

LI-3100C Area Meter



Fast, Precise, Easy Operation

LI-COR[®]

Biosciences

0.1 mm² resolution



LI-3100C Area Meter

Rapid, Precise Area Measurement of Large or Small Leaves

- Adjustable Resolution: 0.1 or 1 mm²
- High accuracy and repeatability
- Individual or cumulative area
- Fast, continuous operation for large quantities of samples
- Large samples: 25 cm wide, 2.5 cm thick, 1mm² resolution
- Small samples: <1 cm² when using 0.1 mm² resolution
- Adjustable press roller to flatten curled leaves
- LED display
- Windows® software
- USB and Serial ports

Versatility

The LI-3100C Area Meter is designed for efficient and exacting measurement of both large and small leaves. Adjustable resolution settings provide versatility for diverse project requirements.

A wide variety of leaves can be measured, ranging from larger samples such as corn, tobacco, and cotton to smaller samples such as wheat, rice or alfalfa. Small leaves or leaf discs are measured with the same precision as larger leaves. The LI-3100C can also handle conifer needles, perforated leaves and leaves with irregular margins. This is especially important in determining leaf damage and insect feeding trails.

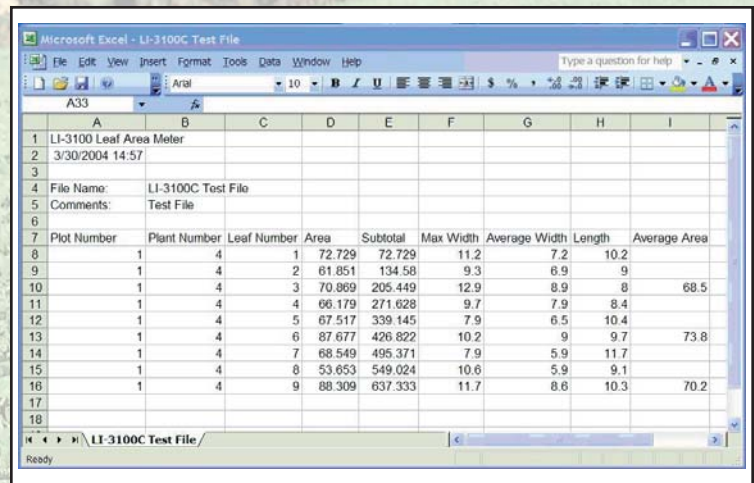
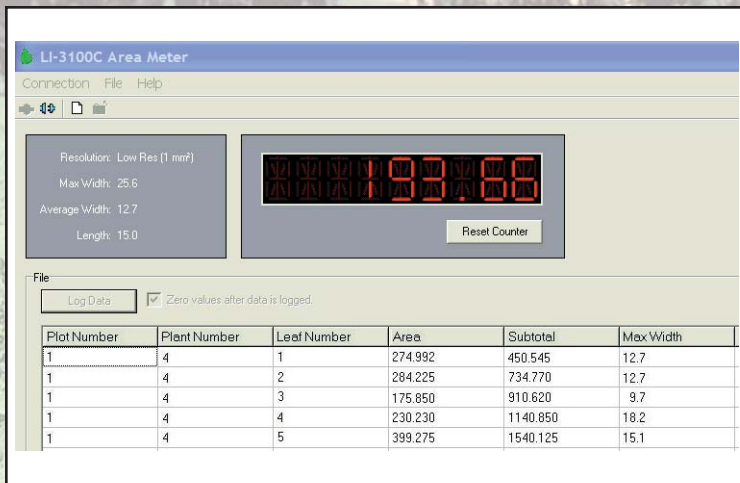
Operation

Samples are placed between the guides on the lower transparent belt and allowed to pass through the LI-3100C. As the sample travels under the fluorescent light source, the projected image is reflected by a system of three mirrors to a scanning camera. This unique optical design results in high accuracy and dependability.

An adjustable press roller flattens curled leaves and feeds them properly between the transparent belts. This provides for accurate measurement of small grasses, legumes, aquatic plants and similar types of leaves.

As samples pass under the light source, the accumulating area in mm² is shown on the LED display or on a computer screen when using the Windows® software. Calibration adjustments are easily accomplished using a standard area calibration disk (included) and turning the calibration screw located near the display.





The Windows® software allows you to save data to a log file containing individual area, average width, maximum width, length, and cumulative area. Log files can be opened with a text editor or spreadsheet program (above, right).

Data Analysis

The LI-3100C Windows® Interface software allows users to monitor data on a computer and store readings in a log file. The log file includes individual area, maximum width, average width, length, and cumulative area. Remarks can be entered for each logged value. Most text editor or spreadsheet programs can open LI-3100C data files.

The Windows® Interface software also features:

- Display of individual area, leaf length, average width, and maximum width
- Indicator of resolution setting on the LI-3100C
- Area counter reset, independent of the LI-3100C LED display
- Support for both USB and serial connections

Simplified Maintenance

Cleaning the LI-3100C is simplified by convenient access to all belt surfaces and mirrors. The transparent belts are rugged and durable. The fluorescent lamp and belts are easy to replace when needed.



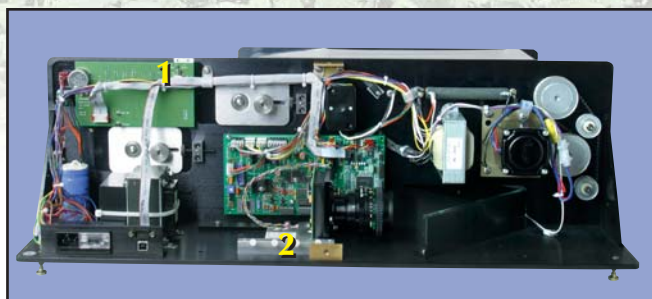
The LI-3100C can be connected to a computer via a serial or USB connection. Simple Windows® software allows you to log data to a file.

Specifications:

Resolution:	1 mm ² or 0.1 mm ² (adjustable)
Scanning Area:	1 mm ² Resolution: 1 mm x 1 mm 0.1 mm ² Resolution: 0.300 mm W x 0.333 mm L
Display Capacity:	1 mm ² Resolution: 999,999.99 cm ² 0.1 mm ² Resolution: 99,999.999 cm ²
Display:	Full 8-digit LED
Width:	25.4 cm max; 1.5 to 3.0 mm minimum
Thickness:	Up to 2 cm, user-expandable to 2.5 cm
Length:	Unlimited
Conveyor Belt Speed:	8.0 cm/s at 60 Hz; 6.7 cm/s at 50 Hz
Light Source:	15 W fluorescent tube
Transparent Belts:	Rugged clear vinyl
Power Requirements:	108-126/216-252 VAC, 48 to 66 Hz, 100 W max
Operating Temperature:	+15 to + 55 C
Storage Temperature:	-20 to + 65 C
Size:	25.0 H x 60.0 W x 73.0 L cm (9.8" x 23.6" x 28.7")
Weight:	43 Kg (95 lb)

Accuracy	Sample Area			
	10 cm ²	3 cm ²	1 cm ²	0.3 cm ²
Resolution				
1 mm ²	± 2.0%	± 3.0%	± 6.0%	± 10.0%
0.1 mm ²	± 1.0%	± 1.5%	± 3.0%	± 5.0%

Combined accuracy and precision to 99% confidence with correct calibration on verifiable shapes. Better accuracy can be achieved by calibrating the LI-3100C and/or placing the leaf on the middle section of the belt. Use the 0.1 mm² resolution for conifers, roots and other similar objects and expect the accuracy to be about 5% less than normal leaves.



Area-sensing resolution is shifted between 1 and 0.1 mm² with a simple procedure. For 1 mm² resolution, the display is switched for two decimal places (1), and the camera lens is moved to the appropriate pre-marked location (2). For 0.1 mm² resolution, the display is switched for three decimal places, and the camera lens is moved to a second pre-marked location. The lens focus is set by LI-COR.

Ordering Information

LI-3100C	Includes both 0.1 and 1 mm ² resolution, one each 3100TBL and 3100 TBU transparent belts, two 3100LAMP fluorescent lamps, 3100-500 Windows interface software, RS-232 serial cable, USB cable, dust cover and instruction manual
3100TBL	Lower Transparent Belt
3100TBU	Upper Transparent Belt
3100LAMP	Fluorescent Lamp

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