Triton Blue

USER MANUAL
MANUAL DE USUARIO

Laser TR-TR2-250

Read kindly this user manual before using the machine
Lea atentamente este manual antes de utilizar el aparato

Triton Blue

USER MANUAL

Laser TR-TR2-250

English

Following is a guide to installing your new TR-TR2-250 projector. Please remember that due care and attention should always be taken when working with electricity. We recommend that your projector be installed by a professional installer and a licensed Electrician.

INTRODUCTION 1

Thank you for purchasing this laser product. You can be assured that you have made an investment into the highest quality laser products available today.
You can be confident that our quality and after sales service is equal to our status of being the global leader in entertainment lighting and laser products.

SAFETY INFORMATION

Warning! This product is for professional use only. It is not for household Use.

This product presents risks of lethal or severe injury due to fire and heat, electric Shock, and or laser related injuries. Read this manual before powering or installing the projector, follow the safety precautions listed below and observe all warnings in this manual and on the projector. If you have questions about how to operate the projector safely, please contact your Triton Blue reseller.

To protect yourself and others from electric shock

- Disconnect the fixture from AC power before removing or installing the projector, fuses, or any part service.
- Always ground (earth) the projector electrically. Failure to do so may damage your projector.
- Use only a source of AC power that complies with local building and electrical codes and has both overload and ground-fault protection.
- Do not expose the projector to rain or moisture.
- No user serviceable parts inside.

To protect yourself and others from potential laser radiation hazards

.Never operates the projector with missing or damaged covers.

- Do not stare directly into the aperture whilst it is projecting a beam.
- Do not open the projector housing to adjust any components.
- This projector contains housing safety interlocks. Opening the housing will defeat the interlocks and cause the laser output to stop.

To protect yourself and others from burns and fire

- Do not place any part of your body in the beam path whilst projecting a stagnant beam.
- Never attempt to bypass the fuses. Always replace defective fuses with ones of the specified type and rating.

- Keep all combustible materials (for example fabric, wood, paper) at least 0.3 meters (12 inches) away from the projector. Keep flammable materials well away from the projector.
- Provide a minimum clearance of 0.1 meters (4 inches) around fans and air vents.
- Never place filters or other materials over the aperture.
- Do not modify the projector in any way.

To protect yourself and others from injury due to falls

- When suspending the projector above ground level, verify that the structure can hold at least 10 times the weight of all installed devices.
- Verify that all external covers and rigging hardware are securely fastened and use an approved means of secondary attachment such as a safety cable.
- Block access below the work area whenever installing or removing the projector.

UNPACKING

The packing material is carefully designed to protect the projector during shipment - always use it to transport the projector. The Projector comes with:

- One 3m, 3-pin IEC mains cable.
- One 1m DMX Cable
- One Installation Manual

Carefully open the top of the shipping carton. Firmly grasp the yoke and lift the unity out of the carton. Taking care to avoid reaching into the front of the unit, where the optics are, remover the foam blocks from both ends of the projector and carefully place it on a flat, stable surface for inspection. Visually inspect the projector to ensure it did not receive any damage during shipping. Verify that the yoke is attached firmly with two bolts and two knobs. Always use a safety cable when hanging ay lighting fixture or effect from truss or overhead fixing point. At this time affix your safety cable and stage clamps.

AC POWER 2

Warning! For protection from electric shock, the projector must be grounded (earthed). The power supply shall have overload and ground-fault protection. Important! Install fuse and verify that power supply settings match local AC supply before use.

To install the main fuse

Use only the fuse specified for the operating voltage.

1. Turn of power mains to the projector.
2. Remove the fuse holder and insert the fuse in the fuse holder.
3. Insert the fuse holder in the empty slot in the mains input socket.

To install a plug on the power cable

If you need to replace the power plug, it must be fitted with a grounding-type cord cap that fits your power distribution system. Consult an electrician if you have any doubts about proper installation.

Following the cord cap manufacturer's instructions, connect the yellow and green wire to ground (earth), the brown wire to live, and the blue wire to neutral. The table below shows some pin identification schemes.

Table 1: Cord cap connections

Wire	Pin	Marking	Screw color
brown	Live	"L"	yellow or brass
blue	Neutral	"N"	silver
yellow/green	Ground	⏚	green

How to Earth the power supply

Warning! The power supply used to power the projector and the computer requires earthed power mains. All power cables used in the installation of the projector and the computer are to be earthed. Important! Powering projector and the computer unearthed will damage the projector and or computer.

Before installing your projector or computer, you must do the following to ensure it is safe to connect the power supply.

- Test power supply to both the projector and the computer. Do this using a Multi-Meter capable of testing up to 750VAC
- Test continuity between both ends of the power supply cables. Ensure that all three wires have continuity.

If you find that you have an unearthed power supply, you will need to connect an earth before installing the projector. We recommend that you contact either a Neo-Laser Technician or a Licensed Electrician to do this. Alternatively, at your own risk, you can follow the instructions below to install an Earth connection.

1. Find a copper water mains pipe or a 2 to 3 meter copper rod. If using a copper rod, drill the rod into the ground outside of the building so that you have no more than 10 to 15 cm exposed.
2. Inside the main Distribution Box connect a copper plate on the inside of the chassis.
3. Run and connect a 1 gauge cable from the copper plate on the inside of the Distribution Box to the Copper Water Mains Pipe or the Copper rod.
4. Test the earth by using a Multi-Meter in 750VAC mode from the hot (Brown) to the earth and then the Neutral (Blue) to the earth. The total between the two should equal the total shown when you connect the prods between hot and Neutral. If not, cease further use and contact a licensed electrician. Once you have completed this correctly you can apply power to your Projector and computer using the Earthed power source.

To apply power

Warning! The power cables must be undamaged and rated for the electrical requirements of all connected devices. Important! Powering through a dimmer system will damage the projector and computer.

1. Connect the prepared cable to the mains input socket and the AC mains distribution system. **Do not** connect the projector.
2. Using the on / off switch located at the rear of the projector, turn the projector on.
3. You now can continue with the installation of your new laser projector.

INSTALLATION 3

LOCATION AND ORIENTATION

For safe operation, install the Projector in a location where: -

- It is at least 0.3 meters (12 inches) away from illuminated surfaces and combustible materials.
- It is not easily touched or bumped.
- It is protected from rain and moisture.
- There is at least 0.1 meters (4 inches) clearance around the fans and air vents.
- There are no flammable materials nearby. The projector may be installed in any orientation as described below or placed directly on a stage or floor. The intense light can burn or melt parts within a distance of 0.3 meters (12 inches).

When installing the projector next to a fixture, avoid illuminating the projector.

Truss or other overhead mounting

WARNING! Ensure the safety Cables are secured to the safety anchor points at the side of the projector.

1. Block access below the work area.
2. Working from a stable platform.
3. Attached the safety cable that can bare at least 10 times its weight, through the safety cable anchor point on the of the projector. Ensure to place the projector on a raised platform, if working above 1.5m.
4. A clamp can be used to hang the projector from a truss or similar. Neo-Laser offers a range of optional Clamps and truss mounting components.

Operating Instructions 4

CAUTION: Use of controls, adjustments, or performance of procedures other than what is specified herein may result in hazardous radiation exposure which can result in server eye damage and or physical injury

This projector is designed to Operate using DMX-512. DMX-512 allows you to control the Projector using any DMX-512 Protocol controller, however a profile will need to be created for some controllers. By following these simple instructions below, you will be able ensure a safe enjoyable show using your new projector.

Compliance Statement

Compliance Statement Your new TR-TR2-250 Projector has been designed to comply with FDA and IEC Standards for it classification. The TR-TR2-250 projector is a Class IIIB laser product.

Laser Safety and Compliance Information

This product is manufactured to comply with the IEC 60925-1 and in accordance with U.S. Food and Drug Administrations (FDA) Standards Listed under FDA Document 21 CFR 1040 and subsequent laser notices.

Product Classification and Manufacturing Label Identification

Laser Classification: Class IIIB
Laser Medium:

RED	>150mW LD 660nm
GREEN	>100mW DPSS 532nm
BLUE	>50mW DPSS 473nm

Output: 250mW
Cooling: TE Cooling

CAUTION: AVOID EXPOSURE TO BEAM: Avoid direct eye contact with laser light. Never intentionally expose your eyes or others to direct laser radiation.

As you can see, from dipswitch 3, the numbers increase by multiplying the previous value by 2.

A Combo label with the Product Model Number, Serial Number, Date of Manufacture, Laser Light Warning Label, Warranty Void Label and Interlocked Housing Label

This laser product is a ClassIIIB laser and has an Interlocked housing.

This projector has been designed to be hung from a truss, ceiling or on a wall. It is recommended that, for safety purposes, your projector be mounted using either a suitable hanging clamp or bolted to the surface as instructed in this manual. Neo-Neon offers a range of items, which are ideal for safe mounting. It is the responsibility of the manufacture to provide useful instruction on the proper use of this product. According to FDA Regulations you should operate this product in the fashion illustrated to the left.

There are no user serviceable parts inside. tampering or removing warranty seals will void your products limited warranty.

CAUTION: AVOID EXPOSURE TO BEAM: Avoid direct eye contact with laser light. Never intentionally expose your eyes or others to direct laser radiation.

As you can see, from dipswitch 3, the numbers increase by multiplying the previous value by 2.

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Proper Usage Safety and Compliance Information

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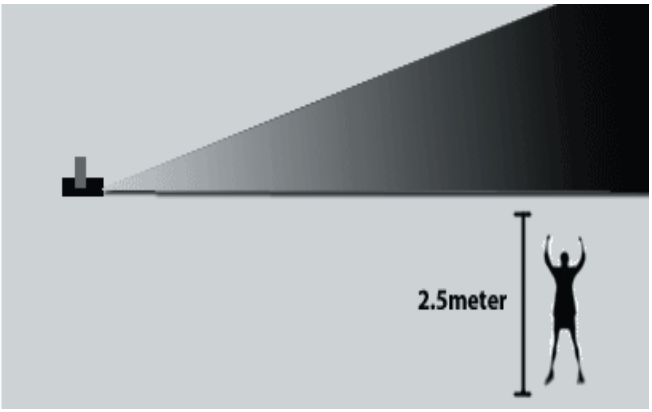

There is only one laser aperture on this product.

CAUTION: ***The use of corrective eye wear or optics for viewing at distances such as telescopes or binoculars with in a distance of 100mm may pose an eye hazard.***

DMX Control 5

Control features

Your projector is capable of being controlled in three modes, DMX-512, Sound Active (Master/Slave), and Stand Alone. Additionally the projector is capable of Remote Sound Activation and Remote Laser On/Off, which can be done from the DMX-512 controller. The projector has over 300 areial effects which can be triggered by all of the above control modes.

Creating a Projector Profile

Your new LC series projector utilizes DMX-512 signal to communicate with the controller. DMX-512 is Industry standard and can be found in some lighting control consoles as well as some software based lighting controllers. Each LC series projector is capable of being individually addressed, so that you can control more than one projector independently. Below are is the DMX profile settings used by the TR-TR2-250 projector. **NOTE: Some Software based DMX controllers already have the TR-TR2-250 profile. Usually fixtures are listed under the manufactures name. This projector is listed under Triton Blue.**

CHANNEL	FUNCTION	VALUE	DESCRIPTION
CH 1	MODE	0-10	LASER OFF, LASER AND SCANNER
		11-120	DYNAMIC PATTERNS
		121-255	STATIC PATTERNS
CH 2	PATTERN SELECTION	0~255	ABOUT 40 STATIC/DYNAMIC PATTERNS, FIVE NUMBERS ASSIGN ONE PATTERN
CH 3	POSITION-X	0~255	ADJUST POSITION-X
CH 4	POSITION-Y	0~255	ADJUST POSITION-Y
CH 5	SCANNING SPEED	0~255	0 IS FAST, 255 IS SLOW
CH 6	DYNAMIC PATTERN PLAY SPEED	0~255	0 IS FAST, 255 IS SL0W
CH 7	STATIC PATTERN SIZE	0~255	0 IS SIZE, 255 IS BIG
CH 8	COLOR SELECTION	0-44	RED, GREEN, YELLOW,MONOCHROMTI
		45-134	2 COLORS COMBINE TO CREATE 6 ARRA
		135-224	LASER TO BE SELECTED.
		225-255	MULTICOLOR RANDOM COMBINATION
CH 9	COLOR SEGMENT	0~255	DMDE INTO 1 TO 51 SEGMENT

Connecting your projector to a DMX-512 Controller

DMX-512 uses a three pin cable similar to XLR or Mic leads. We recommend that you use DMX designated cables only as the use of XLR or Mic Leads can affect the operation of your projector.

1. Determine the length required to run between the projector and the controller.
2. Using DMX Cable, connect the male end to the controller and the

female to the projector.

3. Address your projector accordingly so that it corresponds with projector's profile address on your controller.
4. Apply power to both the controller and projector. You are now able to control the projector via your controller.

Dip Switch Settings

This projector uses dipswitches to assign the desired DMX address. DMX-512 is a simple to use control protocol that allows you to control up to 512 channels at any one time. The TR-TR2-250 Projector uses 7 Channels to control its functions. In order to communicate with the projector you will need to assign a start address for the first channel of the projectors profile. To do this we use the dipswitch located at the rear of the projector to. Dipswitches 1 to 9 represent numbers between 1 and 512. E.G. dipswitch one equals 1, dipswitch two equals 2, Dipswitch three equals 4 and so on up to dipswitch nine which equals 256. To assign an address you can simply follow this DMX binary Chart on the next page.
An easy way to remember the value of each switch, simply follow the following logical mathematical riddle.

Dipswitch No.

1	1x1=1	
2	2x1=2	
3	2x2=4	
4	4x2=8	As you can see, from dipswitch 3, the numbers
5	8x2=16	increase by multiplying the previous value by 2.
6	16x2=32	
7	32x2=64	
8	64x2=128	
9	128x2=256	

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DMX Address Quick Reference Chart

Dip Switch Position — **DMX Address**

DMX DIP SWITCH SET 0=OFF 1=ON X=OFF OR ON																				
					#9	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1
					#8	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1
					#7	0	0	1	1	0	0	1	1	0	0	1	1	0	0	1	1
					#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	378	409	441	473	505
0	1	0	1	1	26	58	90	122	154	186	218	250	282	314	346	379	410	442	474	506
1	1	0	1	1	27	59	91	123	155	187	219	251	283	315	347	380	411	443	475	507
0	0	1	1	1	28	60	92	124	156	188	220	252	284	316	348	381	412	444	476	508
1	0	1	1	1	29	61	93	125	157	189	221	253	285	317	349	382	413	445	477	509
0	1	1	1	1	30	62	94	126	158	190	222	254	286	318	350	383	414	446	478	510
1	1	1	1	1	31	63	95	127	159	191	223	255	287	319	351	384	415	447	479	511

You will also notice dipswitch numbers 10, 11, and 12.
These are used to select between the following modes: -

- SOUND ACTIVE MODE
- AUTO MODE
- MASTER-SOUND
- MASTER-AUTO
- SLAVE
- DMX MODE
- TEST MODE

Depending on how you wish to control your projector, you will need to assign the correct dipswitch address according to the chart below.

0 = OFF 1 = ON X = OFF OR ON

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

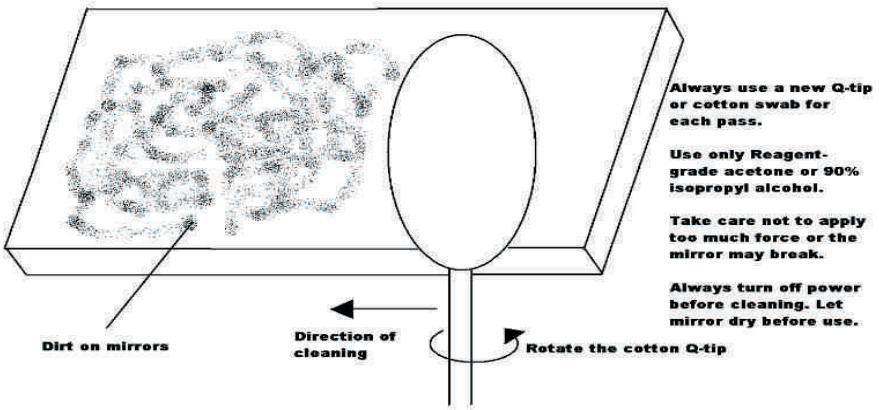
Trouble Shooting 6

PROBLEM	REASON	TROUBLE SHOOTING
No Power	Main power off	Turn on power from mains
	Not pluged in	Plug in IEC power cable
	Fuse	Check that the fuse is intact and servicealbe
Erratic Output	DMX Cable	Check to see that a proper connection betwee control and the fixture is present
		Individually checkeach cable for contiuity on al three pins
		Check Polarity of DMX Cable
	Poor signal from Control	Check DMX cables, Check contol DMX selec switch if present
	DMX Address Offset	Reassign DMX address via dipswitches. Rem and re-insert cable
Laser	Dirty optics	Clean Optics
Appears Dim		Check that fade is at 100%

Cleaning the optics 7

One of the most critical components in a Laser projector is the optics. If the optics are dirty, you will experience a loss in power output. To ensure that your projector outputs at its maximum power follow these simple instructions illustrated below. It is advised that you do this on a regular basis, especially if the projector is installed in a location which is subject to large mounts of dust.

NOTE: Do not use any coarse materials such as newspaper to clean the optics. This will scratch the surface and ultimately will lead to loss in power output.



Technical Specifications 8

Model: TR-TR2-250 projector

Laser Type: LASER DIODE Laser Life: 6,000 to >10,000 Hours
Output Type:CW
Cooling: TEC Thermal Electronically Cooled
Color: 660nm Red, 532nm Green 473nm Blue
Output: As Designated by Model
Modulation: TTL
AC Power: 220VAC 60Hz / 110VAC 50Hz Optional
Consumption: 2.5A to 5A

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