USER MANUAL

LC300H MultiLED

Compact DMX LED controller

MULTIFORM

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■ Introduction

Dear customer,

congratulations on the purchase of a Multiform-branded item and the trust having been put in us with this decision. Multiform is one of the leading global manufacturers of professional lighting equipment and has decades of experience in design, production and quality assurance.

To meet your requirements, this unit has been designed and built to the highest standards, so that we can assure you that you have made a good and satisfying investment. To take full advantage of all possibilities and for your own safety and the safety of your environment, please read these operating instructions carefully before you start using the unit.

■ Product description

The LC300H MultiLED is a compact controller to control a variety of Multiform LED-based lighting products with greatest ease of use. It focuses on giving the user access to the most frequently used presets such as chaser patterns, color choices, scene settings and strobe options at the touch of a button. Presets can be adjusted in key parameters but no programming is necessary, which makes the whole system “plug-and-play”.

For better understanding of a full system setup, it may be necessary to refer to the controlled Multiform device’s user manual.

■ Security advice before use

Warning: Read this section carefully before installing, powering, operating, cleaning or servicing this product!

The following symbols are used to identify important safety information in this manual:

DANGER!
Safety hazard. Risk of injury or death.

WARNING!
Hazardous voltage. Risk of severe or fatal electric shock.

WARNING!
Fire hazard.

WARNING!
Read manual before installation and operation.

General advice:

1. Read this manual completely before using the product.
2. Keep this manual in your records for future reference.
3. Follow all instruction printed in this manual, otherwise warranty may be void.
4. Follow all printed security advice on the product itself. The lighting flash with arrowhead within an equilateral triangle makes you aware of non-insulated AC mains voltage inside the unit. The exclamation mark within an equilateral triangle makes you aware of important operating and maintenance instructions in the literature attached to this product.
5. Take care of enough distance between this product and sources of hum and noise like electric motors and transformers.
6. Carry this product with greatest care. Punches, big forces and heavy vibration may damage this product mechanically.
7. The manufacturer takes no responsibility for injury or damage caused by not following the safety precautions and instructions printed in this manual.

Protection from electric shock:

1. Only connect this unit or its power supply to a mains socket outlet with protective earth connection, ground-fault (earth-fault) protection and overload protection.
2. Where the mains plug or an appliance coupler is used as a disconnect device, the disconnect device shall remain readily operable.
3. To pull the power supply out of the wall outlet, never pull the cable, but only the power supply itself.
4. Disconnect the unit from AC supply by pulling the power supply out of the wall outlet before any kind of cleaning on the product. Use smooth and dry cloth only for cleaning. Check all connection cables before reconnecting the unit.
5. Do not expose this unit or its power supply to any dripping or splashing liquids, and do not place objects filled with liquids, such as vases, on the unit or its power supply. Do not operate this unit near to open water or in high humidity.
6. Choose the position of the power supply and the connection cords according to the lowest risk of damage by foot steps or by squeezing it.
7. Do not open the unit or its power supply for service purpose, as there are no user-serviceable parts inside. Warranty will be void in any case of unauthorized service by the user or other not authorized persons.

Protection from fire:

1. Take care of not placing the unit or its power supply near sources of heat (e.g. powerful amplifiers, fog machines).
2. Take always care of sufficient air convection in the unit's and its power supply's environment to avoid overheating, especially when mounting in a closed environment. Make sure air convection slots are not blocked. Do not operate this unit in environmental temperatures exceeding 40 degrees Celsius.
3. Check the total maximum power of your AC wall outlet if you connect several units to one wall outlet and avoid any overloading.

Protection from injury and damage:

1. Never use any accessories or modifications not authorized by the manufacturer of this unit.
2. Choose a location for operation where the unit is protected from vibration and where a fixed position is provided.
3. Before plugging the power supply in the wall outlet, check whether the AC mains voltage and frequency is the same as this product is specified for. Whenever your power supply should not match the wall outlet, contact you dealer immediately.
4. If fluids have spilled into the unit or its power supply, or small parts have intruded the unit or its power supply, immediately switch off the unit and hand it over to the authorized service for a security check.
5. Disconnect the unit from AC supply by pulling the power supply out of the wall outlet during a thunder-storm in order to avoid any damage on the unit or its power supply due to AC voltage peaks.
6. In cause of not correct function of this unit or damaged power supply or other damaged parts, pull immediately the power supply out of the wall outlet and hand the unit over to the authorized service for a security check.
7. To meet all aspects of functionality and security during maintenance work to be performed on this unit, all parts should be replaced by genuine spare parts. Consequently, take care of your dealer or maintenance company to be authorized by the manufacturer.

■ Health advice

This unit produces and absorbs electromagnetic radiation. The strength of radiation and the sensitivity for disturbing interference matches the CE and FCC requirements. A corresponding sign is printed on the backside of the unit. Any change or modification may affect the behavior of the unit concerning electromagnetic radiation, with the CE requirements eventually not to be met any more. The manufacturer takes no responsibility in this case.

■ Functional advice

This unit is immune to the presence of electromagnetic disturbances – both conducted and radiated - up to a certain level. Under peak conditions, the unit is classified to show a “class C” performance criteria and may encounter temporary degradation or loss of function which may need manual help to recover. In such case, disconnect the AC power from the unit and reconnect it again to recover.

■ Environmental advice

This unit is build to conform to the ROHS standards and the WEEE directive 2002/96/EC of the European Parliament and of the Council of the European Union. Under these regulations, the product shall not be discarded into regular garbage at the end of its life, but shall be returned to authorized recycling stations.

■ Unpacking

Please check that the box contains the following items:

Main parts:	1 pcs. LC300H main unit
	1 pcs. Power supply adaptor
	1 pcs. operation manual

If any part is missing, please contact your dealer immediately for replacement.

■ Getting started: choosing a location

Risk of fire: The LC300H MultiLED controller has been designed to work in dry indoor environments at environmental temperatures up to 40 degrees Celsius.

Do not:

- Operate the LC300H MultiLED controller in environments with more than 40 degrees environmental temperature or more than 80% humidity.

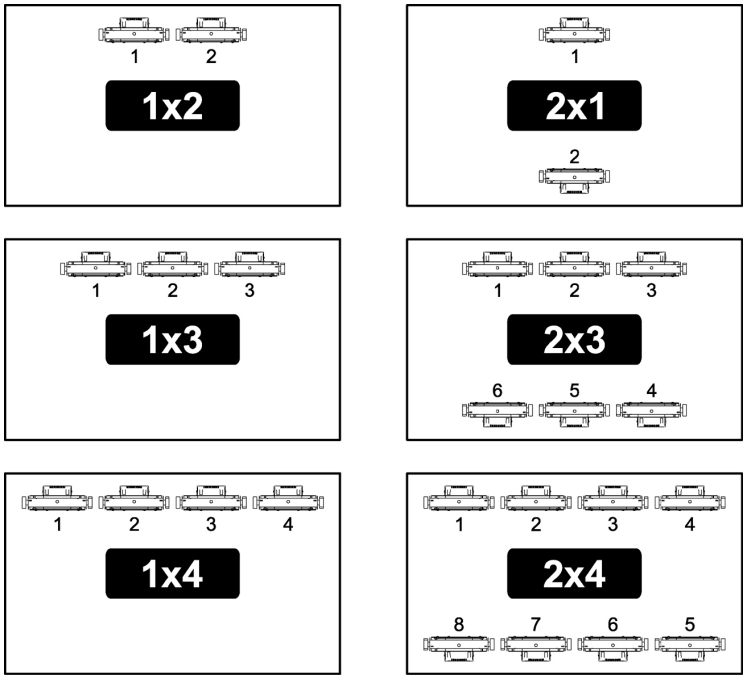
■ Getting started: connecting/assembly/configuration

Risk of electric shock: Make sure that all controlled devices are properly connected to ground (earth).

Note: The LC300H is designed to work with Multiform LED light sources only. Connection of other manufacturer's devices may not yield a working system and may damage the LC300H or any connected device. Multiform does not accept any liability for such occurrence.

A. Rigging configuration.

As the controller can be configured to cater for different geometrical setups of the controlled devices, choose a rigging configuration first and make sure the devices are secured properly on any tripod, truss or ceiling support. Use any of the following configurations or design one which matches the logic of the below best:

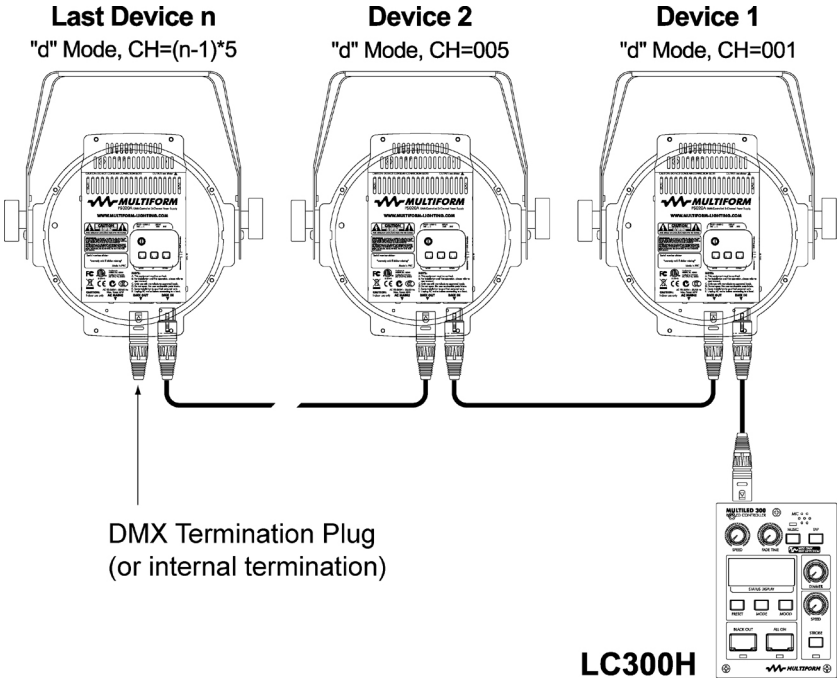


For rigging safety, refer to the controlled unit's user manual and obeye local safety regulations.

B. DMX cabling, AC supply

Once rigging is done, use standard 3-pin microphone cables with proper shielding to connect the DMX output of the LC300H with the DMX input of the first controlled device. Then connect the first device's DMX output with the next device's DMX input. Continue to daisy-chain the controlled devices up to the last device.

Important: Activate the DMX termination on the last device connected (please refer to the connected device's user manual), or add a DMX termination plug on the DMX output of the last device respectively.

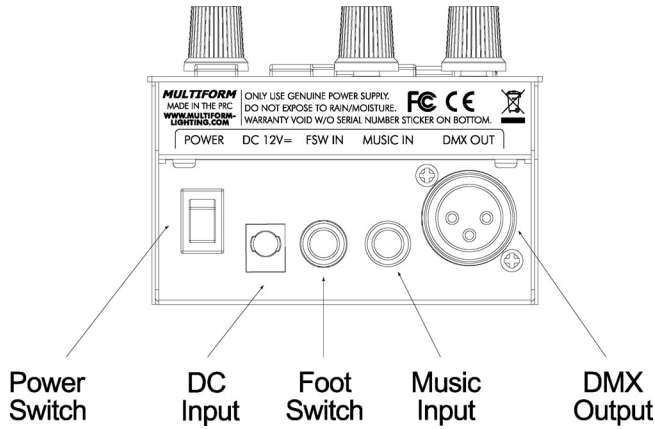


Once the DMX cabling is done, make sure to connect each of the controlled devices to AC power using a 3-lead cable with proper ground connection. Make sure the AC outlet you use has proper ground connection as well. You may switch on the controlled devices first and make necessary DMX settings on those devices. Any connected

Multiform device must be set to “d” mode, and the start address must be assigned in a 4-channel grid. See above illustration.

C. Other controller connections

The LC300H offers the following connections:



Power Switch: switches the unit on and off

DC input: Connect the supplied power adaptor here. Please note that the power supply plug has two small wings that lock into matching apertures in the unit’s socket. By turning the plug after inserting, the wings lock the plug inside the socket to avoid unwanted unplugging during operation. Note: Only use the supplied adaptor or a manufacturer-approved replacement.

Foot switch: This ¼” TRS jack accepts Multiform’s LC400F foot controller to allow remote control of the following functions: A. Switching between BLACKOUT and RUN mode B. Switching between PATTERN and SCENE mode C. Strobe D. Tap Tempo. Please refer to the LC400F user manual for details. Note: This inout only matches with the Multiform LC400F and is not suitable for use with any other foot controller.

Music input: This ¼” TRS jack accepts music signals on line level as well as microphone level. The sensitivity can be adjusted in the configuration settings as described below.

DMX output: A female 3-pin XRL socket to transmit DMX control signals.

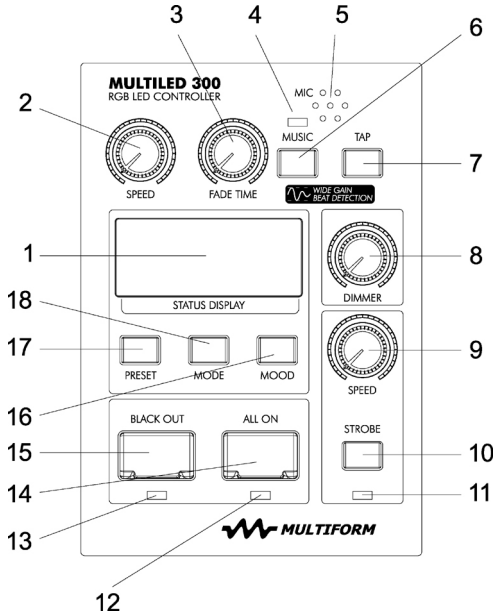
D. Configuration settings in the controller

Once rigging, cabling and DMX setting of the connected devices are done, you may switch on the LC300H controller. For explanation of user interface elements, refer to the chapter “operation”. To set the basic configuration, follow these steps:

- Switch on the LC300H controller
- The start screen will display “Multiform” and then the software version of the controller. Afterwards, the display will show the current operation status.
- Press the “mode” button for 2 seconds. The display will show “MODE” to indicate that the LC300H has been switched from operation to Configuration Mode. If you do not make any settings inbetween 3 seconds, the LC300H will switch back to operation mode.
- Use the “MOOD” and “PRESET” buttons to scroll through the available configuration parameters:
    - AUSE: Aux Sensitivity. Determines the sensitivity of the audio input. Can be set between HIGH and LOW
    - AUIN: Aux Input. Can be set between MIC and LINE, to either use the external microphone or an external line signal fed into the provided ¼” TRS jack.
    - BODE: Blackout default. Determines the power-on status of the controller, and can be set between ON (controller will play last chosen status when switched on) or BOUT (Controller will be in black out when switched on).
    - CONF: Configuration. Allows to choose between 1x2, 2x2, 1x3, 2x3, 1x4 and 2x4. Please refer to the illustration in chapter A. of this section.

Once you reach the parameter that you want to configure, press the “MODE” button again, and use the “Mood” or “Preset” button to make the necessary choice. Press the “MODE” button again to confirm the choice, the display will show “ STORED” then the unit will return to the current menu. After storing a setting, either continue to make other configuration settings or wait for 3 seconds and the LC300H will return into normal operation mode automatically.

■ User Interface Overview



1	Display 4x14 Segment	10	STROBE ON button
2	SPEED control for pattern	11	STROBE control LED
3	FADETIME control f. pattern	12	ALL ON control LED
4	Music beat detection LED	13	BLACK OUT control LED
5	Internal microphone	14	ALL ON button
6	MUSIC (sound-to-light)	15	BLACK OUT button
7	TAP tempo button	16	MOOD button
8	DIMMER level control	17	PRESET button
9	STROBE SPEED control	18	MODE button

■ Operation

The LC300H can be run in 4 different operation modes, in the following hierarchy:

A. BLACKOUT

Pressing the BLACKOUT button (15) will immediately set the light output of all connected devices to zero, indicated by the LED (13). However, the operation mode of the LC300H that was active before pressing the BLACKOUT button (15) will be maintained (and can even be changed) in the background. Once pressing

the BLACKOUT button (15) again, the LC300H will resume the previous operation. The BLACKOUT mode overrides all other modes.

B. STROBE

Pressing the STROBE button (10) switches the LC300H to strobe mode, where the strobe speed can be set by the STROBE SPEED control (9), the overall brightness can be set by the DIMMER (8) and the color setting of the strobe can be chosen from 10 presets by the MOOD button (16). The display shows “ST” to indicate STROBE, followed by “Mx” with x being one of ten color presets. The color setting in STROBE mode will be stored and recalled after leaving and then re-entering the STROBE mode. The STROBE mode overrides the PATTERN and ALL ON mode, hence the controls for SPEED (2), FADE TIME (3), MUSIC (6) and TAP (7) are disabled. The LC300H will store the operation status before the STROBE mode was activated, and will return to that status once STROBE (10) is disabled.

C. ALL ON

Pressing the ALL ON button (14) switches the LC300H into a scene mode where the color setting can be chosen from 10 presets using the MOOD button (16). The display shows “AO” for ALL ON, followed by “Mx” with x being one of ten color presets. The color setting in ALL ON mode will be stored and recalled after leaving and then re-entering the ALL ON mode. The ALL ON mode overrides the PATTERN mode, hence the controls for SPEED (2), FADE TIME (3), MUSIC (6) and TAP (7) are all disabled, plus STROBE SPEED (9) is disabled as long as the STROBE is off, while the DIMMER control remains enabled for overall brightness control. The LC300H will store the operation status before the ALL ON mode was activated, and returns to that status once ALL ON (14) is disabled.

D. PATTERN

The PATTERN mode has the lowest priority and is automatically active if BLACKOUT (15), STROBE (10) and ALL ON (14) are all disabled. The user can choose from 10 different chaser patterns using the PRESET button (17), which can be combined with a choice of ten different color settings using the MOOD button (16). The display shows “Py” to indicate a preset #y running, followed by “Mx” with x being one of the ten color presets. The overall brightness of the chosen preset/mood can be adjusted by the DIMMER control (8).

The speed of the running pattern can be controlled in three different ways:

1. Internal timer set by the SPEED control (2)
2. Internal timer set by the hitting the TAP button (7) at least 4 times with the rhythm of playing music. Pressing the TAP button for more than one second will set the speed to 120 BPM.

3. External audio signal, if the MUSIC function (6) is activated, which is indicated by the control LED (4). The external audio signal can either be picked up by the internal microphone (5) or by an audio signal source connected to the rear-side ¼" TRS music input. See settings in chapter D of "Getting started: connecting/assembly/configuration".

Using the SPEED control (2) after activating the MUSIC (6) or the tap function (7) will override the speed setting by the new value of the SPEED control (2).

With any of the above speed control options, the transition time between two steps of a chaser pattern can be adjusted using the FADE TIME control (3).

■ Switch-on condition

When switching on the controller for the first time, the factory-default settings are as follows:

BODE	ON	Pattern	Set to 0
CONF	1x4	MOOD	Set to 0
STROBE	OFF	MUSIC	off
ALL ON	disabled		

After the first time operation, the controller will resume the last switch-off status when being switched on next time.

■ Maintenance

This unit does not need regular maintenance. The internal circuit is protected by a 250V/2A slow-blow fuse 5x20mm fuse. If this fuse fails, this usually indicates an internal fault requiring servicing by a qualified engineer. The fuse shall only be replaced by a fuse of same specification, and the replacement has to be made by qualified personnel obeying applicable safety rules.

■ Technical data LC300H MultiLED Compact DMX LED controller:

Power supply……..……12V DC by 85-240V AC / 50-60Hz / 300mA adaptor
Control protocol.....DMX 512 (1990)
Dimensions……...W 92 x H 133 x D 52 mm
Weight ……0,6 kg

■ Standards

This product and/or its power supply adaptor complies with the following standards:
EU safety.....EN 60065:2001 +A1
EU EMC.....EN61204-3:2001
US safety ……..……UL60065

US EMC……..……..FCC Part 15
This product meets both the EMC Directive 89/336/EEC and the Low Voltage Directive 73/23/EEC.