



GT14 Underwater Imaging Light

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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1: Introduction

Congratulations on owning a new Gates product: the GT14 Underwater Imaging Light. You've selected an underwater tool that will provide years of value and reliable service.

Please read through this entire guide to learn about the GT14 so you can get the most out of this imaging tool. In this section, we'll introduce you to the features of the GT14 so you can get started.

Warranty Disclaimer

The GT14 Underwater Imaging Light (GT14) 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 GT14.

We warrant the GT14 housing shell for two years. Electronics are warranted for one year. Batteries are warranted for 6 months.

Gates does not warrant optical performance or image quality.

Full details of [Gates Limited Warranties](http://www.gateshousings.com/gates-warranty/) can be found online at <http://www.gateshousings.com/gates-warranty/>

If you have any questions, contact Gates directly. Details are in section 8.

Unpacking the GT14

The items included in your kit are listed below. If you discover any discrepancies, contact Gates or your dealer immediately for assistance.

Kit Components

- | | |
|--|--|
| ☐ GT14 Underwater Imaging Light | ☐ Silicone lubricant |
| ☐ Charger | ☐ Spare main seal o-ring |
| ☐ Battery | ☐ This instruction manual |

Optional Components

- | | |
|--|---------------------------------------|
| ☐ Spare Battery | ☐ Carry Handle |
| ☐ Seal Check Rear Cap | ☐ Filter |

2: Cautions

- ▶ **INSTRUCTIONS.** Read this manual. Keep this manual. Heed all CAUTIONS and WARNINGS. Follow all instructions.
- ▶ **SAFETY.** The GT14 batteries contain Lithium Ion (Li-Ion) and should be handled, transported and operated in accordance with applicable laws and this guide. Use only the supplied charger for battery charging.
- ▶ **HEAT.** This product should be kept away from heat sources such as heaters, stoves and radiators that produce heat.
- ▶ **USER RESPONSIBILITY.** This Setup, Use and Care guide contains important detailed procedures for setup and use of the GT14 Underwater Imaging Light. 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 GT14 and may void your warranty.
- ▶ **SERVICING.** Do not attempt to service this product by yourself as opening or removing covers may expose you to dangerous voltage or other hazards. Refer all servicing to qualified service personnel.
- ▶ **TRANSPORT.** Follow all applicable laws and safety precautions when transporting this product. See section 6 Safety Precautions for more information.
- ▶ **IN-WATER OPERATION ONLY.** Except for momentary verification of operation as noted in this manual, the GT14 is designed for in-water use only. Operation in air may result in overheating, damage and other hazards.

3: Setup

Charge the battery

- Plug the charger into a wall outlet.
- Plug the charger into the battery as shown.
- Charge time:
 - Full: 3 hours
 - 80% : 75 minutes
 - 40% : Approx 30 minutes (for storage)

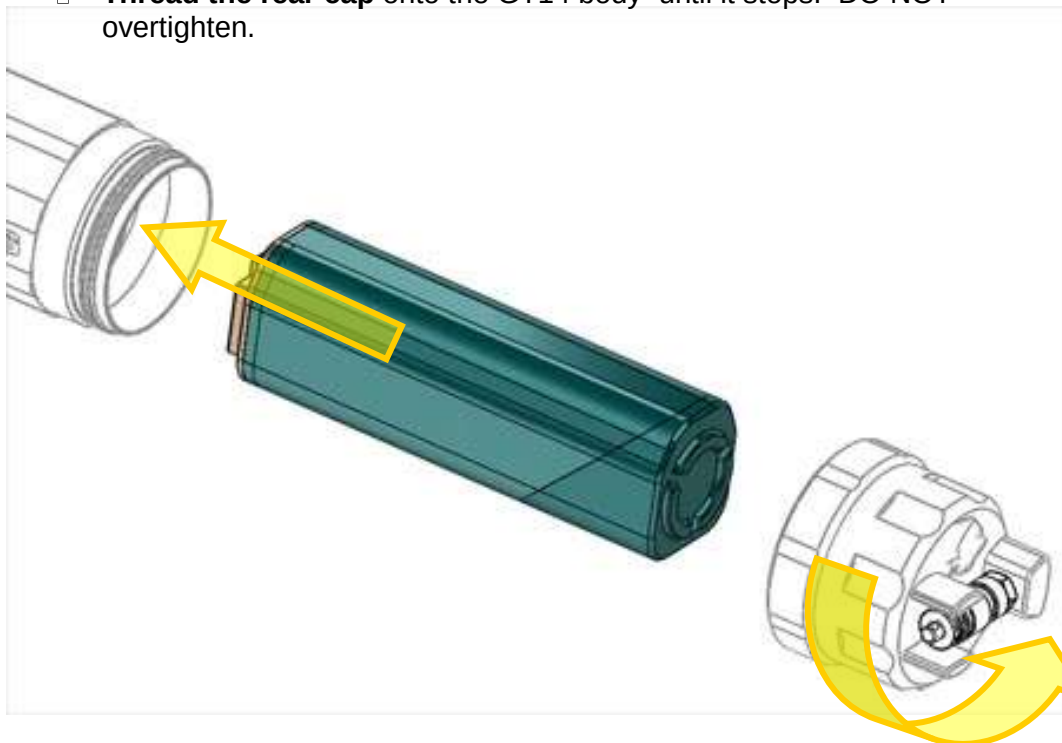


Install the battery

- **Remove the rear cap** by turning counterclockwise.
- **Install the battery** as shown and fully seat into the GT14.

Note that the **battery is keyed** and can only be inserted in the proper orientation.

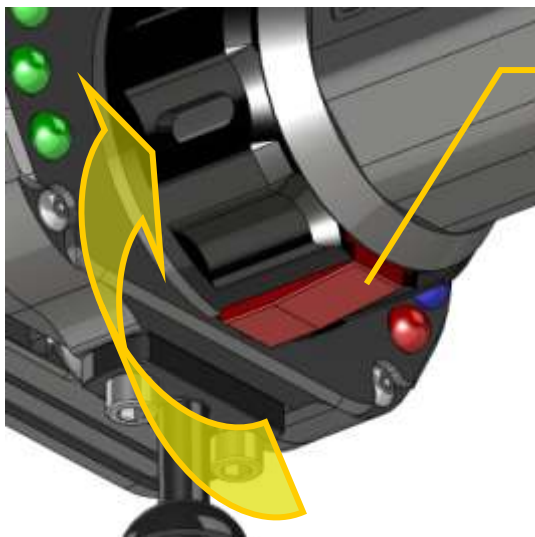
- **Thread the rear cap** onto the GT14 body until it stops. **DO NOT** overtighten.



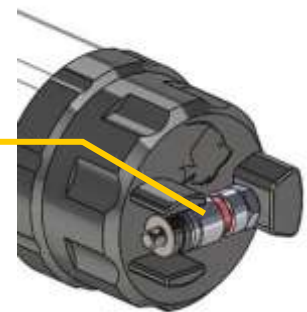
4: Test

Verify Operation

- **Depress the lockout switch** and rotate the Power Ring clockwise one stop. This position is 'Scouting Mode', a very low power light output (see section 5 Operation for more details).
- **Verify** that the LED lights illuminate. **DO NOT** look at the LED's.
⚡ CAUTION: DO NOT LOOK DIRECTLY AT THE LED'S. They are extremely bright.
- **Verify** the Light Level and Fuel Gauge indicators are operational. See section 5 Operation for more details.
- **Turn off** the GT14 light.



Press the lockout switch and rotate the Power Ring one stop clockwise. Verify the LED's illuminate and the indicators are operational.



Seal Check fitting on optional Rear Cap.

Seal Check

- **If you have the optional Seal Check cap** then use your Seal Check kit to verify seal integrity on the GT14. Use 100 mB / 3 in HG vacuum.

⚡ CAUTION: DO NOT DRAW MORE THAN 150 mB / 4 in HG VACUUM. Excessive vacuum can damage the GT14.

⚡ CAUTION: DRAW VACUUM CAREFULLY. Exercise care when drawing a vacuum. The low internal air volume of the GT14 means a vacuum is drawn very fast.

5: Operation

Power On / Levels / Run Time

The GT14 has 5 Power levels as noted in the chart. Actual run times can vary depending on initial battery charge condition, temperature, age, and usage (number of cycles)

	LIGHT LEVEL				
	1	2	3	4	5
	(SCOUTING)	(LOW)			(HI)
LUMENS	400	5600	8000	9700	14000
APPROX RUN TIME	>10 HRS	75 MIN	50 MIN	40 MIN	30 MIN

Power level 1 is 'Scouting Mode'. It is intended for night diving where very low light is required for navigation and spotting. The remaining light levels are for imaging with substantially higher light output.

Turning on the GT14 is easy: simply depress the lockout switch on the Power Ring and rotate either direction. Each power level will have a tactile detent to indicate a position.

You can rotate the Power Ring clockwise to Level 1 or counter-clockwise to Level 5.

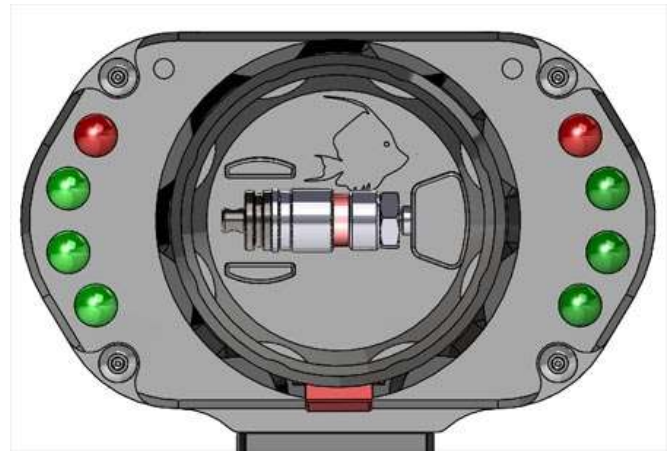


Indicators

The GT14 has 8 indicators, 4 on each side. They are mirrored to show the same Light Level or Fuel Gauge status on each side. This is convenient for monitoring the GT14 status regardless of which side of the housing the light is mounted.

The main indications are:

- **Light Level.** Levels 1 through 5 are indicated in Blue and Magenta color.
- **Fuel Gauge.** Remaining battery time is displayed in Green and Red color.

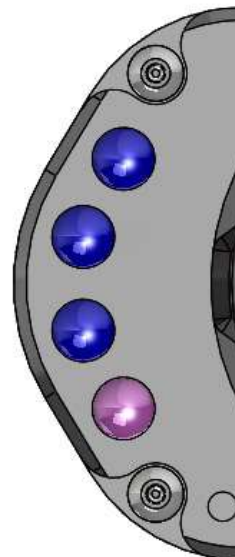


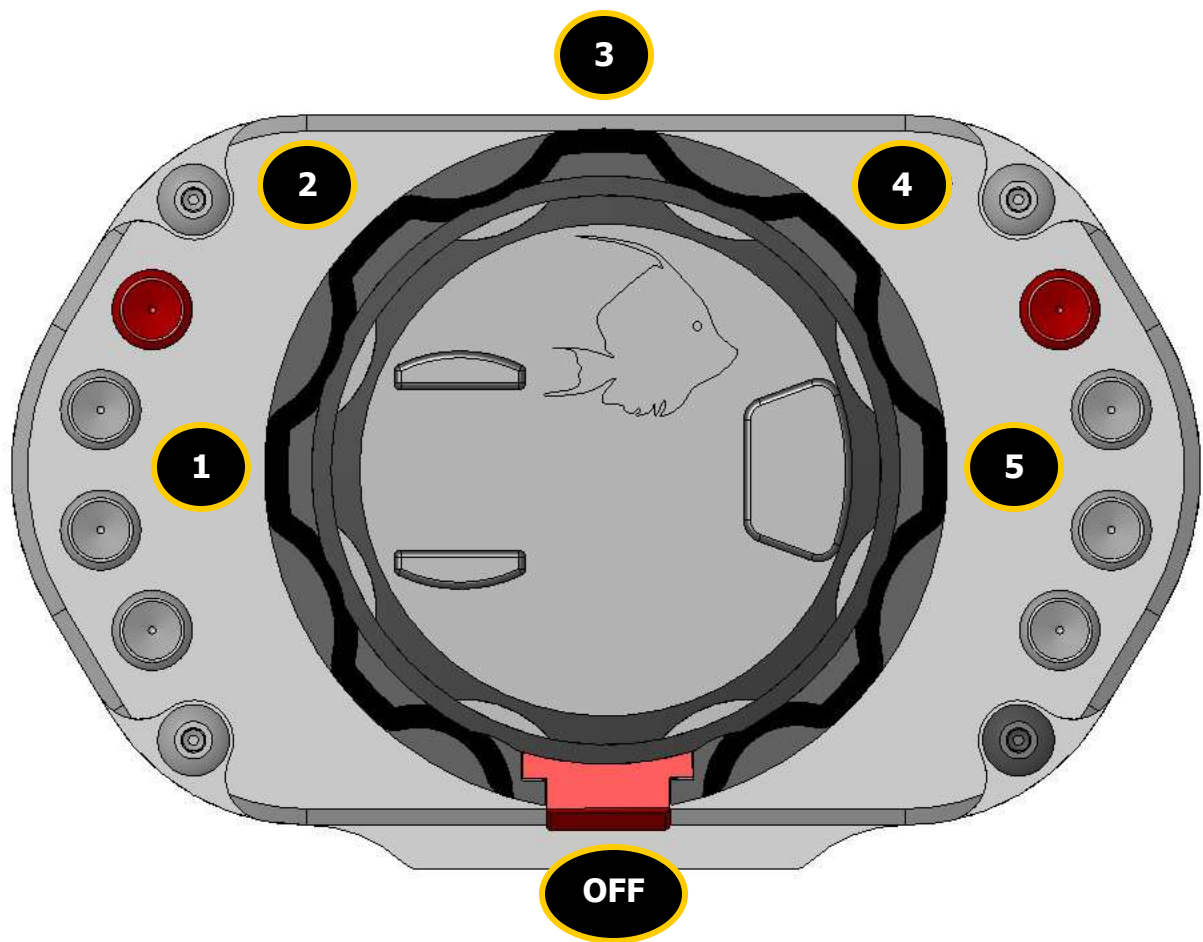
When changing Light Levels, the indicators will illuminate Blue and Magenta for 3 seconds corresponding to the current setting.

After 3 seconds the indicators will switch over to Fuel Gauge and remain in this state until you change Light Levels again.

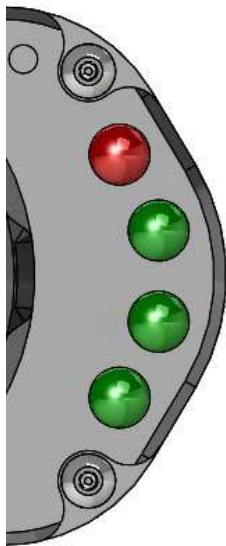
The specific Light Level and Fuel Gauge indications are noted in the following charts.

	LIGHT LEVEL				
	1 (SCOUTING)	2 (LOW)	3	4	5 (HI)
LED COLOR	-	-	-	-	BLUE
	-	-	-	BLUE	BLUE
	-		BLUE	BLUE	BLUE
	MAGENTA	BLUE	BLUE	BLUE	BLUE





Actual run times can vary depending on initial battery charge condition, temperature, age, and usage (number of cycles)



FUEL GAGE (Minutes remaining)								
	> 35	30	25	20	15	10	5	3
LED COLOR	GREEN	RED	-	-	-	-	-	ALL FLASHING
	GREEN	GREEN	GREEN	RED	-	-	-	
	GREEN	GREEN	GREEN	GREEN	GREEN	RED	-	
	GREEN	GREEN	GREEN	GREEN	GREEN	GREEN	RED	

Safety Features

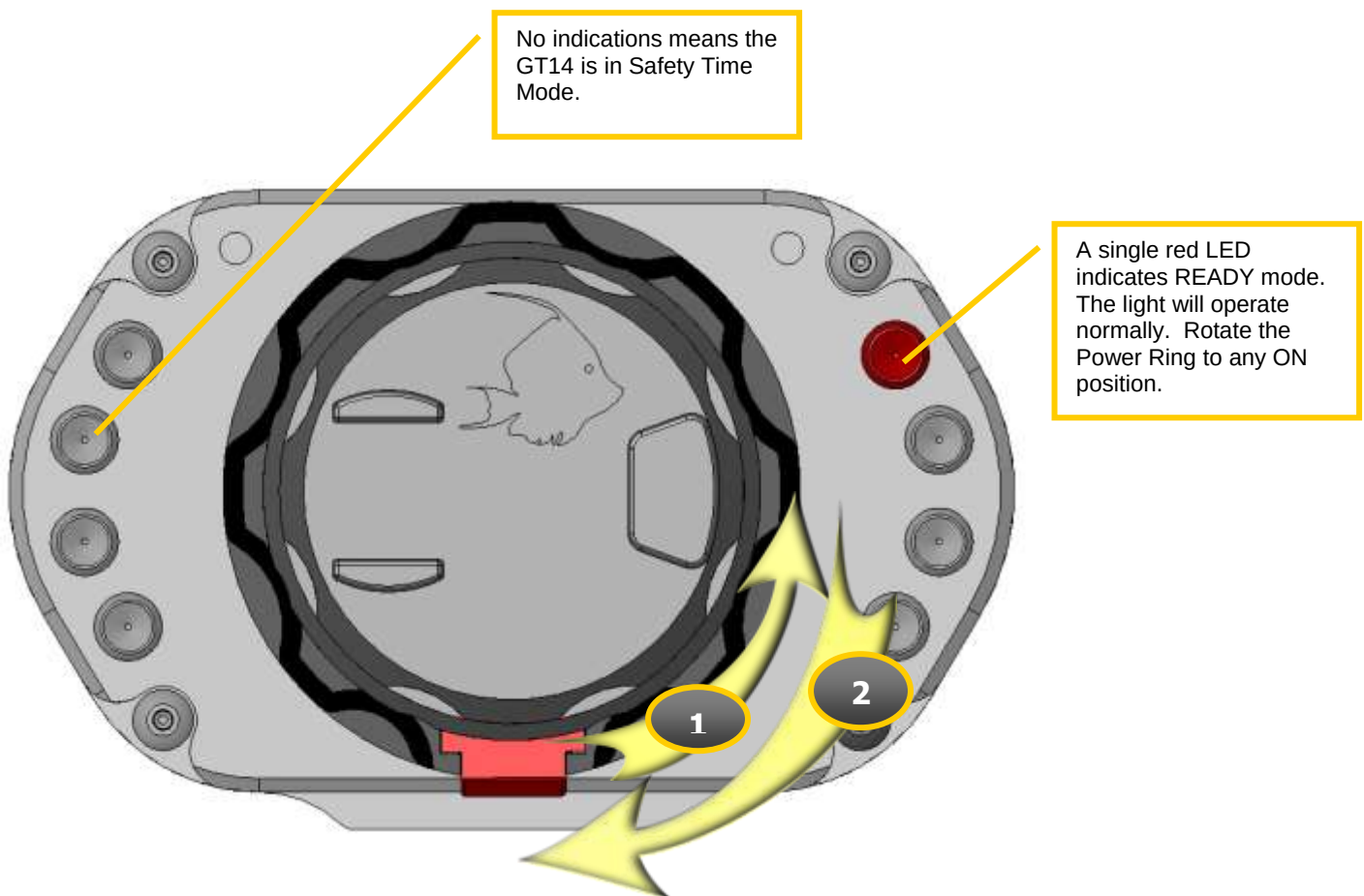
The GT14 has several safety built-in safety features.

- **Power Ring lock.** As noted previously, the Power Ring has a physical spring loaded lockout switch to help prevent accidental activation.
- **Safety Timer.** After 6 hours of non-use (and with battery installed), the GT14 will enter Safety Timer Mode (STM) This mode is intended to avoid accidental activation of the light during transport, such as in your travel bag.

In STM mode, rotation of the Power Ring to any 'ON' setting will have no effect. The light will not activate. You will see the top indicator flash red to indicate the GT14 is DISARMED.

To exit STM, rotate the Power Ring from 'OFF', then to 'ON' – either Scout or level 5 position, then back to 'OFF'. The GT14 will indicate READY with a single glowing red LED at the top of both sides, and will now operate normally.

The READY light will remain illuminated until 6 hours of non-use has expired, at which time the GT14 will enter STM.



- **Thermal shutdown.** The GT14 includes a thermal sensor that will disable the light if it gets too hot, such as inadvertent operation while out of the water.

In this mode the Indicators will cascade WHITE from top to bottom repeatedly and the GT14 will not activate until it has cooled down.

- **Battery Insertion Lockout.** If the GT14 Power Ring is rotated to any 'ON' position while inserting a battery, the light will not operate. The Power Ring must return to 'OFF' then back to 'ON' for proper operation.

This mode is intended to avoid pointing the light in an unwanted direction (like at another person's eyes) while inserting a new battery.

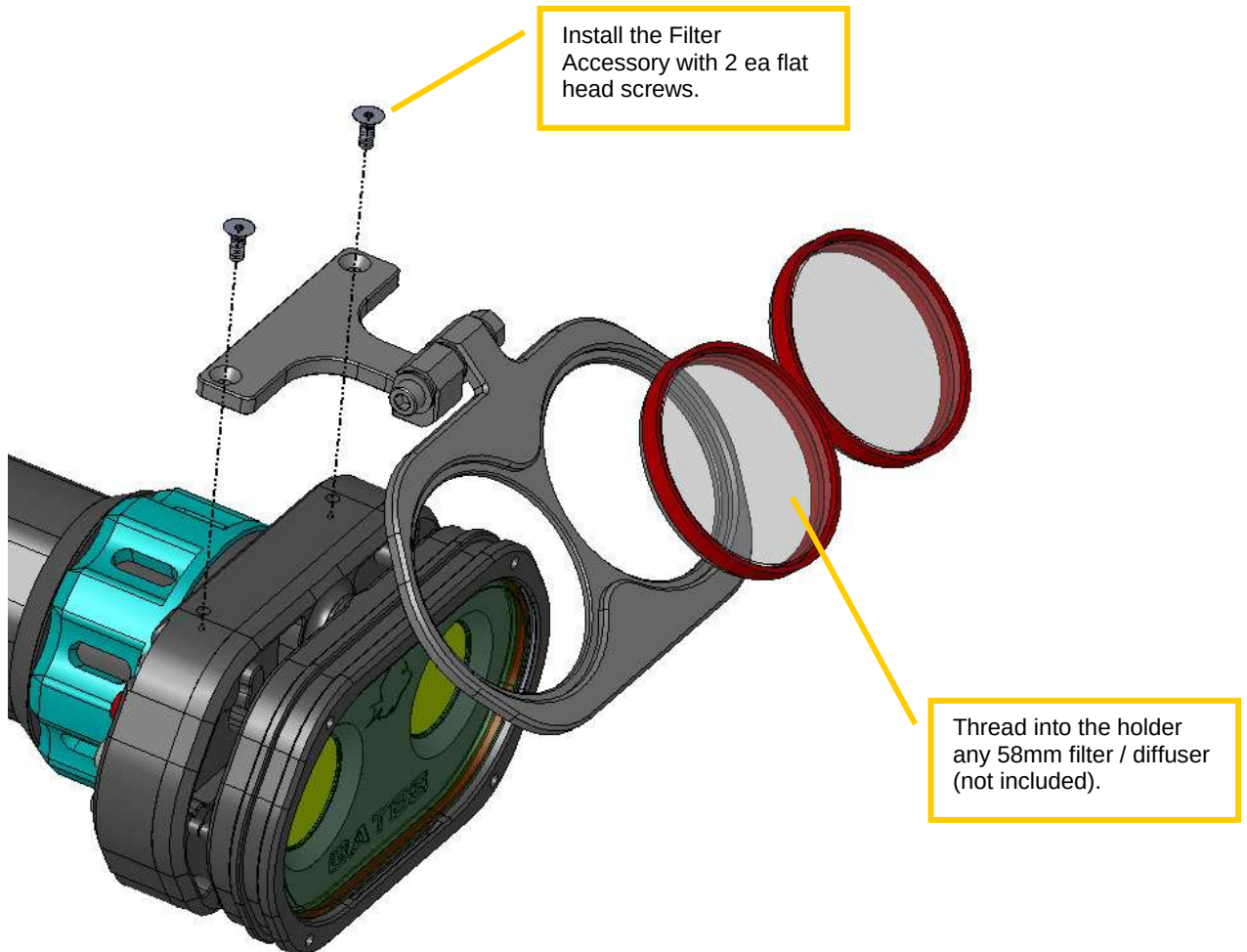
GT14 Flip Filter Accessory

The GT14 Filter Accessory allows the use of any standard 58mm (x 0.75mm pitch) size filter, diffuser or other light modifying element with the GT14 underwater lights. 'Flip' the filters in or out at any time for the desired effect.

For example, the use of cyan filters can remove red to more closely match the blue color of light underwater. Or a diffuser can spread the GT14 light beam significantly, covering a much larger area for use with fisheye lenses.

Refer to the image below for installation of the GT14 Filter Accessory.

Note: Filters / Diffusers are not included with the GT14 Filter Accessory



Tips for Shooting Video with the GT14's

□ **Light Penetration.**

Water is a great absorber of light. In just a few feet, red and yellow are the first to disappear, while blue and green are close behind. For this reason, light penetration through water – even very clear, tropical water – is remarkably limited. This is one reason to be as close to your subject as possible for maximum GT14 effectiveness.

At night, video lights appear to work quite well because the GT14's are not competing with sunlight, so will effectively penetrate further than daylight shooting. In this situation, you may find that ½ power is better than full power so your subjects are not 'spooked' nor do you attract mid-water critters (like segmented worms).

Daytime shooting is different. The GT14's are competing with sunlight and so will appear to penetrate substantially less than at night. Conventional use of lights during daylight hours is for 'fill' or foreground lighting. Practically speaking GT14's will effectively light a foreground up to 4 feet away, perhaps even 6 feet on cloudy days. Caution: be sure to white balance your shots when using both GT14's and daylight.

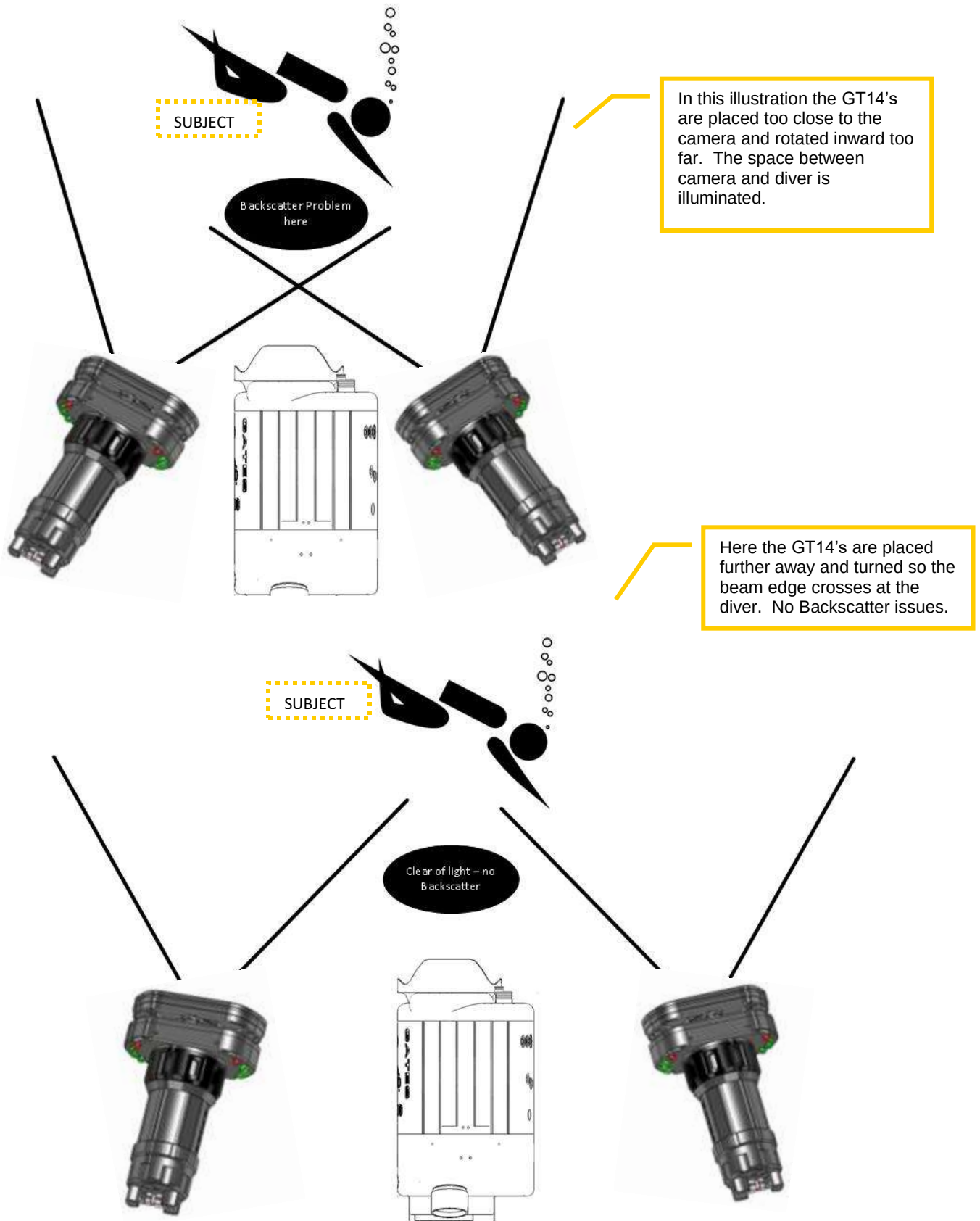
□ **Backscatter**

Backscatter is a problem caused by lighting the space between your camera and subject. It's easy to see and looks like dots, sparkles or white debris in the image. This is an image-killer.

The solution is quite straightforward. Position your lights as wide as possible from your camera, and pointed in a direction so the edge of the light beam just crosses your subject. When the water between the camera and subject is dark, your images will come out far better, free of backscatter, and very often appear clearer than when you were actually there!

Backscatter is an image killer.





6: Safety Precautions

Batteries

GT14 Batteries utilize Lithium Ion (LiOn) cells and should be handled, transported and operated in accordance with the applicable laws and this guide.

Use only the supplied charger for charging GT14 batteries. Use of any other charger may be hazardous.

Travel

Check with your airline and government security agency for current rules regarding travel with lithium batteries. The rules differ depending on country, but in general you can expect to travel with GT14 lights and spare batteries as **carry-on luggage**.

For security inspection purposes, Gates recommends transporting batteries separate from GT14 light. In all cases, ensure the Power Ring is in the 'OFF' position.

For transport / shipment, contact the carrier for details.

In-Water Operation

The GT14's **may be momentarily switched 'on' for a few seconds in air** to verify operation before entering the water.

GT14 Lights are designed for in-water use only. Do not operate in air as overheating, damage and other hazards such as fire may result.

Storage

When storing the GT14 Lights, you should follow these guidelines:

- Discharge the battery to ~ 40% charge. If you must do so, start at 100% full charge, and discharge in water for 20 minutes at full power.
- Remove the battery from the GT14 Light. Store in a cool, dry place.

7: Specifications

- * **Power Level / Run Time**

- * 5 Power Levels
- * Full Power: 30 minute run time.
- * Half Power: > 75 minutes
- * Low Power (Scouting mode): > 10 hours

- * **Dimensions**

- * 5.2W x 3.3H x 8.4L in / 132W x 84H x 214L mm
- * 5.3H in / 135 mm with Mount Ball

- * **Warranty**

- * 2 Years material / workmanship
- * 1 year electronics
- * 90 days batteries

- * **Light Output / CRI**

- * 14000 Lumens / 90 Color Rendition

- * **Construction**

- * Machined Aluminum w/ Type III 'hard' anodize
& Nickel Acetate Seal. Stainless steel hardware.

- * **Weight**

- * **Dry** 3.1 lbs / 1.4kg
- * **Underwater** 19 oz negative

- * **Effective Beam Angle**

- * 90° Actual Underwater

- * **Depth Rating**

- * 450 feet / 137 meters

8: Customer Support

Should you have any questions about the GT14 Underwater Imaging Lights, please contact Gates.

Email: Customer.srv@GatesHousings.com

Web: www.GatesHousings.com

Phone: 858.391.0052

Fax: 858.391.0053