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TDC LED Derby DMX LED Derby light effect



User manual

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User manual version: 2.0 Creation date + author initials: 21-11-2013 RV Revision date + author initials: 16-07-2014 RV

Safety instructions



WARNING!



Always keep this device away from moisture and rain! Hazardous electrical shocks may occur!



WARNING!



Only connect this device to a matching power outlet. This device is intended to work on a specified AC currency. Connecting this device to power outlets with other voltages may result in permanent damage and possible hazardous situations, such as fire or electrical shocks!



WARNING!



Be careful with every operation of this device. Touching live wires inside and outside the unit may cause hazardous electrical shocks!

This unit must be operated by, or under the supervision of an adult. This device is not suitable for children.

Every person involved with the installation, operation and maintenance of this device has to:

- Be qualified
- Follow the instructions of this manual
- Make sure there is no damage caused by transport. If the device seems damaged from the outside, do not use it and contact your dealer for more information and consultation.
- To make sure the device maintains in perfect condition and for safe operation, it is necessary for the user to follow the instructions and warning notes of this user manual.
- Damage caused by improper use or modifications to the device are not covered by warranty.
- This device does not have any user-serviceable parts inside. Servicing of this device needs to be done by qualified technicians.

Important notes regarding safety and health:

- Never let the power cord come in contact with other cables. Handle the power cord and all connectors with the mains with caution.
- Never remove any warning or informative labels from the unit
- The ground contact always needs to be connected. Do not cover or remove the ground contact.
- Never leave cables lying around
- Do not open the device and do not modify any hard- or software of this unit.
- Do not insert this object into air vents.
- Do not connect this device to a dimmerpack.
- Do not switch the system on and off frequently as this will reduce the lifespan of the device.
- Do not drive the inputs of the fixture with a signal larger than required to work at full performance.
- Only use this device indoor, avoid contact with water, moist or other liquids. Do not place items filled with liquids on top of the unit.

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- Avoid nearby flames or heat sources, do not place this device near flammable liquids, gas or flammable items.
- Always disconnect the device when it is not in use for a longer period or time, when servicing is needed or when the device needs cleaning.
- Only handle the power cord by its connectors. Never pull the cable to remove a connector from its socket, as this could lead to damage and electrical shocks.
- Always operate this device with a stable AC current.
- Always operate this device with the AC ground wire connected to the electrical system's ground.
- Never use other types of cables than specified in the manual, do not use defective or bad functioning cables. Contact your dealer when the included or required cables do not work properly with this device.
- When the device has been exposed to large temperature differences (for example, transport from outdoor to indoor), do not connect the device immediately. Do not activate the unit until it has reached room temperature, as moist might build up inside the unit, which may cause shortcuts and/or electrical shocks.

Guidelines and types of use:

- This device is intended to be used by professionals on stage, in theaters, clubs and other equal venues.
- This device is not suitable for children and always needs to be operated by an adult.
- Only use the device when the environment is suitable and will not cause any damage. Do not use the product in moist or dusty environments, or where long-term damage may occur such as:
 - indoor swimming pools where chlorine is used.
 - Beaches, where sand and salt are present.
 - Outdoor, without roof protection
 - Indoor areas where intense heat sources are present or where the temperature exceeds levels which are comfortable for humans.
- Only use the included power adapter and only connect the device to a suitable power outlet with the correct output voltage. Connecting the device to a power outlet with the wrong type of voltage or using the product with a wrong type of power supply may cause permanent damage to the device.
- Avoid shocks and collision during use and transport. Do not transport the device while in use. Avoid brute force during the installation and operation of this device.
- Familiarize yourself with the functions of the device before use. Do not allow operation of the device by unskilled or unqualified people.
- Use of the device in other ways than described in this user manual may cause damage and injury. Ayra can not be held responsible for any damage or injury caused by improper use.

Storage and transport:

- This device is intended for mobile use. When transported, use the original packaging of the product, or a fitting flightcase, preferably filled with foam.
- This device is not intended for permanent use. Operation breaks will ensure that the lifespan of the device remains unchanged.
- If the device is not used for a longer period of time, disconnect it from its power source and store it in its original packaging, or in a fitting flightcase.
- Store the device indoor, dry and do not expose the device to extreme temperature differences.

Housing:

- Inspect the housing of the device frequently. Severe dents, cracks and missing screws should be avoided at all costs. Do not use the device when the housing is not in optimal condition. Contact your dealer or a skilled technician when in doubt about the state of the device
- Check the fixture and screws for corrosion. Corrosion should not be present on the fixture. Contact your dealer or a skilled technician when corrosion is found on the fixture
- Every power or signal chassis/connector should be mounted tightly. Do not use the device when connectors are loose.
- Do not use the power cord when the cores are visible. Contact your dealer for a replacement if needed.
- Avoid the buildup of dust and dirt. Clean the exterior of the fixture every month with a dry or damp cloth. When using the device intensively, the cleaning frequency needs to be increased.

Fuses:

- The main fuse of this device is to be found on the rear of the device. In most cases, directly next to the power inlet.
- Only replace a fuse for a new one with the same type and rating! Do not use a fuse with a higher or lower

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rating.

- Do not bridge the fuse with electrical wires, aluminum foil, as the fuse is used for protection against electrical shocks and short circuit.
- Always mount the fuse cover back to the fuse compartment.

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Box contents

Box contents

1x TDC LED Derby fixture
1x power cable to Schuko
1x power cable to UK plug

Unit and accessory inspection

- Always use the supplied power cable to connect the unit to a power supply. If the cable appears broken or has visible damage, do not use it.
- If the unit is not going to be used for a longer period of time, disconnect it from the power supply and store it in a dust-free environment.
- Always check the unit for possible damage before use. If you suspect that something is wrong with the unit, do not connect it to a power source! When you suspect that your unit is broken or damaged, contact your local dealer or a certified technician to inspect the unit.

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Device overview



1. Beam output
2. Adjustable bracket
3. Safety eye
4. Menu display with buttons
5. IEC Power outlet (Power link)
6. IEC Power inlet with fuse
7. Built-in microphone
8. DMX input (3P XLR)
9. DMX output (3P XLR)

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Setting up the unit

To activate the unit, connect the included power supply to the unit and a suitable 230V, 50 Hz power outlet.

The fixture will start up and show the last chosen setting on the display. Usually, with a new product, this is the DMX mode with the value set on 001.

The display shows several settings, each with the possibility to set several values.

Use the display and the menu buttons to set preferences, change settings and scroll through the menu. "Enter" is used to save a certain setting or preset, press "Menu" for at least 2 seconds to discard the change and return to the main menu.

The table below shows an explanation for every feature and value.

display	Mode	Function
ADDR	DMX address setting	A001-A512
SLND	Master/slave mode	Master (default) Slave 1 - Slave 2
SHND	Auto mode	Auto Speed 1-9
SOUN	Sound controlled mode	Sound controlled mode on/off
SENE	Sound sensitivity	Sound sensitivity 0-100
BLND	Black out mode	LED mode, YES- NO
DISP	Display inversion	Display Inversion, Idsp-dspl
TEST	Test mode	Self test
Hour	Using time of light	Fixture hours,0 ~ 9999
UERS	Firmware version	Firmware version xxx

ADDR: DMX address setting, used to determine the DMX starting channel. From this channel on, the fixture will respond to values, corresponding with the amount of channels that the fixture is occupying. (For example, when you turn the fixture in 3CH mode and set the starting address to value 003, the fixture will respond to channels 3, 4 and 5.)

SLND: When using the master/slave function, you need to connect 2 or more fixtures with XLR-XLR cable. The first fixture in line needs to be set as master, the others as Slave 1 or 2 (synchronized or mirrored performance). This way, the slaves will mimic the behavior of the master fixture for wonderful synchronized lighting shows.

SHND: Automatic mode, runs internal programs on a selectable speed.

SOUN: Activate or disable the built-in sound controlled mode. This way, the fixture will respond to the beat of the music.

SENE: The sensitivity of the built-in microphone is adjustable, to optimize the built-in sound controlled mode. For example, when your music source (speakers) are placed far away, you might want to increase the sensitivity to make sure that the fixture responds to the sound accurately.

BLND: Black out mode (S.L.S.) The Signal Loss Setting provides the right action when the fixture suddenly loses DMX signal. By activating the function, the fixture goes in blackout mode. By deactivation the mode, the fixture goes in sound controlled mode.

DISP: Display invert version – When using the fixture in a hanging setup, it is possible to flip the display, so the characters will be shown upside down. This makes reading the several statuses much easier.

TEST: Self test mode, to control all segments and LEDs

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Hour: The fixture shows how much hours it has been active. This is very practical for rental companies which need to perform service intervals on all fixtures after several hours of performing, to maintain optimal shape.

UERS: Displays the software version which is installed on the main PCB.

The TDC LED Derby is equipped with several working modes, each with its own advantages. For simple events there are stand-alone modes, for advanced situations there are options to create synchronized lightshows, or controlled with a DMX-512 controller. A short description for each mode can be found below:

Auto:

Automatic lightshow with a pre-programmed internal show, on a pre-defined speed.

Sound:

Automatic lightshow with a pre-programmed internal show, on the beat of the music, thanks to an internal microphone which senses the beat of the music and will change a step every time a beat is detected.

Slave:

In master/slave mode, it is possible to link several TDC LED Derby fixtures together, to create synchronized lightshows in the Auto or Sound mode. The first fixture in the chain needs to be set in the Auto or Music mode. All the next fixtures need to be set to Slave and will mimic the behavior of the first fixture. The master/slave function requires XLR – XLR cables (not included).

DMX:

The TDC LED Derby can be connected to a DMX-controller with standard XLR – XLR cable. While doing so, a DMX-terminator must be connected to the last fixture, at the end of the DMX-chain. This prevents reflections in the DMX-signal, which could cause flickering and unwanted behavior from your intelligent fixtures.

A DMX terminator is a XLR connector with a resistor of 120 Ohm, placed between pin 2 and 3 as a bridge.

With the following channel assignment, it is possible to control the TDC LED Derby:

5-ch Mode	Function	Value	
1	Function	000-007 008-190 191-200 201-247 248-255	Dimmer 0 Dimmer 1-100% Dimmer 100% Strobe slow to fast Stand alone
2	Red	000-255	0-100%
3	Green	000-255	0-100%
4	Blue	000-255	0-100%
5	Motor	000-255	0°~ 360°

Installation and maintenance

Installing the fixture in a hanging position

When installing the system in a hanging position (for example, on a truss construction), install proper G-clamps or half couplers (not included).

NOTE: When installing the system in a hanging position, the following list of safety precautions must be met:

- Use at least one regular clamp, for optimal stability and safety.
- Use at least one safety cable, capable of holding 3x the weight of the system. Safety cables must be installed in such a way that it is impossible for the system to fall down when one of the two mounting points breaks.
- It is prohibited to install the system by using only safety cables or chains!

Warranty is void when any of the above safety precautions are not met. Ayra can not be held responsible if any damage or injury occurs due to improper use of the system.

Transport

When using this fixture in mobile setups, provide sufficient protection during transport. Always use the provided transport box or a protecting flightcase to protect the system.

Replacing the internal fuses

First check whether a failing power supply may be the cause of malfunction. When you suspect that one of the internal fuses is broken, the fuse can be replaced by removing the fuse cover, located on the rear of the fixture, near the power inputs, outputs and control menu.

WARNING: Before checking the fuse, always disconnect the fixture from your wall outlet or any other power supply to prevent electric shocks.

Always replace a broken fuse with a fuse that has the same type and rating. After the fuse has been replaced, always close the fuse-cover. Reconnect the fixture to your power supply and check whether the problem is solved. When this does not solve your problem, contact your local dealer for help.

Spare parts

This unit has no user serviceable parts inside. When any damage to internal components occurs, contact your local dealer or a specialized technician in order to repair the fixture.

Cleaning:

Clean the housing of the fixture frequently with a damp cloth, to remove dust and/or dirt.

WARNING: Always disconnect the fixture from your wall outlet or other power supply and let the fixture dry before reconnecting it. This prevents possible electrical shocks.

The lenses can be cleaned with a non-aggressive glass cleaning solution, but is not recommended. Ayra recommends to clean the mirror and lens with a fine brush, while removing dust and/or dirt with a vacuum cleaner. Avoid touching the lenses with your bare fingers, to prevent fingerprints on the optics.

Checkup

To prevent dangerous situations, make sure your fixture is in optimal condition before using it. Check your fixture frequently by using the following checklist:

- All screws must be mounted tightly.
- Check all screws and metal parts for corrosion. No visible corrosion may be present.
- The exterior of your fixture must be in optimal condition. Check your fixture for dents, cracks or missing parts.
- Your installation spot must be in optimal condition. Check your installation spot for corrosion, cracks, dents and strength.
- Electrical components (connectors and cables) must be in optimal condition. Any form of damage (cuts, exposed wire cores or any other visual deformities should not be present.

If any visual or mechanical damage is detected, contact your local dealer or a specialized technician. Do not use a damaged or failing fixture.

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DMX lighting troubleshooting

If you have any problems with DMX lighting, consult this troubleshooting section to solve any difficulties with your product. If this troubleshooting section does not solve your problem, contact your dealer for more information and help.

This troubleshooting section contains the most frequent problems and is not a complete collection of possible faults, defects and solutions. The troubleshooting section applies for DMX controllers, DMX cabling and DMX lighting fixtures. It is possible that not all described problems, causes and solutions apply to your situation as product details may vary from product to product.

Problem	Possible Cause	Solution
The fixture can not be activated	Blown fuse	Check the fuse compartment for blown fuses and replace it if necessary.
	No power cable plugged in	Plug in the power supply to a matching power outlet
	Power switch is not in the ON position	Turn on the device by switching the ON/OFF switch to the ON position, if available
The fixture does not respond to DMX signals	Wrong DMX address	Set the DMX address to the right value
	DMX controller blackout function activated	Deactivate the blackout function of your DMX controller
	Faulty positioning of the DMX polarity switch on the controller	flip the polarity switch on your DMX controller
	No response or DMX activity signal LEDs active	Check your DMX cables for possible connection breaks and replace them if necessary.
The fixture does not respond to sound	Wrong working mode selected.	Check if the sound activated mode of the fixture is activated.
	Microphone sensitivity level is set too low	Increase the microphone sensitivity of the built-in microphone
	Speaker placed too far away or lack of bass	Place your lighting effect closer to your speakers (or vice versa) and/or increase low frequency volumes. The microphone will not be triggered with high pitched sounds.
The beam output is very low	Dirty/dusty optics	Clean the lens and/or other optics with a dry or damp cloth
	Dimmer is not set to full output	Set all dimmer levels to 100% on your DMX console
Sometimes the DMX signal is lost and/or some fixtures are flickering / behaving odd sometimes	Faulty/broken DMX cables	Check your DMX cables for possible connection breaks and replace them if necessary.
	Power cable interference on your	Avoid installing the DMX and

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	DMX signal	(high) power cables parallel to each other.
	No DMX terminator	Apply a DMX terminator at the end of your DMX-chain
	Signal loss or distortion in DMX values	Apply a DMX booster in your DMX chain after 32 fixtures or less. After a maximum of 32 fixtures the DMX signal needs to be refreshed.
Moving parts are not functioning well, values do not match and/or rattling sounds are noticed	Faulty stepping motor positioning	Possible value loss of stepping motors. Activate the reset function, or unplug the power supply and plug it back in to activate the reset program. This will reset all values to the original 0-point.
The fixture does not respond fast enough to the set speed on my DMX controller	Moving parts can not keep up with the set speed	Decrease the chase speed of your DMX controller, as the stepping motors of your fixture need some time to move from one point to another.
The fixture does not respond to all DMX-channels	Wrong DMX channel mode	Check the DMX channel mode of the fixture. If the wrong value is set, change the channel mode to a different setting and try again.

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Technical specifications

- Powerful LED derby effect
- High output thanks to 9W RGB LED chip
- Dozens of narrow, colourful and moving beams fill the room with light
- Razorsharp optics for intense beam projections
- Individual LED chip control with colour mixing, for creative colour combinations.
- Working modes: Automatic, music-controlled, master/slave, DMX
- Exciting built-in programs or full control with a DMX controller
- DMX operation: 5 channels
- Adjustable microphone sensitivity for music-controlled mode
- Menu display and buttons for easy adjustment of settings
- Low power consumption – High output – Long lifespan

Power:

- Voltage: AC100-240V 50Hz/60Hz
- Power: 20W

Physical:

- Dimensions: 325 x 270 x 240 mm (with folded bracket)
- Weight: 4 kg

Connectors:

- DMX: 3p XLR male and female
- Power: IEC Power input with fuse, Power Link output

Included accessories:

- Power cable IEC to Schuko
- Power cable IEC to UK plug



Connectors and wiring schematics:

DMX-connections:

DMX-output

XLR mounting-socket:



- 1: Ground
- 2: Signal (-)
- 3: Signal (+)

DMX-input

XLR mounting-plug:



- 1: Ground
- 2: Signal (-)
- 3: Signal (+)

Electrical wiring:

Cable	Pin	International
Brown	Live	L
Blue	Neutral	N
Yellow/Green	Earth	

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