



# LUMINAR



## GUIDE 2013

VER 4.9.12 2013



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## FRONT VIEW

- 1 Adjustable LCD

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- 2 Keypad

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- 3 Exit from menu 


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- 4 Hotkey [ $\Sigma$ ] - Provokes Counting

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- 5 Navigation arrows

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- 6 Menu & Selector 

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- 7 Stills capture

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- 8 Video recording

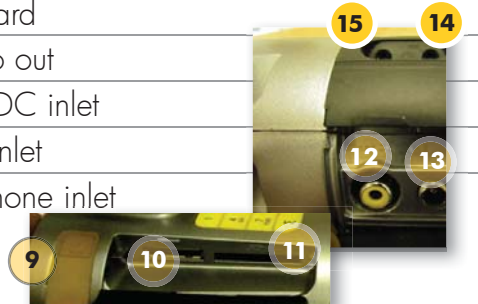


3 front view



## SIDE VIEW

- 9 Power on/off
- 10 Aux / Temperature & Humidity inlet
- 11 SD card
- 12 Video out
- 13 AC/DC inlet
- 14 Mic inlet
- 15 Earphone inlet



4

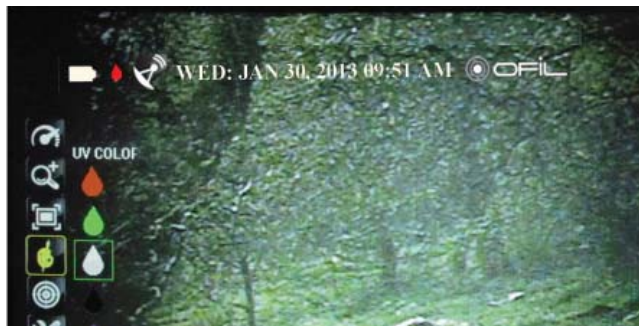
side view



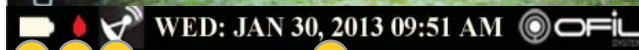
## OSD - ON SCREEN DISPLAY

	Top OSD	Left Side OSD
first line	16 Power source	23 Menu
	17 Corona color	Bottom OSD
	18 GPS signal	24 Camera Mode
	19 Date & Time	25 Focus
second line	20 GPS Data	26 Field of View
	21 Temp & Humidity	27 Gain
	22 Video/Stills on	28 Counting





## OSD - TOP LINES 1 & 2



- 16 17 18 19

---

- 16 Power source - Battery or AC

---

- 17 Corona color - Hue

---

- 18 GPS signal - Red no | Green on

---

- 19 Date & Time - Day: MMDD,YYYY hh:mm

---

- 20 GPS Data - Latitdue & Longitude

---

- 21 Temp & Humidity - if sensor is attached

---

- 22 Video recording - Red | Stills - Yellow

6 OSD - top line



## OSD - LEFT - MENU

### Triggered by



- 23 Gain - page 13

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- 24 Zoom - page 14

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- 25 FOV (field of view) - page 15

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- 26 Corona Color - page 16

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- 27 Focus - page 17

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- 28 Settings - page 28

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- 29 Playback - page 22

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- 30 Exit

7

menu



## O&D - BOTTOM

**VISIBLE AF W-FOV GAIN:170 3400**

31

32

33

34

35

31 Camera Mode - Visible | UV | Combined

32 Auto Focus - AF | Manual Focus - MF

33 Wide FOV - W-FOV | Narrow FOV N-FOV

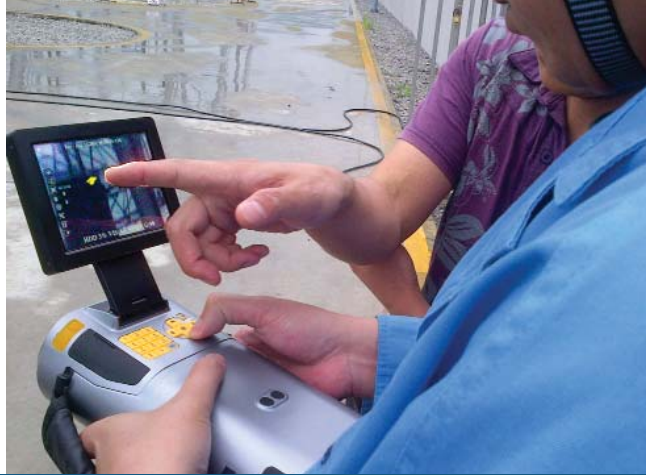
34 Gain value

35 Counting

8

OSD - bottom





## OPERATION

1	Power	9	Mode
2	General	10	Snapshot - stills
3	Gain	11	Video recording
4	Visible Zoom	12	Playback
5	Field of View	13	Audio recording
6	Corona color	14	Text subtitles
7	Counting	15	GPS
8	Focus	16	Settings

9

operation



## 1. POWER

- Short press on the power button to turn on, long press to turn off
- A green LED turns on for a couple of seconds
- Wait 2 minutes while the systems initialize

### **POWER SOURCES:**

- Rechargeable Battery
- AC/DC input 5V, 6A
- Plug in/out the AC/DC when the camera is off

# 1. POWER

## **BATTERY:**

A full battery can last about 3 hours.

## **CHARGING THE BATTERY:**






1. Detach the battery from the Luminar: press on the top & bottom seats and pull
2. First connect the battery to the charger
3. Then, connect the charger to a power source
4. Full charge takes about 12 hours

## **AC/DC INPUT 5v, 6A**

1. Plug in the AC/DC cable to the Luminar
2. Connect to a power source
3. The camera gives priority to electricity supply

## 2. GENERAL

1. Functions are listed in the on-screen menu
2. The menu appears when clicking on the **SELECTOR**  and is removed by pressing on  or on the exit icon 
3. To select/deselect a function item from the menu use the **UP/DOWN/SELECTOR** buttons
4. A green frame indicates which function is in focus
5. The **UP/DOWN** button arrows move the green frame
6. The **SELECTOR** button changes the color of an icon white/yellow yellow/white
7. A yellow icon indicates a selected function. A white icon indicates an idle function
8. Some functions have a sub-menu. The green frame will indicate which sub-menu item is in focus
9. The green frame can be moved when all main menu icons are white

### 3. GAIN



- Gain controls the sensitivity to UV and is manifested graphically as the size and number of UV spots on the screen
- With a higher gain it is easier to detect corona sources. With a lower gain the emitting source is better conceived
- Gain values start at 0 and end at 250
- Default value is 150
- **Move the green frame to the Gain icon**
- **Click on the SELECTOR button to turn on the Gain Function**
- Use the UP/DOWN arrows to control the gain values

## 5. VISIBLE ZOOM



- Zoom is used to magnify the visible image
- Once corona is detected, zoom-in to get more detailed data
- While zooming the camera enters automatically the **VISIBLE-MODE** (no UV displayed and no counting). When exited the **COMBINED-MODE** is restored
- Move the green frame to the visible zoom icon
- Click on the **SELECTOR** button to turn on the visible zoom function
- Use the **UP/DOWN** arrows to zoom in and out
- A long press on either arrows activates the fast zoom. Maximum zoom is attained within one second

## 5. FOV - FIELD OF VIEW



- Affects the working distances & the resolution of the image. Wider FOV is used for shorter distances from the target object. Narrower FOV provides higher image resolution
- Move the green frame to the FOV
- Click on the **SELECTOR** button to turn on the FOV function
- A sub menu with 2 options of narrow and wide views appears
- Move the green frame to the desired view
- Click on the **SELECTOR** to select the view
- The status line will read: W-FOV for wide FOV and N-FOV for narrow
- NOTE: narrow  $5^{\circ} \times 3.75^{\circ}$   
wide  $10^{\circ} \times 7.5^{\circ}$












## 6. CORONA COLOR



- Select from a palette of 5 colors to make the corona signal conspicuous
- Move the green frame to the color icon
- Click on the SELECTOR to turn on the color function
- A sub menu with 5 color swatches appears: Red, Green, White, Black, Yellow
- Use the UP/DOWN arrows to move the green frame to the preferred color
- Click on the SELECTOR to make a selection
- An indication of the selected color is displayed on the screen



## 7. FOCUS

-  • The focus mechanism manages simultaneously both visible & UV channels
-  • By default the camera is in auto focus (AF) mode
-  • Switch to manual focus when the corona source is behind a fence or during poor lighting conditions
-  **AF**
-  **MF**
-  • Move the green frame to the focus
-  • Click on the selector to turn on the FOCUS function
-  • A sub menu with 2 options: AF (Auto Focus) MF (Manual Focus) appears
-  • Move the green frame to the desired focus mode and click on the SELECTOR
-  • In MF change the focus with the UP/DOWN arrows
-  • The OSD bottom status line will display the selected mode as MF or AF

## 8. COUNTING



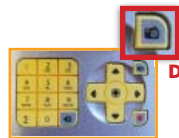
- Counting displays the counted detected UV signals and is available while in combined mode. Counting is unavailable during zooming
- The counting value represents an average of a couple of measurements. It is therefore advised to wait for the result to become stabilized
- Counting values are qualitative indication of the corona in an area enclosed by a square frame. Values are displayed in the OSD bottom status line with a preceding "c:"
- **To change the size of the counting frame click on the hotkey [Σ]**
- **Each click changes the size of the frame**

## 9. MODE



- Display modes: **COMBINED** | **UV** | **VISIBLE**
- **COMBINED** - both visible & UV spectral ranges are deployed
- **VISIBLE** - only the visible spectral range is deployed - no corona
- **UV** - if corona is detected it will be displayed, else the display is black
- **Select the SETTINGS icon**
- **Select the DISPLAY button**
- **Click on the SELECTOR to open a list**
- **Move the green frame to a mode**
- **Click on the SELECTOR to enable the selected mode, move to OK and click on the SELECTOR to save and leave**
- **Move to EXIT and click on the SELECTOR**
- The OSD bottom status line will display: Combine or Visible or UV

## 10. SNAPSHOT - STILL



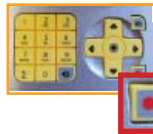
**ENSURE SD CARD IS INSERTED**

**DO NOT EJECT SD CARD WHEN THE CAMERA IS ON**

- To capture a still picture click on the PICTURE button
- A yellow circle will be displayed on the monitor during recording
- The picture format is "bmp"
- Pictures are stored in the SD card
- To preview a stored picture navigate to PLAYBACK (P. 22)

NOTE: corona is a flashing phenomenon and can be evasive. To ensure corona has been captured take multiple pictures per scene

## 11. VIDEO RECORDING



**ENSURE SD CARD IS INSERTED**  
**DO NOT EJECT SD CARD WHEN THE CAMERA IS ON**

- To record a video clip click on the RECORDING button
- A red circle will be displayed on the monitor during recording
- The video format is "avi"
- Video clips are stored in the SD card
- To preview a stored video clip navigate to PLAYBACK (p.22)
- NOTE: for documentation and reporting purposes it is advised to include as much information as possible in the status lines: GPS data, ambient conditions of temp & humidity (optional accessory), voice narration & counting

## 12. PLAYBACK



- Playback lets reviewing images and videos that are stored on the SD card
- Move the green frame to the **PLAYBACK** and click on the selector
- To see a stored image/video move the green frame to the **IMAGE/VIDEO** icon and click on the **SELECTOR** to get a list of files
- Use the **UP/DOWN** arrows to navigate to a picture/video and click on the selector to preview the picture/video
- Nomenclature:  
M-month | D-day | Y-year | h-hour |  
m-minute | s-seconds

### Still pictures

OFIL\_MMDDYYYYhhmmss.bmp

### Video clip:

CH01\_MMDDYYYYhhmmss.avi

## 13. AUDIO RECORDING

- Add narrations to your video clips with data about the condition of the inspected object
- Narrations are handy when processing the video clips and for reports
- **To add narrations plug-in the microphone and click on VIDEO RECORDING. Match the icons on the plugs to those on the camera (the mic is closer to the battery)**



**NOTE:**

It is recommended to keep the mic 30cm (1 foot) away from the mouth to get a clean recording

- Narrations will be recorded with a movie clip and played during playback

## 14. TEXT SUBTITLES



- Add short titles to your pic/video
- You can prepare 8 lines of titles though use only one at a time
- To add titles select the SETTINGS icon
- Move the green frame to CAMERA and click on the SELECTOR
- Select CAMERA TITLE by clicking on the SELECTOR
- You will get 8 empty text boxes
- Select a line
- How to enter text:

### **option 1: yellow keypad**

- Click on a key until you get to the desired character. Click the selector
- The cursor moves forwards automatically
- To repeat a letter click on the SELECTOR



## 14. TEXT SUBTITLES



- [Σ] - shift
- Back arrow - erase
- 0 - space
- **option 2: virtual keypad**
- Use the UP/DOWN arrows to navigate
- Use the SELECTOR to pick a character
- To retype a character - use the SELECTOR again
- Shift - enables/disables caps lock
- Back arrow - erase
- ← - leave the editor
- In the TITLE SELECT square text box enter the line number of the title that will appear on the screen. Navigate with the right/left arrows and select the number from the virtual keyboard or click on the keypad
- To leave the titles options select OK to save and leave, or cancel to ignore changes and leave

## 15. GPS



- Use GPS data to distinguish between similar inspected objects and locations
- By default the GPS is turned off and no GPS icon is displayed
- To turn the GPS on select **SETTINGS**
- Select **DISPLAY**
- Select **GPS**. GPS icon appears on the



LCD Red - no reception, Green - sync

- When GPS is turned on the following options are available in the menu
  - **ON** - the GPS reading appears both on the captured media and on the LCD
  - **ON REC** - the GPS reading is embedded in the captured media and is not displayed on the LCD

## 16. SETTINGS



- Move the green frame to the **SETTINGS**
- Click on the selector to turn on the settings options
- A new sub-menu opens up with the following control-buttons:

**DISPLAY** **CAMERA** **SYSTEM**

- Use the up/down arrows to move the green frame to a selected control button
- Use the selector to turn on the selected control

## SETTINGS



**Display:** OSD | DISPLAY MODE | VIDEO OUT

**OSD** - on screen status line display

**STATUS BAR:** ON/OFF

Selecting ON will display the bottom line

**TITLE:** ON/OFF

Selecting ON will display the selected title line (see page.24)

**GPS:** (see page.26)

**TEMPERATURE SENSOR:** ON/OFF

Selecting on will display the temperature and humidity values, provided the sensor is attached (optional accessory)

**LANGUAGE:** English

Localization is optional per customers request

To exit - move the green frame to OK/CANCEL and click on the selector

# SETTINGS



**Display:** OSD | DISPLAY MODE | VIDEO OUT



**DISPLAY MODE**



SEE PAGE 19



**VIDEO OUT**



**LCD** (DEFAULT)



**EXTERNAL MONITOR** - image will be displayed on an external monitor. The green led turns on and the LCD turns black. **To get back to a regular display restart the camera.**



To exit - move the green frame to OK/CANCEL and click on the selector.

# SETTINGS



**Camera:** TITLE | EXPOSURE | COLOR



**CAMERA TITLE** SEE PAGE 25



**CAMERA EXPOSURE**



**EXPOSURE**



AUTO (DEFAULT) | 1/2 | 1/4 | 1/8 | 1/15 | 1/30



The exposure rate is the time per second the camera shutter is open. It affects the brightness of the captured image. The smaller the exposure time the darker the object. Use AUTO to allow the camera adjust itself optimally.



**COLOR ADJUSTMENTS**

**BRIGHTNESS | CONTRAST | SATURATION | HUE**

To get to a feature move the green frame using the up/down arrows. To change values use the right/left arrows. To apply changes click on APPLY.

# SETTINGS



**System:** INFORMATION | DATE/TIME | SLEEP



MODE | DEFAULT SETTINGS | SOFTWARE UPDATE



## SYSTEM INFORMATION



Technical information about the firmware, hardware, kernel version etc.



## DATE/TIME



Update/modify the date/time.



Use the up/down arrows to navigate vertically, and the right/left arrows to change values.



To save and exit use the UP/DOWN arrows to focus on OK and then click on the SELECTOR.

## SLEEP MODE

The default value is 5 minutes. After 5 minutes if idle [not during recording nor

# SETTINGS



**System:** INFORMATION | DATE/TIME | SLEEP



MODE | DEFAULT SETTINGS | SOFTWARE UPDATE



(contd.) during video-out, or playback] the system hibernates.



During hibernation the green led is on.



**To restart click on any key.**



Sleep mode assists extending battery life time.



## **DEFAULT SETTINGS**

This option restores factory original settings.

If selected your saved selections will be cancelled.

The default original factory settings are displayed in pages 35-36.

## **SOFTWARE UPDATE**

Firmware updates will be sent to you with instructions.



# SETTINGS



## MENU ITEM

Gain	150
Vis Zoom	Off
FOV	NFOV
Corona Color	White
Focus	Auto Focus

## DISPALY

OSD	Status - on Title - off GPS - off Temp Sens. - off
Display Mode	Combine
Video Out	LCD

# SETTINGS



## CAMERA

Camera Title	All lines empty Line No1 is selected
Camera Exposure	Auto
Color Adjustments	Brightness - 200 Contrast - 144 Saturation - 128 Hue - 0
Sleep Mode	5 min.

Date & Time	01.01.2013 00:00
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