TDC Seawave
Water Simulating Light Effect

User Manual

The information in this user manual is subject to change at any time without notice.

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Introduction

Thank you for purchasing the Ayra TDC Seawave. This versatile light effect creates water simulations that projects ripple effects, much like a swimming poolv onto walls or ceilings. This manual provides all the information you need to know about the product before you start using it.

We advise that you read this user manual in its entirety before unpacking the contents of the box, so that you are familiar with all of the functionality that this product has to offer. Please be sure to check that all of the parts and accessories listed below under 'Box Contents' are included in the package. In the event that the Ayra TDC Seawave does not function properly, or if you have any issues while operating it, please remove the plug from the power socket and contact your retailer for assistance.

Box Contents:
- Ayra TDC SeaWave Fixture
- Suspension bracket
- Hardware (2x tightening knobs, 2x rubber rings)
- Connection cable from IEC C13 to Schuko, 1.5 mm²
- 34 Degree and 60 Degree lens (1 pre-installed)

Please inspect the device and included accessories.
Should you discover that either the device or one or more of the included parts have been damaged or rendered defective while in transit, please contact your dealer directly.

Please note that the pictures in this user manual serve illustrative purposes only and may differ from the actual product.

Safety Instructions

WARNING!

Keep this device away from moisture, water and rain to avoid the chance of electric shocks!

WARNING!

Only connect this device to a suitable power socket. This device functions on a specific power voltage. If it is plugged into a power socket with a different voltage, it could result in permanent damage and even dangerous situations such as fire or electric shocks.

WARNING!

Be careful when operating this device. Touching the wires that are connected to the mains, inside or outside the device, could result in electric shocks!

Everyone involved with the installation, operation and maintenance of this device must:
- Be qualified.
- Be skilled.
- Have read the instructions included in this user manual.
- Be sure that neither the device nor the included accessories are damaged. Should the device or the included accessories be damaged, please contact your retailer for more information.
- Ensure that the device is in good working condition and is safe to operate. Please follow the advice and instructions as they are described in this user manual.

Damage caused by misuse and/or modifications made to the device are not covered by the warranty.

This device does not contain any parts that can be repaired or replaced by the user. Should maintenance or repairs be necessary, they must be handled by a qualified technician.

The light source of this device is not replaceable. If the light source no longer functions, the entire device needs to be replaced.

Important information regarding health and safety:
- Do not remove any labels or stickers from this device.
- Do not leave any cables lying around.
- The device should not be opened up and any hardware or software that may be present should not be modified.
- To achieve optimal performance, any inputs on the device should not be fed with a signal higher than necessary.
- The device should only be used indoors; contact with water, rain and moisture should always be avoided. Do not place any objects containing liquid on top of the device.
- Remove the device from any nearby flames or heat sources; do not place it near flammable fluids, gasses

or objects.
- Disconnect this device from a power source if it is not being used for a long period of time; if maintenance is necessary, or if it needs to be cleaned.
– Do not pull or tug on the cable to remove a connector as this may cause damage.
- Do not use any cables other than the ones described in this manual. Do not use defective cables. Please contact your retailer if the included or necessary cables do not function properly with this device.
- Only use this device with a stable AC power supply.
- Only use this device with power from a grounded power source.
- In the event that the device is exposed to extreme temperature changes (e.g. transported from a cold outdoor environment into a warm indoor environment), it should not be turned on until it has reached room temperature. This is necessary to prevent moisture (condensation) from forming inside the device, which could lead to electric shocks.

Guidelines and operation of this device:
- This device is intended for use by professionals on stage, in theatres, in clubs and in similar entertainment locations.
- This device is not suitable for use by children and should always be operated by an adult.
- This device is designed to create light effects for entertainment purposes. It is not suitable for household illumination.
- This device may only be used in a suitable environment where no damage to the device can occur. Do not use the device in moist or dusty environments such as:
    - indoor swimming pools where chlorine is used
    - beaches or any location where sand and/or salt is present
    - outdoors
    - indoors in spaces where intense heat sources are present, or where it can reach temperature levels that would be considered uncomfortable for a person
- Avoid impact and collisions during use and transport. Do not move or transport the device while it is in use. Avoid using excessive force when installing and operating the device.
- Any user must become familiar with the functions of this device before using it.
- Should the device not be used in the manner described in this user manual, damages or even injuries could occur. Ayra cannot be held responsible for any injuries or damages that occur as a result of improper use of this product.

Storage and transport:
- This product was designed for mobile use. Please only transport the device in the original packaging, or in a flight case with a suitable foam inlay.
- This device was not designed for permanent (24/7) use. The expected lifespan of the device will not be affected by occasionally turning the device off. Disconnect the device or turn off the power when it is not actively in use.
- If the device is not in use for a long period of time, it should be disconnected and stored in a dust-free environment.
- Do not expose the device to extreme temperature differences.

Housing:
- Inspect the device's housing frequently and always just before use. Avoid operating the device if there are any large dents or cracks, or if screws are missing. Do not use the device if the housing is not in good condition.
Contact your dealer or a qualified technician if you are unsure about the state of the device.
- Check the device and the screws for corrosion. Corrosion must not be present on this device. Contact your dealer or a qualified technician if you find any corrosion on the screws.
Every power and signal connector should be securely attached. Do not use the device if the connectors are not secure.
- Avoid dust and dirt build-up. Clean the device once a month by disconnecting it from the power supply and wiping it down with a dry or slightly moist cloth. If the device is used frequently, the cleaning intervals should increase.

Symbol Explanation:

	**WEEE:** Ensure that this device is disposed of properly. This product falls under the WEEE (Waste Electrical and Electronic Equipment) directive. The requirements of this directive apply to all manufacturers and producers of electronic devices in the EU. Do not throw this product away with regular rubbish. Please contact your local authority for more information about how to recycle and dispose of these products in your region. By recycling this product in the proper manner, we can work together to ensure that we can continue to enjoy these kinds of products and still protect the environment as much as possible from pollution.
	**CE:** The CE logo indicates that this product meets the European norms and requirements to which it must legally conform.
	**Suitable for indoor use only:** this product was only designed for indoor use. The maximum environmental temperature must not exceed 40 degrees Celsius (104 degrees Fahrenheit).

Contact:
Ayra professional lighting products
Verrijn Stuartweg 18
4462 GE Goes
The Netherlands
Please do not send any products to this correspondence address.
Should you wish to send in a product for repairs or for a refund, please contact your dealer for an RMA request (Return Merchandise Authorisation).

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Operation Guidelines for this Device

1. Suspension bracket with tightening knobs
2. Power output via IEC C13
3. Power input via IEC C14 with fuse holder
4. Safety eyelet for safety cable
5. Built-in microphone
6. DMX input and output via 3-pin XLR
7. LED display with Menu buttons
8. Light output with adjustable lens
9. Ventilation grille

Operation and Mounting

To activate the device, plug it into a mains socket. Once it's connected to an active power source, it will turn on automatically.

The device cannot be operated while it is still starting up and displays the ‘AYRA’ logo. Once the device has fully started up, it will automatically jump to the last mode and setting. Operation modes and other settings shown on the display can now be adjusted or changed via the menu buttons.

If a DMX signal is detected, the device shall automatically switch to DMX mode and the DMX address that was last used. For a new device, this is usually DMX address 001. The DMX address can of course be changed via the display and menu buttons.

The functions, modes and settings can be changed by using the display and menu buttons. Push ‘Enter’ to select a function or to confirm a change. Push ‘Up’ and ‘Down’ to change any values and push the ‘Menu’ button to return to the main menu. A few seconds after confirming a setting by pressing ‘Enter’, the device shall automatically return to the main menu and perform the set actions. This can be sped up by holding the ‘Menu’ button down for 2 seconds after confirming a setting by pressing ‘Enter’. This is usually necessary after adjusting the operation mode or DMX address.

The Menu includes the following options and fuctions:

Display	Mode	Function
ADDR / A001	DMX Address Configuration	Address A001 … A510
SHOW	Show Mode 0-15	SH0-SH15 Built-in Shows SH0 = Random sound reactive effects SH1-15 = Show selection
NASL	Slave Mode	Master Slave
SOUND	Sound-Controlled Mode	Modus: ON / OFF
SENS	Sound Sensitivity	0 - 100: Sensitivity in %
NANU	Manual Mode	Dimm: LED Intensity 0-255 Colo: Colour-indexing and rotation speed VaVe: Rotation direct (anti-clockwise or clockwise) 000-255
LED	LED Display On / Off when not in use	ON: Display always on OFF: Display off when not in use
DISP	Display Invert	ON / OFF
TEST	Test Mode	Test programme that runs the device through all functions to check calibration and for malfunctions
TEMP	Temperature Display in Degrees Celsius	Displayed in Degrees Celsius
FHRS	Duration of use	Displayed in hours
VER	Firmware Version	Displays current version of firmware installed. This cannot be adjusted or changed
RST	Reset device (selecting ‘Yes’ will cause a complete reset)	Yes / No

An explanation of all available functions can be found below:

ADDR: With this function, you can determine the DMX start address of the device. Set it channel 001, and the device will respond to DMX channel 1. Set it to channel 003, then the device will respond to DMX channel 3 and so on.

SHOW: Choose one of the in-built shows. 'SH 0' is a random show, SH1-15 is a SH 1-15 is a fixed show and OFF switches off the in-built shows completely so that the manual mode can be switched on.

NASL: Using the Master / Slave Mode, it's possible to connect several devices of the same type with one another, via DMX 3-pin XLR cables so that they perform exactly the same movements and functions at the same time. Therefore, single devices do not respond individually (or chaotically) and this results in a completely coordinated show. In the Master / Slave function, the first device in the circuit does not receive DMX signal.

PLEASE NOTE: When Slave mode is activated, the device shall wait for a signal from the designated Master device. Selecting an automatic or sound-controlled mode is then not possible! To cancel the Slave mode, enter the 'SLND' menu and select 'NAST'. This then sets the device to Master mode and the stand-alone functions can then be activated once more.

SOUN: Here, the built-in microphone can be turned off or on. If the music/sound-controlled option is switched on, the device will react in time to a beat and as such, the speed of any automatic shows cannot be adjusted and will be ignored .

SENS: This mode allows you to set the sensitivity of the in-built microphone. The further the device is installed from the sound-source, the higher the sensitivity of the microphone needs to be so that the sound is registered and the device responds accordingly and in time to the music. The microphone is able to withstand high sound pressure. However, if the sound is loud and the sensitivity is high, the microphone will find it more difficult to register the beat. Experiment with the sensitivity and distance from the positioning of the device to make sure you're getting the best possible signal and optimum performance.

LED: When the LED display is not in use, it can be switched off. By setting 'LED' to 'Off', this will prevent red symbols from illuminating when the device is being used in dark spaces. If you press of the menu buttons, the display shall immediately light up and show all necessary information. If the display is not used, it shall automatically switch off again within 30 seconds.

DISP: This function is useful when the device is suspended and the display screen is upside down. Use this function to flip the screen so that it can be easily read when the device is suspended.

TEST: When the device needs to be checked, use the 'TEST' function to test one or more devices at the same time. The device(s) shall continuously runs through a programme within which the LEDs are tested so that any deviations or defects can be easily detected. The device shall continue to repeat the programme until it is manually interrupted (when you switch the device to sound control, for example).

TEMP: The in-built temperature sensor registers the heat produced by the device. The temperature can be checked here and is displayed in Degrees Celsius.

FHRS: Here, the usage of the device can be checked. This shows the devices running time in hours and is useful when planning maintenance intervals.

VER: Here, the current firmware version is displayed. This cannot be changed or adjusted.

RST: When this function is activated, the device will be restarted. This has the same affect as turning the power off and on again. When it is reset, the device will recalibrate, reboot and return to the last selected operating mode or DMX signal (if detected).

Operation Modes

Please find a clear explanation of the differences between all available Operation Modes below and how they are affected by the menu functions listed above.

Auto:
In Auto Mode, you can select one of the Operation Modes in which the device is not dependent on external factors such as DMX signals, master signals or sound. Here, one of the basic programmes can be selected such as setting the alternating speed or correcting the intensity.

Sound:
The sound-controlled mode or 'sound mode' uses an in-built microphone that registers the beat of music and a runs a program based on this. For example, the device can move in virtual synchronisation with any music, providing an automatic light-show.

When no music is detected or only highs are present in the music due to a break, the device will continue its program at a slower pace. As such, the light show does not appear to come to a stand still. As soon as sound is registered by the microphone once more, the device shall continue its program in synchronisation with the beat.

Slave
In Slave Mode, it is possible to connect several devices of the same type with one another so that they perform exactly the same movements and functions at the same time. Therefore, single devices do not respond individually (or chaotically) and this results in a completely coordinated show. In theory, by adding a DMX booster, an unlimited number of Slave devices can be linked to one Master device. Initially, no problem would occur if 4 devices were linked and no DMX booster were added.

Please note: If you link devices of a different type or brand (even if they appear to have the same function), chaotic or strange behaviour can occur. This is often because certain functions are linked to the incorrect channels. This applies to DMX lighting of all types and brands.

DMX
The DMX Mode is the most comprehensive mode for optimum control over all functions of this device. Via DMX, it is possible to control either a limited or large amount of functions via a DMX controller or DMX software.

The device can be set to different channel modes so the channel layout (included below) is in alignment with the layout of your DMX circuit and with the functions you want to use.

3CH mode:

CH	Function	Value
1	Dimmer 0-100%	000-255
2	Lens Rotation	000-009 Stop 010-120 Clockwise rotation, fast to slow 121-134 Stop 135-245 Anti-clockwise rotation, slow to fast 246-255 Stop
3	Colour Macros and Programmes	000-010 White 011-021 White + Red 022-032 Red 033-043 Red + Green 044-054 Green 055-065 Green + Blue

066-076 Blue
077-087 Blue + Amber
088-098 Amber
099-109 Amber + UV
110-120 UV
121-127 UV + White
128-187 Clockwise colour wheel rotation, fast to slow
188-196 Colour wheel rotation stop
197-255 Anti-clockwise colour wheel rotation, slow to fast

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Installation and Connection Instructions

Now you know how the TDC Seawave works. So that the device is used in the correct and safest way, please make sure to follow the installation and connection instructions.

Make sure that children do not have access to the device or any connecting cables. If there are children present, make sure that they are supervised. Since the device can be placed upright or be suspended, it is possible for children to pull on any connecting cables and cause the device to fall. To prevent any accidents or injury, this must be taken into account whenever the device is being positioned and/or installed.

Upright use
When you want to place the TDC Seawave in an upright position, make sure that the device is placed on a stable surface such as a table, DJ booth or bar. The TDC Seawave is not fitted with rubber feet to grip the ground and stabilise the device. As such, always make sure that the light is positioned on a stable surface and that any cabling is secured so that no one can trip and knock or pull the device over.

Suspended use (brackets)
Should you want to suspend the TDC Seawave, use the suspension brackets, tightening knobs and rubber rings included.

Place the rubber rings between the bracket and the fixture. Then tighten the knobs on both sides to make sure that the bracket is secure.

If you want to suspend the device with a half-coupler or G-hook, this can be done by using the pre-drilled holes in the bracket. Standard hooks and/or brackets for 35 or 50 mm tubes (trusses or light stands) are available from your local retailer.

Hardware for mounting the TDC Seawave to the wall, ceiling, or beam is not included. Contact a specialist if you're not sure what hardware is required for your situation. A wooden beam and stone wall require different mounting methods.

When the TDC Seawave is suspended, you will need to attach a safety cable to the fixture. This is not included but is available at your local retailer. The device is fitted with an attachment point for hooking a safety cable. Once hooked on, the cable can be wrapped around the truss or light stand and attached once more to the same hook. This ensures the device is secure and prevents it from falling, even if one or both of the brackets should come loose and fail.

Ensure that the safety cable has a load capacity of 10x the weight of the armature and that the device can not fall farther than 30cm. You can wrap the safety cable around the truss or light stand several times to ensure the fall is as short as possible. The shorter the fall, the less chance of damage or injury.

Light source
The TDC Seawave uses powerful LED modules that are made even more powerful by a special lens that combines and focuses these beams, much like a magnifying glass. Since the human eye cannot adjust quickly enough to sudden and intense exposure to the level of brightness this device produces, never look directly into the lens at close range. While it won't result in permanent damage, it can cause temporary blind spots which may cause disorientation and discomfort.

Cooling
The TDC Seawave is cooled by fans fitted in the housing. These fan automatically switch on when the device is switched on. Make sure the fans and vents are not blocked and regularly check that they are functioning normally. Be aware that should the fans becomes clogged with substances like dust, smoke and moisture, this may impair operation and shorten the life-span of the device.

Parts and repairs
This product does not include spare parts and can not be repaired by the user. Any inspections and overall maintenance should be carried out by a specialist only.

Cleaning and maintenance
Clean the exterior of this device on a monthly basis with a dry, or slightly damp microfibre cloth. Ensure that the device is unplugged before cleaning it.

Check that all screws are intact and secured and tighten or replace them where needed. Check all metal parts of the device for any signs of corrosion. If corrosion is found, the device needs to be checked thoroughly.

Power Output
The TDC Seawave is fitted with IEC C14 power input and an IEC C13 power output. This makes it possible to link multiple devices with one single power supply, wall socket or power block.

The fuse fitted in this device is intended to protect that single device only. The input and output of the power supply are directly wired to each other.

Since a standard 230 V group with a maximum of 16A and with each device consuming energy, an IEC connector can only take 10A of current plus each TDC Seawave consumes energy itself, the output has a maximum load of 9A from other devices. This also includes a calculated safety margin.

This is more than enough room to connect multiple LED light effects to each other without having to use more than one power socket. Avoid connecting high-power equipment such as powerful smoke machines and high-output halogen lighting.

DMX terminator
When using the device in DMX mode, it is common for a ‘terminator’ to be used at the end of the DMX circuit. A DMX terminator is a terminal resistor, consisting of a 120 Ohm resistor placed between the second and third pins to eliminate any data reflections. Data reflections can cause strange behaviour in DMX controlled devices.

DMX-terminators are sold read-made but it is possible to solder a 120 Ohm resistor between the second and third pins of a standard, male XLR connector.

DMX Lighting Troubleshooting

If you have a problem with your DMX light effect, please consult the troubleshooting section for possible solutions. If, after consulting this section, the problem remains unresolved, please contact your retailer for more information and/or help.

This troubleshooting section contains information on how to solve the most common DMX light effect problems, but it does not and cannot cover every eventuality.

Problem	**Possible Cause**	**Solution**
The device can not be turned on	The fuse is blown	Check the fuse to rule out if it is blown or not. If it is blown, replace it with a new fuse of the same type and class.
	Power cable not plugged in	Check if the power cable is properly connected to the device and plugged into an active power socket.
The device is not reacting to DMX signals	Incorrect DMX start address	Check if the device has been set to the correct DMX start address
	DMX controller is set to ‘Blackout’	Make sure the ‘Blackout’ function on the DMX controller is not activated
	Make sure the polarity switch on the DMX controller is set correctly	Try to reverse the DMX polarity switch on the DMX controller.
	The device is not reacting, there is no DMX signal indication	Make sure the XLR cables are connected properly and are not defective. Replace if necessary.
The device does not react to sound/music	Incorrect operation mode	Make sure the sound-activated mode has been selected.
	The internal microphone sensitivity is too low	Check the microphone sensitivity level and increase it if necessary.
	The speaker is too far away, or is not producing enough low tones	Place the light effect closer to a speaker (or vice versa) and/or increase the low-frequency level. The built-in microphone is not triggered by high tones.
The amount of projected light is minimal	Dirty or dusty optics	Clean the lens and/or other optics.
	Dimmer is not completely open	Check if the dimmers on the spotlights themselves and/or if the master dimmer is completely open. Also, check the colour balance settings.
The DMX signal appears to be interrupted and some devices are flashing or behaving strangely	Damaged/defective cables	Check and replace the DMX cables if necessary.
	Power interference on the DMX signal	Avoid connecting signal cables parallel to power cables.
	DMX terminator missing	Close the DMX circuit with a DMX terminator

	Signal loss or interference in the DMX circuit	Close the DMX circuit with a terminator or connect a booster after maximum 32 fixtures.
The device is not reacting properly to DMX commands	Incorrect DMX channel mode	Check that the correct DMX channel mode is set
The operation mode can not be changed	The device is in Slave mode	If the device is in Slave mode, it will wait for a master signal unless there is a DMX signal present. Set the device to Master to activate the sound-controlled or automated operation modes.

Technical Specifications

Specifications:

- Light effect with water simulation projection
- Separately rotating lens and colour wheel with adjustable rotation speed and direction
- Powerful 100 Watt white LED light source
- Diverse operation modes for stand-alone (static or programme) and controlled use (sound, automatic, Master / Slave, DMX)
- DMX controlled via 3 DMX channels
- DMX controlled via 3-pin XLR inputs and outputs
- LED display with Menu buttons
- Integrated microphone for sound-controlled operation
- Adjustable microphone sensitivity
- Colour wheel: red, green, blue, amber, white, UV
- Colour blends, static colours or split colours can also be selected
- 34 and 60 Degree projection lenses included
- Power supply: 100-240V AC, 50/60 Hz
- Power factor: 0.684 at 110V, 0.635 at 220 V
- Maximum temperature when in normal use: 52°C
- Optimum use temperature: Between 0°C and 40°C
- Maximum power consumption: 107 W
- Fuse: F3AL250V
- Dimensions: 277 x 260 x 227 mm
- Weight: 3.9 kg

Light Output:

Output Colour	**34 Degrees**	**60 Degrees**
Red	558 Lux at 1m	453 Lux at 1m
Green	3260 Lux at 1m	3700 Lux at 1m
Blue	7760 Lux at 1m	4980 Lux at 1m
White	22400 Lux at 1m	15000 Lux at 1m
Amber	10350 Lux at 1m	9440 Lux at 1m
UV	4290 Lux at 1m	3420 Lux at 1m