



Cobra Dimmer Master DMX Controller User Manual

User Manual

Dimmer Master

Dear Customer,

Thank you for purchasing the Dimmer Master DMX controller. With decades of experience in design and production, we are one of the leading manufacturers of professional sound and lighting equipment.

This unit has been designed and manufactured to the highest of standards so you can be assured you have made a good investment.

For optimum safety and to take full advantage of all the Dimmer Master features, please ensure you read this manual in full.

Product Description:

The Dimmer Master is a 48 channel DMX controller, suitable for use with dimmer packs, LED lighting and effects lights. The controller can store up to 36 scenes and 48 chases with a total of 200 steps. This desk has 2 pages of 24 channel sliders and 12 playback sliders.

Safety Advice:

1. Read this manual in full before operating this product.
2. Keep this manual in a safe place for future reference.
3. Carry and transport this product with care. Dropping this product may result in serious mechanical failure.
4. The manufacturer accepts no responsibility for injury or damage caused by not following the manual provided.

Protection from Electric Shock:

1. Do not connect the AC power plug to the unit before connecting your lights.
2. Only connect this unit to a mains socket with suitable trip and RCD protection.
3. To disconnect from the mains socket always remove by the mains plug. Do not attempt to remove by pulling the mains cable.
4. Disconnect the unit from the mains supply before cleaning. Cleaning should be carried out with a soft, dry cloth.
5. Do not expose this unit to any liquids.
6. Do not operate near exposed water or in high humidity.
7. Choose a suitable route for mains cables, ensuring trip hazards are avoided and the mains cable is not at risk of being crushed.
8. Do not open this unit to service. There are no user serviceable parts inside. Any servicing or repairs should be carried out by a qualified engineer only. Any user attempt to service or adapt this unit will void your warranty and could result in serious malfunction or injury.

Protection from Fire:

1. Do not place near sources of heat or ignition.
2. Do not block any ventilation holes.
3. Check your AC wall socket will take the power you are applying to avoid overloading the mains supply.
4. Ensure you are using the correct voltage DC power supply, set to the correct polarity.

Protection from Injury and Damage:

1. Do not attempt to modify this unit.
2. Always install the unit in a suitable location where vibrations to the unit are avoided.
3. Check this unit matches the mains voltage and frequency before plugging it in to your mains socket.
4. If any liquids or objects have entered the unit, switch it off immediately and consult a qualified engineer.
5. In the event of malfunction or damage to the mains cable, disconnect from the mains supply immediately and consult a qualified engineer.
6. All parts should be replaced with genuine spare parts and carried out by a qualified engineer.

Contents & Unpacking:

1. The box should contain Master Dimmer, power supply and user manual.
2. If you suspect any damage or missing parts, please contact your dealer immediately.

Specifications:

Name: Dimmer Master

Code: DM2448

Power supply: DC 12v 500mA min.

Power consumption: 20 watts

Output: DMX 512 (3-pin)

Audio Input: 100mV ~ 1Vpp

Weight: kg

Features

The Master Dimmer is a DMX 48-channel controller, suitable for dimmer packs, LED lights and effect lights.

Features Include

1. Controls up to 48 channels.
2. Scenes/chases can be stored.
3. Speed and fade can be used after programming.
4. Chases and scenes can be mixed in playback.
5. A chase can have up to 200 steps.
6. 3-pin DMX output socket.

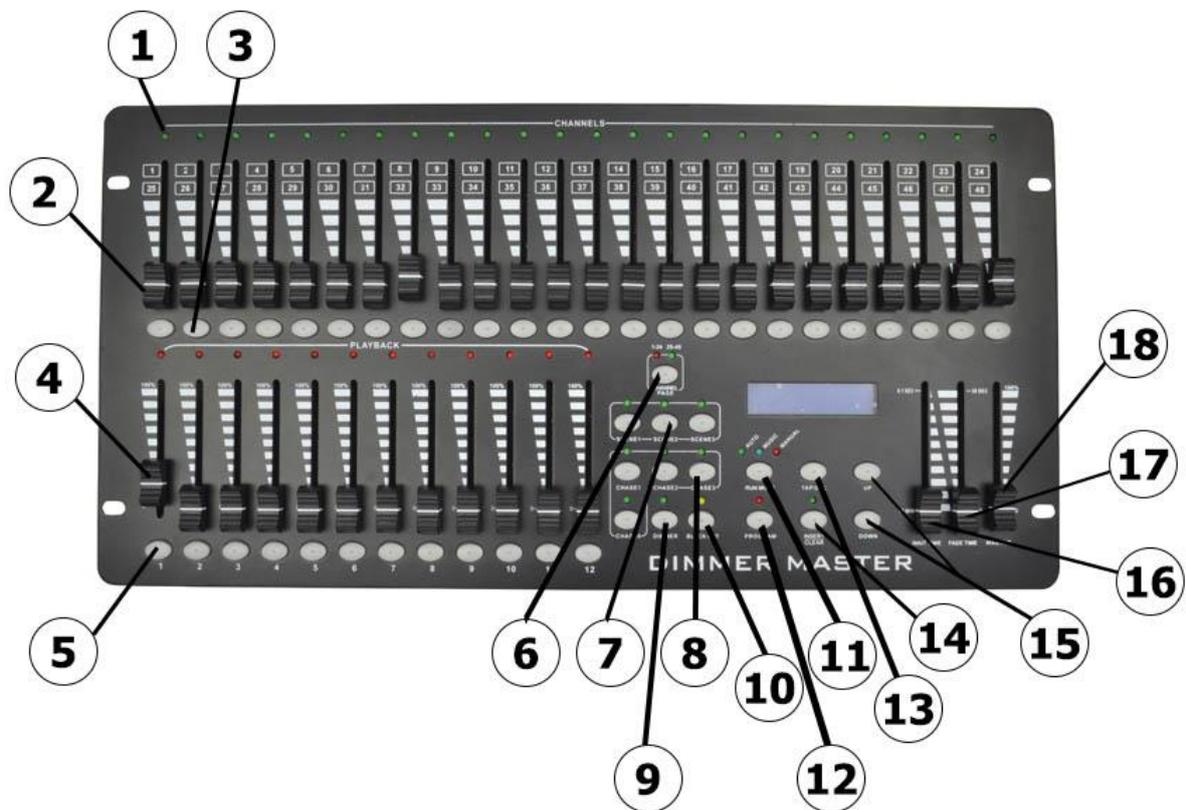
7. Audio input or built in microphone, for playback of chases to the bass beat.
8. 12 Playback sliders.
9. USB connection for back up.

Note: A knowledge of DMX is required to make full use of this controller and all of its features

Controller Front

1. **Channel LEDs**, will light when channel slider 1-24/25-48 is being used.
2. **Channel Sliders**, used to dim the corresponding channel up or down.
3. **Channel Flash Buttons**, when pressed activate the corresponding channel to full brightness.
4. **Playback Sliders**, used activate user built in scenes and chases.
5. **Playback Flash Buttons**, used to activate saved scenes and chases, briefly or constant depending on mode.
6. **Channel Page Button**, used to switch between channel slider 1-24 and 25-48.
7. **Scene Buttons 1-3**, used to select scene 1-12, 13-24 and 25-36, when used in conjunction with playback sliders.
8. **Chase Buttons 1-4**, used to select chase 1-12, 13-24, 25-36 and 37-48, when used in conjunction with playback sliders.
9. **Dimmer Switch**, Used to select dimmer scene 1-12 when used in conjunction with the playback sliders these take priority over the programmed scenes and chase during playback. Scenes need to be stored at 100%.
10. **Blackout Button**, When pressed and the LED is lit, all channel DMX values will set to zero.
11. **Run Mode Button**, used to select Auto, Music and Manual mode.
12. **Programme Button**, hold for 3 seconds to enter programme mode, the LED will light up. Also used for programming scenes and steps in chases.
13. **Tap/Del Button**, in auto mode by tapping this button sets the time between steps in a chase. In programme mode it's used to delete scenes or chases.

- 14. **Insert/Clear Button**, when programming a chase this button inserts a step in between two already programmed steps. In manual mode this button clears any channel values.
- 15. **Up/Down Buttons**, when in programming mode use the up down buttons to go through the steps. In Music mode these buttons adjust the sound sensitivity.
- 16. **Wait Time Slider**, used to set the speed between steps.
- 17. **Fade Time Slider**, used to set the time a programmed step takes to get to its programmed maximum.
- 18. **Master Slider**, Controls the DMX values on all channel sliders and programmes.



Rear Panel

1. USB socket
2. Audio Input
3. DMX Output, 3 pin
4. DC Input
5. On/Off Switch



Common Terms

The following are common terms used in intelligent light programming:

1. **Blackout**- is a state whereby all lighting fixtures output is set to '0' or 'off', usually on a temporary basis.
2. **DMX-512** - is an industry standard digital communication protocol, frequently used in entertainment lighting equipment.
3. **Fixture** - refers to your lighting effect or other device such as a dimmer, which you can control.
4. **Sliders** - are also known as faders.
5. **Scanner** - refers to a lighting effect which has a pan and tilt mirror; However DMX controllers may refer to this term when describing the control of a DMX512 compatible device.
6. **MIDI** - is a standard term for representing musical information in a digital format. A MIDI input provides external triggering of scenes using MIDI devices such as a MIDI keyboard.
7. **Stand Alone**- refers to a fixtures ability to function independently of an external controller. This is usually in sync to music due to a built-in microphone.
8. **Fader slider** - is used to adjust the fade time between scenes within a chase.
9. **Speed slider** - affects the amount of time a scene will hold its state. It is also considered a wait time.
10. **Shutter** - is a mechanical device in the lighting fixture that allows you to block the lights path. It is often used to lessen the intensity of the light output or strobe.
11. **Playbacks**- can either be scenes or chases that are directly recalled by the user. A playback may also be considered a program memory which can be used during a show.
12. **Chase**- is a program built up using steps/scenes.
13. **Pack** - normally refers to a dimmer pack which can come with different channel options. Some have 4 outputs some have 12 for example.
14. **RGBAW**-red, green, blue, amber and white, normally this is referring to the types of LEDs in the lighting fixture.

First Time Operation

1. Remove all packaging materials.
2. Connect a DMX cable from controller to your first light or pack. Connect a DMX cable from the first light or pack to the second. Do this until all lights or packs are connected.
3. Plug any par can/theatre spots in to your dimmer packs if you are using dimmer packs.
4. Plug your controller into the mains with the supplied AC/DC power supply.
5. Plug your dimmer packs or lights in to the mains.
6. If you are using 4-channel packs or 4-channel LED par cans, set the first unit to DMX address 1, the second to DMX address 5, third to DMX address 9 and the fourth to

DMX address 13. (some lights/packs will have digital display, some will have small dip switches).

7. Once you have turned on your controller, check if the blackout light is illuminated. If it is, press the black button.
8. Move the Master slider to 100%.
9. Make sure the controller is in manual mode.
10. Use the channel page button to put the controller into 1-24 mode.
11. Move all the channel sliders up and your lights should have output.
12. Follow the rest of the manual to make full use of all the programming options.

Entering Program Mode

1. Hold programme button down for 3 seconds, the corresponding LED will light up.

Exiting Program Mode

1. Hold the programme button for about 3 seconds, the corresponding LED will go out.

Create a Scene

1. Enter programme mode.
2. Choose channel page 1-24 or 25-24 this will depend on how many lights you have and how many channels they take up, you may need to switch between both pages during programming.
3. Create desired output by adjusting the channel sliders (changes in fixture attributes such as colours & gobos, or simply dimmer values).
4. Choose a scene button to save your scene, there are 3 scene buttons each can store 12 scenes playbacks.
5. Once the desired scene is created press the programme button once. If you have any scenes already saved, the playback LEDs corresponding to these will be lit. Choose a playback position which is not lit to save your scene.
6. Save the scene by pressing the corresponding playback flash button, all the LEDs will briefly flash telling you the scene has been saved successfully.
7. If you wish to save more scenes repeat steps 2-6
8. Exit Programme mode.

Playback a Scene

1. Choose the correct scene button
2. Make sure the master dimmer is set to 100%.
3. Make sure the black LED is not lit.
4. Move up the slider of the desired playback where the scene you want is stored. You can also press the corresponding flash button to flash the scene at maximum.

Notes: You can playback 2 or more scenes at once. Fade and wait time have no response in this mode.

Delete a Scene

1. Enter programme mode.
2. Press and hold the Tap/Delete button.
3. Whilst holding down the Tap/Delete button, press the flash button of the desired scene you wish to delete.
4. The LED will go out indicating the scene is deleted.
5. Exit programme mode.

Create a Chase

1. Enter Programme mode.
2. Choose Channel Page 1-24 or 25-24 this will depend on how many lights you have and how many channels they take up, you may need to switch between both pages during programming
3. Select and press a chase button. There are 4 chase buttons, each can store 12 chase playbacks.
4. Select a playback where the chase will be saved by pressing the corresponding flash button, the LED will light up.
5. Create the first step of your chase by moving the channel sliders.(changes in fixture attributes such as colours & gobos, or simply dimmer values). Make sure the master dimmer is at 100%.
6. Press the Programme button once, all the LEDs will flash indicating the scene has been saved.
7. Repeat steps 5-6 until all the desired steps are created.
8. Exit Programme mode.

Playback a Chase

1. Select and press the chase button where the chase is stored.
2. Move the relevant playback slider to 100%.
3. Make sure the master slider is at 100% and the blackout light is not lit.
4. Choose a Run Mode, either Manual, Music or Auto
5. Manual: Use the Up and Down button to go through each step. The fade and wait time faders do have an effect in this mode.
6. Music: The steps will run to the beat of the music. The music is picked up via the built-in microphone or via the RCA line level socket on the back. The sensitivity can be adjusted by the up and down buttons. The fade and wait time sliders have no effect in this mode.
7. Auto: The chase steps change via the wait and fade time sliders or by taping the Tap/Del button to set the speed.

Inserting a Step into a Chase

1. Enter Programme mode.
2. Select the desired chase
3. Select the desired playback by pressing the corresponding flash button, the LED will light up.
4. Press the Insert/Clear button.
5. Use the Up and Down buttons to find the point where the step needs to be added.
6. Create the step using the channel sliders.
7. Press the Programme button. All the LEDs will flash briefly to tell you the step has been saved.
8. Press the Insert/Clear button.
9. Exit Programme mode.

Deleting a Step from a Chase

1. Enter Programme mode.
2. Select the desired chase.
3. Select the desired playback by pressing the corresponding flash button, the LED will light up.
4. Use the Up and Down buttons to find the scene that needs to be deleted.
5. Press the Tap/Del button to delete the step.
6. Exit Programme mode.

Delete a Chase

1. Enter Programme mode.
2. Select the relevant chase button.
3. Hold the Tap/Del button down, the Playback LEDs that have chases saved in them will light up.
4. Whilst holding down the Tap/Del button, press the flash button corresponding to the chase that needs to be deleted.
5. All the LEDs will flash briefly indicating the chase has been deleted.
6. Exit Programme mode.

Create a Dimmer Scene

1. Enter Programme mode.
2. Choose channel page 1-24 or 25-24 this will depend on how many lights you have and how many channels they take up, you may need to switch between both pages during programming.
3. Press the dimmer button. 12 playback scenes can be saved.
4. Create desired output by adjusting the channel faders (changes in fixture attributes such as colours & gobos, or simply dimmer values).

5. In this mode faders have to be set to 100% for the scene to be saved.
6. Once the desired scene is created press the programme button once. If you have any scenes already saved the playback LEDs corresponding to these will be lit. Choose a playback which is not lit to save your scene.
7. Save the scene by pressing the corresponding playback flash button, all the LEDs will briefly flash telling you the scene has been saved successfully.
8. If you wish to save more scenes repeat steps 2-7
9. Exit programme mode.

Playback a Dimmer Scene

1. Press the dimmer button.
2. Make sure the master dimmer is set to 100%.
3. Make sure the black LED is not lit.
4. Move up the slider of the desired playback where the scene you want is saved. You can also press the corresponding flash button to turn the scene on. Use the Insert/Clear button to clear.

Notes: You can playback 2 or more dimmer scenes at once. Fade and wait time have no response in this mode. Dimmer scenes override chase and normal scenes that are saved.

Delete a Dimmer Scene

1. Enter programme mode.
2. Press and hold the Tap/Delete button.
3. Press the flash button of the desired dimmer scene you wish to delete.
4. The LED will go out indicating the scene is deleted.
5. Exit programme mode.

Delete all Saved Data

1. Turn off the console.
2. Hold down run Mode, Program and Tap/Del buttons
3. Turn the controller on whilst holding the above buttons down.
4. Hold the 3 buttons down until the display says RESET OK.
5. All the saved data is now deleted.

Save a Show (Scenes and Chases) to USB Stick

1. Insert a USB stick into the socket on the back panel.
2. Make sure you are not in program mode.
3. Press and hold the Run Mode button and the Up button for 2 seconds
4. The display will say **Press CH1-24 Key save to USB.**

5. Press one of the Channel Flash Buttons.
6. The display will show the progress, once completed it will show **File saved OK**.

Notes: The user can save up to 24 different shows, which can be called back when needed via an external USB stick.

Loading a show (scenes and chases) from a USB Stick

1. Insert a USB stick into the socket on the back panel.
2. Make sure you are not in programme mode.
3. Press and hold the Run Mode button and Down button for 2 seconds.
4. The display will display **Press CH1-24 Key Loader File**.
5. Press the relevant Channel Flash button that corresponds to the show you wish to load.
6. The Display will show the progress, once completed it will **Show Loader File OK**

Maintenance

The COBRA Master Dimmer requires almost no maintenance. However, you should keep the unit clean. Disconnect the main power supply and then wipe the cover with a dry cloth. Do not immerse in liquid. Do not use alcohol or solvents.

Keep connections clean. Disconnect electric power and then wipe the DMX and audio connections with a dry cloth.

Troubleshooting

If fixture is not responding to DMX

1. Check all connections are correct.
2. Check DMX addressing is correct.
3. Check blackout is turned off.
4. Check the master slider is at 100%.
5. If all the above fails to work, unplug from the mains, wait 30 seconds then reconnect to the power supply.
6. If it is still not working, contact your dealer.

DMX BASICS

DMX is short for digital multiplexer, which is a universal protocol designed for the lighting industry allowing for controlling of intelligent fixtures like scanners, moving heads, LED par cans, dimmer packs, fog machines etc.

DMX allows you to control many fixtures channels, normally up to 512 with varying channels from 0-255 (0-100%).

This will give control of channels like gobo selection, up and down movements, colours and dimming etc.

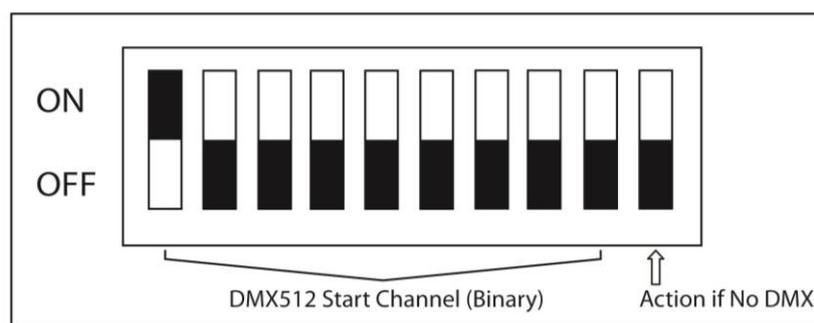
DMX is a very good system as all this information can be sent down one cable, used in conjunction with a DMX controller with memory all your channel settings can be saved and recalled easily.

DMX was designed so that all manufacturers can use the same protocol/language to control their fixtures allowing the end user to use any make of fixture on their DMX controller as long as both are DMX compatible, and the controller has enough channels to control the fixture that is attached.

Fixtures have an input and output DMX socket, allowing you to connect from the controller to the first fixture then from that fixture to the next (this is called daisy chaining).

Sockets are normally 3 pin XLR but can be 5 pin XLR as well.

DMX fixtures need to have a DMX address set, as this is so they can then decode the correct information from the controller. This is normally done by a digital display panel, where the address can be changed by simple up and down buttons; the address ranges from 1-512. In addition to this it can be controlled by a row of small switches, called dip switches; there the required address is converted to a binary number.



Normal DIP Switch assignments: DMX start channel = 1

To work out your dip switch settings you can simply download a DMX calculator from the internet.

The order in which fixtures are connected in a DMX line does not influence the DMX address, a fixture set to DMX address 1 can be put in a DMX line from beginning, middle or end, as it is set to address 1 it knows to take information from that point onwards.

DMX Wiring

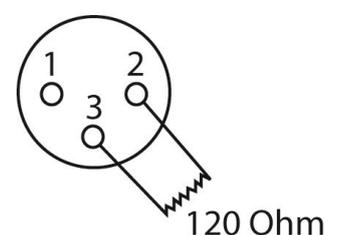
3 PIN	5 PIN
PIN 1 GND	PIN 1 GND
PIN 2 -	PIN 2 -
PIN 3 +	PIN 3 +
	PIN 4 NOT USED
	PIN 5 NOT USED

3 pin wiring is more common, 5 pin is the correct way. 3 pin may be used to save on cost. With 5 pin connections, not all pins are used, though it is worth checking your manual for your fixture, as some lights use the unused pins for low voltage control. 5 pin would be better so there is no confusion over mixer leads and DMX leads in big rigs, sending a mixers 48v phantom power down a DMX cable could damage the DMX light.

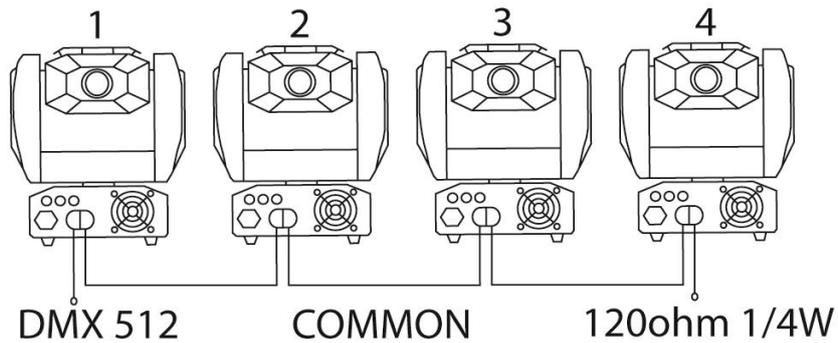
When making cables try and use proper DMX cable and do not connect pin 1 GND to the outer casing of the connector as you might do with audio cables as this may cause erratic behaviour from your fixture.

Do not make Y leads to split cables to fixtures; always use the in and out sockets or a DMX splitter as again this may cause erratic behaviour from your fixture.

We recommend you to put a DMX terminator in any fixture which hasn't got a DMX lead connected from the output socket to another fixture; this again is to reduce erratic behaviour from your fixtures. A DMX terminator is simply a male XLR plug with 120 ohms, ¼ watt resistor soldered across pin 2 & 3.



Example of a DMX line



Ch1 Pan	Ch2 Tilt	Ch3 Shutter/Shaking	Ch4 Gobo	Normal	Colour Split
540°	270°	246-255 Open	255 Fastest speed Gobo change	255 Fastest speed Rainbow Effect	255 Fastest speed Rainbow Effect
		247 Fastest speed shaking			
			128 Slowest speed Gobo change	128 Slowest speed Rainbow effect	128 Slowest speed Rainbow effect
			120-127	118-127 Pink	121-127 Pink
		132 Slowest speed shaking	111-119	107-117 Yellow	113-120 Yellow+Pink
			103-110	096-106 Orange	106-112 Yellow
		131 Fastest speed shutter	094-102	086-095 Light Green	098-105 Orange+Yellow
			086-083	075-085 UV Purple	091-097 Orange
		16 Slowest speed shutter	077-085	064-074 Blue	083-090 Light Green+Orange
			069-076	054-063 Red	076-082 Light Green
		008-015 Open	060-068	043-053 Amber	068-075 UV Purple
		000-007 Blackout	052-059	032-042 Light Blue	061-067 Blue
			044-051	022-031 Magenta	053-060 Red+Blue
			035-043	011-021 Green	046-052 Red
			0-26-034	000-010 White	038-045 Amber
			018-025		031-037 Light Blue
			009-017		023-030 Magenta
			000-008		016-022 Green+Magenta
					008-016 Green
					000-007 White

Each fixture takes up 5 DMX Channels (See Above)

The controller is a fairly basic 24 channel.

So you have a cable from the controller to the first fixture cable from first to second and so on, the last light has a DMX terminator plugged in.

Fixture 1 would be set to DMX address:

1 dipswitch number 1 on.

Fixture 2 would be set to DMX address:

6 dipswitch numbers 2 & 3 on.

Fixture 3 would be set to DMX address:

11 dipswitch numbers 1, 2 & 4 on.

Fixture 4 would be set to DMX address:

16 dipswitch number 5 on.

We would recommend you to fully read manuals for your light and controller as some controllers tell you what each fixture address needs to be, and some lights need other settings changed to make them work.

When setting address you need to make sure fixtures don't overlap from one to the next.

You can set 2 fixtures to the same address, and as long as they are the same fixture (i.e. same channel layout) they will then do the same as each other.