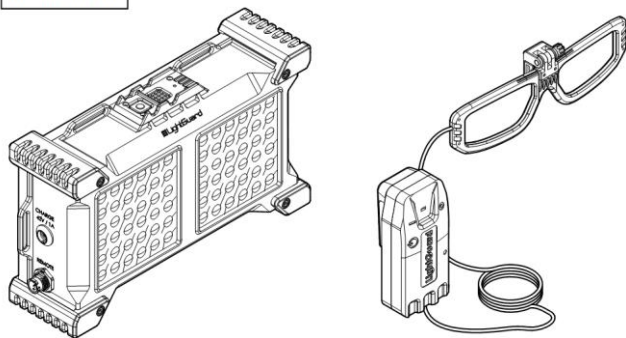


LightGuard

Dual Light Unit

Operation User Manual

101-00007v02



Revision #0

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CHAPTER 1

INTRODUCTION

1.1 PURPOSE OF THIS POCKETBOOK

This pocketbook describes the Dual Light Unit (DLU-100B) 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 DLU-100B.

CHAPTER 3 - Overview

This chapter provides a general description of the DLU-100B and its accessories, technical data and human machine interface.

CHAPTER 4 - User Guide

This chapter provides step by step operation instructions for DLU-100B.

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

DLU	Dual Light Unit
ECO	Economy
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 DLU-100B is equipped with high current LI-ion battery, do not take apart the DLU-100B to avoid risk of electrical shock.



The DLU-100B 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 DLU-100B 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 DLU-100B near a fire or a heated source.



Do not throw the DLU-100B 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 Dual Light Unit (DLU) is a ruggedized dual-feature LED flashlight. The DLU 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 DLU 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 20 meters.
- **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 DLU-100B modes of operation.

Table 3-1: Modes of Operation

	Mode	Description	Max Estimated Operation Time
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"> At 65°C, the indication LED turns red and warns the user from overheating At 70°C unit operation is disabled and re-enabled below 65°C. 	
4	Standby	The unit is turned on but is neither in Flashlight or Stun.	

3.2 KIT OVERVIEW

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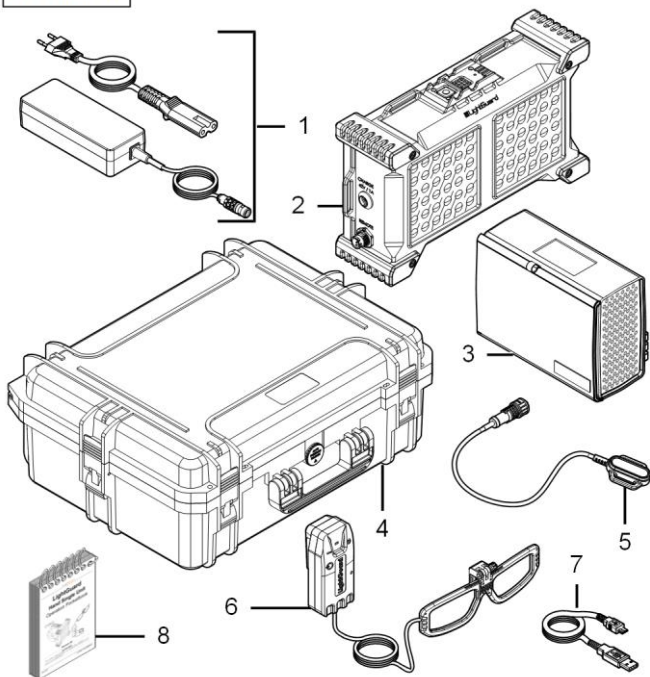



Figure 3-1: Kit Overview

Table 3-2: Kit Overview

	Item	Description	P/N
	DLU Kit	Includes items 1,2 and 4.	KIT-DLU-100B
1	DLU Wall Charger	<ul style="list-style-type: none"> AC to DC adapter - 42V/2A Adapter power cable. 	LG-CHR-42A
2	DLU	Flashlight unit.	LG-DLU-100B
3	Bag Ranger Green	Holds the DLU and enables mounting using Molle straps.	LG-BAG-100A
4	Package	Container for Items 1,2,3 and 5.  Package has a knob to equalize pressure.	LG-PCG-100A
5	Remote Cable	Enables the operator to operate the DLU remotely.	ELEC-P-HH5131A
6	Light Protective Glasses (LPG)	Protects the wearer from the flash-blinding effects.	LG-LPG-10B
7	Micro USB Charger	Cable used to charge the LPG.	LPG-00A
8	Pocketbook	Current user manual.	LG-DLU-RD004

3.3 DLU OVERVIEW

3.3.1 Physical Description

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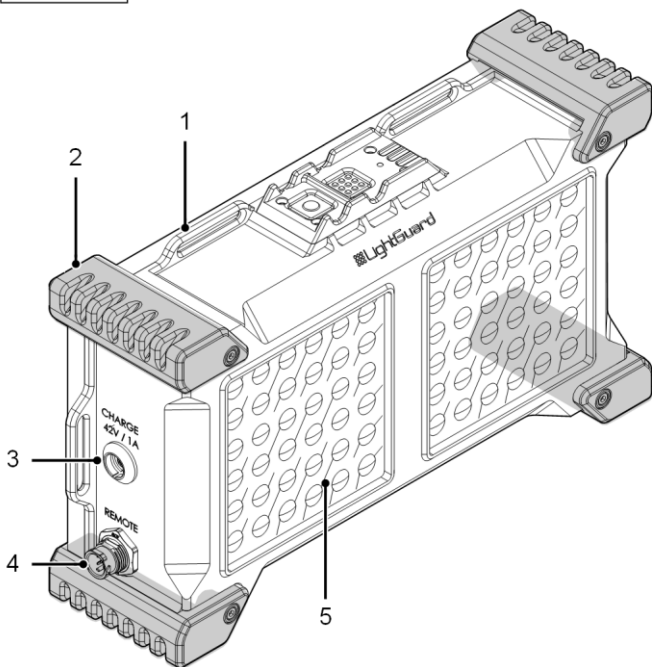


Figure 3-2: DLU Overview - Physical Description

Table 3-3: DLU Overview - Physical Description

	Item	Description
1.	Strip Connection Hooks (x6)	<ul style="list-style-type: none"> Using Velcro strips (not included), enables the operator to attach the DLU as needed. Two hooks are located on the top, two on the bottom and one on each side.
2.	Bumper (x4)	Protects the unit from damage caused by a fall.
3.	Protected Charging Port	A port protected by a magnetic cover. Input of 42A/1A.
4.	Remote Connector.	Enables the operator to connect a remote control to the DLU.
5.	LEDs (x2)	An array of 6x6 white LEDs that produce maximum of 100,000 lumen.

3.3.2 Controls and Indicators

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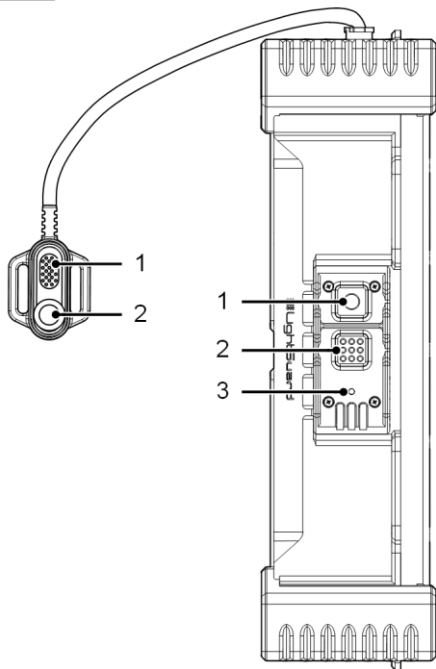



Figure 3-3: DLU Overview - Controls and Indicators

Table 3-4: DLU Overview - Controls and Indicators

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

3.3.3 Technical Data

Table 3-5: DLU Overview - Technical Data

	Category	Description
1.	Dimensions	28x16x8 cm.
2.	Weight	2.35 kg.
3.	Battery	<ul style="list-style-type: none"> • 10 cells x 3.8V LI-ion batteries. • 38V/30A.
4.	Charging Time	0% to 100% - two hours.
5.	Standards	<ul style="list-style-type: none"> • In compliance with: <ul style="list-style-type: none"> • Eye safety - IEC 62471. • Electronic - RoHS. • Designed to comply with: <ul style="list-style-type: none"> • Battery Safety - UN 38.3. • Environment Engineering - MIL-STD-810, and IP67.
6.	Maximum Intensity	100,000 lumens.
7.	Operating Temperatures	<p>-10°C to +55°C.</p> <div style="display: flex; align-items: center;">  <p>Up to 70°C internal measurement.</p> </div>
8.	Power Consumption	Charging - 42V/1A

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3.4 LPG

3.4.1 Physical Description

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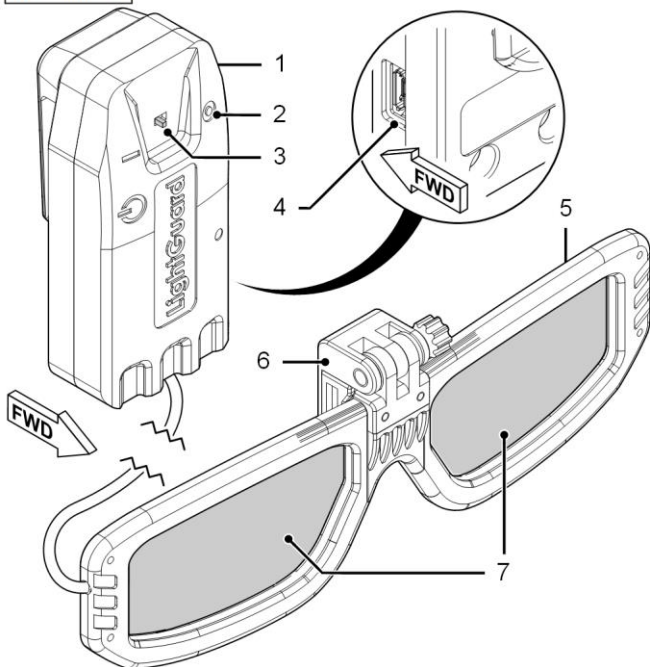


Figure 3-4: LPG - Physical Description

Table 3-6: LPG - Physical Description

	Item	Description
1.	Electronic Unit	Contains the following: <ul style="list-style-type: none"> • Battery. • Electronic cards.
2.		Provides indication for the following: <ul style="list-style-type: none"> • Red and green - not synced to the unit. • Green - synced. • Blue - charging. • Off - turned off.
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

	Category	Description
1.	Dimensions	<ul style="list-style-type: none"> • Clip-on: 16x5.5x2 cm. • Cable: 60 cm. • Electronic Unit: 8x4x3 cm.
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"> • In compliance with: <ul style="list-style-type: none"> • Eye safety - IEC 62471. • Electronic - RoHS. • Designed to comply with: <ul style="list-style-type: none"> • Battery Safety - UN 38.3. • Environment Engineering - MIL-STD-810.
7.	Operating Temperatures	-10°C to +55°C.
8.	Power Consumption	Charging - 5V/0.5÷2A

CHAPTER 4

USER GUIDE

4.1 CHARGING DLU

(See Figure 4-1)

- a. Connect the power cable to the adapter.
- b. Connect the power cable plug to the wall socket.
- c. Uncover the DLU charging port.
- d. Align the red dot (2) on the cable connector with the red line (1) on the DLU charging port.
- e. Push in the connector.

Result:

- The adapter charging indicator is lit red.
 - The DLU is charging.
 - After charging is complete, the adapter charging indicator turns off.
- f. Disconnect the adapter from the wall socket.
 - g. Disconnect the cable from the DLU charging port.
 - h. Cover DLU charging port with its dust cap.

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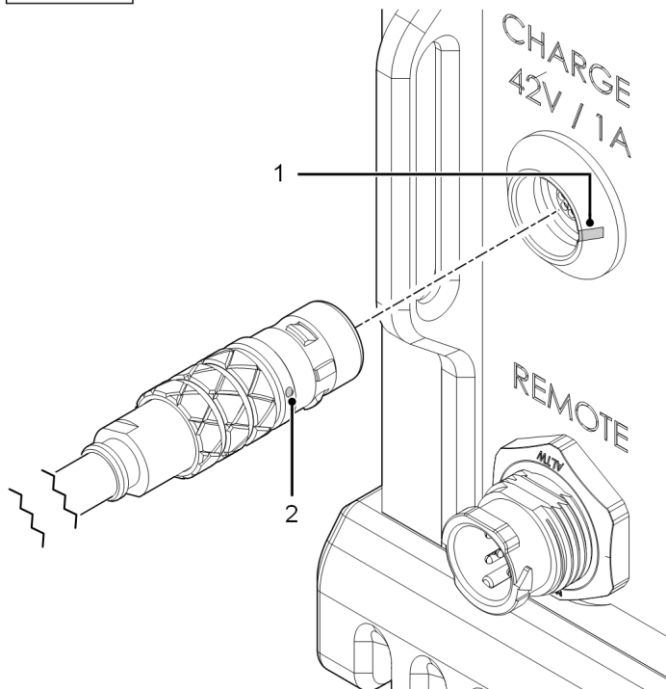


Figure 4-1: Connecting Charger to DLU

4.2 CHARGING LPG

- a. Connect Micro-USB cable to a 5V/0.5÷2A charger (not included).
- b. Plug the charger to 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.

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4.3 CONNECTING/DISCONNECTING REMOTE TO/FROM DLU

(See Figure 4-2)

- a. Connect the remote control as follows:
 - 1) Align the arrow (1) on the remote connector with the triangle (2) on the DLU remote connector.
 - 2) Push in and rotate $\frac{1}{4}$ Clock-Wise (CW).
Result:
The remote is now connected and can operate the DLU.
- b. Disconnect the remote control as follows:
 - 1) Rotate $\frac{1}{4}$ Counter Clock-Wise (CCW).
 - 2) Pull to remove the remote.

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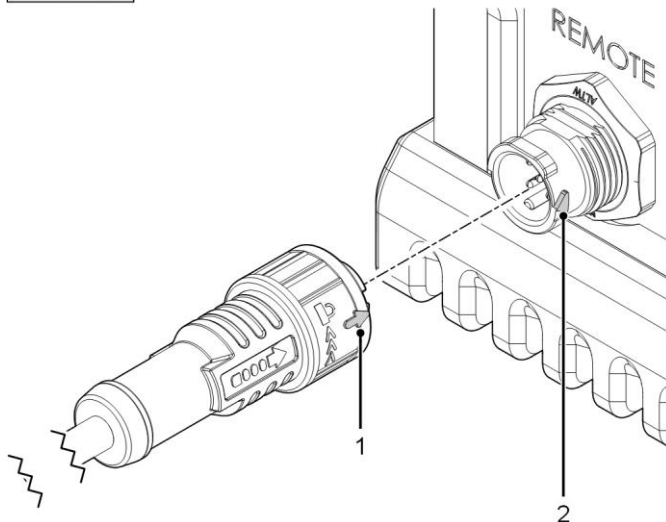


Figure 4-2: Connecting/Disconnecting Remote to/from DLU

4.4 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 DLU is complete, green LED is lit (see Figure 3-4, 2).



Syncing with DLU is possible only after DLU is turned on (see section 4.5).

- 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).

4.5 POWERING ON/OFF DLU

- a. Power on the DLU as follows:

Press and hold the power button (see Figure 3-3, 1) for two seconds.

Result:

- DLU turns on.
- Indication LED is blinking blue (see Figure 3-3, 3).
- DLU is in standby mode.

- b. Power OFF the DLU as follows:

Press and hold the power button (see Figure 3-3, 1) for two seconds.

Result:

- DLU turns off.
- Indication LED is off (see Figure 3-3, 3).

4.6 CYCLING FLASHLIGHT MODES

- Make sure that the DLU is powered on (see section 4.5).
- Double press the power button (see Figure 3-3, 1).

Result:

The flashlight cycles to the next mode (see Figure 4-3).

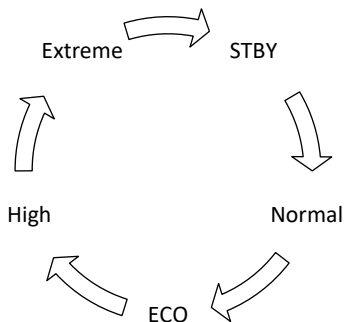


Figure 4-3: Cycling Flashlight Modes

4.7 TURNING STUN MODE ON AND OFF

- a. Make sure that DLU is powered on (see section 4.5).
- b. Make sure that LPG is powered on and synced with DLU (see section 4.4).



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

- d. Power OFF stun mode as follows:

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

Result:

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