



LIGHT INTENSITY FOR AQUARIUM
Plants and corals have an optimal intensity of light. The process of photosynthesis is maximised and growth is greatest at this optimal intensity.

If the level of light is less, growth is reduced. In a typical plant, light level of 4000 lux is just enough for the rate of photosynthesis to equal the rate of respiration. This is called the light compensation point. At this intensity, there is no net growth, but the plant can survive. Therefore, the control of light intensity will help you to achieve the desired growth in plants.

Similarly, corals require even higher intensity to bloom and grow.

Each species of plant and corals have their desired light intensity for growth. Using this light meter, user can monitor and maintain sufficient light source with proper adjustments and positioning of plants or corals to the desired lighting during setup.

As light bulbs degrade in intensity after it is installed, it is necessary to monitor periodically the lowest light tolerance and to replace the bulbs before the plant or coral stops growing.

*** LIGHTING GUIDE INCLUDED**

Model	Aqua LITEcheck
Operating Range	0 to 50,000 Lux
Resolution	100 Lux
Accuracy	±8 % (full scale)
Battery	4 x 1.5V Button Cell (Alkaline A76 or equiv.)
Battery Life	Approximately 150 hours (continuous use)
Weight	Approximately 50gm
Size	180 (L) x 32 (W) x 15 (H) mm



Simple to use - Direct Reading - Single button operation



TRANS INSTRUMENTS
AQUA LITEcheck
Digital Light Intensity Tester

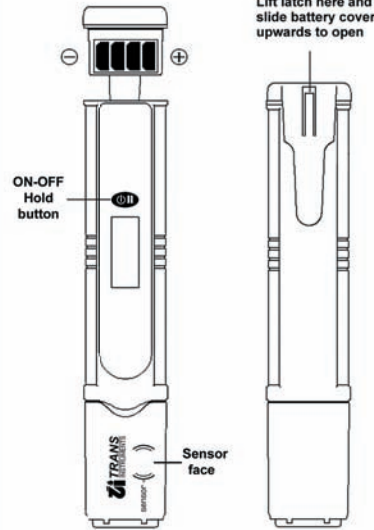
*essential tool
for planted tank
and reef tank setup,
for lighting maintenance*

READ THIS INSTRUCTION SHEET BEFORE USE

UNDERSTAND YOUR PRODUCT

Installing Battery Cap:

The unit is shipped with the Battery Cap open, close the Battery Cap by pressing Cap on table top till the latch "click" for a secure lock.



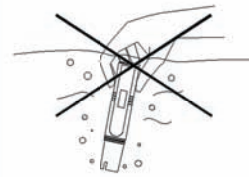
How to open Battery Cap:

- 1 Use a mini screwdriver to lift latch till it pops up. **DO NOT PULL** latch out completely.
- 2 Use the thumb to push Cap forward as shown. Turn over to the front and pull Cap out completely.

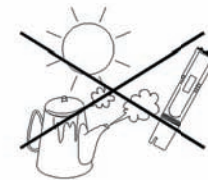


PRECAUTIONS IN HANDLING

Do not submerge the unit underwater without the waterproof bag, it cannot come under high pressure underwater and is beyond repair if water gets into the unit.



Do not store the unit under high temperature or direct sunlight. This will shorten the life span of the unit.



Do not clean unit with thinner or solvents. This will damage the unit. Use only a damp cloth to clean unit if needed.



While using the waterproof bag, be sure to fully seal each zip strip, roll up firmly and fasten with the velcro flap before going under water.

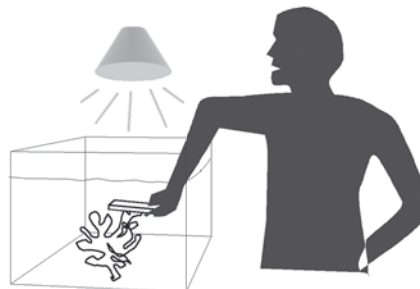
SPECIFICATION

Model	: Aqua LITEcheck
Range	: 0 to 50,000 Lux
Resolution	: 100 Lux
Accuracy	: ±8% full scale
Battery	: 4 x 1.5V Button cell (Alkaline A76 or equivalent)
Battery life	: Approx. 150 hours (continuous use)
Auto Shut-off	: Approx. 15 minutes
Operating temperature	: 0° to 50°C
Case Material	: High impact ABS plastic
Size (LxWxH)	: 180 x 32 x 15mm
Weight	: Approx. 50 gm

MAKING MEASUREMENT

1. Press the **⏻** Hold/On-Off button to switch on the unit.
2. Put the unit inside the waterproof re-seal plastic bag, squeeze out excess air and seal it up. Be sure to seal each zip strip fully, roll up firmly and fasten with the velcro flap.
Caution: If bag is not sealed properly, water leakage may damage the unit. This unit is splash proof but not water tight.
3. With the Sensor face directed perpendicular to the light source, position sensor at the measuring site, avoid any shadow overcast. (See Fig 1.)
4. Keep still and wait for 5 seconds and press the **⏻** Hold button once to freeze the display. Now you can bring the unit in and take a reading.
5. To make another reading, press the **⏻** Hold button to release the display and repeat step 3 and 4.
6. To avoid inaccurate reading due to shadow overcast, always position the sensor face directed at the light source and away from any shadow.
7. You may leave unit in bag, but be careful not to puncture the bag. Once the bag is puncture, it must be replaced.
8. To switch off, press and hold the **⏻** ON-OFF button for 3 seconds.


Fig1. Hold sensor face perpendicular to light source. Submerge the tester just above plant, coral or invertebrate. Avoid shadow overcast on the sensor face and press the hold button to freeze display.



Note:
This meter measures directional light. The reading displayed indicates lighting accurately at the exact spot where the sensor face is. This reading will differ from other photographic meter with a dome shaped sensor where lightings measured includes surrounding reflected light.

MAINTENANCE

LOW BATTERY ALERT

When the battery symbol  appear on the display, this indicates a low battery and only 2 hours of continuous use remain. Though the unit may continue to function, the accuracy of the unit will be affected beyond the 2 hours.

Change the batteries according to instructions under the section: **UNDERSTAND YOUR PRODUCT.**



In the presence of certain radio transmitters, this product may produce erroneous readings. If this occurs then measurements should be repeated at another location.

GUIDE TO AQUARIUM LIGHTING CONTROL

The correct type and amount of lighting are essential in the aquarium. Plants and corals are quite demanding in their requirements and incorrect lighting may favor the growth of certain undesirable algae.

Lighting Type:

The human eyes response to yellow or green light because it appears warmer and more appealing. But plants prefer the red and blue ends of the spectrum. Although some light is absorbed in water, the average aquarium is not deep enough, or normally cloudy enough for this to make an appreciable difference.

Full spectrum light tubes that simulate day light or metal halide lamps are the best choices for aquarium, aquatic plants and corals.

It is important to note that all lighting system degrade the moment they are installed. The gradual lowering in light intensity is not noticeable to the eyes. Therefore, it is imperative to measure with the LiteCheck meter every 3 to 4 month. Understanding the minimum required light intensity for each plant and coral will help you to adjust light fittings to increase intensity or to make bulb replacement if the bulb can no longer generate the required intensity.

Lighting requirement:

Maximum rates of photosynthesis occur at 10,000 to 20,000 lux for many common species of vascular plant.

What is important for the reef and aquatic plant keeper to note is the minimum lighting requirement for plants or corals. As mentioned earlier, lighting degrades after installation. This product will prove to be a money saver. Instead of changing light bulbs at fixed intervals, you may prolong the usage life of your lighting bulbs or tubes by adjust the lighting height. Or make early replacement when the bulbs or tubes fell below the requirement.

Lighting exposure:

Exposure of 10 to 16 hours is enough for marine life.

Maximum display:

This meter will not display after 50,000 Lux. The measuring guide here are the minimum required lighting for plants and marine creatures. When the meter displays "1", it means the brightness has exceeded the maximum display range of this meter.

APPREARANCE	INTENSITY	SUITABLE PLANTS AND INVERTEBRATE
Subdued	< 500 lux	Cryptocoryne, Vesicularia
Moderate	500 – 1,000 lux	Anubias, Echinodorus, Nomophila, Sagittaria
Quite bright	1,000 – 1,500lux	Bacopa, Ceratopteris, Egeria, Ludwigia
Bright	> 1,500 lux	Cabomba, Hygrophila, Microsorium, Myriophyllum, Synnema, Vallisneria
Very bright	6,000 – 8,000 lux	Anemones
Dazzling	12,000 to 16,000 lux	Macroalgae (eg. Caulerpa)
Very dazzling	15,000 to 50,000 lux above	Most Corals (except for most red corals and sponges which prefer shade)