

Job No.: R12406

Calibration Date: 11/04/15

Model Number: QCP2300

Serial Number: 70250

Operator: TPC

Standard Lamp: V-033(3/3/15)

Operating Voltage Range: 6 to 15 VDC (+)

Note: The QCP2300 output is a voltage that is proportional to the log of the incident irradiance. To calculate irradiance, use this formula:

Irradiance = Calibration factor * (10^Light Signal Voltage - 10^Dark Voltage)

Dry Calibration Factor: 2.82E+12 quanta/cm^2-sec per volt 4.68E-06 μEinsteins/cm^2-sec per volt

Wet Calibration Factor: 3.03E+12 quanta/cm^2-sec per volt 5.03E-06 μEinsteins/cm^2-sec per volt

Sensor Test Data and Results²⁾

Sensor Supply Current (Dark): 3.4 mA

Supply Voltage: 6 Volts

Lamp Integrated PAR Irradiance: 9.39E+15 quanta/cm^2-sec 0.01559 μEinsteins/cm^2sec

Immersion Coefficient: 0.931

Nominal Filter OD	Expected Transmission	Calibrated Trans.	Sensor Voltage	Expected Voltage	Measured Trans.	Transmission Error (%)	Test Irrad. (quanta/cm^2-sec)
No Filter	100%	100.00%	3.523	3.523	100.00%	0.0	9.39E+15
0.3	50%	36.10%	3.084	3.080	36.36%	-0.7	3.41E+15
0.5	32%	27.60%	2.972	2.964	28.08%	-1.7	2.64E+15
1	10%	9.27%	2.510	2.490	9.67%	-4.2	9.08E+14
2	1%	1.11%	1.608	1.568	1.19%	-6.3	1.11E+14
3	0.10%	0.05%	0.543	0.250	0.07%	-27.8	7.02E+12
RG780	0.00%	0.00%	0.043	0.012	0.00%	-100.0	2.93E+11

Dark Before: 0.012 Volts
 Light - No Filter Hldr.: 3.523 Volts
 Dark After - NFH: 0.013 Volts
 Average Dark: 0.0123 Volts

Notes:

1. Annual calibration is recommended.

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



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SEASOFT COEFFICIENTS
FOR THE BIOSPHERICAL PAR LIGHT SENSOR
S/N 70250

Your Sea-Bird Instrument has been configured to record light data from a BIOSPHERICAL Quantum sensor. The 0 – 5 volt output of this sensor corresponds on a logarithmic scale to light measurement over the measurement range.

Make the following entries in SEASOFT

M = **1**
B = **0**

From the Biospherical calibration sheet obtain:

C_w = Calibration Factor ($\mu\text{Einstein}/\text{cm}^2 \cdot \text{sec}$ per volt)
= **5.03E-06**
V = Average Dark Voltage (Volts)
= **0.0123**

Calculate the following coefficients:

Calibration Constant = Seasoft Calibration Coefficient
= $10^5 / C_w$
= **1.9881E+10**
Offset = $-(10^4 * C_w * 10^V)$ (V is the dark voltage)
= **-0.051744952**
Multiplier = **1**

Set multiplier to 1 for output in $\mu\text{Einstein}/\text{m}^2\text{sec}$. See Application Note 11 General for information on output in units other than $\mu\text{Einstein}/\text{m}^2\text{sec}$. See Application Note 11QSP-L for information regarding this calibration sheet.