

INON UFL-M150 ZM80

Underwater Micro Fisheye 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

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INON Underwater Micro Fisheye Lens UFL-M150 ZM80

Thank you for purchasing INON product.

The INON Underwater Micro Fisheye Lens UFL-M150 ZM80 is a micro fisheye conversion lens to provide handy ultra wide fisheye image even a subject “on the lens” simply by attaching the lens on your camera via combination of optional “Mount Base” and 「Mount Converter」 with approx. 80mm focal length (35mm film equivalent) setting on the camera.

This product is exclusively for INON 「Mount Base」 and necessary to use in combination with appropriate 「Mount Converter」 depending on type of your Mount Base. Please see “Option” section in this manual for detail.

Product features

- An afocal system fisheye conversion lens exclusively designed for a versatile compact digital camera which carries relatively small master lens (=narrow beam), and standard zoom performance where the master lens and this lens are not too separated even at zoom position of approx.80mm (35mm film equivalent).
- Designed to have 150° view angle when incident beam through the master lens is 『approx.30° diagonal』 and 『approx. 16mm in diameter』 at zoom setting 80mm (35mm film equivalent)
- Threaded lens barrel allows adjusting distance between this lens and camera master lens to accommodate with various cameras.
- Targeting for underwater use benefits to have extremely compact subject side lens.
- Maximum view angle underwater is approx. 150° and minimum shooting distance is 0cm enables you to capture a tiny subject in entire image by taking advantage of compact subject side lens.
- The lens construction is 5 elements in 4 groups by optical glasses including achromat doublet lens to suppress chromatic aberration.
- Inner lenses have multi coating excluding achromat lens joint surfaces and water-shedding magenta coating on subject side lens surface and camera side lens surface to suppress reflection by lenses themselves and damage on exposed lenses.

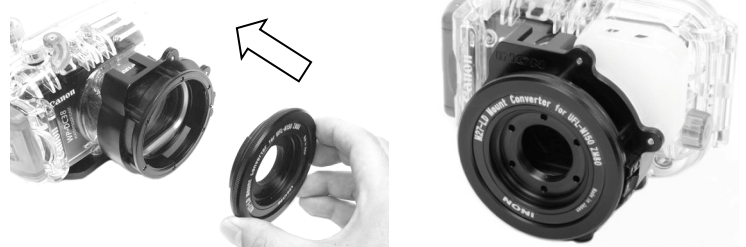
Usage

- **This product is designed for underwater use only.** Not usable on land as the lens does not form an image. Use a tank or bathtub filled with water when conducting test shot on land.
- Refer to compatibility chart in this manual to check usable camera. This product is not usable for a compact digital camera carrying larger master lens or super zoom function, or interchangeable lens for a SLR system.
- **When shooting, zoom towards to telephoto side until no vignetting is observed.** If zoom too much, image quality deteriorates in its peripheral part and view angle gets narrow.
- **Since the lens enables to shoot ultra wide image at 0cm from a subject and carries small lens diameter, depth of field gets enormously shallow when shooting few mm away from a subject.** This optical characteristic is different from standard fish-eye lens, and necessary to stop down the aperture as much as possible if your camera system allows adjusting the aperture setting. Using open aperture or nearly open aperture setting may cause significant aberrations.
- This product is not compatible with any of INON 「Lens Holder」 due to product feature to adjust mount position back and forth by screwing it.
- It is recommended not to use the built-in flash when not using an external strobe since the built-in flash light could be blocked depending on housing, shooting distance or angle of view etc.
- Be well conscious of marine environment and marine lives not to stress and harm them when shooting with this product.

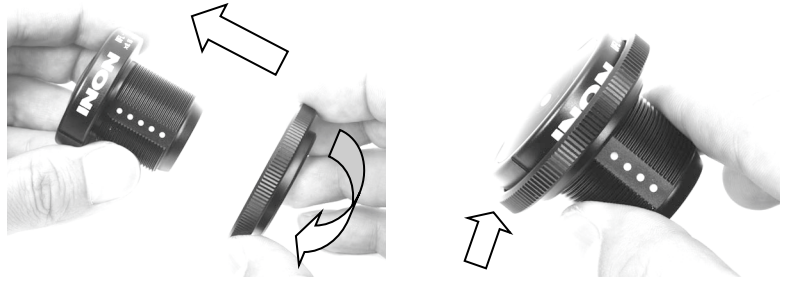
- Package contents :**
- Underwater Micro Fisheye Lens UFL-M150 ZM80 ①
 - Subject Side Lens Cap (PP with lanyard) ②
 - Camera Side Rear Cap (PP) ③
 - Lock Ring ④
 - This user manual



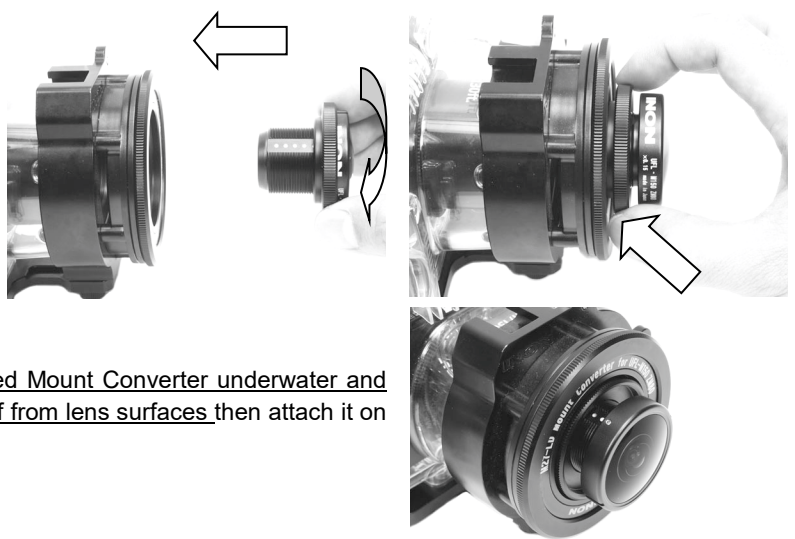
- Installation method:**
- Attach appropriate 「Mount Converter」 on your Mount Base. Refer to an user manual of the 「Mount Converter」



- Screw the 『Lock Ring』 onto the lens body so that its concave side faces the lens body until it nearly comes to base of the subject side lens as shown in right images.



- Slowly screw the lens body into the center hole of the 『Mount Converter』 until it comes to 0mm~10mm away from the lens port surface of the housing but not contact with it.
- Then screw the 『Lock Ring』 towards camera to lock lens position.



- Remove the lens with combined Mount Converter underwater and shake it well to take bubbles off from lens surfaces then attach it on the Mount Base again.

Handling precaution:

- **When screwing the lens into a Mount Converter, do not let the lens contact with the lens port surface to avoid accidental damage of the lens port and flooding.**
- INON Inc. assumes no responsibility whatsoever for any direct/indirect damage (relevant expense to take a shot etc.)resulting from user's improper installation of this product.
- **Do not hold this product only to transport whole system** to avoid accidental damage on this product or separation of combined housing. Hold a housing 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, especially on such surfaces as a boat deck, car dashboard etc. to prevent damage and subsequent flooding.

Maintenance

- After using, **always remove this product from a housing.** Soak the lens in fresh water (below 30°C / 86°F) for several hours to dissolve any remaining salt, then **blow off water on the both lens surface** by compressed air etc. Leave the lens at **shaded** and well-ventilated area to dry **with no water drops on the both lens surface** (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.

Options

- **M27-AD Mount Converter for UFL-M150 ZM80**
An adapter to attach this product on INON 『AD Mount Base』, 『28AD Mount Base』 or 『28AD/AD Mount Base』 .
- **M27-M67 Mount Converter for UFL-M150 ZM80**
An adapter to attach this product on INON 『M67 Mount Base』 ,
- **M27-LD Mount Converter for UFL-M150 ZM80**
An adapter to attach this product on INON 『28LD Mount Base』 ,



- [AD Lens Holder DP-S](#)
- [AD Lens Holder DP for Float Arm](#)
- [M67 Lens Holder DP-S](#)
- [M67 Lens Holder DP for Float Arm](#)
- [LD Lens Holder DP-S](#)
- [LD Lens Holder DP for Float Arm](#)

Lens holders to hold this product on an INON Arm/Float Arm product to support speedy lens exchange underwater. Equipped with deeper receptacle to hold INON lenses with long lens barrel including this product via compatible Mount Converter.



Specifications [①]	
Model	UFL-M150 ZM80
Size [②]	φ 39.7mm (1.6") × 36.8mm(1.4")
Weight [②]	Air: 66g(2.3oz)/Underwater:41g(1.4oz)
Thread diameter / Pitch	M27 / P1
Depth rating	60m (197')
Body material / finishing	Corrosion-resistant aluminum alloy / rigid black almite
Lens material / finishing	Optical glass / both side coating
Construction / magnification	4 groups 5 elements / 0.15 (underwater afocal system)
Max. view angle [③]	150.0°(underwater)

Actual shooting distance (from lens surface) and camera's focus setting

Camera's focus setting [④]	Shooting distance (from lens surface)[⑤]
309.8mm	0mm
400mm	2.9mm
500mm	6.1mm
600mm	9.3mm
700mm	12.5mm
800mm	15.7mm
900mm	19mm
1000mm	22.2mm

[①] Specification is subject to change without prior notice

[②] Excluding 「Lock Ring」

[③] Actual view angle (actual field of view) varies depending on zoom setting of combined camera.

[④] Focus range/position on land (=visual distance underwater). Multiply by 1.33 for measured distance underwater.

[⑤] Measured distance underwater. Divide by 1.33 for visual distance underwater.

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Shooting tips to master this lens

This product is so-called 「underwater insect-eye lens」 to capture small subject in entire image including its surroundings. Therefore some knacks are required to obtain vigorous image. Please check out below tips to bring out performance of this lens.

- Approach to a subject as close as possible. Though ideal shooting distance depends on subject size, shooting a few mm away from a subject which is less than 10cm will provide vigorous and deformed image of a fisheye lens.
- If your camera allows adjusting aperture value, stop down the aperture as much as possible. If your camera does not have this function, you may have smaller aperture by using Macro mode, higher ISO setting or strong aiming light etc.
- Adjust the lens position so that the gap between the lens and lens port surface of an underwater housing is between 0mm and 10mm. More than 10mm will affect image quality according to our field test.
- Most compatible cameras have better image quality with closer position of the lens against housing lens port even in the range of 0mm – 10mm.

However the distance effect varies among a few cameras to have better results at certain distance or same results regardless of the distance within the range. So you may need to take several test shots with different lens position to find ideal distance of the lens for your particular camera system.

- When shooting, stabilize yourself and hold your camera system firmly to avoid blurred image or camera shake.
- Strobe or other lighting source may be recorded in an image due to ultra-wide coverage of the lens. So when you use external lighting device, use an arm to locate it away from a camera and pull it back.

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INON UFL-M150 ZM80 Compatibility Chart

This chart provides necessary information when you use 「UFL-M150 ZM80」 for your camera system. Please make sure to check compatibility, necessary Mount Base and Mount Converter before using this product.

- Glossary: “Comp.” Compatibility of the UFL-M150 ZM80. “O” : compatible. “X”: Not compatible
 “M.B.” Compatible Mount Base type to use the UFL-M150 ZM80.
 “M.C.” Indicates necessary Mount Converter to attach the UFL-M150 ZM80 on a Mount Base.
 M27-AD means 「M27-AD Mount Converter for UFL-M150 ZM80」
 M27-LD means 「M27-LD Mount Converter for UFL-M150 ZM80」
 M27-M67 means 「M27-M67 Mount Converter for UFL-M150 ZM80」

Compatibility Chart

Mfr.	Housing	Camera	Comp.	M.B.	M.C.	RMK
Olympus	PT-056	TG-3	O		M27-M67	*3
	PT-055	TG-830,TG-835	O		M27-M67	*3
	PT-054	XZ-2	x			*1
	PT-053	TG-1,TG-2	O		M27-M67	*3
	PT-052	TG-820	O		M27-M67	*3
	PT-051	TG-610, TG-615, TG-810	O		M27-M67	*3
	PT-050	XZ-1	x			*1
	PT-047	μ TOUGH-6000	O	28AD Mount Base-PT-045/047	M27-AD	
	PT-046	FE-3010	O	AD Mount Base-PT-046	M27-AD	
	PT-045	μ TOUGH-8000	O	28AD Mount Base-PT-045/047	M27-AD	
	PT-044	FE-360	O	AD Mount Base-PT-044/046	M27-AD	
	PT-043	μ1030SW	O	28AD Mount Base-PT-043	M27-AD	
	PT-042	μ1020	x			*2
	PT-041	μ790SW,μ850SW	O	AD Mount Base-PT-041	M27-AD	
	PT-039	μ780,μ830	untested			
	PT-037	SP-550UZ/560UZ	x			*1
	PT-036	μ760	O	AD Mount Base-PT-032/036	M27-AD	
	PT-035	μ770SW,μ795SW	O	AD Mount Base-PT-033/035	M27-AD	
	PT-034	μ750	untested			
	PT-033	μ720SW,μ725SW	O	AD Mount Base-PT-033/035	M27-AD	
	PT-032	μ710	O	AD Mount Base-PT-032/036	M27-AD	
	PT-031	SP-700	O	AD Mount Base-PT-031	M27-AD	
	PT-030	SP-350	O	AD Mount Base-PT-030	M27-AD	
	PT-029	μ600	O	AD Mount Base-PT-029	M27-AD	
	PT-027	C-7070WZ	x			*1
	PT-026	μ-40	O	AD Mount Base-PT-026	M27-AD	
	PT-024	X-3	O	AD Mount Base-PT-024	M27-AD	
	PT-023	C-8080WZ	x			*1
	PT-022	C-760UZ,C-770UZ	x			*1
	PT-020	C-5080WZ	x			*1
	PT-018	C-740UZ,C-745UZ,C-750UZ,C-755UZ	x			*1
	PT-016	μ-10,μ-15,μ-20,μ-25,μ-30	O	AD Mount Base-PT-016	M27-AD	
	PT-015	C-5050Z	x			*1
PT-014	X-1,X-2	O	AD Mount Base-PT-014 M67 Mount Base-PT-014	M27-AD M27-M67		
PT-012	C-40Z	O	AD Mount Base-PT-012 M67 Mount Base-PT-012	M27-AD M27-M67		
PT-010	C-2020Z,C-2040Z,C-3000Z,C-3030Z,C-3040Z,C-3100Z,C-4040Z,C-4100Z	x			*1	
PT-009	C-200Z,C-300Z	untested				

Fujifilm	WP-XQ1	XQ1,XQ2	O	28LD Mount Base-XQ1	M27-LD	
	WP-FXF500	Finepix F300EXR, F550EXR, F600EXR	x			*1
	WP-FXF80	Finepix F80EXR	x			*1
	WP-FXF200	Finepix F200EXR	x			*1
	WP-FXF100	Finepix F100fd	x			*1
	WP-FXF50	Finepix F50fd	O	AD Mount Base-FXF50	M27-AD	
	WP-FXF40	Finepix F40fd	O	AD Mount Base-FXF40	M27-AD	
	WP-FXF30	Finepix F30,F31fd	O	AD Mount Base-FXF30	M27-AD	
	WP-FXF10	Finepix F10,F11	O	AD Mount Base-FXF10	M27-AD	

Sony	MPK-WH	DSC-WX200,WX100	x			*2
		DSC-WX50	O	M67 Lens Adapter Base WH	M27-M67	
	MPK-THGB	DSC-T90,T77,T700	O	AD Mount Base-THG/THGB	M27-AD	
	MPK-THG	DSC-T77,T700	O	AD Mount Base-THG/THGB	M27-AD	
	MPK-WD	DSC-W300	O	M67 Mount Base-WD	M27-M67	
		DSC-W170	untested			
	MPK-WA	DSC-W1,W5,W7	O	AD Mount Base-WA	M27-AD	
	MPK-NA	DSC-N1,N2	O	AD Mount Base-NA	M27-AD	
	MPK-PHB	DSC-P100,P150	O	AD Mount Base-PHB	M27-AD	

Mfr.	Housing	Camera	Comp.	M.B.	M.C.	RMK
Canon	WP-DC36	IXY 200F	O	28AD Mount Base-DC36	M27-AD	
	WP-DC33	IXY D220IS	O	28AD Mount Base-DC33	M27-AD	
	WP-DC32	IXY D510IS	O	28AD Mount Base-DC32	M27-AD	
	WP-DC31	IXY D210IS	O	AD Mount Base-DC31	M27-AD	
	WP-DC29	IXY D110IS	O	AD Mount Base-DC29	M27-AD	
	WP-DC27	IXY D3000IS	O	AD Mount Base-DC19/27	M27-AD	
	WP-DC26	IXY D920IS	O	28AD Mount Base-DC26	M27-AD	
	WP-DC24	IXY D95IS	O	AD Mount Base-DC22/23/24	M27-AD	
	WP-DC23	IXY D25IS	O	AD Mount Base-DC22/23/24	M27-AD	
	WP-DC22	IXY D20IS	O	AD Mount Base-DC22/23/24	M27-AD	
	WP-DC19	IXY D2000IS	O	AD Mount Base-DC19/27	M27-AD	
	WP-DC17	IXY D910IS	O	28AD Mount Base-DC17	M27-AD	
	WP-DC15	IXY D810IS	O	AD Mount Base-DC5/15	M27-AD	
	WP-DC14	IXY D90	O	AD Mount Base-DC3/4/13/14	M27-AD	
	WP-DC13	IXY D10	O	AD Mount Base-DC3/4/13/14	M27-AD	
	WP-DC9	IXY D900IS	O	28AD Mount Base-DC9	M27-AD	
	WP-DC7	IXY D1000	O	AD Mount Base-DC7	M27-AD	
	WP-DC5	IXY D800IS	O	AD Mount Base-DC5/15	M27-AD	
	WP-DC4	IXY D70	O	AD Mount Base-DC3/4/13/14	M27-AD	
	WP-DC3	IXY D80	O	AD Mount Base-DC3/4/13/14	M27-AD	
	WP-DC80	IXY D700	O	AD Mount Base-DC70/80	M27-AD	
	WP-DC70	IXY D600	O	AD Mount Base-DC70/80	M27-AD	
	WP-DC800	IXY D400/D450/D500	O	AD Mount Base-DC800	M27-AD	
	WP-DC55	PowerShot G7X Mark II	x			*1
	WP-DC54	PowerShot G7X	x			*1
	WP-DC52	PowerShot G16	x			*1
	WP-DC51	PowerShot S120	O	28LD Mount Base-DC51	M27-LD	
	WP-DC49	PowerShot SX280HS	x			*1
	WP-DC48	PowerShot G15	x			*1
	WP-DC47	PowerShot S110	O	28LD Mount Base-DC43/47	M27-LD	
	WP-DC46	PowerShot SX260HS	x			*1
	WP-DC45	PowerShot D20	x			*2
	WP-DC44	PowerShot G1X	x			*1
	WP-DC43	PowerShot S100	O	28LD Mount Base-DC43/47	M27-LD	
	WP-DC38	PowerShot S95	O	28LD Mount Base-DC38	M27-LD	
	WP-DC35	PowerShot S90	O	28AD Mount Base-DC35	M27-AD	
	WP-DC12	PowerShot A570IS	O	AD Mount Base-DC12	M27-AD	
	WP-DC2	PowerShot A540	O	AD Mount Base-DC2	M27-AD	
	WP-DC1	PowerShot S80	O	28AD Mount Base-DC1	M27-AD	

Panasonic	MCFT5	LUMIX FT5	O	28LD Mount Base-FT5	M27-LD	
	MCFT3	LUMIX FT3, FT4	O	28LD Mount Base-FT3	M27-LD	
	MCFT2	LUMIX FT2	O	28AD Mount Base-FT2	M27-AD	
	MCFT1	LUMIX FT1	O	28AD Mount Base-FT1	M27-AD	
	MCTZ40	LUMIX TZ40	x			*1
	MCTZ35	LUMIX TZ35	x			*1
	MCTZ30	LUMIX TZ30	x			*1
	MCTZ20	LUMIX TZ20	x			*1
	MCTZ10	LUMIX TZ10	x			*1
	MCTZ7	LUMIX TZ7	x			*1
	MCTZ5	LUMIX TZ5	x			*1
	MCZX3	LUMIX ZX3,ZX1	x			*1
	MCZX1	LUMIX ZX1	x			*1
	MCFX40	LUMIX FX40	O	28AD Mount Base-MCFS5/FX35/FX40	M27-AD	
	MCFX35	LUMIX FX37,FX35	O	28AD Mount Base-MCFS5/FX35/FX40	M27-AD	

Nikon	WP-N3	Nikon 1 J4	O		M27-M67	
	WP-N2	Nikon 1 J3	O		M27-M67	
	WP-N1	Nikon 1 J2	O			M27-M67

- *1 Not usable since the camera has large master lens or super zoom.
 *2 Not usable since image quality is extremely poor.
 *3 INON 「Step-Up Ring 52-67」 or Olympus step up ring 「PSUR-03」 is required.

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