

# Red/Far-Red Light Meter

## PRODUCT MANUAL

Item # 3412



***Spectrum***<sup>®</sup>  
***Technologies, Inc.***

Thank you for purchasing a Field Scout™ Red / Far Red Meter. This manual describes its features and operation.

### **Using the Meter**

1. Press the ON/OFF button to turn the meter on or off. When first turned on, the display will show the current battery level.
2. Press the READ button to take a light reading. The meter will measure the incident light for 0.3 seconds and display the mean.
3. Press the MODE button to switch between displaying the Red / Far Red Ratio, and the Red and Far Red readings.
4. The sensor assembly can be rotated to provide accurate readings while maintaining visibility of the display screen.
5. Turn the meter off after use to conserve battery power.

### **Changing the Battery**

The Field Scout Red / Far Red Meter uses a standard 9V battery. To change the battery:

1. Slide open the door on the back of the meter.
2. Remove the old battery from the compartment, and insert the new battery. Be sure to orient the battery to match the image on the bottom of the compartment.
3. Place the battery cover on the case and slide it closed.

### **Accuracy**

The Field Scout Red / Far Red Meter is accurate to  $\pm 5\%$ .

Red light is measured at 660nm, 40nm FWHM ( $\pm 20$ nm).

Far Red light is measured at 730nm, 30nm FWHM ( $\pm 15$ nm).

If the red or far red value is less than 9, the meter does not calculate the R/FR ratio.

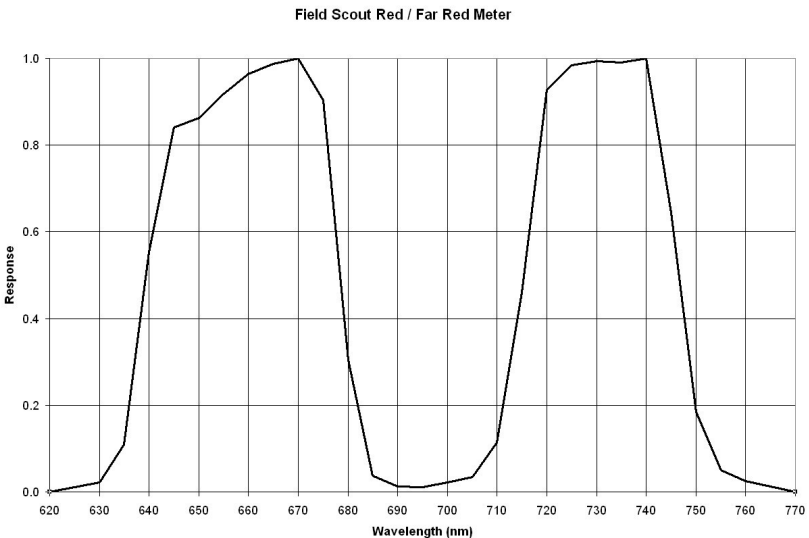
## Red and Far Red Light

Plants sense the amount of light in the ranges around 660 nanometers (red) and 730 nanometers (far red), and use the ratio between the two to direct growth. Though plants differ in the details of their reaction, in general a low Red / Far Red ratio results in elongation and lower leaf area compared to a higher ratio.

The Field Scout Red / Far Red Meter measures the light in these two ranges, and displays the values in units of  $\mu\text{mol m}^{-2} \text{s}^{-1}$  (the number of photons in units of micromoles, striking an area one meter square each second).

In addition, the meter displays the Red / Far Red Ratio, eliminating the need for computation.

The chart below displays the spectral response of the Field Scout Red / Far Red Meter.



# WARRANTY

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This product is warranted to be free from defects in material or workmanship for one year from the date of purchase. During the warranty period Spectrum will, at its option, either repair or replace products that prove to be defective. This warranty does not cover damage due to improper installation or use, lightning, negligence, accident, or unauthorized modifications, or to incidental or consequential damages beyond the Spectrum product. Before returning a failed unit, you must obtain a Returned Materials Authorization (RMA) from Spectrum. Spectrum is not responsible for any package that is returned without a valid RMA number or for the loss of the package by any shipping company.

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