MarCum TECHNOLOGIES

Quest HD L

Underwater Viewing System

User Manual

QUEST HD L

www.MarCumtech.com

INTRODUCTION

Thank you for purchasing the Quest HD L underwater viewing system from MarCum Technologies. The Quest HD L offers several technologies that are the first of their kind, making this system the most technologically advanced underwater viewing system available. Using technology such as an 7" Solar Intelligent-H2D display will deliver the sharpest, most vivid display, even in bright sunlight. Color Kill technology allows you to switch between a Color or Black and White image on demand, while maintaining crisp screen resolution. On-Screen displays of Camera Direction, Depth, Temp and Battery Meter take all the guess work out of your camera position so your new Quest HD L can be used to hunt for underwater treasures, locate the "spot on the spot", observe fish in their natural habitat or learn how fish react to your lure or bait presentation. The applications are endless, and it's never been easier or more fun to view.

Features

480v x 800h Solar-Intelligent, H2D LCD monitor. The daylight viewable monitor requires no sunshield while viewing outdoors, though it is recommended that you use the provided visor and turn the monitor away from direct sunlight when using outdoors during the day. The ultra-thin monitor housing is sealed with a rubber gasket and all plug-in connections are potted to protect the internal electronics from the harsh elements.

Sony CMOS HD Image Sensor - .01 lux - Sony's next generation low-light camera. In order to create an ultra-clear, HD picture. This camera offers a 90° angle of view, giving the user a wide coverage area for maximum visibility.

The Manta camera design matches the high-quality Sony CMOS HD Image Sensor. This lighting option incorporates MarCum's exclusive Dark water lighting technology. Dark-water technology greatly reduces particulate reflection and increases viewing distance by positioning the lights above and behind the actual camera lens. For added open water stability or to use as a down view camera, the fin (included) snaps into the rear of the Manta camera housing with ease.

Getting Started

Remove the Quest HD L from the packaging and place it on a level surface with the MarCum Technologies logo facing towards you and right side up. Once opened, loosen the knobs on either side of the monitor by turning each one counter-clockwise a considerable distance. Then depress both knobs by pushing inwards and hold in place. This releases the lock on the monitor angle.

While depressing the knobs with the base of your palms use the index fingers of each hand and gently lift the monitor up to the desired viewing position and release tension on the gimbal knobs. Gently tighten the knobs until they are snug. The battery, camera and cable are now accessible behind the monitor. It's easiest to remove the hook and loop straps and unzip the soft pack case. The battery has a wiring harness with "piggyback" terminals attached. The power cord from the monitor attaches to this; the positive (red) terminal should already be attached. You should only have to attach the negative (black) wire to the negative (blue) terminal, and you are ready to go. The other cord coming from the battery is the port to attach your battery charger, there is no reason for you to disconnect any of these wires unless you are going to remove/replace the battery.

To turn "on" the Quest HD L, press the power key which is located on the keypad on the lower left side on the front of the monitor. After pressing the power key, a small red LED indicator light will illuminate. The monitor will now display a picture. The camera can now be unwrapped from the cable spool and deployed into the water to the desired depth.
The depth of field (distance the camera can see underwater) depends on the clarity of the water and available light at the depth the camera is used. In clear water, the depth of field can be many feet but in cloudy, muddy, or stained water the depth of view can be reduced to only a few inches

due to particles suspended in the water. Dirty or muddy water and/or low light penetration can detract from the quality of the color picture. Optimum color quality will result from clear water and adequate light penetration.

NOTE: As far down into the water you can see the camera, is how far out the camera will be able to see.

Adjusting the Monitor and On-Screen Display (OSD) Settings

Monitor Screen Adjustments

The Quest HD L monitor has four different adjustments that can be made to enhance the image on the monitor to the user's preference. (Note: The Quest HD L has been pre-set with factory defaults for normal viewing.) To access the settings menu, press the menu key on the digital keypad. The settings menu will be displayed on the screen (Note: if you wait too long before selecting and adjustment, the menu screen will time out and disappear).

To change between on-screen adjustment choices

When adjusting for Brightness, Color Kill, Color, Contrast, Reset and Exit. Press the menu key to pull up the menu for adjusting these settings. The selected on-screen adjustment will be highlighted on the LCD screen. Once you have the desired selection highlighted; use the Up and Down arrows to increase/ decrease or turn on/off the desired selection. To accept the changes, press the menu button to highlight the Exit and use the up or down arrow to exit. Otherwise wait for the menu to time out and the setting change is saved. If the adjustment did not set. Go back to the menu options and return to the setting that would not adjust and try readjusting it.

Brightness – Increases how bright the individual pixels on your screen will illuminate. Different lighting conditions and water clarity will affect how you may want the brightness to be set. Too much "Brightness" can cause the image to have a washed-out look.

Color – Increasing the color saturation will increase the vividness but can make the picture look darker overall. Decreasing the color saturation will make the colors look washed out and gray.

Contrast – Contrast is the difference in brightness between lightest and darkest tones in a picture. A picture with too much contrast has highlights (lighter tones) that are too bright with no detail, and shadow areas that are too black. A picture with too little contrast looks dull, with no true blacks and more grayish highlights. Different water clarities coupled with the amount of light available will affect the contrast. Adjust the contrast to the desired setting for the best overall picture.

Color-Kill – This feature allows you to switch between color and black and white with the push of a button. To access Color Kill, find in the main menu and select 'yes' to activate (turn on black and white). For viewing in low-light, dirty water, or after dark, Black and White viewing is recommended for optimal viewing. Clear or good water clarity and daylight viewing is optimal for viewing in color.

NOTE: The Color-kill feature will turn on automatically when the camera's light sensor does not detect enough light for optimal color viewing. This can happen in low light conditions, in deep water, or when the ice is very thick and/or covered with snow.

On-screen Display (OSD) Adjustments

The MarCum Quest HD L underwater viewing system includes the most technically advanced features available in an underwater fishing camera. This system incorporates a variety of sensors and an On-Screen Display capable of displaying water temperature, water depth, battery status, and the relative direction heading of the camera.

The Manta camera contains a digital temperature sensor, a pressure sensor for measuring camera depth, and an electronic compass sensor used to determine the heading of the camera.

The heading is displayed around the perimeter of the screen indicates which direction the camera is pointing “relative” to the direction the monitor is facing. For this indication to be accurate, the camera must be suspended by the cable, and the monitor must be on a level surface. If either the camera or the monitor rotates, so will the arrow. An arrow at the top center of the screen indicates that the camera and monitor are facing in the same direction. An arrow at the left indicates the camera is pointing to the left relative to the direction the monitor is facing. Down indicates behind, and right indicates to the right. When enabled, the temperature and depth are also displayed along the top. The battery status icon will always appear in the top right-hand portion of the screen.

Display: Each press of the **OSD/DISPLAY** button will toggle the unit through its various display modes:
Mode 1 (Direction, temperature, depth) – default
Mode 2 (Direction and depth)
Mode 3 (Direction only)
Mode 4 (all OSD off)

F/C: Each press of the F/C button will alternate the units between Fahrenheit and Celsius. In addition, with each initial press of the F/C button, the battery voltage is displayed briefly.

CALIBRATION: The system contains sensors which measure water temperature, relative direction, and depth. The temperature sensor is pre-calibrated. The compass sensor may be calibrated with a sophisticated calibration routine contained within the microprocessor software. The Depth sensor automatically calibrates itself, and can optionally be manually zeroed.

Compass Calibration: Pressing and holding both temperature and OSD buttons simultaneously for several seconds will cause the unit to enter Compass Calibration mode. This is only necessary if the user suspects the camera or monitor compasses have become magnetized for some reason, or if the direction appears to be incorrect. Tilt of the camera, such as “nose down”, or “nose up”, will also cause direction errors. Calibration can be used to compensate for a change in tilt, such as from the addition of weights or attachment of fins.
Step 1 – Press and hold the F/C (Ft/M) and the OSD DISPLAY buttons until "Calibrate the display" pops up on the screen.
Step 2 – Rotate the monitor 720 degrees clockwise. Once complete press the F/C (Ft/M) and the OSD DISPLAY buttons at the same time to enter the next step. A menu will pop up saying "Calibrate the camera".
Step 3 – With the camera suspended below the monitor hanging horizontally rotate the camera 720 degrees clockwise. Once complete press the F/C (Ft/M) and the OSD DISPLAY buttons at the same time. A menu will come up saying "Calibrated". Now your complete. The compass sensors are now calibrated.
Depth Calibration: If the depth display ever indicates a non-zero depth with the camera out of the water, possibly due to a change in barometric pressure. To reset the depth calibration, power the system down and back on again.

Utilizing the HD video out jack: On the back of the monitor, there is a HD video out jack that supports a version 1.4 interface. This can be used to attach a larger monitor, or an external recording device. There are many compact recording devices available that will work great for capturing video.

ICE FISHING APPLICATION

The Quest HD L can be used to search for that perfect weed line or locate the crib or rock pile where fish will generally school, entertain the kids, or as the perfect tool to enhance your ice fishing experience. To use as a search tool, drill a series of holes through the ice in the location

from hole to hole. Drop the camera down each hole in search for the best spot or until you locate fish. Keep your eye on the directional and depth indicators to pinpoint the fish's hideout. Once you've located the spot, drill a hole 3- 4 feet away from the hole you're actually going to fish in. Set the Quest HD L on the ice and lower the camera down the second hole. To assist in keeping the camera at the desired depth and direction, it is recommended that an Automatic Camera Panner be used. Once you send a lure or bait down and locate it with the Quest HD L, you are ready to fish. The depth, direction and temp indicators on the Quest HD L can be changed at any time by pressing the OSD/Display button. The Quest HD L also includes a down viewing fin that snaps into the back of the Manta camera. Once the fin is attached, the camera cable can be inserted through the cutout at the rear of the fin and locked into place. It is recommended that you leave about six inches of excess cable, forming a loop, before locking the cable into place. The camera can now be lowered into the hole to view what is directly below you. This can be very helpful while fishing in shallow water.

OPEN WATER APPLICATION

To locate fish, look for treasure or find that perfect spot, simply turn the camera power ON and drop the Manta camera into the water. If you are drifting with the wind or using a trolling motor with the Quest HD L, attach the supplied trolling fin to the rear of the Manta Camera for added stability. The internal weight is enough to keep the camera down while the fin assists in keeping the Manta Camera tracking straight through the water. The direction, temp and depth indicator combined with the solar intelligent H2D display makes this the ultimate search tool. Learn in minutes what would normally take a lifetime to reveal through traditional sonar. Moving along at speeds of 1 mph or less will give the best viewing opportunities. It is a good idea to have a GPS and/or a marker buoy at hand to quickly mark any hotspots for future reference. This is a great way to learn new ice fishing hotspots. Imagine finding a rock pile that no one else on your lake knows about! Always use extra caution when viewing around underwater obstructions like boulders, cribs, or wrecks. If the camera becomes hung up, back up from the direction you were traveling from and slowly try to back the camera out of the snag. DO NOT pull directly upward with force unless all other avenues have been pursued.

If you spend a lot of time using your viewing system from your boat, it is inevitable that you will encounter some weather. While your Quest HD L system is designed to be used in a variety of conditions in the outdoors, it is recommended that anytime you experience precipitation that is more than a light rain, you should immediately turn off and stow your entire viewing system. At no time should the monitor be in direct contact with large amounts of water. Should your viewing system become wet, it is unlikely that any harm will come to it, but make sure you get the entire system completely dried out as soon as possible.

Installing and Using the Visor

Your Quest HD L includes a visor that was custom designed to fit snugly around the monitor. This visor will help to shroud the monitor and improve your viewing during sunny conditions. The visor is easily attached or removed by using the hook and loop fasteners. It is strongly advised that you install the hook side of the hook and loop fastener to the monitor while still at home.

LITHIUM BATTERY CHARGING

Your MarCum Quest HD L comes with a 3-stage battery charger. This style of charger has proven to be the most effective and easiest to use of all charging systems available. Since this is a 3-stage charger, there is no danger of overcharging your battery. When properly cared for, a LiFePO4 battery will last for 2000 charge cycles. Batteries are made to be used, and they need to be used to make the most of them. The most important thing you can do is to promptly recharge your battery after each use. Not charging your battery immediately after use is the number one thing

you are interested in fishing. The Quest HD L is small enough to hold in your arms while walking that leads to battery failure.

For safety reasons, it is recommended that you place your system on a flat, hard surface like cement or tile when charging it, away from any flammable materials. Be sure to disconnect the charger from the wall when not in use, and avoid leaving your battery hooked up to the charger for extended periods of time.

When you get home from a trip, put your battery on charge right away and leave it there overnight, or for around 4-6 hours. Likewise, on the night before an ice fishing trip, put it on the charger again, just to make sure. Again, there is no danger of overcharging your battery.

We often talk to people who hesitate to charge their battery after each use for fear that the battery will develop a “memory” and this will lead to a shortened run time—THIS IS FALSE!!! ALWAYS CHARGE YOUR BATTERY AFTER EVERY USE!!! Be sure to use the charger that came with your system. Using a larger charger, like you would use on a car, truck, RV, or boat is likely to cause damage to the battery. There is really no danger of overcharging your battery with a low amp charger, and most chargers automatically go into “maintenance mode” once a full charge has been achieved.

TO CHARGE YOUR BATTERY:

Your battery has a wiring harness attached to it that has “piggyback” terminals on it, enabling you to keep the power cord from the unit attached to the battery always, as well as having the wiring harness with receptacle for your charger attached always. To charge, simply couple the end of the charger with the end of the wiring harness. It is normal for a green light to appear on the charger now if the charger is plugged into the battery only. It is also normal for the light on the charger to be green if it is just plugged into the wall. When it is plugged into the wall and battery, you will see a red LED light appear on the charger. If the light is red, the battery is being charged. When your battery is fully charged, this red light should change to green. If it is time to go fishing and the light has not turned green, go fish and try to allow a longer charging period next time.

Batteries are an expendable item, and must be replaced periodically. The batteries that we use are the Lithium Iron Phosphate (LiFePO4) variety, they are 12-volt 10-amps. The more amps the battery has, the longer it will run on a full charge. Your MarCum can be powered off any battery that is 12 volts, even a large automotive or deep cycle battery.

If you are having difficulty with the charging process, please see the Charger Troubleshooting section on our website, www.marcumtech.com/support.

If you need to remove the battery, slide the power cord leads from the battery. Remove the strap that is holding the battery in place and lift the battery out. To replace the battery, place a new battery of similar specifications into the battery compartment and secure it with the Velcro strap and re-connect the positive and negative terminals.

LiFePO4 Long Term Storage

As the ice fishing season ends many of us find ourselves organizing, cleaning, and drying out our gear before packing it up for storage. It is important to remember the LiFePO4 batteries are chemically different then SLA batteries. When it comes to the LiFePO4 battery in your system and storage make sure to:

- Deplete your charged battery down to 30-50% charge.
- Remove the battery from the system; wipe dry the contact of the terminals along with the outside of the battery.
- Store in a Cool, Dry Place (i.e., Not your garage)
  - A place with ambient temperature between 40-80°F (4-27°C).
  - Stored dry and away from sources of moisture to prevent rusting of the terminals.
  - Away from heat sources, open flames, and other flammable explosive material (i.e., running furnaces.).

One Year Warranty

MarCum warranties this product to be free from defects in materials and workmanship for one year from the date of purchase. This warranty applies to customers who properly complete the online product registration form found on the MarCum Technologies Website: www.MarCumtech.com/support.
MarCum Technologies will repair or replace any components that fail in normal use. Failures due to abuse, misuse, unauthorized alteration, modification, or repair are not covered. The warranty is valid only for the original owner who purchases the unit from an authorized dealer. An original sales receipt dated within the warranty period is required for all warranty claims.

To best serve our customers, MarCum Technologies has set a standardized battery warranty policy. Battery warranty coverage requires a proof of purchase. Please see our website, www.marcumtech.com/support for full details on warranty coverage.

HOW TO OBTAIN SERVICE

If your system is malfunctioning, check the support section of our website. You may find that the solution to your problem is something you can resolve yourself. If you need to send it in, there is no need to contact our office. Getting repairs made is as simple as going to our website, www.Marcumtech.com clicking the support tab and then filling out the MarCum Warranty Claim.

Once you have completed and submitted a warranty claim, package the unit as described on the website and ship it to us.

If your system is out of warranty, it is a simple as going to our website and filling out a MarCum non-warranty claim. Once you have completed the non-warranty claim, package the system as described on the website and ship it to us. All non-warranty repair pricing is determined after the system is received by us.

Some people are more comfortable calling for shipping instructions. During peak ice season, we sometimes receive a high volume of calls, making it impossible to get to all customers who phone in. For this reason, strongly consider using the on-line forms at www.marcumtech.com/ support or the "Live Chat" option.

OUR ADDRESS:
MARCUM TECHNOLOGIES
ATTN: SERVICE DEPT.
3943 QUEBEC AVE NORTH
MINNEAPOLIS, MN 55427

Please send your email inquiries to service@marcumtech.com
If you are unable to use email or INTERNET, you may call us at 763-512-3987.
Our office hours are Monday – Friday, 8 – 4 Central Time.
International callers may use 888-778-1208.

The customer is responsible for shipping costs associated with returning the system to MarCum Technologies. MarCum will pay for shipping the repaired system back to the customer while it is still under warranty. All out of warranty services will be charged a fee for service and shipping which must be paid in advance. The unit should be securely packed and shipped “prepaid freight” and insured to MarCum Technologies. It is the customer’s full responsibility to track their products sent out in the mail or other forms of delivery service. MarCum Technologies will not be liable for packages lost in route to us. Unless specified otherwise, do not include batteries or other accessories when returning the product for repair. MarCum Technologies will not be responsible for lost or damaged accessories. Turnaround time can vary, on average it is about 1 week.

MarCum User Manuals are available for downloads from
https://marcumtech.com/manuals