

*Recd 9 Feb 04 vj*

## CALIBRATION CERTIFICATE

### QUANTUM SENSOR

Calibration date : 17-Dec-03

Calibrated by : G. v/d Wilt

Quantum sensor, type : **PAR LITE**

Serial no : 030380

Sensitivity ( $\pm 2\%$ ) : 5.31  $\mu\text{V}/\mu\text{mol}/\text{s}\cdot\text{m}^2$   
in solar radiation at airmass 1.5

Impedance : 240 Ohm

Calibration procedure : Exact interchange of test PAR LITE and reference PAR LITE in a horizontal parallel beam from a Xenonlamp. Photosynthetic photon flux density approx. 400  $\mu\text{mol}/\text{s}\cdot\text{m}^2$ . Instrument temperature approx. 25<sup>o</sup> C.

Hierarchy of traceability : The reference PAR LITE is calibrated against a standard of known illuminance, the photometric standard lamp of Osram type Wi 41/G with color temperature of 2856 K, which on his turn is calibrated yearly at the dutch standard laboratory NMI. From the known illuminance and the 2856 K spectrum the photosynthetic photon flux density is calculated: 6.122  $\mu\text{mol}/\text{s}\cdot\text{m}^2$ . The sensitivity figure of the reference PAR LITE is made correct for hemispherical solar irradiance at airmass 1.5 (spectrum according international standard ISO 9845-1). The correction of the Correction applied to sensitivity figure was +1.2 %.