



FGC100

FluxGage[™]

Calibration Unit FGC100

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1 Acronyms

DUT – Device Under Test

Note: The FGC100 calibration lamp complies with standard IEC 62471:2006 (First Edition) "Photobiological safety of lamps and lamp systems" and is classified as Low risk (Risk Group 1) when used as a standalone luminaire. When the FGC100 calibration lamp is connected to the FluxGage system it is classified as Exempt Group (RG0).

2 Introduction

The FGC100 calibration system is used to calibrate the FluxGage LED luminaire system. The FGC100 includes:

- 12VDC adapter
- Control unit
- Lamp unit with protective cap
- D-type cable
- 100-230VAC mains cable
- Disk on key

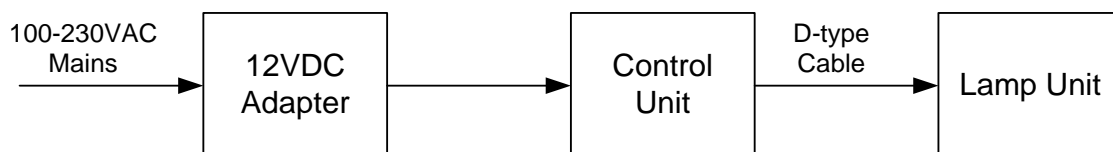


Figure 1. FGC100 Block Diagram

The lamp unit includes:

- LED mounted on a heat sink
- Temperature sensor
- Fan for temperature control.
- D-type connector
- White reflector
- Protective cap for the reflector
- Two thumb screws for attaching the lamp unit to the FluxGage lid



Figure 2.FGC100 Lamp Unit

The control unit includes

Front panel

- Fixed current source for the LED
- Temperature stabilization circuit
- General on/off switch
- Hour meter
- LED on/off push button
- LED temperature indicator light (Green/Red)

Back Panel

- D-type connector
- USB connector (for usage at Ophir service centers only)
- DC power in connector

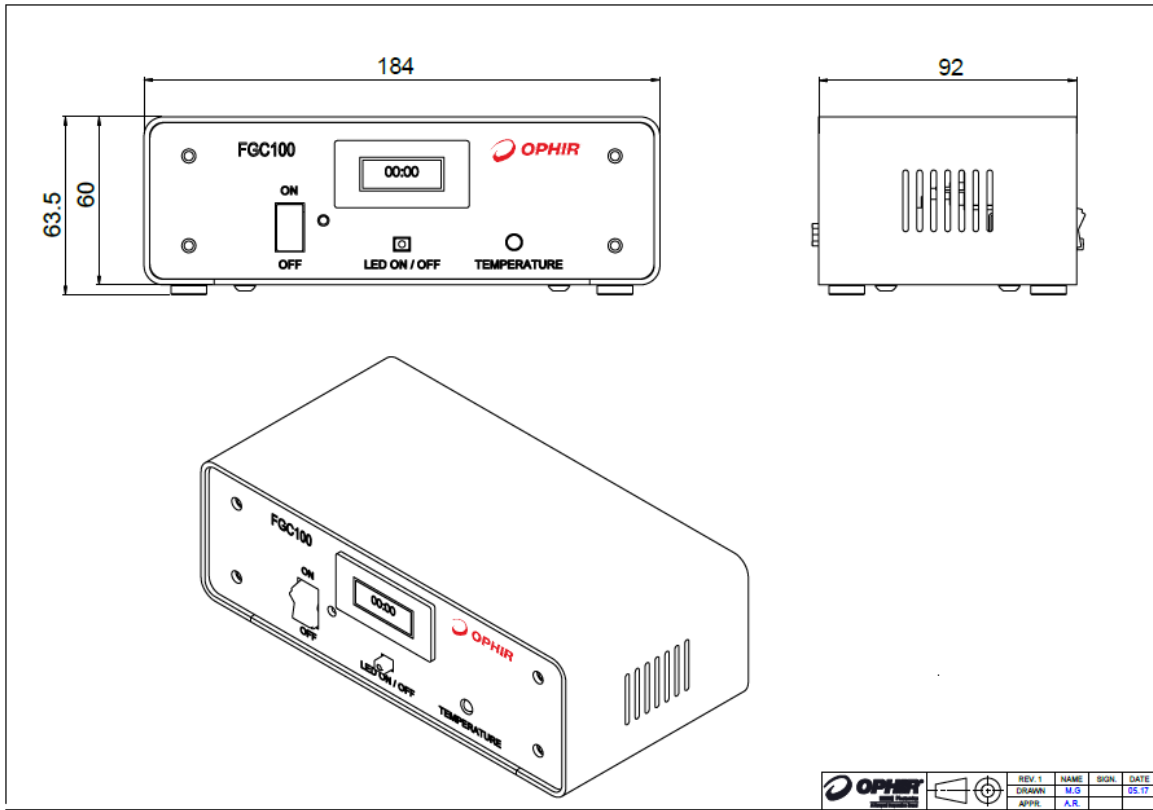


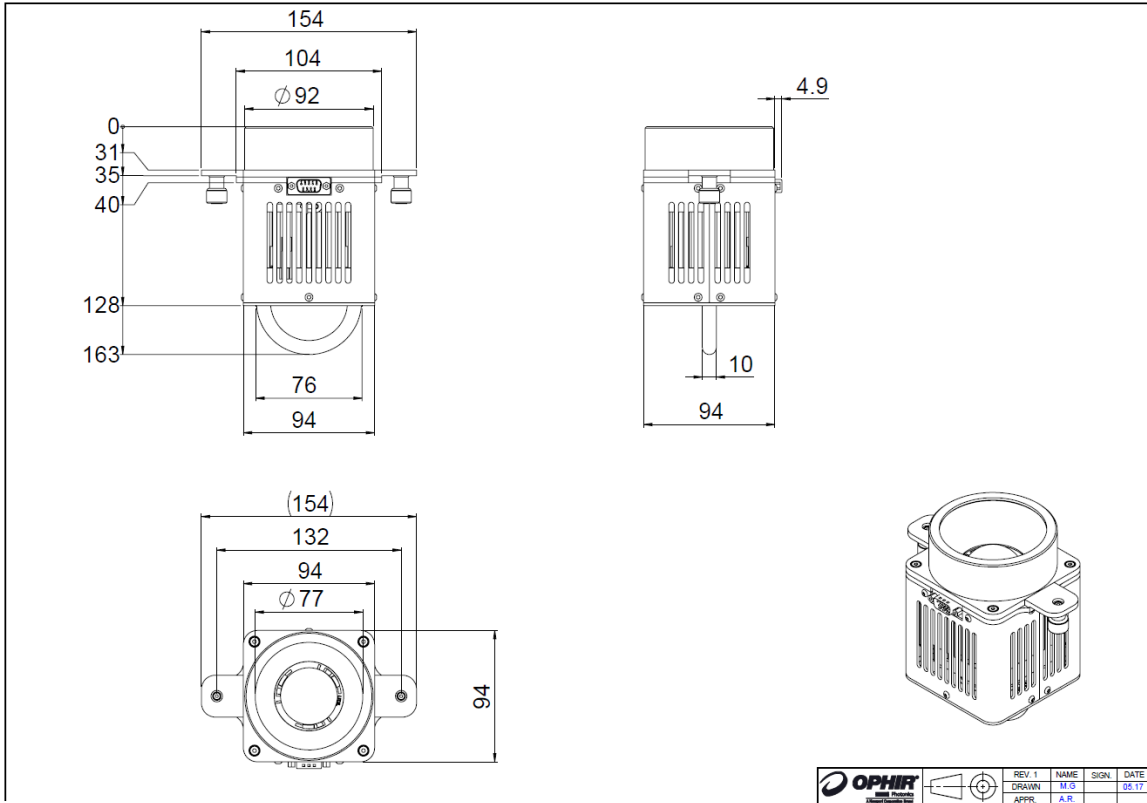
Figure 3. FGC100 Control Unit – Front



Figure 4. FGC100 Control Unit - Back

3 Mechanical Drawings





4 Setting Up The FGC100

- Place the FluxGage box on a flat surface.
- Place the lid over the FluxGage. Make sure the lid is placed such that the round cover is over the spectrometer diffuser.
- Remove the round cover from the lid
- Remove the protective cover from the FGC100 lamp unit
- Insert the FGC100 lamp unit into the hole in the lid and secure it using the two thumb screws
- Connect the D-type cable between the FGC100 control unit and the FGC100 lamp unit
- Connect the output cable of the 12VDC adapter to the FGC100 control unit
- Connect the mains cable to the 12VDC adapter and plug it into a mains socket



Figure 5. FGC100 connected to FluxGage

4.1 Operating the FGC100



Figure 6. FGC100 Control Unit - Front

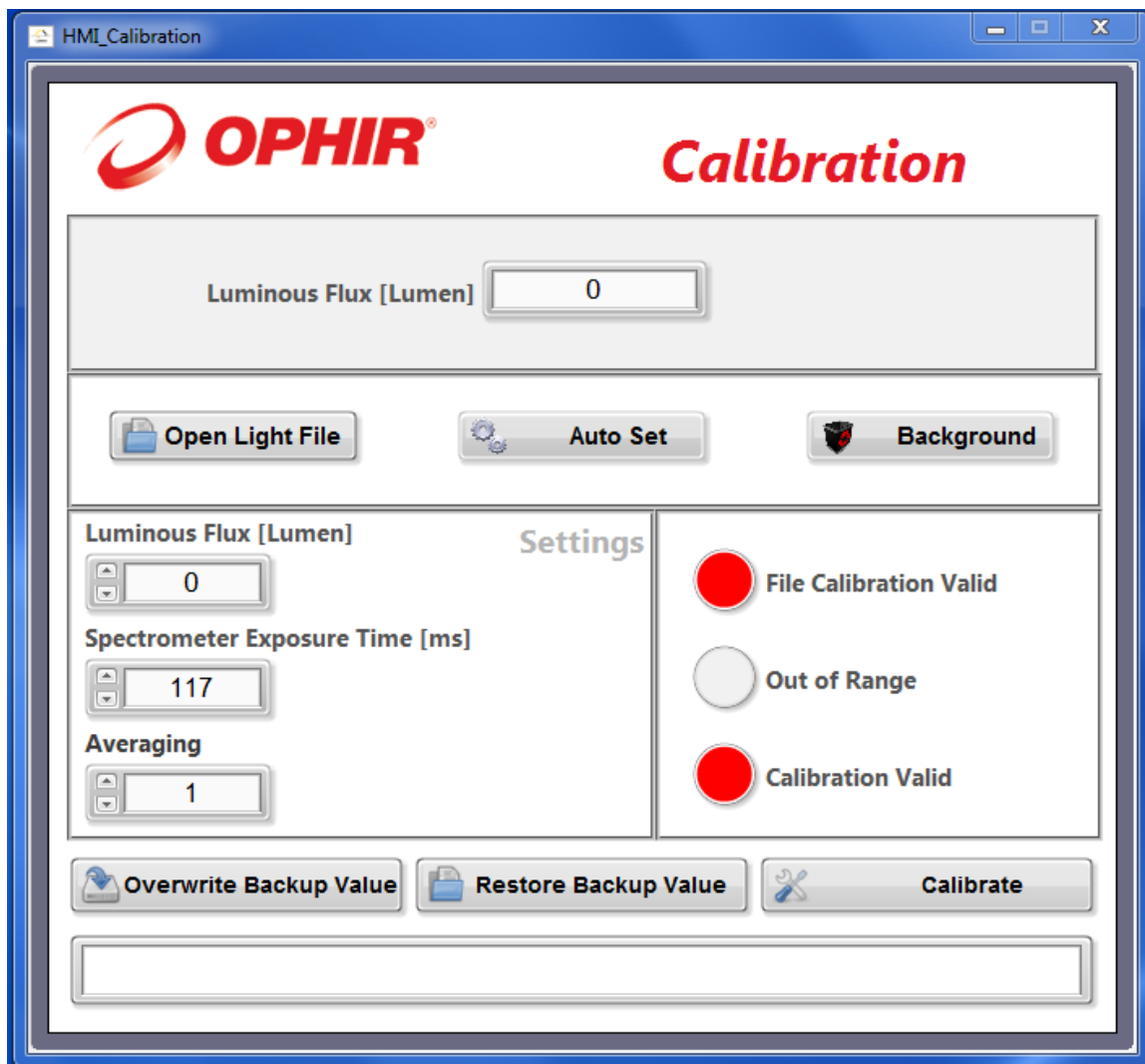
Turn the control unit on using the on/off switch (on the left)

Press the LED on/off push button to turn on the lamp unit

The temperature indicator will be red initially and will turn to green after a few minutes when the temperature of the lamp unit will be stabilized. However, wait at least 30 minutes before using the FGC100.

The hour meter displays the total time in which the LED in the lamp unit was on. After 75 hours, the FGC100 (lamp unit and control unit) should be sent to Ophir for recalibration.

5 Performing Calibration of FluxGage Using FGC100



5.1 Calibration of the spectrum measurement and the total flux measurement

Follow these steps:

- To calibrate the FluxGage click ‘Calibration’ on the top banner of the FluxGage software.
- In the setting area, enter the total luminous flux of the FGC100. The value is provided with the Disk-On-Key included in the FGC100.
- Click ‘Open Light File’ and select the spectral calibration file provided with the Disk-On-Key included in the FGC100.
- If the file is loaded correctly, the ‘calibration file valid’ indicator will turn green.
- Turn on the FGC100 lamp unit.
- Press ‘Autoset’ and wait for the operation to complete.
- In the setting area, select 30 averages.
- Turn the FGC100 lamp unit off.
- Press ‘Background’ and wait for the operation to complete.
- Turn the FGC100 lamp unit on, and allow enough time to reach thermal stabilization (~30minutes).
- Press ‘Calibrate’ and wait for the operation to complete.
- At the top of the screen, the measured flux of the calibration source will appear. It should match the value entered in the settings area.
- Click on the top right corner to exit the window.

5.2 Calibration of the total flux measurement only

Follow these steps:

- To calibrate the FluxGage click ‘Calibration’ on the top banner of the FluxGage software.
- In the setting area, enter the total luminous flux of the FGC100. The value is provided with the Disk-On-Key included in the FGC100.
- Press the push button to turn the FGC100 lamp unit on.
- Press ‘Autoset’ and wait for the operation to complete.
- In the setting area, select 30 averages.
- Press the push button again to turn the FGC100 lamp unit off.
- Press ‘Background’ and wait for the operation to complete.
- Press the push button to turn the FGC100 lamp unit on, and allow enough time to reach thermal stabilization (~30minutes).
- Press ‘Calibrate’ and wait for the operation to complete.
- At the top of the screen, the measured flux of the calibration source will appear. It should match the value entered in the settings area.
- Click on the top right corner to exit the window.

5.3 Calibration of the spectrometer only

Follow these steps:

- To calibrate the FluxGage click 'Calibration' on the top banner of the FluxGage software.
- In the setting area, enter the total luminous flux value zero
- Click 'Open Light File' and select the spectral calibration file provided with the Disk-On-Key included in the FGC100.
- If the file is loaded correctly, the 'calibration file valid' indicator will turn green.
- Press the push button to turn the FGC100 lamp unit on.
- Press 'Autoset' and wait for the operation to complete.
- In the setting area, select 30 averages.
- Press the push button again to turn the FGC100 lamp unit off.
- Press 'Background' and wait for the operation to complete.
- Press the push button to turn the FGC100 lamp unit on, and allow enough time to reach thermal stabilization (~30minutes).
- Press 'Calibrate' and wait for the operation to complete.
- At the top of the screen, the measured flux of the calibration source will appear. It should match the value entered in the settings area.
- Click on the top right corner to exit the window.

5.4 Back up calibration

In addition to the working calibration there is a backup calibration.

The backup calibration can be retrieved by pressing 'restore back up calibration'. This will copy the backup calibration into the working calibration. The backup calibration can be overwritten by pressing 'over write back up calibration'. This should be done when the calibration is done with an Ophir certified calibration unit.