

MVD/MVHD/MVU Video Housings

Product Data Sheet

MANGROVE
Underwater Technology



HOUSING

The Mangrove video housing's front case is constructed from marine grade aluminum, machined, anodized and protected with a special coating and the rear case is machined from solid Delrin. The housing's sleek, ergonomic design feels like a natural extension of your hands and makes capturing that perfect video sequence fluid and easy. Redundant double O-ring seal system on the control unit provides maximum protection and does not depend on clamping pressure for security. Each unit is pressure tested to 200m/ 660 feet. There are three different available models; the **MVD** is a dedicated housing that accepts one specific camcorder model, the camera mounts on a specially engineered stay in a fix position, this housing also adapts to your future video cameras but needs to be modify in our workshop, the new **MVHD** housing accepts nearly the entire line of Sony HD video cameras and the design benefits of interchangeable optics like the wide angle port WP-80, and finally the **MVU** which is a fully universal housing that features a oversized 117mm optical flat port. On the **MVHD** and **MVU** video housings the camcorder mounts on a specially engineered universal camera tray that can be adjusted by the customer in any position in just a few minutes.

CONTROL SYSTEM

The Mangrove video housing is a full electronically controlled housing that uses the wired remote control for LANC or AV/R-10pin compatible SONY camcorders, while with Panasonic, Canon and JVC cameras it uses the Infrared remote control. The external controls on the housing are linked by 12 electromagnetic pushbuttons to corresponding controls on the camera inside the case, eliminating the need for the physical shafts that pierce the walls of mechanical housings. The electromagnetic controls do not penetrate the housing wall and can be easily removed for cleaning and maintenance. With non-penetrating electronic controls there is virtually no risk of the housing leaks typical with mechanical through-hole designs. Another convenient feature of this type of system is that the controls for the housing are grouped together in three locations, to the left, right and under the in-built monitor, so that each function can be operated by your thumbs while maintaining a steady grip on the handles. In this position you can instantly see the labels for the names of each control, as compare to a mechanical housing where you must either memorize the location of the controls or rotate the housing to read the name of the control you want to operate. Grouped electronic controls are very convenient on deep dives where nitrogen narcosis may be a factor

MONITOR

Rather than viewing the underwater world through a small viewfinder, the Mangrove housing has a High-Resolution TFT LCD monitor built into the back of the case that gives you a large 3.5" image; you see what the camera is recording, in full colour, while holding the housing at arm's length. Not only will the larger image be of great assistance in composing your shots, you can instantly see the results when you change manual focus, turn on lights, or use your filter, you will also see all the status information normally displayed in your camera's screen/viewfinder. The in-built monitor has a hood that eliminates glare and reflections from your surrounding, which also allows viewing even in strong ambient light; furthermore the LCD screen is 25 degrees angled for more ergonomics. The monitor is powered by their own Lithium batteries so they do not rob any power from the camera's battery. The rearward placement of the handles is also a boon for those who suffer from Hyperopic and Presbyopia. Rear monitor housings can be difficult for bad eyesight sufferers and often you can see many people shooting with arms straight out to be able to focus. A few inches do make a difference for many and the handle position allows all but the most farsighted divers to comfortably maintain relaxed arms for steady shooting. A live video feed to the surface is also available, you can use your Mangrove external monitor or any standard monitor with a 100 m (333 feet) extension cable and have a perfect view of the diver assisted or tripod mounted Mangrove housing from the boat.



AUDIBLE & VISUAL LEAK DETECTOR

The housing is equipped with a leak detector that will immediately activate a loud buzzer and a LED if the housing leaks, the water detector is located next to O-ring sealing and at the lowest point (in usual operating position) of the control module.

INTERCHANGEABLE OPTICS

The housing comes with a 56mm threaded port ring that accepts optional removable ports, the wide angle ports Mangrove WP-80/WP-100 and the flat port Mangrove FP-M56 that supports any 67mm threaded wet lenses such as the WA-24, INON UWL-100 Type 2, and macro lenses such as the INON UCL-165 and UCL-330. The WP-80 wide angle port designed by Fathom Imaging is constructed of an aluminium shell and coated BK-7 glass elements to provide the sharpest, clearest underwater images possible. The WP-80 covers a range of 80° underwater and 90° on land. It is nitrogen-purged / vacuum-sealed. The front dome element has a hard coating and is protected by a shade. The INON UCL-330 and the UCL-165 close-up lenses are used to shorten the maximum object distance (M.O.D), the M.O.D. for the UCL-330 is 330 mm with a magnification factor of x1.3, and for the UCL-165 is 165 mm, with a magnification factor of x2.

ADVANCED DIVING TECHNOLOGY S.L.

Tel +34.972.661.661 / Fax +34.972.660.735 / info@aditech-uw.com / www.aditech-uw.com

23/03/09

COLOUR CORRECTION FILTER

Three removable external filters are available; the **CF-127**, the **CF-M67** and the **CF-96**. These optional colour filters reduces the blue hues and revives the vivid colours instantly when used with available sunlight to 24 m (80') depths. The CF-M67 filter has a double male/female 67mm screw that will be screwed onto the flat port FP-M56. The CF-127 filter directly attaches to the Mangrove WP-80 and the CF-96 to the INON UWL-100 wide angle lens, both of them can be removed underwater

VIDEO LIGHTING SYSTEMS

Once you descend beyond the effective range of your correction filter, or if you are diving at night, in a cavern, or on a particularly overcast day, you are going to need some type of supplementary lighting system to provide colour, contrast, and excitement to your videos. Fortunately Mangrove's Video Lighting Systems combine remarkably even lighting coverage with a compact design that attaches easily and maintains exceptionally balance of the housing. The VC-2 and VC-4 are lightweight compact halogen lights that can be used for video as well as a modelling light to aid with auto focus on your underwater still camera. The MVS-4 halogen lights are engineered to equalized weight and maximize balance, the light heads and batteries are separate units, because the battery module is mounted beneath the housing, the light head is small, lightweight, and easy to position. The MVS-4H series use High Intensity Discharge (HID) pluggable light heads producing a daylight balanced colour temperature of 4500 degrees Kelvin, the light heads and batteries are separate units. All lighting systems are powered by Lithium Ion or memory-free Nickel Metal Hydride (NiMH) battery packs, also included is the smart charger for worldwide use

COMPATIBLE CAMCORDERS

SONY

MVD-S	MVD-L		MVHD-S	MVHD-L	MVD-HC1
DCR PC5	DCR TRV9	DCR HC22	HDR HC3	HDR HC3	HDR HC1
DCR PC6	DCR TRV10	DCR HC32	HDR HC5	HDR HC5	HVR A1
DCR PC8	DCR TRV11	DCR HC39	HDR HC7	HDR HC7	
DCR PC9	DCR TRV17	DCR HC42	HDR HC9	HDR HC9	
DCR PC101	DCR TRV18	DCR HC94	HDR SR1	HDR-SR5	HDR-SR1
DCR PC103	DCR TRV25	DCR-HC96	HDR-SR5	HDR-SR7	HDR-SR5
DCR PC105	DCR TRV40	DCR TRV60	HDR-SR7	HDR-SR8	HDR-SR7
DCR PC106	DCR TRV50	DCR TRV940	HDR-SR8	HDR-SR10	HDR-SR8
DCR PC109	DCR TRV33	DCR TRV950	HDR-SR10	HDR-SR11	HDR-SR10
DCR PC100	DCR-IP220	DSR PDX10	HDR-SR11	HDR-SR12	HDR-SR11
DCR PC110	DCR-SR30	DCR HC85	HDR-SR12	HDR-UX3	HDR-SR12
DCR PC115	DCR-SR50	DCR HC1000	HDR UX1	HDR-UX7	HDR-UX3
DCR PC120	DCR-SR70	DCR-SR210	HDR UX3	HDR-CX6	HDR-UX7
DCR PC330	DCR-SR90	DCR-SR220	HDR UX7	HDR-CX7	HDR-CX6
DCR PC350	DCR-SR190	DCR-SR35	HDR-UX9	HDR-CX11	HDR-CX7
DCR PC1000	DCR-SR200	DCR-SR36	HDR-UX19	HDR-CX105	HDR-CX11
DCR HC90	DCR-SR290	DCR-SR55	HDR-CX6	HDR-CX106	HDR-CX105
DCR-SR32	DCR-SR300	DCR-SR75	HDR-CX7	HDR-XR105	HDR-CX106
DCR-SR42	DCR HC16	DCR-SR45	HDR-CX11	HDR-XR106	HDR-XR105
DCR-SR52	DCR HC18	DCR-SR55	HDR-XR200V	HDR-XR200V	HDR-XR106
DCR-SR72	DCR HC20	DCR DVD403		HDR-XR500V	HDR-XR200V
DCR-SR82	DCR HC30	DCR DVD505		HDR-XR520V	HDR-XR500V
HDR-TG1	DCR HC40				HDR-XR520V
HDR-TG3	DCR HC19				

PANASONIC

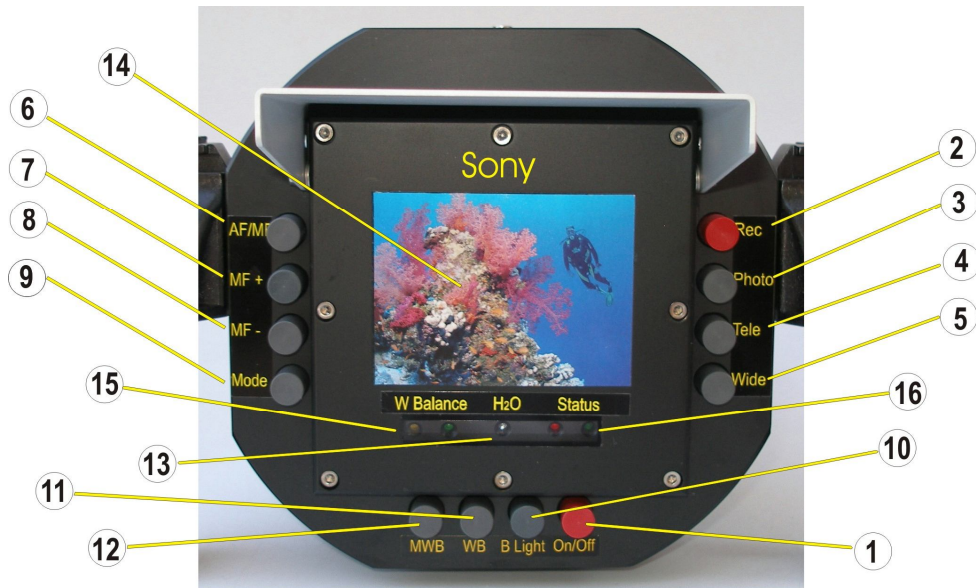
	MVDP-L	DCR-DVD508			
	HDC-SD1	DCR-DVD510	NV-GS75		
	HDC-SD5	HDC-DX1	NV-GS230		
	HDC-SD9	HDC-SD100	NV-GS250		
	HDC-HS9	HDC-HS100	NV-GS280		
			NV-GS500		

CANON

	MVHDC-S	MVHDC-L	
	HF10	HF10	
	HF11	HF11	
	HF100	HF100	
	HG10	HG10	
	HG20	HG20	
	HG21	HG21	

SPECIFICATIONS	MVD-S	MVD-L/HC1	MVHD-S	MVHD-L	MVU-S	MVU-L
Dimensions (D x L)	160 x 195 mm	160 x 236 mm	160 x 236 mm	160 x 266 mm	160 x 246 mm	160 x 276 mm
Weight (w/o camera)	3535 gr	3680 gr	3680 gr	3860 gr	3787 gr	3970 gr
Buoyancy (in seawater)	Engineered to be +/- neutrally buoyant with camera, WP-80 and lighting system VC-4 installed on the case					
Housing materials	Anodized marine grade aluminium and machined Delrin					
Hardware	316 Stainless Steel throughout					
Locking system	2 rotary action draw latches					
Seals	<ul style="list-style-type: none"> ➤ Back of the Housing: double 3 mm O-ring Seals; one radial bore seal, one face seal ➤ Front Port: double 2.5 mm O-ring Seals; one radial bore seal, one face seal 					
Grip handles	2 detachable ergonomic handles					
Finish	Clear anodize aluminium and black Delrin					
Control System	For SONY through the :LANC or AV/R-10pin / For Panasonic, Canon and JVC through the Infrared remote					
Type of controls	12 non-penetrating electro-magnetic pushbuttons					
Control set for: SONY	<ul style="list-style-type: none"> <input type="checkbox"/> Power Monitor + Camera On/Off <input type="checkbox"/> Record/Stand-by <input type="checkbox"/> Photo (on tape or Memory stick) <input type="checkbox"/> Zoom Wide <input type="checkbox"/> Zoom Tele <input type="checkbox"/> Auto focus On/Off <input type="checkbox"/> Momentary Auto focus <input type="checkbox"/> Manual Focusing Far <input type="checkbox"/> Manual Focusing Near <input type="checkbox"/> Memory switch (records still images on Memory stick) <input type="checkbox"/> Variable speed Zoom + <input type="checkbox"/> Variable speed Zoom - <input type="checkbox"/> Backlight compensation <p>OPTIONAL: compatible only with SONY HC camcorders, replace the Zoom speed +/- controls</p> <ul style="list-style-type: none"> <input type="checkbox"/> White balance: AUTO, INDOOR, OUTDOOR <input type="checkbox"/> Manual White balance 					
Controls set for: PANASONIC, CANON (with Joystick)	<ul style="list-style-type: none"> <input type="checkbox"/> Power Monitor On/Off (Camcorder should be set to POWER SAVE > OFF) <input type="checkbox"/> Record/Stand-by <input type="checkbox"/> Photo <input type="checkbox"/> Zoom Wide <input type="checkbox"/> Zoom Tele <input type="checkbox"/> OSD <input type="checkbox"/> Joystick Up <input type="checkbox"/> Joystick Down <input type="checkbox"/> Joystick Left <input type="checkbox"/> Joystick Right <input type="checkbox"/> Enter <input type="checkbox"/> Menu 					
Controls set for: CANON (w/o Joystick) JVC	<ul style="list-style-type: none"> <input type="checkbox"/> Power Monitor On/Off <input type="checkbox"/> Record/Stand-by <input type="checkbox"/> Photo (on tape or Memory stick) <input type="checkbox"/> Zoom Wide <input type="checkbox"/> Zoom Tele 					
Leak detector	Audible & Visual water alarm					
Status information	(SONY) Two LEDs, green when camcorder is connected, red when camcorder is recording					
White balance status	(SONY) Two LEDs, yellow and green show the white balance selection					
Rear monitor	3,5" colour TFT LCD, monitor hood included					
Screen resolution	960 (W) x 234 (H)					
Monitor life time	10.000 hours					
Monitor brightness	250 Cd/m2					
Monitor power source	4 x CR123A Lithium Ion batteries / 4 X CR123A Lithium Ion rechargeable batteries					
Monitor run time	+/- 6 hours with Lithium Ion batteries / +/- 3 hours with Lithium Ion rechargeable batteries					
External monitor	(Optional) MS-6 and MS-7					
Video out	(Optional) bulkhead connector allows for video feed to surface or external monitor					
Remote monitor cable	(Optional) 100 m (300 foot) extension cable with pluggable connector					
Wide angle lens	(Optional) WP-80, field of view of 80°, depth rating: 200 m / 660 feet					
Super wide angle port	(Optional) WP-100, field of view of 100°, depth rating: 200 m / 660 feet					
Flat port	(Optional) FP-M56, coated optical glass port with external 67mm threaded ring, depth rating: 200 m / 660 feet					
Macro lens	(Optional) INON UCL-165 / UCL-330, M67 screw mounted lens, depth rating: 60 m					
Colour correction filter	(Optional) CF-127 compatible with wide angle WP-80, CF-67 67mm screw mounted filter and CF-96 that mounts on INON UWL-100 wide angle lens					
Transport handle	(Optional) Hd-UP					
Stabilizing wings	(Optional) SW-MVD					
Depth rating	200 m (666 ft)					

DESCRIPTION OF HOUSING CONTROL SET



SONY

1. **ON-OFF:** Power Camera + Monitor
2. **REC:** Stand-by/Record
3. **Photo:** Still picture on tape or Memory Card
4. **Tele:** Zoom tele
5. **Wide:** Zoom Wide angle
6. **AF/MF:** Auto focus ON/OFF / Momentary Auto focus
7. **MF+:** Manual focus near
8. **MF-:** Manual focus far
9. **Mode:** selection between record on Memory card or Tape
10. **B Light:** Backlight
11. **Zoom +:** increase the zoom speed
12. **Zoom -:** decrease the zoom speed
13. **H2O (LED red):** water leak alarm
14. **Screen:** 3.5" Colour LCD
15. **W Balance** (LED yellow/green) show the state of the white balance adjustment; INDOOR, OUTDOOR, AUTO, MANUAL
16. **Status** (LED green/red): show the camcorder status (battery, tape, memory)
- ➔ **OPCIONAL WHITE BALANCE:** Zoom + and Zoom - controls are replaced by WB and MWB.
11. **WB:** selection between Indoor, Outdoor and Auto
12. **MWB:** allows a manual White Balance adjustment

PANASONIC / CANON / JVC

1. **ON-OFF:** Monitor ON/OFF
2. **REC:** Stand-by/Record
3. **Photo:** Still picture
4. **Tele:** Zoom tele
5. **Wide:** Zoom Wide angle
6. **Up:** Cursor up
7. **Down:** Cursor down
8. **Right:** Cursor right
9. **Left:** Cursor left
10. **OSD:** allows the display of data on the LCD monitor
11. **Menu:** activates MENU function
12. **Enter:** activates joystick control
13. **H2O (LED red):** water leak alarm
14. **Screen:** 3.5" Colour LCD

JVC