

Calibration Date: 01/11/17 Job No.: R12831  
Model Number: QSP2300  
Serial Number: 70359  
Operator: TPC  
Standard Lamp: 91453(7/20/16)  
Operating Voltage Range: 6 to 15 VDC (+)

Note: The QSP2300 output is a voltage that is proportional to the log of the incident irradiance.  
To calculate irradiance, use this formula:

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

Dry Calibration Factor: 3.29E+12 quanta/cm<sup>2</sup>-sec per volt 5.46E-06  $\mu$ Einsteins/cm<sup>2</sup>-sec per volt  
Wet Calibration Factor: 5.80E+12 quanta/cm<sup>2</sup>-sec per volt 9.64E-06  $\mu$ Einsteins/cm<sup>2</sup>-sec per volt

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

Sensor Supply Current (Dark): 3.5 mA  
Supply Voltage: 6 Volts  
Lamp Integrated PAR Irradiance: 8.38E+15 quanta/cm<sup>2</sup>-sec 0.01391  $\mu$ Einsteins/cm<sup>2</sup>-sec  
Immersion Coefficient: 0.566

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%	3.407	3.407	0%	100.00%	0.0	8.38E+15
0.3	50%	36.10%	2.966	2.964	0%	36.20%	-0.3	3.03E+15
0.5	32%	27.60%	2.857	2.847	0%	28.19%	-2.1	2.36E+15
1	10%	9.27%	2.386	2.374	1%	9.50%	-2.4	7.96E+14
2	1%	1.11%	1.472	1.452	1%	1.12%	-1.1	9.41E+13
3	0.10%	0.05%	0.306	0.134	56%	0.04%	34.0	3.36E+12
RG780	0.00%	0.00%	0.003	0.003	1%	0.00%	-100.0	2.51E+10

Dark Before: 0.003 Volts  
Light - No Filter Hldr.: 3.407 Volts  
Dark After - NFH: 0.003 Volts  
Average Dark: 0.0033 Volts

#### Notes:

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