LZ500 Green Laser User Manual

Thanks for purchasing **LZ500 Green Laser.**

Please read this manual carefully and thoroughly, as it gives important information regarding safety and operation instruction. Keep this manual in order to consult it in the future.

The quality of every set of the products is guaranteed in the factory before the shipment. Please check the accessories as the packing list inside. If the carton appears to be damaged, please inspect the fixture carefully. In case damage has been found or some parts are missing, please contact Neo-Laser after service department before shipping back the product.

Safety Information：

1. Always ground the fixture electrically properly.
2. For indoor use only. Keep in cool and dry place with the ambient temperature of 10-35℃. Put the fixture in steady place and do not shake.
3. Continuous operation of over 4 hours will shorten the life of the laser. Please always keep within 4 hours.
4. The lens at the aperture will be covered with dirt and dust that will decrease the power output. Please clean it with the soft cloths or paper periodically.
5. Do not attempt to tear off the warranty paper. Such action will avoid the company's warranty.
6. Do not attempt to dismantle the fixture if problems happen. Please connect with Neo-Laser after service department directly.
7. Do not throw away the packing material. If problems happen, please pack the product with the material and send back to Neo-Laser after service department

CAUTION
LASER RADIATION AVOID EXPOSURE TO BEAM
CLASSⅢB LASER PRODUCT
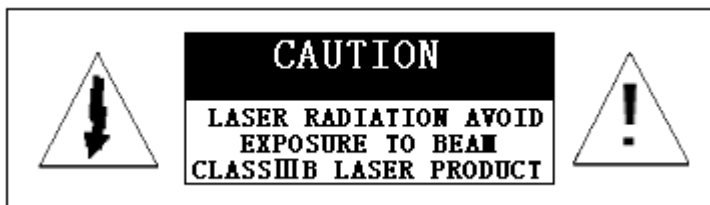
Fuse Replacement

Note: replace the fuse with the same specified. If not, the potential damage will be avoided of the company's responsibility.

Replace the fuse：Disconnect the power, use the screwdriver to unscrew the fuse holder, take out the fuse, place it with the good one of the same specified and finally screw the fuse tight.

Technical Specification:

1. AC Power：AC 110 V/ 220V ， 50~60 HZ ， Fuse(2A)
2. Laser： Wavelength 532nm, Verdure, Facula Size φ12, Power 10mW
3. Control system: high capacity macro processor
4. Scanner: step motor , X/Y scanning.
5. Display Mode：DMX/ Sound Active/ Auto

6. Laser Safety Level：Class IIIB
7. Connector：3-pin DMX Connector / XLR
8. Net Weight： KG
9. Size ： 280MM*206MM*163MM (L x W x H)

Function Introduction:

1. SOUND ACTIVE

The laser graphic is controlled by with the sound, that is the graphic effect changes with the rhythm. Turning the sensitivity knob in a clockwise direction will increase the sound sensitivity. Turning the sensitivity knob in a counter-clockwise direction will decrease the sound sensitivity. Only the medium and low frequency that reaches certain sound intensity can control the changing effect of the graphic. Without sound activation for 7 seconds, the system shuts out the laser.

2. AUTO

The laser graphics runs automatically by the built-in programs. Via Auto mode, the laser cannot be shut off automatically.

3. DMX control

The system only accepts the DMX 512 control. DMX control can control the laser's on/off, the graphics, and its size, color, direction, scan speed, and display speed etc.

Function Settings:

4 Work Mode:
1. SOUND_ACTIVE —— triggered by sound only
2. AUTO_MODE—— default program, not subject to change with the external effect
3. SLAVE——controlled by Master only, receive Master's data
    Note: only one master, no link with console
4. DMX MODE——controlled by DMX 512 console only, receive console's data

Set the system function with the dipswitch.

See the function listed below.

1. The dipswitches 10, 11 and 12 are for the setting of the system function.
    The dipswitches 1-9 are for the setting of the DMX Channel Address in DMX mode. If not in DMX mode, the dipswitches 1-9 can be set randomly.
2. The setting of the projector's address is needed via DMX mode. Under control of DMX 512 console, the projector takes up 9 channels.

Dip Switch Setting   0=OFF   1=ON   X=OFF   or   ON

DIPSWITCH CHART												FUNCTION
1	2	3	4	5	6	7	8	9	10	11	12	
X	X	X	X	X	X	X	X	X	0	0	0	SOUND ACTIVE
X	X	X	X	X	X	X	X	X	0	0	1	AUTO MODE
SET DMX ADDRESS									0	1	0	DMX MODE
X	X	X	X	X	X	X	X	X	0	1	1	SLAVE

DMX ADDRESS MATHEMATICAL RIDDLE:

ADDR =

CH_NUM $\times$ N + 1

 CH_NUM：DMX CHANNEL OF THIS PROJECTOR，CH_NUM>=9

 N: PROJECTOR CHANNEL NUMBER，N=0,1,2,3······

 EG：Each projector is distributed with 16 DMX channels

Loop1　ADDR＝1；　　　Loop2　ADDR＝17；

Loop3　ADDR＝33；　　　Loop4　ADDR＝49；

Address Setting:

In binary system, there are only two number.　0 meaning "OFF" and 1 meaning "on". The numbers increase by multiplying the previous value by 2. Positions from dipswitch 1 to dip switch 9 signify binary value from lower to high position.

EG：	LOOP	ADDR	BINARY
	1	1	100000000
	2	17	100010000
	3	33	100001000

DMX control table:

Channel	Function	DMX Value	Detail
CH1	Mode Selection	0~30	Laser Off
		31~100	DMX
		101~175	Auto
		176~255	Sound Active
CH2	Pattern Selection	0~255	35 patterns
CH3	X Position	0~255	Pan
CH4	Y Position	0~255	Tilt
CH5	Scan Size	0~255	Size from small to big
CH6	Scan Speed	0~255	Speed from fast to slow

Note: via DMX, only CH3 & 4 are valid in Auto & Sound Active Mode.

General

Operation:

1. Mode settings: Based on different application, different modes are set. If in DMX mode, bear in mind the correct DMX address assignment.

2. Connection: connect the projector and DMX 512 console with the DMX signal cable. As for Stand Alone, there is no need.

3. Powered on, laser emits the beam in 2 seconds.

4. The projector can be controlled to play and edit shows by DMX512 console in DMX mode, by default program in auto mode, and in sound active mode if sound sensitivity knob is kept in proper position

M/S mode:

1. Stand Alone——Via MASTER_ SOUND or MASTER_ AUTO, no console is needed. Laser shows only obey sound or default program.

2. Mode settings: set the dipswitch in corresponding position, that is
   MASTER_ SOUND：＃10－0，＃11－0, ＃12－0
   MASTER_ AUTO：　＃10－0，＃11－0, ＃12－1
   SLAVE:　　　　　＃10－0，＃11－1，＃12－1

3. Connection: Use XLR- XLR cable to connect the Master's DMX output with the DMX Input of the first Slave, and then output of the first Slave with input of second Slave till all the Slaves are connected in this way.

4. Powered on, laser emits the beam in 2 seconds

5. The projector can be controlled to play shows by default program in Auto mode, and in MASTER_ SOUND mode if sound sensitivity knob is kept in proper position

   Note:

1. Via Master/Slave mode, there should be only **one Master and no DMX512 controller.**

2. Power on the Master and the Slaves **at the same time** or **first** power on the **Slaves**, **then** the Master.

| N. SLAVE | 2.SLAVE | 1. MASTER(Sound/Auto) |
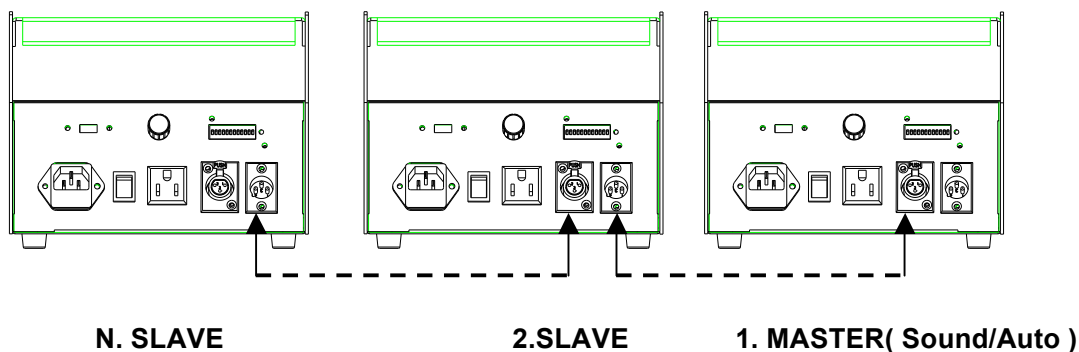
**MASTER /SLAVE Connection**

DMX Mode:

1. Use standard DMX512 console in DMX Mode.

2. Mode settings: set the dipswitch in corresponding position, that is DMX Mode：＃10－0，＃11－1, ＃12－0.

3. Connection: Use XLR-XLR cable to connect DMX 512 console with the DMX Input of first projector, and then output of the first projector with input of second projector till all the projectors are connected in this way.

4. Powered on, laser emits the beam in 2 seconds
5. Console control
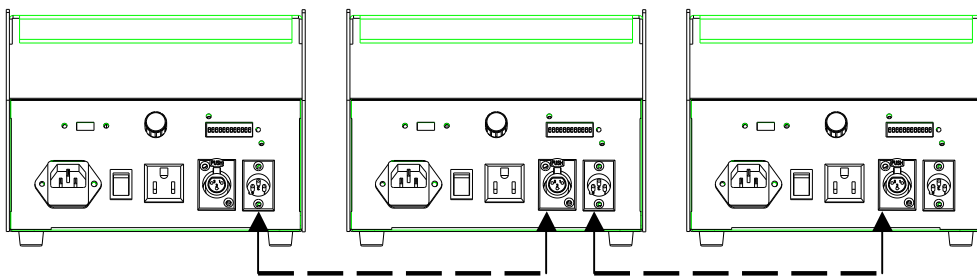
N. DMX   **2.DMX**   **1. DMX**

DMX Connection

Accessories:

1.User Manual	1PCS
2. Handle	1PCS
3.DMXcable	1PCS
4. Power cable	1PCS

Trouble Shooting:

Problems	Reasons	Remedy
Power indicator off and no laser	Check if AC power matches specified	Make sure of the specified power or check the power facility
Via stand alone mode: power indicator on, no laser	Set to Slave mode by mistake	Set to Stand-alone mode (Stand-alone Sound Active or Stand-alone Auto)
Via M/S mode, Slave projector works abnormally	1. The mode setting (only one Master with others set as Slave) 2. Check if there is DMX console or not 3. Check the connection between Master and Slaves	1.Set the work mode properly 2.Disconnect with the DMX signal 3.Make sure of the connection between Master and Slaves
Via DMX mode, DMX indicator off and no laser	1. Check if the work mode is set to DMX mode . 2. Check the XLR-XLR cable's connection and quality	3. Set the work mode to DMX mode properly 4. Make sure of the XLR-XLR cable's connection and quality
Via DMX mode, DMX indicator flicker, but out of control of the console.	Make sure the DMX console's channel distribution match with the laser's	Set the console's channel distribution and the laser's DMX address again.
Some patterns are blocked	————	Power on again and the system regain normality

Any other problems, please contact your distributor or service Dept. of "Neo-Laser".

DMX Address Quick Reference Chart

Dip Switch Position

DMX DIP SWITCH SET					#9	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1
0=OFF					#8	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1
1=ON					#7	0	0	1	1	0	0	1	1	0	0	1	1	0	0	1	1
X=OFF or ON					#6	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1
#1	#2	#3	#4	#5																	
0	0	0	0	0			32	64	96	128	160	192	224	256	288	320	352	384	416	448	480
1	0	0	0	0		1	33	65	97	129	161	193	225	257	289	321	353	385	417	449	481
0	1	0	0	0		2	34	66	98	130	162	194	226	258	290	322	354	386	418	450	482
1	1	0	0	0		3	35	67	99	131	163	195	227	259	291	323	355	387	419	451	483
0	0	1	0	0		4	36	68	100	132	164	196	228	260	292	324	356	388	420	452	484
1	0	1	0	0		5	37	69	101	133	165	197	229	261	293	325	357	389	421	453	485
0	1	1	0	0		6	38	70	102	134	166	198	230	262	294	326	358	390	422	454	486
1	1	1	0	0		7	39	71	103	135	167	199	231	263	295	327	359	391	423	455	487
0	0	0	1	0		8	40	72	104	136	168	200	232	264	296	328	360	392	424	456	488
1	0	0	1	0		9	41	73	105	137	169	201	233	265	297	329	361	393	425	457	489
0	1	0	1	0		10	42	74	106	138	170	202	234	266	298	330	362	394	426	458	490
1	1	0	1	0		11	43	75	107	139	171	203	235	267	299	331	363	395	427	459	491
0	0	1	1	0		12	44	76	108	140	172	204	236	268	300	332	364	396	428	460	492
1	0	1	1	0		13	45	77	109	141	173	205	237	269	301	333	365	397	429	461	493
0	1	1	1	0		14	46	78	110	142	174	206	238	270	302	334	366	398	430	462	494
1	1	1	1	0		15	47	79	111	143	175	207	239	271	303	335	367	399	431	463	495
0	0	0	0	1		16	48	80	112	144	176	208	240	272	304	336	368	400	432	464	496
1	0	0	0	1		17	49	81	113	145	177	209	241	273	305	337	369	401	433	465	497
0	1	0	0	1		18	50	82	114	146	178	210	242	274	306	338	370	402	434	466	498
1	1	0	0	1		19	51	83	115	147	179	211	243	275	307	339	371	403	435	467	499
0	0	1	0	1		20	52	84	116	148	180	212	244	276	308	340	372	404	436	468	500
1	0	1	0	1		21	53	85	117	149	181	213	245	277	309	341	373	405	437	469	501
0	1	1	0	1		22	54	86	118	150	182	214	246	278	310	342	374	406	438	470	502
1	1	1	0	1		23	55	87	119	151	183	215	247	279	311	343	375	407	439	471	503
0	0	0	1	1		24	56	88	120	152	184	216	248	280	312	344	376	408	440	472	504
1	0	0	1	1		25	57	89	121	153	185	217	249	281	313	345	377	409	441	473	505
0	1	0	1	1		26	58	90	122	154	186	218	250	282	314	346	378	410	442	474	506
1	1	0	1	1		27	59	91	123	155	187	219	251	283	315	347	379	411	443	475	507
0	0	1	1	1		28	60	92	124	156	188	220	252	284	316	348	380	412	444	476	508
1	0	1	1	1		29	61	93	125	157	189	221	253	285	317	349	381	413	445	477	509
0	1	1	1	1		30	62	94	126	158	190	222	254	286	318	350	382	414	446	478	510
1	1	1	1	1		31	63	95	127	159	191	223	255	287	319	351	383	415	447	479	511

Dip Switch Position   DMX   Address