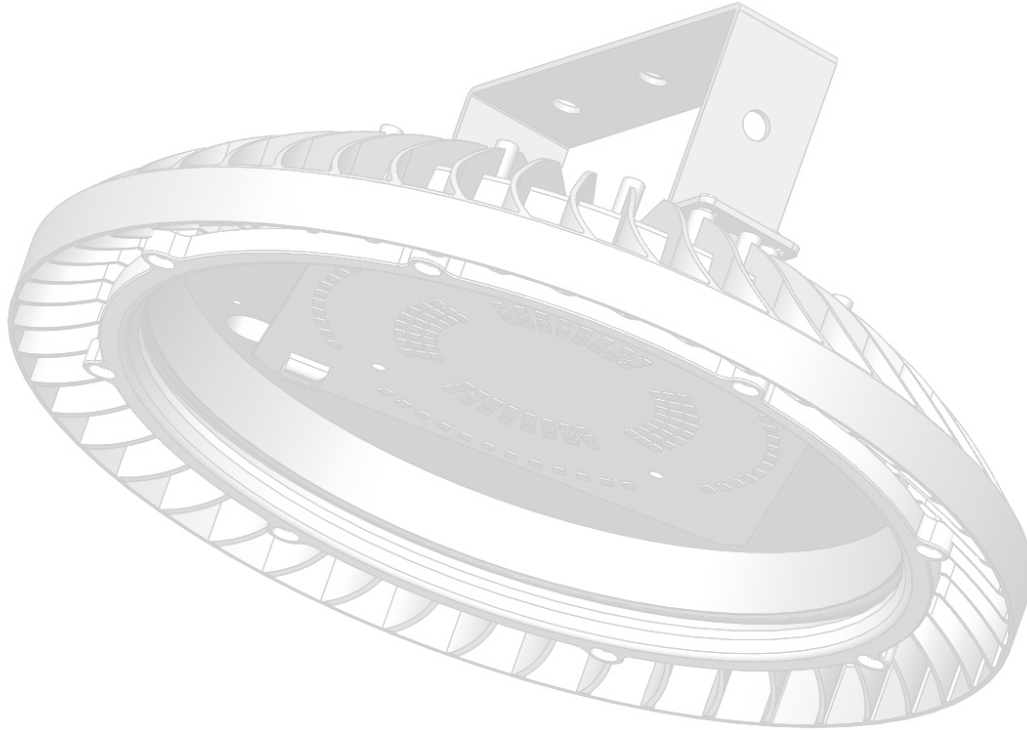


**Detroit Radiant Products Co.**

# **LB Series Manual**

**LED Bay Lighting Fixtures  
Installation, Operation,  
and Maintenance**



All persons involved with the installation, operation, and maintenance of the lighting system must read and understand the information in this manual.

## **⚠ WARNING**



Improper installation, adjustment, alteration, service or maintenance can cause property damage, injury or death. Read and understand the installation, operating and maintenance instructions thoroughly before installing or servicing this equipment.

**INSTALLER: Present this manual to the end user.**

Keep these instructions in a clean and dry place for future reference.

Model#: \_\_\_\_\_ Serial #: \_\_\_\_\_  
(located on rating label)

LIOLB-Rev. 34216  
Print: LIOLB-1c-02/17(DRP)

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# 1.0 Introduction

The Re-Verber-Lyt® LB Series High Bay LED light is designed for illumination of industrial locations. It uses the latest in solid state lighting (SSL) technology for long life, low maintenance, and high efficiency. The unique optical design focuses light downward to where it is needed, giving improved efficiency over a conventional HID luminaire.

Re-Verber-Lyt® LB Series LED Bay Lighting Fixtures are designed to vastly reduce energy use and maintenance needs, improve safety, ease disposal, and reduce CO<sub>2</sub> emissions.

## ⚠ WARNING


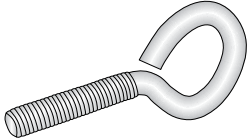


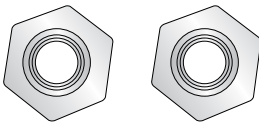
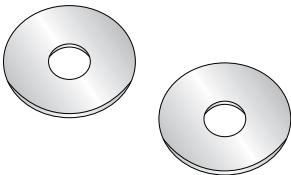



To avoid the risk of fire, explosion, or electric shock, this product should be installed, inspected, and maintained by a qualified electrician only in accordance with all applicable electrical codes.

**To avoid electric shock:**

- Be certain electrical power is OFF before and during installation and maintenance.
- Luminaire must be connected to a wiring system with an equipment-grounding conductor.
- Make sure the supply voltage is the same as the rated luminaire voltage.
- Do not operate in ambient temperatures above those indicated on the luminaire nameplate.
- No user serviceable parts inside of fixture. Removal of lens will void the warranty.

## LB Series Kit Contents

LRA-HSA Kit Contents			
<p>Horseshoe Bracket Qty. 1</p> 	<p>Eye Bolt Qty. 1</p> 	<p>Screws Qty. 4</p> 	<p><b>LIOLB: LB Series LED Bay Lighting Manual</b></p> 
<p>Nuts Qty. 2</p> 	<p>Flat Washer Qty. 2</p> 	<p>Spring Washer Qty. 1</p> 	

## 2.0 Specifications

Chart 2.1 • LED Bay Lighting Specifications

MODEL	DESCRIPTION	WATTS (w)	Color (k)	Lumens (l)	Amps (A)	Typical Mount <sup>1</sup>	Weight (lbs.)
LB1-10FL-A3	Flat lens, low bay fixture, 6 ft. cord, 120V	100	5,000	8,600	0.85	8-24 ft.	4
<b>Limited Warranty:</b> 5-Years		<sup>1</sup> Recommended mounting height allowance will depend on proper building evaluation.				Product can dim from 10% to 100%	
<b>Operating temperature range:</b> -40°F to 113°F (-40°C to +45°C).		CSA/DLC certified for indoor and outdoor applications, IP65 certified, and NEMA 4X certified.					

### IP Code Definition and Explanation of IP65 Rating

The IP Code, International Protection Marking, IEC standard 60529, also interpreted as Ingress Protection Marking, classifies and rates the degree of protection provided against intrusion (body parts such as hands and fingers), dust, accidental contact, and water by mechanical casings and electrical enclosures.

**Solid Particle Protection:** The first digit indicates the level of protection that the enclosure provides against access to hazardous parts (e.g., electrical conductors, moving parts) and the ingress of solid foreign objects. **6:** Totally protected against dust ingress.

**Liquid Ingress Protection:** The second digit indicates the level of protection that the enclosure provides against harmful ingress of water. **5:** Protected against low pressure jets of water from all directions - limited ingress

### Design

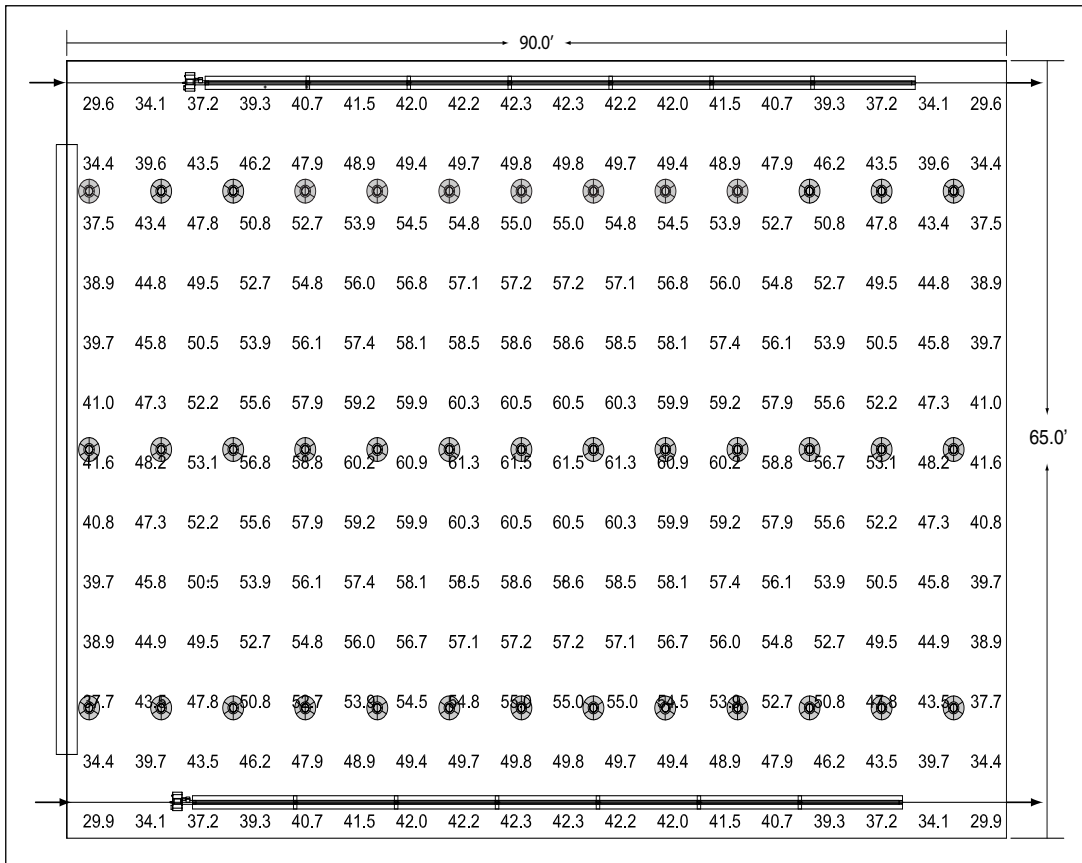
When designing a layout for a particular application, there are several factors that should be taken into consideration.

The typical mounting height for model LB1-10FL-A3 is 8 - 24 ft. from the ground. This mounting height is a recommendation only. The facility usage purpose, color scheme, desired brightness levels, and overall facility size will all factor into the layout of the lighting fixtures.

These LED Lighting Fixtures are NEC Class 1 compliant. Check applicable state, local, and national codes before designing and installing lighting fixtures.

A common misconception with LED lighting is the belief that they do not generate heat. While it is true that LED fixtures produce much less heat than other forms of lighting due to the increased efficiency and lower power consumption, thermal management is still a crucial component of a well-designed LED fixture. The LB fixtures have been designed to not only enclose the LEDs and circuitry, but to act as a heat sink as well. These fixtures utilize state of the art thermal interface materials to conduct the heat from the LED module to the housing and have geometrically designed the housing with a large surface area for excellent convection of heat away from the housing. As a result, the LB series fixture is warranted for 50,000 hours of use within an ambient temperature of up to 113°F (45°C). For maximum long-term reliability, this light should be installed in free air.

Figure 2.1 • Sample Lighting Layout - Maintenance Hangar




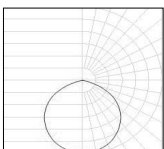
**Notes:**

- Airplane Repair Hangar
- 19 ft Ceiling
- Dark Walls and Floor
- High Light Output Desired

Chart 2.2 • Sample Lighting Layout Statistics

Description	Symbol	Avg	Max	Min	Max/Min	Avg/Min
Airplane Hangar	+	49.6 fc	61.5 fc	29.6 fc	2.1:1	1.7:1

Chart 2.3 • Sample Lighting Layout Schedule

Symbol	Label	Qty.	Catalog Number	Lamp	Number Lamps	Lumens /Lamp	Description	Wattage	Polar Plot
	A	39	LB1 (100% Output)	144 White LEDs. Lumen Output= 8,599 LMS.	1	8,599	Brant Radiant Heaters LED Low Bay Luminaire	97.07	 Max: 3476cd

# 3.0 Maintenance, Care, and Usage

## ⚠ CAUTION

To avoid personal injury, disconnect power to the light and allow the unit to cool down before performing maintenance.

Visual, mechanical, and electrical inspections should be performed on a regular basis. Routine checks at least once a year are recommended. Frequency of use and environmental conditions may make it necessary to perform more than one routine check per year. It is recommended to follow the Electrical Preventative Maintenance Program as described in NFPA 70B: Recommended Practice of Electrical Equipment.

The lens should be cleaned periodically as needed to ensure continued photo-metric performance. Clean the lens with a damp, non-abrasive, lint-free cloth. If a damp cloth alone is not sufficient, use mild soap or a liquid cleaner. Do not use an abrasive, strong alkaline or acid cleaner as damage may occur.

Inspect the cooling fins on the luminaire to ensure that they are free of any obstructions or contamination (i.e. excessive dust build-up). Clean with a non-abrasive cloth if needed.

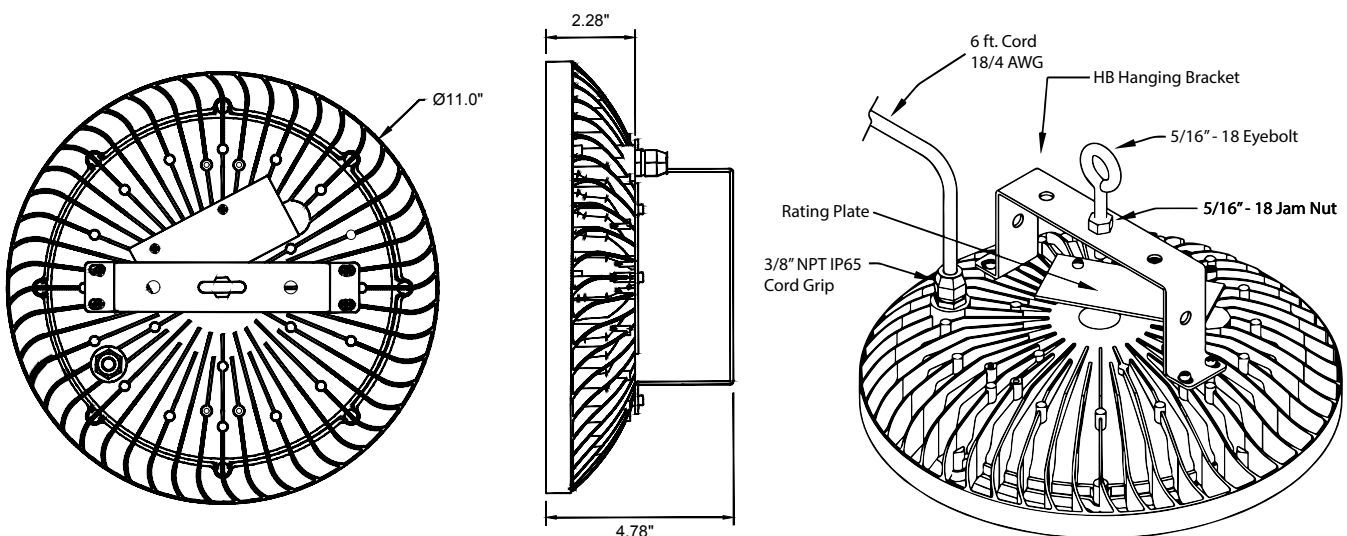
Electrical connections and wires should be checked for exposed wire and overall circuit integrity.

## Bracket Mount Installation

**NOTE:** Accessory installation sheets supersede these instructions.

- ❶ Sub assemble the eyebolt to the hanging bracket using the two jam nuts and one lock washer (provided) in a sandwich-like assembly.
- ❷ Use the four screws provided on the main housing to attach the hanging bracket assembly to the housing.
- ❸ Use a chain or cable (**must** be able to bare the weight of 50 lbs. or more) and hook into the eyebolt. Always close “S” hooks if used.

Figure 3.1 • Bracket Mount Dimensions



## Maintenance Log

<b>Date</b>	<b>Maintenance Performed</b>	<b>Replacement Parts Required</b>

# 4.0 Electrical and Wiring

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## General Wiring Steps

The LB Series of LED Fixtures is an AC driverless bay light. The ballast component of the light has been eliminated which, in a conventional LED fixture, transforms the main voltage to DC and steps the voltage down to the level required by the LED module. The ballast and LED module in a standard fixture are often not compatible with the existing building management systems as the ballast has specific power requirements in order to supply the LED module with the correct DC voltage and amperage. The LB Series, on the other hand, is exceptionally versatile due to the advanced circuitry employed in the construction of the AC driverless LED module. This facilitates straightforward integration of controls such as daylight harvesting, occupancy sensors, timers, and dimmers. Essentially, from a control aspect, the LB Series behaves similarly to an incandescent light bulb.

When installing the LB Series LED Lighting Fixtures, it is important to be aware of, and comply with, all state, local, and national codes applicable to LED lighting and other Class 1 compliant lighting fixtures before beginning installation.

If the fixture is to be hard-wired into a junction box, determine the required lumen level by referring to the **Specifications** table on page 4 as well as the **Wiring Diagrams** on page 9. Required wiring will vary depending on the lumen level to be achieved. This fixture is designed for 120VAC, single phase only.

## Dimming

The LB Series is capable of dimming from 10% to 100%. The lifespan of the LED is not diminished when using a control system for dimming. Phase-cut dimmers, particularly forward phase/ leading-edge are compatible with the LB AC driverless technology. Other types of dimmers may or may not be compatible, depending upon manufacturer and specific application.

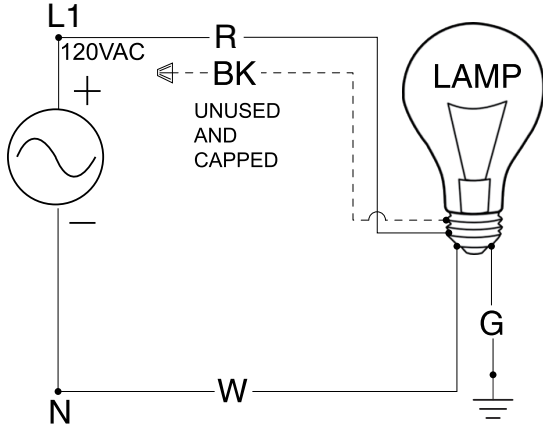
## Additional Power Saving Options

The LB fixture has been designed with a modular LED circuit board which allows the maximum power consumption to be hardwired limited to 1/3 or 2/3 the maximum output. There are often areas of a facility which do not require the full amount of illuminance due to different light requirements for different tasks, but similarly, it makes economic sense to install the same light fixture throughout the facility. In addition to being individually controllable, the LB series can be switched from 1/3 to full power by a switch on a panel, or through an occupancy sensor. By hardwire limiting the output of the fixture, many lights can be in a zone of control, operated by a single sensor, and result in varying amounts of illuminance from the exact same fixture depending on mounting heights and specific task requirements.



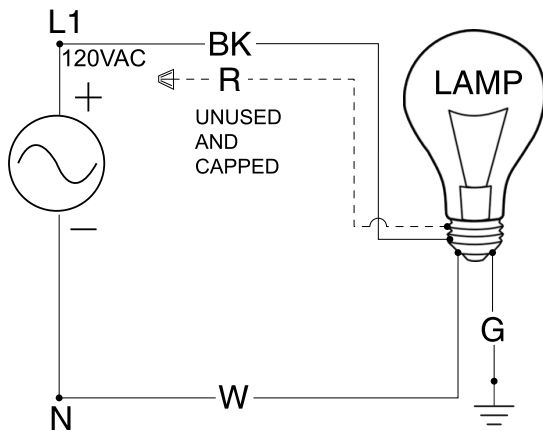
## Hard Wiring Lumen Levels Internally

Figure 4.1 • Block Wiring Diagram - 1/3 Power



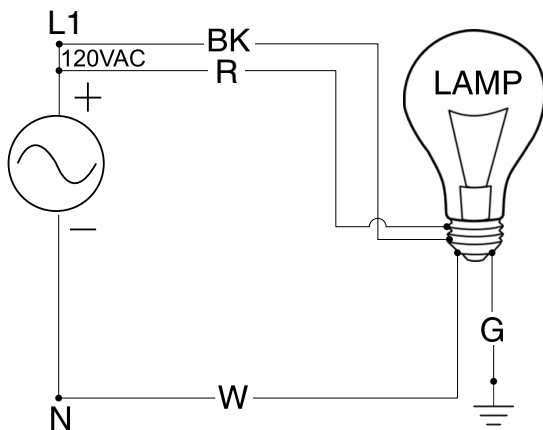
For a 1/3 Power Phase connection, connect the green wire to ground, the red wire to the hot conductor, and the white wire to the neutral conductor. The black wire should be unused and capped with a wire nut.

Figure 4.2 • Block Wiring Diagram - 2/3 Power



For a 2/3 Power Phase connection, connect the green wire to ground, the black wire to the hot conductor, and the white wire to the neutral conductor. The red wire should be unused and capped with a wire nut.

Figure 4.3 • Block Wiring Diagram - 3/3 Power



For a 3/3 Power Phase connection, connect the green wire to ground, both the black and the red wires to the hot conductor, and the white wire to the neutral conductor. All wires should be connected for this setup.

# 5.0 Light Assembly Components

Figure 5.1 • Components

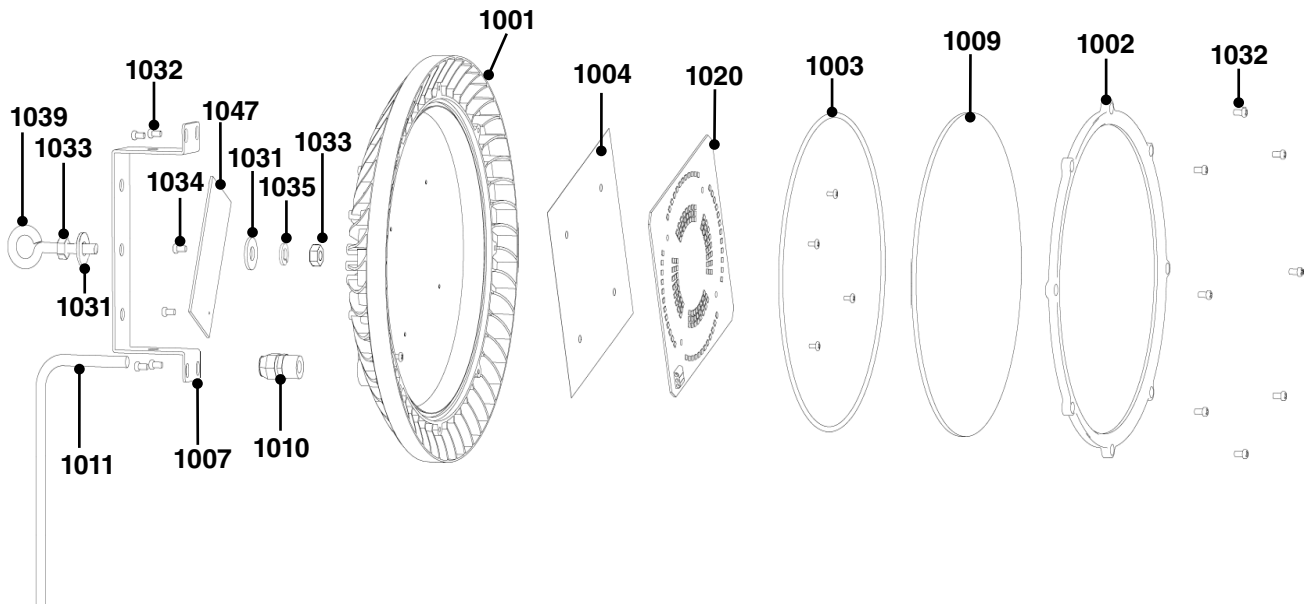


Chart 5.1 • Parts List

Part No.	Description	Part No.	Description
LRP-1001	Aluminum Housing	LRP-1031	5/16" Flat Washer
LRP-1002	Aluminum Ring	LRP-1032	M4 x 10 mm Pan Head Casting Screw
LRP-1003	Lens Gasket	LRP-1033	5/16" - 8 Nuts, Zinc
LRP-1004	Graphite Heat Spreader	LRP-1034	M3.5 x 6 mm Zinc Philips Pan Head Screw
LRP-1007	Hanging Bracket	LRP-1035	5/16" Spring Washer
LRP-1009	Tempered Glass 8.75" Dia.	LRP-1037	5/16" - 18 x 1.0" L - Hex Bolt, Zinc
LRP-1010	3/8" NPT Liquid Tight Cord Grip, (IP65)	LRP-1039	5/16"- 18 x 2.0" Hanging Eyebolt
LRP-1011	6 ft. Cord	LRP-1047	Rating Plate
LRP-1020	L.E.D Board		



## 6.0 Limited Warranty

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**Five-Year Limited Warranty:** Detroit Radiant Products Company (hereinafter referred to as the Company) warrants to the original purchaser or original user that all Detroit Radiant Re-Verber-Lyt® Lighting Systems sold by it and all parts thereof are free from defects in materials or workmanship under normal use and service. The Company's sole obligation under this warranty shall be limited to furnishing replacement parts, F.O.B. Warren, Michigan, for 60 months from the date of initial installation of the heater, but not to exceed 66 months from the date of shipment by the Company of the lighting system, for any parts which the Company's examination shall disclose to its satisfaction to be defective. Defective parts are to be returned to the company, transportation charges prepaid.

**General Conditions:** The warranties set out in this certificate are the exclusive remedy of the original owner or user in lieu of all other warranties written, oral, or implied (including any warranty of merchantability or fitness for the purpose) and all other obligations or liabilities on the part of the Company, and the Company neither assumes nor authorizes any person to assume for it any other obligation or liabilities on the part of the Company, and the Company neither assumes nor authorizes any person to assume for it any other obligation or liability in connection with the sale, installation, or use of the lighting system or any parts thereof.

The Company will not be responsible for labor charges for the analysis of a defective condition in the lighting system for the installation of replacement parts. The warranties provided herein will not apply if the lighting system in the judgement of the Company has been subjected to misuse, excessive dust, improper conversion, negligence, accident, corrosive atmospheres, excessive thermal shock, excessive vibration, physical damage to the lighting system, alterations by unauthorized service personnel, operation contrary to the Company's instructions, or if the serial number has been altered, defaced, or removed. The Company shall not be liable for any default or delay in the performance of these warranties caused by contingency beyond its control, including war, government restriction or restraints, strikes, fire, flood, short or reduce supply of raw materials, or parts.

The warranties herein shall be null and void if the lighting system is not installed by a competent electrical contractor and/or if the lighting system is not installed according to, and repaired according to, the Company's instructions. Normal product degradation and wear (rust, oxidation, etc.) does not constitute a material defect and applicable warranty claim.

Written permission is required for the return of any parts or equipment and any such return must be made on the basis of transportation charges prepaid. Shipment may be refused unless prior written permission is obtained and good returned prepaid.

This warranty applies only within the United States.



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