CI-202 Portable Laser Leaf Area Meter

CID Bio-Science Inc.

Portable Instruments for Precision Plant Measurement

CI-202 Portable Laser Leaf Area Meter

The CI-202 Portable Laser Area Meter uses laser technology to render accurate and precise measurements in a convenient lightweight instrument. The high-resolution laser scanner, data logger and display are enclosed in a hand-held, self-contained unit. Designed for field use, the CI-202 weighs approximately 1.5kg.

Researchers can perform measurements on virtually any leaves, needles or seeds by simply sliding the scanner over the object then export the data to common file types for analysis.

Portable
High-speed, accurate measurements in the field

Lightweight
Designed for field use, the CI-202 weighs 1.5 kg

Precise
The CI-202 sets the industry standard for precision measurements of leaf area

Applications

- Broad leaves
- Ferns
- Arapidopsis
- Grasses
- Seeds
- Feathers
- Wings

Measurements & Calculations

- Length
- Width
- Perimeter
- Area
- Ratio
- Shape factor

Features

- Precise and accurate
- Quick and non-destructive measurements
- Ideal for field use
- Stores 8000+ data points
- Download data and recharge
- Download data and recharge via USB on your laptop in the car or the field

Theory of Operation

The CI-202 collects length, width, perimeter, and area measurements directly using a combination of a sweeping laser beam and an optical motion sensor. After activating the device by pressing the <start> key, a low energy laser beam sweeps across the laser window 500 times per second at a rate of 150 m/s. As the user moves the CI-202 control unit down the pallet, an optical sensor records the motion along the specially textured aluminum rail.

The onboard processing unit collects the data from each laser sweep and uses the optical sensor data to correctly accumulate the area and perimeter measurements.

Computing Ratio/Shape Factor

Aspect ratio and shape factor information are easily calculated from the other data collected by the CI-202. The calculations used are shown below.

Aspect ratio is the ratio of the leaf length to its maximum width. It can be calculated from the equation:

$$r = \frac{l}{W_m}$$

Where r is the aspect ratio, W_m is the maximum width, and l is the length

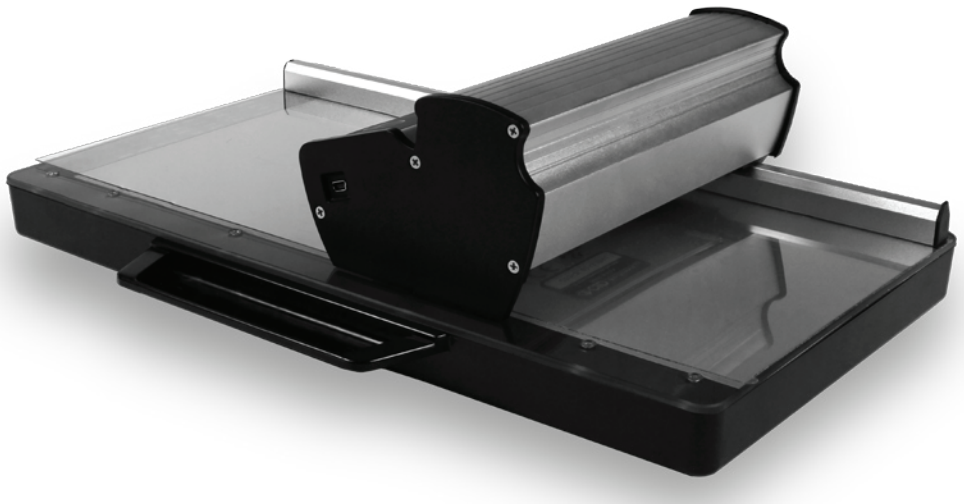
Shape factor is the ratio of the leaf area to the leaf perimeter, corrected so that the shape factor of a circle is equal to 1. It can be calculated from the equation:

$$f = 4\pi \frac{a}{p^2}$$

Where f is the shape factor, a is the area, and p is the perimeter.

What's in the Box

- Laser scanner with built-in control unit
- Scan board
- Internal Batteries
- Battery charger
- Communication software
- One additional transparent film
- Operation manual
- Hard shell carrying case



Toll Free: 1-800-767-0119 | Fax: (360) 833-1914 | Office Hours: M-F 7:30 AM to 6:00 PM [PST] | sales@cid-inc.com

Specifications

	CI-202 Specifications	CI-203 Specifications
Format	Palette	Wand
Scanning Technology	Laser	Laser
Measuring Thickness	15mm	15mm
Measuring Width	150mm	150mm
Measuring Length	1m	3m
Scanner	675nm Laser Diode	675nm Laser Diode
Resolution	0.01cm^2	0.01cm^2
Accuracy	± 1% for samples > 10cm^2	± 1% for samples >10cm^2
Interface	USB 2.0	USB 2.0
Memory Size	8,000 measurements	4GB SD card, virtually unlimited measurements
Display	LCD - 16 characters x 2 lines	Transflective LCD graphic display
Scanning Speed	200mm/sec	200mm/sec
Battery	7.2v rechargeable NiMH	7.2v rechargeable NiMH
Battery Capacity	250 scans	250 scans
Operating Temperature	0 - 50° C	0 - 50° C
Dimensions	Board - 38.5cm x 21.5cm x 3cm Scanner - 11.5cm x 20cm x 8cm	35.5cm x 4.5cm x 5cm
Weight	1.5 Kg	750g
Accessories	None	CI-203CA Leaf Conveyor

Publications & Applications

For more information about applications and a full list of publications, please visit **www.cid-inc.com/publications**

CID Bio-Science, Inc.

Phone: (360) 833-8835
Toll Free: 1-800-767-0119
Fax: (360) 833-1914
Email: sales@cid-inc.com

1554 NE 3rd Ave
Camas, WA 98607 USA

www.cid-inc.com