Attachment Lens Lineup

INON offers wide variety of attachment lenses to support from fish-eye to ultra macro imaging expanding shooting chance of compact digital cameras to realize your creative intent.

Wide

Wide coverage captures breathtaking moment as it is like entire of a big fish, school of fishes or corals.

Super Wide

Ultra wide coverage and minimal focal length depicts exciting seascape with distinct deformed effect and perspective.

Close-up

Move close to a subject to capture a small subject in entire image to illustrate invisible tiny underwater world.
Bug Eye

Unique lens to shoot dramatic underwater scenery as like through eyes of a small fish.
Mount Base / Lens Adapter Base
Multifunctional base tray as a key component to add an attachment lens and strobe on compact underwater housing.

How to add an attachment lens on an underwater housing

Generally, there are two ways to install an attachment lens such as wide conversion lens or close-up lens on an underwater housing for compact camera. For those housings equipped with screw mount lens ring, screw mount type attachment lens can be directly installed. A housing without this lens ring needs to have a Mount Base or Lens Adapter Base to hold an attachment lens.

A Mount Base is a multifunctional base and key component to add an attachment lens and strobe on a compact underwater housing. Different four Mount types available including [28LD], [28AD], [AD] and [M67] support you to shoot with wide conversion lens, fisheye conversion lens or close-up lens to suit different subject.

A Lens Adapter Base is a lens adapter with base tray to add a close-up lens or “UWL-S100 ZM80” wide conversion lens which is designed for super zoom digital camera not supported by existing [28LD], [28AD], [AD] or [M67] wide conversion lens to use at zoom telephoto side.

A Mount Base or Lens Adapter Base is fixed on a housing at tripod base and lens port to provide reliable installation and precise alignment of optical accessory together. Also they help to have a strobe etc. without excessive load on combined housing.

Housing with screw mount lens ring

**M67 Lens Ring (35φ at wide end)**
An attachment lens carrying 67φ threaded mount is directly attached on a housing with screw mount lens ring. M67 series wide conversion lens and close-up lens support standard 35φ digital camera.

**M67 Lens Ring (28φ at wide end)**
An attachment lens carrying 67φ threaded mount is directly attached on a housing with screw mount lens ring. 28M67 series wide conversion lens “UWL-H100 28M67” and M67 series/28M67 series close-up lens support wide 28φ digital camera.

*1 Some models require a step-up ring.
A Lens Adapter Base to carry LD type close-up lens "UCL-165LD" etc. The "UWL-S100 ZM80" wide conversion lens to use at zoom position 80㎜ (35㎜ film equivalent) is also supported.

#2 "AD-LD Mount Converter for UCL-165AD" is necessary.
#3 "M67-LD Mount Converter for UCL-330/165M67" is necessary.
#6 "M52-M67 Mount Converter for UWL-S100 ZM80" is required.

A Lens Adapter Base to carry M67 series close-up lens "UCL-330" or "UCL-165M67". Also usable to hold "UWL-S100 ZM80" wide conversion lens.

#4 Some models require "AD Mount Converter for UCL-165AD".
#5 "Dome Spacer for UWL-100 28AD" is necessary.

Equipped with INON 28LD Mount which is a bayonet lens mount with lockable feature. It's simple yet secure to attach and remove "UWL-H100 28LD" wide conversion lens which is exclusively designed for a 28㎜ (35㎜ film equivalent) wide digital camera with a large master lens. For macro imaging, 28LD series close-up lens and other Mount type close-up can be used as well with optional Mount Converter.

Equipped with INON 28AD Mount which is a bayonet lens mount. It's simple yet secure to attach and remove "UWL-100 28AD" wide conversion lens which is exclusively designed for a 28㎜ (35㎜ film equivalent) wide digital camera. For macro shooting, "UCL-165AD" is compatible.

Equipped with INON AD Mount which is bayonet lens mount system. It's simple yet secure to attach and remove AD Mount series attachment lenses designed for a 35㎜ (35㎜ film equivalent) standard digital camera, including "UFL-165AD" underwater fish-eye conversion lens, "UWL-105AD" wide conversion lens and "UCL-165AD" close-up lens.

Equipped with M67 screw type lens mount. With M67 Mount Base, wide conversion lens "UWL-100 Achromat Type1/Type2" which is initially designed for underwater housing with M67 lens ring, "UCL-330" or "UCL-165M67" close-up lenses can be usable for housings without M67 lens ring.
Camera manufacturers like Canon, Olympus, Fujifilm, Panasonic, Sony and Nikon etc. keep producing compact digital cameras (and underwater housing) and we, INON have been developing compatible “Mount Base” to use an attachment lens for those digital cameras/housings. We already support more than 100 different camera models and will actively continue supporting new camera/housing. You may think that universal type Mount Base is convenient to use for several digital cameras. However INON dears to design dedicated Mount Base for each digital camera though it requires more time and effort.

A compact digital camera has to have an attachment lens in front of camera's lens (master lens) to suit different subject/shooting condition while a single-reflex camera has interchangeable lens system to use different lens. INON underwater attachment lens lineup supports every shooting scene with “Close-up Lens”, “Wide Conversion Lens”, “Dome Lens Unit” etc. and all of them are optically designed to provide high quality image even in periphery part of an image. Optical phenomena like distortion of an image, bleeding of color or blur are generally referred to as “aberration”. The key factor to design a wide conversion lens which captures wide area, is how suppress these aberrations on periphery part of an image.

Can we use a wide conversion lens as far as the lens is physically attached on an underwater housing? No, we can’t. The distance between camera's master lens and a wide conversion lens very much affects on image quality. Let’s go back to science lesson of hand glass at school days. First, hold a hand glass over a white paper to project fluorescent ceiling light on the paper to find exact point where we can see the light very clearly on the paper. The projected image will blur only with a few mm deviation.
If you have a wide conversion lens, let’s peer through the lens. When you move away the lens from your eye, you will find the point to see landscape very clearly through the lens. The landscape will get blur when you move the lens away further only a couple of mm. The blurred part becomes bigger towards to the image center as you move away the lens further away.

We, INON design a Mount Base based on precise calculation including each distance between camera’s master lens, lens port surface and an attachment lens and refraction of water since we consider the distance between a wide conversion lens and camera’s master lens important factor as a part of lens designing.

We tested a camera with a wide conversion lens at appropriate position and a camera with a wide conversion lens positioned at 5mm away from the appropriate position underwater shooting same subject. First we took a shot with a wide conversion lens attached at correct position via dedicated Mount Base. Though this is extremely close and wide shot, the image is very sharp even in its peripheral part. Next, we took a shot same subject with a wide conversion lens intentionally attached on 5mm away from correct position. Obviously the image is bastardized with blur in its peripheral part.

**Wide conversion lens at appropriate position**

 Below image was taken with a wide conversion lens attached on an underwater housing at appropriate position via optically designed dedicated Mount Base. Though this wide image was taken at quite short shooting distance, we can see clearness and sharpness even on periphery part.

**Wide conversion lens at 5mm away from appropriate position**

 Below image was taken with a wide conversion lens attached on an underwater housing 5mm away from appropriate position. We can see blur on periphery part causing degradation of image. A wide conversion lens has to be attached on an underwater housing at appropriate position to enhance image quality.

**Mount Base is a part of a lens**

An INON Mount Base is not just a lens adapter but a part of a lens consisting image quality. First we choose most appropriate lens type then design a Mount Base to locate the lens at appropriate position relative to combined camera/housing. Before put it in mass production, the prototype unit has to pass strict and rigorous field test in chamber and ocean to deliver highest standard of image quality. This is how INON designs and develops Mount Base for each different digital camera.

Since a Mount Base also functions to support a Grip Base to connect a strobe etc. and fix a fiber optics to transmit built-in flash light, it is truly core component for underwater camera system.
Wide Conversion Lens

UWL-H100 28LD

Wide Conversion Lens

[UWL-H100 28LD Specifications]

- **Dimensions**: φ90.4㎜(3.6in) ×45.4㎜ (1.8in)
- **Weight (air / underwater)**: 530g(18.7oz) / approx.326g(11.5oz)
- **Lens construction**: 4 elements in 4 groups
- **Focal length (air / underwater)**: ∞ / ∞ (afocal system)
- **Magnification**: 0.60
- **Maximum incident view angle (air / underwater)**: 179° / 100.8°
- **Body material / Finishing**: Corrosion-resistant aluminum alloy / Rigid black anilte, Polycarbonate etc.
- **Glass / Coating**: Optical glass / Both side anti-reflection coating
- **Mount System**: INON 28LD Mount
- **Depth rating**: 60m (197ft)

Dual use (land/underwater) wide conversion lens specially designed for 28㎜ wide camera (35㎜ film equivalent). The maximum view angle is 100.8° underwater for wide imaging and 179° on land for fisheye imaging.

Together with newly designed optical construction, using highly refractive optical elements provides larger effective diameter of the rear optical element in compact size to accommodate with latest camera model carrying larger image sensor and brighter master lens.

Optical construction consists of 4 elements in 4 groups with coated optical glasses which effectively suppress optical aberrations and elicits master lens performance.

Unique optical design allows to shorten minimum focal distance with ultra wide view angle thus effective for wide macro shot.

Optional “Dome Lens Unit II for UWL-H100” further increases maximum view angle to 144.8° underwater for semi-fisheye imaging.

Lockable bayonet mount “28LD Mount” compatible. Easy, speedy yet reliable installation on “28LD Mount Base”.

The UWL-H100 28LD is attached on compatible camera/housing via “28LD Mount Base” which is exclusively designed for each housing.

When using a wide conversion lens:
- When shooting without an external strobe, it is recommended to use ambient light only instead firing the built-in flash since the built-in flash light may be blocked depending on a housing design, shooting distance or angle of view etc.
- Set camera zoom at wide end. If you observe vignetting at wide end, zoom to telephoto side minimum necessary or crop the image after taking image. The lens is designed to get optimum performance at above setting.
Wide conversion lens constructed same optical elements as UWL-H100 28LD with screw mount.

Two options (Type1/Type2) for various camera type to bring out optimum performance by positioning the lens at different distance against master lens of combined camera.

Optional “M67 Screw Ring Set for UWL-H100 28M67 Type1” or “M67 Screw Ring Set for UWL-H100 28M67 Type2” makes it easy to modify original lens to other type.

Lens mount is highly versatile screw type “M67 Mount”. Directly screwed on a housing which has M67 lens ring or via step-up ring on a housing with a lens ring other than M67.

[UWL-H100 28M67 Type1/Type2 Specifications]

- **Dimensions**: φ90.4㎜ (3.6in) × 45.4㎜ (1.8in)
- **Weight (air / underwater)**:
  - Type1: 555g (19.6oz) / approx. 345g (12.2oz)
  - Type2: 556g (19.6oz) / approx. 346g (12.2oz)
- **Focal length (air / underwater)**: = = (afocal system)
- **Magnification**: 0.60
- **Maximum incident view angle (air / underwater)**: 179° / 100.8°
- **Body material / Finishing**: Corrosion-resistant aluminum alloy / Rigid black almite
- **Glass / Coating**: Optical glass / Both side anti-reflection coating
- **Mount System**: M67-0.75 thread
- **Depth rating**: 60m (197ft)

[Wide Conversion Lens]

- Camera: Canon PowerShot S95
- Strobe: 2x S-2000
- Location: Atami, Shizuoka, JAPAN
- Ryo Hattori (INON)

[Options]

- **Lens Hood II for UWL-H100**
  - The hood blocks unnecessary ambient light like in back-lit condition to prevent ghost/flare and also protect the lens surface from damage.

- **Dome Lens Unit II for UWL-H100**

- **M67 Screw Ring Set for UWL-H100 28M67 Type1**
  - Set of a lens mount of the UWL-H100 28M67 Type1 (service part).

- **M67 Screw Ring Set for UWL-H100 28M67 Type2**
  - Set of a lens mount of the UWL-H100 28M67 Type2 (service part).
Wide Conversion Lens

UWL-100 28AD
Wide Conversion Lens

- Dual use (land/underwater) wide conversion lens specially designed for 28㎜ wide camera (35㎜ film equivalent). The maximum view angle is 100° underwater for wide imaging and 179° on land for fish-eye imaging.

- Compact size for easy handling underwater; outer diameter: 87.4㎜, height: 43.2㎜, weight: 370g (* excluding optional lens hood).

- In addition to ultra wide angle of view, optical design of the UWL-100 28AD allows closer focusing distance which benefits you when shooting wide macro image.

- Optional “Dome Lens Unit Ⅱ for UWL-100” further widen maximum angle of view to 150.8° underwater for semi-fisheye imaging.

- Optical construction consists of 4 elements in 4 groups with coated optical glasses which effectively suppress optical aberrations and elicits master lens performance to deliver high quality evenly up to edge of an image.

- Bayonet “28AD Mount” compatible to support instant installation and speedy lens exchange underwater.

- The UWL-100 28AD is attached on compatible camera/housing via “28AD Mount Base” or “28AD Port” which is exclusively designed for each housing.

* The UWL-100 28AD is designed for 28㎜ (35㎜ film equivalent) digital camera so not usable for “AD Mount Base” which is compatible with 35㎜ standard digital camera though the lens is physically attached on it.

**UWL-100 28AD Specifications**

- **Dimensions**: φ87.4㎜(3.4in)×43.2㎜(1.7in)
- **Weight (air / underwater)**: 370g (13.1oz) / approx. 209g (7.4oz)
- **Lens construction**: 4 elements in 4 groups
- **Focal length (air / underwater)**: ∞ / ∞ (afocal system)
- **Magnification**: 0.63
- **Maximum incident view angle (air / underwater)**: 179° / 100°
- **Body material / Finishing**: Corrosion resistant aluminum alloy / Rigid black alumina, Polycarbonate etc.
- **Glass / Coating**: Optical glass / Both side anti-reflection coating
- **Mount System**: INON 28AD Mount
- **Depth rating**: 60m (197ft)

**Options**

- **Lens Hood Ⅱ for UWL-100 28AD**: The hood blocks unnecessary ambient light like in back-lit condition to prevent ghost/flare and also protect the lens surface from damage.

- **Dome Lens Unit Ⅱ for UWL-100**: Necessary to combine the “Dome Lens Unit Ⅱ for UWL-100 28AD” and “UWL-100 28AD”.
UWL-100 Achromat Type1
UWL-100 Achromat Type2
Wide Conversion Lens

**Dual use (land/underwater) wide conversion lens specially designed for 35㎜ standard camera (35㎜ film equivalent). Maximum angle of view 100.5° underwater for ultra wide shot and 158.35° on land for fish-eye shot.**

- In addition to ultra wide angle of view, optical design of the UWL-100 allows closer focusing distance which benefits you when shooting wide macro image.
- Optional “Dome Lens Unit II for UWL-100” further widen maximum angle of view to131.6° underwater for semi-fisheye imaging.
- Optical construction is 5 elements in 4 groups with coated optical glasses including achromat lens (achromatic doublet) which effectively suppress optical aberrations and elicits master lens performance.
- Highly versatile screw type “M67 Mount” compatible.
- Two options (Type1/Type2) for various camera type to bring out optimum performance by locating the lens different distance against to the camera’s master lens.
  * Type conversion is available by replacing original screw ring with optional part.
- Directly screwed on a housing which has M67 lens ring or mounted through dedicated “M67 Mount Base” for a housing which is not equipped with a M67 lens ring.
**Ultra Wide**

Widen underwater view angle by attaching in front of a wide conversion lens. Super dome option for ultra-wide imaging.

### Dome Lens Unit II for UWL-H100

**Dome Lens Unit II for UWL-H100 Specifications**

<table>
<thead>
<tr>
<th></th>
<th>Dome Lens Unit II for UWL-H100 with UWL-H100 28LD</th>
<th>Dome Lens Unit II for UWL-H100 with UWL-H100 28M67</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Dimensions</strong></td>
<td>φ132.4㎜ (5.2in) × 48.2㎜ (1.9in)</td>
<td>φ132.4㎜ (5.2in) × 72.7㎜ (2.9in)</td>
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<tr>
<td><strong>Weight</strong></td>
<td>470g (16.5oz) (air)</td>
<td>approx.505g (17.8oz) (underwater)</td>
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<tr>
<td></td>
<td>approx.525g (18.5oz) (underwater)</td>
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<td><strong>Maximum incident view angle</strong></td>
<td>144.8° (underwater)</td>
<td>144.8° (underwater)</td>
</tr>
<tr>
<td><strong>Body material / Finishing</strong></td>
<td>Corrosion-resistant aluminum alloy / Rigid black anodite, Polycarbonate etc.</td>
<td>—</td>
</tr>
<tr>
<td><strong>Glass / Coating</strong></td>
<td>Optical glass / Inner side anti-reflection coating</td>
<td>—</td>
</tr>
<tr>
<td><strong>Depth rating</strong></td>
<td>60m (197ft)</td>
<td>60m (197ft)</td>
</tr>
</tbody>
</table>

The Dome Lens Unit II for UWL-H100 installation on the UWL-H100 28LD or UWL-H100 28M67 (“Dome Spacer for UWL-H100” comes with the Dome Lens Unit II for UWL-H100 as standard package).

### Dome Lens Unit II for UWL-100

**Dome Lens Unit II for UWL-100 Specifications**

<table>
<thead>
<tr>
<th></th>
<th>Dome Lens Unit II for UWL-100 with UWL-100 28AD</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Dimensions</strong></td>
<td>φ132.4㎜ (5.2in) × 48.2㎜ (1.9in)</td>
</tr>
<tr>
<td><strong>Weight</strong></td>
<td>460g (16.2oz) (air)</td>
</tr>
<tr>
<td></td>
<td>approx.533g (18.9oz) (underwater)</td>
</tr>
<tr>
<td></td>
<td>approx.500g (14.1oz) (underwater)</td>
</tr>
<tr>
<td><strong>Maximum incident view angle</strong></td>
<td>131.6° (underwater)</td>
</tr>
<tr>
<td><strong>Body material / Finishing</strong></td>
<td>Corrosion-resistant aluminum alloy / Rigid black anodite, Polycarbonate etc.</td>
</tr>
<tr>
<td><strong>Glass / Coating</strong></td>
<td>Optical glass / Inner side anti-reflection coating</td>
</tr>
<tr>
<td><strong>Depth rating</strong></td>
<td>60m (197ft)</td>
</tr>
</tbody>
</table>

The Dome Lens Unit II installation on UWL-100 Achromat Wide Conversion Lens Type1/Type2

**Options**

Dome Lens Unit II installation on UWL-100 28AD (Dome Spacer for UWL-100 28AD is necessary).

Dome Spacer for UWL-100 28AD

Required spacer when installing the Dome Lens Unit II for UWL-100 on the UWL-100 28AD.
Dedicated super dome option to increase underwater view angle by simply attached it on the compatible wide conversion lens to provide "more wide angle image" and "more close-up image". “Dome Lens Unit II for UWL-H100” for UWL-H100 series wide lenses and “Dome Lens Unit II for UWL-100” for UWL-100 series wide lenses are available.

* The “Dome Lens Unit” patented in the U.S.

Maximum angle of view underwater is 144.8° with “UWL-H100 28LD" or “UWL-H100 28M67 Type1/Type2” wide conversion lens.

* Dedicated "Dome Spacer for UWL-H100" comes with the Dome Lens Unit II for UWL-H100 as standard package.

Maximum angle of view underwater is 131.6° with “UWL-100 Achromat Wide Conversion Lens Type1/Type2” and 150.8° with “UWL-100 28AD”.

* Optional "Dome Spacer for UWL-100 28AD" is necessary to attach on to "UWL-100 28AD".

Unique optical design allows to shorten minimum focal distance with super wide view angle thus effective for ultra wide macro imaging and capturing clear image even in poor visibility condition.

The Dome Lens Unit II is made of optical glass with inner anti-reflection multi-coating to minimize flare and ghost in backlit condition.

The packaged protector is molded resin with detachable structure to enhance friendly hood position adjustment and lighten total weight as well.

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**[Usage of the Dome Lens Unit]**

* This product cannot be used by itself and must be used with compatible INON wide conversion lens.

* Set camera zoom at wide end. If you observe vignetting, crop the image when editing or zoom forward just enough to eliminate the vignetting. The Dome Lens Unit II is designed to obtain best image quality and results when the zoom is set at this setting.

* Generally, set Macro Mode to [ON]. However, for some cameras, depending on the particular focus range and aperture capabilities, some subjects at farther distances may not be in focus. In such cases, set Macro Mode to [OFF].

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[with UWL-100] + [Dome Lens Unit]

[without conversion lens]
Wide

For super zoom digital camera.
A wide conversion lens to use at optical zoom setting 80㎜.

UWL-S100 ZM80
Wide Conversion Lens

Dual use on land/underwater wide conversion lens to use with camera's zoom position 80㎜ (35㎜ film equivalent) for a user of a wide digital camera which is wider than 28㎜ (35㎜ film equivalent) or super zoom camera with long lens extension to enjoy wide underwater imaging.

The maximum view angle is 100° underwater for wide imaging and 179.8° on land for fish-eye imaging.

Unique optical design allows to shorten minimum focal distance (minimum focus distance 0cm) with ultra wide view angle thus effective for Wide Macro shots.

The lens construction is 4 elements in 4 groups by optical glasses. Subject side lens surface is water-shedding magenta coating and inner lenses have multi coating to suppress reflection by lenses themselves to suppress chromatic aberration.

Dedicated super dome option "Dome Lens Unit II for UWL-S100 ZM80" further increases its view angle underwater up to 149.8°.

Installation on a compatible underwater housing via "Lens Adapter Base" and "Mount Converter" exclusively designed for combined camera system.

Threaded lens barrel allows adjusting distance between this lens and camera master lens to accommodate with different master lenses among many compact digital cameras.

[UWL-S100 ZM80 Specifications]

| Dimensions | φ67.8㎜(2.7in) ×66.4㎜(2.6in) |
| Weight (air / underwater) | 296g(10.4oz) / approx. 145g(5.1oz) |
| Lens construction | 4 elements in 4 groups |
| Focal length (air / underwater) | ∞ / ∞ (afocal system) |
| Magnification | 0.23 |
| Maximum incident view angle (air / underwater) | 179.8° / 100° |
| Body material / Finishing | Corrosion resistant aluminum alloy / Rigid black alumite |
| Glass / Coating | Optical glass / Both side anti-reflection coating |
| Mount System | M52-1.5 thread |
| Depth rating | 60m (197ft) |

Options

M52-M67 Mount Converter for UWL-S100 ZM80
An adapter to attach the UWL-S100 ZM80 on M67 Lens Adapter Base.

M52-LD Mount Converter for UWL-S100 ZM80
An adapter to attach the UWL-S100 ZM80 on LD Lens Adapter Base.

Dome Lens Unit II for UWL-S100 ZM80

[Dome Lens Unit II for UWL-S100 ZM80 Specifications]

| Dome Lens Unit II for UWL-S100 ZM80 | with UWL-S100 ZM80 |
| Dimensions | φ97.8㎜(3.9in) ×91.5㎜(3.6in) |
| Weight (air / underwater) | 148g(5.2oz) (air) / approx 505g (17.8oz) (underwater) |
| Maximum incident view angle | 149.8°(underwater) |
| Body material / Finishing | Corrosion resistant aluminum alloy / Rigid black alumite, Polycarbonate etc. |
| Glass / Coating | Optical plastic / Inner side anti-reflection coating, Antifouling coating, Outer side hard coating |
| Depth rating | 60m (197ft) |
**Bug Eye**
Capture through tiny marine lives.
Micro fisheye lens to use at optical zoom setting 80㎜.

**UFL-M150 ZM80**
Underwater Micro Fisheye Lens

**[UFL-M150 ZM80 Specifications]**

<table>
<thead>
<tr>
<th>Specifications</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dimensions</td>
<td>φ39.7㎜(1.6in) ×36.8㎜(1.4in)</td>
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<tr>
<td>Weight (air / underwater)</td>
<td>66g(2.3oz) / approx.41g(1.4oz)</td>
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<tr>
<td>Lens construction</td>
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<td>Magnification</td>
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<td>Maximum incident view angle (underwater)</td>
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<td>Body material / Finishing</td>
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<td>Glass / Coating</td>
<td>Optical glass / Both side anti-reflection coating</td>
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<tr>
<td>Mount System</td>
<td>M27-1.0 thread</td>
</tr>
<tr>
<td>Depth rating</td>
<td>60m(197ft)</td>
</tr>
</tbody>
</table>

- Canon PowerShot S100
- Strobe: 2× Z-240
- Location: Atami, Shizuoka, JAPAN
- Rafael Cosme Daza

- Canon PowerShot S95
- Strobe: 2× S-2000
- Location: Illes Medes, Girona, SPAIN
- © Ryo Hattori (INON)

**Installation on a Mount Base via specific "Mount Converter"**

- Compact fisheye lens to shoot through eyes of small marine life, so-called “insect-eye lens” imaging. The lens is designed to use at approx. 80㎜ zoom position (35㎜ film equivalent) not as like standard wide conversion lens.
  * This lens is designed for underwater use only. Using on land will not form an image.

- Underwater view angle is 150°. The subject side lens is compact diameter 32.9㎜ and minimum focal length is 0cm to capture a tiny subject in entire image together with background.

- As same as standard wide conversion lens, the UFL-M150 ZM80 does not affect brightness of combined master lens and enables you to use benefit of camera’s AF (auto focus).

- You can take full advantage of INON "S-TTL" Auto exposure of INON Z-330, D-200, S-2000 to benefit appropriate exposure images simply by pressing shutter release button.

- The UFL-M150 ZM80 is attached on compatible camera housing via combination of “Mount Base” which is exclusively designed for each housing and appropriate “Mount Converter”.

- The lens barrel has threaded wall to adjust lens position back and forth to accommodate with different master lenses among many compact digital cameras.
  * Not usable for a compact digital camera carrying large master lens or super zoom function, or an interchangeable lens for a SLR camera system.

**Options**

- **M27-AD Mount Converter for UFL-M150 ZM80**
An adapter to attach the “UFL-M150 ZM80” on AD Mount Base, 2BAD Mount Base.

- **M27-LD Mount Converter for UFL-M150 ZM80**
An adapter to attach the “UFL-M150 ZM80” on 2BMD Mount Base.

- **M27-M67 Mount Converter for UFL-M150 ZM80**
An adapter to attach the “UFL-M150 ZM80” on M67 Mount Base or underwater housing which is equipped with M67 lens adapter.
Wide/Ultra Wide

UWL-105AD
Wide Conversion Lens

- Convenient dual use (land/underwater) wide conversion lens for standard 35㎜ digital camera. This compact wide lens delivers the maximum view angle 105° underwater for wide imaging and 179° on land for fish-eye imaging.

- Optical construction consists of 4 elements in 4 groups with coated optical glasses, which effectively suppress optical aberrations and elicits master lens performance even in peripheral part of an image.

- Bayonet “AD Mount” compatible to support instant installation and speedy lens exchange underwater. The UWL-105AD is attached on compatible camera/housing via “AD Mount Base” which is exclusively designed for each housing.

[UWL-105AD Specifications]

| Dimensions | φ78㎜ (3.1in) ×49㎜ (1.9in) |
| Weight (air / underwater) | 276g (9.4oz) / approx.142g (5.0oz) |
| Lens construction | 4 elements in 4 groups |
| Focal length (air / underwater) | ∞ / ∞ (afocal system) |
| Magnification | 0.51 |
| Maximum incident view angle (air / underwater) | 179° / 105.6° |
| Body material / Finishing | Corrosion resistant aluminum alloy / Rigid black alumite, Polycarbonate etc. |
| Glass / Coating | Optical glass / Both side anti-reflection coating |
| Mount System | INON AD Mount |
| Depth rating | 50m (197ft) |

UFL-165AD
Underwater Fisheye Conversion Lens

- Underwater fisheye conversion lens specially designed for 35㎜ standard camera (35㎜ film equivalent). The UFL-165AD provides maximum angle of view underwater 165° and minimum focusing distance 0cm enabling you to shoot dynamic scenery and its greater depth of field benefits you to shoot wide macro photo with vibrant perspective.

- Together with pre-installed “Lens Hood” which suppresses ghost/flare and provides comfortable lens handling, “hard coating” on the lens surface protects from accidental damage.

- Bayonet “AD Mount” compatible to support instant installation and speedy lens exchange underwater. The UFL-165AD is attached on compatible camera/housing via “AD Mount Base” which is exclusively designed for each housing.

[UFL-165AD Specifications]

| Dimensions | φ114㎜ (4.5in) ×86.5㎜ (3.4in) |
| Weight (air / underwater) | 440g (15.5oz) / approx.85g (3.0oz) |
| Lens construction | 4 elements in 4 groups |
| Focal length (underwater) | ∞ (afocal system) |
| Magnification | 0.405 |
| Maximum incident view angle (underwater) | 165.5° |
| Body material / Finishing | Corrosion resistant aluminum alloy / Rigid black alumite, Polycarbonate, ABS etc. |
| Glass / Coating | Optical glass / Both side anti-reflection coating, Optical plastic / Outer hard coating |
| Mount System | INON AD Mount |
| Depth rating | 50m (197ft) |
Macro

Shorten minimum focusing distance for close-up and high magnification photography. AD series close-up lens with quick bayonet mount.

UCL-165AD
Close-up Lens

[AD series]

[UCL-165AD Specifications]

- Dimensions: φ64.5㎜ (2.5in) × 27.7㎜ (1.1in)
- Weight (air / underwater): 70g (2.5oz) / approx. 35g (1.2oz)
- Lens construction: 2 elements 2 groups
- Focal length (air / underwater): 135.4㎜ (5.3in) / 165㎜ (6.5in)
- Body material / Finishing: Corrosion resistant aluminum alloy / Rigid black alumite, Polycarbonate etc.
- Glass / Coating: Optical glass / Inner side anti-reflection coating
- Mount System: INON AD Mount
- Depth rating: 60m (197ft)

[with 1x UCL-165AD]

[with 2x UCL-165AD]

- Focal length 165㎜ (+6 diopter) high magnification close-up lens with 165㎜ shooting distance from lens surface when camera’s focus position is set to infinity. Using minimum focusing distance will shorten minimum shooting distance allowing you to get closer to a subject enabling high magnification close-up photography.

- Dual use underwater/land and usable with all zoom range. Even at same shooting distance, it is easy to capture a subject at desired size by adjusting zoom setting.

- The lens construction is 2 elements in 2 groups with high quality optical glass with inner coating to suppress optical aberrations more effectively and bring out optimal performance of combined master lens comparing to a lens using just one double-convex element.

- It is possible to stack multiple UCL-165AD lenses to allow for even higher magnification macro imaging. You can capture micro-world in entire image.

- Bayonet “AD Mount” compatible to support instant installation and speedy lens exchange underwater.

- The UCL-165AD is attached on compatible camera/housing via “AD Mount Base”, “28AD Mount Base” or “28AD Port” which is exclusively designed for each housing. For “28LD Mount Base” compatible housing, the UCL-165AD is attached on “28LD Mount Base” via “AD-LD Mount Converter for UCL-165AD”.

* When installing on “28AD Mount Base” or “28AD Port”, optional “AD Mount Converter for UCL-165AD” may be necessary depending on camera/housing. Please refer accompanied “System Table” or our web site.

Options

AD Mount Converter for UCL-165AD
A spacer ring for 28AD Mount compatible products not supporting direct installation of the “UCL-165AD close-up lens”.

AD-LD Mount Converter for UCL-165AD
A Mount Converter for 28LD Mount/ LD Mount compatible product to attach AD series attachment lens “UCL-165AD Close-up Lens”.

Camera: Canon PowerShot S50
Strobe: 2x D-2000
Location: Kawana, Shizuoka, JAPAN
©Yoshiro Ichikawa
Macro
Shorten minimum focusing distance to support close-up and magnified imaging. LD series close-up lens with lockable bayonet mount.

UCL-165LD
Close-up Lens

[UCL-165LD Specifications]

| Dimensions | φ75.2㎜ (3.0in) × 21.9㎜ (0.9in) |
| Weight (air / underwater) | 133g (4.7oz) / approx. 72g (2.5oz) |
| Lens construction | 2 elements 2 groups |
| Focal length (air / underwater) | 135.4㎜ (5.3in) / 165㎜ (6.5in) |
| Body material / Finishing | Corrosion resistant aluminum alloy / rigid black anodite, Polycarbonate etc. |
| Glass / Coating | Optical glass / inner side anti-reflection coating |
| Mount System | INON 28LD Mount/LD Mount |
| Depth rating | 60m (197ft) |

[The UCL-165M67 stacked on the UCL-165LD]

- Camera: Canon PowerShot S95
- Strobe: 2× S-2000
- Location: Atami, Shizuoka, JAPAN
- ©Ryo Hattori (INON)

- Focal length 165㎜ (+6 diopter) high magnification close-up lens with 165㎜ shooting distance from lens surface when camera’s focus position is set to infinity. Using minimum focusing distance will shorten minimum shooting distance allowing you to get closer to a subject enabling high magnification close-up photography.
- Dual use underwater/land. Even at same shooting distance, it is easy to capture a subject at desired size by adjusting zoom setting. * Sole use for underwater. Compatible with zoom range of middle to telephoto side. Using on land and zoom wide side setting underwater will have vignetting.
- The lens construction is 2 elements in 2 groups with high quality optical glass with inner coating to suppress optical aberrations more effectively and bring out optimal performance of combined master lens comparing to a lens using just one double-convex element.
- The lens barrel has joint screw mount on its front side to hold another INON M67 series close-up lens for super macro imaging. * This product (UCL-165LD) cannot be stacked together.
- Lockable bayonet mount INON "LD Mount" compatible. Easy, speedy yet reliable installation on “28LD Mount Base”.
- The UCL-165LD is attached on compatible camera/housing via “28LD Mount Base” or “LD Lens Adapter Base” which is exclusively designed for each housing.

[When using a close-up lens]

- Depending on housing, shooting distance, angle of view etc., the lens may block the built-in flash light from illuminating the entire image. In such cases it is recommended to shoot with an external strobe or flashlight.
- A close-up lens provides maximum magnification at zoom telephoto end.
- Generally, a close up lens shortens the camera’s close focusing distance. With the UCL-165LD, you can place your camera closer to a subject, achieving a larger image. On the other hand, depending on zoom or aperture setting, it may be more difficult to obtain complete depth of field on a distant subject.
- Stacking multiple lenses may cause vignetting at zoom wide end. As you stack more lenses, focusing distance gets short and depth of field gets shallow as well.
The UCL-165M67 is high magnification close-up lens providing 165㎜ focal length (+6 diopter) where 165㎜ shooting distance from lens surface when camera’s focus position is set to infinity. Using minimum focusing distance will shorten minimum shooting distance allowing you to get closer to a subject enabling high magnification close-up photography.

The UCL-330 is a close-up lens providing 330㎜ focal length (+3 diopter) where shooting distance is 330㎜ from lens surface when camera’s focus position is set to infinity, which is half power of the UCL-165M67. Especially useful for super zoom digital camera when shooting a shy subject with best suited distance and magnification.

Dual use underwater/land and usable with all zoom range. Even at same shooting distance, it is easy to capture a subject at desired size by adjusting zoom setting.

The lens construction is 2 elements in 2 groups with high quality optical glass with inner coating to suppress optical aberrations more effectively and bring out optimal performance of combined master lens comparing to a lens using just one double-convex element.

The lens body has screw mount on its front end to stack other M67 series close-up lens for even higher magnification macro imaging. The threaded part has a slit to drain water from gap between two lenses to easily separate combined lens underwater.

Options

M67-LD Mount Converter for UCL-330/165M67
A Mount Converter for 2BLD Mount /LD Mount compatible product to attach M67 series close-up lens.
Macro

High magnification, superior image quality and long working distance. Underwater close-up lens supports from a full frame SLR macro lenses to a compact camera.

UCL-90 M67
Underwater Close-up Lens

M67 series

- A close-up lens designed to provide comfortable high magnification and longer working distance to fill light easily. The UCL-90 widely supports from a macro lens for full frame SLR system to a compact digital camera.

- Powerful magnification with focal length 90㎜ (+11 diopter). The maximum magnification when using this lens with 100㎜ range macro lens for a full frame SLR system is x2.23 (area ratio x4.98) which delivers middle power in between “UCL-67 M67/UCL-67 LD” (+15 diopter) and “UCL-165M67/UCL-165LD” (+6 diopter). Working distance is 69㎜ at minimum focusing distance.

- Exclusively designed for underwater use to strive high image quality and using HR lens attains significantly compact lens body. The compact lens body enables you to light up whole subject even at minimum focusing distance. The optical component consists of achromat lens which can effectively suppress chromatic aberration and anti-reflection coating on all lens surfaces suppresses flare/ghost.

- Optional “Lens Adapter Ring for UCL-67/90” is attached on the M65 screw thread of the UCL-90 allowing to stack INON M67 series, “UCL-165M67”/”UCL-330” on the front side of the UCL-90 to support even higher magnification for super macro imaging needs.

- The UCL-90 M67 has M67 screw mount to provide wide versatility. Optional “M67 Flip Mount Adapter for UCL-67/90” is available to replace with original M67 screw mount to use the lens on a flip mount such as Nauticam flip lens holder etc. This adapter allows the UCL-90 to locate close to housing lens port.

- The UCL-90 LD is to use for lockable INON “28LD Mount Base” and “LD Lens Adapter Base” to support easy, speedy yet reliable installation.

UCL-90 LD
Underwater Close-up Lens

LD series

- Directly screwed in housing or lens port which has M67 lens ring (UCL-90 M67) or “28LD Mount Base” or “LD Lens Adapter Base” (UCL-90 LD).

- Attached via specific “28LD Mount Base” or “LD Lens Adapter Base”.

Options

- Lens Adapter Ring for UCL-67/90
- M67 Flip Mount Adapter for UCL-67/90
Super magnification, superior image quality and ample working distance. Underwater close-up lens best suited to full frame SLR macro lenses.

**UCL-67 M67**
Underwater Close-up Lens

*The UCL-67 underwater close-up lens is designed to deliver high magnification yet superior image quality best suited to full frame SLR macro lenses of focal length 60mm - 100mm with comfortable long working distance enabling easy lighting. The lens also supports mirrorless as well as compact system.*

*1 Vignetting may be observed depends on the distance between master lens and lens port glass and/or UCL-67 and lens port glass.
*2 Only usable when the focal length is between 60mm and 100mm range at 35mm film equivalent. Beyond this range, there will be vignetting at the wide side and deteriorated image quality at the telephoto side.

- Powerful magnification with focal length 67mm (+15 diopter).
- Maximum magnification of the UCL-67 with range of 100mm macro lens for full frame SLR is x2.76 (area ratio x7.65) at the minimum focusing distance.*3 Working distance is 52mm (83.4mm from housing port surface) at minimum focusing distance.*3
- The lens is consists of 4 elements in 3 groups using high refractive index glass to accommodate with a macro lens for full-frame digital SLR with compact body yet delivering high magnification and superior image quality. Employing achromatic lens effectively suppresses chromatic aberration and anti-reflection coating on all surfaces suppresses flare/ghost. Designed sole use underwater to provide effectively suppressed aberrations in all focal range and unparalleled high quality image on any supported shooting range.

- Optional "Lens Adapter Ring for UCL-67/90" is attached on the M65 screw thread of the UCL-67 allowing to stack INON M67 series, "UCL-165M67"/"UCL-330" on the front side of the UCL-67 to support even higher magnification for super macro imaging needs. *4
- The UCL-67 M67 has M67 screw mount to provide wide versatility. Optional "M67 Flip Mount Adapter for UCL-67/90" is available to replace with original M67 screw mount to use the lens on a flip mount such as Nauticam flip lens holder etc. This adapter allows the UCL-67 to locate close to housing lens port. *5 *6
- The UCL-67 LD is to use for lockable INON "28LD Mount Base" and "LD Lens Adapter Base" to support easy, speedy yet reliable installation.

**Options**

- **Lens Adapter Ring** for UCL-67/90
- **M67 Flip Mount Adapter** for UCL-67/90

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**UCL-67 LD**
Underwater Close-up Lens

**[UCL-67 M67 / UCL-67 LD Specifications]**

<table>
<thead>
<tr>
<th></th>
<th>UCL-67 M67</th>
<th>UCL-67 LD</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Dimensions</strong></td>
<td>ø70mm(2.76in) x 37mm(1.46in)</td>
<td>ø75.2mm(2.96in) x 37mm(1.46in)</td>
</tr>
<tr>
<td><strong>Weight (air / underwater)</strong></td>
<td>340g(12.0oz) / approx.627.2g(8.0oz)</td>
<td>326g(11.5oz) / approx.617g(7.7oz)</td>
</tr>
<tr>
<td><strong>Focal length (underwater)</strong></td>
<td>67mm(2.6in) / equivalent to +15 diopter</td>
<td></td>
</tr>
<tr>
<td><strong>Body material / Finishing</strong></td>
<td>Corrosion resistant aluminum alloy / Rigid black alumite</td>
<td>Corrosion resistant aluminum alloy / Rigid black alumite, Polycarbonate etc.</td>
</tr>
<tr>
<td><strong>Glass / Coating</strong></td>
<td>Optical glass / Both side coating</td>
<td></td>
</tr>
<tr>
<td><strong>Mount System</strong></td>
<td>M67-0.75 thread</td>
<td>INON 28LD Mount/LD Mount</td>
</tr>
<tr>
<td><strong>Depth rating</strong></td>
<td>60m(197ft)</td>
<td></td>
</tr>
</tbody>
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*Compatible Lens
- 60mm - 100mm range macro lens for full-frame SLR *1
- 40mm - 60mm range macro lens for APS-C *1
- 45mm - 60mm range macro lens *1, standard zoom lens *2 for Micro Four Thirds
- Compact digital camera with maximum optical zoom 5x or less *2

*1 Vignetting may be observed depends on the distance between master lens and lens port glass and/or UCL-67 and lens port glass.
*2 Only usable when the focal length is between 60mm and 100mm range at 35mm film equivalent. Beyond this range, there will be vignetting at the wide side and deteriorated image quality at the telephoto side.

*3 When using for AF-S VR Micro-Nikkor 105mm f/2.8G IF-ED.
*4 Other higher magnification close-up lens, "UCL-100M67", "UCL-90 M67" and "UCL-67 M67" are not usable as those combinations will have significantly degrade image quality.

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LENS ACCESSORY

**LD Lens Holder for Float Arm**
A lens holder attached on a Float Arm/Mega Float Arm/Mega Float Tube or on the M5 Joint installed on a Stick Arm/Multi Ball Arm to carry 28LD series/ LD series attachment lens to help comfortable multiple lens handling underwater.**1**
- **Weight:** 32g (1.1oz)[air] / approx. 7g (0.2oz)[u/w]

**M67 Lens Holder for Float Arm**
A lens holder attached on a Float Arm/Mega Float Arm/Mega Float Tube or on the M5 Joint installed on a Stick Arm/Multi Ball Arm to carry M67 series/28M67 series attachment lens.
- **Weight:** 50g (1.8oz)[air] / approx. 25g (0.9oz)[u/w]

**AD Lens Holder for Float Arm**
A lens holder attached on a Float Arm/Mega Float Arm/Mega Float Tube or on the M5 Joint installed on a Stick Arm/Multi Ball Arm to carry AD series/28AD series attachment lens to help comfortable multiple lens handling underwater.
- **Weight:** 26g (0.9oz)[air] / approx. 6g (0.2oz)[u/w]

**LD Lens Holder W**
A lens holder attached on an Arm to carry maximum two 28LD series/LD series attachment lens **1**. Compatible product is sandwiched between the Lens Holder [screw] and Lens Holder [hole]. The Lens Holder [screw] is usable as LD Lens Holder S and the Lens Holder [hole] is usable as like LD Lens Holder for Float Arm as well.
- **Weight:**
  - When attached on both sides 69g (2.4oz)[air] / approx. 30g (1.1oz)[u/w]

**M67 Lens Holder W**
A lens holder attached on an Arm to carry maximum two M67 series/28M67 series attachment lens. Compatible product is sandwiched between Lens Holder [screw] and Lens Holder [hole]. The Lens Holder [screw] is usable as M67 Lens Holder S and the Lens Holder [hole] is usable as like M67 Lens Holder for Float Arm as well.
- **Weight:**
  - When attached on both sides 106g (3.7oz)[air] / approx. 50g (1.8oz)[u/w]

**AD Lens Holder**
A lens holder attached on an Arm to carry maximum two AD series/28AD series attachment lens. Compatible product is sandwiched between Lens Holder [screw] and Lens Holder [hole]. The Lens Holder [screw] is usable as a lens holder on the D Holder Extension Bar and the Lens Holder [hole] is usable as a lens holder for Float Arm as well.
- **Weight:**
  - When attached on both sides 57g (2.0oz)[air] / approx. 18g (0.6oz)[u/w]
  - When attached on single side 38g (1.3oz)[air] / approx. 12g (0.4oz)[u/w]

**LD Lens Holder DP for Float Arm**
A LD mount lens holder with deeper receptacle for an INON attachment lens with long lens barrel such as “UFL-M150 ZM80”/”UWL-S100 ZM80”. Compatible with other 28LD series/LD series attachment lenses as well **1**. Directly screwed on a Float Arm/Mega Float Arm/Mega Float Tube or on the M5 Joint installed on a Stick Arm/Multi Ball Arm.
- **Weight:** 64g (2.3oz)[air] / approx. 33g (1.2oz)[u/w]

**M67 Lens Holder DP for Float Arm**
An M67 mount lens holder with deeper receptacle for an INON attachment lens with long lens barrel such as “UFL-M150 ZM80”/”UWL-S100 ZM80”. Compatible with other M67 series/28M67 series attachment lenses as well. Directly screwed on a Float Arm/Mega Float Arm/Mega Float Tube or on the M5 Joint installed on a Stick Arm/Multi Ball Arm.
- **Weight:** 58g (2.0oz)[air] / approx. 34g (1.2oz)[u/w]

**AD Lens Holder DP for Float Arm**
An AD mount lens holder with deeper receptacle for an INON attachment lens with long lens barrel such as “UFL-M150 ZM80”. Compatible with other AD/28AD series attachment lenses as well. Directly screwed on a Float Arm/Mega Float Arm/ Mega Float Tube or on the M5 Joint installed on a Stick Arm/Multi Ball Arm.
- **Weight:** 49g (1.7oz)[air] / approx. 24g (0.8oz)[u/w]

**LD Lens Holder DP-S**
A LD mount lens holder with deeper receptacle for an INON attachment lens with long lens barrel such as “UFL-M150 ZM80”/”UWL-S100 ZM80”. Compatible with other 28LD series/LD series attachment lenses as well **1**. An Arm or D Holder Extension Bar etc. is sandwiched between Lens Holder [screw] and Lens Holder Base of this product.
- **Weight:** 75g (2.6oz)[air] / approx. 39g (1.4oz)[u/w]

**M67 Lens Holder DP-S**
An M67 mount lens holder with deeper receptacle for an INON attachment lens with long lens barrel such as “UFL-M150 ZM80”/”UWL-S100 ZM80”. Compatible with other M67 series/28M67 series attachment lenses as well. An Arm or D Holder Extension Bar etc. is sandwiched between Lens Holder [screw] and Lens Holder Base of this product.
- **Weight:** 69g (2.4oz)[air] / approx. 39g (1.4oz)[u/w]

**AD Lens Holder DP-S**
An AD mount lens holder with deeper receptacle for an INON attachment lens with long lens barrel such as “UFL-M150 ZM80”. Compatible with other AD/28AD series attachment lenses as well. An Arm or D Holder Extension Bar etc. is sandwiched between Lens Holder [screw] and Lens Holder Base of this product.
- **Weight:** 60g (2.1oz)[air] / approx. 29g (1.0oz)[u/w]

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**1** In combination with AD-LD Mount Converter for UCL-165AD or M67-LD Mount Converter for UCL-330/165 M67, those close-up lenses can be attached as well.
A step-up ring to install M67 series / 28M67 series attachment lens on a compatible waterproof protector which is equipped with 52mm lens mount.

- Weight: 14g (0.5oz)[air] / approx. 9g (0.3oz)[u/w]