



MBPKG-E Series Environmental Enclosure Searchlights

Designed for long term installation in harsh environments with a corrosion-resistant Aluminum housing and built-in cooling system.

Key Features

- 12,000,000 Peak Beam CandlePower Output
- 6.9 km Range (ANSI/NEMA FL1)
- 85 Watt Xenon Short Arc Lamp
- Infrared Illumination Capability (filter sold separately)
- Motorized Beam Width Adjustment
- Strobe Mode
- Control via RS-232 Protocol or Wired Switches
- Multi-Voltage Input Options



MBPKG-E Series Searchlight Options

- Connector Configuration – Single Combined Power/Control or Dual Connectors
- Input Voltage – 12VDC, 24VDC or 48VDC

Available Models

Model Number	Input Voltage (VDC)	Connector Layout	Control Method		Output
			RS-232 Serial Control	Wired Remote Switches	
MBPKG-E	10.0-13.5	Single	X	X	12,000,000 CandlePower
MBPKG-E2	10.0-13.5	Dual	X	X	
MBPKG-E-24	18.0-36.0	Single	X	X	
MBPKG-E2-24	18.0-75.0	Dual	X	X	
MBPKG-E-48	37.0-75.0	Single	X		

Typical Applications

- Long Range Illumination (visible/infrared)
- Border Security
- Maritime and Harbor Security
- Surveillance (visible/infrared)
- Shipboard Protection

Maxa Beam Searchlight End-Users Include

- U.S. Armed Forces (all branches)
- U.S. Border Patrol
- U.S. Department of Energy
- U.S. Secret Service
- Federal Law Enforcement (FBI, U.S. Marshals)

MBPKG-E Series Maxa Beam Searchlights

rev. 09/24



FEATURES

Output	12,000,000 Peak Beam CandlePower (no maximum threshold; -10% minimum threshold)
Range	0.25 lux @ 6,925 meters 1 lux @ 3,500 meters 12 lux @ 1,000 meters <i>Visible ranges per ANSI/NEMA FL1: Flashlight Basic Performance Standard</i>
Lamp	85 Watt Xenon Short Arc, Instant hot/cold start and restrike
Beam Width	1° Spot to 40° Flood, Motorized
Beam Intensity	3 Levels: 45W (Regular), 85W (High), 35W (Low; User-Programmable)
Disorienting Strobe Function	Default frequency of 10Hz and default duty cycle of 38%. User-adjustable frequency from 1-31Hz and duty cycle from 3-63%
Mount Interface	Removeable Cradle Mount Plate

CONTROL

Control Method	RS-232 Protocol (Serial Communication) Wired Remote Switches (Hand Controller); <i>not available on all models, see table on page 1</i>
Control Command Set	Interface Control Document (ICD) available upon request
Control Software	Maxa Beam Searchlight Control Panel (included)
Controllable Functions	On/Off, Beam Intensity, Beam Width, Strobe, Customized Beam Settings
Customizable Settings	Start-Up Beam Mode and Beam Width, Spot Limit, Flood Limit, Strobe Frequency and Duration

ENVIRONMENTAL

Ingress Protection	IP67 per CEI/IEC 60529:2001
Low Operating Temperature	-15°C (<i>Optional heater extends low operation to -40°C, please inquire for details</i>)
High Operating Temperature	+60°C per MIL-STD-810G High Temperature Operating Test, Method 505.5, Proc. 1
High Storage Temperature	+85°C per MIL-STD-810G High Temperature Storage Test, Method 505.1, Proc. 1
Marine Environment	MIL-STD-810G Salt Fog Test, Method 509.5, Proc. 1

MAINTENANCE

Lamp	Field Replaceable Xenon Short Arc Lamp (Kit #MBA-2400-E)
MTBF	1500 hours (lamp); maintenance/replacement recommended at 1000 hours
Warranty	90 days (lamp); 1 year (all other components)

INCLUDED WITH THIS PRODUCT

All MBPKG-E Series Searchlights ship with an Operation Manual, Focus Adjustment Tool, Interface Control Document (ICD) and an installation CD for the searchlight's Windows-compatible Maxa Beam Control Software (MBA-GUI).

All MBPKG-E Series Searchlights also ship with Mating Connector Kits that can be used to build your own power and control cables:

- Single-Connector MBPKG-E-* Searchlights include a 12-pin mating connector for a combined power/control cable.
- Dual-Connector MBPKG-E2-* Searchlights include a 4-pin mating power connector and a 10-pin mating control connector.

Off-the-shelf cables are also available from Peak Beam for dual-connector searchlights only; please inquire for details.

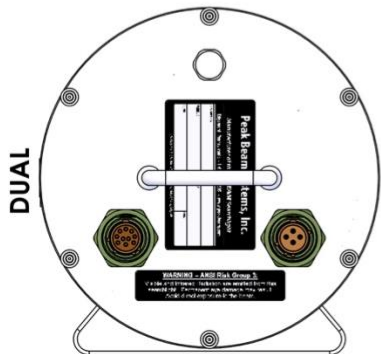
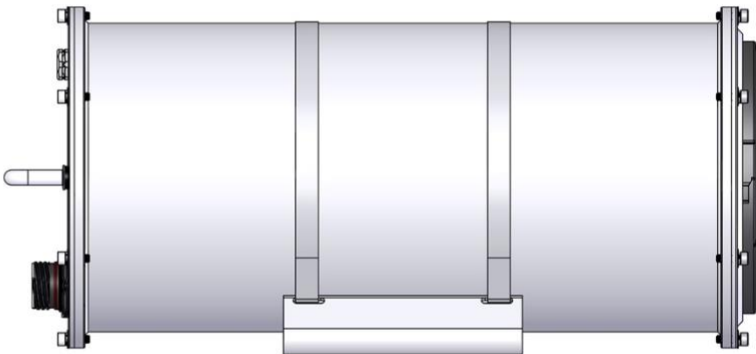
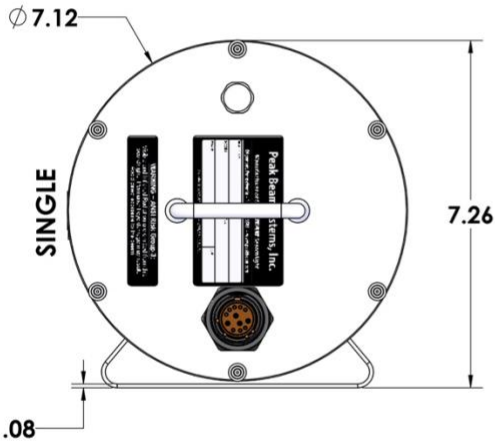
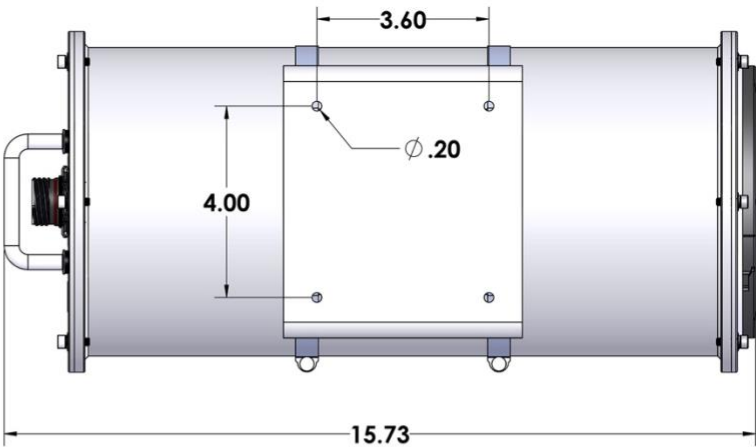
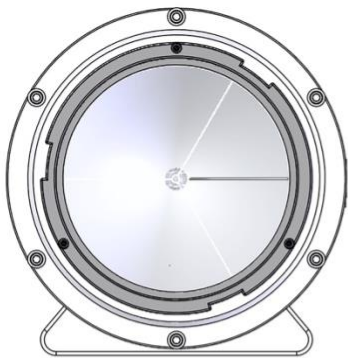
MBPKG-E Series Maxa Beam Searchlights

rev. 09/24



PHYSICAL CHARACTERISTICS

Model Number	Input Voltage (VDC)	Connector Layout	Mating Connector(s) (included)	Weight (lbs.)
MBPKG-E	10.0-13.5	SINGLE D38999/24ZD97PN (combined power/control)	D38999/26ZD97SN	8.7 ±0.1
MBPKG-E-24	18.0-36.0			9.4 ±0.1
MBPKG-E-48	37.0-75.0			9.4 ±0.1
MBPKG-E2	10.0-13.5	DUAL D38999/24ZC4PA (power) D38999/24ZC98PN (control)	D38999/26ZC4SA D38999/26ZC98SN	8.7 ±0.1
MBPKG-E2-24	18.0-75.0			9.4 ±0.1



Dimensions are in inches.

MBPKG-E Series Maxa Beam Searchlights

rev. 09/24



INPUT POWER REQUIREMENTS

10.0-13.5VDC Input Models (MBPKG-E, MBPKG-E2)			
Parameter	Value	Unit	Notes
Operating Voltage	10.0-13.5	Volts	Over Voltage/Reverse Polarity Protected to $\pm 36V$
Lamp Off	0.077 ± 0.01	Amps	25°C, 12VDC Input
Low Beam Mode	3.35 ± 0.07	Amps	25°C, 12VDC Input
Normal Beam Mode	4.29 ± 0.08	Amps	25°C, 12VDC Input
High Beam Mode	8.29 ± 0.09	Amps	25°C, 12VDC Input
Peak Current at Lamp Start	20.5 ± 3.2	Amps	25°C, 12VDC Input
Peak Current Pulse Duration	8.1 ± 1.6	mS	Time spent above high beam mode current draw.

18-36VDC Input Models (MBPKG-E-24, MBPKG-E2-24)			
Parameter	Value	Unit	Notes
Operating Voltage	18.0-36.0	Volts	Reverse Polarity Protected to -50V
Lamp Off	0.320 ± 0.015	Amps	25°C, 24VDC Input
Low Beam Mode	2.04 ± 0.04	Amps	25°C, 24VDC Input
Normal Beam Mode	2.52 ± 0.04	Amps	25°C, 24VDC Input
High Beam Mode	4.75 ± 0.04	Amps	25°C, 24VDC Input
Peak Current at Lamp Start	12.6 ± 1.1	Amps	25°C, 24VDC Input
Peak Current Pulse Duration	8.3 ± 1.1	mS	Time spent above high beam mode current draw.

37-75VDC Input Models (MBPKG-E2-24, MBPKG-E-48)			
Parameter	Value	Unit	Notes
Operating Voltage	37.0-75.0	Volts	Reverse Polarity Protected to -60V
Lamp Off	0.179 ± 0.007	Amps	25°C, 48VDC Input
Low Beam Mode	1.04 ± 0.02	Amps	25°C, 48VDC Input
Normal Beam Mode	1.28 ± 0.02	Amps	25°C, 48VDC Input
High Beam Mode	2.38 ± 0.03	Amps	25°C, 48VDC Input
Peak Current at Lamp Start	4.6 ± 0.4	Amps	25°C, 48VDC Input
Peak Current Pulse Duration	7.8 ± 0.7	mS	Time spent above high beam mode current draw.

CONNECTOR PIN-OUTS

Function			Pin	
			Single Connector	Dual Connectors
CONTROL	Wired Remote Switches*	12VDC Out	-	A
		Focus Narrow	B	B
		Strobe/Low Beam Mode	A	C
		On/Off	D	D
		High/Normal Beam	F	G
		Focus Wide	H	H
	RS-232	RS-232 Signal Ground (DB9 Pin-5 + Drain Wire)	E	E
		RS-232 Receive Data (from searchlight to controller) (DB9 Pin-2)	J	J
		RS-232 Transmit Data (from controller to searchlight) (DB9 Pin-3)	K	K
POWER		Positive Supply Voltage	G	A
		Positive Supply Voltage	L	B
		Negative Supply Voltage	C	C
		Negative Supply Voltage	M	D

*Not connected on model MBPKG-E-48.

MBPKG-E Series Maxa Beam Searchlights

rev. 09/24



CONTROL METHOD NOTES

All MBPKG-E Series Searchlights can be controlled with an internal RS-232 computer interface. With this capability, a searchlight can be remotely controlled via computer either as a stand-alone illuminator or as part of an integrated computer-controlled surveillance or security system on a pan and tilt device.

RS-232 Searchlights can be controlled using a terminal emulator such as HyperTerminal or Peak Beam’s Graphical User Interface (GUI). Computer-controlled searchlights are also frequently installed with third-party Ethernet-to-Serial servers, allowing multiple searchlights to be linked together on the same network.

All searchlight models except MBPKG-E-48 can be controlled with wired remote switches. For details on remote port and switch functionality, consult the Operation Manual. Off-the-shelf controllers are available for dual-connector searchlights; contact Peak Beam for more information.

SAFETY WARNINGS

ANSI Risk Group 3. Warning.
Visible and infrared radiation emitted from this searchlight.
Permanent eye damage can result. Avoid direct exposure to the beam.

Do not look directly into the searchlight beam. Exposure of the eye to either the direct searchlight beam or a beam reflected from a flat mirror-like surface can cause permanent eye injury to the unprotected eye. Follow the same precaution even when an Infrared Filter is installed on the searchlight.

Nominal Ocular Hazard Distance (NOHD), Visible Light: 10 meters
NOHD, Infrared Light: 30 meters for exposures greater than 10 seconds

Do not operate searchlight if the front lens is damaged or removed. Ultraviolet injury to skin and cornea can occur if the searchlight is operated with a damaged front lens or if the lens is removed.

Do not allow the concentrated beam of light to be focused on flammable materials at close distances for prolonged periods of time.

Do not operate light in an explosive environment.

Do not touch lamp connections during operation as high voltage is present.

Do not touch the quartz envelope of the lamp. If the lamp is accidentally touched, clean with rubbing alcohol and allow it to dry completely before operating the searchlight.

Always wear protective eyewear, long sleeves, and gloves if removing the front lens cover. The lamp is under positive pressure and should be handled with care.

Always disconnect searchlight from power cord when not in use, when placed in storage or when being transported to prevent accidental activation.

REVISION HISTORY

5/2007	MBPKG-E Series released.
3/2011	Output increased from 7,500,000 CandlePower to 12,000,000 CandlePower (G3-20).
5/2013	Input power range on 24V models updated from 11-36VDC to 18-36VDC.
5/15/2014	Serial Interface V3.5 released; Interface Control Document V3.5 released.
5/2016	Continuous High Beam function added (applicable to switch control only) (G3-26).
8/2017	Phased transition begins for D38999 connectors from military service class W (Cadmium plated) to military service class Z, Zinc-Nickel plated over Aluminum shell.
5/2018	MBPKG-E Series Datasheet released. Product details consolidated and corrected. <i>This document replaces MBPKG-E rev.G, MBPKG-E2 rev.G, MBPKG-E-24 rev.J, MBPKG-E2-24 rev.H, MBPKG-E-48 rev.D, MBPKG-E2-48 rev.F.</i>
2/20/2020	MBPKG-E2-24 input voltage range extended. MBPKG-E2-48 discontinued and replaced by MBPKG-E2-24. Transition to D38999 connector military service class Z complete. Weights updated. Serial Interface V4.0 released; Interface Control Document V4.0 released.
5/18/2022	New reflector coating with improved visible and infrared reflectivity released (G3-26A).
9/1/2024	Searchlight programmable settings updated, including power-up on high beam option (G3-34). Input power requirements updated. Serial Interface V4.2 released; Interface Control Document V4.2 released.



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