USER MANUAL

PHOTOGENIC®

MATRIX MCD400R

2.4 GHz Wireless Digital Monolight

Thank you for selecting the PHOTOGENIC® Matrix MCD400R Digital Monolight. The MCD400R incorporates the newest electronic components providing improved lighting control, power setting repeatability and expanded functions. This product is designed to meet the demanding needs of professional photographers, and it is our expectation that your MCD400R and related accessories will provide you with years of dependable service.

Before using your new MCD400R for the first time, please read this manual carefully to acquaint yourself with the controls and features. This will help you get the greatest benefit from your new MCD400R Digital Monolight and maintain the efficient and safe operation.

Features include

- Built-in 2.4G radio receiver system with 16 channels in 4 groups
- Consistent color temperature
- Power-control range of six f-stops from 1/32 to full power
- Precise flash power adjustment in 1/10 f-stop increments
- Preflash sync capable
- User replaceable UV-corrected flashtube
- Fan Cooled high impact housing
- Integrated wireless radio receiver and MRT-16 2.4 GHz Wireless Transmitter
- Optical slave with on/off control
- Easy to read digital control panel
- Overheat/overcharge protection
- Audible on/off flash indicator
- Digital flash and modeling lamp power display
- Convenient ratchet-handle tilt adjustment

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WHAT'S IN THE BOX

Each PHOTOGENIC® Matrix MCD400R comes complete with the following items

- (1) 120VAC flash unit.
- (1) flash tube
- (1) flash tube protective cap
- (1) 150W modelling lamp
- (1) Standard 7 inch Reflector
- (1) MRT-16 wireless transmitter
- (1) Power cord
- (1) Sync. cord
- (1) User manual

1.0 Preparing Your Flash For Use

Figure 1

Figure 2

Figure 3

Figure 4

1.1 Safety Notes

a. Do not use your flash in an environment where moisture or flammable vapor is likely to come in contact with the unit.
b. A fire hazard exists if flammable materials are placed in close proximity to either the flash tube or the modeling lamp when the unit is in use.
c. Do not restrict air vents while in use.
d. Avoid placing cables where they can be tripped over. Protect from heavy, sharp object or hot object, which may cause damage. Replace damaged cables immediately.
e. Turn the power off and unplug the power cord if the flash is not going to be used for a while.
f. Do not flash over 8 times in a minute at full power.
g. We recommend applying power to the flash unit for 2 hours prior to initial use and after an extended period of inactivity (every month).
h. Select a stand or supply system of suitable weight and dimensions to ensure stable operation of the unit.

1.2 Install Reflector / Protective Cap and Modeling Lamp

a. Ensure the flash is switched off and disconnected from AC power supply.
b. To remove black plastic cap, push the latch knob back towards the rear of the unit and rotate the protective cap counter clockwise (Fig. 1).
c. Screw the modeling lamp into lamp holder in the center of the flash (Fig.2).
d. Install the reflector provided. Align the three pegs on the reflector with the three slots. Press the reflector in and rotate clockwise until it locks in place (Fig.3) with the umbrella hole at the bottom.
e. To remove reflector, push the latch knob back towards the rear of the unit and rotate the reflector counter clockwise (Fig. 4)
f. Always install the protective cap when transporting the unit to avoid damaging the flash tube.
g. NEVER operate the flash with the plastic protective cap installed.
h. CAUTION: Do not touch the lamp with your bare hands. Oil residue from your fingers can cause the surface of the lamp to heat unevenly and explode. Use white cotton gloves or a clean cloth.
i. CAUTION: Take care when fitting or removing reflectors to avoid damaging the flash tube assembly. The flash tube is very delicate; avoid unnecessary handling of the flash tube. Always switch power off and disconnect from the AC power supply power cord before fitting and changing reflectors.

1.3 Control Panel (Fig.5)

A. LED Display
B. AUDIO Ready ON/OFF Control
C. Ready Light LED
D. TEST Button
E. SLAVE ON/OFF Control
F. Sync Cord Input
G. SLAVE (Photocell)
H. Flash Power Control
I. MODEL Lamp Power Control
J. Main Power Switch
K. Power Cable Input/Fuse Holder & Spare Fuse
L. Umbrella Holder

Figure 5

2.0 Power Supply Connection

Use only the power cord supplied to connect to AC power supply before plugging the power cord into the wall socket, make certain that the power switch is set to the OFF position.

Figure 6

Figure 7

Figure 8

3.0 Light Holder with Umbrella Hole

a. An umbrella with a handle diameter of 8-10mm can be firmly secured in the umbrella holder (Fig.6). Do not over tighten the screw of the umbrella holder to avoid deforming the shaft of the umbrella.
b. When the standard reflector is used, fit the umbrella in the hole of the reflector (Fig.7).
c. The handle can be pulled and turned to reposition it. (Fig.8).

4.0 Operation Instructions (Settings)

a. Switch the unit ON and set the AUDIO B and SLAVE E (Fig. 5) switches as required.
b. Set the Flash Power and Modeling Light Power controls to the required level.
c. When the unit has charged to the required level, the LED 'Ready' indicator **C** (Fig.5) will turn green.

d. Plug in the sync cord and connect to camera shutter at ‘X’ synchronization. Alternatively a wireless transmitter can be used to trigger.

5.0 Operating the Flash

a. The power switch **J** (Fig.5) on the rear panel controls the power to both the flash and the modeling lamp. The LED Display **A** (Fig.5) will light when power is on.
b. When the unit has charged to the level set by the Flash Power control **H** (Fig.5) the green LED light **C** (Fig.5) will be lit. The Flash is now ready to fire.
c. Pressing the control **H** up and down (Fig.5) will adjust the flash from full to 1/32.
d. When reducing the power level, the LED display A (Fig. 5) will blink until the power level is adjusted to the set value.
e. For testing the flash, press button **D** (Fig.5).

6.0 Operating the Modeling Lamp

a. To activate the modeling lamp ‘ON’, press the MODEL button **I** (Fig.5). Each press of the switch will increase the power of the modeling lamp by a full stop from **1** to **6** on the LED display. The output of the modeling lamp will show on the LED display for a few seconds and then will display the flash output.
b. Pressing the MODEL button **I** (Fig.5) until you get **00** will disable the modeling lamp.
c. Pressing the AUDIO button **B** (Fig.5) will disable the audio ready beeper, and allow the modeling lamp to momentarily switch off when the flash is fired.

7.0 Triggering the Flash

7.1 TEST Button

The simplest way to trigger the flash is to press the TEST button D (Fig.5). This is also useful when you need to discharge the power built up in the flash unit, for example when replacing the flash tube (see section 10-1).

7.2 Sync Connection

The sync jack F (Fig.5) on the flash may be used for direct connection to a camera set to "X" synchronization. A radio slave receiver may also be plugged into the socket.

7.3 Photocell

a. The Slave photocell G (Fig.5) is located behind the red transparent cover on the top and at the back of the unit. It enables the unit to be triggered by another flash or an IR remote trigger. Enable or disable this feature by pressing MODEL button E (Fig. 5). When enabled, the associated green LED light will be ON.
b. The numbers of pre-flashes are variable from one to seven. In automatic pre-flash mode, the unit matches the pre-flash count with the camera.
c. Press and hold the SLAVE button for 4 seconds to enter the pre-flashes setup page “Cx ” (Fig. 9A & 9B).
d. Press UP/DOWN button (Fig. 10A 10B) to adjust from pre-flashes from 1 to 7, or select 0 for automatic mode.

Press SLAVE and hold 4 seconds

Figure 9A **Figure 9B**

Figure 10A **Figure 10B**

“c0” is automatic recognition mode. When “c0” is displayed, use the camera flash and release a test exposure. The photocell detects the number of flashes the camera released and memorizes the value automatically. Or, manually setup the number of pre-flashes as follows:

If you have selected "c1", the unit will auto-flash immediately when another flash is activated in the same area.
If you have selected "c2" the unit will auto-flash on the second flash detected by the photocell.
If you have selected "c3", the unit will auto-flash on the third flash detected by the photocell.
If you have selected "c4", the unit will auto-flash on the fourth flash detected by the photocell.
If you have selected "c5", the unit will auto-flash on the fifth flash detected by the photocell.
If you have selected "c6", the unit will auto-flash on the sixth flash detected by the photocell.
If you have selected "c7", the unit will auto-flash on the seventh flash detected by the photocell.

To exit Setup mode, press and hold the Slave button for 4 seconds, or continue with the following additional parameter setups.

NOTE: The photocell is very sensitive, but some experimentation with positioning may be necessary to ensure a reliable trigger, particularly if the cell is not in the direct line of sight of the triggering flash unit. Avoid directly illuminating the photocell from a continuous light source (such as ceiling lights or windows) since this can prevent correct operation. Very high ceilings can also affect the operation of the photocell.

7.4 2.4G Built-in Radio Receiver

a. When the studio flash is at page “cx”, press SLAVE button once to enter into radio channel setup page “Fx”. (Fig. 11A & 11B)

Press SLAVE once

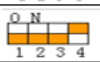
Figure 11A **Figure 11B**

b. There are 16 different channels for your choice from F0, F1, F2, F3 to FF. Press UP/DOWN button to select proper receiver channel (Fig. 12A & 12B).

Figure 12A **Figure 12B**

c. The MATRIX flash includes an MRT-16, which is a basic 16 channel radio transmitter. For additional remote control functionality, you need to purchase an optional MCD-TXC (included with kits).

d. When the Matrix and the radio transmitter are at the same channel, the flashes can be triggered. The following table shows how to coordinate codes between radio transmitter and receiver.

Built-in Radio Trigger Channel Setup		
Channel code	Corresponding code on **MATRIX MCD400R**	Corresponding setup on radio transmitter
0	F.0	
1	F.1	
2	F.2	
3	F.3	
4	F.4	
5	F.5	
6	F.6	
7	F.7	
8	F.8	
9	F.9	
10	F.A	
11	F.b	
12	F.c	
13	F.d	
14	F.E	
15	F.F	

Note:

- FA represents number F10
- Fb represents number F11
- Fc represents number F12
- Fd represents number F13
- FE represents number F14
- FF represents number F15

7.5 Group function

Figure 13

907011
MCD-TXC Wireless Controller

a. To use group function, you need the optional MCD-TXC remote control. When the studio flashes are on the same channel and group as the MCD-TXC remote control, the flash output and modeling lamp can be remotely controlled (Fig. 13).

b. There are 4 different groups from Ga, Gb, Gc to Gd. Press UP/DOWN button to set flash into the different groups (Fig. 14A & 14B).

Figure 14A

Press SLAVE once

Figure 14B

Figure 15A

Figure 15B

c. When the Matrix studio flash is at page “Fx ”, press SLAVE button once to enter into radio group setup page “Gx” (Fig.15A & 15B).

d. The following table shows how to set the same groups between the matrix light and remote controller.

Corresponding Group code on Matrix MCD400R	Corresponding setup on remote controller MCD-TXC
G.A	Group 1
G.b	Group 2
G.c	Group 3
G.d	Group 4

e. To exit group mode, press and hold in the SLAVE button for 3 seconds, or wait 15 seconds to exit normal operation mode.

7.6 Setting Pre-flashes time frame from Normal Operating Mode

a. Press SLAVE button for 8 seconds to enter Preflash Time Frame Mode setup “tx” as shown in Figure 16B. This mode is used to set the total time of all released pre-flashes plus main flash.

Press SLAVE and hold for 8 seconds

Figure 16A **Figure 16B**

b. The time frame is variable from 1 to 5 seconds. Press UP/DOWN button to set up time frame value (Fig. 17A & 17B).

Figure 17A **Figure 17B**

c. The default setting is “t2” means the “time frame is 2 seconds”. The flash will only be triggered when all the pre-flashes are fired within the setting time frame. Set the value “t” between 1-5 to ensure all pre-flash and the main flash are inside the time frame.

7.7 Setting Pre-flashes Block Time

Press SLAVE flash button once at “tx” page to switch to “bx” page, to set block time between two adjacent pre-flashes (Fig. 18A & 18B).

Figure 18A

Figure 18B

Default setting is b5 (means the block time of pre-flash is 10 milliseconds).

Value b	1	2	3	4	5	6	7	8	9
Time (milliseconds)	2	4	6	8	10	12	14	16	18

8.0 Audible Beep Settings

Press the AUDIO Button **B** (Fig. 5) to provide an “audible ready confirmation”. A short beep will indicate that the unit is ready to fire.

NOTE: When AUDIO Button **B** (Fig. 5) is OFF, the modeling lamp will momentarily turn off when the flash is fired and will come back on when ready.

9.0 Flash Output

The flash power output is variable over a 6 f-stops range from 1/32 to full in 1/10 f-stop increments using the Flash Power Control **H** (Fig.5). The power is displayed in an easy to use decimal form where each whole number represents 1 f-stop. The control has a minimum setting of 1.0 and a maximum setting of 6.0. Pressing the button **H** (Fig.5) will change the value by 0.1 f-stop (giving a total of 51 values). For example, if the current value shown is 5.6, then to reduce the power by 1 f-stop just reduce the setting to 4.6. The following table shows the whole decimal numbers and equivalent fractional power ratio:

Display power	Fractional equivalent
6.0	1(FULL)
5.0	1/2
4.0	1/4
3.0	1/8
2.0	1/16
1.0	1/32 (MIN)

10.0 Changing the Flash Tube

10.1 Discharge the Flash Unit

The charge in the flash unit must be discharged before removing the flash tube. Contact with high voltage may result in injury or death if instructions are not followed.

To discharge the Flash unit:

a. **Make sure the Flash unit is ON and set to the lowest power level. The LED display should show “1.0” and should not be flashing.**
b. **Push the red "TEST" button on the rear panel of the Flash.**
c. **Immediately turn off the power switch on the rear panel of the Flash. Do not allow more than 1/2 second between pressing the "TEST" button and the power switch.**
d. **Remove power cord from power source before removing the flashtube. It is recommended to wait at least 30 minutes before touching/removing the flash tube.**

Note: Use cotton gloves or a clean cloth to prevent fingers from touching the flash tube.

Figure 19

Figure 20

Figure 21

10.2 Remove Old Flash Tube

First, remove the reflector. Then, using cotton gloves or clean cloth, remove the modeling lamp (Fig. 19). Remove the retention spring wrapped around the top of the flash tube. With needle-nose pliers, unhook the retention spring loop (Fig. 20). Again using cotton gloves or a clean cloth, grip the base of the flash tube on each side and carefully pull the flash tube from the flash unit (Fig. 21).

10.3 Install New Flash Tube

Make sure the power switch is off and the power cord is disconnected from the source. Locate the two flash tube pin sockets above the modeling lamp socket. Using cotton gloves or a clean cloth, push the pins of the flash tube into the sockets using firm, even pressure at the base of the flash tube. With needle-nose pliers, hook the retention spring over the hook above the flash tube. Re-insert the modeling lamp using white cotton gloves or a clean cloth. Re-install the reflector.

11.0 Changing the Fuses

a. A 6.3A fuse, mounted on the rear panel, protects the circuitry in the flash unit. **Switch off the unit,** and **disconnect the power supply before changing the fuse.** Never replace with a fuse of a different type or rating. A spare 6.3A fuse is fitted in the fuse holder K (Fig. 5).
b. Use a small screwdriver to release the fuse cover. Remove the old fuse, place the new fuse in the slot, and then replace the fuse holder (Fig. 22).

Figure 22

12.0 Protection Feature

This unit is equipped with advanced overheating and overcharge warning and protection circuits to prevent damage to the internal electronics.

12.1 Overheating protection

After a long shooting session at high output, the recycling time of the flash will automatically increase until the unit cools down to a safe level, and then will start working normally again.

12.2 Over voltage protection and Over current protection

The flash voltage is protected against unstable input voltages. Overcurrent protection is especially useful when using a power pack.

12.3 Best Practices

a. As with any flash units, the useful life of the flash tube and the unit as a whole depends on the way it is used. Avoiding excessive heat is the key to long life.
b. The fast recycling feature of the PHOTOGENIC® Matrix MCD400R allows a rapid sequence of high power flashes to be obtained. However this feature should be used sparingly since continuous rapid flashing can cause overheating and subsequent damage to the flash tube and possibly the internal electronics.
c. Rapid sequences of flashes should always be followed by a reasonable cooling period. This flash is fitted with a cooling fan and will cool faster if left powered on with the modeling lamp off.
d. Dimming or turning the modeling lamp off will help prevent overheating.
e. Avoid rapid high power flashing especially when using restrictive reflectors such as snoots or grid reflectors, particularly if the unit is pointing downwards. Long shooting sessions at high output at more than 8 times per minutes should be followed by a reasonable cooling period. At least 10 to 20 minutes is advised either without flashing or at substantially reduced rate.

   Do not flash over 12 shots per minute for over 10 minutes
   Do not flash over 8 shots per minutes for over 30 minutes

13.0 Error Codes

This unit will display a flash malfunction in the LED display. An error code will blink in conjunction with the output of the flash (see drawings below). Error codes E2 & E3 also have a beep warning.

E1: Temperature Transducer problem. Turn the unit OFF immediately and contact the retailer where you purchased the flash.

E2: This error code can display after a long shooting session at high output or rapid sequence, Turn OFF the flash and allow it to rest 30 minutes.

E3: This Error code will display when the internal voltage of the flash is too high, Turn OFF the power immediately. After a few minutes turn on the flash again, if you still have the malfunction warning, Turn OFF the unit and contact the retailer where you purchased the flash.

14.0 Specifications

Matrix MCD400R	
Power Output	400Ws
GN (2m, ISO 100) 1/60 Reflector SF-610	70
Output Control range	Full to 1/32
Recycling Time to Full 110V-120V/60Hz	0.4 ~ 1.7s
Flash Duration	1/250th ~ 1/600th
Modeling Lamp Output	150W (Max)
Triggering Method	Slave Sensor / Sync Cable / Test Button / Built-in radio receiver
Color Temperature	5500° K ± 200° K
Flash Tube	"Plug in" Tube (user replaceable)
Triggering Voltage	4.5V Low Voltage Trigger
Cooling Fan	Yes
Overvoltage / Overheating Protection	Yes
Built-in 2.4G Radio Receiver	Yes
Power Source	100-130V/50~60Hz
Accessories Included	Reflector, Power Cord (4M), Synch Cord (4m), Wireless Remote Control, Modeling Lamp, Instructions Booklet
Weight	4.9 lbs.
Dimensions (inches)	9.75" x 4.5" x 4"

*Test by SEKONIC L-758DR Light meter, using the included reflector.
*Due to our policy of constant product improvement we reserve the right to change equipment specifications without notice.

15.0 Maintenance Notes

a. Turn the power off and unplug the power cord when the flash is not in use.
b. We recommend powering the flash unit for one to two hours prior to its initial use and after an extended period of inactivity (more than one month).
c. If the unit is left unused for a few months, or the unit has been used predominately at low power settings, we recommend that the power be increased to the maximum and the unit left switched on(with the modeling lamp OFF), occasionally for at least 30 minutes to help preserve the life and reliability of the capacitors.
d. Avoid rapid, high-power flashing, especially when using restrictive reflectors such as snoots or grids. Excessive heat will shorten the lifespan of your flash unit, modeling lamp, and flash tube.

16.0 General Trouble Shooting, Service and Warranty

16.1 Common Problems & Causes

Unit does not charge.

Probable causes:

- Fuse blown – Unplug and discharge the unit then replace fuse.
- No line power to unit – Check line cord and outlet.

Modeling light does not turn on.

Probable causes:

- Lamp burned out – Inspect and replace when cool.

Light flashes by itself without apparent reason.

Probable causes:

- Defective trigger cord or trigger cord incorrectly polarized.
- Bright light falling on photo slave.
- Poor connection in line cord.
- Reverse connection on trigger cord connection at camera.
- Some radio slaves will cause interference. Consult Photogenic.

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

Probable causes:

- Defective trigger cord.
- Defective flashtube. Turn unit off. Wait until cool, then replace flashtube. See Section 10.
- Unit is on, but will not charge. The safety thermal detector may be activated by heavy use, beyond specified Flashing Rates.

16.2 Service

The operator should not attempt to make repairs

Contact the Tech Support / Customer Service Department at Photogenic in Bartlett, Illinois by calling 800-682-7668 if you have any questions.

16.3 Warranty

PHOTOGENIC® MATRIX MCD400R 2.4 GHz WIRELESS DIGITAL MONOLIGHT
- FACTORY WARRANTY -

Photogenic warrants to the first commercial owner of the Matrix MCD400R, 2.4 GHz Digital Monolight*, to be free from defects in the material and workmanship for a period of one (1) year from the date of purchase and will repair or replace product found to be defective under normal use. Warranty does not cover damages caused by shipment, by product abuse, accident, modification, disassembly or use beyond intended use specified by Photogenic. The Matrix MCD400R used with nonstandard Photogenic electrical accessories will render this warranty immediately void.

This warranty is the only warranty made to any person by Photogenic and is in lieu of all other expressed or implied warranties. The remedies set for this warranty shall be the exclusive remedies available to any person for breach of this warranty. Under no circumstances shall Photogenic be liable to any person for incidental or consequential damages, whether arising out of breach of warranty or other contract, negligence, strict liability or other tort or otherwise.

*Flash tubes and modeling lamps are considered consumable and are so limited to a 90-Day Warranty.

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