



# Serrata Secchi Disk

## Purpose:

To monitor the Depth of Light Penetration in Water by giving an indication of transparency or index of suspended matter in the water. The smaller the number (1.5 meter, for example) the more suspended materials in the water. Can also be used to determine the depth of light penetration and a rough estimate of the extent of the littoral zone. It may also be used as a sounding line and weight to measure the depth of the water at any given point.

## Contents

1. Assembled Secchi Disk
2. Cord – 15m long

**No prior assembly required**

## Background:

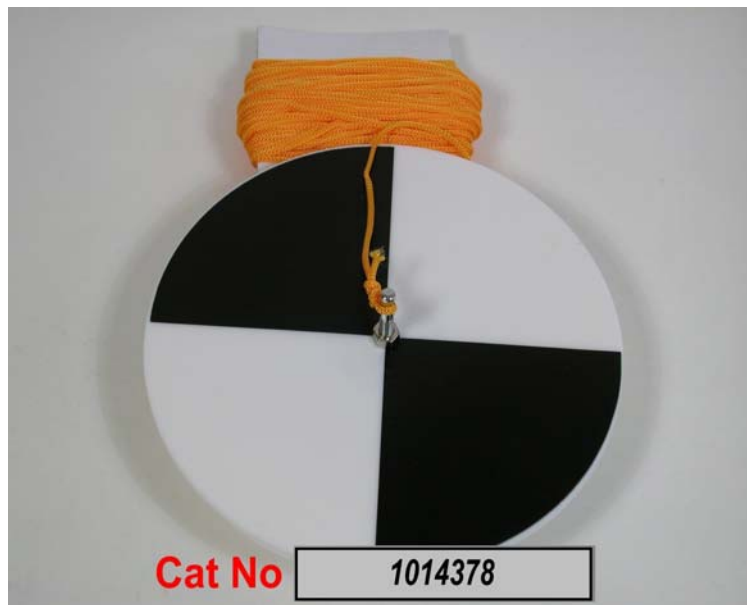
Plants require light for photosynthesis. In water, many factors influence the amount of light available to plants. The amount of suspended sediments, the angle of the incident sunlight and the amount of plant life in the water are determining factors for the depth of light penetration. Since plants need light for growth, the depth of light penetration determines the maximum depth at which plants can grow.

The Secchi Disk is used to measure this maximum depth.

## Application:

1. Use in shallow water in a shaded location. For fresh water use.
2. Calibrate your line. We recommend using two different coloured permanent markers, one for meters, one for half meters. Make sure the first 1/2 m marking is exactly 1/2 m from the black and white surface.
3. Tie the included line securely to the eyebolt attached to the disk. (If using an already marked line, tie so that the first half-meter mark is one half meter from the disk face).
4. Lower the disk into the water from a boat, dock or other support which allows you to position yourself over a reasonably deep region of water.
5. Shielding your eyes from glare, watch the black and white regions as the disk is lowered into the water.
6. Count the marks on the line as it's being lowered and make a depth reading at this point. This reading or index is the depth of the disk as indicated by the marks on your line. Lower it further until it is completely out of sight and then begin to raise it slowly.
7. When you've reached the point where you can just distinguish between the black and white quadrants, take another reading.
8. Repeat three times, recording each reading.
9. Calculate the average of all eight readings to determine your final average. This is the proper Secchi Disk reading or index.

**Important:** When make this measurement, also record any visual conditions, you can see, that might affect light penetration – such as mud or algae.



The smaller the Index - 1.5, for example - the more suspended material there is. The water is less transparent with a lower degree of visibility.

Light can travel this distance through the water before being absorbed by microscopic plants and animals or scattered by mud and silt.

Rooted vegetation cannot grow below this depth.

Phytoplankton can live up to three times deeper but they do not reproduce or produce food below this critical depth.

## Maintenance:

The equipment is designed to be used for year after year, class after class. Simply follow these commonsense precautions. All aquatic samplers should be rinsed in fresh water after each day's use, then air dried completely. The line should be washed and hung out loosely to dry in the open air. When dry, you can store all samplers in their closed position or in their carrying case. Store in a clean, dry place only. This will help ensure a clean sampler at the start of the next sampling session.

## Time Allocation

Individual experiment times will vary depending on methods of instructions and normally will not exceed one period.