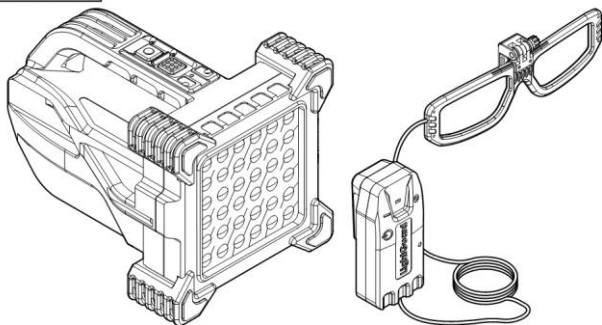


# LightGuard

## Hand Single Unit

### Operation User Manual

101-00006v01



#### Revision #0

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# CHAPTER 1

# INTRODUCTION

## **1.1 PURPOSE OF THIS POCKETBOOK**

This pocketbook describes the Hand Single Unit (HSU-50B) and its components, and details the operating procedures.

## **1.2 ARRANGEMENT OF THIS MANUAL**

This pocketbook includes the following chapters:

### **Chapter 1 - Introduction**

This chapter provides general information on the scope and arrangement of the pocketbook, list of applicable documents, definition of warnings, cautions and notes, and list of acronyms and abbreviations.

### **CHAPTER 2 - Safety**

This chapter provides safety instructions and warnings that are relevant to the HSU-50B.

### **CHAPTER 3 - Overview**

This chapter provides a general description of the HSU-50B and its accessories, technical data and human machine interface.

### **CHAPTER 4 - User Guide**

This chapter provides step by step operation instructions for HSU-50B.

## 1.3 WARNINGS, CAUTIONS AND NOTES

Warnings and cautions precede the text and follow the paragraph heading to which they apply. Notes may precede or follow applicable text, depending upon the material to be highlighted. Warnings, cautions or notes are concise statements used to emphasize important or critical data. The definitions of warning, caution and note are as follows:

### WARNING



A warning highlights an essential operating or maintenance procedure, practice, condition, statement, etc., which, if not strictly observed, could result in injury to, or death of, personnel or long-term health hazards.

### CAUTION



A caution highlights an essential operating or maintenance procedure, practice, condition, statement etc., which, if not strictly observed, could result in damage to, or destruction of, equipment or loss of mission effectiveness.

**NOTE**

A note highlights or clarifies an essential system description or operating or maintenance procedure, condition or statement.

## 1.4 LIST OF ABBREVIATIONS AND ACCRONYMS

ECO	Economy
HSU	Hand Single Unit
LPG	Light Protective Glasses
LED	Light Emitting Diode

# CHAPTER 2

# SAFETY

## 2.1 GENERAL SAFETY INSTRUCTIONS



Read the user manual before using the product for the first time.



It is forbidden to expose people to the stun feature for a period longer than 100 seconds per eight hours when the distance is 0.5 meters. The time period increases depending on the exposure distance.



The HSU-50B is equipped with high current LI-ion battery, do not take apart the HSU-50B to avoid risk of electrical shock.



The HSU-50B is designed to comply with MIL-STD-810 and IP67 specifications. Removing the cover voids the warranty and might ruin the seal.



Do not operate the HSU-50B while it is being charged as this can shorten the life of the battery.



Activating stun mode while the LPG is not synced might result in flash-blinding the operator.

## 2.2 BATTERY SAFETY



Do not leave the HSU-50B near a fire or a heated source.



Do not throw the HSU-50B into a fire.



Do not leave, charge or use the battery in a vehicle or similar place where the temperature can be over 60°C.



Charge the battery only using the provided charger or a company approved charger.



Do not immerse, throw, wet the battery in water/sea water



Stop charging the battery if charging isn't completed within the specified time.



Keep away from fire immediately when leakage or foul odours are detected. If liquid leaks onto skin or cloths, wash well with fresh water immediately.



If liquid leaking from the battery gets into eyes, do not rub them and wash them with clean water. Seek a doctor immediately.



While the battery is charged, used and stored, keep it away from object materials with static electric chargers.



Before using the charger for the first time, be sure to read the charger user's manual.



# CHAPTER 3

# OVERVIEW

## 3.1 GENERAL DESCRIPTION

The Hand Single Unit (HSU) is a ruggedized dual-feature LED flashlight. The HSU is light-weight and has a high capacity battery that enables the operator to carry and operate the flashlight in low-lit or night conditions, in both closed and open areas. The HSU is designed to withstand harsh conditions.


### 3.1.1 Capabilities

- **Dual Functionality** - flashlight/search-light and flash-blinding impact.
- **No Damage to Eyes** - visual recovery within 1-2 seconds.
- **Range** - Flash-Blind, up to 10 meters.
- **Tripod Interface** (¼ Inch UNC thread).
- **Overheat Protection** - protects the unit from overheating during operation.
- Fully compliant with international safety standards.
- Wireless encrypted synchronization between any number of units.

### 3.1.2 Modes of Operation

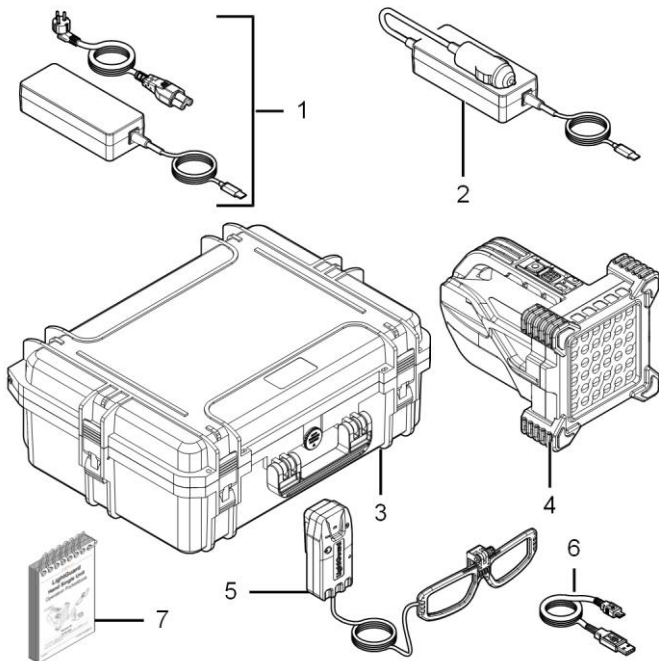
Table 3-1 lists the HSU-50B modes of operation.

**Table 3-1: Modes of Operation**

	<b>Mode</b>	<b>Description</b>	<b>Max Estimated Operation Time</b>
1	Stun	A repeated sequence of flashes of light in the highest intensity of the flashlight designed to stun individuals for a short period of time.	5 unaccumulated minutes
			 2 minutes of continuous mode triggers overheat protection
2	Flashlight	Economy (ECO)	12 hours
		Normal	5 hours
		High	3 hours
		Extreme	1 hour
3	Overheat	Designed to protect the unit from damage. <ul style="list-style-type: none"> <li>At 65°C, the indication LED turns red and warns the user from overheating</li> <li>At 70°C unit operation is disabled and re-enabled below 65°C.</li> </ul>	
4	Standby	The unit is turned on but is neither in Flashlight or Stun.	


## 3.2 KIT OVERVIEW

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**Figure 3-1: Kit Overview**

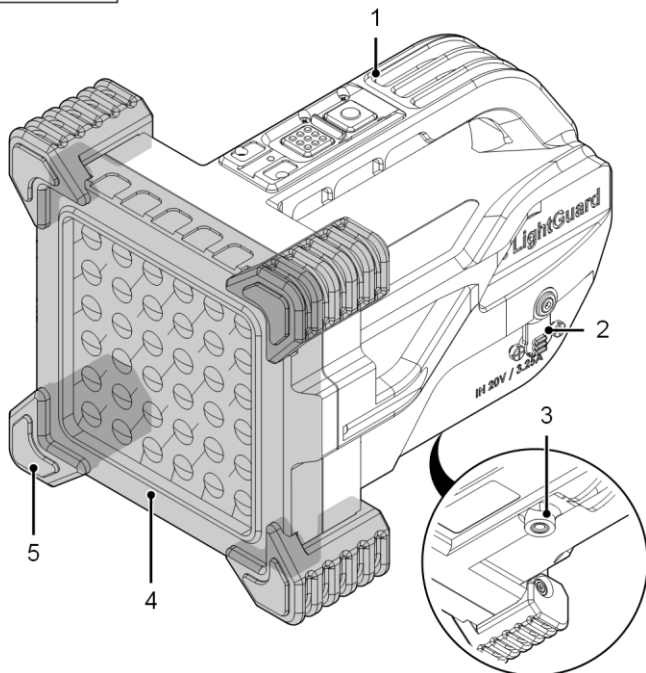
**Table 3-2: Kit Overview**

	Item	Description	P/N
	HSU Kit	Includes items 1,2 and 4.	KIT-HSU-50B
1	HSU Wall Charger	<ul style="list-style-type: none"> <li>• USB Type-C 65W.</li> <li>• AC to DC adapter.</li> <li>• Adapter power cable.</li> </ul>	LG-CHR-USBA
2	HSU Car Charger (Optional)	USB Type-C 65W DC to car plug adapter.	LG-CHR-CARA
3	Package	Container for Items 1 and 3.   Package has a knob to equalize pressure.	LG-PCG-50A
4	HSU	Flashlight unit.	LG-HSU-50B
5	Light Protective Glasses (LPG)	Protects the wearer from the flash-blinding effects.	LG-LPG-10B
6	Micro USB Charger	Cable used to charge the LPG.	LPG-00A
7	Pocketbook	Current user manual.	LG-HSU-RD005

## 3.3 HSU OVERVIEW

### 3.3.1 Physical Description

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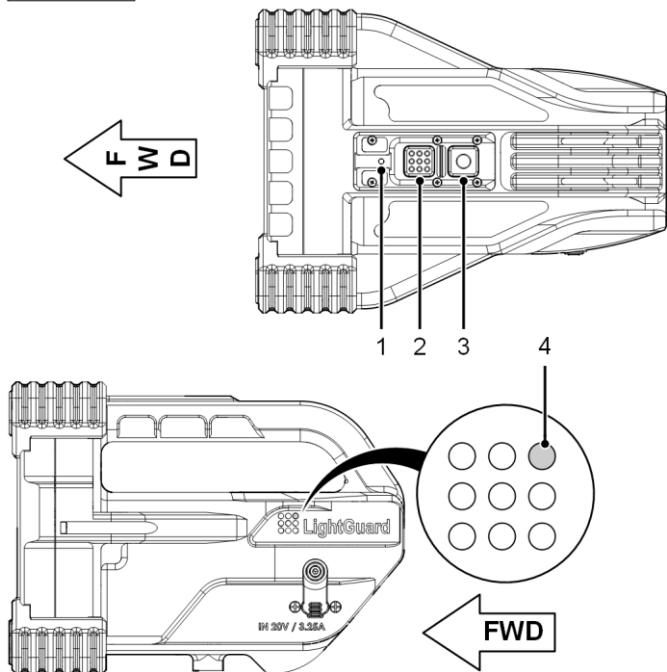
**Figure 3-2: HSU Overview - Physical Description**

**Table 3-3: HSU Overview - Physical Description**

	Item	Description
1.	Handle	<ul style="list-style-type: none"> <li>• Houses the operation buttons.</li> <li>• Used by the operator for carrying the unit.</li> <li>• Provides mounting points for carrying strap (not included).</li> </ul>
2.	Protected Charging Port	A USB Type-C port protected by a rubber cover.
3.	Tripod Interface	¼"-UNC threaded bore that enables to mount the unit to standard ¼" tripods and mounting points.
4.	LEDs	An array of 6x6 white LEDs that produce maximum of 50,000 lumen.
5.	Bumper (x4)	Protects the unit from damage caused by a fall.

### 3.3.2 Controls and Indicators

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**Figure 3-3: HSU Overview - Controls and Indicators**




**Table 3-4: HSU Overview - Controls and Indicators**

	Item	Description
1.	Indication LED	Provides indication for the following: <ul style="list-style-type: none"> <li>• Off - unit is turned off.</li> <li>• Constant red - battery charge is less than 10%.</li> <li>• Blinking red - overheat, unit measured temperature is above 65°C.</li> <li>• Blinking blue - standby mode.</li> <li>• Green - ECO mode.</li> <li>• Yellow - Normal mode.</li> <li>• Constant blue - High mode.</li> <li>• White - extreme.</li> </ul>
2.	Stun button	Turns on the blinding-flash when pressed.
3.	Power button	Provides the following: <ul style="list-style-type: none"> <li>• Two seconds press - turns ON/OFF unit.</li> <li>• Double press - cycles between modes.</li> </ul>
4.	Charging indicator	Provides indication for the following: <ul style="list-style-type: none"> <li>• Off - not charging.</li> <li>• Green LED indicates that the unit is charging.</li> </ul>

### 3.3.3 Technical Data

**Table 3-5: HSU Overview - Technical Data**

	Category	Description
1	Dimensions	19x14x14 cm.
2	Weight	1.25 kg.
3	Battery	<ul style="list-style-type: none"> <li>• 5 cells x 3.8V LI-ion batteries.</li> <li>• 20V/30A.</li> </ul>
4	Charging Time	0% to 100% - three hours.
5	Standards	<ul style="list-style-type: none"> <li>• In compliance with:               <ul style="list-style-type: none"> <li>• Eye safety - IEC 62471.</li> <li>• Electronic - RoHS.</li> </ul> </li> <li>• Designed to comply with:               <ul style="list-style-type: none"> <li>• Battery Safety - UN 38.3.</li> <li>• Environment Engineering - MIL-STD-810, and IP67.</li> </ul> </li> </ul>
6	Maximum Intensity	50,000 lumens.
7	Operating Temperatures	<p>-10°C to +55°C.</p> <div style="display: flex; align-items: center;">  <div style="background-color: #f0f0f0; padding: 5px; border: 1px solid #ccc;"> <p>Up to 70°C internal measurement.</p> </div> </div>
8	Power Consumption	Charging - 20V/3.25A

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## 3.4 LPG

### 3.4.1 Physical Description

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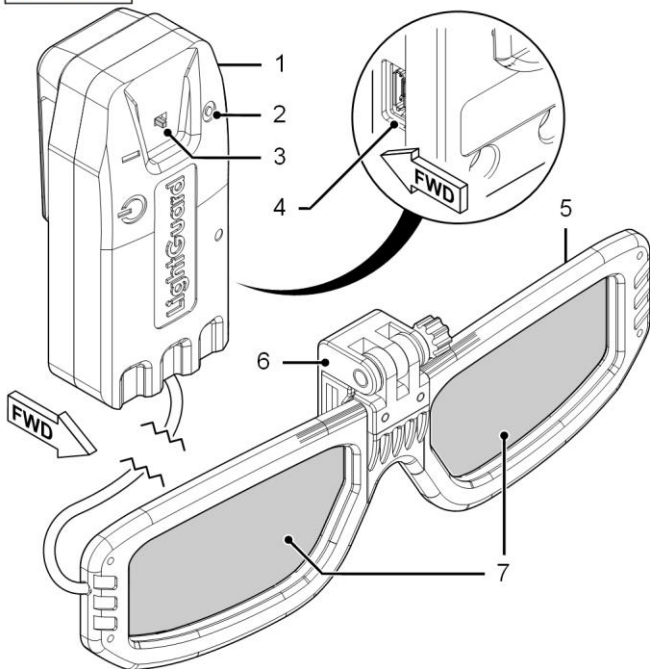


Figure 3-4: LPG - Physical Description

**Table 3-6: LPG - Physical Description**

	Item	Description
1.	Electronic Unit	Contains the following: <ul style="list-style-type: none"> <li>• Battery.</li> <li>• Electronic cards.</li> </ul>
2.		LED that Provides indication for the following: <ul style="list-style-type: none"> <li>• Red and green - not synced to the unit.</li> <li>• Green - synced.</li> <li>• Blue - charging.</li> <li>• Off - turned off.</li> </ul>
3.		Power ON/OFF switch.
4.		Mini-USB charging port.
5.	Anti-Dazzling Unit	Synchronizes with the unit and is activated only when the stun feature is turned on.
6.		Adjustable bracket that secures the protective glasses.
7.		LCD Active shutters that protect the wearer from flash-blinding.

## 3.4.2 Technical Data

**Table 3-7: LPG - Technical Data**

	<b>Category</b>	<b>Description</b>
1.	Dimensions	<ul style="list-style-type: none"> <li>• Clip-on: 16x5.5x2 cm.</li> <li>• Cable: 60 cm.</li> <li>• Electronic Unit: 8x4x3 cm.</li> </ul>
2.	Weight	100 grams.
3.	Battery	LI-ion 3.7V 600mA/H.
4.	Charging Time	0% to 100% - one hour.
5.	Standards	<ul style="list-style-type: none"> <li>• In compliance with:               <ul style="list-style-type: none"> <li>• Eye safety - IEC 62471.</li> <li>• Electronic - RoHS.</li> </ul> </li> <li>• Designed to comply with:               <ul style="list-style-type: none"> <li>• Battery Safety - UN 38.3.</li> <li>• Environment Engineering - MIL-STD-810.</li> </ul> </li> </ul>
7.	Operating Temperatures	-10°C to +55°C.
8.	Power Consumption	Charging - 5V/0.5÷2A

# CHAPTER 4

# USER GUIDE

## 4.1 CHARGING HSU

- a. Connect the power cable to the adapter.
- b. Connect the power cable plug to the wall socket.
- c. Uncover the HSU USB charging port.
- d. Connect adapter USB-C plug into the USB charging port in the HSU.

*Result:*

- The HSU charging indicator is lit green.
  - The HSU is charging.
  - After charging is complete, the charging indicator turns off.
- e. Disconnect the adapter from the wall socket.
  - f. Disconnect the USB cable from the charging port.
  - g. Cover USB charging port with its rubber cover.



It is possible to charge the HSU using the car charger kit (not included).



## 4.2 CHARGING LPG

- a. Connect Micro-USB cable to a 5V/0.5÷2A charger (not included).
- b. Plug the charger into the wall socket.
- c. Connect Micro-USB plug to the USB charging port in the LPG.

*Result:*

- The LPG charging indicator is lit blue.
- The LPG is charging.
- After charging is complete, the charging indicator turns off.

## 4.3 POWERING ON/OFF LPG

- a. Make sure that the LPG is charged (see section 4.2).
- b. Power on the LPG as follows:  
Set LPG power switch to 'I' (ON)  
(see Figure 3-4, 3).

*Result:*

- LPG turns ON.
- Indication LED (see Figure 3-4, 2) is lit red and green.
- After sync with HSU is complete, green LED is lit (see Figure 3-4, 2).



Syncing with HSU is possible only after HSU is turned on (see section 4.4).

- c. Power off the LPG as follows:  
Set the LPG power switch to 'O' (OFF)  
(see Figure 3-4, 3).

*Result:*

- LPG turns OFF.
- Indication LED is off (see Figure 3-4, 2).

## 4.4 POWERING ON/OFF HSU

- a. Power ON the HSU as follows:

Press and hold the power button for two seconds.

*Result:*

- HSU turns on.
- Indication LED is blinking blue.
- HSU is in standby mode.

- b. Power OFF the HSU as follows:

Press and hold the power button for two seconds.

*Result:*

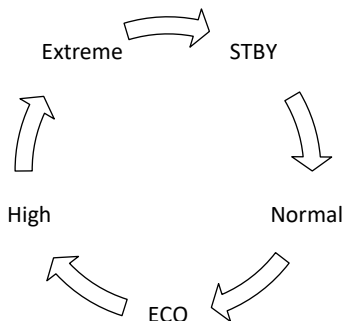
- HSU turns off.
- Indication LED is off.

## 4.5 CYCLING FLASHLIGHT MODES

- Make sure that the HSU is powered on (see section 4.4).
- Double press the power button.

*Result:*

The flashlight cycles to the next mode (see Figure 4-1).



**Figure 4-1: Cycling Flashlight Modes**

## 4.6 TURNING ON/OFF STUN MODE

- a. Make sure that HSU is powered on (see section 4.4).
- b. Make sure that LPG is powered on and synced with HSU (see section 4.3).



Turning stun mode while LPG is not synced might result in flash-blinding the operator.

- c. Power ON stun mode as follows:

Press and hold the stun button (see Figure 3-3, 2).

*Result:*

- The HSU switches to stun mode as long as the button is pressed.
- The LPG shutters (see Figure 3-4, 7) flicker in-sync with the frequency of the HSU stun mode.

- d. Power OFF stun mode as follows:

Release the stun button (see Figure 3-3, 2).

*Result:*

- The HSU returns to previous mode.
- The LPG shutters (see Figure 3-4, 7) stop flickering.