



LTL2000S(Q) Trouble shooting & Hints

- ***The instruments measures negative values or values are fluctuating.***
 - Check calibration and calibration procedure

 - The lamp may be faulty.
Place the instrument on the rear end and take a measurement. Make sure you observe a bright white light coming out from the front window or from the Qd light box.

- ***The instrument will not turn on.***
 - Recharge battery.
Make sure that the green light on the charger turns red when charger is connected. Otherwise see “Instrument will not charge”

 - Check battery fuse on the rear of the instrument.

 - Replace battery.

- ***Instrument will not charge.***
 - Make sure that the green light on the charger turns red when charger is connected. When the charger is connected take a measurement, the red light on charger must light up.
If not check charging fuse on the rear of the instrument, charger or replace battery.

 - Check “Menu/Status, VBat now”. This value shows the actual battery voltage and due to the charging process it is higher than 13 V if the charger is working.

- ***Instrument forgets and loses data***
 - Internal data memory must be replaced. Typical life time 7 years.

- ***Calibration check***
 - Check that light trap is clean and free from dirt and dust, and that the white ceramics is clean and intact.
 - Check that the front window is clean and intact.

 - Calibrate instrument:
Zero calibrate (RL) + Normal calibrate.
Calibrate Qd
 - Check calibration factors from Status dump. See examples in appendix. Pressing the print button just after the calibration procedure is finished will print the calibration status.

Appendix

```
RL Calibration  
Zero Signal: 1  
RL Normal: 152 mcd/m2 /lx  
RL Factor: 2.0116  
2005 Jun 01 09:46:30 Status: 0  
Instrument sn: DEMO2
```

```
Qd Calibration  
Qd Normal: 289 mcd/m2 /lx  
Qd Factor: 0.4643  
2005 Jun 01 09:47:09 Status: 0  
Instrument sn: DEMO2
```

Qd light box

Front window.
RL light output and
RL/ Qd observation.





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Status print-out

```
2005 May 31 15:21:11
-----
* Instrument Status *
-----
Zero Adjust : 2005 May 31 14:51:09
System Leak : 1
Dark Signal : 2
Offset Signal: 1
-----
RI Calibrated: 2005 May 31 14:51:27
RI Normal : 152 mcd/m2/lx
RI Factor : 2.0152
Signal : 151
Leak : 1
Lamp On : 154
Lamp Off : 2
-----
RI Measured : 2005 May 31 15:10:54
Result : 10
Signal : 10
Leak Signal : 0
-----
Qd Calibrated: 2005 May 31 15:20:57
Qd Normal : 289 mcd/m2/lx
Qd Factor : 0.4611
Signal : 1254
Lamp On : 1255
Lamp Off : 1
-----
Qd Measured : 2005 May 30 14:06:59
Result : 289
Signal : 427
-----
Voltage Measurements
Battery Ok : 13.44 volt
Low Bat Alarm: 11.00 volt
PMT voltage : 725 volt
RI Lamp On : 13.11 volt
Qd Lamp On : 12.97 volt
VPMT Factor : 0.9863
VBat Factor : 0.0156
-----
Log Status : 24 Data 1274 Free
-----
No Errors or Warnings
-----
Special Status
Off timer : 300 sec.
Log Full Warning: On
Mean Calculation: Off
Qd Measurement : On
RI Measurement : On
-----
Firmware Info
Retrometer
LTL2000SQ v1.65
(c) 30-MAY-05
S/N: DEMO2
DELTA Light & Optics
DENMARK
e-mail: opelec@delta.dk
www.roadsensors.com
tel: +45 721-940-000 fax: +45 721-940-001
```

Observe the yellow marked lines

RI factor MUST be close to 2.00
Leak must be between 1-5.

Qd factor is typically 0.5