



EM50 External Monitor

Setup, Use, and Care Guide

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This manual and current revision is available in 8.5 x 11 size and full color at

<http://www.gateshousings.com/documentation.html>

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Introducing the EM50 External Monitor

Congratulations on owning a new Gates product: the EM50 External Monitor. You've selected an underwater imaging tool that will provide years of value and reliable service.

Please read through this entire guide to learn about the EM50 so you can get the most out of this imaging tool. In this section, we'll introduce you to the features of the EM50 so you can get started.

Features

The EM50 has several key features:

- **High Resolution.** 800 x 480.
- **HDMI** for broad camera compatibility.
- **Neutrally Buoyant.** The EM50 is not top heavy and it won't disrupt your housing buoyancy / trim.
- **Battery Life.** The EM50 will operate for 6-8 hours on a fully charged battery.

Warranty Disclaimer

The EM50 External Monitor is a tool that, like any tool, requires knowledge and understanding to be effective.

Your responsibility is to learn the proper setup, use and care of the EM50. Because we can only provide you with the information necessary to do so, Gates does not warrant the contents of your housing (e.g. electronics) under any circumstance.

We warrant the EM50 as an image acquisition tool for a period of 2 years.

Gates does not warrant optical performance or image quality.

If you have any questions about the setup, use and care of the EM50, contact Gates directly. Details are in section 4.

Unpacking the EM50

After you remove the EM50 from its shipping container, carefully inspect it for missing parts or damage that may have occurred during shipment. If you discover any discrepancies, contact Gates or your dealer immediately for assistance.

Standard Parts

- **EM50 External Monitor.**
- **Spare O-Ring Kit.**
- **O-Ring Removal Tool.**
- **Two Lithium-Ion batteries.**
- **One LiON charger.**
- **HDMI Adapter Cable** (specific to your underwater housing).

Optional Parts

- **Shade Extension(s)**



1: Cautions

- ▶ **USER RESPONSIBILITY.** This Setup, Use and Care guide contains important detailed procedures for setup and use of the EM50. It is the user's responsibility to read, understand and employ these procedures. Failure to do so can result in poor or non-operation of the EM50 and may void your warranty.

Contact Gates if you have questions regarding this manual or using the EM50.

2: EM50 Setup

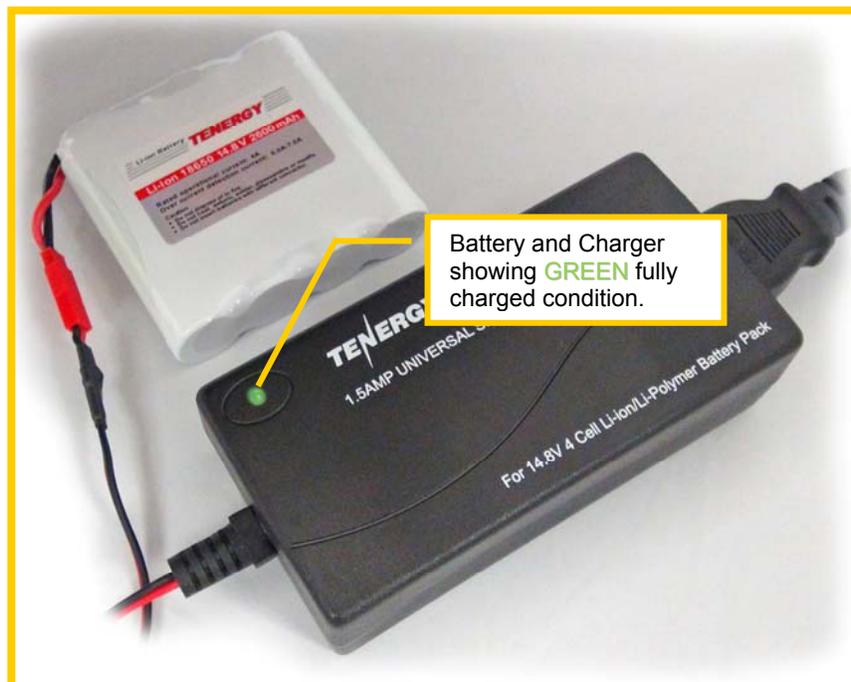
The EM50 requires complete and thorough setup prior to use.

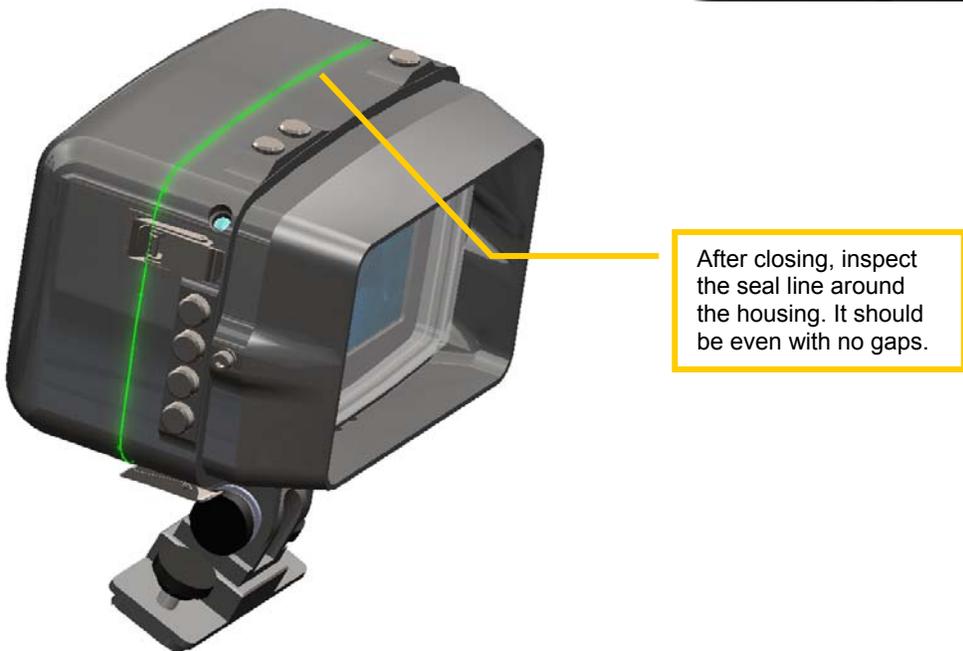
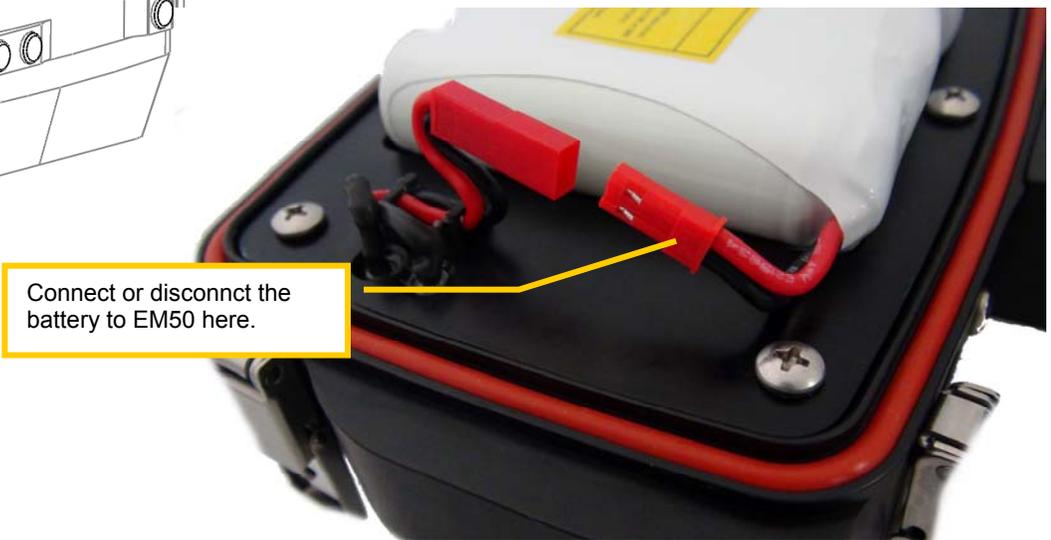
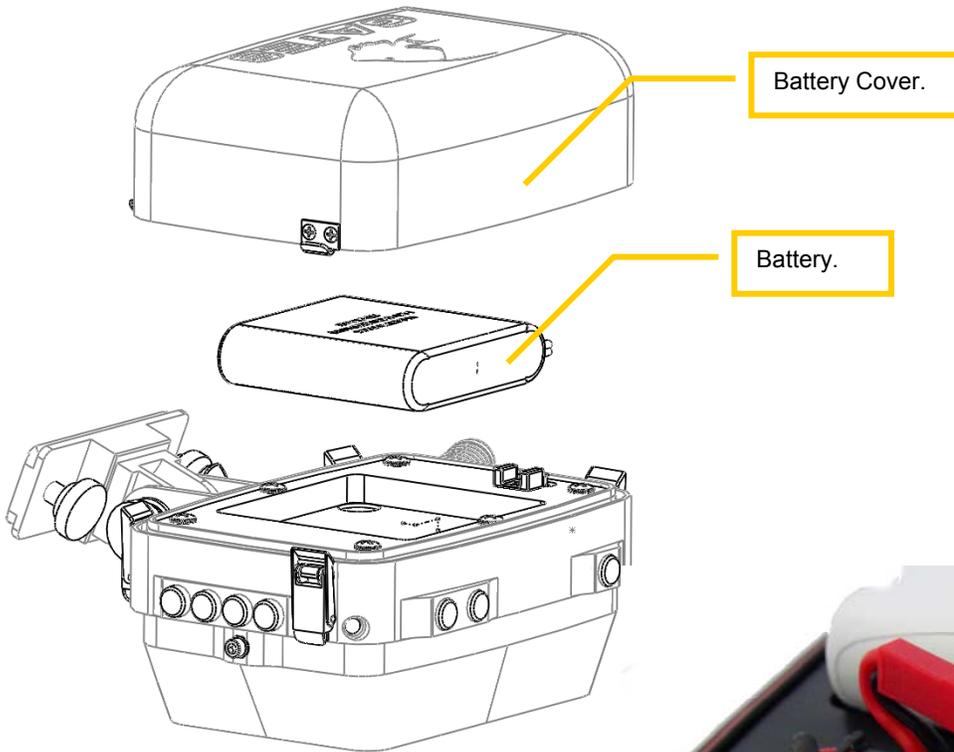
Battery and Charging

- ❑ **Charge a battery.** The EM50 comes with two LiON batteries that provide up to 6 hours of continuous operation. Plug one into the charger. The LED on the charger will indicate either GREEN (fully charged) or RED (charging).

The batteries will take up to 2 hours to fully charge.

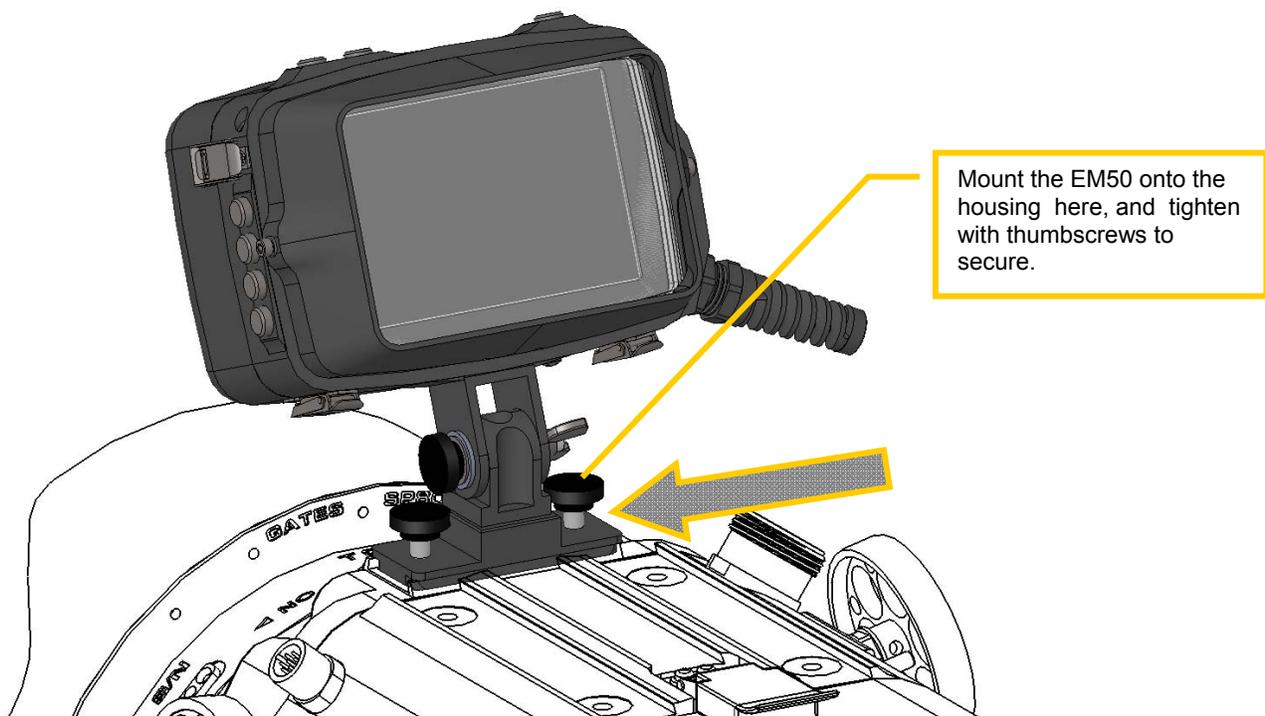
- ❑ **Open the housing .** Position the EM50 with the Battery Cover facing up as shown. Release the four latches and the battery cover will separate.
- ❑ **Install and plug in the battery.**
- ❑ **Close the housing.** Orient the Battery Cover and mate to the EM50.
- ❑ **Secure the latches.** Close opposing latches at the same time.
- ❑ **Check seal line.** Ensure that the seal line around the perimeter has no gaps.

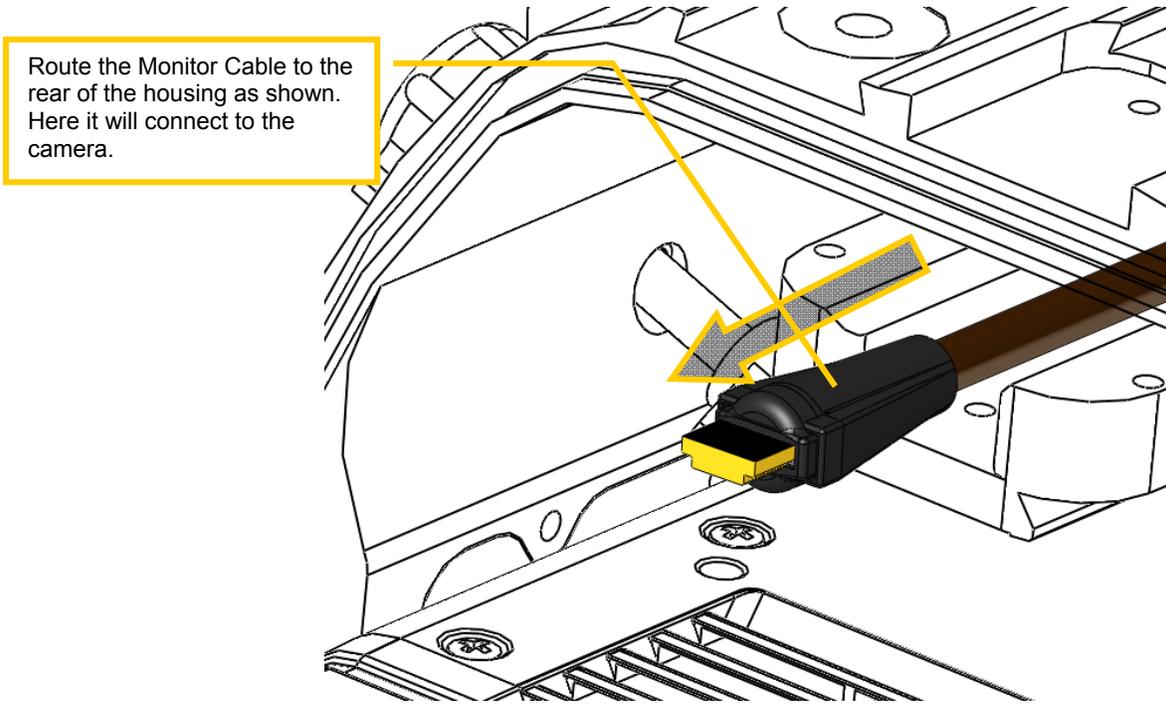
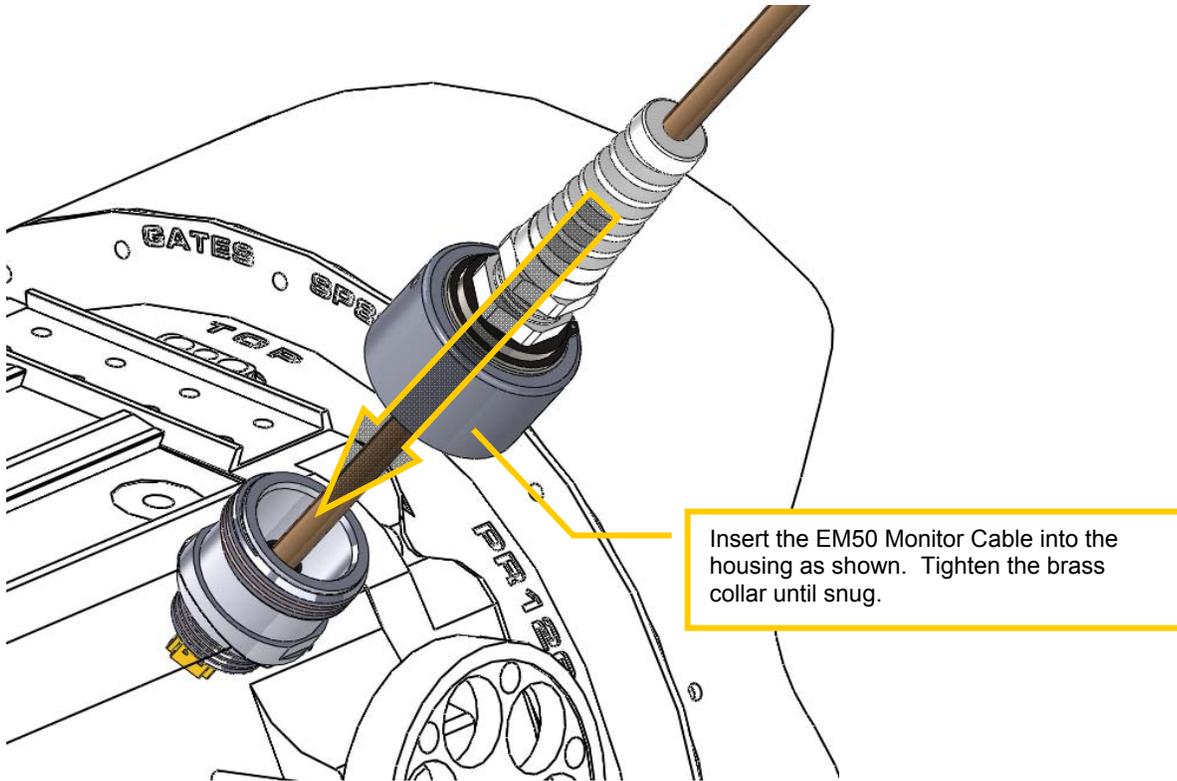


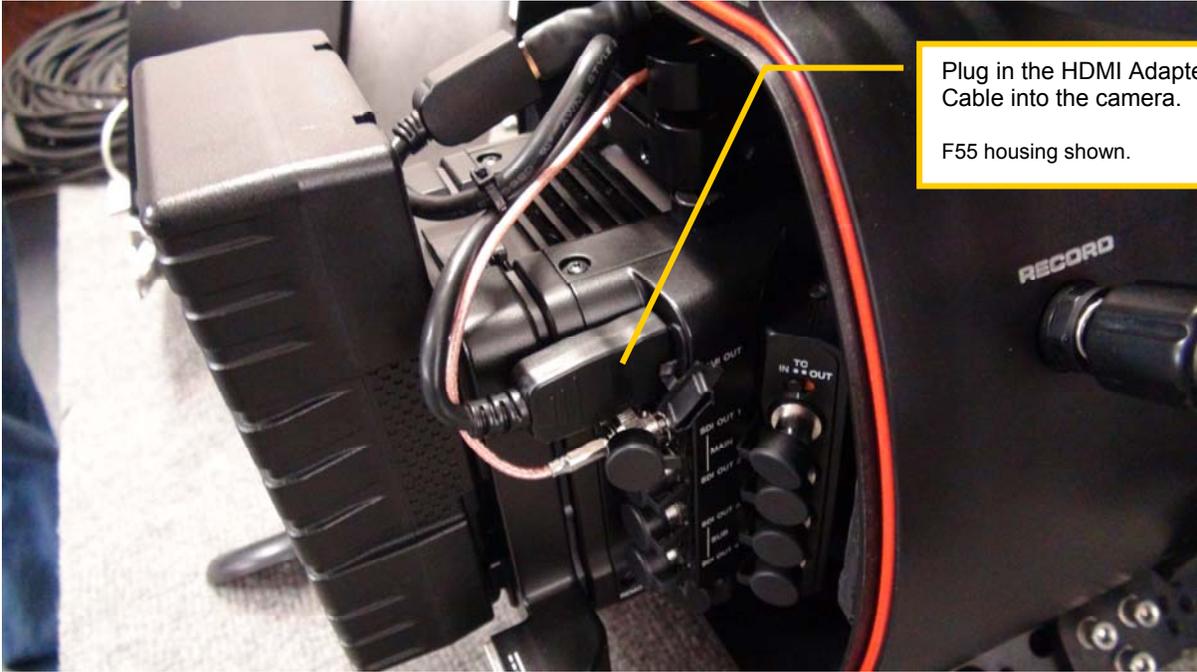


Monitor Mount / Video Connections

- **Mount the EM50 monitor** . Secure the monitor to the top of the housing shell. An example is shown below. Tighten the thumbscrews to secure.
- **Insert the Monitor Cable into the housing.** Refer to the illustration which shows the F55 Housing. The EM50 monitor cable is a 'pass through' type that inserts into the bulkhead opening on the upper right side of the housing. Insert the HDMI connector and route the cable to the rear of the housing to the position shown in the next illustration.
- **Tighten the brass collar** until snug.
- **Connect to the camera.** An HDMI adapter cable is supplied with your EM50 kit to make the final connection from camera to EM50.



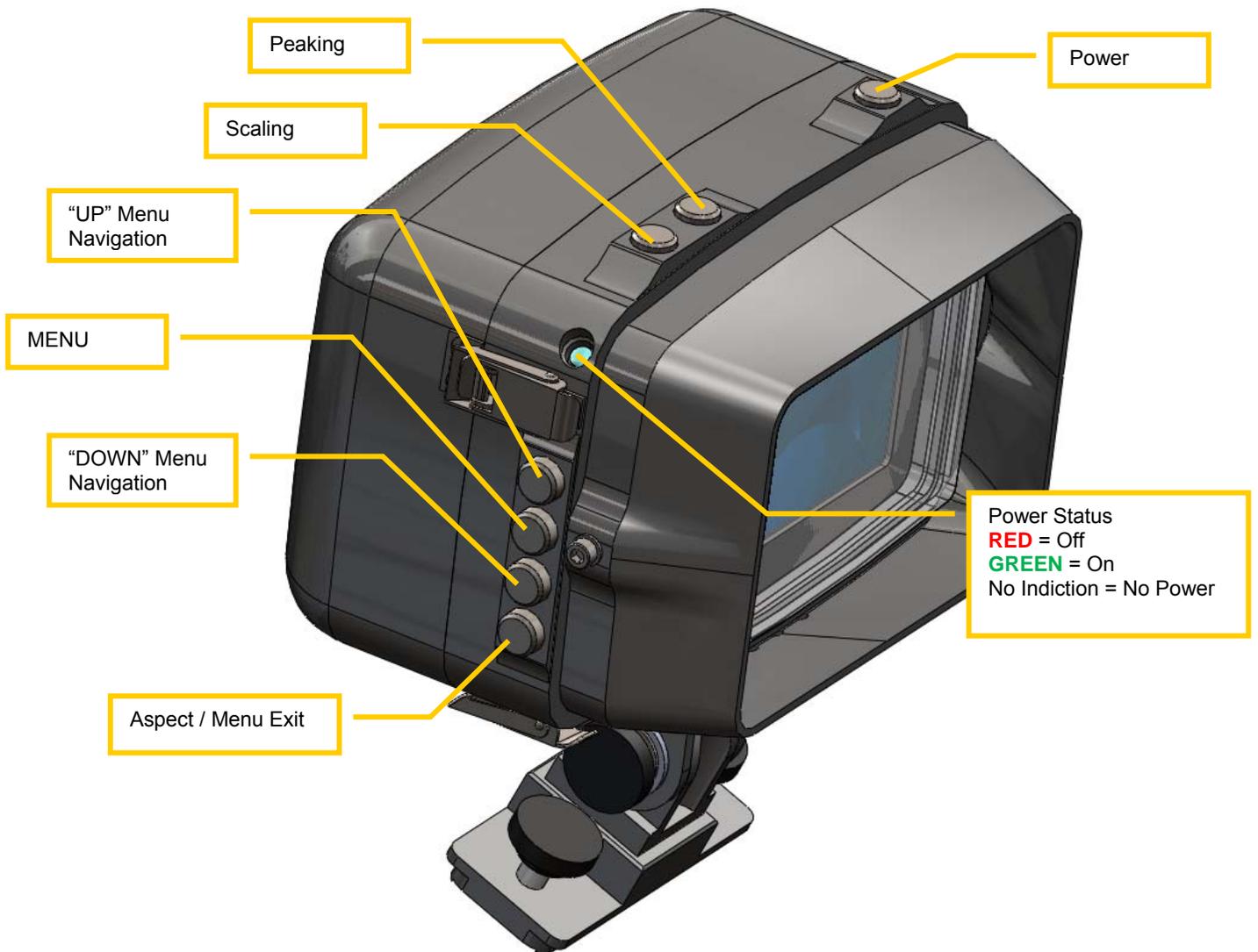




Plug in the HDMI Adapter Cable into the camera.
F55 housing shown.

EM50 Controls

- **Controls.** See the image below for the functions assigned to each Pushbutton control.



EM50 Operation.

- **Scaling.** This function is useful if the camera supports scaling.
- **Menu / Navigation.** Within the Menu are the following features / adjustments:
 - **Contrast.**
 - **Brightness.**
 - **Color Adjustment.**
 - **Menu Duration.** Adjust duration of menu timeout.
 - **Guides.** Different framing guides are available.
 - **Bluegun.** A color calibration tool.
 - **Underscan.**
- **Peaking.** This is a focus tool. When activated, elements of the image in focus are outlined in color.
- **Aspect / Menu Exit.** When not within the Menu, this function cycles through various aspect ratios available to match the camera aspect. When within the menu, press this button to exit.
- **Battery Life.** The EM50 will operate up to 6 hours on a fully charged battery.

EM50 Travel / Transport

Some notes about traveling with the EM50

- **Disconnect Batteries.** While you can transport the EM50 with a battery installed, disconnect the battery from the EM50 as noted above in Section 2.
- **Protect connectors.** Cover any housing-to-camera connectors to protect them from damage during transit.
- **Packing.** Ensure the complete system is packed well in transport case(s).

3: EM50 Maintenance

Housing Care and Maintenance

Proper care of your Gates housing is important to provide you reliable operation and long life. You'll find all the guidelines in the "Housing Care and Maintenance" document included with your Gates housing. You can also find it on Gates web site at www.GatesHousings.com.

O-Ring Care and Maintenance

Your Gates EM50 External Monitor has 1 serviceable o-ring. It is located on the main housing where the Battery Cover mates. Its color is orange.

Servicing the o-rings is easy and covered in the "Housing Care and Maintenance" document in this package. It can also be found on the Gates website at www.gateshousings.com.

- ▶ **CAUTION:** Do not lubricate the large orange o-ring! It is a special silicone o-ring and can be damaged by petroleum-based lubricants.

- ▶ **CAUTION:** Never use metal tools or objects for removing o-rings!

4: Customer Support

Should you have any questions about the EM50 and its operation, please contact Gates at the numbers below.

Email: Customer.srvc@GatesHousings.com

Web: www.GatesHousings.com

Phone: 858.391.0052

Fax: 858.391.0053