http://www.four-thirds.org/en/
The Science of Expression

Ten years ago, on August 5th, 2008, a brand new standard for cameras and lenses made its debut on the world stage, Micro Four Thirds. As the new standard was called, was the culmination of a rigorous scientific examination of photography and the form that it should take in the 21st century.

Looking ahead to the future of digital technology, Micro Four Thirds developers took into consideration the interplay between a wide range of factors, including communication between the camera and lens, seamless compatibility between still images and movies, and high image quality. All of this was modulated by our conviction that as many people as possible should be able to enjoy and benefit from this technology. And that meant that as well as embodying the latest technological advances and most sophisticated photographic concepts, this new standard should also offer improved portability through reductions in size and weight, thus making it easier for more people than ever to enjoy the incredible joy and excitement that comes from the creative expression made possible by photography.

By eliminating the mirror box used in traditional interchangeable lens cameras, the Micro Four Thirds development team made it possible to create remarkably slim and compact cameras and lenses that provide users with all the power and performance of a full-size SLR. One of the results of the Micro Four Thirds’ launch was a social phenomenon called “wearing a camera,” the impact of which is still being felt today.

Each and every aspect of performance and functionality has been formulated and refined to unleash the creative power of each individual, to enable them to shoot pictures that capture the feelings they wish to express, and to evoke those same feelings in anyone who views those images. Our commitment to creative passion has made the Micro Four Thirds standard what it is today and will continue to push it forward in the decades to come.
The Micro Four Thirds standard arose from the effort to develop a more compact slim-bodied camera and lens system while maintaining the concept of the digital-dedicated Four Thirds standard.

In addition to the high imaging performance inherited from the original Four Thirds standard, the Micro Four Thirds standard features amazing portability enabled by the mirrorless design, as well as optimized video recording, easier Live View shooting, and a wide variety of dedicated lenses and accessories, not to mention access to an extensive selection of existing Four Thirds and classic lenses.

**Benefit 1: Compact and Lightweight System**

Traditional interchangebale lens SLRs use a mirror box to ensure that the photographer can look through the viewfinder and see exactly what will be captured. However, the image viewed on the focusing screen after being reflected by the mirror is not the same as the image formed on the film or image sensor surface. Furthermore, this design is a major factor contributing to increasing the size and weight of the camera.

The Micro Four Thirds camera eliminates the mirror box and brings the high image quality of the Four Thirds standard to a broader range of applications thanks to the compact size and optimized video recording facility. Micro Four Thirds is a new standard that has greatly expanded the photographer’s freedom to explore various precedences that would have been impossible with traditional interchangebale lens SLRs.

**Benefit 2: Optical Design that Provides Mobility and Image Quality**

However good the image sensor and processing engine are, image quality will be inferior if the lens is of poor quality. The size of the Micro Four Thirds image sensor is based on the minimum size limit for a lens that can be easily carried, while still providing high image quality.

The light passing through the lens is output from the output lens (rear-lens element) and forms a circular image on the imaging plane (image sensor). The circular area that contains an accurate image is referred to as the image circle. In most cases, the sensor is placed so that it can deal with image distortion due to the light intensity outside the image circle. However, the area used in actual shooting is called the effective pixel area, which is inside the image circle. The size of this area is defined as the effective sensor size. Diagram 1 shows the relationship between the image circle and effective sensor size. Due to the strict physical principles between the light passing through the lens and the subsequent output from the lens, it is generally necessary to design a lens with a large diameter and length in order to obtain a large image circle. In addition, the flange back should also be optimized to avoid unwanted refractions of light.

Micro Four Thirds lenses have a flange back about half the size of those used in Four Thirds lenses while using a sensor that’s the same size. The mount diameter has also been reduced by about 6 mm to further support lens size reduction.

**Benefit 3: Incredible High-speed Performance**

By eliminating the mirror box that used to limit the speed of traditional interchangeable lens SLRs, the Micro Four Thirds standard has eliminated the delay in sequential shooting and the restriction of AF distance measurement caused by the action of the mirror. High-speed capability that surpasses conventional limits is one of the biggest benefits of Micro Four Thirds.

Micro Four Thirds technologies support the tracking of moving objects and the reliable recognition of human bodies and faces. Other Micro Four Thirds technologies include a 121-point all-cross-type on-chip phase detection sensor for faster focusing and a 225-area AF sensor that allows multi-zone automatic AF frame settings. The world’s fastest AF at 0.04 sec. and 18-stage sequential shooting in AF-tracking can also be found in some of the higher-end Micro Four Thirds cameras.

The Micro Four Thirds standard dramatically enhanced photography with technologies such as 3D moving object capture called 3D (derived from Digital), human body recognition and advanced face recognition technology, and Pro Capture that can record up to 14 frames at 200 ISO between the 1st and 2nd shutter releases so that you never miss the precise moment. Apart from the performance improvement of cameras as described above, another important factor contributing to the speeding up of the Micro Four Thirds photography is the advanced signal linkage with a large variety of lenses, which is critically an open standard whose mandate is to make it possible for photographers to choose from an array of options for the combination of lenses and cameras that best suit their requirements. This is because the high-resolution capability of the lens is the starting point for the image capture process, so it is the most essential for many speed-enhancing technologies.

**Benefit 4: Optimized for Video**

As the Micro Four Thirds standard employs a very similar image area as 35mm motion picture 16mm, you can utilize the shooting skills you have gained through experience by using Film mount lenses, such as being able to compose your shot and issue the depth of field without using the viewfinder. In addition, unlike conventional SLR/SLM type lenses, Micro Four Thirds standard lenses allow more efficient use of battery power by reducing both size and the risk of noise caused by heat in the image processing.

Such advantages had the video and movie industries interested in the standard from the very start.

After release of the AG-310G (which is marketed as the AG-310G series outside Japan) professional electronic movie camera by Panasonic in 2010, there has been a rush to join the standard among many video industry professionals who recognize Micro Four Thirds’ usefulness as models, as well as well-established lens manufacturers such as Schneider and Carl Zeiss.

The compact size and high image quality of the entire system (including the lens) and the remote controllability made possible by the digital control are also useful in industrial applications such as drone shooting and professional recording cameras, which has also induced many companies to join the standard,

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4
Wide Zoom Lenses

Lenses covering wide-angle focal lengths of less than 18mm (36mm or 50mm equivalent).

14-42mm (50mm equivalent)

OLYMPUS - M.ZUIKO DIGITAL ED 7-14mm F2.8 PRO

Ultra-wide-angle zoom lens for low-light shooting and dynamic perspectives.

Panasonic - LUMIX G VARIO 7-14mm F4.0 ASPH.

Weight: 350g | Dimensions: 72mm x 69mm

Ultra-wide-angle, ultra-compact 14-42mm zoom lens for dynamic shooting.

OLYMPUS - M.ZUIKO DIGITAL ED 9-18mm F4.0-5.6

Weight: 200g | Dimensions: 74mm x 69mm

Ultra-wide-angle zoom lens with a wide angle of view.

14-16mm (50mm equivalent)

Panasonic - LUMIX G VARIO 8-14mm F2.8-4.0 ASPH.

Weight: 205g | Dimensions: 74mm x 69mm

Excellent imaging with dynamic perspectives and unlimited creativity.

OLYMPUS - M.ZUIKO DIGITAL ED 9-18mm F4.0-5.6

Weight: 200g | Dimensions: 74mm x 69mm

Ultra-wide-angle zoom lens with a wide angle of view.

This ultra-wide-angle zoom lens is ideal for wide-angle landscapes and dynamic perspectives.
Standard Zoom Lenses

Lenses covering focal lengths from wide-angle to telephoto (between 17mm and 180mm, or 24mm and 350mm at 35mm equivalent) to telephoto.

24-70mm (35mm equivalent)
Panasonic : LUMIX G X VARIO 12-35mm F2.8-II ASPH. POWER O.I.S.
- Ultra-compact and lightweight 12-35mm standard zoom lens
- High-speed, high-performance lens with high M.4.8 power.
- Weather-resistant and durable design.

24-70mm (35mm equivalent)
Kodak : F70 PRO SZ
- ED 12-45mm F3.5-6.3 AF
- White-diamond lens elements for a wide range of focal lengths.
- Weather-resistant and durable design.

24-90mm (35mm equivalent)
Panasonic : LEICA DG VARIO-ELMARIT 12-60mm F2.8-4.0 ASPH. POWER O.I.S.
- High-speed, high-performance lens with high M.4.8 power.
- Weather-resistant and durable design.

24-120mm (35mm equivalent)
Panasonic : LUMIX G X VARIO 12-60mm F3.5-5.6 ASPH. POWER O.I.S.
- Ultra-compact and lightweight 12-60mm standard zoom lens
- High-speed, high-performance lens with high M.4.8 power.
- Weather-resistant and durable design.

24-120mm (35mm equivalent)
Olympus : M.ZUIKO DIGITAL ED 12-100mm F4.0 IS PRO
- High-performance, high-magnification zoom lens
- With high image quality, high magnification and zoom ratio.
- Weather-resistant and durable design.

24-120mm (35mm equivalent)
Panasonic : LUMIX G X VARIO 12-60mm F3.5-5.6 II ASPH. POWER O.I.S.
- Ultra-compact and lightweight 12-60mm standard zoom lens
- High-speed, high-performance lens with high M.4.8 power.
- Weather-resistant and durable design.

24-120mm (35mm equivalent)
Panasonic : LUMIX G VARIO 14-45mm F3.5-5.6 ASPH. POWER O.I.S.
- Compact and lightweight standard zoom lens
- With a compact, lightweight design and high-speed performance.
- With a wide range of focal lengths.

24-120mm (35mm equivalent)
Panasonic : LUMIX G VARIO 14-140mm F3.5-5.6 ASPH. POWER O.I.S.
- Compact, lightweight standard zoom lens
- With a wide range of focal lengths.
- With a compact, lightweight design and high-speed performance.
**Telephoto Zoom Lenses**

Lenses covering telephoto focal lengths of 150mm (100mm at 35mm equivalent) or more.

- **70-200mm (35mm equivalent)**
  - Panasonic: LUMIX G X VARIO 35-100mm F2.8 POWER O.I.S.
  - Weight: 424g
  - Optical Features: Power O.I.S., Optical Image Stabilizer

- **70-300mm (35mm equivalent)**
  - Panasonic: LUMIX G X VARIO 35-100mm F2.8 POWER O.I.S.
  - Weight: 424g
  - Optical Features: Power O.I.S., Optical Image Stabilizer

- **80-400mm (35mm equivalent)**
  - OLYMPUS: M.ZUIKO DIGITAL ED 40-150mm F4.0-5.6 R
  - Weight: 424g

- **50-200mm (35mm equivalent)**
  - Panasonic: LUMIX G X VARIO 200-300mm F4.0-5.6 II POWER O.I.S.
  - Weight: 424g

- **120-400mm (35mm equivalent)**
  - Panasonic: LUMIX G VARIO 100-300mm F4.0-5.6 II POWER O.I.S.
  - Weight: 646g

- **100-400mm (35mm equivalent)**
  - Panasonic: LEICA DG VARIO-ELMAR 100-400mm F4.0-6.3 ASPH.

- **60-150mm (35mm equivalent)**
  - Kodak: PIXPRO 55-200mm F3.5-5.6

- **60-150mm (35mm equivalent)**
  - Panasonic: LUMIX G VARIO 45-150mm F4.0-5.6 ASPH. MEGA O.I.S.

- **80-200mm (35mm equivalent)**
  - Panasonic: LUMIX G VARIO 45-150mm F4.0-5.6 ASPH. MEGA O.I.S.

- **100-400mm (35mm equivalent)**
  - OLYMPUS: M.ZUIKO DIGITAL ED 75-300mm F4.5-6.7 II

- **150-600mm (35mm equivalent)**
  - Panasonic: LEICA DG VARIO-ELMAR 100-400mm F4.0-6.3 ASPH.

- **100-300mm (35mm equivalent)**
  - Panasonic: LUMIX G X VARIO 35-100mm F2.8 POWER O.I.S.

- **180-600mm (35mm equivalent)**
  - Panasonic: LEICA DG VARIO-ELMAR 100-400mm F4.0-6.3 ASPH.

**Ultra-Compact Telezooms**

- The lens is equipped with the Four Thirds family of lenses, making it ideal for travel and everyday use. The lens is lightweight and compact, making it perfect for use in both stills and video applications. Its versatile focal length range allows for capturing subjects from a wide range of distances.
Wide Prime Lenses

Single-focus-length Lenses for Wide-Angle with Focal Length below 28mm (40mm at 35mm equivalent).

**OLYMPUS : M.ZUIKO DIGITAL ED 8mm F/3.8 Fisheye PRO**
- Maximum magnification: 0.18x
- Weight: 260g

**Kowa : PROMINAR 8.5mm F2.8**
- Weight: 280g

**OLYMPUS : M.ZUIKO DIGITAL ED 12mm F/2.0**
- Weight: 250g

**OLYMPUS : M.ZUIKO DIGITAL ED 17mm F/1.8**
- Weight: 330g

**OLYMPUS : M.ZUIKO DIGITAL ED 25mm F/1.8**
- Weight: 320g

**OLYMPUS : M.ZUIKO DIGITAL ED 45mm F/1.8**
- Weight: 370g

**OLYMPUS : M.ZUIKO DIGITAL ED 75mm F/1.8**
- Weight: 420g

**OLYMPUS : M.ZUIKO DIGITAL ED 12mm F/2.0**
- Weight: 280g

**OLYMPUS : M.ZUIKO DIGITAL ED 17mm F/1.8**
- Weight: 330g

**OLYMPUS : M.ZUIKO DIGITAL ED 25mm F/1.8**
- Weight: 320g

**OLYMPUS : M.ZUIKO DIGITAL ED 35mm F/1.8**
- Weight: 370g

**OLYMPUS : M.ZUIKO DIGITAL ED 45mm F/1.8**
- Weight: 420g

**OLYMPUS : M.ZUIKO DIGITAL ED 75mm F/1.8**
- Weight: 530g

**OLYMPUS : M.ZUIKO DIGITAL ED 12mm F/2.0**
- Weight: 280g

**OLYMPUS : M.ZUIKO DIGITAL ED 17mm F/1.8**
- Weight: 330g

**OLYMPUS : M.ZUIKO DIGITAL ED 25mm F/1.8**
- Weight: 320g

**OLYMPUS : M.ZUIKO DIGITAL ED 35mm F/1.8**
- Weight: 370g

**OLYMPUS : M.ZUIKO DIGITAL ED 45mm F/1.8**
- Weight: 420g

**OLYMPUS : M.ZUIKO DIGITAL ED 75mm F/1.8**
- Weight: 530g

**OLYMPUS : M.ZUIKO DIGITAL ED 12mm F/2.0**
- Weight: 280g

**OLYMPUS : M.ZUIKO DIGITAL ED 17mm F/1.8**
- Weight: 330g

**OLYMPUS : M.ZUIKO DIGITAL ED 25mm F/1.8**
- Weight: 320g

**OLYMPUS : M.ZUIKO DIGITAL ED 35mm F/1.8**
- Weight: 370g

**OLYMPUS : M.ZUIKO DIGITAL ED 45mm F/1.8**
- Weight: 420g

**OLYMPUS : M.ZUIKO DIGITAL ED 75mm F/1.8**
- Weight: 530g

**OLYMPUS : M.ZUIKO DIGITAL ED 12mm F/2.0**
- Weight: 280g

**OLYMPUS : M.ZUIKO DIGITAL ED 17mm F/1.8**
- Weight: 330g

**OLYMPUS : M.ZUIKO DIGITAL ED 25mm F/1.8**
- Weight: 320g

**OLYMPUS : M.ZUIKO DIGITAL ED 35mm F/1.8**
- Weight: 370g

**OLYMPUS : M.ZUIKO DIGITAL ED 45mm F/1.8**
- Weight: 420g

**OLYMPUS : M.ZUIKO DIGITAL ED 75mm F/1.8**
- Weight: 530g

**OLYMPUS : M.ZUIKO DIGITAL ED 12mm F/2.0**
- Weight: 280g

**OLYMPUS : M.ZUIKO DIGITAL ED 17mm F/1.8**
- Weight: 330g

**OLYMPUS : M.ZUIKO DIGITAL ED 25mm F/1.8**
- Weight: 320g

**OLYMPUS : M.ZUIKO DIGITAL ED 35mm F/1.8**
- Weight: 370g

**OLYMPUS : M.ZUIKO DIGITAL ED 45mm F/1.8**
- Weight: 420g

**OLYMPUS : M.ZUIKO DIGITAL ED 75mm F/1.8**
- Weight: 530g

**OLYMPUS : M.ZUIKO DIGITAL ED 12mm F/2.0**
- Weight: 280g

**OLYMPUS : M.ZUIKO DIGITAL ED 17mm F/1.8**
- Weight: 330g

**OLYMPUS : M.ZUIKO DIGITAL ED 25mm F/1.8**
- Weight: 320g

**OLYMPUS : M.ZUIKO DIGITAL ED 35mm F/1.8**
- Weight: 370g

**OLYMPUS : M.ZUIKO DIGITAL ED 45mm F/1.8**
- Weight: 420g

**OLYMPUS : M.ZUIKO DIGITAL ED 75mm F/1.8**
- Weight: 530g

**OLYMPUS : M.ZUIKO DIGITAL ED 12mm F/2.0**
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**OLYMPUS : M.ZUIKO DIGITAL ED 45mm F/1.8**
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**OLYMPUS : M.ZUIKO DIGITAL ED 75mm F/1.8**
- Weight: 530g

**OLYMPUS : M.ZUIKO DIGITAL ED 12mm F/2.0**
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**OLYMPUS : M.ZUIKO DIGITAL ED 17mm F/1.8**
- Weight: 330g

**OLYMPUS : M.ZUIKO DIGITAL ED 25mm F/1.8**
- Weight: 320g

**OLYMPUS : M.ZUIKO DIGITAL ED 35mm F/1.8**
- Weight: 370g

**OLYMPUS : M.ZUIKO DIGITAL ED 45mm F/1.8**
- Weight: 420g

**OLYMPUS : M.ZUIKO DIGITAL ED 75mm F/1.8**
- Weight: 530g
Standard Prime Lenses

Single focal length Lens with focal lengths from 40mm to 60mm (60mm to 85mm at 35mm equivalent).

40mm (35mm equivalent)

Panasonic: LUMIX G 20mm F1.7 ASPH.

- Weight: 315g
- Filter diameter: 58mm
-MENU: Single Focus Lens with excellent brightness
- This lens achieves a superior optical performance with a high level of sharpness. The image is bright and clear, even in low light conditions, allowing for greater creative freedom.

45mm (35mm equivalent)

Voigtlander: NOKTON 50mm F0.95 Type II

- Weight: 259g
- Lens size: 68mm x 72mm
- MENU: Large aperture high-resolution lens with beautiful bokeh effects
- The combination of a large F0.95 aperture and a high resolution optical performance makes the lens ideal for portrait photography.

50mm (35mm equivalent)

Olympus: M.ZUIKO DIGITAL ED 25mm F1.2 PRO

- Weight: 300g
- Filter diameter: 58mm
- MENU: Large aperture lens with fast aperture
- An angle of view of 85°/Cases of high-speed shooting and beautiful bokeh effects produced by the open aperture of F1.2,

50mm (35mm equivalent)

Kowa: PROMINAR 50mm F1.8

- Weight: 320g
- Filter diameter: 62mm
- MENU: Large aperture lens with fast aperture
- A lens that achieves a wide range of images, from portraits to landscapes.

60mm (35mm equivalent)

Olympus: M.ZUIKO DIGITAL ED 45mm F1.2 PRO

- Weight: 340g
- Filter diameter: 62mm
- MENU: Large aperture lens with fast aperture
- A lens that achieves a wide range of images, from portraits to landscapes.

Telephoto Prime Lenses

Single focal length Lens for Medium Telephoto to Telephoto with 60mm (60mm to 85mm at 35mm equivalent) and up.

60mm (35mm equivalent)

Panasonic: LEICA DG Noctilux 42.5mm F1.2 ASPH.

- Weight: 560g
- Filter diameter: 72mm
- MENU: Large aperture lens with fast aperture
- A light and compact lens that can shoot face to face or in close-up portraits and also allows for high-quality, high-speed shooting.

60mm (35mm equivalent)

Sigma: 60mm F2.8 DN | Art

- Weight: 280g
- Filter diameter: 52mm
- MENU: Family portrait lens with beautiful bokeh effects
- A lens that achieves a wide range of images, from portraits to landscapes.

100mm (35mm equivalent)

Sigma: 100mm F2.8 DN | Contemporary

- Weight: 290g
- Filter diameter: 67mm
- MENU: Large aperture lens with fast aperture
- A lens that achieves a wide range of images, from portraits to landscapes.
Telephoto Prime Lenses

Single focal length lenses for medium telephoto to telephoto with 60mm (35mm of 35mm equivalent) and up.

Tekina:
Reflex 300mm F6.3 MF Macro

Feature
- Maximum Length: 400mm (equivalent)
- Weight: 800g
- Filter thread: 77mm

Polarization suppression filters with front housing distance of 200-2000mm

The use of reflex optics and reduced size of the overall lens length have resulted in a lens with a remarkably compact length of 60mm, a maximum diameter of 65mm and a weight of 268g.

Micro Four Thirds System compatible Telephoto Lens Kit

Kowa: KOWA PROMINAR 500mm F5.6 FL Standard Kit

350mm, 500mm, 850mm, Telephoto lens kit for shooting in three focal lengths with a single lens.

To minimize the chromatic aberrations (color fringing) that lenses with long focal length tend to produce, the lens employs one double aspherical lens and two double aspherical aspherical lens elements, based on advanced optical technology developed in Japan. For shooting purposes, this lens features the high control and high imaging performance required of a complete lens.

The standard focal length of the main lens in the Standard Kit is 1000mm (35mm equivalent). When the optional 4037 mm adapter is added to the main lens, the focal length of the main lens is increased with a monolens of 1400mm (35mm equivalent). The adapter can be used with a standard lens or 1547mm focal length, and the adapter can be used with the 1400mm focal length of the main lens.
60mm (35mm equivalent)
Panasonic: LUMIX G MACRO 30mm F2.8 ASPH. MEGA O.I.S.

- Single focus lens
- With a single focus length of 30mm (35mm equivalent), this macro lens can be combined with a variety of applications for high-resolution macro photography in macro photography.

60mm (35mm equivalent)
OLYMPUS: M.ZUIKO DIGITAL ED 30mm F3.5 Macro

- Power focusing lens
- Utilized with the magnification factor of 2.5x, it becomes 1.5 times longer than the lens.

60mm (35mm equivalent)
Panasonic: LEICA DG MACRO-ELMARIT 45mm F2.8 ASPH. MEGA O.I.S.

- Outstanding image quality
- Known for high-level performance

50mm (35mm equivalent)
OLYMPUS: M.ZUIKO DIGITAL ED 60mm F2.8 Macro

- Macro lens
- With a single focus length of 60mm (35mm equivalent), this lens can be used for various applications.

50mm (35mm equivalent)
Panasonic: LUMIX G 12.5mm F12

- Tiny, lightweight
- Perfect for 24mm wide-angle photography

World's first* interchangeable 3D lens

*The world's first interchangeable 3D lens.
**Four Thirds Lenses**

By utilizing the accurate, quick phase-detection AF, the traditional Four Thirds system format allows you to fully enjoy the high image quality of the full range of Four Thirds lenses.

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**LEICA D LENS**

Panasonic 20-30mm F4.0 ASPH, MEGA O.I.S.
- **Aperture:** F4.0 - F5.6
- **Filter Size:** 52mm
- **Angle:** 77°
- **Macro:** 0.16x
- **Closest Focusing Distance:** 0.35m
- **Weight:** 370g

Panasonic 20-60mm F3.5-5.6 ASPH, MEGA O.I.S.
- **Aperture:** F3.5 - F5.6
- **Filter Size:** 52mm
- **Angle:** 75°
- **Macro:** 0.19x
- **Closest Focusing Distance:** 0.28m
- **Weight:** 345g

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**ZUKO DIGITAL LENS**

Olympus 12-45mm F4.0-5.6 II
- **Aperture:** F4.0 - F5.6
- **Filter Size:** 52mm
- **Angle:** 80°
- **Macro:** 0.18x
- **Closest Focusing Distance:** 0.28m
- **Weight:** 470g

Olympus 12-60mm F3.5-5.6 II
- **Aperture:** F3.5 - F5.6
- **Filter Size:** 58mm
- **Angle:** 80°
- **Macro:** 0.18x
- **Closest Focusing Distance:** 0.28m
- **Weight:** 525g

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**Specification**

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<th>Lens</th>
<th>Manufacturer</th>
<th>Color</th>
<th>Size Equipped</th>
<th>Aperture</th>
<th>Angle</th>
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<td>80°</td>
<td>0.18x</td>
<td>0.28</td>
<td>525</td>
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*35mm equivalent focal length calculated as 35mm equivalent focal length for a digital single-lens reflex camera. The filter diameter is 52mm. *3 Manual focusing is available.

*4 The proposed lens has not been confirmed to be compatible with the Olympus lens. Compatibility varies depending on the version of the firmware.

*5 Olympus incorporates the image stabilization in the body of the camera. Image stabilization is available with any lens. (Corresponding models: OLYMPUS OM-D series, OLYMPUS PEN series)
**Accessories**

**Body Cap Lenses for Micro Four Thirds**

- **Olympus E-25-60mm Fisheye Body Cap Lenses**
  - Diameter: 27mm
  - Fisheye lens that gives you a full-frame equivalent of 142°.
  - The small size makes it easy to store compactly.
  - Cap can be used as both a body cap and as a petal lens for a special photographic effect.

- **Olympus E-50-150mm Body Cap Lens** (F4.0)
  - Diameter: 27mm
  - Fisheye lens that gives you a full-frame equivalent of 142°.
  - Petal lens for a special photographic effect.

**Converter Lenses for Micro Four Thirds**

- **Olympus MC-14 M.Zuiko Digital 1.4x Teleconverter**
  - Magnification: 1.4x
  - This converter provides the equivalent of a 2.8x power increase to any Olympus Micro Four Thirds lens.

- **Olympus MC-14 M.Zuiko Digital 1.4x Wide Converter**
  - Magnification: 1.4x
  - This converter provides the equivalent of a 2.8x power increase to any Olympus Micro Four Thirds lens.

- **Panasonic DMW-GH1GK1 Wide Conversion Lens**
  - Magnification: 1.4x
  - This converter provides the equivalent of a 2.8x power increase to any Olympus Micro Four Thirds lens.

**Four Thirds Adapters for Micro Four Thirds**

- **Olympus MMF-3 Four Thirds Adapter**
  - Mount adapter for Micro Four Thirds lenses to be mounted on Micro Four Thirds mounts.

- **Panasonic DWM-MAT Four Thirds Adapter**
  - Mount adapter for Four Thirds lenses to be mounted on Micro Four Thirds mounts.

**Classic Lens Adapters for Micro Four Thirds**

- **Panasonic DMW-MAPM**
  - Mount adapter for Micro Four Thirds lenses to be mounted on a Micro Four Thirds mount.

- **Olympus MMF-20 Four Thirds Adapter**
  - Mount adapter for Micro Four Thirds lenses to be mounted on a Micro Four Thirds mount.

- **Olympus MMF-30 Four Thirds Adapter**
  - Mount adapter for Micro Four Thirds lenses to be mounted on a Micro Four Thirds mount.

- **Converter Lenses for Four Thirds**

- **Olympus EC-20 ZUIKO DIGITAL 2x Teleconverter**
  - Magnification: 2x
  - Convert any Four Thirds lens to a full-frame equivalent of a 4x power increase.

- **Olympus EC-25 ZUIKO DIGITAL 1.4x Teleconverter**
  - Magnification: 1.4x
  - Convert any Four Thirds lens to a full-frame equivalent of a 2.8x power increase.

- **Olympus EC-40 Extension Tube**
  - Magnification: 1.4x
  - Convert any Four Thirds lens to a full-frame equivalent of a 2.8x power increase.

**Konica Extension Tube Set**

- **Makita Extension Tube Set**
  - Magnification: 1.4x
  - Convert any Four Thirds lens to a full-frame equivalent of a 2.8x power increase.

- **Olympus Extension Tube Set**
  - Magnification: 1.4x
  - Convert any Four Thirds lens to a full-frame equivalent of a 2.8x power increase.
Movie Equipments

Expand the potential of movie recording with the flexibility of the Micro Four Thirds standard.

Digital Cinema Cameras

- Blackmagic Micro Cinema Camera
- Blackmagic Pocket Cinema Camera
- Blackmagic Micro Studio Camera 4K
- Blackmagic Studio Camera

Innovative Camera Systems

- Inspire 2
- Zenmuse X5S
- DJI MFT 15mm f/1.7 ASPH Prime Lens
- OSMO Pro
- OSMO RAW

Industrial Camera Systems

- FASTCAM MUJI
- Z CAM S1 Pro
- Z CAM S1x Pro
- Z CAM V1 Pro
- Z CAM K1 Pro

Professional Camera Systems

- AG-AF105A
- GY-LS300CH
- HORSEMAN TS-pro

Camera Lenses

- 11-16 13 CINEMA LENS
- Cine Prominar 8.5mm T3.0 / 12mm T1.9 / 25mm T1.9

* These products also accept the use of MFT and cameras compatible with the Micro Four Thirds System. However, as there are functional restrictions with certain models, please consult the manufacturer of each product for details.

* For more information, refer to the manual and consult with the manufacturer before purchase.
5-axis Sync IS

Integrating an image stabilization mechanism, the M.ZUIKO DIGITAL ED 100-400mm F4.0 IS PRO has an image-blurring compensation effect equivalent to up to 5 shutter speed steps* and the M.ZUIKO DIGITAL ED 12-100mm F4.0 PRO an effect equivalent to up to 5 shutter speed steps* with the lens alone. When combined with a camera featuring 5-axis image stabilization, the stabilization effect can be expanded to as many as 6.5 steps*—quite simply the world's best. This unprecedented stabilization performance ensures virtually shake-free shooting free from the effects of camera shakes even in super telephoto and zoom photography.

* Unlike previous models, this feature applies to lens alone.
* When combined with a camera featuring 5-axis image stabilization.

With their outstanding imaging capabilities, Lumix and Leica lens technologies deliver superb picture quality

LEICA DG Lens

Leica, the pioneer of compact camera systems, has kept impressed professionals the world over with its lenses. Its world-famous name as a manufacturer of precision optical devices is built on a constant stream of innovations and inventions that go back more than a century. The LEICA DG lens designed for Panasonic's Lumix G series is another innovation made possible by Leica’s command of the latest technology in optics and mechanics. Natural imaging performance with rich gradations throughout the image plane creates an extraordinary sense of texture—seamless as you can almost touch it. The result is extraordinary expressive power that will allow you to fully realize your creative vision.

Aspherical Lenses

To assure superior image quality while reducing size and weight, each LEICA DG / LEICA lens features a number of aspherical lenses that effectively prevent lens aberrations such as spherical aberration, distortion, and various aberrations. This configuration enables effects that would normally require several optical lens elements, it makes possible an ultra-compact design. In addition, LEICA optics fit a variety of high-speed lenses onto the 15mm and other advanced cameras that use the M.ZUIKO lense, contributing to the excellent high-image quality and compactness of M.ZUIKO lenses.

Image stabilization by interlocking the body and lens

Dual I.S. / Dual I.S.

With real-time interlocked control of the 5-axis Body Image Stabilization (B.I.S.) and the 5-axis Optical Image Stabilization (O.I.S.), Dual I.S. offers powerful support for users who require high-quality high-definition images. While O.I.S. on its own has difficulty stabilizing telephoto side images as the focal length is increased, Dual I.S. is able to effectively stabilize the image in the medium telephoto range, as well as throughout the telephoto range by interlocking the two axes to the body and the two axes in the lens.
Introducing Sigma's all-new DN series of lenses
-the lenses for mirrorless interchangeable lens cameras

Mirrorless-camera-dedicated DN Lenses

SIGMA DN lenses feature an “DN” in the name, designed for optimal performance on cameras with a short flange back. Launched in early 2012, the SIGMA DN Series initially included the 30mm F2.8 EX DN and the 19mm F2.8 EX DN. Designed for exclusive use with mirrorless interchangeable lens cameras, both models featured high performance, compact design and smooth, quiet operation. Later in 2013, these new models were incorporated into the Art line, which, thanks to the addition of the 60mm F2.8 DN F/2.8, includes wide-angle, standard, and medium telephoto models. The series continued to expand in 2016 with the introduction of the 10mm F2.8 EX DN. It also features a 15mm F/2.8 aperture with a slim, compact design. In 2017, SIGMA introduced another “Contemporary” model, the 16mm F1.4 DC DN (Contemporary). SIGMA is committed to establishing itself as the lens system for mirrorless cameras and to that end will continue to add new models to its lineup to meet a diverse range of requirements.

Art and Contemporary

SIGMA’s Art lenses incorporate optics that deliver the best possible performance in a package that maintains the compact profile of mirrorless interchangeable lens cameras and boasts extremely high-optical performance throughout the focus range. AF functions such as continuous AF are included and the speed and quietness of AF operation make these lenses an excellent choice for movie recording. Reliable performance and outstanding focusing capability allow users to focus all their attention on shooting. The Contemporary line lenses epitomize today’s state-of-the-art in every aspect including the latest optical design, optimum material selection, and superior movie recording performance. Streamlined, ergonomic, and remarkably compact, these easy-to-use lenses make image quality their first priority.

To offer excellent products

For evaluation of lens performance, the unique MET test instrument AT⁺ employing the 46-mega-pixel Foveon sensor was developed. This has made it possible to inspect high-frequency components that were previously undetectable. All SIGMA products are subjected to the AT 100% inspection before shipment to ensure maximum performance.

“Made in Japan”

All Sigma’s manufacturing plants, everything right down to tools and parts is carried out under an integrated production system. We are one of the very few manufacturers whose products are said to “be made in Japan”. We like to think our products are somehow imbued with the essence of our homeland. Blessed as it is with clear air and water, and focused, painstakingly precise, we are driven by our passion for maintaining the superior quality that is the hallmark of all our products, born of a marriage between highly refined expertise and intellectual, advanced technology. Our most advanced products have satisfied professionals and lovers of photography all over the world, because our manufacturing is based on precise craftsmanship, underpinning the passion and pride of our experts.

The “Lichtriesen” of Voigtländer – Nokton series

Four of the Voigtlander lenses are specifically designed for use on Micro Four Thirds cameras. They are real stars – the “Lichtriesen” of Voigtlander –

Serving as a so-called “standard lens”, the Nokton 50/1.5/25mm produces pictures that correspond to the angle of view of the human eye. Aperture is critical to the impression that people receive from a photograph. The extremely fast 10/1.5 aperture makes it easy for you to capture stunning, crystal-clear images under virtually any conditions. By using a shallow depth of field, you can create a series of different impressions from the same scene. The superb balance of the Nokton makes the subject stand out for extraordinary overall results.

Video- and film-making enthusiasts will be especially impressed by the Selective Aperture Control System featured on the Viltrox Micro Four Thirds lenses. This enables smooth, stepless and noiseless control of the aperture.

Another highlight of four lenses is the very short closest focusing distance. At macro setting, coupled with the fixed aperture, this gives you tremendous scope for image design.

With their large, fast aperture, these lenses are extremely bright, making them able to operate very effectively in low light. With a Nokton lens, you’ll suddenly find yourself looking out difficult lighting conditions such as these all down or under heavy clouds, so that you can capture beautiful atmospheric images.

The outstanding manufacturing quality of these lenses puts them at the top of their class in every respect. A smooth turning focus ring and clickless aperture ring reflect the high precision of our manufacturing process.
Tokina expands the new option of “lightness”

Tokina decided to participate in the Micro Four Thirds System for one very simple reason. The small image sensor and shorter flange back of the Micro Four Thirds System offer tremendous advantage in optical design. This makes it possible to develop new lenses completely different from conventional ones.

“Is the lens that will users of Micro Four Thirds cameras most appreciate?”

Tokina’s answer to this question—“a lens that offers characteristics matching those of the camera body”—is based on the deep understanding and knowledge it has gained over its many years as a dedicated lens manufacturer.

Reflex 300mm F6.3 MF Macro (Manual Focus)

Super-telephoto lens that fits in the palm of your hand

The Reflex 300mm F6.3 MF Macro lens employs Reflex optics to reduce the overall length of the lens by reflecting light with a mirror. The result is precisely reproducible—a compact lens with a length of 66mm, maximum diameter of 66mm, and weight of 298 grams.

High-precision mirror and aluminium-enhanced-reflection mirror coating

The key to Reflex optics is the mirror that reflects light. This lens employs a mirror polished with ZEROS-type bi-speed technology to provide a high accuracy equivalent to the best glass parts (Newton gauge). In addition, the aluminum-reflection film is treated with special processing to improve the mirror’s reflectivity.

Closest focusing distance of 0.8m

The Reflex 300mm F6.3 MF Macro lens is not only a super-telephoto lens, but it can also approach subjects to a closest focusing distance of 0.8m and shoot pictures with a macro magnification of 1:1. This telephoto macro lens is capable of macro shooting while retaining a working distance.

Manual focusing for maximum accuracy

Tokina chose not to provide this lens with AF because of the large focusing rotation angle from ∞ to the closest focusing distance of 0.8m and the requirement for very precise focusing with some very narrow angles of view. Consequently, we decided that manual operation would provide more accurate and allow users to feel the “joy of photography.” Nevertheless, this lens incorporates a distance encoder that live AF lenses so it is capable of interfacing with the camera to provide distance information.

Tamron’s constantly evolving high-magnification zoom lenses have finally arrived in the world of Micro Four Thirds

14-150mm F/3.5-5.8 Di III Model C001

The essence of Tamron technology in a compact, all-in-one™ zoom that minimizes aberrations and maximizes image quality

The optical design of Tamron 14-150mm Di III is all-in-one”, a zoom in which all elements are contained within the lens body. This zoom is the result of Tamron’s 20+ years of experience in designing and manufacturing world-class all-in-one zoom lenses.

Building an impressive 10.7X zoom range into an ultra-compact lens body is made possible by adopting a more sophisticated multi-element cam system. This advanced cam-filax drive on Tamron’s extensive engineering expertise, which is focused on innovation space-saving zoom cam structures.

A Stepping Motor for quick, quiet auto-focusing

The stepping motor provides fast, quiet, and comfortable autofocus. The stepping motor’s actuator allows precise control of angular rotation, and since it drives the focusing mechanism directly without any intermediate reduction gear, it is also exceptionally quiet.

These features also give the lens a seamless, fluid auto-focusing action when shooting video.
Kowa Micro Four Thirds lenses — carrying on the tradition of the prestigious PROMINAR brand

**PROMINAR** — A half century of excellence —
Beginning with the Kowa Reflex Automatic twin-lens reflex in 1954, Kowa Optical Works produced a succession of one-of-a-kind cameras for about 35 years, culminating with the Kowa Super 6X. For over half a century that tradition of original design and advanced technology has been diligently maintained until finally reborn under the name of PROMINAR Micro Four Thirds lenses.

**PROMINAR** — Inherited design concept —
“To reproduce natural colors as they are seen by the human eye” — this is the key concept driving the design of Kowa PROMINAR lenses. Comprising XD (Extra-low Dispersion) lens, high-definition aspherical lenses, and multilayer film coating, these lenses are able to capture true images with extremely accurate color reproduction, crisp high resolution, and the lowest possible distortion all the way to the edges.

**PROMINAR** — The quality of tradition —
Crafted individually by master artisans who fabricate each part individually, then carefully assemble and inspect them, these lenses are reminiscent of a bygone era, where genuine materials are painstakingly selected to produce a lens with a luxurious texture that feels good to the touch and provides the precision response you would expect from a “made-in-Japan” product.

**PROMINAR** — Technologies leading the way to what’s next —
The use of a 9-blade circular aperture diaphragm enables beautiful and natural defocusing effects appropriate to a PROMINAR lens. The aperture ring has a dual link iris system with clickless/silent switching capability compatible with both still picture and movie shooting.

Birger Engineering supports the use of Micro Four Thirds System and Four Thirds System lenses in "non-traditional applications".

Remote and Automated Control
Birger lens control systems enable the remote and automated control of low cost consumer and professional camera lenses. These control systems are utilized in the Machine Vision, Broadcast, Security, Surveillance, and Entertainment markets. CLOSED LOOP control and feedback with a high degree of precision and repeatability for focus, aperture and zoom. Now supporting Micro Four Thirds System, and Four Thirds System lenses.

With the addition of a Birger controller, Micro Four Thirds lenses can be a perfect match for sensors and cameras that would typically be provided with a C-mount or CS-mount interface. Typically, the Four Thirds System lenses are faster, sharper, smaller, and more cost-effective than photographic lenses designed for a larger image circle. Unlike lenses manufactured specifically for these markets, Four Thirds System lenses with a Birger controller allow for complete automation of all aspects of image acquisition.

**BEI Device Interface Software**
Control your lenses from a computer running MacOS or Windows using the “BEI Device Interface Software”. This is a free download from the Birger website. On control your lenses using a simple command protocol that is the same, regardless of lens manufacturer or lens mount type. This Birger protocol is open, and utilizes the user from any lens compatibility or lens platform differences.
Birger offers software updates free of the life of the platform.

“Any Lens. Any Camera.”
Birger provides mechanical and electrical adapters for dozens of different camera types and industry standard interfaces. The connection to the computer controlling the adapter can be RS-232, USB, or Ethernet, allowing for control from as far as half a world away. The Birger command interface is supported by many of the world’s leading Machine Vision camera companies. Now, without any additional software engineering work, these same companies can offer support for Micro Four Thirds System, and Four Thirds System lenses, with this new generation of controllers from Birger.
New style of movie recording made possible by the Blackmagic design

Blackmagic Micro Cinema Camera

The world’s smallest digital film camera with innovative remote control!

Introducing the Blackmagic Micro Cinema Camera, a miniaturized Super 16mm digital film camera with 13 stops of dynamic range and a revolutionary expansion port with P-2048 and S-128 outputs! You can operate Micro Cinema Camera remotely; it is possible to capture the action anywhere by using commercially available remote controlers and video transmitters. Imagine adjusting focus, iris and zoom remotely! Micro Cinema Camera is a true digital film-quality camera with up to 13 stops of dynamic range, an MFT lens mount and built-in RAW and ProRes recording.

Blackmagic Pocket Cinema Camera

Blackmagic Pocket Cinema Camera is a pocket sized Super 16 digital film camera that’s small enough to take with you everywhere, so you’ll never miss a shot! You get true digital film images with 13 stops of dynamic range, Super 16 sensor, RAW and ProRes recording, built-in SD card recorder, 3.5” LCD screen and the flexibility of an active MFT lens mount. You can easily monitor and review files on the high resolution LCD, preview, check focus with 1:1 zoom and check camera status with on screen display. You even get built in metadata entry!

Blackmagic Micro Studio Camera 4K

The Blackmagic Micro Studio Camera is an incredibly small Ultra HD studio camera that can be remote controlled via SDI and completely customized so you can mount it virtually anywhere. You get a broadcast quality Ultra HD sensor, MFT lens mount, built in primary color corrector, talkback, tally and a unique expansion port that features P/T/Z control. Lens control and more Micro Studio Camera is the perfect camera for live studio production, sports fixtures and hidden camera work in both HD and Ultra HD!

Super 35 CMOS image sensor creates professional 4K images

Variable Scan Mapping maintains native angle of view for a variety of lenses

JVC’s unique variable scan mapping allows you to dynamically map the pixels on the GY-L500 4K image sensor to your target output resolution. It enables use of a wide variety of high quality lenses maintaining their native field of view without sacrificing the feature, suitable in the zoom control capabilities of the camera, allows you to magnify the image of fixed focus lenses, or extend the range of zoom lenses while shooting.

JVC Log (J-Log) Gamma Modes for Truly Cinematic Results and HDR solution

JVC provides the Log Gamma modes, expanding the recorded image dynamic range by 800% with 9-Bit latitude by preserving more information over the entire dynamic range of the sensor for grading and manipulation in postproduction. In this gamma mode, 80% coverage of the “ITU-R BT.2020” wide color space is possible.

JVC provides 3 types of LUTs converting J-Log to color gamut of “ITU-R BT.709”, “ITU-R BT.2020” and “ITU-R BT.1090 HDR Hybrid Log Gamma” for color grading in post. These LUTs expand utility of J-Log including HDR workflow, and give you the opportunity to create truly cinematic results and HDR solution.

Cinema 4K, Cinema 2K recording for the ultimate cinema look, and more...

Cinema 4K (6K9.6e x 2K60) and Cinema 2K (2K4.88 x 1T04) with 17:9 aspect ratio recording expand GY-L500’s range of applications, for cinema quality documentaries or for film-quality resolution and presence.

- New Dcil-LUTs

New LUTs are released which convert J-log video to color gamut of “DIC67Z’XZ’” or “DIC57HR’Z’”, digital cinema standard, “DIC67Z’E’” LUTs enables color grading with an wide color space as DICP for cinema theater.