

TRANS INSTRUMENTS

INSTRUMENTS FOR THE PROFESSIONAL

AQUA LITECHECK OPERATION (MANUAL)

PRODUCT SPECIFICATION

OPERATING RANGE	100~50,000 LUX
RESOLUTION	100LUX
ACCURACY	±8% FULL SCALE
BATTERY	4x1.5V BUTTON CELL (ALKALINE LR44 OR EQUIV.)
BATTERY LIFE	APPROX. 150 HOURS (CONTINUOUS USE)
AUTO SHUT-OFF	APPROX. 15 MIN.
OPERATING TEMPERATURE	0°~50°C

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.



TRANS INSTRUMENTS
www.transinstruments.com

ISO 9001 Certified Firm

Submersible - simple to use - directional spot sensor



TRANS INSTRUMENTS Aqua LiteCheck (Aquaria)

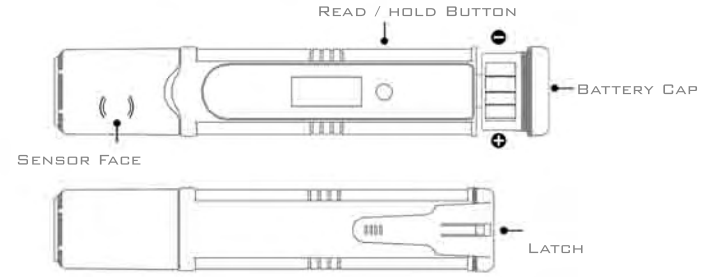
for essential photosynthesis in coral reef & planted tank

Submersible Digital Light meter 100 to 50,000 Lux with hold function

Submersible - simple to use - directional spot sensor

ISO 9001 Certified Firm

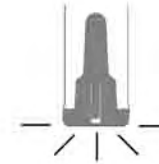
PRODUCT FEATURE



BATTERY CAP INSTALLATION

INSTALLING BATTERY CAP

This unit is shipped with the battery cap open. Close the battery cap by pressing Cap on on a hard surface until the latch **clicks**, indicating a secure lock.



REPLACING BATTERIES

1. Lift latch with a pen or mini screwdriver. **DO NOT PULL** latch out completely.
2. Use the thumb to push Cap forward.
3. Hold the battery cap and separate it from the meter.
4. Replace all batteries according to polarity.



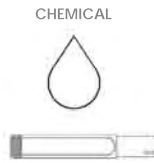
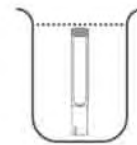
PRECAUTIONS IN HANDLING

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

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

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

Do not clean unit with thinner or solvents. This will damage the unit. Use only mild detergent on damp cloth to clean and rinse unit if needed.



MAKING MEASUREMENT

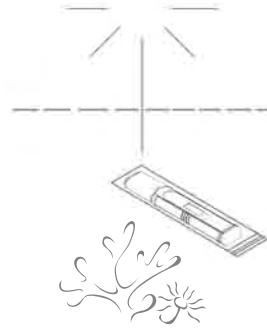
1. Press the **READ/HOLD** button to switch on the unit.
2. Carefully unroll the waterproof plastic bag, open the two(2) zip lock sealer.
3. Place the unit inside the bag, squeeze out excess air and fully seal up both zip sealer, fold and roll up both zip sealer and firmly and fasten over with the velcro flap.

Caution: If bag is not sealed properly, water leakage may damage the unit. This unit is splash proof but not water tight.

4. With the Sensor face directed perpendicular to the light source, submerge meter to position where sensor is just above measuring site and avoid any shadow overcast.
5. Keep still and wait for 3 seconds and press the **HOLD** button once to freeze the display. Now you can bring the unit in and take a reading.


Note: This meter measures directional light. The reading displayed indicates lighting accurately at the exact spot where the sensor face is. This reading will appear lower against other photographic/light meter where a dome-shaped sensor is employed to include surrounding reflected stray light from other angles.

6. To make another reading, press **READ** button to release the display and repeat step 3 and 4.
7. To avoid inaccurate reading due to shadow overcast, always position the sensor face directed at the light source and away from any shadow.
8. You may leave unit in bag, but be careful not to puncture the bag. Once the bag is puncture, it must be replaced.
9. To switch off, press and hold-down the **READ** button for 3 seconds.



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 2 hours. Change the batteries according to instructions overleaf.



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 " - - -", it means the brightness has exceeded the maximum display range of this meter and there is sufficient light for the plants or marine life.

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