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ENGLISH

SUPERTRACER 2500 HTI

2500W intelligent discharge followspot

USER' S MANUAL release 1.0

This manual must be considered an integral part of the projector.

BEFORE CONNECTING AND USING THE PROJECTOR, IT IS IMPORTANT TO READ CAREFULLY ALL THE INSTRUCTIONS IN THIS MANUAL.

QUALIFIED PERSONNEL ONLY, IN COMPLIANCE WITH ALL THE SECURITY LAWS, CAN DO THE INSTALLATION, THE MAINTENANCE AND THE UTILISATION OF THIS PROJECTOR.

BEFORE CONNECTING THE PROJECTOR, MAKE SURE THAT THE FREQUENCY AND THE VOLTAGE VALUES ARE SUITABLE AS SPECIFIED ON THE PROJECTOR.

FOR ANY DOUBT, CONTACT YOUR SUPPLIER OR SEND AN E-MAIL TO:

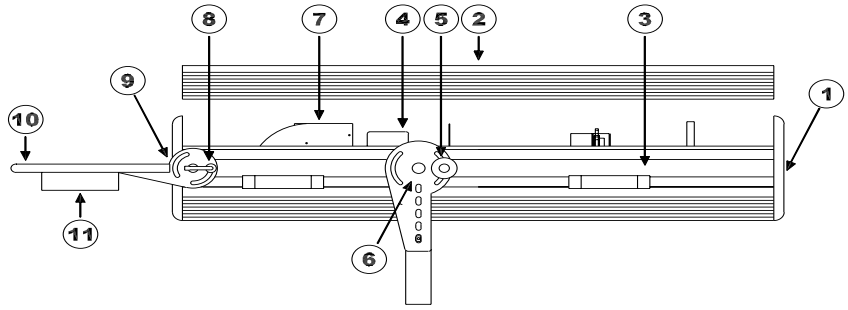
tech@lamposrl.it

INDEX

GENERAL DESCRIPTION

SUPERTRACER is an intelligent followspot ideal for distance between 20 and 80mt, it has an external ballast, zoom between 7.4° and 15.6° and it is perfectly balanced. Supertracer has a colour wheel, filter correction, frost filter, focusing, dimmer and strobe, this effects is controller by TRACER console or by any DMX 512 controller.

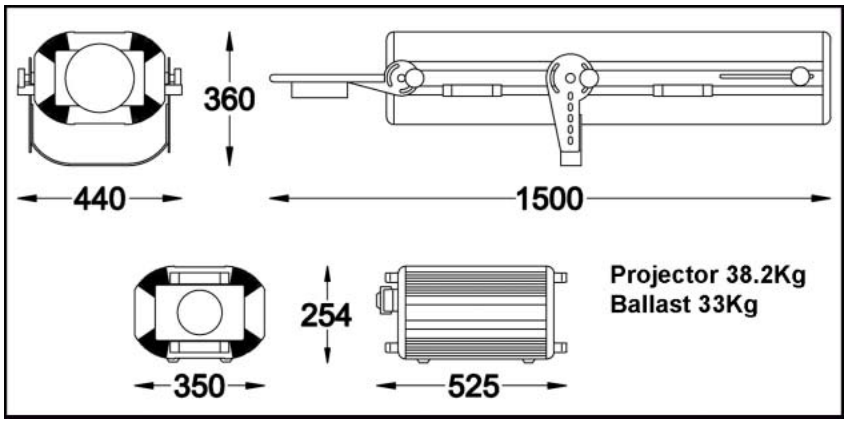
As shown in the figure, the SUPERTRACER FOLLOWSPOT 2500 HTI is made up of the following parts:



1. Front opening
2. Upper lid
3. Projector body
4. Lamp compartment
5. Adjustable support bracket
6. Support bracket
7. Cooling unit
8. Bar adjustment
9. SUPERTRACER control unit on board
10. TRACER console

TECHNICAL FEATURES AND DIMENSIONS

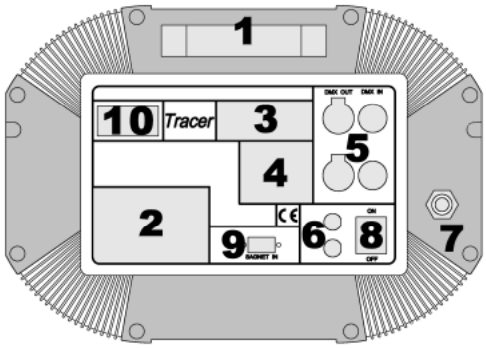
Voltage rating	**230 V**	**Rated current**	**15 A**
Inductive current	**7,1**	**Absorbed power**	**3080 W**
Frequency	**50 Hz or 60 Hz**	**Maximum room temperature**	**35° C**
Maximum surface temperature	**70° C**	**Distance from inflammable surface**	**2 mt**
Main mount via # 1 screw	**M12**	**Projector body length**	**1350 mm**
Max. length complete with bar	**1500 mm**	**Width including bracket and handles**	**360 mm**
Weight of the projector	**38.2kg**	**Weight ballast-projector included packaging**	**82 kg**
Ballast measure	**350X254X525 mm**	**Ballast weight**	**33 kg**



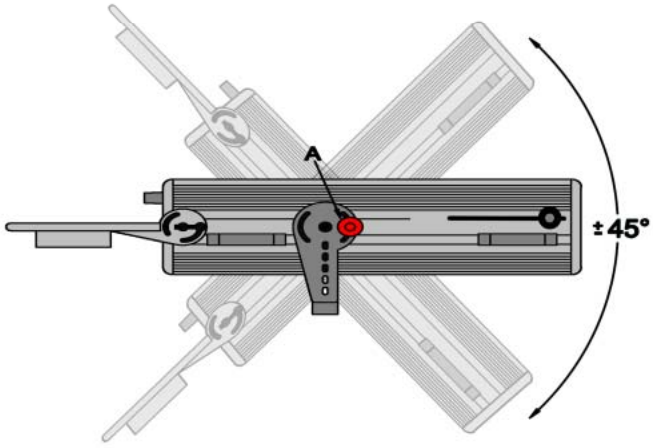
REAR PANEL

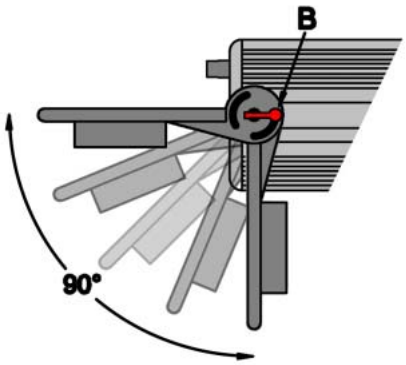
As shown in the figure, the following elements ca be seen on the rear panel:

1. **Rear handle**
2. **Serial number plate**
3. **DMX address area**
4. **Control Assignment Section**
5. **XLR DMX 512 in/out**
6. **Line and electronic fuse**
7. **Main power supply cable**
8. **ON/OFF lamp switch**
9. **RS232 for TRACER console**
10. **Projector work hour counter**



ADJUSTMENT OF PROJECTOR BODY ANGLE AND REAR BAR





As shown in the figure, in order to be able to control manually the movement of the vertical axis, it's sufficient to loosen the knobs "A". Thanks to the innovative reinforced bracket with teflon coated disks, you can avoid hard adjustments and obtain smooth movement and perfect stability of the product, even in case of "release". The movement, enabled by the support bracket, is +/- 45° compared to the assembly position of the bracket.

In order to recline the rear bar into the desired position it is necessary to loosen the knob "B". When the new positioning has been made, we suggest to tighten firmly the knobs and to verify that the locking is well done before operating directly with the projector.

WORKING POSITION

SUPERTRACER FOLLOWSPOT 2500 can work in all positions.

MECHANICAL SAFETY GUARDS

A bipolar cut-off switch is located between the lamp compartment and the cooling unit. This safety switch cuts off the power to the projector if the top lid is opened.

NOISE LEVEL

After the projector has been powered up and the initial configuration takes place, the noise produced by the projector is primarily due to its cooling system. The noise level is much lower than the limit of 70 db A permitted by law.

PACKING

The projector is shipped and delivered in a cardboard box made of KRAFT cardboard and semi-chemical additive-free paper, in compliance with BSFV Class 3 standards for waste disposal.
The projector is completely assembled, placed in the box inside a polyethylene bag and held firmly in place with polyurethane foam packing material. The box is stapled shut.
Even though the packing provides complete protection from rain, it must not be exposed to inclement weather or humidity.
No more than three identical boxes can be stacked one on top of the other.
Keep the original packing for possible shipments in the future.

STORAGE

The projector, in its original packing, must be kept in covered, dry areas with a temperature between –10°C and +50°C.

HANDLING

The projector, with or without packing, must be handled with care.
Lifting and handling must be carried out with special equipment. Do not expose the projector, with or without its packing, to brusque accelerated or decelerated movements, knocks, dragging, or other stress caused by unsuitable handling.

The projector in its packing can be seriously damaged if it falls or suffers a blow during transportation.
HANDLE WITH CARE!

ADMISSIBLE ENVIRONMENTAL CONDITIONS

The projector was engineered and produced to function in covered dry areas with an air temperature ranging between 0° and 35° C, and with a humidity level between 30 and 90%.
Sharp changes in room temperature may generate condensation inside the projector which can harm the projector. Therefore, switch on the projector only after it has undergone a period of gradual adaptation to the room temperature.

START – UP PROCEDURES

POSITIONING AND INSTALLATION

Follow these steps for opening the package and installing the projector in its working position:

- Place the projector near the place it will be installed.
- Open the package and remove the anchoring elements, accessories, and User manual.
- Carefully read the instructions in the manual.
- Arrange tripod or stand or any other adequate support.
- In case of tripod or stand, position the projector on an horizontal plane and mount before the rotation pivot in the middle of the adjustable anchoring bracket.
- Using and adequate lifting equipment, complete the mounting on the stand or any other adequate support.
- Tighten the M12 bolts and insert a device to prevent them from accidentally loosening.
- Make sure all adjustable parts are locked firmly in place in the desired position.

You must verify the stability of the support elements when the projector is in working condition.

Do not install the projector where there are objects located at a distance of less than 20 centimetres from the cooling unit.

POWER SUPPLY

Use the cable provided inside the special junction box. The power line must be protected by a differential magneto thermal circuit breaker, while metal parts that might be electrically charged through the projector must be grounded. SUPERTRACER 2500 absorbs 3080W at 230V. Makes sure the projector does not pull the cable in all different working positions, and that sources of heat are not placed in the vicinity.

Connect the fixture to the mains with the enclosed power cord and plug. See the table for the colours of the connection-cable.

PIN	SYMBOL	EC	US	UK
phase	L	brown	yellow/c	red
neutral	N	blue	silver	black
earth	⏚	yellow/green	green	green

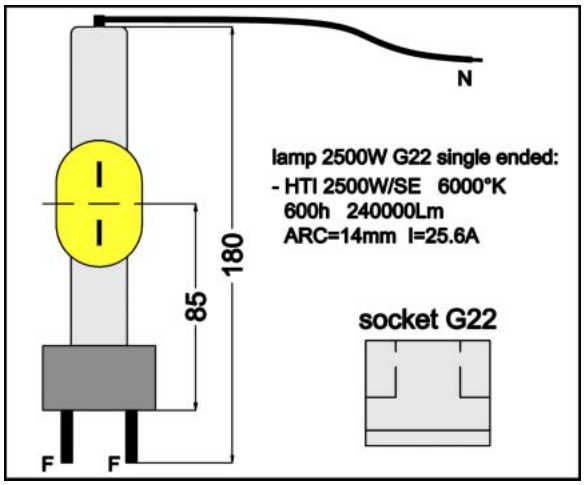
When in doubt, consult a qualified electrician.

Be careful with your operations. With a high voltage you can suffer a dangerous electric shock when touching the wires! Inside the projector, the ignitor circuit have very high voltage, over 5Kv.

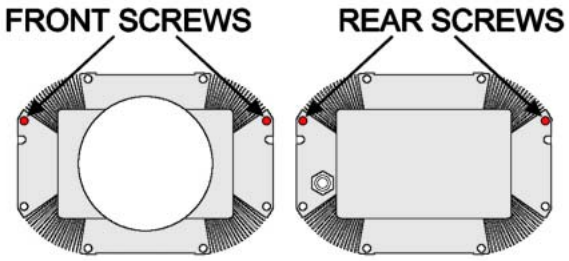
The User must ensure that the power supply is provided with a highly sensitive differential circuit breaker 30m/A to protect the projector from indirect contacts, and that the grounding system PE is working properly.

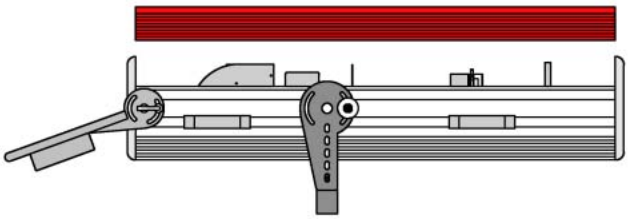
Don’t power the projector with a dimmer circuit

LAMP INSTALLATION



- Switch off projector
- Loosen the cheese-headed screw hexagon built in front and on the back of the projector of the top lid and remove the lid.
- Remove the lamp from the packing and carefully read the Manufacturer's instructions.
- Insert the lamp into the socket
- Block the wire contact firmly to avoid low efficiency connection.
- Switch on the projector to make sure the lamp is working correctly.
- Regulate the lamp, if necessary. (The lamp holder is aligned at the factory)
- Replace the top lid (4 screws) and firmly tighten the screws.





WHAT'S INSIDE

COLOUR WHEEL
SUPERTRACER has n°1 motorized colour wheel with n°7 adjacent dichroic filter plus open (White – Red – Yellow – Magenta - Green – Orange – Pink).

GOBOS
Supertracer has n°1 slot for gobos holder.
Gobos holder is optional. (M-size gobo).

EFFECT WHEEL
TRACER has n°1 motorized effect wheel with CTO filter, CTB filter and Frost filter for soft beam.

FOCUS LENS
TRACER has n°1 motorized focusing coated lens, for high definition projection.

ZOOM
TRACER has manual linear zoom, from 7.4° to 15.6°.

SHUTTER
SUPERTRACER has n°4 shutter for perfect dimmer and strobe effect

DMX CHANNEL ASSIGNMENT

CHANNEL	FUNCTION
01	COLOUR
02	COLOUR CORRECTION
03	IRIS
04	DIMMER & SHUTTER
05	FOCUSING
06	SPECIAL FUNCTION

DMX CHANNEL FUNCTIONS are described in the table.
When you address a projector keep in mind that the BASE CHANNEL (or Starting Channel) corresponds to the first channel (the colour channel, in this case), and the other functions follow in the order described in the table.

When using the projector with a standard DMX controller, the channels with the DIP SWITCHES of control assignment channels set on ON can only be used with the TRACER CONSOLE, do not remove the TRACER console for any reasons.

PROJECTOR ADDRESS

To make sure the projector functions properly , the dip-switches in the DMX ADDRESS AREA on the rear panel must be correctly configure. Keep in mind that each SUPERTRACER occupies 6 DMX channels. Each projector must be set separately on its own BASE CHANNEL (or STARTING CHANNEL) . The BASE CHANNEL assignment is obtained by summing the values for each switch in the DMX SECTION (for example, to set a projector on BASE CHANNEL #39, you must set dip-switches 32,4,2 and 1 to the ON position, because 32+4+2+1= 39). In the Standard Operating Mode, this means the SUPERTRACER will receive signals on 6 channels following the BASE CHANNEL, BASE CHANNEL included (for example, if the projector is set on BASE CHANNEL #39, it will receive signals on channels #39, 40, 41, 42, 43 and 44)

CHANNEL 1 = COLOURS

percent values		decimal values
0 > 5.9 %	WHITE	0 > 15
6.3 > 9.4 %	WHITE / RED	16 > 24
9.8 > 13.3 %	RED	25 > 34
13.7 > 18 %	RED / YELLOW	35 > 46
18.4 > 21.6 %	YELLOW	47 > 55
22 > 25.5 %	YELLOW / MAGENTA	56 > 65
25.9 > 29.8 %	MAGENTA	66 > 76
30.2 > 33.7 %	MAGENTA / GREEN	77 > 86
34.1 > 37.3 %	GREEN	87 > 95
37.6 > 41.6 %	GREEN / ORANGE	96 > 106
42 > 45.9 %	ORANGE	107 > 117
46.3 > 49.8 %	ORANGE / BLUE	118 > 127
50.2 > 53.3 %	BLUE	128 > 136
53.7 > 57.3 %	BLUE / PINK	137 > 146
57.6 > 61.6 %	PINK	147 > 157
62 > 65.9 %	PINK / WHITE	158 > 168
66.3 %	MIN RAINBOW SPEED	=169
66.3 > 100 %	INCREASING RAINBOW SPEED	169 > 255
100 %	MAX RAINBOW SPEED	=255

CHANNEL 2 = COLOURS CORRECTION

percent values		decimal values
0 > 19.2 %	OPEN	0 > 49
19.6 > 38.8 %	CTO (CORRECTION ORANGE)	50 > 99
39.2 > 58.4 %	CTO + FROST FILTER	100 > 149
58.8 > 78.0 %	CTB (CORRECTION BLUE)	150 > 199
78.4 > 97.6 %	CTB + FROST FILTER	200 > 249
98.0 > 100 %	FROST FILTER	250 > 255

CHANNEL 3 = IRIS DIAPHRAGM

percent values		decimal values
0 %	CLOSED	=0
0 % > 100 %	INCREASING DIAMETER	0 > 255
100 %	OPEN	=255

CHANNEL 4 = DIMMER & SHUTTER

percent values		decimal values
0 %	BLACK-OUT	=0
0 % > 52.5 %	LIGHT LEVEL, FROM 0 TO MAX	0 > 134
52.9 %	STROBE EFFECT MIN SPEED	=135
52.9 > 95.3 %	INCREASING RAINBOW SPEED	135 > 243
95.3 %	STROBE EFFECT MAX SPEED	=243
96.1 % > 100 %	OPEN (MAX LIGHT LEVEL)	245 > 255

CHANNEL 5 = FOCUSING

percent values		decimal values
0 %	MAX FOCUS	=0
0 > 100 %	adjustable focus from FAR to NEAR	0 > 255
100	MIN FOCUS	=255

CHANNEL 6 = SPECIAL FUNCTION

percent values		decimal values
0 > 29.4 %	**LAMP OFF** (AFTER 20 SEC.)	0 > 75
44.7 > 54.9 %	**RESET** (AFTER 5 SEC.)	114 > 140
71 > 100 %	**LAMP ON** (INSTANT)	181 > 255

NOTE: (In standard version of SUPERTRACER, the LAMP is permanent ON)

CONTROL SYSTEMS

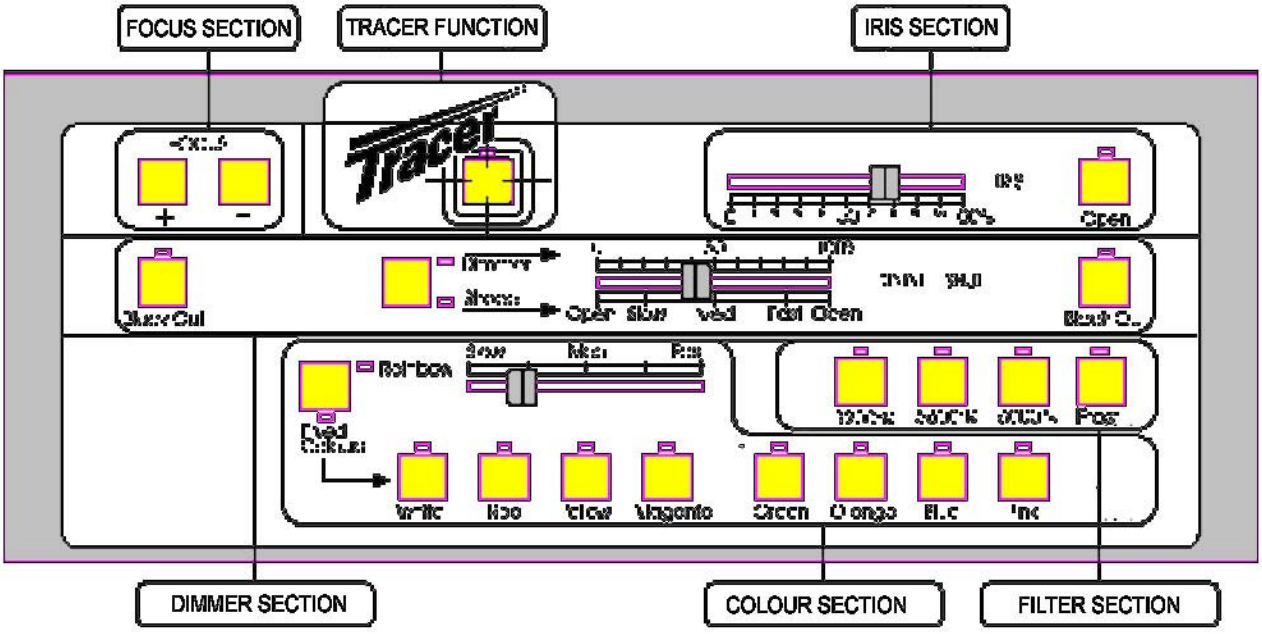
TRACER CONTROL UNIT

SUPERTRACER comes with a control unit mounted on the adjustable bar and connected to the projector by means of a proper cable through 9 pin din connector. The TRACER CONTROL UNIT is powered at low voltage 12 Volts directly by the projector and it is able to control the fixture in all its functions.

It is necessary to know that SUPERTRACER can be controlled by practically all types of controllers on the market that can execute the standard DMX 512 protocol. Controller-projector and projector-projector connections require a two-core screened cable provided with CANNON PLUGS AND SOCKETS. SUPERTRACER can use both 3 or 5 pin CANNON plugs and sockets because it comes with 3- and 5 pin CANNON SERIAL PORTS. The ground braid on the screened cable must be connected to just one end of the cable. The projector and cables must not be installed near overhead ducts for electrical cables or intense magnetic fields.

CONTROL FROM TRACER CONTROL UNIT

In this mode, the projector is controlled directly from the on-board TRACER control unit.
To better understand the working, we suggest to read carefully this paragraph and, if possible, to operate step by step directly on the TRACER console or to refer to the TRACER console drawing.



COLOUR SECTION

Colours are controlled from here.

Quick- select keys can be used to project the corresponding colour.
Two-colour beams are projected when two adjacent keys are pressed simultaneously.
When the Rainbow/Fixed Colours key is pressed, the projector will do the rainbow effect. Rotation speed is controlled by the colour section slider when the Rainbow LED is switched on. This function may be switched off by pressing the Rainbow/Fixed Colours key again or any of the quick-select COLOUR keys.

FILTER CORRECTION SECTION

Temperature correction filters and frost filter are controlled from here.

The colour temperature correction filter keys is used to set primary colours (5600°K), warm colours (3200°K CTO) or cold colours (6500°K CTB). The FROST filter key is used to obtain soft beam using.

DIMMER /SHUTTER SECTION

This section contains the controls for light beam characteristics: INTENSITY, my means of the DIMMER, and STROBE EFFECT, using the variable speed SHUTTER.

Note that the action of the slider for this section depends on the position of the Dimmer/Strobe selector. When the Dimmer LED is on, the slider adjusts the intensity of the beam. When the Strobe LED is on, the slider controls the strobe effect speed.
The two Blackout keys on both sides of the DIMMER / SHUTTER SECTION open or close the shutter instantaneously. This function has priority over the other keys in this section, when the black-out function is active the LED over the two blackout keys flashes.
When the blackout LED is flashing, just press any one of the two blackout keys and the projector will return to either dimmer or strobe status (depending on the position of the dimmer/strobe selector).

IRIS SECTION

This section provides beam DIAMETER controls.

Beam diameter is controlled directly with the slider. The beam is blocked completely when the slider is set to 0. Press the Open key to open or close the iris immediately. The beam can be opened to the desired diameter using the slider.

FOCUS SECTION

By pressing one of two keys (“+” or “-“), the beam can be perfectly focused at the desired distance.

SPECIAL FUNCTION

Tracer function, as the name suggest, concerns the beam positioning.

HOW IT WORKS: when the blackout key is pressed, the Blackout and Tracer LED flash simultaneously. In fact, the TRACER function only works when the projector is in BLACKOUT mode.
At this point, when the TRACER key is pressed and held down, the IRIS is at the minimum aperture and the DIMMER starts opening at minimum speed. In this phase the TRACER key directly controls the dimmer.
Keeping the key pressed, light intensity increases, When the key is released, intensity decreases, As a result, the operator can easily get exactly the right intensity for undetectable tracing.
Once the projector has been correctly positioned, simply pressing the Blackout key the beam instantly is on target with the preset light intensity and beam diameter.

CASCADE CONTROL FROM THE TRACER CONSOLE

When several projectors are connected by cable, the console on the first projector can control all functions on the following projectors. For this reason, the projectors must be connected with a standard DMX cable, IN/OUT 3 or 5 pin connectors. Each projector must have its own TRACER console connected.
This system can be used to control an indefinite number of projectors in perfect synchronism.

FIRST MASTER: all the dip switches of the control assignment section and the DMX address area must be set on OFF, but the dip switch nr. 7 of the control assignment section set on ON.

OTHER SLAVES: all the dip switches of the control assignment section and the DMX address area must be set on OFF, but the dip switch nr. 1 of the DMX address area set on ON.

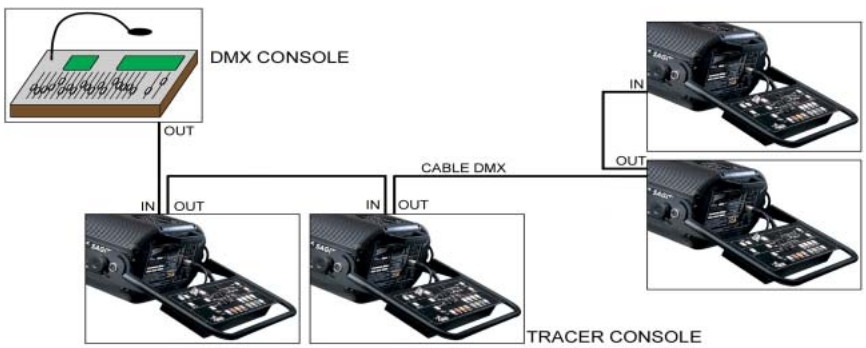
CASCADE CONTROL FROM ANY DMX 512 LIGHTING DESK

This control system is identical to the previous one with the only difference that all projectors must be set to SLAVE mode (all 5 DIP-SWITCHES of the CONTROL ASSIGNMENT SECTION set to OFF).

MIXED CONTROL

Mixed control means that the projectors are driver by any DMX console, but allows the operator to decide the functions to use directly from the projector.

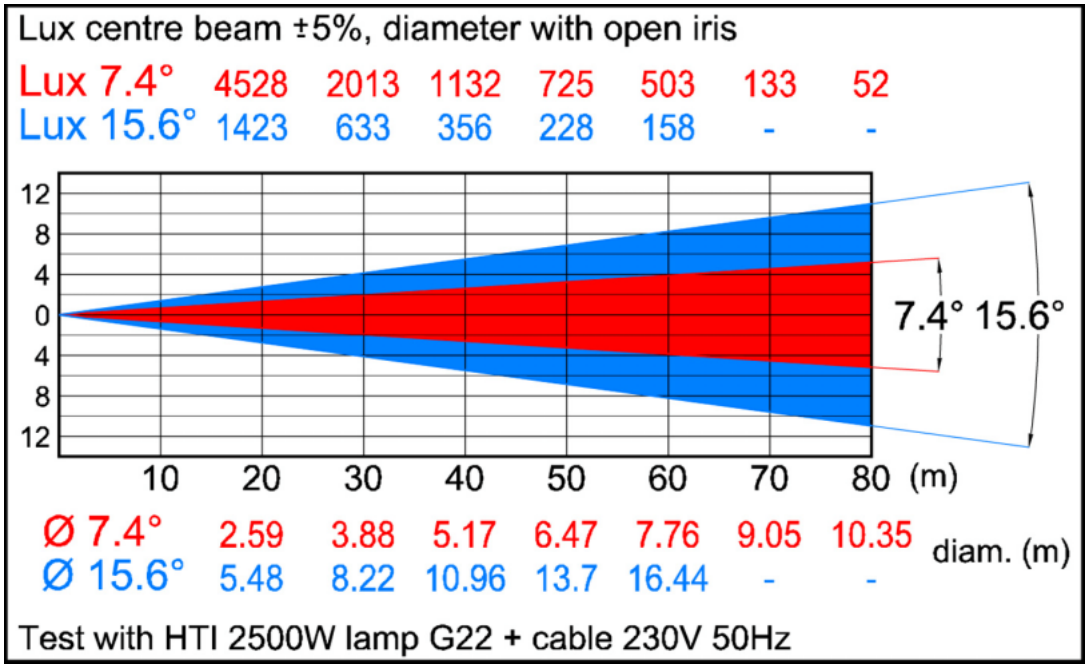
The projector can receive the signal from any DMX CONTROLLER and from the TRACER CONSOLE at the sometime. The dip switches of the control assignment section set on OFF area controlled by the DMX CONTROLLED. The dip switches of the control assignment section set on ON area controlled by the TRACER CONSOLE.



OPTICAL SYSTEM

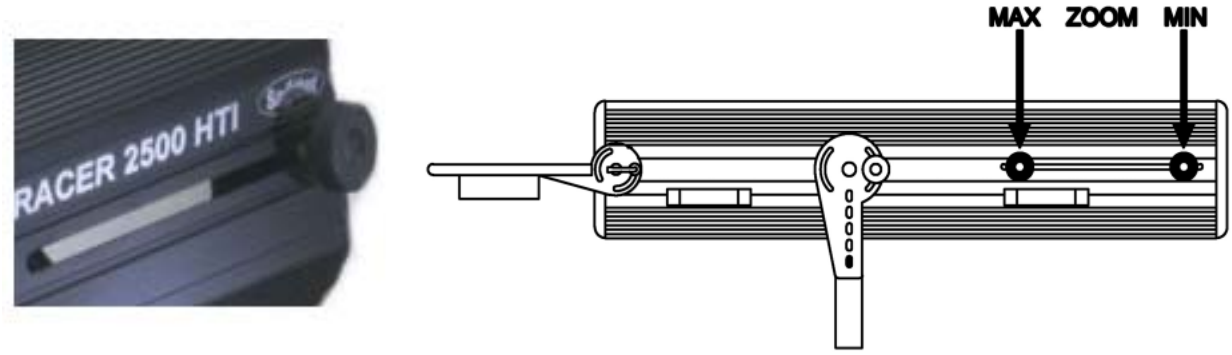
The SUPERTRACER FOLLOWSPOT 2500 is provided with a high-efficiency optical system made of mirror, optic condenser and two anti-flare lenses. This system lets SUPERTRACER FOLLOWSPOT 2500 project an extremely powerful and homogenous light beam.

The SUPERTRACER use OSRAM HTI 2500W/SE lamp. Socket G22+cable 240000 lumen 6000K 600h



LENS ADJUSTMENT

The SUPERTRACER FOLLOWSPOT 2500 is furnished with lens system that lets you create beams of different sizes. It is a manual zoom that let SUPERTRACER 2500 produce beams of different sizes.



With projector ON, in order to obtain the desired beam aperture, it is sufficient to act on the control knob, visible on the left picture and located on the side of the projector body.
By pressing one of two keys (“+” or “-“) of the TRACER CONSOLE or any other dmx controller, the beam can be perfectly focused at the desired distance.

MAINTENANCE

Safety guards, lenses and filters must be replaced if they are visibly damaged to the point that they become ineffective (i.e.: if they have deep slashes or cuts)..

The lamp must be replaced if damaged, cracked or deformed by the heat

PLANNED MAINTENANCE

OPERRATION	FREQUENCY	RESPONSIBLE	ACTION
Optical efficiency test	600 hours	User	M1
Lamp replacement	600 hours	" "	M2
Surface temperature test	Quarterly	" "	M3
Cleaning	Every two months	" "	M4
Testing for safety breaker circuit on general electric system	Monthly	" "	Check life-saving safety device by pressing its "T" bottom
Check damage to cables due to mobile use projector	Once a year	" "	Replace cable if damage
General service check of projector	Every two years	Authorized technician	

Always use original spare parts to ensure safe and proper functioning of the projector.

Do not make changes to the projector. A modified projector Requires a new CE marking

M1 OPTICAL EFFICIENCY TEST

Use the controller to focus the beam on a flat surface, keeping the Iris and Dimmer at 100%. If the spot is not homogeneous, follow these steps:

- Remove knob A, making sure the projector keeps its current position.
- Insert a screw driver in the hold and turn clockwise or counter clockwise to optimise the horizontal position of the lamp compared to the optical system.
- Replace the knob A and firmly tighten.
- Remove the PVC plug on the bottom of the projector. Insert a screw driver in the hole and turn it clockwise or counter clockwise to optimise the vertical position of the lamp compared to the optical system. Replace the plug.

M2 LAMP REPLACEMENT

The lamp must be replaced with the same type of lamp and according to the same frequency. A less efficient lamp jeopardizes projector performance. Replace the lamp as follows:

- When the projector is cold, turn off the ON/OFF SWITCH and remove the POWER SUPPLY to cut the electricity
- Remove the top lid.
- Remove the lamp from the lamp holder.
- Remove the new lamp from its packing and carefully read the manufacturer’s instructions
- Inserting new lamp in its lamp holder
- Block the wire contact firmly to avoid low efficiency connection.
- Replace the top lid and firmly tighten the knobs.
- Switch on the projector to make sure the lamp is working correctly.

M3 SURFACE TEMPERATURE TEST

Before you check the temperature, make sure the projector is in the full operating mode (wait about 20 minutes after switching on the projector). Use a contact probe to measure the surface temperature on the projector's metal case and determine the hottest area at the bottom's projector (nearest to the lamp). The temperature must be less than 70°. Otherwise, check the cooling system.

M4 CLEANING

Cleaning must be carried out when the projector is cool disconnected from the power supply with the general power switch turned off, and the ON/OFF switch on the rear panel switched OFF.

FREQUENCY

It is recommended to clean the projector every two months to ensure efficiency and performance. If the projector is used in particularly smoky or dusty areas, clean the projector more frequently.

Cleaning Procedures

1 Open the top lid by unscrewing the knob and removing it from its seat.
2 Use a vacuum cleaner to remove dust.
3 Use a soft cloth (non fabric) and pH neutral (pH7) liquid detergent to clean mirror and lens surface. Make sure you remove all residual traces. Never touch the lamp directly with your hands or materials that can leave greasy traces.
4 Follow the same steps to clean the other internal parts of the projector.
5 Make sure the cleaning procedure did not damage any internal part or modified their correct position
6 Replace the top lid and firmly tighten the knob.

If the projector is operated in ordinary working conditions and the user follows the planned maintenance operations established by the Manufacturer, it should last for three years
When the projector is discarded, it must be disposed of according to recycling laws.

TROUBLESHOOTING

PROBLEM	POSSIBLE CAUSE	SOLUTION
Projector does not turn ON	No mains power supply	Make sure the mains power is ON and the circuit breaker has not been triggered
	No power to projector	Make sure the switch on the back of the projector is ON Make sure the top lid is tightly closed
	Burned-out fuse	Replace the burned-out fuse* Use the type of fuse as indicated on the side of the projector
Lamp does not ignite	Burned-out or faulty lamp Lamp switch Lid protection	Replace the lamp Control lamp switch on position “On” Lid protection is positioned correctly
The beam is not well defined (Faulty projection)	An optical element is damaged	Switch OFF the power and check lenses. If damaged call an authorized technician.
	Malfunctioning of the electronic circuit	Contact an authorized technician
	The lenses are dirty	Switch OFF the power and clean the parts as explained in the cleaning paragraph
The projector does not respond to controller signals	In case of DMX control: malfunctioning of the DMX cable	Replace the cable and check the line before switching ON again the projector
	In case of DMX control: wrong addressing	Check the DMX area and CONTROL ASSIGNEMENT area and reconfigure the dip-switches correctly
	Malfunctioning electronic circuit	Contact an authorized technician
	Malfunctioning motor or transmission	Contact an authorized technician
Discontinuous projector functioning	Safety thermostat has been triggered	Remove the dirt and check to see if the cooling system is working properly
		The fan stopped functioning. Contact authorized technician
Noisy projector	Mechanical wear	Identify the source of noise and remove the cause or contact an authorized technician

*Before switching ON the projector, identify and remove the causes that made the safety fuse intervene.

Call your area dealer or feel free to contact the Manufacturer for any additional assistance.

SPARE PARTS

When ordering spare parts for the projector remember to mention the model and serial number which can be found on the plate at the rear of the projector.

Call your area dealer or feel free to contact the manufacturer for any additional assistance.

WARRANTY

SUPERTRACER is guaranteed against any manufacturing defects or material flaws. If defects or breakdowns occur during the warranty period, the manufacturer, directly or through its agents. After inspection and according to its own unquestionable judgment, the manufacturer will repair or replace the defective part.
No goods can be returned, for any reason without previous authorisation from the manufactured, and the transport charges, to and from LAMPO are at the cost of the client.

The warranty is not valid in the following cases:
1 If the projector was used improperly or with negligence, or if it was damaged and repaired and/or modified to the point of jeopardizing safe functioning.
2 If the projector is used in conditions other that those specified in this manual.
3 If non-original spare parts are used.
4 All malfunctioning and breakdowns caused by acts of God, negligence, and improper use, and parts subject to wear are not covered by the warranty.