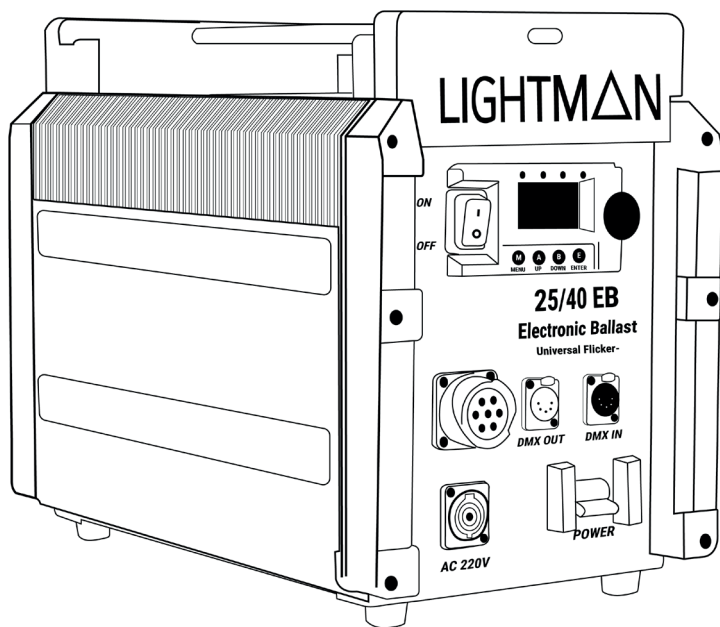




LIGHTMAN

60/90 EB

User Manual

User Manual

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Lightstar Lights
info@lightstar-lights.com



■ Table of Contents

Important Safety Instructions	1
Product Overview	1
Technical Information	2
Operational Instructions	3
LCD Display Control	4
Error Codes	5
DMX Control	6
Notice and Maintenance	7
Service Warranty Ordinance	8

■ Important Safety Instructions

- Disconnect EB from mains power before power supply is being prepared. Do not pull connection cable with force.
- Before connecting the EB to mains power, ensure that the socket is correctly wired.
- The lamphead must be disconnected from power before changing or fitting the lamp.
- EB must be switched off before connecting or disconnecting the lamphead with the lamp head cable. To avoid any danger to the user and EB, we highly recommend using our original LIGHTMAN cables and connectors.
- Working temperature of the EB is guaranteed between - 20°C and 50°C
- Do not operate the EB in high humidity or explosive gas environments
- within 3 minutes after startup, the ballast is locked and all operations are invalid (default frequency is 75Hz, brightness is 100%)

■ Product Overview

The 60/90 electronic ballast from our LIGHTMAN series provides an automatic switchable ballast for 6000W and 9000W metal halide lamps. It features high efficiency, power density and automatic problem analysis.

- Flicker-free operation – up to 10'000 fps (frames per second)
- fluctuation of output light is less than 3%
- compared to inductive EB, light intensity is increased by at least 5%
- constant power output
- constant color temperature
- 50% - 100% power output adjustment
- at least 20% increase of service life (lamp)
- Output frequency: 50 - 1000Hz, Fine-Tuning range: 800Hz - 1200Hz
- DMX 512 Protocol

■ Technical Information

SKU:	LMEB-090
Description:	6000 / 9000W Electronic Ballast for Metal Halide Lamps
Power:	9850VA
Nominal Current:	40 - 55A
Cooling:	Passive Cooling
Dimming:	50-100%
Output Frequency:	50/60/75/300/1000Hz
AC Input:	180-250V AC / 50/60Hz / 1 Phase
Control:	DMX In- & Output (5-Pin XLR socket) LCD Display
Starting:	Cold start / hot restrike
IP Class:	IP22
Dimensions:	271 x 387 x 465mm
Weight:	28'000g



■ Operational Instructions

Energizing System

1. Check if the EB is disconnected from mains supply before connecting cables to the lamp head.
2. Check if the main circuit break switch of the EB is in the off position
3. Confirm if the lamp head meets the requirements of the EB
4. Check the lamp head cable for visible damages
5. If you followed all of these quick checks, you can connect the EB to the mains supply and connect the lamphead.
6. You are now ready to start the EB and change the settings.

Adjusting the System

1. After preparing everything, you can now change your settings on the display of the EB.
2. The LCD display turns on when the main circuit breaker is in the ON position.
3. It should light up the L3 indicator (green)
4. If ground connection is correct, L4 indicator is on. If this is not the case, check the power supply and socket.
5. Turn on the ignition switch to ON - the light will ignite within 3 seconds. At the same time, L1 indicator turns on (yellow)
6. Wait for 3 minutes until the lamp is fully heated and the color temperature and brightness have a stable output. Then you can adjust the brightness value and frequency as needed.



■ LCD Display Control

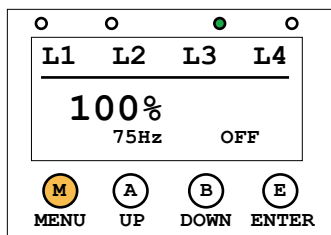


Figure 1 - Menu Screen (not ignited)

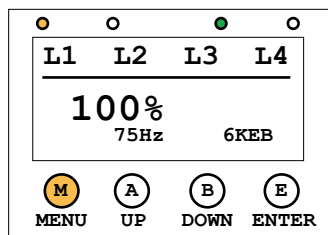


Figure 2 - Menu Screen (ignited)

After the EB has power and the switch is on, this LCD display pops up. After 3 minutes the EB is locked and all operations cannot be dialed.

75Hz below the percentage show the frequency setting. To change this value, just push button A or B and change the frequency by turning the knob.

The 6KEB shows which lamp is in use. It automatically identifies the lamp. If anything doesn't work properly, the ballast shows an error message.

Press button E to have a look at the EB data.

Fine Tuning for 1000Hz

Press button A to go to the 1000Hz fine tuning screen. Adjust by rotating the dimmer knob between 800Hz and 1200Hz. By pressing button B you return to the main menu.

Error Codes

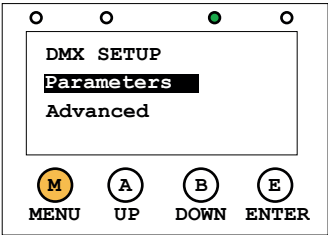


Figure 3 - Menu Screen

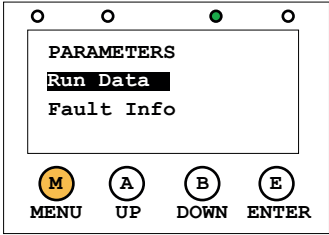


Figure 4 - Menu Screen

Press button M to enter menu setting screen, then press button B to select Parameters. Press push button E to enter the Parameter screen (Figure 4). Select Fault Info and press button E again. Press button A or B to scroll up/down to check the error codes. To return to home screen - press button M.

Error Codes

LE	System Error
TEMP	EB is overheating
PFC	PFC Control is faulty
BUCK	Voltage Control has troubles
UVLO	Input Voltage is too low
LAMP	Problems with lamp head / lamp defect

Working Parameters Reference

Supply Voltage	170 - 250V
Output Voltage	6000W – 110 - 130V 9000W – 140 - 160V
Output Current	6000W – 60 - 55A 9000W – 60 - 55A
Input Current	26 - 55A
PFC Voltage	350 - 370°C
Working temperature	40 - 80°C



■ DMX Control

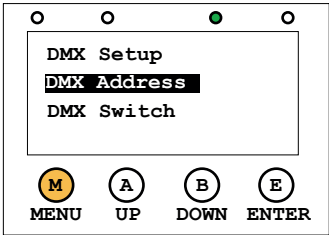


Figure 5 - DMX Screen

Initial Address Set-Up

In menu settings screen (Figure 3) press button B and select DMX Set-up. Then press E again to open the DMX address screen. Adjust the start address with the dimming knob by turning it.

DMX Status

In DMX Setup display press button B to select DMX Switch. Press E and adjust value with the dimming knob. Press M to get back to the menu screen.

DMX Channels

The start address is CH1 - below 100 = OFF, above 100 = ON (lamp)
Start address +1 is CH2 - it is used for brightness adjustment ranging from 50% to 100%. Start address +2 is used for controlling the frequency:

DMX Value (8-bit)	Output Frequency (Hz)
0 - 50	50
51 - 100	60
101 - 150	75
151 - 200	300
201 - 255	1000

Start address +3 is used for 1000Hz fine tuning. DMX Value 0 - 255



■ Notice and Maintenance

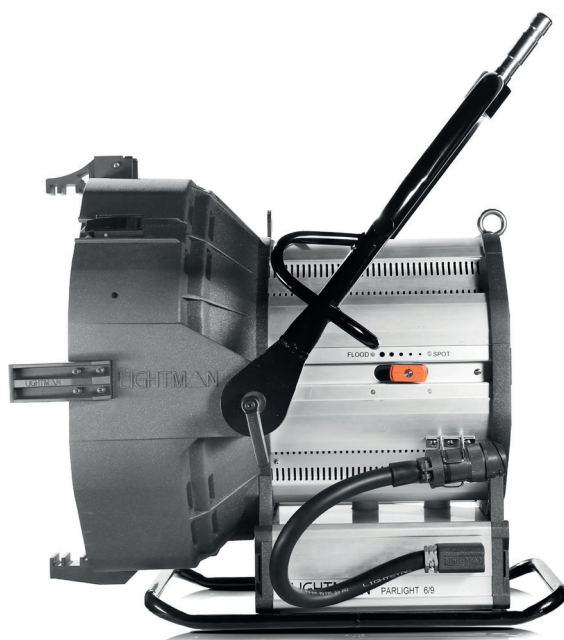
1. LED's operating temperature range must be guaranteed between - 20°C to +40°C. Overheating or undercooling can both reduce the fixtures life span.
2. The product must be placed on a solid, flat and dry surface. The surface temperature should be less than 50°C. Avoid exposure to direct sunlight and operation in an environment with high humidity or explosive gas.
3. Do not beat, knock or shake the light violently or it may influence the normal use of the light.
4. Do not cover lamps with paper, cloth or similar materials that could ignite due to high temperature.
5. Put the lamp in a cool and dry place when you do not use it for a long time.
6. Avoid any flammable liquid, water or metal material entering the machine. Cut off the power supply as soon as this happens.
7. Do not use machines in dirty and dusty environments and clean them regularly.
8. The technicians must get professional trainings to install, operate or repair LED's.
9. If any equipment from Lightstar doesn't work properly, please get in contact with a Lightstar special repair department or professional technician. Do not disassemble or reassemble the parts by yourself.

■ Service Warranty Ordinance

Customers enjoy a one-year free warranty service as of the date of purchasing our product.

1. If the expiry date of the warranty is reached, our product can still be repaired for an according price.
2. In any of the following circumstances, the product is not repaired free of charge, whether the warranty period expires or not.
 - Damage caused by misuse or abuse, disassembly and non-original parts replacement.
 - Damage caused by natural disasters, unconventional voltage and environmental factors
3. Lightstar will remain in the power of interpretation.
4. Software version modification without further notice.

When anything doesn't work correctly the user can confirm the error code and check the further procedure with our customer support team. We always try to offer quick solutions, whenever possible. Do not open any device without explicit consultation of Lightstar. The repair must be carried out with our guidance or if not possible by our technician team.



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