Speed	Pitch:120°/s Pan:180°/s

Status LED

The Status LED describes the working status of the camera.

Status LED	Camera Status
Solid Green	Powered on; system is on standby.
Blinks Green quickly (0.1 on, 0.2s off)	System is warming up.
Blinks Green once (0.2s off)	Taking a single photo.
Blinks Green 3 times (0.2s on, 0.2s off)	Burst shooting 3 to 5 photos.
Blinks Red slowly (0.8s on, 0.8s off)	Recording video.
Blinks Green and Red alternatively (0.8s Green, 0.8s Red)	Firmware update in progress.
Blinks Red quickly (0.2s on, 0.3s off)	SD card error.
Solid Red	Firmware update failed.
Blinks Red twice (0.1s on, 0.1s off)	Camera overheated.

This content is subject to change.

Download the latest version from
www.dji.com/support

If you have any questions about this document, please contact DJI by
sending a message to **DocSupport@dji.com**.