

Showco Blinder 3000

user manual

SAFETY INFORMATION

Warning: *This product is for professional use only! It is not for household use.*

The Blinder 3000 presents risks of lethal or severe injury due to fire and heat, electric shock, ultraviolet radiation, and falls. Flashing light is also known to trigger epileptic seizures in persons who are photosensitive. **Read this manual** before powering or installing the fixture, follow the safety precautions listed below and observe all warnings in this manual and printed on the fixture.

To guard against electric shock

- Disconnect the fixture from AC power and allow the flash capacitor to discharge for 1 minute before changing the lamp or fuse, and when not in use.
- Do not remove the rear cover: there are no user-serviceable parts inside.
- Always ground (earth) the fixture electrically.
- Use only a source of AC power that complies with local building and electrical codes and has both overload and ground-fault protection.
- Do not expose the fixture to rain or moisture.

To guard against UV radiation, burns, and fire

- Never operate the fixture with the front glass open, missing or damaged.
- Do not stare directly into the light. Never look at an exposed lamp while it is lit.
- Replace the lamp when it becomes defective or worn out.
- When replacing the lamp, allow the fixture to cool for at least 10 minutes before opening the fixture or removing the lamp.
- Never attempt to bypass the fuse. Always replace defective fuses with ones of the specified type and rating.
- Verify that the power feed cable is rated for the current draw of all connected fixtures.

- Keep all combustible materials (for example fabric, wood, paper) at least 0.5 meters (20 inches) away from the fixture. Keep flammable materials well away from the fixture.
- Do not illuminate surfaces within 1 meter (39 inches) of the fixture.
- Provide a minimum clearance of 0.1 meters (4 inches) around air vents.
- Never place filters or other materials over the front glass cover.
- The exterior of the fixture can reach temperatures up to 120° C (248° F). Allow the fixture to cool for at least 15 minutes before handling.
- Do not operate the fixture if the ambient air temperature (T_a) exceeds 40° C (104° F).

To guard against falls

- When suspending the fixture above ground level, verify that the structure can hold at least 10 times the weight of all installed devices.
- Verify that all external covers and rigging hardware are securely fastened and use an approved means of secondary attachment such as a safety cable.
- Block access below the work area whenever installing or removing the fixture.

To guard against epileptic seizure

- Do not operate the fixture near stairways.
- Provide advance notice that strobe lighting is in use.
- Avoid extended periods of continuous flashing, particularly at frequencies of 10 to 20 flashes per second.

The current required by the Blinder 3000 varies according to lamp type, power mode, and usage. To avoid overload, allow one 16 or 20 amp branch circuit per fixture to operate the MAX-15 model at full power.

Use 2.5 mm² (13 AWG) or larger power feed cables and keep runs as short as possible.

INSTALLATION

The Blinder 3000 may be installed in any orientation. The mounting bracket provides five 12 mm holes for direct fastening or attachment of rigging clamps.

To install the mounting bracket

- 1 Place the fixture face down on a table.**
- 2 Place a plastic washer on each mounting bracket stud.**
- 3 Place one end of the bracket on one of the mounting studs. Bend the other end of the mounting bracket open slightly and work it onto the opposite stud.**
- 4 Place a knob on each stud. Tighten both hand knobs to lock the mounting bracket in place.**

To rig the fixture

Warning: *Always use a secure means of secondary attachment!*

Before installing, verify that

- the attachment hardware is in good condition and designed to bear at least 10 times the fixture's weight,
- the structure can support at least 10 times the weight of all installed fixtures, clamps, cables, auxiliary equipment, etc.;
- the fixture will be located at least 1 meter (39 in.) away from the surface to be illuminated, at least 0.5 meters (20 in.) from any combustible materials, and well away from flammable materials;
- the clearance around the air vents is at least 0.1 meters (4 in.), and
- no one is located under the work area.

- 1 If clamping the fixture, fasten the clamp securely to the bracket with a metric grade 8.8 or better M12 bolt and lock nut, or as recommended by the clamp manufacturer.**
- 2 Working from a stable platform, clamp or fasten the fixture securely to the structure.**
- 3 Install a safety cable around the support and bracket.**
- 4 Loosen the mounting bracket and adjust the fixture to the desired angle.**
- 5 Connect and arrange the power and data cables.**

This section describes the lamp options, the lamp power setting, and how to replace the lamp.

The lamp is electronically regulated to prevent overheating. Lamp regulation can be seen, for example, by the gradually decreasing intensity of the blinder effect.

LAMP POWER SETTING

The Blinder 3000 provides high and low lamp power settings. The high power setting provides maximum flash intensity for the Philips lamps; the low power setting reduces output by approximately 50 percent and extends lamp life, this mode is recommended when uses chinese lamps. The setting is selected on pin 6 of the Mode DIP switch and applies regardless of the other switch settings.



High power setting (Philips lamps)



Low power setting (chinese lamps)

APPROVED LAMPS

Warning: *Only Philips MAX-15 xenon lamp are approved in the Blinder 3000. Installing a lamp that is not approved may create a safety hazard or damage the fixture!*

CONTROLLER OPERATION

DATA CONNECTION

The Blinder 3000 provides both 3-pin and 5-pin XLR sockets for data connection. The pin-out on all sockets is pin 1 to shield, pin 2 to cold (-), and pin 3 to hot (+). There is no connection to pins 4 and 5. The sockets are wired in parallel: both inputs connect to both outputs. *For reliable data transmission use one input and one output!*

To connect the data link

- 1 Connect the DMX data input from the controller to the Blinder 3000's 3-pin or 5-pin input (male) socket.
- 2 Connect up to 31 additional fixtures output-to-input.
- 3 Insert a termination plug in the output of the last fixture on the link.

DATA CONNECTION TIPS

- Use shielded twisted-pair cable designed for RS-485 devices: standard microphone cable cannot transmit control data reliably over long runs. 24 AWG cable is suitable for runs up to 300 meters (1000 ft.). Use heavier gauge cable and/or an amplifier for longer runs.
- Never use both outputs to split the link. To split the serial link into branches use a signal splitter.
- Do not overload the link. Up to 32 devices may be connected on a serial link.
- Terminate the link by installing a termination plug in the output socket of the last fixture. The termination plug, which is a male XLR plug with a 120 ohm, 0.25 watt resistor soldered between pins 2 and 3, "soaks up" the control signal so it does not reflect and cause interference.

DMX CONTROL MODES

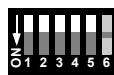
The DMX control options are selected on the Mode DIP switch.

1-channel DMX mode allows you to strobe from 0 flashes per second to the maximum flash rate and trigger the blinder effect from the controller. To select 1-channel DMX operation, set pin 5 of the Mode DIP switch to on; set pins 1 to 4 to off.



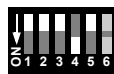
1-channel DMX mode setting

3-channel DMX mode provides control of flash intensity, flash duration, and flash rate for more advanced control than 1-channel mode. To select 3-channel DMX operation, set pins 1 to 5 of the Mode DIP switch to off.



3-channel DMX mode setting

4-channel DMX mode provides six special effects in addition to flash intensity, duration, and rate control. To select this 4-channel DMX operation, set pins 1, 2, 3, and 5 to off; set pin 4 to on.



4-channel DMX mode setting

CONTROL ADDRESS

The control address, also known as the start channel, is the first channel used to receive instructions from the controller. The address may be any channel from 1 to 511 and is set on the Address DIP switch.

The Blinder 3000 uses 1, 3, or 4 channels depending on the control mode. For independent control, each fixture must be assigned its own address and non-overlapping control channels. Two or more Blinder 3000s may share the same address if individual control is not required.

To set the DMX address

- 1 Select an address for the fixture on your controller. Look up the DIP s switch setting for the address in the table below.**
- 2 Set pins 1 through 9 ON (1) or OFF (0) as listed in the table. Set pin 10 to OFF.**

DMX CONTROL SUMMARY

INTENSITY

Flash intensity can be set from minimum (blackout) to maximum on channel 1 in the 3- and 4-channel DMX modes. Intensity is maximum in 1-channel DMX mode.

The maximum intensity can be reduced by selecting low power mode as described on page 9.

DURATION

Flash duration can be set from 0 to 650 ms on 50 Hz power supplies, or 0 to 530 ms on 60 Hz power supplies, on channel 2 in the 3- and 4-channel DMX modes. Flash duration is fixed in 1-channel DMX mode.

RATE

Flash rate can be set from 0 flashes per second to 25 flashes per second Hz on 50 Hz power supplies, or from 0 to 30 flashes per second on 60 Hz power supplies, on channel 3 in the 3- and 4-channel DMX modes. Flash rate is also controllable in 1-channel DMX mode.

PROGRAMMED EFFECTS

Six programmed effects are available on channel 4 in the 4-channel DMX mode only. The effects may be altered using the intensity, duration, and rate controls.

- **Ramp up: Light gradually increases in intensity, then blacks out.**
- **Ramp down: Light flashes to full intensity, then gradually fades.**
- **Ramp up-down: Light gradually increases and decreases.**
- **Random flash: Light flashes randomly with variable rate and intensity. Multiple units flash independently of each other.**
- **Lightning: The flashes simulate lightning. Duration is not adjustable.**
- **Spikes: The lamp remains dimly illuminated between flashes. Set flash intensity, duration, and rate as normal.**

BLINDER EFFECT

The blinder effect, in which the light remains on for an extended period, is available in all DMX modes. In the 3- and 4-channel modes, the effect is achieved

whenever the combination of flash duration and rate prevents pauses between flashes. For example, the blinder effect can be achieved with a flash duration of 0.25 seconds (250 ms) and a flash rate of 4 flashes per second, or a flash duration of 0.05 seconds (50 ms) and a flash rate of 20 flashes per second.

In 3- and 4-channel DMX mode, the intensity of the blinder effect is controllable on channel 1. Lamp power is electronically regulated to prevent the lamp from overheating. The intensity falls as power is reduced.

SINGLE FLASH

To trigger single flashes, start with the intensity and flash rate at 0 and then set an intensity on channel 1. When the value of channel 1 changes, the light will flash once with the programmed intensity, duration, and effect.

STAND-ALONE OPERATION

This section describes how to operate the Blinder 3000 in stand-alone mode without a DMX controller.

STAND-ALONE FLASH RATE

To program stand-alone execution

- 1 Apply power to the fixture.
- 2 Set pin 1 of the Mode DIP switch to ON. Set pins 2 - 5 to OFF. Set pin 6 to ON for low-power operation or to OFF for high-power operation.
- 3 Select either a flash rate or the blinder effect. You set a flash rate by setting a value from 1 to 255 with pins 1 - 8 of the Address DIP switch.
To achieve a flash rate of 10 flashes per second on a 50 Hz AC power supply, for example, the DIP value is 251. To select the blinder effect instead, set pin 9 to ON.
- 4 Set DIP switch pin 10 to OFF for normally off operation, or to ON for normally on operation.

SERVICE

Warning: *High voltage! Do not remove the rear panel. There are no user-serviceable parts inside.*

FUSE REPLACEMENT

The Blinder 3000 uses a 20 amp time-delay fuse for protection against current overload. If the power diode does not light when power is applied, the fuse may be spent. If the fuse blows repeatedly, there is a fault with the unit that requires service by a service center.

Never bypass the fuse or replace it with one of another size or rating.

To replace the fuse

- 1 **Disconnect the fixture from AC power.**
- 2 **Unscrew the fuse holder, located on the side plate nearest the power cord. Remove the spent fuse from the holder and replace it with an identical 20 amp 6.3 x 32 mm time-delay fuse.**
- 3 **Replace the fuse holder in the side plate.**

DMX PROTOCOLS

1-CHANNEL DMX MODE

Channel	Value	Percent	Function
1	0 - 5	0 - 1	Blackout
	6 - 249	2 - 98	Flash rate, slow to fast
	250 - 255	98 - 100	Continuous "Blinder" effect

3 AND 4 CHANNEL DMX MODES

Channel	Value	Percent	Function
1	0 - 5	0 - 1	Flash intensity Blackout
	6 - 255	2 - 100	Minimum to maximum
2	0 - 255	0 - 100	Flash duration 0 - 650 ms @ 50 Hz AC, or 0 - 530 ms @ 60 Hz AC
3	0 - 5	0 - 1	Flash rate No flash (single flash with ch. 1)
	6 - 255	2 - 100	0.5 - 25 Hz @ 50 Hz AC, or 0.6 - 30 Hz @ 60 Hz AC

Note: Enable channel 4 with Mode DIP switch no. 4 on.

Channel	Value	Percent	Function
4	0 - 5	0 - 1	Special effects No effect
	6 - 42	2 - 16	Ramp up
	43 - 85	16 - 33	Ramp down
	86 - 128	33 - 50	Ramp up-down
	129 - 171	50 - 67	Random
	172 - 214	67 - 84	Lightning
	215 - 255	84 - 100	Spikes