

Job No.: L12552

Calibration Date: 05/05/16  
 Model Number: QCP2350  
 Serial Number: 70627  
 Operator: TPC  
 Standard Lamp: V-035(3/4/15)  
 Operating Voltage Range: 6 to 15 VDC (+)

Note: The QCP2350 output is a voltage that is proportional to the log of the incident irradiance.  
 To calculate irradiance, use this formula:

$$\text{Irradiance} = \text{Calibration factor} * (10^{\text{Light Signal Voltage} - 10^{\text{Dark Voltage}}})$$

Dry Calibration Factor: 2.83E+12 quanta/cm<sup>2</sup>·sec per volt 4.70E-06  $\mu$ Einsteins/cm<sup>2</sup>·sec per volt  
 Wet Calibration Factor: 3.04E+12 quanta/cm<sup>2</sup>·sec per volt 5.05E-06  $\mu$ Einsteins/cm<sup>2</sup>·sec per volt

#### Sensor Test Data and Results<sup>2)</sup>

|                                 |                       |                   |                                 |                  |                 |                 |                        |                                           |
|---------------------------------|-----------------------|-------------------|---------------------------------|------------------|-----------------|-----------------|------------------------|-------------------------------------------|
| Sensor Supply Current (Dark):   |                       | 3.3               | mA                              |                  |                 |                 |                        |                                           |
| Supply Voltage:                 |                       | 6                 | Volts                           |                  |                 |                 |                        |                                           |
| Lamp Integrated PAR Irradiance: |                       | 1.03E+16          | quanta/cm <sup>2</sup> ·sec     |                  |                 |                 |                        |                                           |
| Immersion Coefficient:          |                       | 0.931             | μEinsteins/cm <sup>2</sup> ·sec |                  |                 |                 |                        |                                           |
| Nominal Filter OD               | Expected Transmission | Calibrated Trans. | Sensor Voltage                  | Expected Voltage | Voltage % Error | Measured Trans. | Transmission Error (%) | Test Irrad. (quanta/cm <sup>2</sup> ·sec) |
| No Filter                       | 100%                  | 100.00%           | 3.562                           | 3.562            | 0%              | 100.00%         | 0.0                    | 1.03E+16                                  |
| 0.3                             | 50%                   | 36.10%            | 3.122                           | 3.119            | 0%              | 36.30%          | -0.5                   | 3.75E+15                                  |
| 0.5                             | 32%                   | 27.60%            | 3.010                           | 3.003            | 0%              | 28.03%          | -1.5                   | 2.89E+15                                  |
| 1                               | 10%                   | 9.27%             | 2.540                           | 2.529            | 0%              | 9.49%           | -2.3                   | 9.79E+14                                  |
| 2                               | 1%                    | 1.11%             | 1.630                           | 1.607            | 1%              | 1.14%           | -2.8                   | 1.18E+14                                  |
| 3                               | 0.10%                 | 0.05%             | 0.459                           | 0.289            | 37%             | 0.05%           | 4.6                    | 5.32E+12                                  |
| RG780                           | 0.00%                 | 0.00%             | 0.008                           | 0.007            | 4%              | 0.00%           | -100.0                 | 5.05E+10                                  |

Dark Before: 0.007 Volts  
 Light - No Filter Hldr.: 3.562 Volts  
 Dark After - NFH: 0.008 Volts  
 Average Dark: 0.0074 Volts

#### Notes:

1. Annual calibration is recommended.
- 2) This section is for internal use and for more advanced analysis.