

# INON UCL-G165 II SD

## Underwater Wide Close-up Lens

### User Manual

#### Safety Precautions

- Before using your lens, please ensure that you have read and understood the safety precautions described below and user manuals. Please retain user manuals handy for easy reference.
- The safety precautions are intended to instruct you in the safe and correct operation of the strobe to prevent injuries or damage to yourself, other persons and equipment.



#### WARNING

Failure to observe the precautions described below may lead to possibility of serious injury or death.

**Never attempt to see the sun or strong light source through the lens or camera** to avoid irreparable injury to the eyes, or temporary visual impairment which may affect your performance requiring safety aspects.

**Do not leave the lens in a place subject to direct sunlight** to prevent fire which may be caused by the lens collecting sunlight



## INON UCL-G165 II SD Underwater Wide Close-up Lens

Thank you for purchasing INON product.

The INON UCL-G165 II SD Underwater Wide Close-up Lens is dedicated wet lens designed for action cameras enabling super close-up/high magnification imaging which would not be possible with action camera standalone.

Besides your camera, this lens requires INON *SD Mount Cage*, *SD Front Mask* or *SD Mount Base* and genuine camera housing(for particular camera). Check below table to prepare necessary item(s) according to your camera.

Manufacture	Camera	Genuine housing	INON Front Mask / Cage / Mount Base
GoPro	HERO12 Black HERO11 Black HERO10 Black HERO9 Black	Dive Housing for HERO12 Black / HERO11 Black / HERO10 Black /HERO9 Black	SD Front Mask for HERO9
	HERO8 Black	Dive Housing for HERO8 Black	SD Front Mask for HERO8
	HERO7 Black HERO6 Black HERO5 Black	Dive Housing "Super Suit" for HERO7 Black / HERO6 Black / HERO5 Black (depth rating: 60m/196 ft.)	SD Front Mask for HERO5/6/7
	HERO4 HERO3+ HERO3	Dive Housing (depth rating: 60m/197 ft.)	SD Mount Cage for HERO3/3+/4
		Standard Housing (depth rating: 40m/131 ft.)	SD Front Mask STD
	HERO HERO+ HERO+LCD	---	
Olympus	TG-Tracker	---	SD Mount Base for TG-Tracker
Sony	FDR-X3000 HDR-AS300	MPK-UWH1	SD Mount Base UWH1

### Product features

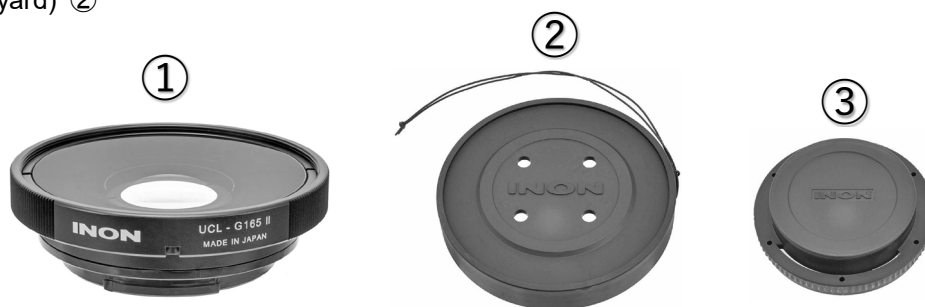
- This lens shortens minimum focus distance underwater supporting high magnification/close-up image(\*1)
- Maximum angle of view of action camera will narrow down when underwater due to different refraction index. The INON *UCL-G165 II SD* is a unique close-up lens providing slightly wide angle of view **underwater 110°**(\*2) to have deeper depth of field (DoF) benefitting you with less out-of-focus close range clip which is not possible with standard close-up lens.
- Bayonet **INON SD Mount** compatible to support friendly and speedy lens exchange underwater.
- Optional INON *AD Lens Holder* can hold the *UCL-G165 II SD* when the lens is not in use.
- Optics is constructed of 2 elements in 2 groups. All elements are made from high refractive index glass lens to minimize whole size dramatically without sacrificing performance.
- Both lens elements have anti-reflection coating on all surfaces to elicit combined master lens performance.

(\*1) Refer to Depth of Field (DoF) Range on the last page of this manual to see measured DoF data of each camera.

(\*2) Maximum angle of view (field of view) by using this lens. It varies among different action cameras.

## Package contents

- UCL-G165 II SD Underwater Wide Close-up Lens ①
- Front Lens Cap (rubber/with lanyard) ②
- Rear Lens Cap (PC) ③



## How to attach the lens

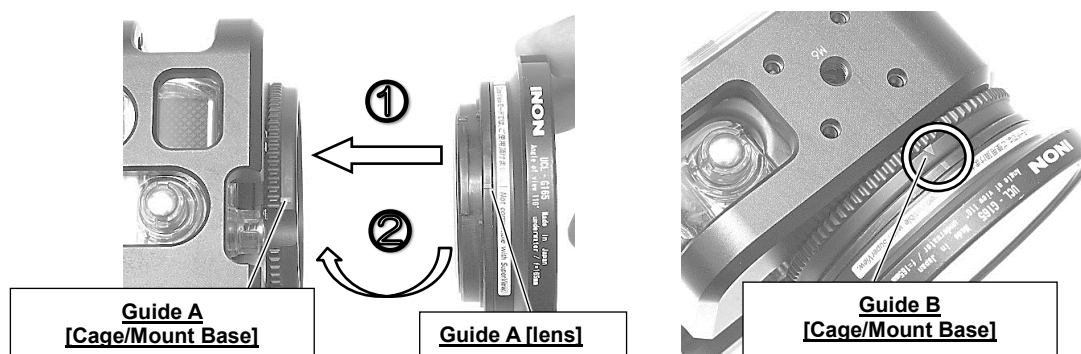
### [Installation on SD Front Mount Mask]

- Match **Guide A [Lens]** with **Guide A [Mask]** as in below left image and put the male bayonet mount of the lens in the SD bayonet mount of this product.
- Rotate the lens clockwise until **Guide A [Lens]** is coupled with **Guide B [Mask]** where you should feel and hear clicking.
- When removing the lens, with pressing the **Lock Lever (Lock Button)**, rotate the lens counterclockwise.
- **Remove the lens underwater and shake it well to drop trapped bubbles from the rear lens surface** then install the lens on the SD Mount Cage/Mount Base.



### [Installation on SD Mount Cage / SD Mount Base]

- Match **Guide A** of this lens with **Guide A** of the Cage / Mount Base and put the bayonet mount in the SD Mount.
- Rotate the lens clockwise until **Guide A** of this lens is coupled with **Guide B** of the Cage / Mount Base where you should feel and hear clicking.
- **Remove the lens underwater and shake it well to drop trapped bubbles from the rear lens surface** then install the lens on the SD Mount Cage/Mount Base.



## Usage

### [Common notes]

- **This lens is designed only for underwater use.**

### [When using for GoPro]

- Set FOV/Digital Lenses to [Wide] for wide-angle macro shooting that prioritizes angle of view, or [Narrow] for magnification-oriented imaging.
- When using HERO11 Black, shoot in 4:3 or 16:9 aspect ratio as vignetting will occur in 8:7 or HyperView mode which delivers footage in 16:9 aspect ratio by using the full 8:7 sensor.
- [SuperView™] mode is not recommended. The SuperView™ mode stretches both ends of the image inside the camera to fit into a 16:9 aspect ratio from originally obtained 4:3 aspect ratio image by the camera sensor. Since the edges of the frame are stretched horizontally, using an attachment lens further stretches the edges of the frame, resulting in an unnatural image.
- Set the camera's image stabilization (HyperSmooth) to [Standard], [High], or [On]. Setting to [Off] will cause vignetting in image corners, and [Boost] will crop the image significantly.
- The FOV/Digital Lenses setting [Wide] in Photo mode causes vignetting in image corners.
- Since this lens provides ultra wide angle of view, it is recommended to set Spot Meter to ON when using external lighting source (LED flashlight etc.). Setting Spot Meter to OFF may have washout if the external lighting device aims center of the frame.

### [When using for TG-Tracker]

- Enable image stabilization function of the camera to avoid vignetting.
- Usable range of DoF (depth of field) with this lens is "2cm/0.8in~15cm/5.9in" and distant subject beyond this range gets blur.
- **DO NOT** use this lens when taking still image to avoid significant vignetting.

### [When using for FDR-X3000 / HDR-AS300]

- Select SteadyShot (Movie) "Act" when shooting video as "Std" and "OFF" cause slight vignetting
- Excessive camera movement may result vignetting even SteadyShot(Movie) "Act" is selected.
- Select SteadyShot (Still) "ON" when shooting still image.
- Set FOV/Digital Lenses to [W: Wide] for wide-angle macro shooting that prioritizes angle of view, or [N: Narrow] for magnification-oriented imaging.

## Handling precaution

- **Follow instruction/procedure in this manual to properly install the lens on the Cage/Front Mask/Mount Base and make sure to check if the lens is properly coupled with the SD Mount Cage/SD Front Mask if the lens receives impact shock.** The lens may be dropped when hitting on a rock etc. When using underwater, periodically check if the lens is firmly attached on the cage.
- **DO NOT hold this product only to transport whole system** to avoid accidental damage on this product or separation of combined Cage/Front mask/Mount Base. Hold the Cage/Front Mask/Mount Base during transportation.
- **After using, never put the lens caps on or place the lens in a carry pouch with any water (salt or fresh) remaining on the lens surfaces.** Doing so may degrade the glass coatings or the glass itself, or cause spotting or discoloration. Heavy surface degradation would necessitate replacing the damaged lens element(s) which is NOT covered by warranty.
- **DO NOT disassemble.** Disassembling lens could cause damage and subsequent flooding, and will void warranty.
- **DO NOT** subject lens to large shocks or vibrations, which can lead to damage and possible flooding.
- **DO NOT** leave lens exposed to strong sunlight as the lens will collect and concentrate the sunlight, creating a fire hazard. Never attempt to see the sun or strong light source through the lens or camera to avoid irreparable injury to the eyes.
- **DO NOT** leave lens exposed to strong sunlight such as a boat deck or to high temperatures like in sun-heated car etc. to prevent damage and subsequent flooding.
- **DO NOT** use the lens if you observe any damage on the lens surface to avoid possible flooding.

## Maintenance

- After using, **always remove this product from the Cage/Front Mask/Mount Base** and soak the lens in fresh water (below 30°C/ 86°F) for several hours to dissolve any remaining salt, then take out the lens and **blow off water droplets** by compressed air etc. Leave the lens at shaded and well-ventilated area to dry **with no water drops on the both lens surfaces** (it may take several days to completely dry).
- After completely dry, put lens caps on**, and store out of direct sunlight and well-ventilated area. DO NOT store the lens in area with chemical fumes, high humidity or extreme temperature fluctuations. Storage in such area may lead to damage, water leakage, lens surface degradation or mold.

## Specifications

### INON UCL-G165 II SD Underwater Wide Close-up Lens Specifications (\*1)

Model	UCL-G165 II SD
Size	φ77mm/3.0in × 25.2mm/1.0in
Weight	air: 205g/7.2oz, underwater:125g/4.4oz
Lens mount	INON SD Mount
Depth rating	60m/197ft
Body material/finishing	Corrosion-resistant aluminum alloy/rigid black almite, PC
Lens material/finishing	Optical glass/both side coating
Optical construction	2 groups 2 elements
Focal length	165mm(underwater use only)

### Depth of field (DoF) with UCL-G165 II SD (\*2)

Mfr.	Camera	DoF	Remarks
GoPro	HERO12 Black	5cm/2in~35cm/13.8in (*4)	(*3)
	HERO11 Black		
	HERO10 Black		
	HERO9 Black		
	HERO8 Black		
	HERO7 Black		
	HERO6 Black		
	HERO5 Black		
	HERO4		
	HERO3+ Black		
	HERO		
	HERO+		
	HERO+LCD		
	HERO3 Black	7cm/2.8in~∞	
Olympus	TG-Tracker	2cm/0.8in~15cm/5.9in	
Sony	FDR-X3000	5cm/2in~35cm/13.8in	
	HDR-AS300		

(\*1) Specification is subject to change without prior notice

(\*2) Measured DoF from foreground of the lens surface. Divide by 1.33 for visual distance underwater.

(\*3) Measured distance underwater for GoPro® HERO12 Black/HERO11 Black/HERO10 Black/HERO9 Black/HERO8 Black /HERO7 Black/HERO6 Black/HERO5 Black/HERO4/HERO3+ Black/HERO3 Black/HERO/HERO+/HERO+LCD. Other Edition has not been tested.

(\*4) All brand name, product name and function name in this manual are trademarks or registered trademarks of respective manufactures

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