

FloX & D-FloX component description

1.0 FloX | D-FloX. System for the hyperspectral measurement of sun-induced-fluorescence.



1.1 AC/DC Wall power plug to power the FloX indoor. 110-220V AC to DC 100 W 12 V indoor use only.



1.2 F-LED active fluorescence reference for in-field use.



1.3 Spare plug for in-field power connection

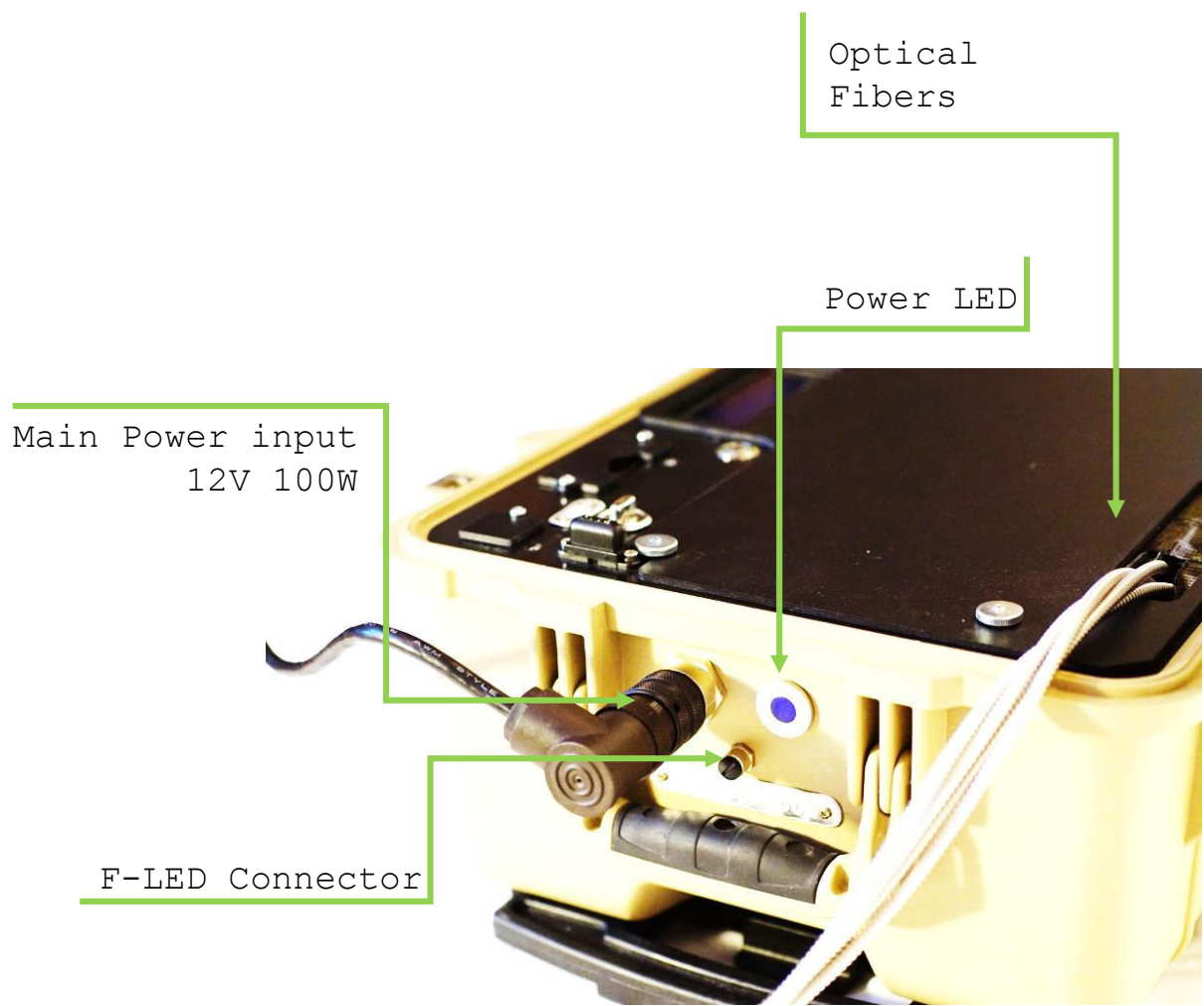
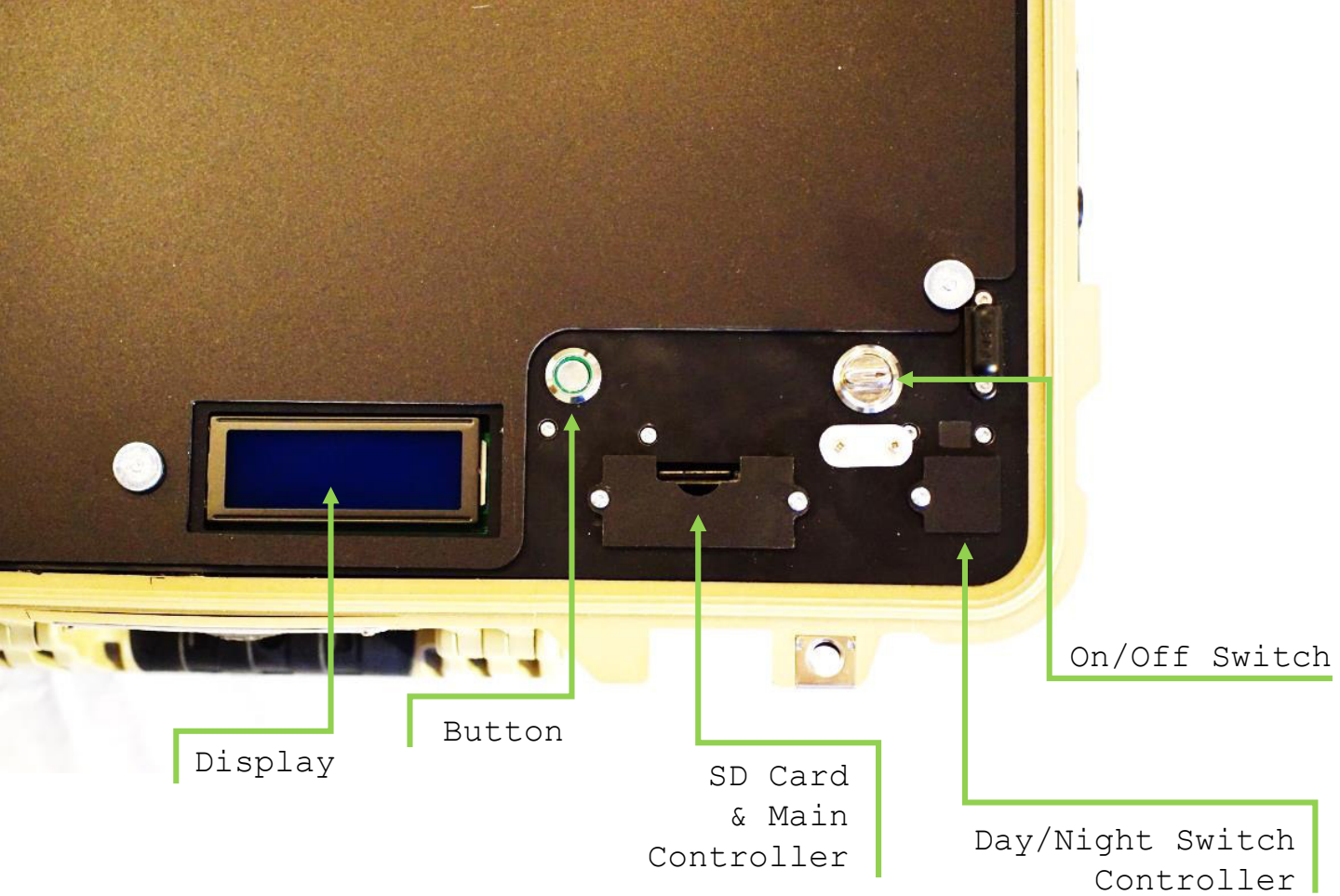


Additional items:

- 1.4 Micro USB cable
- 1.5 XBee wireless connector
- 1.6 Spare cosine receptor

Warning note

DO NOT BEND THE OPTICAL
FIBERS BEYOND 16 CM DIAMETER



FloX & D-FloX first startup guide

1. Connect the AC/DC wall socket to the system to provide power
2. Switch the On/Off switch to towards On position.

The system will start up, perform a self-check and will enter the continuous measurement mode. Two beeps indicate the end of the self-check. One beep indicated the end of a measurement cycle.

3. Switch off the system.
4. Remove the SD card and insert the SD card into a computer

Locate the folder inside the root folder of the SD card, which is named after the current date (YYMMDD). Open the folder and investigate the spectral raw data measured by the system.

Startup

Switch On

D-FloX V0.5
QEPro ok

S1

D-FloX V0.5
Manual Mode?
QEPro ok

S2

D-FloX V0.5
Measuring...
QEPro ok

S3

If Button Pressed

Manual Mode

D-FloX V0.5
Manual Mode Set
QEPro ok

M1

If Button Pressed

Measurement

Nr:1 D-FloX V0.5
Measuring... GPS ok
19:06:13 Opt FLAME

CF1

Nr:1 D-FloX V0.5
Measuring... GPS ok
19:06:33 WRIT=2.00s

CF2

Nr:1 D-FloX V0.5
Measuring... GPS ok
19:06:51 VEGIT=2.00s

CF3

Nr:1 D-FloX V0.5
Measuring... GPS ok
19:06:55 FLAME WR ok

CF4

Nr:1 D-FloX V0.5
Measuring... GPS ok
19:06:59 FLAME VEG ok

CF5

Nr:1 D-FloX V0.5
Measuring... GPS ok
19:07:07 FLAME DC ok

CF6

Nr:1 D-FloX V0.5
25.00C 33.50% 11.73V
19:07:12 Opt QEPro

CQ1

Nr:1 D-FloX V0.5
25.00C 33.50% 11.73V
19:07:27 WRIT=4.00s

CQ2

Nr:1 D-FloX V0.5
25.20C 33.30% 11.73V
19:10:24 VEGIT=4.00s

CQ3

Nr:1 D-FloX V0.5
25.00C 33.50% 11.73V
19:07:47 QE WR ok

CQ4

Nr:1 D-FloX V0.5
25.00C 33.50% 11.73V
19:07:51 QE VEG ok

CQ5

Nr:1 D-FloX V0.5
25.00C 33.50% 11.73V
19:07:56 QE WR2 ok

CQ6

Nr:1 D-FloX V0.5
25.00C 33.50% 11.73V
19:08:05 QE DC ok

CQ7

If Button Pressed

Nr:1 D-FloX V0.5
Ready :)
19:10:47 QE DC ok

M2

If in automatic mode

Errors

D-FloX V0.5
SD error

Please insert a SD
Card into the FloX

D-FloX V0.5
No Calibration

No calibration
files on
the SD card. No
live fluorescence
values will be
displayed

	Startup
S1	The system performs selfchecks and initialises.
S2	The manual mode can be entered by pressing the button.
S3	If the button was not pressed, the system will enter the automatic measurement mode and continuously acquire data according to the preset configuration.
	Manual Mode
M1	Manual mode is set and the device will remain in manual mode until the next restart. To start the measurement cycle, press the button.
M2	The measurement cycle is complete and will start the next measurement on pressing the button.
	Measurement Cycle Full Range Spectrometer (D-FLoX only)
CF1	The measurement cycle starts. If the GPS is active, "GPS ok" will be displayed. The full range spectrometer is now optimizing the integration time for the up- and downwelling fiber. This may take a few seconds depending on the light intensity.
CF2	An optimized integration time for the downwelling light was set and is displayed.
CF3	An optimized integration time for the upwelling light was set and is displayed.
CF4	The full range spectrometer has measured the downwelling light
CF5	The full range spectrometer has measured the upwelling light
CF6	The full range spectrometer has acquired the dark current for both channels. At this step, the data is saved to SD card and transmitted via the serial port if data transfer is active.
	Measurement Cycle Fluorescence Range Spectrometer
CQ1	The fluorescence range spectrometer is optimizing the integration time for both channels. This step takes a few seconds
CQ2	An optimized integration time for the downwelling light was set and is displayed.
CQ3	An optimized integration time for the upwelling light was set and is displayed.
CQ4	The fluorescence spectrometer has measured the downwelling light
CQ5	The fluorescence spectrometer has measured the upwelling light
CQ6	The fluorescence spectrometer has measured the downwelling light again, to assess the stability of the light conditions
CQ7	The dark current of both channels has been measured. Afterwards the data is saved to SD card and transmitted via serial if serial data transfer is active. If the system health is good, it will beep 1 time. If the autonomous mode is active, the system will await the interval (standard = 0 seconds) between measurements and afterwards start a new measurement cycle. If the manual mode is active, the device will wait for the button to be pressed and afterwards start a new measurement cycle.