

Calibration Date: 08/18/11

Model Number: QSP2300

Serial Number: 70378

Operator: TPC

Standard Lamp: GS-1024(7/22/11)

Operating Voltage Range: 6 to 15 VDC (+)

Job No.: L11036

Note: The QSP2300 output is a voltage that is proportional to the log of the incident irradiance.

To calculate irradiance, use this formula:

Irradiance = Calibration factor \* (10<sup>Δ</sup>Light Signal Voltage - 10<sup>Δ</sup>Dark Voltage)

Dry Calibration Factor: 3.49E+12 quanta/cm<sup>2</sup>.sec per volt 5.79E-06 μEinsteins/cm<sup>2</sup>.sec per volt

Wet Calibration Factor: 5.87E+12 quanta/cm<sup>2</sup>.sec per volt 9.74E-06 μEinsteins/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: 9.27E+15 quanta/cm<sup>2</sup>.sec 0.01540 μEinsteins/cm<sup>2</sup>.sec

Immersion Coefficient: 0.594

Test Irrad.

Nominal Filter OD	Expected Transmission	Calibrated Trans.	Sensor Voltage	Expected Voltage	Voltage % Error	Measured Trans.	Transmission Error (%)	(quanta/cm <sup>2</sup> .sec)
No Filter	100%	100.00%	3.425	3.425	0%	100.00%	0.0	9.27E+15
0.3	50%	36.10%	2.998	2.983	1%	37.39%	-3.4	3.47E+15
0.5	32%	27.60%	2.889	2.866	1%	29.08%	-5.1	2.70E+15
1	10%	9.27%	2.440	2.392	2%	10.32%	-10.1	9.57E+14
2	1%	1.11%	1.565	1.470	6%	1.34%	-17.3	1.25E+14
3	0.10%	0.05%	0.471	0.153	68%	0.07%	-26.7	6.83E+12
RG780	0.00%	0.00%	0.352	0.009	97%	0.05%	-100.0	4.35E+12

Dark Before: 0.009 Volts  
 Light - No Filter Hldr.: 3.425 Volts  
 Dark After - NFH: 0.010 Volts  
 Average Dark: 0.0093 Volts

Notes:

1. Annual calibration is recommended.

2) This section is for internal use and for more advanced analysis.