rev. 4/02.05

City COLOR IP·54

PATENT SYSTEM

INTERNATIONAL PATENT WO99/40361

⚠ WARNING

SAFETY INFORMATION

READ ALL CAUTIONS AND WARNINGS PRIOR TO OPERATE THIS EQUIPMENT.
INSTRUCTION TO PREVENT INJURY OR DAMAGE DUE TO ELECTRIC SHOCK, FIRE, MECHANICAL HAZARDS AND UV RADIATION HAZARDS.

• PROTECTION AGAINTS FIRE
1) **IMPORTANT: Use only the lamps showed on page n. 3.**
   DO NOT USE ANY OTHER TYPE LAMP!
2) Maintain minimum distance of 0.5 meter from walls or any other type flammable surfaces.
3) Maintain minimum distance to lighted objects of 5.0 meter.
4) Replace fuses only with the specified type and rating.
5) Do not install the spot close to heat sources. Do not lay the connection cable on the spot when it is warm.

• PROTECTION AGAINST ELECTRIC SHOCK
1) This equipment must be earthed.
2) Class I equipment. The power supply cord includes a protective earthing conductor as part of the cord.
3) For connection to the supply mains proceed as pict.1 page 3. The equipment must be connected to branch circuit having a circuit- breacker In=16A Id=0.03A (230VAC) (art.0002) or In=32A Id=0.03A (230VAC) (art.0003)
4) Disconnect power before lamp's replacement or servicing (service personnel).

• PROTECTION AGAINST MECHANICAL HAZARDS
1) Use secondary safety chain when fixing this equipment.
2) Hot lamp explosion hazard. Do not open the equipment for 300 seconds after switching off.
3) Equipment surface may reach temperature up to 100°C. Allow about five minutes before handling.
4) Replace the lamp if it is damaged or thermally deformed.

• PROTECTION AGAINST UV RADIATION HAZARDS
1) Do not start on this equipment without lamp enclosure or if the protection screens, or ultraviolets screens are damaged.
2) The protection screens, the lenses, or the ultraviolet filters must be replaced if they are visibly damaged and their effectiveness has been reduced, for example, by cracks or deep scratches.
3) Do not look directly at the lamp while lamp is on.

INTRODUCTION

Thank you for using our flood projector CityColor.

The CityColor projects, thanks to an extremely efficient optic system (international patent n. WO99/40361), a powerful light beam which can create numberless color shades. Its performances, in terms of luminousity and lighted surfaces, can reach incredible levels.

The CityColor IP54 comes in the following versions:

• Art. 0002   CITYCOLOR IP54 1800W
• Art. 0003   CITYCOLOR IP54 2500W High Power

The CityColor can work in automatic mode or in synchro mode, otherwise may be controlled by 8 bit DMX controllers

The input protocol is the DMX 512. To drive the CityColor we suggest to use either our controller DMX Control Spot, the Control Show 512 the Easy Control or the Fancy.

To make the most of its possibilites and for a correct functioning of this unit in the years to come, we suggest you to read carefully this manual before connecting or putting the spot into use. By doing so you will gain experience with its commands and connections and you will be easily able to use it.

⚠ WARNING

Check that the spot has not been damaged during transport. If it has been damaged or it does not work, address the seller. Whether the spot has been shipped to you directly, please contact the shipping company. Only the consignee (person or company) can claim for these damages.

YOUR REFERENCE
Always remember to give the serial number and to specify the model any time you address the seller for information or assistance.

BASIC KIT
The basic kit of the CityColor flood projector consist of:

- Projector
- User's manual
- Power connector
- Studio Due warranty

Available on request:
- art. 9801/a: barndoor to define illuminated surface
- art. 0003/a: anti glare
- art. 0002/a: XLR 3 pin male IP54 connectors
- art. 0002/b: XLR 3 pin female IP54 connectors
- Lamp

TECHNICAL FEATURES

- LAMPS

MHN/SA 1800W PHILIPS (art. 9801 - 0002)	HTI/DE 2500W OSRAM • MSA/DE 2500W PHILIPS (art. 0003)
Color temperature: 5.600°K	Color temperature 6.000°K
Lamp life: 2.500 hours	Lamp life 2.000 hours
Luminous flux 180.000 lm	Luminous flux 260.000 lm

- OPTIC COLOR SYSTEM
Full CYM color mixing, unlimited variety of colours and shades. High resolution stepper motors.
Shutter + dimmer. The color changer can be drived with 4 different speeds or in real time.

- BEAM ANGLE: (50% intensity) 50°x52°

- CONTROL INPUT
Standard interface: RS-485; opto-couplet input.
Protocol: USITT DMX 512

- SETUP AND CONFIGURATION
On the control panel with menu and buttons

- AUTOMODE
Stand-alone control: auto mode function master/slave (synchro mode) with 27 programs

- IP RATE: IP 54 (art. 0002 - 0003)

- POWER SUPPLY: (art. 0002) magnetic ballast
Rated voltage: 230V/50Hz
On request: 200V/50Hz; 208V/60Hz; 230V/60Hz; 240V/50Hz
Rated current: 10A
Rated power: 2000W

- POWER SUPPLY: (art. 0003) magnetic ballast
Rated voltage: 230V/50Hz
On request: 200V/50Hz; 208V/60Hz; 230V/60Hz; 240V/50Hz
Rated current: 14A
Rated power: 3000W

- POWER FACTOR CORRECTOR: built-in cos Ø 0.9

- DMX CHANNELS

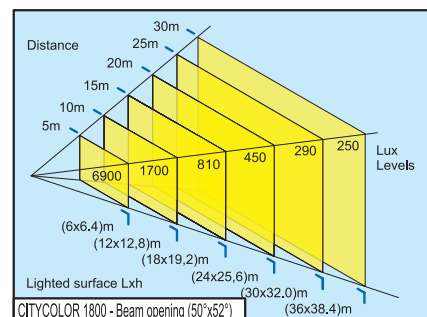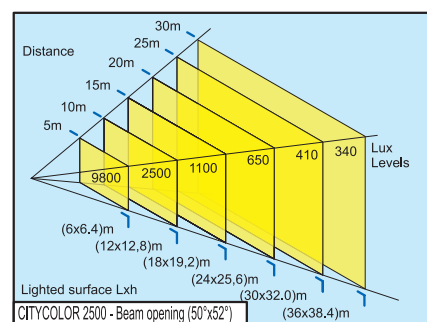|	
ch1 = motors speed	ch5 = dimmer
ch2 = cyan	ch6 = basic colors + rainbow
ch3 = yellow	ch7 = remote reset/lamp off
ch4 = magenta	

- DIMENSIONS (wxdxh)
mm 780x560x740

- WEIGHT
art. 0002:   56 kgs. net
art. 0003:   69 kgs. net

CITYCOLOR 2500 - Beam opening (50°x52°)

CITYCOLOR 1800 - Beam opening (50°x52°)

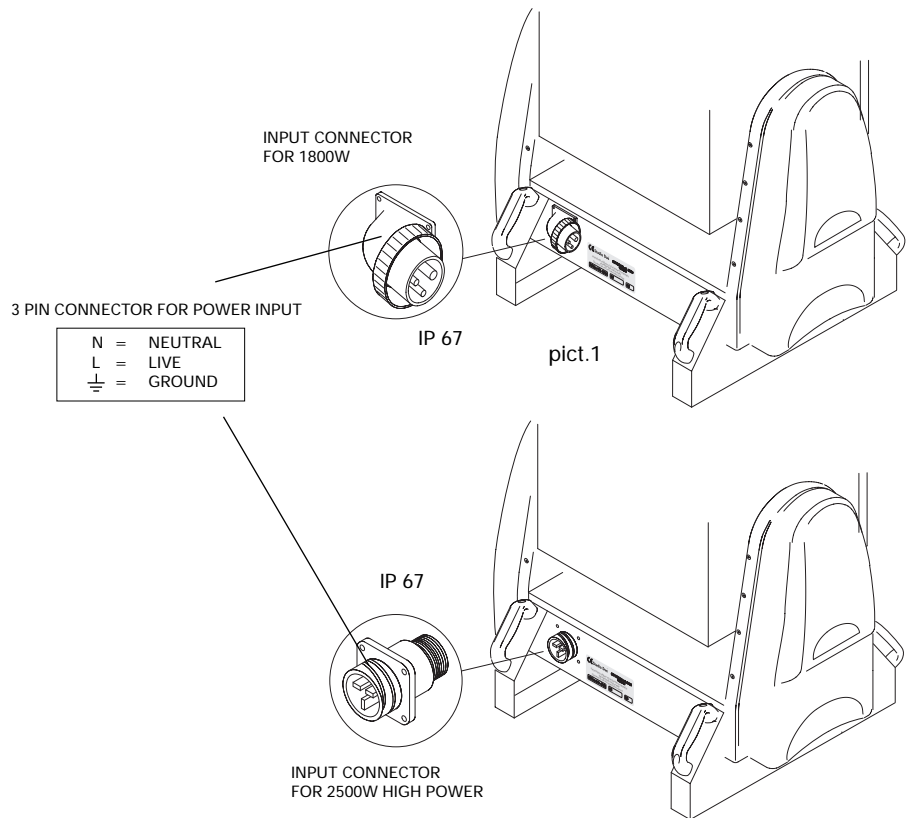| CIRCUIT BREAKER		
MAINS VOLTAGE	In	Id
230V	32A	0,03A

CE **Studio Due**® CITYCOLOR art. 0002

Keep at least a distance of 0.5mt between the apparatus
and inflammable surface nearby
Disconnect the unit from power before servicing

| 230 VAC ; 10A - 50 Hz | SN | QC |

CONDUCTOR SIZES (length < 20mt.)	
MAINS VOLTAGE	CROSS SELECTIONAL AREAS
230V	3X1,5 mm² (minimum)

INPUT CONNECTOR
FOR 1800W

3 PIN CONNECTOR FOR POWER INPUT

N	=	NEUTRAL
L	=	LIVE
⏚	=	GROUND

IP 67

pict.1

IP 67

INPUT CONNECTOR
FOR 2500W HIGH POWER

BEFORE USING

⚠ **WARNING** **The equipment must be earthed.**
IP 54 rate: the equipment must be installed on the horizontal plane.

Read all cautions and warnings to page 1 prior to install this equipment. Particularly, read the follow:
1) Disconnect power before lamp's replacement or servicing (service personnel)
2) Do not open the lamp cover for 300 seconds after switching off
3) Wear gloves and goggles to re-lamping or to work inside the unit (service personnel)

Before connecting the equipment to the power system: make sure that the mains voltage and frequency correspond to rated values.
• The CityColor can be equipped for a mains voltage 230Vac, 50Hz.
  on request: 200V/50Hz; 208V/60Hz; 230V/60Hz; 240V/50Hz
For a power supply of 100V-120V it is necessary to use one auto transformer with the following features:
• Output voltage 230V
• Output current 15A (for art. 0002)
• Output current 20A (for art. 0003)

The power supply cords construction is shown in pict.1. For connection to the mains supply proceed as pict.1.

The equipment must be connected to branch circuit having a circuit-breacker In=16A • Id=0.03A (230VAC) (art. 0002) or In=32A • Id=0.03A (230VAC) (art.0003)
 a) Do not install the spot close to the heat sources. Observe minimum distance between the spots of 1.5 meters. Do not lay the connection cable on the spot when it is warm.
 b) This unit must be positioned as to allow its ventilation. Be careful not to acclude the in-out ventilating grilles.
 c) The unit must be positioned at least 50cm. from walls or other flammable surfaces.
 d) Observe minimum distance to lighted objects of 5 meters.

External surface temperature Ta 35°C:
• After 5 minutes work; Tc=75°C.
• Once the thermic balance has been obtained; Tc=100°C.

4) The protection screens, the lenses, or the ultraviolet filters must be replaced if they are visibly damaged and their effectiveness has been reduced, for example, by cracks or deep scratches.
5) The lamp must be replaced if it has been damaged or thermally deformed.
6) Clean regularly the in-out ventilating grilles.
7) Do not handle the spot by taking it by the head, but always by using the special handles.

pict.2
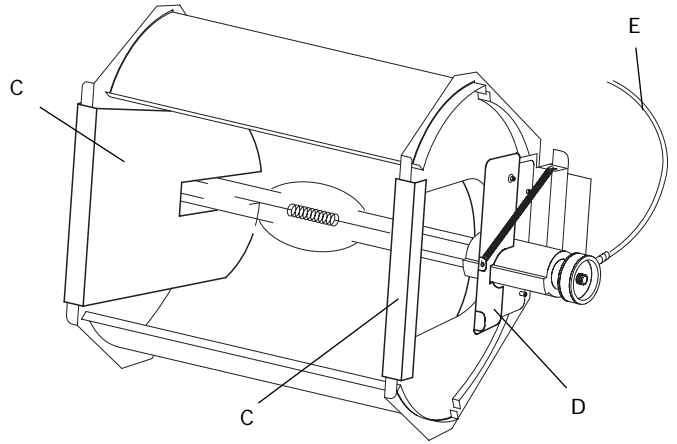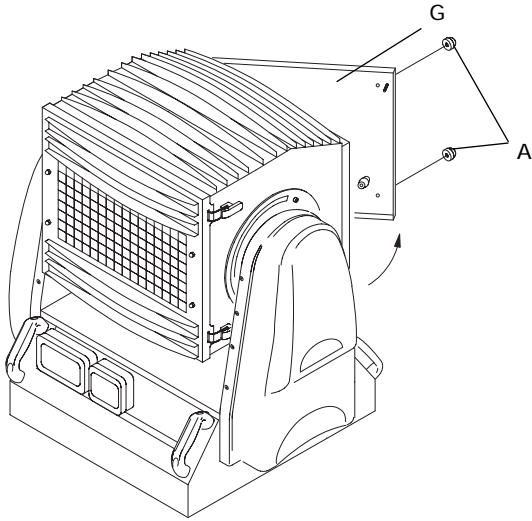
! **WARNING**   **In case of replacement of the lamp or maintenance, do not open the fixture unless 5 minutes have passed from the switching off. This operation has to be done when the apparatus is disconnected from the mains supply**

INSTALLATION OF THE DISCHARGE LAMP (art. 0002 - 0003)
(see pic.2)

1) Disconnect power before lamp' s replacement. Wear gloves and goggles.
2) Remove completely the pommels (A) on the base of the head
3) Open the base of the lamp room (G)
4) Remove the two lateral reflectors (C)
5) Lift up the two lampholder (D)
6) Install the new lamp. Taking care that protuberance of the bulb is set towards the reflector
   Do not touch the quarz bulb with fingers. If this happenes, clean the bulb before use with dry cloth and alcohol.
7) Put down the two upper lampholders (D)
8) Connect the cables (E) to the two ends of the lamp or connect the two cables of the lamp to the two red insulators on the rear panel of the head.
9) Put in again the two lateral plane reflectors.
10) Close the rear panel and install again the two pommels (A) and hold them tightly.

IP RATE

The declared IP rate of the CityColor comes supported at these conditions:
- the installation of the fixture on a wide and stable surface
- the air cooling input and output are located on the base of the side-shell,
  it is not possible to install the fixture outdoor with the ballast upwards
- you must use the filter supplied with the basic kit for the IP RATE 54

⚠ **WARNING**

**The CityColor has a IP rate 44 without filters installed and an IP RATE 54 with filters installed.
You must use the filters in critical working conditions and, normally, when the fixture works outdoor.
You must remove the filters when the ambient temperature is over 35°C.
You must regularly clean the filters to allow the correct cooling of the fixture.**

INSTALLATION OF THE DUST PROOF FILTERS

⚠ **WARNING**   **You must operate with power supply disconnected from the fixture**
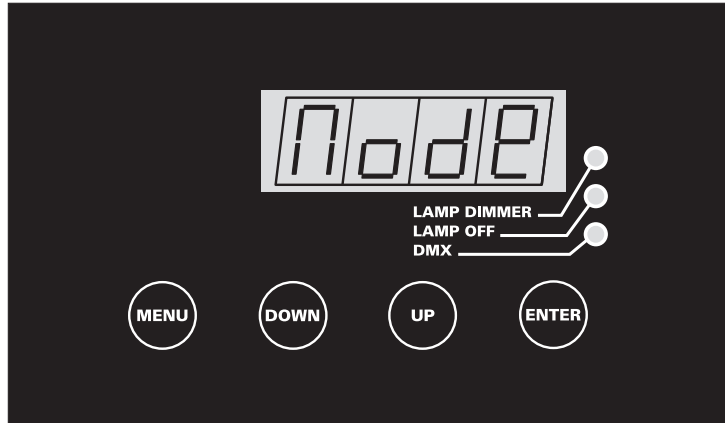

pict.3

You must remove the two side protective shells. The two filters must be assembled on the bulkheads at the bottom of the side brackets.

Pay attention to the installation: dust proof filters must stick correctly to prevent the entrance of the dust. You must control that the two filters completely cover the overall of the air entrance.

pict.4

CONTROL PANEL
On the control panel of the CityColor (pict.4) you can find, besides the display, the leds and the buttons to use to set the spot.

LED
* "DMX" led   flashing: DMX input present
                       off: no DMX input

* "LAMP" led   flashing: the lamp switching off is remotely controlled
                       off: lamp switched on

* "DIMMER" led flashing: the lamp is 33% dimmered
                       off: lamp switched on

BUTTONS
Four buttons are used to programme the spot:

* MENU   to select the programming options
* DOWN   to go backward in the selected options
* UP   to go forward in the selected options
* ENTER   to confirm the selected options

DISPLAY
Shows the various menus and the selected options.

SUMMARY OF THE PROGRAMMING FUNCTIONS OF THE CITYCOLOR

Addr	**nChn**
Mode	**teSt**
LHrS	**FLIP**
FHrS	**rSEt**

About twenty seconds after the switching on, the number of the software version will be shown on the display in "X_00" format. Afterwards the first of the eight available menus will appear:

Addr   to assign the DMX-512 address
Mode   DMX512 mode, master with pre-set selection, slave
LHrS   lamp working hours
FHrS   fixture total working hours
nChn   channels number
teSt   auto-test
FLIP   display inversion
rSEt   reset of the spot

To select any of the given options, press the MENU button up to when the required one is shown.

Addr (Address)
To visualise the DMX address press ENTER.
To modify the address press Down and Up buttons and, once the required address has been selected, press and keep ENTER pressed up to when the display stops flashing (it flashes to indicate that the selected option is different from the pre-set one). To go back to the options without making any change, press the MENU button.

Mode (Mode)
To visualise this mode press ENTER.
Use Down and Up buttons to change the mode and, once the required one has been selected, press and keep ENTER pressed up to when the display stops flashing (it flashes to indicate that the selected option is different from the pre-set one). The available options are: no (normal) for the functioning in DMX reception; Pr01…Pr15 (pre-set 01…15) for the master functioning with the re-spective game, SL (slave) for the functioning as slave. To go back to the options without any change, press the MENU button.

LHrS (Lamp Hours)
To visualise the number of working hours of lamp press ENTER.
The maximum countable number of hours is 3000. Exceeding this number, the display will show gr3t (greater than 3 thousands). To reset the counter press simultaneously buttons Down and UP: the display will show CLLH (clear lamp hours). To go back to the options without making any change, press the MENU button.

FHrS (Fixture hours)
To visualise the number of working hours of fixture press ENTER.
The maximum countable number of hours is 3000. Exceeding this number, the display will show gr3t (greater than 3 thousands). To reset the counter press simultaneously buttons Down and UP. A control of the memory will be run and all the default settings will be stored: the display will then show Init. If the memory is damaged, the display will show the message FAIL. To go back to the options without making any change, press the MENU button.

nChn (Number of Channel)
To visualise the number of channel press ENTER.
Use Down and Up buttons to change the channel and, once the required one has been selected, press and keep ENTER pressed up to when the display stops flashing (it flashes to indicate that the selected option is different from the pre-set one). It is possible to set 6 channels or 7 channels (remote reset and remote lamp switch off). To go back to the options without making any change, press the MENU button.

teSt (Autotest)
To insert the auto-test press ENTER and keep it pressed up to when the display shows the flashing message t-on (test on). To take off the auto-test press the MENU button. To go back to the options without making any change, press the MENU button.

FLIP (Display overturning)
The display visualisation can be standard or overturned: by pressing the ENTER button the two modes will be alternatively visible. The selected one will be immediately stored in the spot setting.
To go back to the options without making any change, press the MENU button.

rSEt (Reset)
To run the complete reset press ENTER and keep it pressed up to when the display shows the flashing message r-on (reset on). Once the reset procedure has been completed the spot will go back to the normal setting. To go back to the options without making any change, press the MENU button.

DRIVING THE CITYCOLOR WITH A DMX REMOTE CONTROLLER

• Select the requested DMX starting address by operating on the Addr option
• Select the requested number of channel with NChn option
• Connect the DMX signal between the fixture and the controller
• Check that the DMX led is flasing. (DMX signal present)
• If there is no signal, you must manually reset by operating on the RESET option

It is possible to choose a standard configuration occupying 6 DMX channels, or a enanched configurationoccupying 7 channels. Use the enanched configuration if you want to activate channel 7 which enables the reset of the motors and the switching off of the lamp from the controller.

6/7 CHANNELS MODE SELECTION

Press the MENU button on the control panel up to when the option nChn is shown on the display, select it by pressing ENTER and the set indication will appear (6 or 7 channels). If you want to activate channel 7 you must set 6 channels on the display. Pass through the numbers by pressing the buttons UP and DOWN: once you have set the required number, store it by pressing the ENTER button and keep it pressed up to when the display stops flashing (the flashing shows that the selected option is different from the one previously stored). To exit from the selected option without making any change press the MENU button.

Here below is shown the complete list of the functions of the CityColor.
The complete list of the DMX values can be found in appendix "A", page 26

7 CHANNELS

CH 1 =   Motor speed
CH 2 =   Cyan
CH 3 =   Yellow
CH 4 =   Magenta
CH 5 =   Dimmer
CH 6 =   Basic colors+rainbow
CH 7 =   Remote reset/Lamp off

6 CHANNELS

CH 1 =   Motor speed
CH 2 =   Cyan
CH 3 =   Yellow
CH 4 =   Magenta
CH 5 =   Dimmer
CH 6 =   Basic colors+rainbow

⚠ **WARNING**   **When using CYM color mixing, the basic colors channel # 6 must be set at: 00=DMX value**
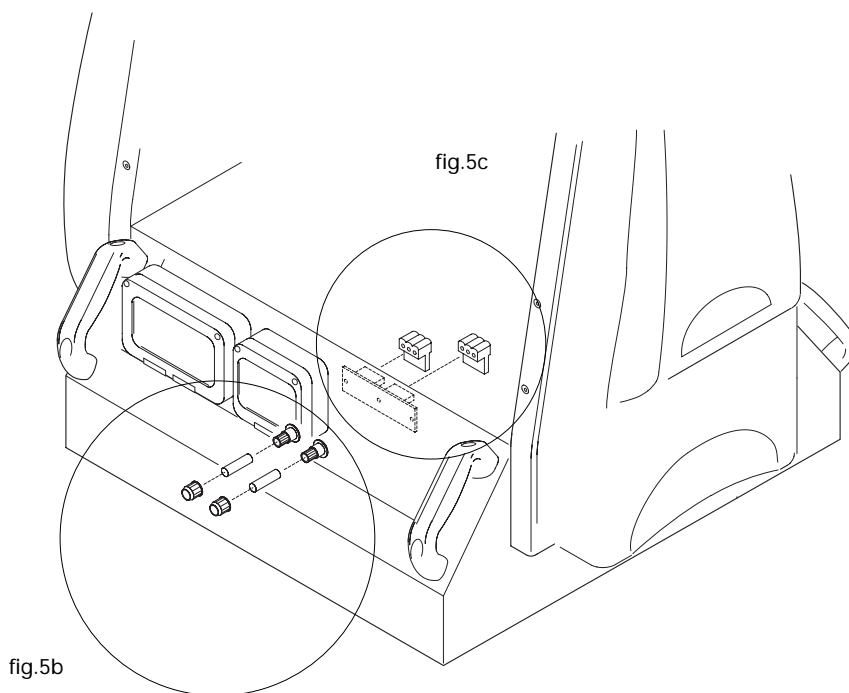
CONNECTION THE DATA LINK (DMX 512)
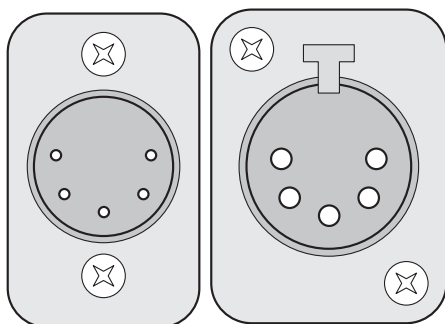
PIN	WIRE	SIGNAL
1	SHIELD	GROUND/RETURN/OV
2	INNER CONDUCTOR	DATA COMPLEMENT (-, INVERTED)
3	INNER CONDUCTOR	DATA TRUE (+, NON INVERTED)

pict.5a

pict.5

fig.5c

fig.5b

The connection of the DMX signal to the CITYCOLOR must be made by using the signal input XLR 5 pin connectors which are located on the control panel of the fixture. (pict.5)

The pin nomenclature of the connectors for the connection to the DMX signal is listed in the table. (pict.5a)

In order to avoid any problem in the signal transmission, it is warmly suggested to use a cable for high speed data transmission (sect. > 2x0.25 + gnd).

If the lines have a total length over 150-200 mts it is suggested to use a signal amplifier (art. 3004 - DMX repeter amplifier).
The usage of a normal microphonic or audio cable is suggested only for lines max 100 mts long.

To ensure the IP54 rate you must connect the DMX cable inside the base. Use the given cables fixing (pict. 5b) and connect by following the cables numbering (pict. 5c).

DMX TERMINAL LINE ⚠ **WARNING**

The wrong connection of the terminal line or its non-connection are probably the most frequent reasons for the defective functioning of the DMX line. The terminator is a resistor fitted between the two "data" lines (pins 2 and 3 of an XLR 5 pin connector) at the end of the cable furthest from the transmitter. The terminator resistor should have the same value as the impedance of the connection cable.
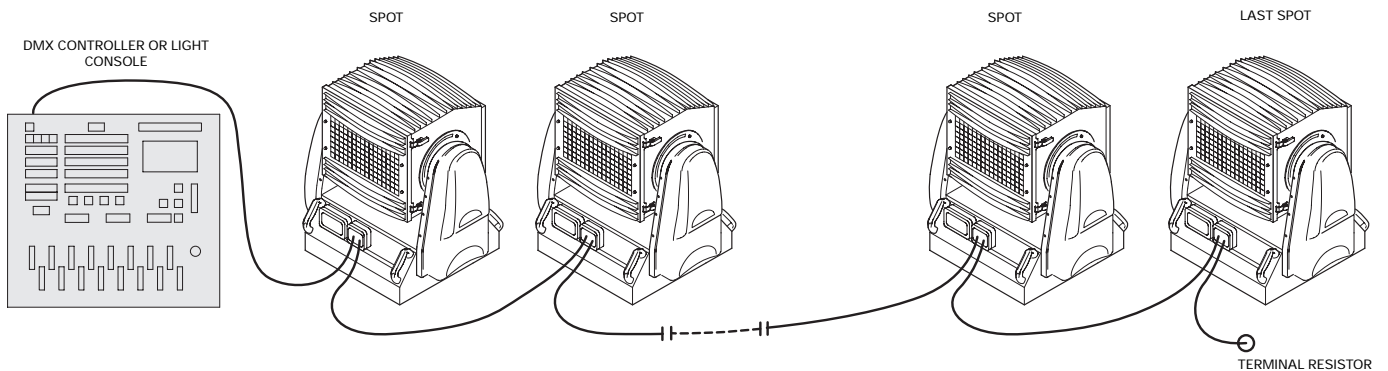
We supply a terminal with a 100 Ohm resistor.

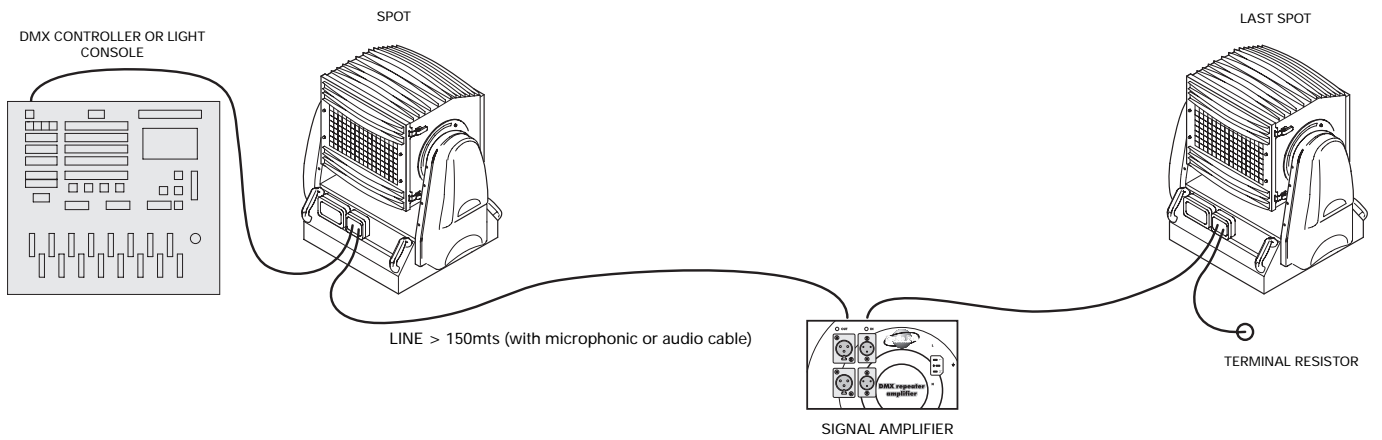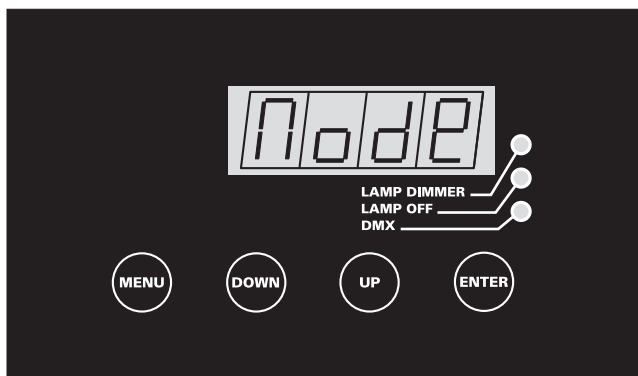It is recommanded that all DMX 512 systems have the termination resistor at the and of the line.
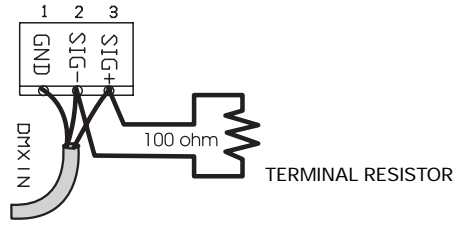
pict.6

EXAMPLE 1
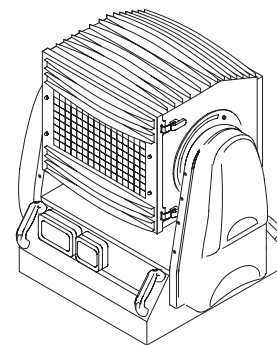**Connection controller-spot with 1 DMX 512 output**

EXAMPLE 2
Connection controller-spot to one DMX 512 output over 150mts long

pict.7

MASTER

USE OF THE CITYCOLOR IN AUTO-MODE
A short list of the games can be found in appendix "B", page 27

Press the MENU button on the control panel up to when the option MODE (pict. 7) is shown on the display, select it by pressing ENTER and the set indication will appear (no...SL). Use Down and Up buttons to change the mode and, once the required one has been selected, press and keep ENTER pressed up to when the display stops flashing (it flashes to indicate that the selected option is different from the pre-set one). The available options are: no (normal) for the functioning in DMX reception; Pr01…Pr27 (pre-set 01…27) for the master functioning with the respective game, SL (slave) for the functioning as slave.
To go back to the options without any change, press the MENU button.

Mode   **no**   use of the CityColor in DMX-512
       Pr1..Pr27   master functioning with execution of the 27 stored programme
       SL   use of the CityColor in SLAVE MODE

EXAMPLE OF CONNECTION AND SETTING OF 4 CITYCOLOR IN SYNCHRO - MODE

MASTER   SLAVE   SLAVE   SLAVE
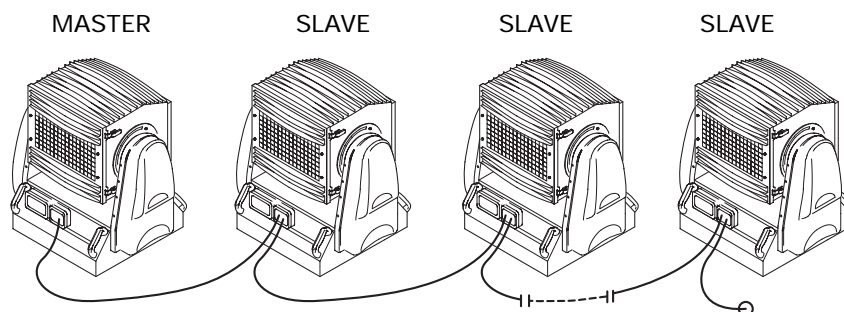
⚠ **WARNING**   **The cables are the same as the DMX standard cable**

EXAMPLE OF CONNECTION AND SETTING OF 4 CITYCOLOR IN INDIPENDENT AUTO - MODE

MASTER   MASTER   MASTER   MASTER
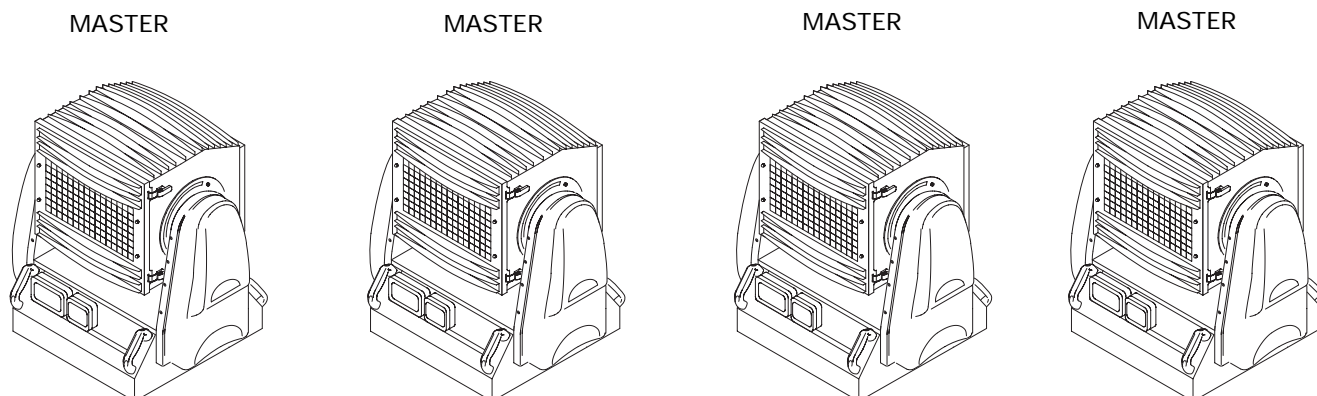
TROUBLESHOOTING GUIDE

Before calling for technical assistance, follow the recommended procedures in this appendix to solve many problems on your fixture.

CAUTION! • BEFORE YOU BEGIN:
Before you perform any troubleshooting procedures read the following personnel and equipment safety precautions:

1) Refer servicing to service personnel (Q.T.= qualified technician); no user serviceable parts inside
2) Wear hand and eye protection
3) Wait at least five minutes before accessing the lamp after operation
4) Disconnect the unit from power before removing any cover (Q.T.)

If the procedures do not solve your problem and you need to call for assistance, please provide the support technician with the follow information:

• Customer name
• Phone number and fax number
• Fixture serial number
• Message that are you displayed on your Citycolor display
• Description of the problem and the troubleshooting procedures that you have performed so far to diagnose and resolve the fault.

You can contact your authorized STUDIO DUE dealer or directly STUDIO DUE Technical Service.
(tel. +39.0761.352520 or fax +39.0761.352653 - e-mail: service@studiodue.com or customer@studiodue.com)

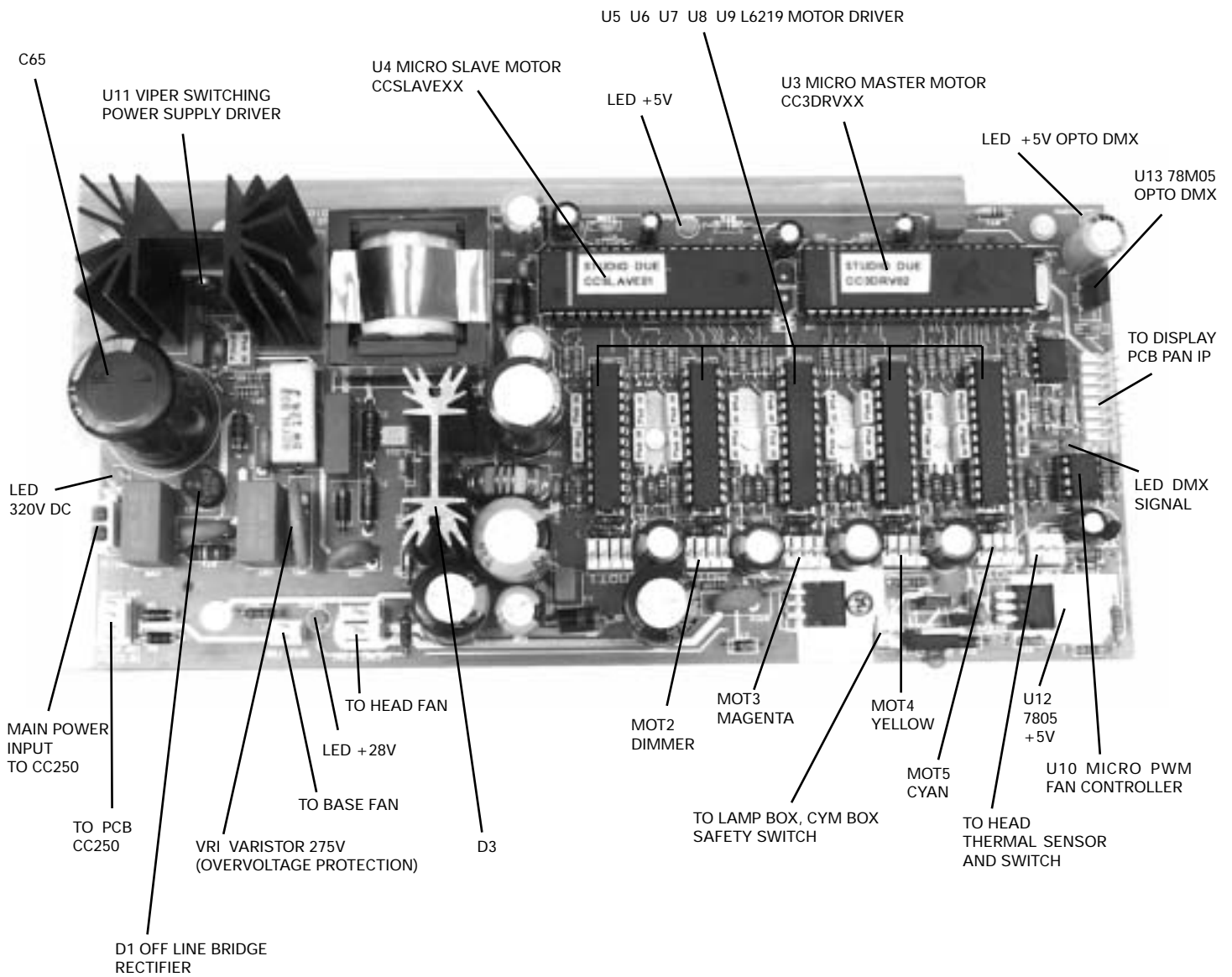## GENERAL TOUBLESHOOTING
Appendix "C" • Table A1

Problem	Pilot-tests (guide)	Probable causes	Suggested solutions
The unit does not turn on, the fans do not work. The unit is completely dead	Measure the mains voltage on the main connector. If you have the right value the main fuses are blown	No power. Power cord or connectors. Main fuses blown.	Connect power. Replace the cables and the connectors. Replace the mains fuse
The fans work, the display is turned off (no reset when switching on, no light).	The electronics do not work. Check that the leds on the motor board (CCIP PCB) are turned on, particularly check the +5V.	Short circuit on the +5V line. D4 has blown. U12 short circuit or blown	General test on the +5V line. Replace the D4 diode. Replace the U12.
The unit works normally but the lamp does not turn on	When switching on, you can ear the clack of the internal circuit breaker.	Bad lamp. Lamp is too hot to re-strike. Mains voltage is too low. The igniter is not working. Wrong ballast wiring.	Replace the lamp. Wait for the lamp cooling Measure the mains voltage. Replace the igniter. Check the ballast wiring
The unit works normally but the lamp does not turn on	When switching on, you can not ear the clack of the internal circuit breaker.	The unit is not properly closed (cover and/or lamp house) Fault on wiring, PCB, switches	Check and close all the eight mechanical latches Carry out the tests shown on page 14
The unit works normally but the lamp does not turn on.	The thermal switch on the head of the fixture is open. The last DMX channel on the controller (n. 7) is set on a value>250	Too high temperature inside the head. The fan on the head is not working The air-in grilles are stopped up. The REMOTE LAMP OFF command is on.	Wait that the lamp housing has cooled down. Check and if necessary replace the fan. Check and if necessary replace the connettors HEAD FAN, BASE FAN, THERMAL SENSOR. Clean the grilles Set the DMX channel on 0 value.

Ventilation of the head does not work normally	The electronic control of the fan is broken or not correctly connected	HEAD FAN connectors on the PCB CC are not ok U10 micro on the PCB CCIP broken	Check tension on the TO HEAD FAN connector Check the start-up test when switching on the fixture
Speed of the head fan is always the same	The electronic control of the fan is broken or not correctly connected	TO HEAD THERMAL SENSOR connectors are not ok Thermal sensor on the air output broken or disconnected U10 micro on the PCB CCIP broken	Check connections from TO HEAD THERMAL SENSOR connector to thermal sensor Check the thermal sensor Check the start-up test when switching on the fixture
The lamp is cutting out intermittently	The lamp is not working well. The values reached by the internal temperature are too high	The tension of the power supply is either too high or too low. The fan on the head is not working regularly The air grilles are stopped up.	Measure the mains voltage. Check and if necessary replace the fan. Check and if necessary replace the RFH resistor Clean the grilles
One of the function is not working well(ie. DIMMER)	Disconnect the power. Manually test if the DIMMER moves freely.	The stepper motor is damaged or the cable connected to the controller pcb is broken (ref. CCIP PCB). The motor drive (L6219) is broken.	Make all the tests reported in page 14

DATA LINK (512 DMX) TOUBLESHOOTING
Appendix "C" • Table A2

Problem	Pilot-tests (guide)	Probable cause(s)	Suggested Solutions
None of the Citycolors responds to controller. The DMX led is switched off.	Make sure that all the units are set in DMX mode. After the configuration reset all the fixtures	The controller is not connected to the fixtures. The cable from the controller to the first of the Citycolor is interrupted (or pin 2 and 3 are swapped or the cables are on short circuit)	Connect the controller properly. Use an already tested cable and connect the fixtures one by one.
One or more of the Citycolors do not respond to the controller or do it wrongly.	The non-working fixtures are always the same. The fixtures work accidentally. If one of the connecting cables is missing this may cause a random malfunctioning in addition to apparent normal operation. If the inverted-data is cut wire is cut (pin. 2 on the DMX connector) the line works intermittently.	Wrong DMX address in the fixture. Wrong data cables, or disconnected or shorted. One fixture has a broken DMX board. DMX link not terminated.	Set the proper address Check and if necessary replace the cables. Use a tested cable and replace only one at a time. Use a tested cable and exclude only one fixture at a time. Insert the terminator on the last fixture (pag.10)

MAIN BOARD CONNECTION

C65

U11 VIPER SWITCHING POWER SUPPLY DRIVER

U4 MICRO SLAVE MOTOR CCSLAVEXX

U5 U6 U7 U8 U9 L6219 MOTOR DRIVER

LED +5V

U3 MICRO MASTER MOTOR CC3DRVXX

LED +5V OPTO DMX

U13 78M05 OPTO DMX

TO DISPLAY PCB PAN IP

LED 320V DC

LED DMX SIGNAL

MAIN POWER INPUT TO CC250

MOT2 DIMMER

MOT3 MAGENTA

MOT4 YELLOW

U12 7805 +5V

TO HEAD FAN

LED +28V

MOT5 CYAN

U10 MICRO PWM FAN CONTROLLER

TO PCB CC250

TO BASE FAN

D3

TO LAMP BOX, CYM BOX SAFETY SWITCH

TO HEAD THERMAL SENSOR AND SWITCH

VRI VARISTOR 275V (OVERVOLTAGE PROTECTION)

D1 OFF LINE BRIDGE RECTIFIER

MOTORS BOARD

- POWER SUPPLY +30V Led On
- +5V Led
- +320V Led
- +5V DMX Led
- DMX signal
    Led flashing: the DMX signal is operating on the board
    Led off: check the U1 (6N137) and the DMX connecting cable (from PCB PAN IP)

- STEPPER MOTOR channel not working: (i.e. YELLOW):
1) Switch off the fixture and disconnect the YELLOW and CYAN cables
2) Connect the YELLOW cable on the CYAN connector
3) Switch on the fixture:
3a) If the YELLOW motor works normally it is necessary to replace the U6 (L6219)
3b) If the motor is still not working check with extreme attention the motor and the interconnecting circuits (cables and connectors). To check the cables and the motors you can measure the resistance as follows:
    between PIN 1 and PIN21 (on IC U6)r=~18ohm; between PIN 2 and PIN5 (on IC U6) r=~18ohm

- If the led +5V OPTODMX is off:
1) Disconnect TO DISPLAY PCB PAN IP connector; if the led is on check PCB PAN IP
2) Check U13 (78M05), L3, D6

- If the led +5V is off:
1) Disconnect TO DISPLAY PCB PAN IP connector; if the led is on check PCB PAN IP
2) Check D4, L2, U12

- If the led +28V is off:
1) Check if the led +320V is on, if it is ok:
1a) Check if U11 is in thermal drift **(ATTENTION on the heat dissipator there is dangerous tension!!!!)**
1b) Check if U5, U6, U7, U8, U9 are in short-circuit. Switch off the fixture. Remove all the chips from the socket.
    Switch on the fixture: if the led is on, insert the chips one by one in the sockets to find out which is in short-circuit.
1c) Check D3
1d) **If all the operations described above have not given any positive result, change U11**
2) If the led +28V is off together with the led +320V
2a) Check the MAIN POWER INPUT where you can measure the working voltage
2b) Check the main fuse, if it is blown check VR1 (normally it has a resistance = ∞). If it is in short circuit you must change it.
2c) Check D1 (Bridge Rectifier), if it is ok check C65.
2d) **If the fuse is still blown, change U11**