

INON

INON Dome Lens Unit II for UWL-100

Thank you for purchasing INON product.

Installing INON Dome Lens Unit II for UWL-100 on compatible INON UWL-100 series lens, enables you to 「take more wide image」 and 「get more closer to subject」 comparing to sole use of UWL-100 series lens.

This product can not be used by itself and must be used with compatible INON UWL-100 series attachment lens. Compatible UWL-100 series lens and other necessary parts is option. As a nature of this product to keep airtight during self assembly, please read through this user manual carefully before you commence assembly of this product.

Features

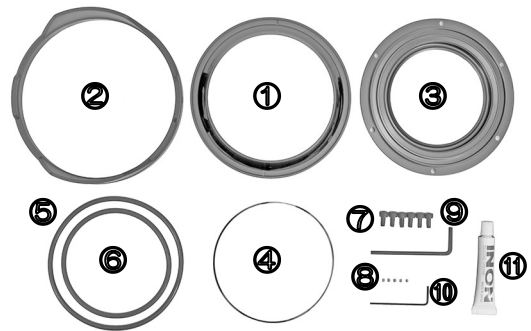
- The Dome Lens Unit II functions as a **Semi-Fisheye Converter** when attached to an INON UWL-100 series wide conversion lens. The Dome Lens Unit II enables the UWL-100 underwater angle of view to increase close to that of the UWL-100 when used in air.
- While the special optical design enables wider angle of view, the Dome Lens Unit also allows closer focusing distances for **ultra wide macro imaging**.
- The Dome Lens Unit II is specially designed for optimum performance with the UWL-100 series/UWL-H100 series attachment lens and is made of optical glass with an anti-reflection multi-coating on its inner surface. Optimum design and the highest quality optics, together with the detachable protector, minimize flare and ghost for clearer images.

Compatible attachment lens : • UWL-100 28AD (*1)
 (as of October 2012) • UWL-100 Achromat Type.2
 • UWL-100 Achromat Type.1

*1) Optional 「Dome Spacer for UWL-100 28AD」 is necessary.

Package contents :

• Dome Lens Unit II	①	×1
• Protector	②	×1
• Dome Lens Unit II Base 100	③	×1
• Dome Lens Unit Washer	④	×1
• O-ring (L)	⑤	×1
• O-ring(S)	⑥	×1
• Cap Screw	⑦	×6
• Hollow Screw	⑧	×5
• Allen Wrench (3.0mm WAF)	⑨	×1
• Allen Wrench (1.5mm WAF)	⑩	×1
• INON Grease	⑪	×1
• This user manual		×1

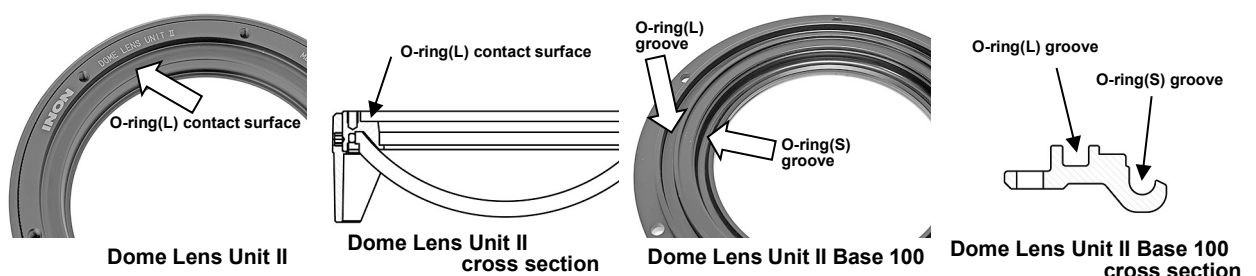


This manual explains when using for 『UWL-100 Achromat Type.1/Type.2(initial model)』 . Please refer to user manual of 『Dome Spacer fro UWL-100 28AD』 when using this product for 『UWL-100 28AD』

- UWL-100 Inspection :**
- **Check your UWL-100 to make sure there is no scratches or other surface defect on the angled face of the lens barrel (indicated by arrow in image right).** If you find any damage on the surface, contact your purchasing dealer for inspection and possible repair. Damaged surface will cause flooding of the Dome Lens Unit.
 - Check lens condition of your UWL-100 to make sure there is no heavy spotting or discoloration on the subject side lens. If your UWL-100 has heavy spotting / discoloration, it would affect on image and it may be necessary to replace the lens. Contact your purchasing dealer for inspection and replacement.



- Preparation before assembly :**
- Dome Lens Unit II, Dome Lens Unit II Base 100 and UWL-100 **must be completely dry before assembly** in order to prevent dew condensation during use.
 - **Clean lens surfaces** of the Dome Lens Unit and UWL-100 as necessary.
 - Check and confirm **there is no scratches or debris on O-ring Grooves and O-ring Contact Surface** of the Dome Lens Unit II and Dome Lens Unit II Base 100 (as shown in images below).
 - Check and confirm **there is no cuts, cracks or attaches debris** on the O-ring (L) and O-ring (S).

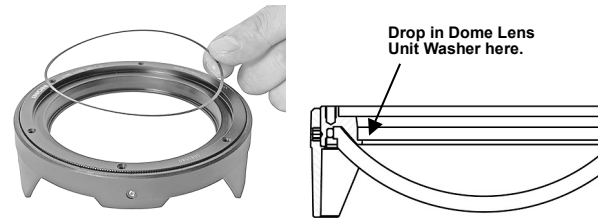


How to assemble :

Attach Dome Lens Unit II on UWL-100

To avoid dew condensation, **assemble in a cool and dry area.**

First, place the protector front side down and put the Dome Lens Unit II on it then drop in the Dome Lens Unit Washer according to the arrow in the diagram right. **Make sure it is seated completely and uniformly.**

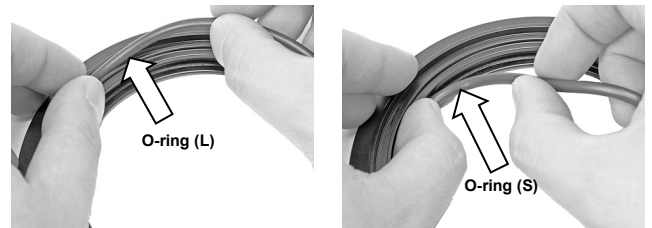


Next, remove rubber lens protector from UWL-100 by **pulling downwards** and gently place the UWL-100 on the Dome Lens Unit Washer.

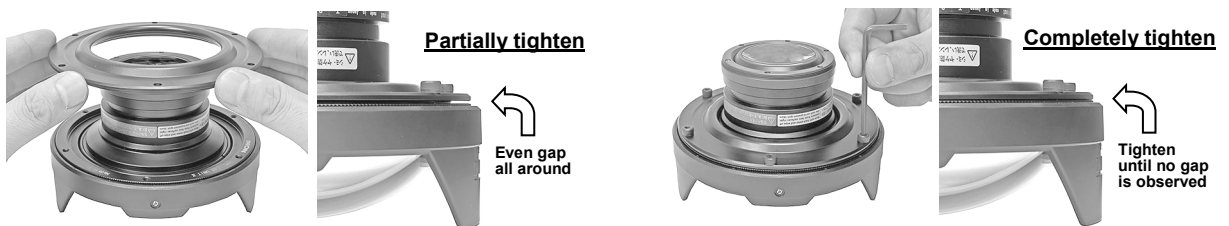


Apply thin film of INON grease on the O-ring (L) and O-ring (S).

Set the O-rings in the O-ring grooves on the Dome Lens Unit II Base 100. **Make sure that the O-rings are seated uniformly and completely with no twists.**



Flip over the Dome Lens Unit II Base 100 on to the Dome Lens Unit II / UWL-100 with lining up their screw holes. **Make sure that O-rings on the Dome Lens Unit II Base 100 remain completely seated.** Insert 6 cap screws through the Dome Lens Unit II Base 100 and into the Dome Lens Unit screw holes, and partially tighten them evenly with fingers then **completely tighten with supplied Allen Wrench (3.0mm WAF) by making star pattern.** DO NOT tighten completely or unequally to prevent accidental damage/flooding of the Dome Lens Unit II.



Adjust/Fix Protector Position

Separate the protector from the Dome Lens Unit II and attach combined lens unit on a camera system. Grasping UWL-100 lens barrel, screw the combined lens unit into the housing completely. Refer to respective user manual of a lens for detail of installation method. Put grease in screw holes on the protector and attach the protector on the Dome Lens Unit II again so that the large flanges are at the 12:00 and 6:00 o'clock positions. Then fasten the protector with hollow screws by supplied Allen Wrench (1.5mm WAF) without changing the protector position. **When tightening hollow screws, tighten alternately and evenly by making cross pattern.** Do not tighten too much or tighten unequally to prevent accidental damage on the Dome Lens Unit II or protector.



Dome Lens Unit II, Dome Lens Unit II Base 100 and UWL-100 must be completely dry before assembly and assemble must be conducted in cool and dry area in order to prevent dew condensation during use.

Leak Test : • After assembly and before using, **always confirm that the Dome Lens Unit II has been assembled properly and is watertight by conducting a “Leak Test.” Immerse the Dome Lens Unit II / UWL-100 Lens assembly in a bathtub or tank of water (30°C /86°F or less). No water should come between the Lens and Dome Unit.** If water leaks between the two, disassemble, dry and reassemble again.

Usage : • **Attaching to Housing**
Attaching the Dome Lens Unit II/UWL-100 Lens assembly to the housing is same as installing on an underwater housing with M67/0.75 pitch screw mount or installing on an INON M67 Mount Base. Refer to respective user manual of a lens. **Apply a little amount of grease on the threaded part of the attachment lens** to prevent anchoring caused by 「salt-build-up」 「electrical corrosion」. Make sure no air bubbles are trapped between the lens rear element and the housing port. If necessary, **install underwater, or partially unscrew the lens and tighten again underwater** to allow air bubbles to escape.

• **Setting Camera Zoom Position**
Set camera zoom at wide end. Depending on the camera and housing used, there may be vignetting in the image corners. In this case, 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 tis setting.

• **Setting Camera Focus Mode**
For cameras below, set **Macro Mode to OFF**.
NIKON: E880, E800
Canon: S1 IS (*No Macro Mode)
For cameras not mentioned above, 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. For various camera’s focus settings and actual focus ranges (distance from the subject to dome surface) see the specification charts at the end of this Manual.

Maintenance : • After using, **always remove from housing**, soak for several hours in fresh water (at 30°C / 86°F or less) to dissolve salt deposits, **blow off water droplets with compressed air, wipe off any remaining moisture on the lens surfaces** and store in a shade area with good ventilation. (It may take several days to completely dry).

• **Then, after completely drying**, remove the Dome Lens Unit II from the UWL-100 using the reverse of the previously explained assembly process. Clean the O-rings, O-ring grooves and contact surfaces, and grease screw holes on the Dome Lens Unit II and protector.
• Do not store in areas with solvents or chemical fumes, with high humidity, high ozone or extreme temperature fluctuations. Storage in such conditions may lead to water leakage or other damage such as lens surface degradation, discoloration or mold.



Handling Precautions: • Due the inherent design and characteristics of the Dome Lens Unit II as an add-on accessory to the UWL-100 Lens, even if the camera zoom position is optimum, compared to the UWL-100 alone, image quality may be somewhat less, in particular at the edges of an image. **Setting the aperture size as small as practically possible can improve image quality.**

• **After using, always make sure no water droplets or moisture remains on the optical surfaces. Never put wet lens covers on the Dome Lens Unit II.** Doing so may cause degradation of the glass surface, or cause spotting or discoloration. Slight spotting or discoloration will have minimal adverse effect on the image, but heavy surface degradation would necessitate replacing the damaged dome lens element. Contact purchasing dealer if you require a dome lens element replacement.

• **Especially if air temperature is relatively high where remaining water on the lens surface will be vaporized very quickly, the lens has high chance to get spot/burn with remaining water on the lens surface even for a short period of time.**

• **Do not disassemble this product.** Doing so could cause damage and subsequent flooding, and will void warranty. Also, when removing the Dome Lens Unit II/ UWL-100 assembly from the housing **do not grasp and twist the Dome Lens Unit II portion of the assembly. Instead grasp the middle area of the UWL-100 lens barrel, where you see product name and sticker.** Grasp this middle area and rotate to remove. Applying torque or rotational force to the Dome Lens Unit II could cause loosening of internal parts, causing damage and subsequent flooding.

• Do not subject Dome Lens Unit II to large shocks or vibrations, which can lead to damage and possible flooding.

• Do not leave exposed to strong sunlight, especially on such surfaces as a boat deck, car dashboard etc. as the optical elements will collect and concentrate the sunlight, creating a fire hazard.

• Never look at sun through Dome Lens Unit II.

• Do not expose to extreme heat, such as the inside of a hot car, or in hot direct sunlight, such as a beach or boat deck. Doing so may cause damage and subsequent flooding.

• The Dome Lens Unit II will block the camera’s built-in flash light from reaching the subject. We recommend using an external strobe such as the INON D-2000.

Options

- Dome Lens Unit Cover
Neoprene cover usable underwater protects lens element. Recommend to cover lens whenever not in use.
- Replacement Spare O-ring Set (for Dome Lens Unit for UWL-100/
Dome Lens Unit II for UWL-100)
A set of one large and one small O-ring.
Not usable for 「Dome Lens Unit II for UWL-H100」.
- Dome Spacer for UWL-100 28AD
Optional part necessary to attach Dome Lens Unit II on 「UWL-100 28AD Wide Conversion Lens」



INON Dome Lens Unit II for UWL-100 Specification [(1)]

Outer diameter [(2)]	φ 132.4mm (5.2in.)
Length (standalone / with UWL-100 28AD) (with UWL-100Type1/Type2)[(2)]	48.2mm (1.9in.) / 70.9mm (2.8in.) 85.8mm(3.4in.)
Weight (standalone on land / with UWL-100 28AD underwater) (with UWL-100Type1/Type2 underwater)[(2)]	460g(16.2oz)/approx. 400g(14.1oz) approx. 533g (18.8oz)
Depth rating	60m (196.9ft)
Body material / finishing	Corrosion resistant aluminum alloy / Black rigid alumite
Glass material / finishing	Optical glass / antireflection multi- coating (inner side)

INON Inc.

2-18-9, Dai, Kamakura
Kanagawa 247-0061

E-mail support@inon.co.jp

Fax. +81(0)467-48-2178

URL http://www.inon.jp/

October 2012

Actual shooting distance(from Dome) and camera's focus setting with UWL-100 Type.1/Type.2	
Shooting distance(from Dome)[(6)]	Camera's focus setting[(7)]
∞	77.0cm
80cm	61.1cm
76cm	60.5cm
50cm	55.1cm
40cm	51.8cm
30cm	47.5cm
20cm	41.3cm

Actual shooting distance(from Dome) and camera's focus setting with UWL-100 28AD	
Shooting distance(from Dome)[(6)]	Camera's focus setting[(7)]
∞	62.6cm
80cm	49.6cm
44cm	43.1cm
20cm	33.3cm
4cm	18.7cm

[(1)] Specifications is subject to change without prior notice.

[(2)] Including lens protector

Compatible housing / Focus range (at wide end)								
Mfr.	Housing	Camera	Compatible UWL-100			Focus range[(6)] (Focus range w ithout attachment lens[(7)])		Vignetting [(8)][(9)]
			Type.1	Type.2	28AD	Normal mode	Macro mode	
Canon	DC36 [(8)]	IXY 200F	x	x	★	∞~0cm (∞~5cm)	83.8cm~0cm (50cm~3cm)	No vignetting
	DC35 [(8)]	S90	x	x	★	∞~83.8cm (∞~50cm)	83.8cm~0cm (50cm~5cm)	(3)
	DC33 [(8)]	IXY D220IS	x	x	★	∞~15.1cm (∞~30cm)	83.8cm~0cm (50cm~3cm)	(3)
	DC32 [(8)]	IXY D510IS	x	x	★	∞~83.8cm (∞~50cm)	83.8cm~0cm (50cm~2cm)	(3)
	DC26 [(8)]	IXY D920IS	x	x	★	∞~83.8cm (∞~50cm)	83.8cm~0cm (50cm~2cm)	No vignetting
	DC17 [(8)]	IXY D910IS	x	x	★	∞~51.9cm (∞~45cm)	5.22m~0cm (60cm~3cm)	No vignetting
	DC9 [(8)]	IXY D900IS	x	x	★	∞~51.9cm (∞~45cm)	5.22m~0cm (60cm~3cm)	No vignetting
	DC1 [(8)]	S80 (9)	x	x	★	∞~47.6cm (∞~44cm)	47.6cm~0cm (44cm~4cm)	(3)
	DC40 [(8)]	S70/S60 (9)	x	x	★	∞~47.6cm (∞~44cm)	47.6cm~0cm (44cm~4cm)	(3)
	DC20 [(8)]	S1 IS	●	▲	x	∞~0cm (∞~10cm)	(No macro mode)	No vignetting
	DC500 [(8)]	IXY D300a	▲	●	x	∞~16.7m (∞~76cm)	16.7m~0cm (76cm~16cm)	(5)
	DC300 [(8)]	S50/S45	▲	●	x	∞~35.0cm (∞~50cm)	35.0cm~0cm (50cm~10cm)	(5)
		S30/S40	▲	●	x	----- (∞~80cm)	∞~0cm (80cm~10cm)	(5)
	DC200s [(8)]	A40/A30	●	▲	x	∞~16.7m (∞~76cm)	16.7m~0cm (76cm~16cm)	(5)
		A20/A10	●	▲	x	∞~16.7m (∞~76cm)	16.7m~0cm (76cm~16cm)	(5)
	DC200 [(8)]	A20/A10	●	▲	x	∞~16.7m (∞~76cm)	16.7m~0cm (76cm~16cm)	(5)
DC100 [(8)]	IXY D300	▲	●	x	∞~16.7m (∞~76cm)	16.7m~0cm (76cm~16cm)	(5)	
Olympus	PT-045 [(8)]	μTOUGH-8000	x	x	★	∞~83.8cm (∞~50cm)	∞~0cm (∞~10cm)	(3)
	PT-043 [(8)]	μ 1030SW	x	x	★	∞~83.8cm (∞~50cm)	∞~0cm (∞~10cm)	(3)
	PT-042 [(8)]	μ1020	●	▲	x	∞~2.16m (∞~70cm)	∞~0cm (∞~10cm)	(5)
	PT-039 [(8)]	μ830/μ780	●	▲	x	∞~2.16m (∞~70cm)	∞~1.97cm (∞~20cm)	(5)
	PT-034 [(8)]	μ750	●	▲	x	∞~2.16m (∞~70cm)	∞~1.97cm (∞~20cm)	(5)
	PT-027 [(8)]	C-7070WZ	x	x	★	----- (∞~80cm)	∞~4.95cm (80cm~20cm)	(3)
		C-5060WZ	x	x	★	----- (∞~80cm)	∞~4.95cm (80cm~20cm)	(3)
	PT-020 [(8)]	C-5060WZ	x	x	★	----- (∞~80cm)	∞~4.95cm (80cm~20cm)	(3)
	PT-015 [(8)]	C-5050Z	x	◎	x	----- (∞~80cm)	∞~1.97cm (80cm~20cm)	(3)
	PT-014 [(8)]	X-2/X-1	▲	●	x	∞~35.0cm (∞~50cm)	35.0cm~1.97cm (50cm~20cm)	(5)
	PT-012 [(8)]	C-40Z	▲	●	x	----- (∞~80cm)	∞~0cm (80cm~10cm)	(5)
	PT-010 [(8)]	C-4100Z	○	x	x	----- (∞~80cm)	∞~1.97cm (80cm~20cm)	(4)
		C-4040Z	○	◎	x	----- (∞~80cm)	∞~1.97cm (80cm~20cm)	(3)
		C-3040Z	○	◎	x	----- (∞~80cm)	∞~1.97cm (80cm~20cm)	(3)
		C-2040Z	○	◎	x	----- (∞~80cm)	∞~1.97cm (80cm~20cm)	No vignetting
		C-3030Z	○	x	x	----- (∞~80cm)	∞~1.97cm (80cm~20cm)	(4)
		C-3000Z	○	x	x	----- (∞~80cm)	∞~1.97cm (80cm~20cm)	(4)
	C-2020Z	C-2020Z	○	◎	x	----- (∞~80cm)	∞~1.97cm (80cm~20cm)	(5)
		PT-007 [(8)]	C-3040Z	○	◎	x	----- (∞~80cm)	∞~1.97cm (80cm~20cm)
		C-2040Z	○	◎	x	----- (∞~80cm)	∞~1.97cm (80cm~20cm)	No vignetting
C-3030Z		○	x	x	----- (∞~80cm)	∞~1.97cm (80cm~20cm)	(4)	
	C-3000Z	○	x	x	----- (∞~80cm)	∞~1.97cm (80cm~20cm)	(4)	
	C-2020Z	○	◎	x	----- (∞~80cm)	∞~1.97cm (80cm~20cm)	(5)	
PT-005 [(8)]	C-3030Z	○	x	x	----- (∞~80cm)	∞~1.97cm (80cm~20cm)	(3)	
	C-3000Z	○	x	x	----- (∞~80cm)	∞~1.97cm (80cm~20cm)	(3)	
C-2020Z	○	x	x	----- (∞~80cm)	∞~1.97cm (80cm~20cm)	No vignetting		
Panasonic	MCFT2 [(8)]	FT2	x	x	★	∞~15.1cm (∞~30cm)	∞~0cm (∞~5cm)	(3)
	MCFT1 [(8)]	FT1	x	x	★	∞~15.1cm (∞~30cm)	∞~0cm (∞~5cm)	(3)
	MCFS5 [(8)]	FS3	x	x	★	∞~83.8cm (∞~50cm)	∞~0cm (∞~5cm)	(3)
	MCFX30 [(8)]	FX33/FX30	x	x	★	∞~83.8cm (∞~50cm)	∞~0cm (∞~5cm)	(3)
	MCFX07 [(8)]	FX07	x	x	★	∞~83.8cm (∞~50cm)	∞~0cm (∞~5cm)	(3)
	MCFX01 [(8)]	FX01	x	x	★	∞~83.8cm (∞~50cm)	∞~0cm (∞~5cm)	(3)
Sony	MPK-WD [(8)]	W300	●	▲	x	∞~0cm (∞~5cm)	∞~0cm (∞~5cm)	(5)
Housing:INON	DN-880	E 880	◎	x	x	∞~18.2cm (∞~40cm)	(unusable at wide end)	No vignetting
Camera:Nikon	DN-800	E 800	◎	x	x	∞~8.39cm (∞~30cm)	(unusable at wide end)	No vignetting

★ : 「Dome Spacer for UWL-100 28AD」 is necessary to attach Dome Lens Unit on UWL-100 28AD. Compatible 「28AD Mount Base」 or 「28AD Port」 is necessary to attach combined lens unit (Dome Lens Unit II / UWL-100, Dome Lens Unit II / UWL-100 28AD) on a housing.

◎ : Optional parts is not necessary. Combined lens unit is directly attached on a housing.

○ : Optional parts is not necessary. Optional 「PT-005 Adapter Ring」 is necessary to attach combined lens unit on a housing.

● : Optional parts is not necessary. Compatible 「M67 Mount Base」 is necessary to attach combined lens unit on a housing.

▲ : Optional parts is not necessary. It is recommended to change to another Type of UWL-100 (indicated by ●) though this Type can be directly attached on compatible M67 Mount Base with some degradation of image quality.

x : This combination is unusable.

[(3)] Slight vignetting on four corners at zoom wide end. Zoom little bit to telephoto side or crop image after shooting.

[(4)] Noticeable vignetting on four corners at zoom wide end. Zoom to telephoto side or crop after shooting.

[(5)] Untested. No vignetting or slight vignetting is expected.

[(6)] Measured distance underwater. Divide by 1.33 for visual distance underwater.

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

[(8)] Angle of view/vignetting may vary depending on housing model even using same camera.

[(9)] Based on not using image stabilizer.