LIGHT ENGINE
USER MANUAL

MODEL: LEF-1002DMX
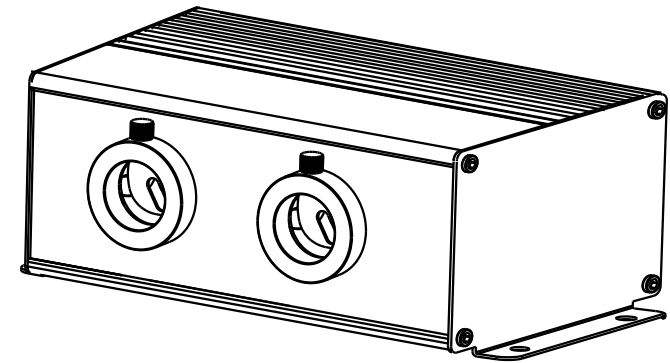
Accessories:

Fiber Connector ....1 PC

Wireless Remote Controller...............1 PC (Optional)

Power Adapter................................1 PC

User Manual ....1 PC

Signal Cable ....1 PC (for DMX machine only)

CE

**ISO9001:2000
CERTIFIED**

LIGHT ENGINE
USER MANUAL

Welcome to use LEF series of professional light engine. Please read the manual carefully before turning on the light engine. If you have any questions concerning the operation or maintenance, please contact your wholesaler.

Safety Instruction
   1. Make sure the Light Engine and Power Source have the same voltage;
   2. Keep out of rain or moist area to avoid shock hazards;
   3. Avoid to work in high ambient temperature (>40℃);

CHAPTER 1   LEF-1002DMX

1. Technical Data

Voltage: 12V DC
Power: 20W
Color Wheel: 6 colors
Light Source: 2X10W LED
Life of LED :   50000H
Size: 205X130X84mm^3
Gross Weight: 1.0Kg
Standard Aperture: Φ20mm
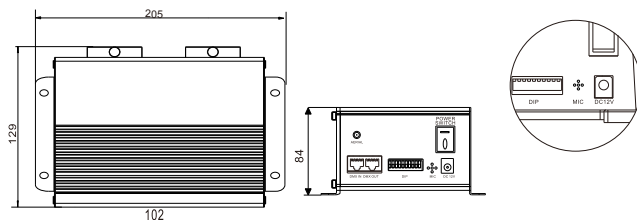
2. Installation dimension of light engine (see Fig.1)：

Fig.1

3. Light Engine Setup：

Light engine control:
a. When a single light source is running by itself or controlled by a remote control, it should be set as the master machine.
b. When multiple light engines of the same model are connected into a group, the light engines can be set as either slave or master machine as follows:
(1) When a DMX512 console is connected to the group, all light engines should be set up as the slave machines and will follow the program run in the console.

Chapter 2 Installation of Fiber Optic

1. Connecting the fiber optic with Light Engine:

Solid core fiber optic cable(See Fig. 1):

(1) Cut the fiber to the specified length. The cross section should be vertical to the fiber and keep clean and smooth.

(2) Peel off 50-100mm of the PVC jacket of the fiber optic cable (not necessary if there is no PVC jacket). Be careful not to hurt the fiber optic cable.

(3) Unscrew the PG Connector and insert the fiber optic cable into the PG Connector and Fiber Connector until the end of the cable is flush with the Fiber Connector. Screw tightly the PG Connector.

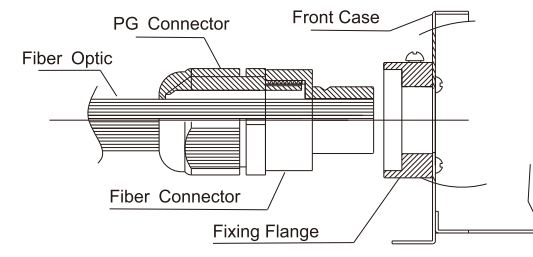(4) Insert the finished Fiber Connector into the Fixing Flange, screw tightly the screw.

PG Connector   Front Case
Fiber Optic
Fiber Connector
Fixing Flange
Fig. 1

2.Installation of the end part of the Multi-String fiber optic:

(1) Drill holes on the installing board according to the design. Then insert the fiber optic string into holes and fix it with epoxy glue. Trim the end of the fiber string to be flush with the board or at a required length. Fasten the other end of the fiber string to a harness and insert the harness into PG Connector and Fiber Connector. Apply the hot knife to cut fiber end flush with the Fiber Connector. (See Fig.2).

(2) Insert the finished Fiber Connector into the Fixing Flange and screw tightly the screw.
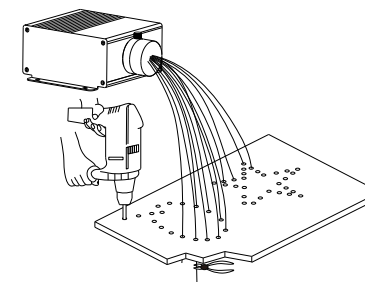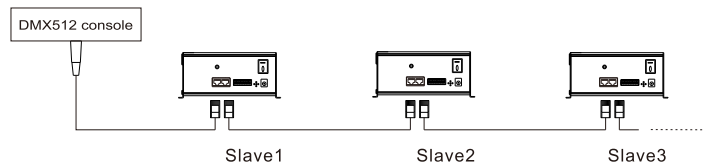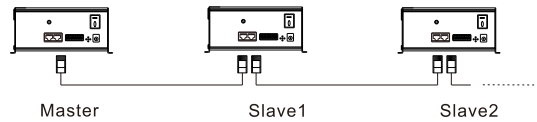

Fig. 2

g. The connection diagram of the light engines when there is a DMX console connected:
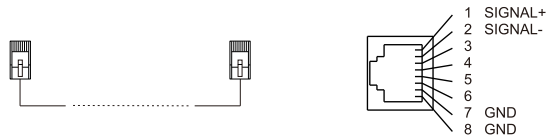

Slave1　　　　　Slave2　　　　　Slave3

h. The connection diagram of the light engines when the group runs the master-slave control mode:

Master　　　　　Slave1　　　　　Slave2

i. Connection diagram of DMX signal cable:

The signal cable adopts RJ45 shielded wire (i.e. network cable).

1 SIGNAL+
2 SIGNAL-
3
4
5
6
7 GND
8 GND

4. The remote control:

a. Before using the remote control:

(1) Make sure that the remote control has the battery, which has enough power.

(2) Make sure that the DIP SW9 and SW10 on the light engine are at the ON position.

7 8 9 10 ON

Remote　　　　Master

(3) The remote control needs to be paired with the light engine before use.
(It has been paired with 🌀 by default).

(4) After the pairing is completed, the remote control is ready for use.

(5) The light engine only accepts the control of the paired remote control.
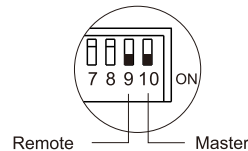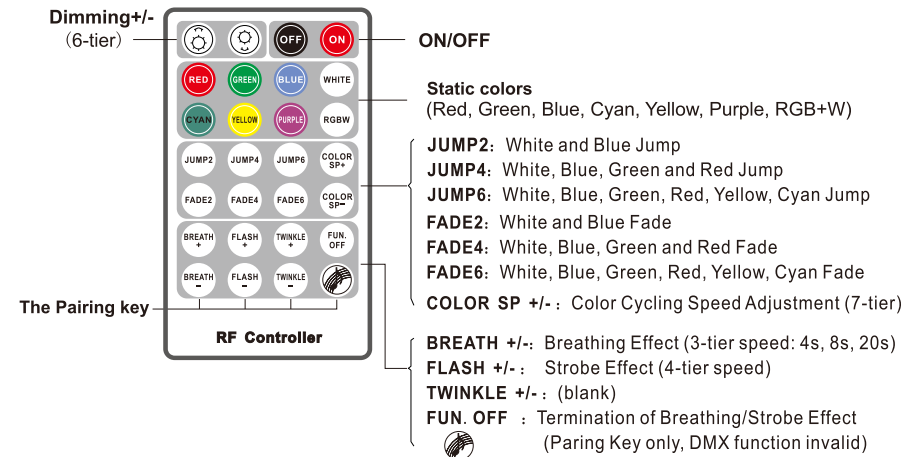
b. How to pair the remote control and the machine:

(1) Press and hold any one of the four pairing keys on the remote control.(Picture 7)

Fig.7

(2) Turn on the power of the light engine, and the machine starts to work.

(3) The green indicator next to the DIP switches will flash 2 times slowly and 3 times quickly.

(4) The remote control and the machine are successfully paired.

(5) Release the pairing key.

c. The pairing rule of the remote control and the light engine:

(1) The four keys in the last row of the remote control, 〔BREATH-〕〔FLASH-〕〔TWINKLE-〕🌀 are the four Pairing Keys.

(2) Each Pairing Key can be paired with multiple light engines and will have the same effect.

(3) Each light engine can be paired with at most four different Pairing Keys, namely 〔BREATH-〕〔FLASH-〕〔TWINKLE-〕🌀 respectively. These four Pairing Keys with different icons can come from different remote controls.

(4) Once the device is successfully paired with the remote control, the pairing function cannot be canceled, but can be overwritten.

(5) For the same light engine, the pairing key with the same icon can overwrite the previous pairing key.

(6) The light engine can be paired no matter it is a master or a slave machine.

Dimming+/-
（6-tier）

ON/OFF

Static colors
(Red, Green, Blue, Cyan, Yellow, Purple, RGB+W)

The Pairing key

RF Controller

JUMP2：White and Blue Jump
JUMP4：White, Blue, Green and Red Jump
JUMP6：White, Blue, Green, Red, Yellow, Cyan Jump
FADE2：White and Blue Fade
FADE4：White, Blue, Green and Red Fade
FADE6：White, Blue, Green, Red, Yellow, Cyan Fade
COLOR SP +/- : Color Cycling Speed Adjustment (7-tier)

BREATH +/-：Breathing Effect (3-tier speed: 4s, 8s, 20s)
FLASH +/- : Strobe Effect (4-tier speed)
TWINKLE +/- : (blank)
FUN. OFF : Termination of Breathing/Strobe Effect
🌀 　　(Paring Key only, DMX function invalid)

Note:

1. **Press "BREATH" or "FLASH" key when the light engine works, the machine will run the effect of fading or strobe at the particular color when pressing. If "FUN.OFF" is pressed, the current breathing or strobe effect will be cancelled and the program before will be restored.**

2. **After turned on, the light engine will automatically run the program before it is powered off.**

3. **Both the dimming knob on the light engine and the dimming button on the remote control can adjust the brightness. They are effective at the same time, and the dimming effects will be superimposed. For example, to set the light engine the brightest, both the dimming knob and the dimming button need to be adjusted/pressed to the maximum.**

Attached Table:

IV.The table of the built-in programs of the Master light engine

Built-in Programs List of the Master (1th to 5th DIP Switches)

Pro.No.	DIP Switches Settings (1st to 5th)	Function
00		Light off, Motor stops
01		White
02		Blue
03		Green
04		Red
05		Yellow
06		Cyan
07		White、Blue、Green、Red、Yellow、Cyan Jump 2S
08		White、Blue、Green、Red、Yellow、Cyan Jump 4S
09		White、Blue、Green、Red、Yellow、Cyan Jump 8S
10		White、Blue、Green、Red、Yellow、Cyan Fade 2S
11		White、Blue、Green、Red、Yellow、Cyan Fade 4S
12		White、Blue、Green、Red、Yellow、Cyan Fade 8S
13		White、Blue Jump 2S
14		White、Blue Jump 4S
15		White、Blue Jump 8S
16		White、Blue Fade 2S
17		White、Blue Fade 4S
18		White、Blue Fade 8S

(2) When there is no DMX512 console connected, the group must run the master & slave mode: one and only one light engine is set as the master machine, and the rest are set as the slave machines. In the group, all the slave machines run the program following the master machine.

c. The master and slave machine setup through the DIP switch (1=ON, 0=OFF)
   Master light engine:the 10th DIP Switch SW10 is ON
   When the SW10 is ON (master machine status), SW1-SW5 represent the built-in program, SW6-SW8 are invalid, and SW9 is used to turn on and off the remote control function.(Picture 2)
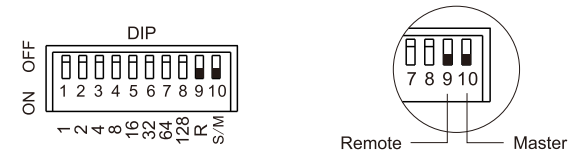
Remote —— Master   Fig.2

Slave Light engine: the 10th DIP switch SW10 is OFF
(1) When SW10 is OFF (slave machine state), SW1-9 are used to indicate the DMX address, and the remote control function is invalid.
(2) When all the slave machines have the same DMX address of 001 (shown in Figure 5), they will work synchronously with the master machine.
(3) The Slave machines could also have an increasing DMX address by 4, for example, 001, 005, 009...when there is a DMX console connected, or 005, 009, 013...when the group runs the master-slave mode. As such, all light engines will run the program with a scrolling effect.
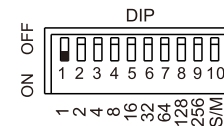   DIP switch settings (Figure 6)

Fig.5

DMX add.	DIP Switch									
	1	2	3	4	5	6	7	8	9	10
001	1	0	0	0	0	0	0	0	0	0
002	0	1	0	0	0	0	0	0	0	0
003	1	1	0	0	0	0	0	0	0	0
004	0	0	1	0	0	0	0	0	0	0
005	1	0	1	0	0	0	0	0	0	0

009	1	0	0	1	0	0	0	0	0	0

013	1	0	1	1	0	0	0	0	0	0

Fig.6

d. DMX address calculation:
   For example: DMX address 009=8(4)+1(1), 013=8(4)+4(3)+1(1)

e. Number of DMX channels and corresponding function:
   CH1: 6 colors;   CH2: speed   motor;   CH3: NA;   CH4: dimming   CH5 strobe

Note: CH2 is linked with CH1, and it is valid when the value of CH1 is 0-127.
   Usually CH2 is used in the DMX console programming.