

# **LUMINAIRE CONTROL SET**

## **MODEL LRC2400-1 and MODEL LEC2400-1**

### **USER MANUAL**

<b>LUMINAIRE CONTROL SET</b>	<b>1</b>
<b>MODEL LRC2400-1 and MODEL LEC2400-1</b>	<b>1</b>
<b>USER MANUAL</b>	<b>1</b>
<b>COPYRIGHT</b>	<b>2</b>
<b>ACKNOWLEDGMENTS</b>	<b>2</b>
<b>ANNOUNCEMENT</b>	<b>2</b>
<b>LIMITED WARRANTY</b>	<b>3</b>
<b>PRODUCT DESCRIPTION</b>	<b>4</b>
<b>MODES OF OPERATION</b>	<b>5</b>
MANUAL MODE	5
REMOTE CONTROL MODE	5
<b>TECHNICAL SPECIFICATIONS</b>	<b>6</b>
<b>ASSEMBLY INSTRUCTIONS</b>	<b>6</b>
<b>SHIPPED COMPONENTS</b>	<b>7</b>
<b>STORAGE AND TRANSPORTATION</b>	<b>7</b>
<b>CONTACT INFORMATION</b>	<b>7</b>

Last revised August 11th, 2009

## **COPYRIGHT**

This document is copyrighted, © 2009, and all rights reserved. The original manufacturer reserves the right to make improvements to the products described in this manual at any time without notice. No part of this manual may be reproduced, copied, translated or transmitted in any form or by any means without the written permission of the original manufacturer. Information provided in this manual is intended to be accurate and reliable. However, the original manufacturer assumes no responsibility for its use, nor for any infringements upon the rights of third parties that may result from such use.

Copyright © 2009 by Dourbal Electric Inc.

All rights Reserved

## **ACKNOWLEDGMENTS**

Surefire is a trademark of Surefire, LLC

LEDWAVE is a trademark of LEDWAVE Light Systems

For more information, technical support and service for the LEC/LRC2400-1, please contact your supplier.

The manual is for LEC/LRC2400-1. (1<sup>st</sup> Edition, 2009)

## **ANNOUNCEMENT**

This user manual is only written for the model LEC2400-1 and model LRC2400-1 products.

## **AGENCY APPROVALS**

### **FCC**

FCC ID: **XLB-LRC2400**

This equipment has been tested and found to comply with the limits for a class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and radiates radio frequency energy and if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna;
- Increase the separation between the equipment and receiver;
- Consult the dealer or an experienced radio/TV technician for help.

The user is cautioned that changes and modifications made to the equipment without the approval of manufacturer could void the user's authority to operate this equipment.

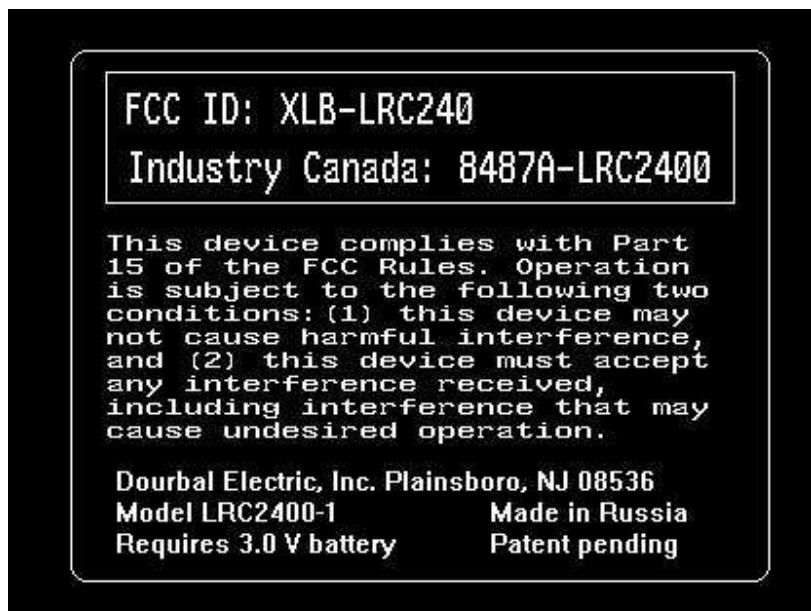
This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Any changes or modifications not expressly approved by original manufacturer Dourbal Electric could void the user's authority to operate the equipment.

## Industry Canada

Industry Canada ID number: **8487A-LRC2400**

## Product Label



## LIMITED WARRANTY

This is a "Limited Warranty" as defined in the U.S. Consumer Product Warranty and Federal Trade Commission Improvement Act. This warranty gives you specific legal rights, and you may also have other rights, which vary from state to state. For a period of one year from the date of purchase, any malfunction caused by factory, defective parts or workmanship will be corrected at no charge to you. **Batteries are not covered.** To obtain a refund or a replacement, return the product to the place of purchase.

**Not Covered** — Repair service, adjustment and calibration due to misuse, abuse or negligence, light bulbs, batteries and other expendable items are not covered by this warranty. Unauthorized service or modification of the product or of any furnished component will void this warranty in its entirety. This warranty does not include reimbursement for inconvenience, installation, set-up time, loss of use, or unauthorized service. This warranty covers only models LRC2400-1 and LEC2400-1 products and is not extended to other equipment and components that a customer uses in conjunction with our products. **SUCH REPAIR OR REPLACEMENT SHALL BE THE SOLE REMEDY OF THE CUSTOMER AND THERE SHALL BE NO LIABILITY ON THE PART OF HEATH FOR ANY SPECIAL, INDIRECT, INCIDENTAL, OR CONSEQUENTIAL DAMAGES, INCLUDING BUT NOT LIMITED TO ANY LOSS OF BUSINESS OR PROFITS, WHETHER OR NOT FORESEEABLE.** Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you. Retain receipt for warranty claims. The manufacturer reserves the right to discontinue and to change specifications at any time without notice without incurring any obligation to incorporate new features in previously sold products.

## **PRODUCT DESCRIPTION**

Luminaire control set remotely controls battery powered flashlight such as Surefire, LedWave, etc.

**The set consists of the following 2 components:**

- **Product model: LEC2400-1, product name: Luminaire Electronic Cap.**
- **Product model: -, product name: Luminaire Remote control.**

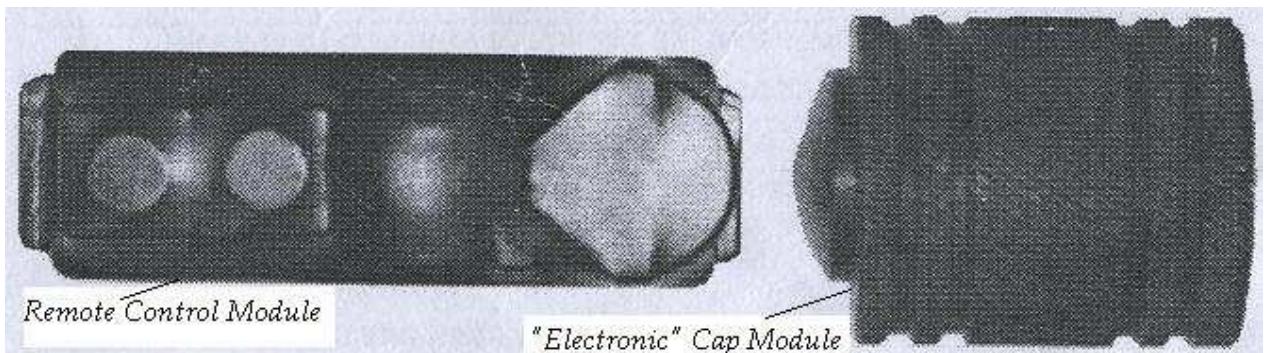


Fig. 1. Luminaire control set.

The flashlight can be turned ON or OFF either by pressing buttons on the remote control module or pressing a button on the “electronic” cap.

Universal “electronic” cap and remote control module have unique identification addresses permanently stored in their flash memory units at the time of production. Components from different sets are not compatible.

Remote control unit is powered by one type CR2032 lithium battery. When the battery is discharged, it must be replaced.

## **MODES OF OPERATION**

### **MANUAL MODE**

Turning the flashlight ON and OFF is done by briefly pressing the tactile button situated on the tip of the cap. Pressing and holding this button activates slow periodic light intensity change from highest to lowest. The button must be released when required light intensity level is achieved.

This intensity level is retained. Subsequent pressing and holding the button restores the highest light intensity level. Manual control sequences and flashlight states are shown in the table 1 below.

Table 1. Manual mode sequences and states

#	Initial flashlight state	Button control sequence	Resulting flashlight state
1	FLASHLIGHT OFF	SINGLE BUTTON CLICK	FLASHLIGHT ON
2	FLASHLIGHT ON	SINGLE BUTTON CLICK	FLASHLIGHT OFF
3	FLASHLIGHT OFF	DOUBLE BUTTON CLICK	1. FLASHLIGHT ON 2. TOGGLE REMOTE CONTROL MODE
4	FLASHLIGHT ON	DOUBLE BUTTON CLICK	1. FLASHLIGHT ON 2. TOGGLE REMOTE CONTROL MODE
5	FLASHLIGHT OFF	BUTTON PRESS AND HOLD	1. FLASHLIGHT ON 2. TOGGLE LIGHT INTENSITY
6	FLASHLIGHT ON	BUTTON PRESS AND HOLD	FLASHLIGHT OFF

### **REMOTE CONTROL MODE**

In this mode the flashlight can be controlled either by the tactile button on the tip of the “electronic” cap or through the remote control module. Switching to the remote control mode is done by double clicking (within 1 second time interval) of the tactile button on the tip of the “electronic” cap. A subsequent single blink of the flashlight lamp indicates that the flashlight is switched into the remote control mode. Switching back to the manual mode is done by double clicking (within 1 second time interval) of the tactile button on the tip of the “electronic” cap. A subsequent double blink of the flashlight lamp indicates that the flashlight is switched back into the manual mode. Both buttons of the remote control module are connected in parallel with one another (figure 2). The flashlight lamp blinking after turning ON or OFF by the remote control indicates that the remote control battery is low and has to be replaced. The remote control mode sequences are shown in the table 2 below.

Table 2. Remote control mode sequences and states

#	Initial flashlight state	Button control sequence	Resulting flashlight state
1	FLASHLIGHT OFF	SINGLE REMOTE CONTROL MODULE BUTTON CLICK	FLASHLIGHT ON
2	FLASHLIGHT ON	SINGLE REMOTE CONTROL MODULE BUTTON CLICK	FLASHLIGHT OFF

**Attention! Flashlight is constantly discharges its batteries in remote control mode (operates in this mode for at least 5 days).**

## TECHNICAL SPECIFICATIONS

Universal “electronic” cap technical specifications are shown in the table 3 below.

Table 3.

#	Parameter	Value
1	Radio channel frequency band, MHz.	2400.2
2	Minimum communication range, feet .	6
3	Maximum current consumption in manual mode, uA.	70
4	Maximum current consumption in remote control mode, mA.	5
5	Minimum battery life time in remote control mode, days	5
6	Flashlight battery voltage range, Volt.	3 - 12
7	Operating temperature range, Deg. C.	-20 - +40

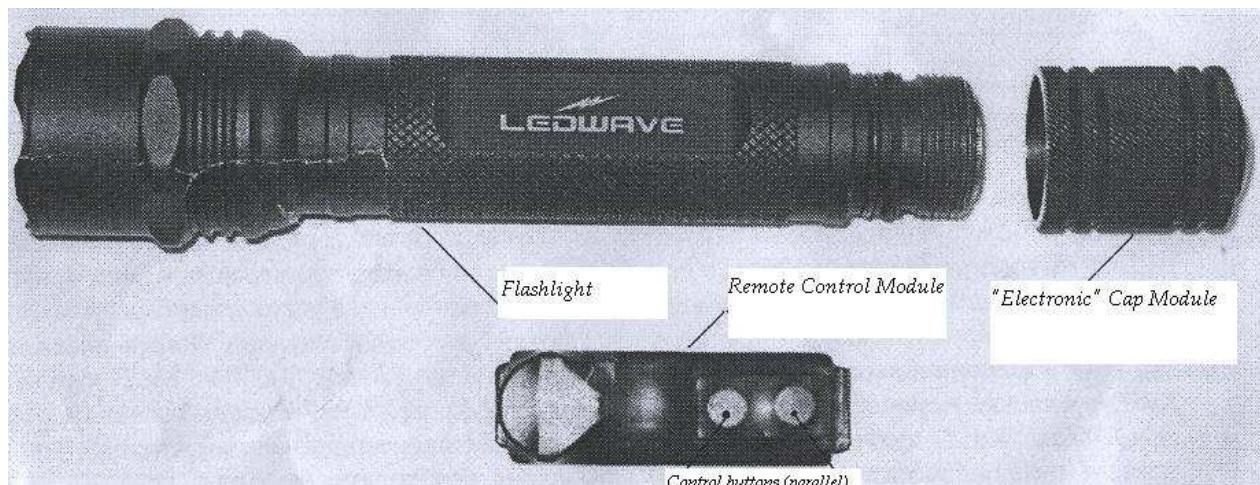
Remote control module technical specifications are shown in the table 4 below.

Table 4.

#	Parameter	Value
1	Radio channel frequency band, MHz.	2400.2
2	Minimum communication range, feet .	6
3	Maximum current consumption during transmission, mA.	30
4	Maximum transmitting power, mW / dBm	1.3 / 1.139
5	Maximum current consumption while not in transmitting, uA.	3
6	Remote control module battery voltage range, Volt.	2.0 – 3.6
7	Operating temperature range, Deg. C.	-20 - +40

## ASSEMBLY INSTRUCTIONS

Figure 2 below depicts a flashlight with the “electronic” cap and remote control module.



**To assembly the system the following must be done:**

- Remove the standard flashlight cap;
- Replace it with the “electronic” cap.

## **SHIPPED COMPONENTS**

Table 5. Shipped components

#	Name	Amount
1	Universal “electronic” cap	1
2	Remote control module	1
3	User manual (this document)	1

## **STORAGE AND TRANSPORTATION**

Transportation method: in sealed containers

Transportation temperature range (deg.C.) min/max: -40/+50

Do not store in chemically aggressive environment or environment containing electrically conductive dust.

Storage temperature range (deg.C.) min/max: +5/+40

## **CONTACT INFORMATION**

ATTN: PAUL DOURBAL

DOURBAL ELECTRIC INC.

10 SCHALK'S CROSSING RD. SUITE 501-295 PLAINSBORO NJ 08538

EMAIL: [PAUL@DOURBALELECTRIC.COM](mailto:PAUL@DOURBALELECTRIC.COM)

PHONE: 215-512-5039