



Studio Max II

Operator's Manual

Studio Max II AK320
Studio Max II AK320B
Studio Max II AK160
Studio Max II AK160B

OPERATOR MANUAL FOR MONOLIGHTS

Studio Max II AK320 Studio Max II AK320B Studio Max II AK160 Studio Max II AK160B

Thank you for selecting the Photogenic Professional Studio Max II AK series. The Studio Max II series incorporates state of the art electronic components, providing economical lighting control, power setting repeatability and constant color. These products are built for the operational needs of the semi-professional and amateur photographer and it is our expectation that your Studio Max II and Studio Max II accessories will provide you with years of dependable service. With this new Studio Max II series optional accessories include: all Photogenic "Quick-Change" reflectors and their attachments (gels, grids, etc.) and soft boxes.

INTRODUCTION

The Studio Max II's are self-contained light units and power supplies. They have a professional plug-in flashtube, a 100 watt on/off modeling light, and bare bulb capability, both vertically and horizontally. The Studio Max II's are fitted with Photogenic's unique quick-change system for holding accessories made by Photogenic Professional.

Before using your new Studio Max II for the first time, please read this manual carefully and acquaint yourself with the controls and features. In this way, you can quickly get the greatest benefit from your new unit and maintain an efficient and safe operation.

SAFETY PRECAUTIONS

Despite the measures that have been taken to make electronic flash equipment safe, it must be recognized that high voltages and high temperatures do exist within the power supply / lighting unit. Certain precautions must be observed in handling the unit. Contact with internal high voltage may result in severe injury or death.

1. Before installing or removing the flashtube and modeling lamp, be sure this appliance is turned off, cooled and unplugged from AC power source.
2. Do not touch the glass tubes with bare hands, as normal body oils will shorten the bulb's life. Always use a clean cloth or wear gloves to protect your hand from glass breakage and heat.
3. Do not defeat the purpose to the three-wire line cord by disconnecting the ground. Connect to properly functioning and grounded 3-pin receptacles only. If you are using an extension cord, be sure the cord has an equivalent or greater rating and has a ground.
4. Do not insert a screwdriver or other metal objects into the flashtube socket area or vents. Contact with high voltage may result.
5. Do not operate this appliance with a frayed or damaged line cord. When replacing or using the unit with an extension cable, be sure the cable has an equivalent or greater rating and is a properly connected 3-wire grounded cable.
6. Do not attempt to use this appliance if it has been dropped or damaged, until a qualified service person has serviced it.
7. Do not operate the unit with a damaged or broken flashtube or modeling lamp. To prevent damage always use Photogenic specified replacements for the flashtubes and modeling lamps.
8. Perform no internal service work on this unit. Refer all such service to a qualified service person or return to the factory. This will provide you safety and continuation of your warranty.
9. Do not operate when water is present (including ocean salt spray) and from extreme temperature shifts. If the unit is stored in hot or below freezing temperatures, allow at least one hour at room temperatures before using.

PREPARATION AND BASICS

Unpacking and Setup:

Unpack all units carefully to remove all parts from the carton(s). Do not discard or destroy the packing material until the equipment has been inspected, assembled, and all parts accounted for.

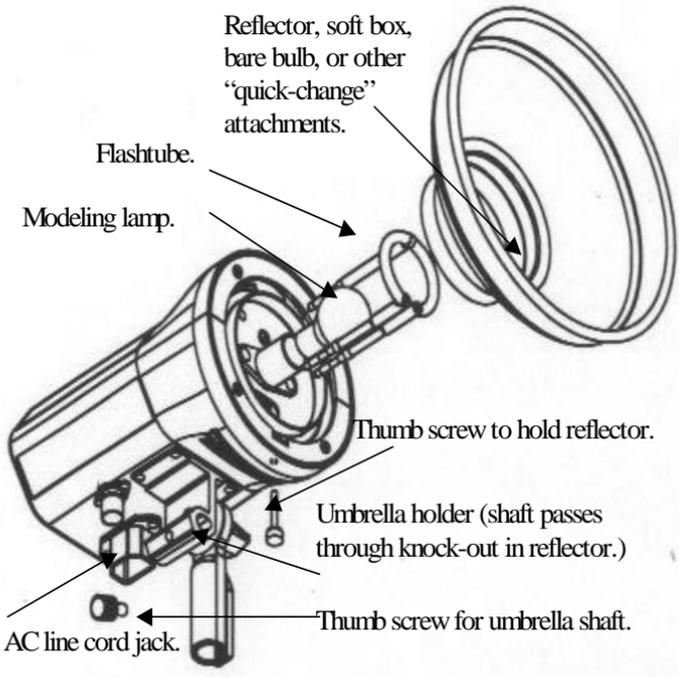
After unpacking, all parts should be examined for any damage, which may have been caused by rough handling during shipment. If any damage is detected, contact the delivering carrier at once. Claim for damage should be made to the delivering carrier before destroying packing cartons.

To set up the unit, first mount and secure it on a suitable stand. The Studio Max II stand adapter allows the unit to be mounted on a stand with a 3/8" to 5/8" post. Be sure to use a stand that is stable and will not tip easily.

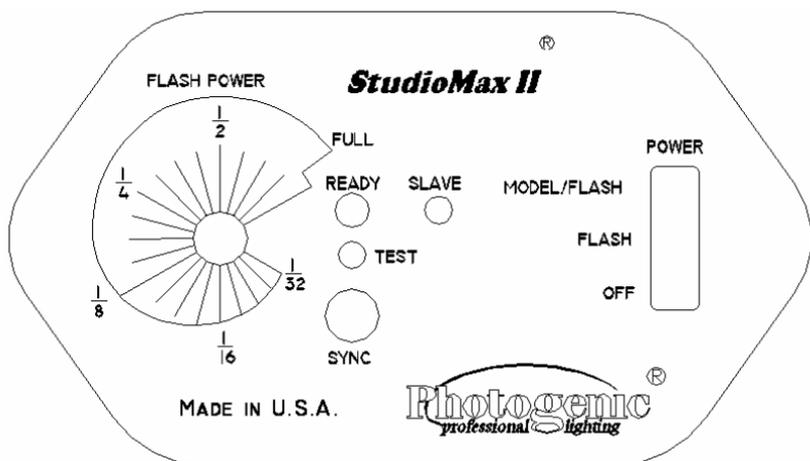
The unit may be shipped with the modeling lamp and flashtube not installed. While installing the modeling lamp and flashtube (with glove or clean cloth to protect the hand) be sure they are properly inserted and tight to avoid arcing and failure of the socket contacts during operation. Do not touch the glass tubes with bare hands, as normal body oils will shorten the bulb's life. Always use a clean cloth or wear gloves to protect your hand from glass breakage and heat. If flashtube and modeling lamp are installed when received, there will be spacers between the glass to prevent damage during shipping. REMOVE THE SPACERS.

The 7 ½ inch reflector is attached by the “quick-change” mechanism. A solid tab and a thumb screw on the unit grip the ring on the reflector. To mount the reflector, loosen the thumb screw so it does not show inside the circle and tilt the reflector past the stationary top-tab, then past the thumb screw. Tighten the thumb screw, securing the reflector (see illustration below.) All accessory reflectors and soft boxes are designed for use with this “quick-change” system or onto this 7 ½ inch reflector.

With power switch OFF, attach the line cord to the power-input connector, located on the bottom of the Studio Max II, and connect it to a grounded wall outlet. Turn the power switch ON. The READY light will light when the unit has charged.



CONTROL PANEL AND BASIC OPERATION:



Power Input:

The power required to operate the Studio Max II is 105 to 125 volts AC, 50/60 Hz, 4 Amp, and/or, for a B model, an approved DC battery power pack. The power cord has a 125V, 10 Amp. rating. Replacement cords or extension cords rated for less amperage may overheat and should not be used with PowerLights.

Circuit Protection:

Circuit protection (fuse) automatically protects this appliance from excessive damage due to circuit or component failure. Operation exceeding the rated cycle of the appliance may cause the fuse to open. [Always replace fuse with same rating of fuse.]

To replace a blown fuse (power cord must be disconnected), simply unscrew the fuse holder cap (side front of unit) and replace the exposed fuse with a new fuse. If fuses continue to blow, contact your dealer or qualified service person. (See specification section for fuse replacements)

Power Switch:

The power switch controls the AC power to both the modeling and flash circuits. You have the option to turn-off the modeling circuit (center switch position).

Flash Power:

All settings and controls of the Studio Max II are extremely stable and repeatable due to the use of an internal microcomputer. The AK320 and AK320B are adjustable from 10 watt seconds to 320 watt seconds. The AK160 and AK160B are adjustable from 5 watt seconds to 160 watt seconds.

To adjust the Studio Max II to its lowest flash power setting (5 or 10 watt seconds), rotate the *FLASH POWER* control knob fully counter clock-wise.

To adjust the Studio Max II to its greatest flash power setting (160 or 320 watt seconds), rotate the *FLASH POWER* control knob fully clock-wise.

Ready Light:

The Studio Max II is charged when the *READY* lamp is on. Lowest power (10 ws) charge time is a maximum of .1 seconds and at full power charge (320 ws) time is a maximum of 3 seconds. The unit may be flashed before fully charged.

Modeling Light:

The modeling light has two modes of operation:

1. With *POWER* switch in *MODEL/FLASH* position, the modeling lamp is ON.
2. With *POWER* switch in *FLASH* position, the modeling lamp is OFF.

Test Function:

The *TEST* button is pressed to fire the flashtube for test purposes.

Power Off:

Turning OFF the POWER switch will turn OFF both the AC line power and the battery pack power connection. The POWER switch must be ON for either power source. The battery pack will also have a POWER switch, which must be turned ON and OFF.

The Studio Max II POWER OFF position will “dump” the stored power in the flash capacitors by flashing the unit. This is for safety and reliability.

Synchronization and Triggering:

Triggering is accomplished by using a camera flash or a trigger cable from one Studio Max II to the camera shutter contacts of “X” or “zero” delay. Other units in the system are then triggered by photoslave operation, or a “daisy-chain” connection of all SYNC jacks. It is best to connect the fill light directly to the camera since it will be positioned furthest back in the studio and will usually provide sufficient illumination to trigger the other units. It is suggested that all walls and ceiling be painted either in white or light neutral colors for most reliable photoslave operation.

After the trigger cord is properly connected, check the synchronization with the camera. Adjust the lighting unit to same height as the camera lens and face the lights into the lens. The lens aperture should be open to its fullest extent and set on “X” or “zero” delay. Remove the camera back. It is best to perform this test with the modeling lamps turned off.

While looking at the lens through the back of the camera, operate the shutter. A few sheets of white paper in front of the lens will cut down the brilliance of the flash and aid in making the observation. The flash of the light should then appear as a circle the same size as the aperture. If the circle is flattened on the sides, or if no light appears through the lens, the shutter is not synchronized. If the shutter appears not to be synchronized, a reputable camera repair shop should check the shutter contacts.

AK160 and AK320 Accessories:

A large assortment of standard reflectors, umbrellas, softboxes, snoots, barndoors and cases. (See the listing later in this manual)

AK160B and AK320B Accessories:

A battery pack power source is available, as well as the large assortment of standard reflectors, umbrellas, soft boxes, snoots, barndoors and cases. (See the listing later in this manual)

OPERATION

Studio Max II All Models

Flashing Rate:

The unit recharges quickly, as indicated by the READY light on the control panel. A quick series of flashes can be obtained within the limits of the recharge time. Continuous rapid flashing, however, can overheat and damage the flashtube and internal parts. The maximum recommended rate of flashing depends upon the power level being used and the amount of operation time. Use the following chart to serve as a guide for the maximum rate to use in your situation.

Power Level	Operating Time	Sec. Between Flashes.	Number of Flashes.
Full	Continuous	15	Continuous
	30 minutes	10	180
	1 minutes	4	15
1/4	Continuous	10	Continuous
	30 minutes	6	300
	3 minutes	4	45
1/32		1.5	Continuous

Exposure Information:

The following charts give the BCPS output for various umbrellas and reflectors. Coverage angle is given in degrees. Divide numbers in half for 160 watt-second units.

Umbrella	32 inch	45 inch	60 inch
Coverage	120 degree	120 degree	120 degree
Full Power	1658	1683	1683
Half	829	841	841
Quarter	414	421	421
Eighth	207	210	210
Sixteenth	104	105	105

Reflector						
Diameter	None	7 ½"	14"	16"	20"	24"
Coverage	360°	35°	40°	60°	65°	145°
Full	703	7534	5274	7032	4922	1266
Half	352	3767	2637	3516	2461	633
Quarter	176	1884	1318	1758	1230	316
Eighth	88	942	659	879	615	158
Sixteenth	44	471	330	439	308	79
Thirty- Second	22	235	165	220	154	39
GN@ ASA 100	33	110	92	105	89	45

SPECIFICATIONS

AK320 & AK320B

General:

Flash Power.....	10 to 320 watt-seconds. (6 f-stops)
Flash Duration.....	1/120 second at Full 1/400 second at ½ 1/840 second at ¼ 1/1660 second at 1/8 1/2900 second at 1/16 1/4800 second at 1/32
Recycling time.....	0.02 to 3 seconds
Power Control.....	Full to 1/32 range. (6 f-stops) 0.1 f-stop resolution.
Modeling Light Power	40 Watt, 120 VAC
Modeling Light Control	ON or OFF.
Triggering	Built in Photoslave. Push to Test button. Synchronization Jack.
Main Supply	105-125 VAC, 50/60 Hz, 3 amp.
Consumption	1 amps idling, 5 amps charge.
Overload Protection	Fuse. 3AG type, 8 Amp, SLO-BLO.
Packaging	Molded, high-impact, plastic case.
Weight	2 pounds, 8 ounces.
Dimensions (housing only).....	5.25"W x 5.25"H x 7"L

Flashtubes and Modeling Lamps:

Flashtube	Plug-in style, use only Photogenic's Standard C4-12
Modeling Lamp	40-Watt, 120 VAC [NO LARGER WATTAGE]
Fuse	3AG type, 8 Amp, SLO-BLO.

SPECIFICATIONS

AK160 & AK160B

General:

Flash Power.....	5 to 160 watt-seconds. (6 f-stops)
Flash Duration.....	1/175 second at Full 1/700 second at ½ 1/1300 second at ¼ 1/2400 second at 1/8 1/4100 second at 1/16 1/7400 second at 1/32
Recycling time.....	0.01 to 1.5 seconds
Power Control.....	Full to 1/32 range. (6 f-stops) 0.1 f-stop resolution.
Modeling Light Power	40 Watt, 120 VAC
Modeling Light Control	ON or OFF.
Triggering	Built in Photoslave. Push to Test button. Synchronization Jack.
Main Supply	105-125 VAC, 50/60 Hz, 3 amp.
Consumption	1 amps idling, 5 amps charge.
Overload Protection	Fuse. 3AG type, 8 Amp, SLO-BLO.
Packaging	Molded, high-impact, plastic case.
Weight	2 pounds, 2 ounces.
Dimensions (housing only).....	5.25"W x 5.25"H x 7"L

Flashtubes and Modeling Lamps:

Flashtube	Plug-in style, use only Photogenic's Standard C4-12
Modeling Lamp	40-Watt, 120 VAC
Fuse	3AG type, 8 Amp, SLO-BLO.

QUICK CHANGE ACCESSORIES

REFLECTORS:

PL06-R	7 1/2" Standard high grain reflector. 35 degree coverage.
AE65	14" Parabolic for portraits, feathering, flood and fill lighting. 60 degree coverage.
AE66	16" Parabolic for portraits, feathering, flood and fill lighting. 60 degree coverage.
AE58-16	16" 2-panel clamp-fit barndoor & diffuser.
AE58-16BDS	16" 4-panel barndoor and diffuser.
AE67	20" Parabolic for portraits, feathering, flood and fill lighting. 65 degree coverage.
AE58-20	20" 2-panel clamp-fit barndoor & diffuser
AE79	24" Parabolic for soft illumination and flood lighting. 100 degree coverage.
AE58-24	24" 2-panel barndoor kit.
A10166	Shallow Background reflector rotates to control light for high key & back lighting.
A10166A	Veil Slotted Background reflector for veil and burst-lighting effects.
A10157	Deep Conical Background reflector.
A10172	Gel & Diffuser holder for Deep background reflector.
PL47-MF	Accessory mounting frame for 7 1/2" reflector.
PL47-BDS	4-panel barndoor, frame and diffuser kit for PL06-R. Diffuser available separately
AG47	3" & 5" snoot kit with diffuser and mounting frame. Snoots also available separately.
AG47-GS	Fine & coarse grids with diffuser and mounting frame. Grids also available separately
PL06-CW	Counter weight for PowerLights. Used with soft boxes, umbrellas and large reflectors.
PL06-HA	Tilting handle for PowerLights. Makes an adjustment easier for light direction.

UMBRELLAS:

EC32BC	32" White satin flat panel inner umbrella with black blocking outer umbrella.
EC45BC	45" White satin flat panel inner umbrella with black blocking outer umbrella.
EC60BC	60" White satin flat panel inner umbrella with black blocking outer umbrella.
EC32S	32" Silver satin flat panel inner umbrella with black blocking outer umbrella.
EC45S	45" Silver satin flat panel inner umbrella with black blocking outer umbrella.
EC60S	60" Silver satin flat panel inner umbrella with black blocking outer umbrella.

SOFTBOXES:

AK12	12" Square Soft Box with mounting ring.
AK24	24" " Square Soft Box with mounting ring.
AK1024	10" x 24" Strip Soft Box with mounting ring.
AK2436	24" x 36" Square Soft Box with mounting ring.
AK36	36" Square Soft Box with mounting ring.

BATTERY PACK: AKB-1 (Uses a spill proof 12 volt battery to power the AK160B for over 320 flashes and the AK320B for over 160 flashes, at FULL power.)

SERVICE

The photographer should not attempt to make repairs.

Consult a dealer for an authorized Photogenic Professional Lighting service agent. This will provide you safety, insure proper operational functions and provide continuation of your warranty.

Before removing the old tubes or installing new tubes, always unplug your Studio Max and discharge the stored energy by switching the POWER switch to OFF. Wait approximately two hours for the main capacitors to deplete any residual stored wattage. If the Studio Max does not flash when turned OFF (flash tube may be defective), the unit must remain OFF for four hours to discharge the main capacitors. Never place your fingers or any metal objects into the flash or modeling sockets. Contact with high voltage may result.

General Trouble Shooting

COMMON PROBLEMS AND CAUSES

Unit does not charge.

Probable causes:

- a. Fuse blown. (Unplug and discharge the unit-Replace fuse.)
- b. No line power to unit. (Check line cord and outlet.)
- c. Defective unit. (Return for repair.)

Modeling light does not turn on.

Probable causes:

- a. Lamp turned off. (Press FULL ON/OFF button until LED lights.)
- b. Lamp burned out. (Inspect and replace, when cool. Replace with same part number.)

Light flashes by itself without apparent reason.

Probable causes:

- a. Defective trigger cord, or trigger cord incorrectly polarized.
- b. Bright light falling on photoslave.
- c. Poor connection in line cord.
- d. Reverse connection on trigger cord connection at camera.
- e. Some radio slaves will cause interference. Consult slave manufacturer.

Trigger cord will not flash unit, but charge indicator shows that the system has charged.

Probable causes:

- a. Defective trigger cord.
- b. Defective flashtube. Turn unit off. Wait until discharged (4 hours) and cool, then replace flashtube. (See SERVICE section of this manual)

Limited PowerLight Warranty

Photogenic warranties the “standard line” products are free from defects in material and workmanship of the AK series of Studio Max Lights for a period of one year. At our choice, we will repair or replace any AK series light that is deemed to be defective. This warranty does not cover damages caused by shipping, product abuse or use other than the intended photographic applications.

Any product modifications will render this warranty void. Use of other manufacture’s accessories, which restrict normal or intended operation (especially venting airflow), may cause damage and will void this warranty.



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