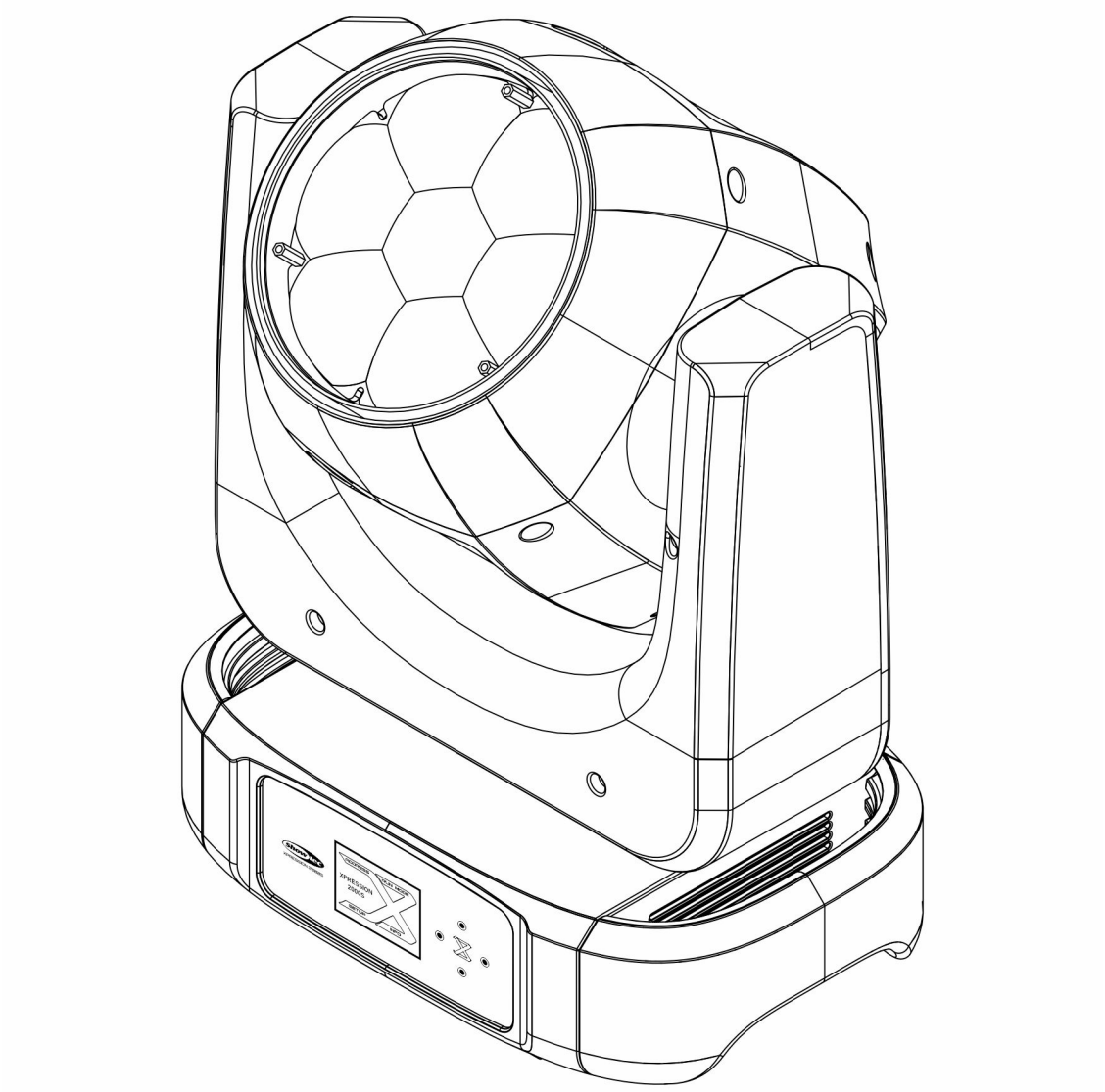
# USER MANUAL

ENGLISH

V1.0



# Xpression 2000W - WashBeam

Product code: 47040

## Preface

Thank you for purchasing this Showtec product.

The purpose of this user manual is to provide instructions for the correct and safe use of this product.

Keep the user manual for future reference as it is an integral part of the product. The user manual shall be stored at an easily accessible location.

This user manual contains information concerning:

- Safety instructions
- Intended and non-intended use of the device
- Installation and operation of the device
- Maintenance procedures
- Troubleshooting
- Transport, storage and disposal of the device

Non-observance of the instructions in this user manual may result in serious injuries and damage of property.

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Design and product specifications are subject to change without prior notice.

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Highlite International B.V. – Vestastraat 2 – 6468 EX Kerkrade – the Netherlands

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# 1. Introduction

## 1.1. Before Using the Product

**Important**
**Read and follow the instructions in this user manual before installing, operating or servicing this product.**

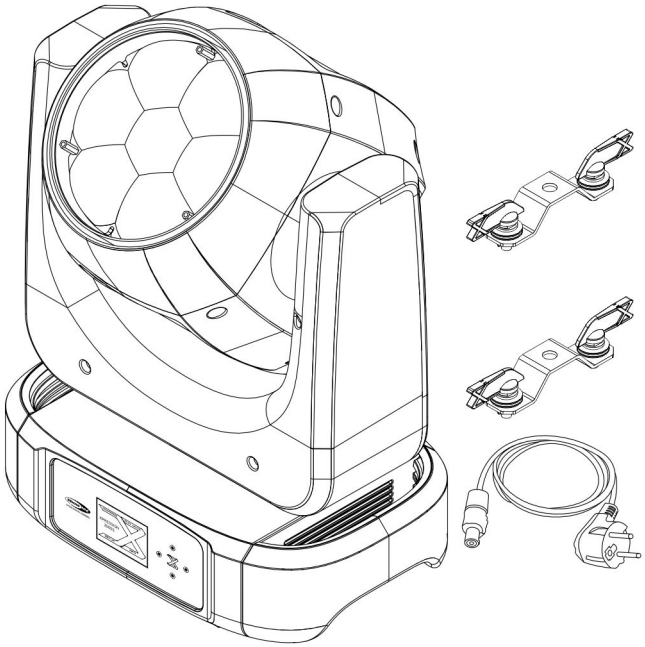
The manufacturer will not accept liability for any resulting damages caused by the non-observance of this manual.

After unpacking, check the contents of the box. If any parts are missing or damaged, contact your Highlite International dealer.

Your shipment includes:

- Showtec Xpression 2000W - WashBeam
- Schuko to Power Pro cable (1,5 m)
- 2 x quick-lock brackets
- User manual

**Figure 1**



## 1.2. Intended Use

This device is intended for professional use as a moving head. It can be installed only indoors. This device is not suitable for households and for general lighting.

Any other use, not mentioned under intended use, is regarded as non-intended and incorrect use.

## 1.3. LEDs Lifespan

The light output of the LEDs gradually decreases over time (lumen depreciation). High operating temperatures contribute to this process. You can extend the lifespan of the LEDs by providing adequate ventilation and operating the LEDs at the lowest possible brightness.

## 1.4. Text Conventions

Throughout the user manual the following text conventions are used:

- Buttons: All buttons are in bold lettering, for example "Press the **UP/DOWN** buttons"
- References: References to parts of the device are in bold lettering, for example: "turn the **adjustment handle (05)**". References to chapters are hyperlinked
- 0–255: Defines a range of values
- Notes: **Note:** (in bold lettering) is followed by useful information or tips

## 1.5. Symbols and Signal Words

Safety notes and warnings are indicated throughout the user manual by safety signs.

Always follow the instructions provided in this user manual.



**DANGER** Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.



**WARNING** Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.



**CAUTION** Indicates a potentially hazardous situation, which, if not avoided, may result in minor or moderate injury.



**Attention** Indicates important information for the correct operation and use of the product.



**Important** Read and observe the instructions in this document.



**Electrical hazard**



**Eye damage hazard**



Provides important information about the disposal of this product.

## 1.6. Symbols on the Information Label

This product is provided with an information label. The information label is located on the base plate of the device.

The information label contains the following symbols:



This device is designed for indoor use.



This device shall not be treated as household waste.



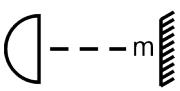
Read and follow the instructions in the user manual before installing, operating or servicing the device.



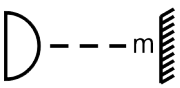
This device falls under IEC protection class I.



Caution: Risk of electric shock, Disconnect input power before opening.
Warning: This appliance must be earthed.




Minimum distance from lighted objects




Minimum distance from other objects

# 2. Safety



**Important**
**Read and follow the instructions in this user manual before installing, operating or servicing this product.**

The manufacturer will not accept liability for any resulting damages caused by the non-observance of this manual.

## 2.1. Warnings and Safety Instructions



**DANGER**
**Danger for children**

For adult use only. The device must be installed beyond the reach of children.

- Do not leave any parts of the packaging (plastic bags, polystyrene foam, nails, etc.) within the reach of children. Packaging material is a potential source of danger for children.



**DANGER**
**Electric shock caused by dangerous voltage inside**

There are areas inside the device where dangerous touch voltage may be present.

- Do not open the device or remove any covers.
- Do not operate the device if the covers or the housing are open. Before operation, check if the housing is firmly closed and all screws are tightly fastened.
- Disconnect the device from the electrical power supply before service and maintenance, and when the device is not in use.



**DANGER**
**Electric shock caused by short-circuit**

This device falls under IEC protection Class I.

- Make sure that the device is electrically connected to ground (earth). Connect the device only to a socket-outlet with a ground (earth) connection.
- Do not cover the ground (earth) connection.
- Do not bypass the thermostatic switch or fuses.
- Replace fuses only with the same type and rating.
- Do not let the power cable come into contact with other cables. Handle the power cable and all connections with the mains with caution.
- Do not modify, bend, mechanically strain, put pressure on, pull or heat up the power cable.
- Make sure that the power cable is not crimped or damaged. Examine the power cable periodically for any defects.
- Do not immerse the device in water or other liquids. Do not install the device in a location where flooding may occur.
- Do not use the device during thunderstorms. Disconnect the device from the electrical power supply immediately.



**WARNING**
**Risk of epileptic shock**

Strobe lighting can trigger seizures in photosensitive epilepsy. Sensitive persons should avoid looking at strobe lights.



**WARNING**
**Possible eye damage caused by high light intensity**

Possibly hazardous optical radiation emitted from this device.

- Do not look at the operating light source. May be harmful to the eye.
- Do not look at the light source with optical instruments that may concentrate the light output.
- Make sure that persons are not looking directly into the light source when the device lights up suddenly. This can happen when the device is powered on, when it receives a DMX signal, or when certain menu items are selected.
- Disconnect power before servicing.
- Wear protective goggles if looking into the light source during service or maintenance.



**CAUTION**
**Risk of injury due to movement of the device**

The head of the device can move quickly. Persons standing near the device could get injured or scared.

- Make sure that there are no persons close to the device when you turn on the device and during operation.
- Keep body parts away from the moving parts of the device when servicing and during maintenance. Long hair or loose clothing can be entangled during the rotation of the moving head.



**Attention**
**Power supply**

- Before connecting the device to the power supply, make sure that the current, voltage and frequency match the input voltage, current and frequency specified on the information label on the device.
- Make sure that the cross-sectional area of the extension cords and power cables is sufficient for the required power consumption of the device.



**Attention**
**General safety**

- Do not lift the device holding it by the projector head. This may damage the mechanics. Use the transport handles when handling the device.
- Do not insert objects into air vents.
- Do not connect the device to a dimmer pack.
- Do not switch the device on and off in short intervals. This reduces the device's life.
- Do not shake the device. Avoid brute force when installing or operating the device.
- Change the lens or the LEDs if they are visibly damaged to such an extent that their effectiveness is impaired, for example by cracks or deep scratches. Contact your Highlite International dealer for more information, as servicing can be performed only by instructed or skilled persons.
- If the device is dropped or struck, disconnect the device from the electrical power supply immediately.

- If the device is exposed to extreme temperature variations (e.g. after transportation), do not switch it on immediately. Let the device reach room temperature before switching it on, otherwise it may be damaged by the formed condensation.
- If the device fails to work properly, discontinue use immediately.



**Attention**
**For professional use only**
**This device must be used only for the purposes it is designed for.**

This device is intended for professional use as a moving head. Any incorrect use may lead to hazardous situations and result in injuries and material damage.

- This device is not suitable for households and for general lighting.
- This device is not designed for permanent operation.
- This device does not contain user-serviceable parts. Unauthorized modifications to the device will render the warranty void. Such modifications may result in injuries and material damage.



**Attention**
**Before each use, examine the device visually for any defects.**

Make sure that:

- All screws used for installing the device or parts of the device are tightly fastened and are not corroded.
- The safety devices are not damaged.
- There are no deformations on housings, fixings and installation points.
- The lens is not cracked or damaged.
- The power cables are not damaged and do not show any material fatigue.



**Attention**
**Do not expose the device to conditions that exceed the rated IP class conditions.**

This device is IP20 rated. IP (Ingress Protection) 20 class provides protection against solid objects greater than 12 mm, such as fingers, and no protection against harmful ingress of water.

## 2.2. Requirements for the User

This product may be used by ordinary persons. Maintenance may be carried out by ordinary persons. Installation and service shall be carried out only by instructed or skilled persons. Contact your Highlite International dealer for more information.

Instructed persons have been instructed and trained by a skilled person, or are supervised by a skilled person, for specific tasks and work activities associated with the installation, service and maintenance of this product, so that they can identify risks and take precautions to avoid them.

Skilled persons have training or experience, which enables them to recognize risks and avoid hazards associated with the installation, service and maintenance of this product.

Ordinary persons are all persons other than instructed persons and skilled persons. Ordinary persons include not only users of the product but also any other persons that may have access to the device or who may be in the vicinity of the device.

## 2.3. Personal Protective Equipment

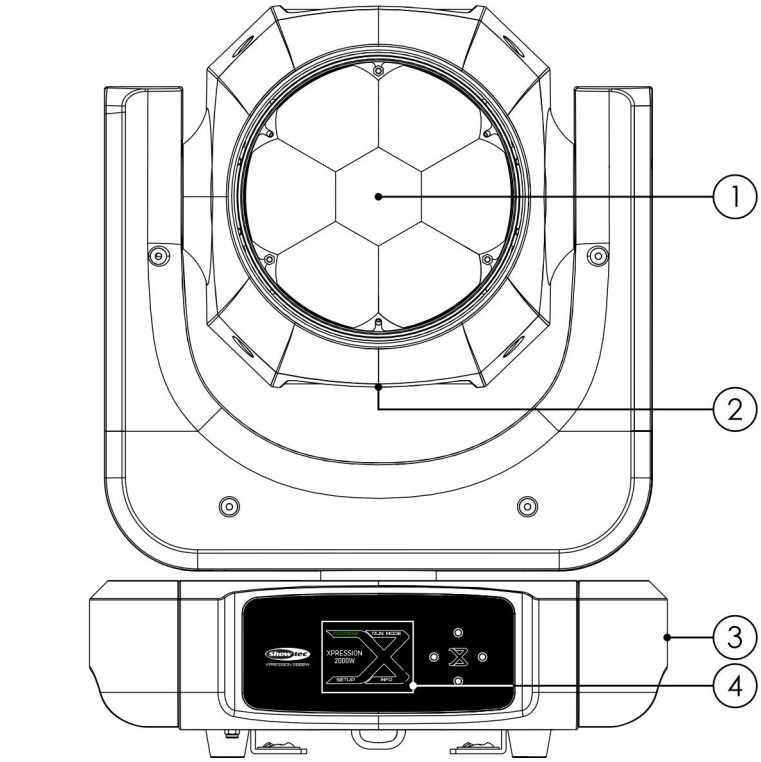
During installation, deinstallation and rigging wear personal protective equipment in compliance with the national and site-specific regulations.

# 3. Description of the Device

The Showtec Xpression 2000W - WashBeam is a LED moving head with an adjustable beam angle between 3.8° and 35° and an output of 3166 lm. It features seven 40-watt RGBW LEDs, motorized zoom, precise 16-bit pan and endless tilt, and adjustable PWM (1200–15000 Hz). Control modes include DMX/RDM, master/slave, manual, auto, built-in program, and stand-alone. The included 2 quick-locks can be adjusted to multiple positions for flexible mounting. The base features 2 transport handles.

## 3.1. Front View

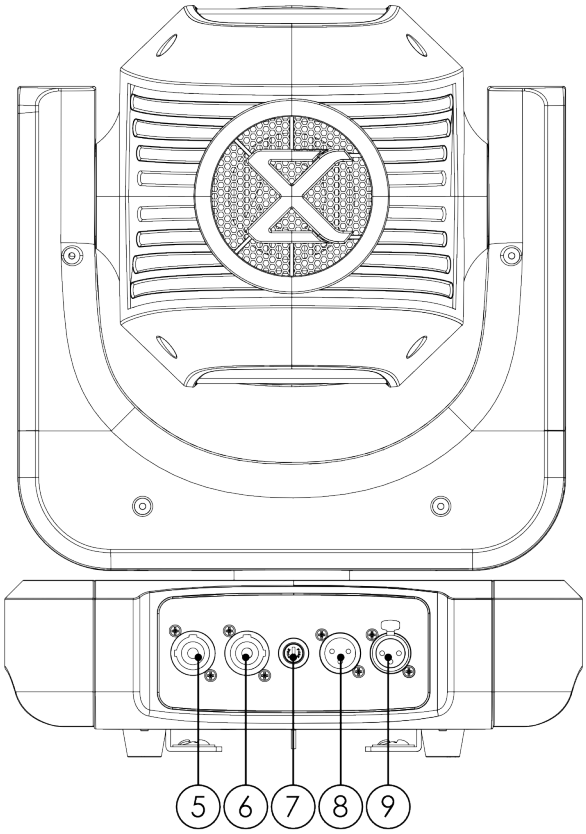
**Figure 2**




01) Lens
02) Cooling
03) 2 x Transport handles
04) Control panel: LCD screen and control buttons

## 3.2. Back View

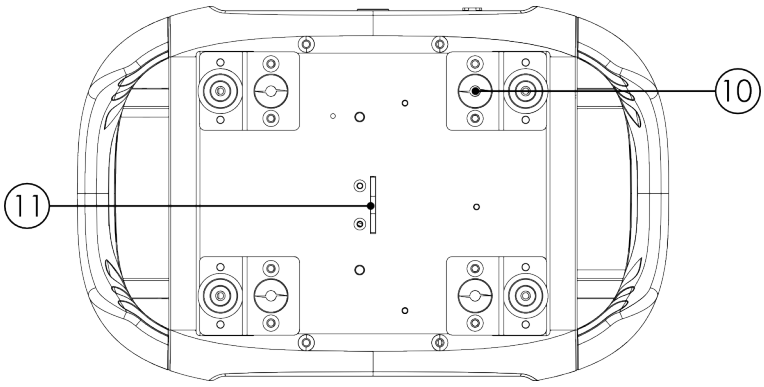
**Figure 3**




05) Power Pro power connector IN
06) Power Pro power connector OUT
07) Fuse (F5 A, 250 V)
08) 3-pin DMX signal connector IN
09) 3-pin DMX signal connector OUT

## 3.3. Base Plate

**Figure 4**




10) 4 x Mounting holes for quick-lock brackets
11) Opening for a safety cable

## 3.4. Product Specifications

| | |
|---|---|
| Model: | Xpression 2000W - WashBeam |

| **Source:** | |
|---|---|
| Light source type | LED |
| Light source quantity | 7 |
| Light source power | 40 W |
| LED color type | RGBW |
| Refresh rate | 1200 Hz |
| Refresh rate (max.) | 15 kHz |
| Illuminance @ 2 m | 62931 lx |
| Illuminance @ 3 m | 27696 lx |
| Illuminance @ 5 m | 10069 lx |
| Luminous flux (total) | 3166 lm |
| CRI | 70 |

| **Optical:** | |
|---|---|
| Beam angle minimum (circular) | 3,8° |
| Beam angle maximum (circular) | 35° |
| Zoom type | Motorized |

| **Control and Programming:** | |
|---|---|
| Control mode | Auto / Built-in Program / DMX / Manual / Master Slave / Stand Alone |
| DMX channels | 13 / 21 |
| Protocols | DMX / RDM |
| Display | LCD |
| Fan mode | Yes |
| Dim curve | Linear / Square / I-Square / S-Curve |

| **Dynamic Effects:** | |
|---|---|
| Dimmer | 0–100 % |

| **Movement:** | |
|---|---|
| Pan | 540° |
| Tilt | 360° |
| Pan/tilt resolution | 16-bit |
| Continuous movement | Yes |

| **Electrical Specifications and Connections:** | |
|---|---|
| Power supply | 100–240 V AC 50/60 Hz |
| Power consumption | 282 W |
| Fuse | 5 A |
| Power connector IN | Power Pro blue |
| Power connector OUT | Power Pro grey |
| DMX connector | XLR 3P IN/OUT |
| DMX connector IN | XLR 3P |
| DMX connector OUT | XLR 3P |

| **Mechanical Specifications:** | |
|---|---|
| Length | 205 mm |
| Width | 310 mm |
| Height | 409 mm |
| Weight | 9,8 kg |
| IP rating | IP20 (indoor use only) |
| Housing | Metal / plastic |
| Color | Black |

| **Product Properties:** | |
|---|---|
| Cooling | Convection/axial fan |

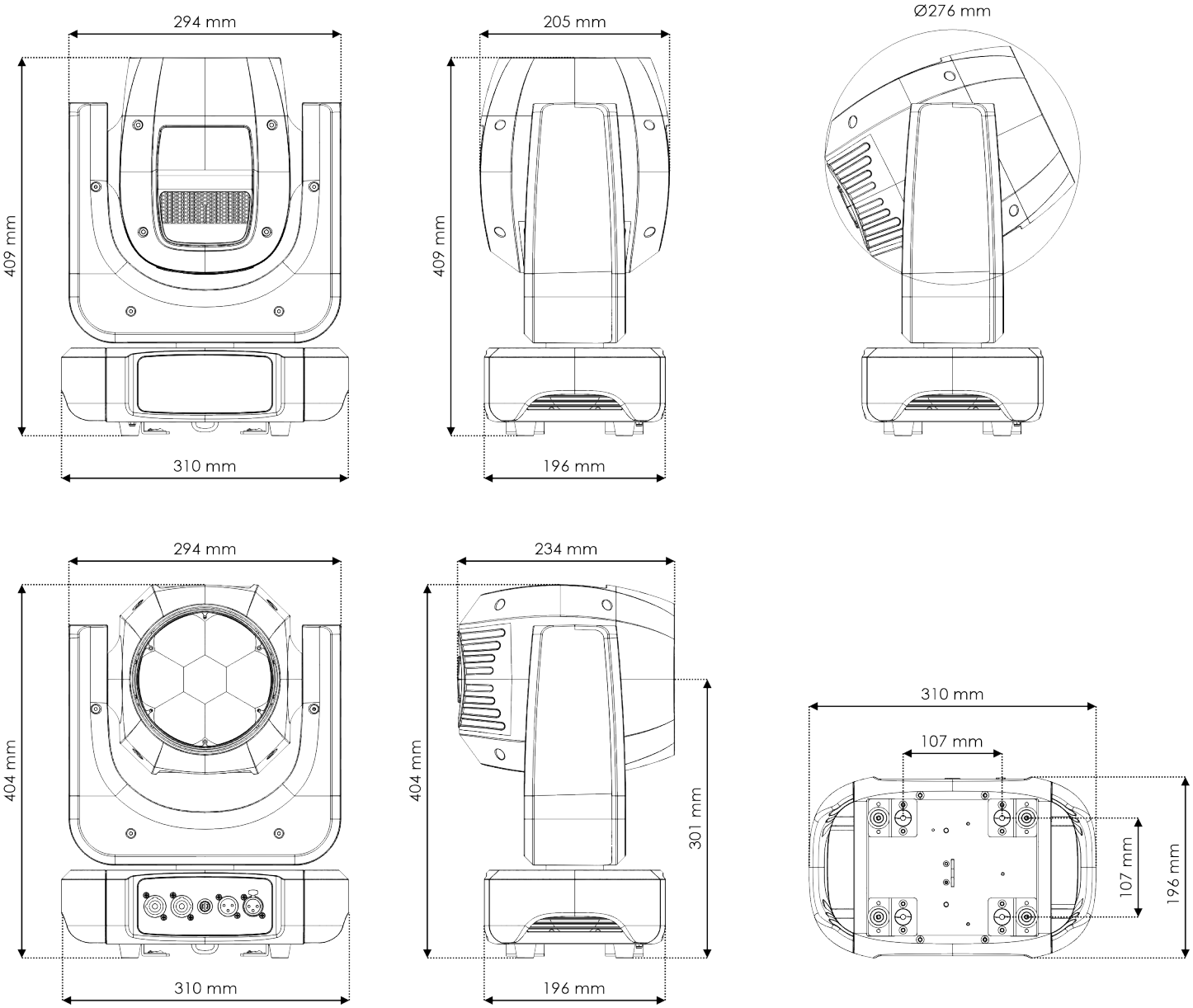
| **Rigging:** | |
|---|---|
| Mounting options | Quick-lock |
| Safety attachment | Yes |

| **Thermal Specifications:** | |
|---|---|
| Maximum ambient temperature | 40 °C |
| Maximum surface temperature | 70 °C |

| **Included Items:** | |
|---|---|
| Included cables | Power Pro cable |
| Included rigging | Quick-lock bracket |

## 3.5. Dimensions

**Figure 5**




## 3.6. Optional Accessories

You can additionally purchase the following accessory:

- 47090 Case for 4x Xpression
- 47099 Quicklock bracket for Xpression series

Contact your Highlite International dealer for more information.

# 4. Installation

## 4.1. Safety Instructions for Installation

**WARNING**
**Incorrect installation can cause serious injuries and damage of property.**

If trussing systems are used, installation must be carried out only by instructed or skilled persons.

Follow all applicable European, national and local safety regulations concerning rigging and trussing.

## 4.2. Personal Protective Equipment

During installation, deinstallation and rigging wear personal protective equipment in compliance with the national and site-specific regulations.

## 4.3. Installation Site Requirements

- The device can be used only indoors.
- The minimum distance to other objects must be bigger than 0,5 m.
- The maximum ambient temperature $t_a$ = 40 °C must never be exceeded.
- The relative humidity must not exceed 50 % with an ambient temperature of 40 °C.

## 4.4. Rigging

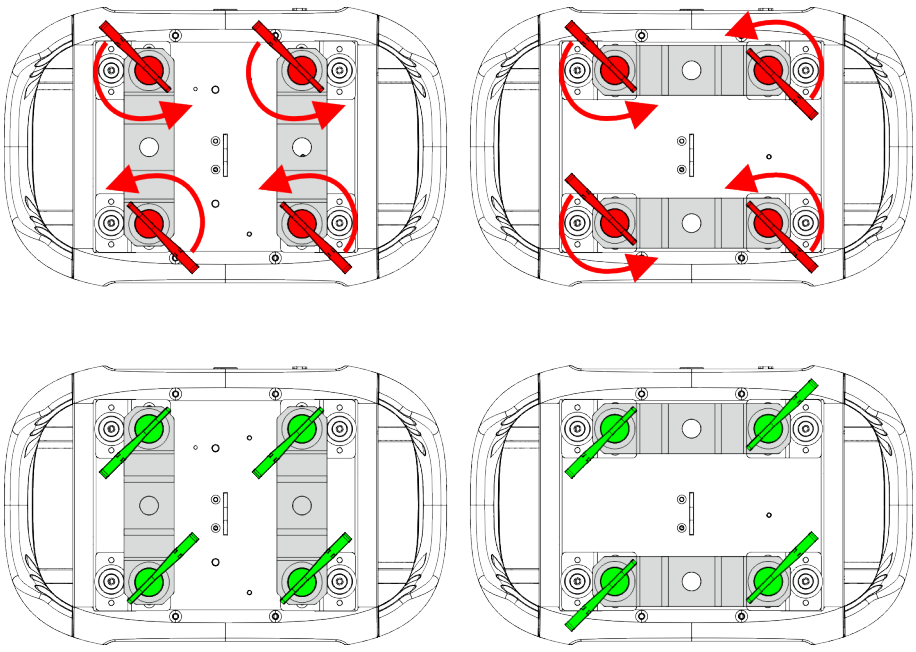
The device can be positioned on a flat surface or mounted to a truss or other rigging structure in any orientation. Make sure that all loads are within the pre-determined limits of the supporting structure.

**CAUTION**
**Restrict the access under the work area during rigging/derigging.**

To mount the device, follow the steps below:

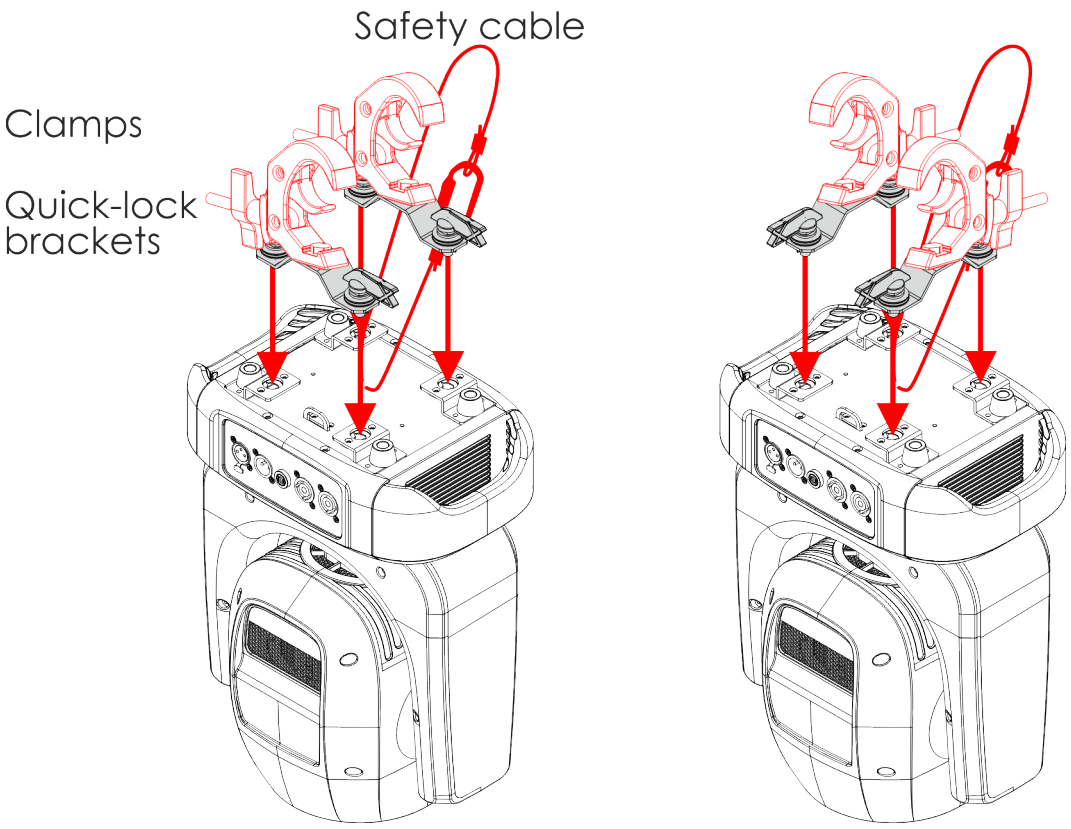
01) Fasten the 2 quick-lock brackets, supplied with the device, on the **mounting holes for quick-lock brackets (10)**. You can position the quick-lock brackets in 2 ways.
02) Lock the 2 quick-lock brackets by turning the locking mechanism of the quick-lock brackets clockwise.

**Figure 6**



03) Install the clamps. Make sure that you use clamps suitable for attaching the device to a truss.

**Figure 7**




04) Attach the device to the supporting structure. Make sure that the device cannot move freely.
05) Secure the device with a secondary suspension, for example a safety cable. Make sure that the secondary suspension can hold 10 times the weight of the device. If possible, the secondary suspension should be attached to a supporting structure independent of the primary suspension. Put the safety cable through the **opening for a safety cable (11)**.

## 4.5. Connecting to Power Supply



**DANGER**
**Electric shock caused by short-circuit**

The device accepts AC mains power at 100–240 V and 50/60 Hz. Do not supply power at any other voltage or frequency to the device.

This device falls under IEC protection class I. Make sure that the device is always electrically connected to the ground (earth).

Before connecting the device to the socket-outlet:
- Make sure that the power supply matches the input voltage specified on the information label on the device.
- Make sure that the socket-outlet has a ground (earth) connection.

Connect the device to the socket-outlet with the power plug. Do not connect the device to a dimmer circuit, as this may damage the device.

## 4.6. Power Linking of Multiple Devices

This device supports power linking. Power can be relayed to another device via the power OUT connector. Note that the input and the output connectors have different designs: one type cannot be connected to the other.

Power linking of multiple devices must be carried out only by instructed or skilled persons.



**WARNING**
**Incorrect power linking may lead to overload of the electrical circuit and result in serious injuries and damage of property.**

To prevent overload of the electrical circuit, when power linking multiple devices:

- Use cables with sufficient current-carrying capacity. The power cable supplied with the device is not suitable for power linking of multiple devices.
- Make sure that the total current draw of the device and all connected devices does not exceed the rated capacity of the power cables and the circuit breaker.
- Do not link more devices on one power link than the maximum recommended number.

Maximum recommended number of devices:
- at 100–120 V: 4 devices Xpression 2000W - WashBeam
- at 200–240 V: 8 devices Xpression 2000W - WashBeam

# 5. Setup

## 5.1. Warnings and Precautions

**Attention**
**Connect all data cables before supplying power.**
**Disconnect power supply before connecting or disconnecting data cables.**

## 5.2. Stand-alone Setup

When the Xpression 2000W - WashBeam is not connected to a controller or to other devices, it functions as a stand-alone device. It can be operated manually via the control panel or in auto mode.

For more information refer to Control Modes (see 6.2. Control Modes on page 20).

## 5.3. DMX Connection

### 5.3.1. DMX-512 Protocol

You need a DMX serial data link to run light shows of one or more devices using a DMX-512 controller.

The Xpression 2000W - WashBeam has 3-pin DMX signal IN and OUT connectors.

The pin assignment is as follows: pin 1 (ground), pin 2 (-), pin 3 (+).

Devices on a serial data link must be daisy-chained in a single line. The number of devices that you can control on one data link is limited by the combined number of the DMX channels of the connected devices and the 512 channels available in one DMX universe.

To comply with the TIA-485 standard, no more than 32 devices should be connected on one data link. In order to connect more than 32 devices on one data link, you must use a DMX optically isolated splitter/booster, otherwise this may result in deterioration of the DMX signal.

**Note:**

- Maximum recommended DMX data link distance: 300 m
- Maximum recommended number of devices on a DMX data link: 32 devices

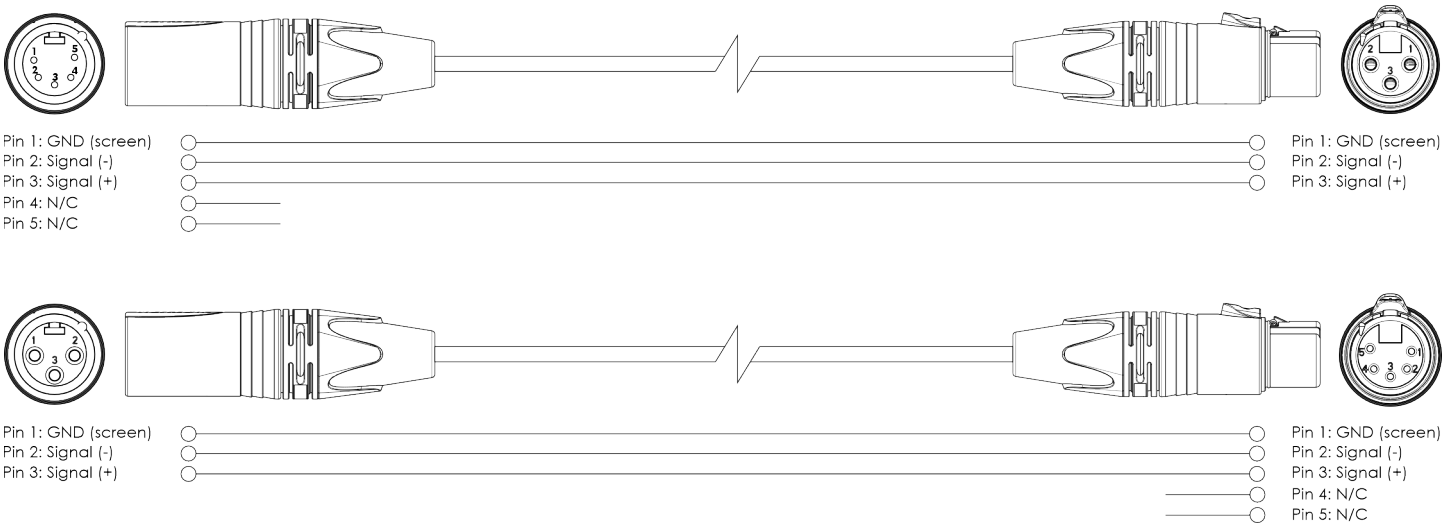
### 5.3.2. DMX Cables

Shielded twisted-pair cables with 3-pin XLR connectors must be used for reliable DMX connection. You can purchase DMX cables directly from your Highlite International dealer or make your own cables.

If you use XLR audio cables for DMX data transmission, this may lead to signal degradation and unreliable operation of the DMX network.

When you make your own DMX cables, make sure that you connect the pins and wires correctly as shown in the figure below.

**Figure 8**

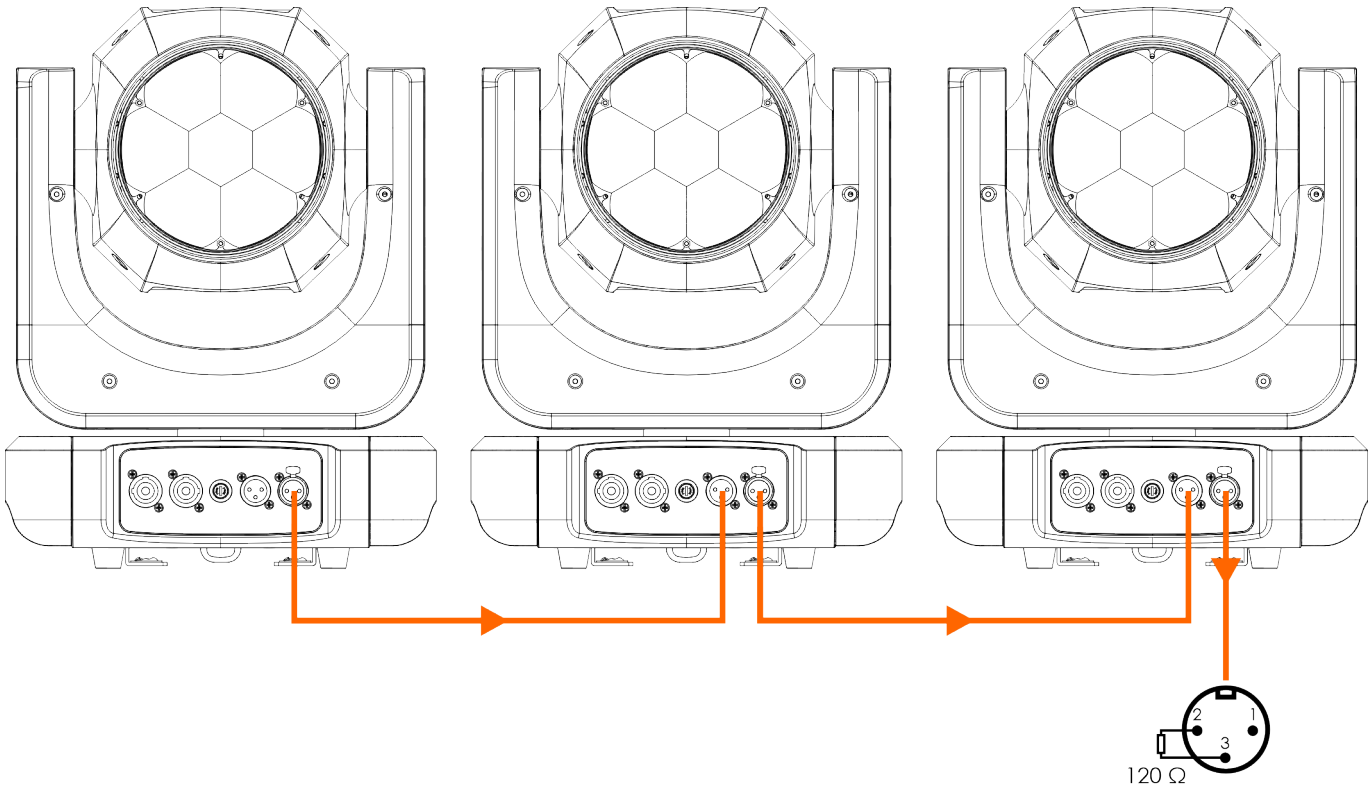



### 5.3.3. Master/Slave Setup

The Xpression 2000W - WashBeam supports master/slave control mode. To connect multiple devices in a master/slave setup, follow the steps below:

01) Connect the DMX OUT connector of the 1st device to the DMX IN connector of the 2nd device with a 3-pin DMX cable.
02) Repeat step 1 to connect all devices in a daisy-chain.
03) Connect a DMX terminator (120 Ω resistor) to the DMX OUT connector of the last device on the data link.
04) Set the 1st device on the data link as a master device (see 6.6.2.5. Slave on page 31).
05) Set the remaining devices as slave devices (see 6.6.2.5. Slave on page 31).

**Figure 9**

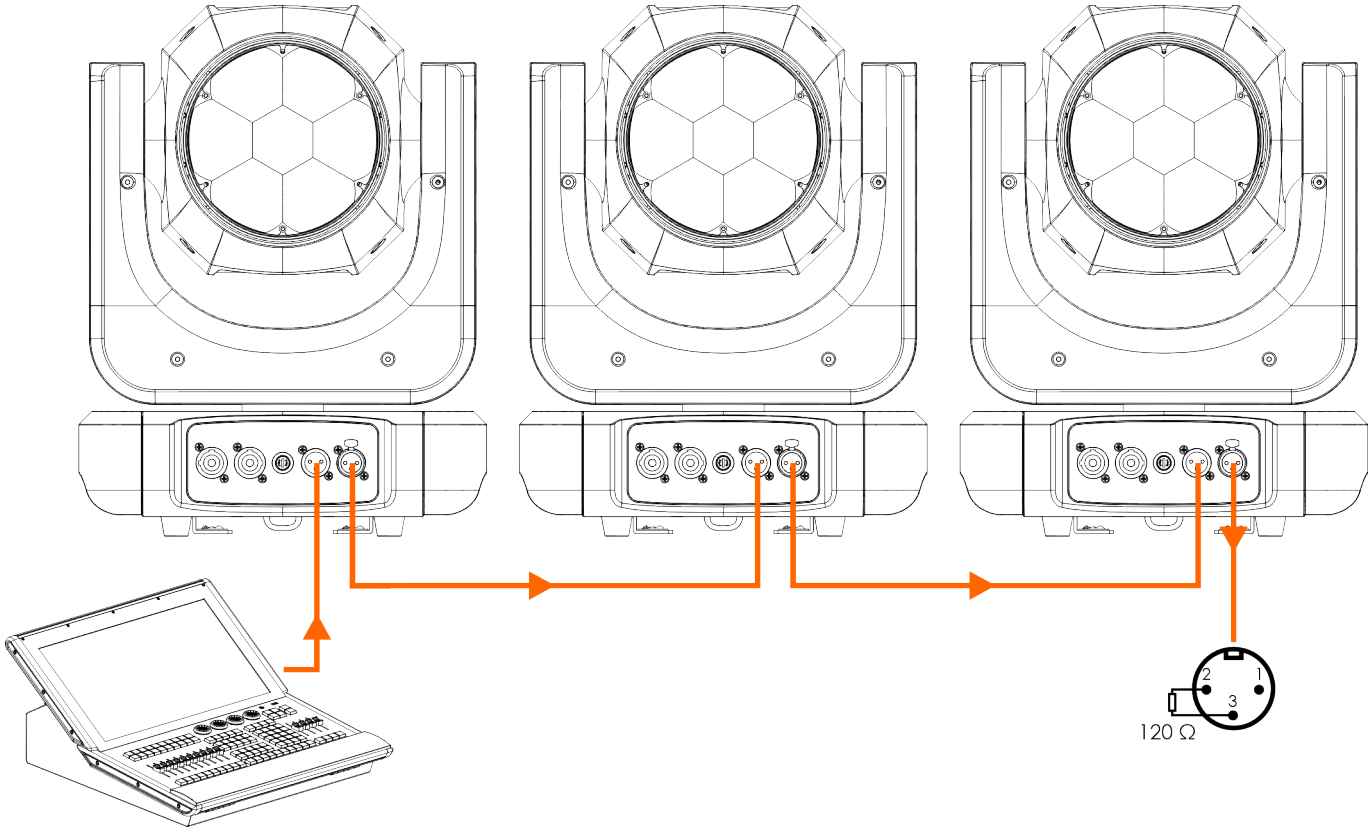


### 5.3.4. DMX Linking

To connect multiple devices on one DMX data link, follow the steps below:

01) Use a 3-pin DMX cable to connect the DMX OUT connector of the lighting controller to the DMX IN connector of the 1st device.
02) Connect the DMX OUT connector of the 1st device to the DMX IN connector of the 2nd device with a 3-pin DMX cable.
03) Repeat step 2 to connect all devices in a daisy-chain.
04) Connect a DMX terminator (120 Ω resistor) to the DMX OUT connector of the last device on the data link.

**Figure 10**




### 5.3.5. DMX Addressing

In a setup with multiple devices, make sure that you set the DMX starting address of each device correctly. The Xpression 2000W - WashBeam has 2 personalities: 13 channels and 21 channels.

If you want to connect multiple devices on one data link and use them in 21-channel mode, for example, follow the steps below:

01) Set the starting address of the 1st device on the data link to 1 (001).
02) Set the starting address of the 2nd device on the data link to 22 (022), as 1 + 21 = 22.
03) Set the starting address of the 3rd device on the data link to 43 (043), as 22 + 21 = 43.
04) Continue assigning the starting addresses of the remaining devices by adding each time 21 to the previous number.

Make sure that you do not have any overlapping channels in order to control each Xpression 2000W - WashBeam correctly. If two or more devices are addressed similarly, they will work similarly.

# 6. Operation

## 6.1. Safety Instructions for Operation

**Attention**
**This device must be used only for the purposes it is designed for.**

This device is intended for professional use as a moving head. It can be installed only indoors. This device is not suitable for households and for general lighting.

Any other use, not mentioned under intended use, is regarded as non-intended and incorrect use.

**Attention**
**Power supply**

Before connecting the device to the power supply, make sure that the current, voltage and frequency match the input voltage, current and frequency specified on the information label on the device.

## 6.2. Control Modes

The Xpression 2000W - WashBeam supports the following control modes:

- Stand-alone: Manual mode, auto mode, custom program mode
- Master/slave: Manual mode, auto mode, custom program mode
- DMX-512: 13 channels, 21 channels

For more information about how to connect the devices, refer to Setup (see 5. Setup on page 17).

To operate the device manually as a stand-alone device:

Adjust the parameters of the device in the Manual menu (see 6.6.2.2. Manual on page 27).

To run the built-in programs in auto mode without a DMX controller:

Select one of the 5 auto programs in Auto Mode (see 6.6.2.3. Auto on page 28).

To run a custom program in program mode without a DMX controller:

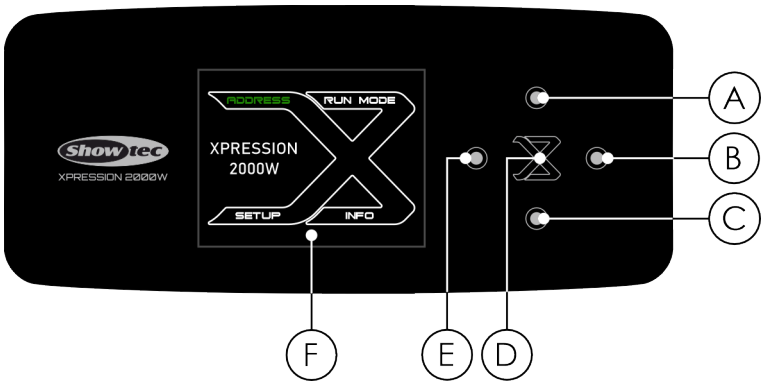
01) Create a custom program in Program Mode (see 6.6.2.4. Program on page 28).
02) Adjust the parameters of the selected built-in program.

To operate the device with a DMX controller:

01) Select DMX512 as control mode in the Run Mode menu (see 6.6.2. Run Mode on page 26).
02) Set the DMX starting address of the device in the DMX Address menu (see 6.6.1. DMX Address on page 26).
03) Select the DMX channel mode in the Run Mode menu (see 6.6.2. Run Mode on page 26). Refer to DMX Channels (see 6.7. DMX Channels on page 37) for a complete overview of all DMX channels.

## 6.3. Control Panel

**Figure 11**




A) UP touch button
B) RIGHT touch button
C) DOWN touch button
D) ENTER touch button
E) LEFT touch button
F) LCD display

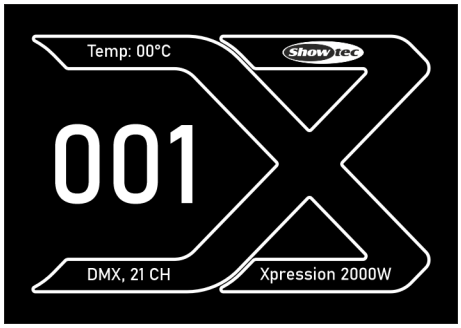
- Use the **LEFT** button to exit the current submenu, to return to the Main Menu and to return to the start screen.
- Use the **RIGHT** button to navigate through the menus.
- Use the **UP/DOWN** buttons to navigate through the menus or to increase/decrease numeric values.
- Use the **ENTER** button to open the desired menu, to confirm your choice or to set the currently selected value.

## 6.4. Start-up

After the device is connected to power supply, the device will perform a reset. During the reset the display shows a splash screen with the Showtec logo and the name of the device:



Immediately afterwards, the display shows the start screen. The start screen provides information about the current LED temperature and control mode of the device. For example:




Touch the **ENTER** button to enter the main menu.

**Note:**

If no button is pressed, after 60 seconds the display turns off. You can change this setting in the Display Time submenu (see 6.6.3. Setup on page 31). If the DMX signal is lost, the display blinks.

## 6.5. Menu Overview

| Level 1 | Level 2 | Level 3 | Level 4 |
|---|---|---|---|
| **Address** (see 6.6.1. DMX Address on page 26) | Address Setting | 001–500/492 | |
| **Run Mode** (see 6.6.2. Run Mode on page 26) | 1. DMX | 13 CH | |
| | | 21 CH | |
| | 2. Manual | 1. Pan | 000–255 |
| | | 2. Pan Fine | 000–255 |
| | | 3. Tilt | 000–255 |
| | | 4. Tilt Fine | 000–255 |
| | | 5. Tilt Infinite | 000–255 |
| | | 6. Pan Tilt Speed | 000–255 |
| | | 7. Dimmer | 000–255 |
| | | 8. Strobe | 000–255 |
| | | 9. Color Macro | 000–255 |
| | | 10. Red | 000–255 |
| | | 11. Red Fine | 000–255 |
| | | 12. Green | 000–255 |
| | | 13. Green Fine | 000–255 |
| | | 14. Blue | 000–255 |
| | | 15. Blue Fine | 000–255 |
| | | 16. White | 000–255 |
| | | 17. White Fine | 000–255 |
| | | 18. CTC | 000–255 |
| | | 19. Zoom | 000–255 |
| | | 20. Zoom Fine | 000–255 |
| | 3. Auto | Auto 1 | |
| | | Auto 2 | |
| | | Auto 3 | |
| | | Auto 4 | |
| | | Auto 5 | |
| | 4. Program | Play Program | Program 1 |
| | | | Program 2 |
| | | | Program 3 |
| | | | Program 4 |
| | | | Program 5 |
| | | | Continuous Play |
| | | Record Program (For Level 5–8 (see 6.5.1. Menu overview Level 5-8)) | 1. Program 1 |
| | | | 2. Program 2 |
| | | | 3. Program 3 |
| | | | 4. Program 4 |
| | | | 5. Program 5 |
| | 5. Slave | Slave | |
| | | Master | |
| **Setup** (see 6.6.3. Setup on page 31) | 1. Pan Invert | Off | |

| Level 1 | Level 2 | Level 3 | Level 4 |
|---|---|---|---|
| | | On | |
| | 2. Tilt Invert | Off | |
| | | On | |
| | 3. Dim Curve | Linear | |
| | | Square | |
| | | Inv. Square | |
| | | S-Curve | |
| | 4. PWM | 1,2 kHz | |
| | | 2 kHz | |
| | | 4 kHz | |
| | | 6 kHz | |
| | | 15 kHz | |
| | 5. Color Mixing | RGBW | |
| | | CMY | |
| | 6. Tilt Range | 280° | |
| | | 360° | |
| | 7. DMX Fail | Hold | |
| | | Manual | |
| | | Auto | |
| | | Program | |
| | 8. Fan | Auto | |
| | | Full | |
| | 9. BO. P/T Move | Off | |
| | | On | |
| | 10. BO. Zoom Move | Off | |
| | | On | |
| | 11. Pan Tilt Reset | No | |
| | | Yes | |
| | 12. Zoom Reset | No | |
| | | Yes | |
| | 13. Reset All | No | |
| | | Yes | |
| | 14. Display Intensity | 01–10 | |
| | 15. Display Invert | Auto | |
| | | Yes | |
| | | No | |
| | 16. Display Time | On | |
| | | 1M | |
| | | 2M | |
| | | 3M | |
| | | 4M | |
| | | 5M | |
| | 17. Factory Reset | No | |

| Level 1 | Level 2 | Level 3 | Level 4 |
|---|---|---|---|
| | | Yes | |
| **Info** (see 6.6.4. Info on page 33) | 1. Version | | |
| | 2. Running Mode | | |
| | 3. Address | | |
| | 4. LED Temp | | |
| | 5. Hours | | |
| | 6. Channels | 1. Pan | |
| | | 2. Pan Fine | |
| | | 3. Tilt | |
| | | 4. Tilt Fine | |
| | | 5. Tilt Infinite | |
| | | 6. Pan Tilt Speed | |
| | | 7. Dimmer | |
| | | 8. Strobe | |
| | | 9. Color Macro | |
| | | 10. Red | |
| | | 11. Red Fine | |
| | | 12. Green | |
| | | 13. Green Fine | |
| | | 14. Blue | |
| | | 15. Blue Fine | |
| | | 16. White | |
| | | 17. White Fine | |
| | | 18. CTC | |
| | | 19. Zoom | |
| | | 20 Zoom Fine | |
| | | 21. Control | |
| | 7. Errors | No Errors | |
| | 8. RDM UID | | |
| **Service Menu (password 6468)** (see 6.6.5. Service on page 35) | 1. Effect Adjust | 1. Pan | -127–127 |
| | | 2. Tilt | -127–127 |
| | | 3. Zoom | -127–127 |
| | 2. Reset Hours | Only for Highlite International Service personnel | |
| | 3. Factory Reset | Only for Highlite International Service personnel | |

### 6.5.1. Menu overview Level 5-8

| Level 5 | Level 6 | Level 7 | Level 8 |
|---|---|---|---|
| 1. Steps | Step 1 | 1. Pan | 000–255 |
| | Step 2 | 2. Pan Fine | 000–255 |
| | Step 3 | 3. Tilt | 000–255 |
| | Add step | 4. Tilt Fine | 000–255 |
| | | 5. Tilt Infinite | 000–255 |
| | | 6. Pan Tilt Speed | 000–255 |
| | | 7. Dimmer | 000–255 |
| | | 8. Strobe | 000–255 |
| | | 9. Color Macro | 000–255 |
| | | 10. Red | 000–255 |
| | | 11. Red Fine | 000–255 |
| | | 12. Green | 000–255 |
| | | 13. Green Fine | 000–255 |
| | | 14. Blue | 000–255 |
| | | 15. Blue Fine | 000–255 |
| | | 16. White | 000–255 |
| | | 17. White Fine | 000–255 |
| | | 18. CTC | 000–255 |
| | | 19. Zoom | 000–255 |
| | | 20. Zoom Fine | 000–255 |
| | | 21. Confirm | Are you sure? |
| | | 22. Delete Step | Are you sure? |
| 2. Hold | 0,0-10,0 sec | | |
| 3. Fade | 0,0-10,0 sec | | |

## 6.6. Main Menu Options

The main menu has the following 5 options:

| | |
|---|---|
| ADDRESS | DMX Address (see 6.6.1. DMX Address on page 26) |
| RUN MODE | Run Mode (see 6.6.2. Run Mode on page 26) |
| SETUP | Setup (see 6.6.3. Setup on page 31) |
| INFO | Information (see 6.6.4. Info on page 33) |
| SERVICE | Service (see 6.6.5. Service on page 35) |

01) Touch the **LEFT/RIGHT/UP/DOWN** buttons to navigate through the main menu.
02) Touch the **ENTER** button to open the submenus.

### 6.6.1. DMX Address

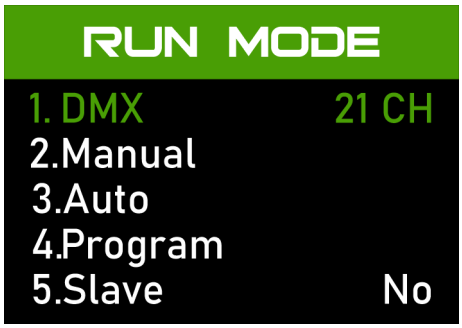
In this menu you can set the DMX starting address of the device.

01) Touch the **UP/DOWN** buttons to select the DMX starting address of the device. The selection range depends on the active DMX channel mode. The adjustment range is 001–500 (13 CH Mode) or 001–492 (21 CH Mode). For more information about the channel mode, refer to DMX Mode (see 6.6.2.1. DMX on page 26).
02) Touch the **ENTER** button to confirm the selection.

### 6.6.2. Run Mode

In this menu you can select the control modes of the device.

01) Touch the **UP/DOWN** buttons to scroll through the 5 available options:




- DMX (see 6.6.2.1. DMX)
- Manual (see 6.6.2.2. Manual)
- Auto (see 6.6.2.3. Auto)
- Program (see 6.6.2.4. Program)
- Slave (see 6.6.2.5. Slave)

02) Touch the **ENTER** button to confirm the selection.

#### 6.6.2.1. DMX

In this submenu you can select the DMX channel mode.

01) Touch the **UP/DOWN** buttons to select the DMX channel mode. There are 2 options available:
- 13 channels
- 21 channels

02) Touch the **ENTER** button to confirm the selection. For more information, refer to DMX Channels.

#### 6.6.2.2. Manual

In this submenu you can manually adjust the settings for the device.

01) Touch the **UP/DOWN** buttons to scroll through the 20 available options:



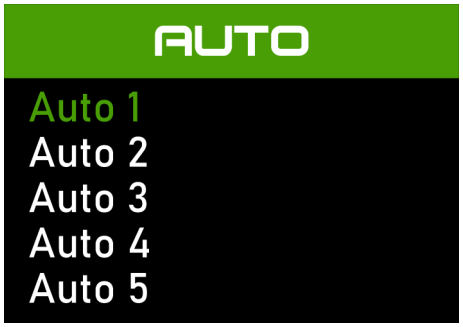

- Pan: Pan adjustment (000–255)
- Pan Fine: Pan Fine adjustment (000–255)
- Tilt: Tilt adjustment (000–255)
- Tilt Fine: Tilt Fine adjustment (000–255)
- Tilt Infinite: Tilt Infinite adjustment (000–255)
- Pan Tilt Speed: Pan Tilt Speed adjustment (000–255)
- Dimmer: Dimmer adjustment (000–255)
- Strobe: Strobe adjustment (000–255)
- Color Macro: Color Macro adjustment (000–255)
- Red: Red adjustment (000–255)
- Red Fine: Red Fine adjustment (000–255)
- Green: Green adjustment (000–255)
- Green Fine: Green Fine adjustment (000–255)
- Blue: Blue adjustment (000–255)
- Blue Fine: Blue Fine adjustment (000–255)
- White: White adjustment (000–255)
- White Fine: White Fine adjustment (000–255)
- CTC: CTC adjustment (000–255)
- Zoom: Zoom adjustment (000–255)
- Zoom Fine: Zoom Fine adjustment (000–255)

02) Touch the **ENTER** button to confirm the selection.
03) Touch the **UP/DOWN** buttons to increase/decrease the values. The adjustment range is 000–255.
04) Touch the **ENTER** button to confirm the selection.

#### 6.6.2.3. Auto

In this submenu you can select an auto mode.

01) Touch the **UP/DOWN** buttons to select one of the 5 available options:




- Auto 1: Play Auto 1
- Auto 2: Play Auto 2
- Auto 3: Play Auto 3
- Auto 4: Play Auto 4
- Auto 5: Play Auto 5

02) Touch the **ENTER** button to confirm the selection.

#### 6.6.2.4. Program

In this submenu you can select or record a program.

01) Touch the **UP/DOWN** buttons to select one of the 2 available options:




- Play Program (see 6.6.2.4.1. Play Program)
- Record Program (see 6.6.2.4.2. Record Program)

02) Touch the **ENTER** button to confirm the selection.

#### 6.6.2.4.1. Play Program

In this submenu you can select a program.

01) Touch the **UP/DOWN** buttons to select one of the 6 available options:



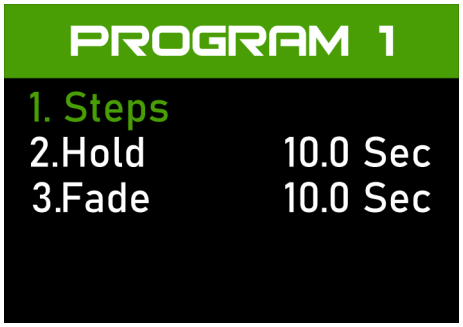

- Program 1: Play Program 1
- Program 2: Play Program 2
- Program 3: Play Program 3
- Program 4: Play Program 4
- Program 5: Play Program 5
- Continuous Play: Play all programs in a loop

02) Touch the **ENTER** button to confirm the selection.

#### 6.6.2.4.2. Record Program

In this submenu you can record a program.

01) Touch the **UP/DOWN** buttons to select one of the 3 available options:




- Steps
- Hold: The adjustment range is 0,0–10,0 sec
- Fade: The adjustment range is 0,0–10,0 sec

02) Touch the **ENTER** button to confirm the selection.

03) Touch the **UP/DOWN** buttons to select a specific step or add a new step. There are 3 options available:




- Step 1
- Step 2
- Add step

04) Touch the **ENTER** button to confirm the selection.

05) Touch the **UP/DOWN** buttons to adjust the parameters for a step, to confirm the step, or delete the step. There are 22 options available:




- Pan: Pan adjustment (000–255)
- Pan Fine: Pan Fine adjustment (000–255)
- Tilt: Tilt adjustment (000–255)
- Tilt Fine: Tilt Fine adjustment (000–255)
- Tilt Infinite: Tilt Infinite adjustment (000–255)
- Pan Tilt Speed: Pan Tilt Speed adjustment (000–255)
- Dimmer: Dimmer adjustment (000–255)
- Strobe: Strobe adjustment (000–255)
- Color Macro: Color Macro adjustment (000–255)
- Red: Red adjustment (000–255)
- Red Fine: Red Fine adjustment (000–255)
- Green: Green adjustment (000–255)
- Green Fine: Green Fine adjustment (000–255)
- Blue: Blue adjustment (000–255)
- Blue Fine: Blue Fine adjustment (000–255)
- White: White adjustment (000–255)
- White Fine: White Fine adjustment (000–255)
- CTC: CTC adjustment (000–255)
- Zoom: Zoom adjustment (000–255)
- Zoom Fine: Zoom Fine adjustment (000–255)
- Confirm: Confirm the newly made step
- Delete Step: Delete the current step

06) Touch the **ENTER** button to confirm the selection.
07) Touch the **UP/DOWN** buttons to increase/decrease the values. The adjustment range is 000–255.
08) Touch the **ENTER** button to confirm the selection.

09) Select **21. Confirm** and touch the **ENTER** button to confirm

#### 6.6.2.5. Slave

In this submenu you can set the device as a slave device in a master/slave setup.

01) Touch the **UP/DOWN** buttons to select one of the 2 options:
- Yes: The device is set as a slave and reacts the same as the master device
- No: The device is set as the master device

02) Touch the **ENTER** button to confirm the selection.

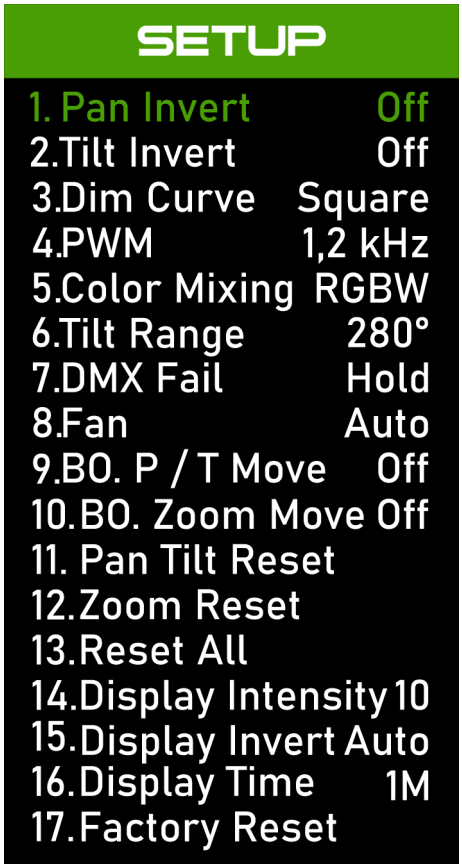
**Note:**

In a master/slave setup, make sure that only one device is set to master device and the remaining devices are set to slave devices. All slave devices follow the master device.

### 6.6.3. Setup

In this menu you can adjust the settings of the device.

01) Touch the **UP/DOWN** buttons to scroll through the 17 available options:




- Pan Invert: Invert the pan direction automatically, depending on the position of the device (ON/OFF)
- Tilt Invert: Invert the tilt direction automatically, depending on the position of the device (ON/OFF)
- Dim Curve (see 6.6.3.1. Dimmer Curve)
- PWM (see 6.6.3.2. PWM)
- Color Mixing: Set the color mode (RGBW/CMY)
- Tilt Range: Set the tilt range (280°/360°)
- DMX Fail (see 6.6.3.3. DMX Fail)
- Fan (see 6.6.3.4. Fan)
- BO. P/T Move: The device will black out the light output when Pan/Tilt are active (NO/YES)
- BO. Zoom Move: The device will black out the light output when Zoom is active (NO/YES)
- Pan Tilt Reset: Reset the pan/tilt (NO/YES)
- Zoom Reset: Reset the zoom (NO/YES)

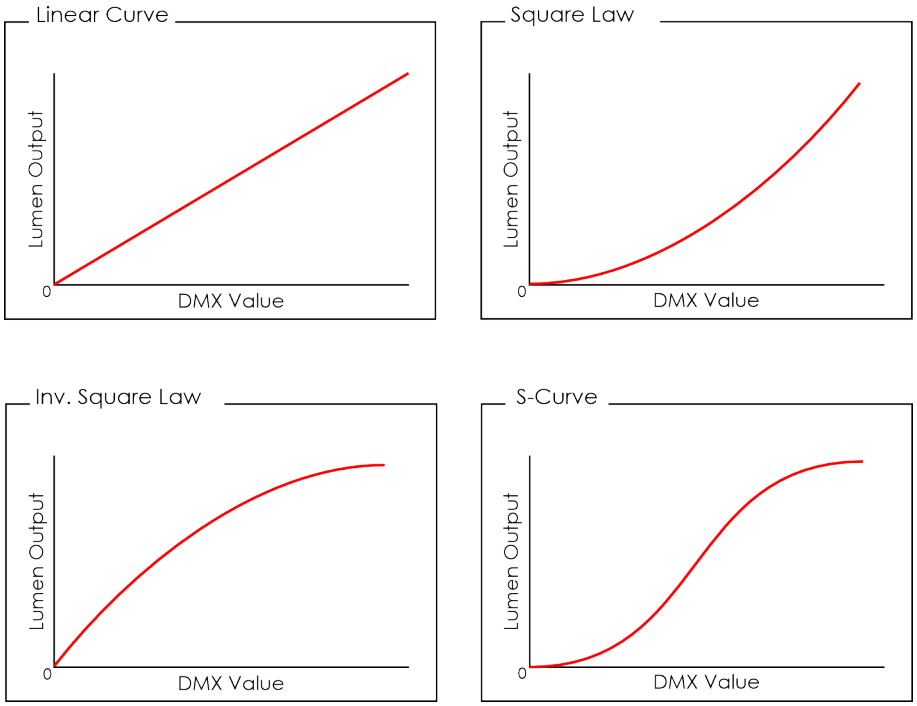
- Reset All: Reset all settings (NO/YES)
- Display Intensity: Set the intensity of the LCD display. The adjustment range is 01–10
- Display Invert Auto: Rotate the text on the display 180° when the device is mounted upside down (NO/YES/AUTO). If you select AUTO, the text on the display automatically rotates 180° when the device is turned upside down
- Display Time: Set the time after inactivity, before the display turns off (Off/1 min/2 min/3 min/ 4 min/5 min/ON). If you select ON, the display does not turn off
- Factory Settings: Restore the factory default settings (NO/YES)

02) Touch the **ENTER** button to confirm the selection.

#### 6.6.3.1. Dimmer Curve

In this submenu you can select the dimming curve.

01) Touch the **UP/DOWN** buttons to select one of the 4 options:
- Linear
- Square
- Inverse Square
- S-Curve




02) Touch the **ENTER** button to confirm.

#### 6.6.3.2. PWM

In this submenu you can adjust the PWM (pulse-width modulation) frequency of the LEDs.

01) Touch the **UP/DOWN** buttons to select one of the 5 options:
- 1200 Hz
- 2000 Hz
- 4000 Hz
- 6000 Hz
- 15000 Hz

02) Touch the **ENTER** button to confirm the selection.

#### 6.6.3.3. DMX Fail

In this submenu you can determine the behavior of the device in case of a DMX failure.

01) Touch the **UP/DOWN** buttons to select one of the 4 options:
- Hold: The device will use the last properly received DMX signal
- Manual: The device will switch to Manual mode (see 6.6.2.2. Manual on page 27)
- Auto: The device will run the Auto programs (see 6.6.2.3. Auto on page 28)
- Program: The device will run the Recorded programs (see 6.6.2.4. Program on page 28)

02) Touch the **ENTER** button to confirm the selection.

#### 6.6.3.4. Fan

In this submenu you can adjust the fan settings.

01) Touch the **UP/DOWN** buttons to scroll through the 2 available options:
- Auto: The fan speed is automatic, depending on the selected light output
- Full: The fan speed is full on

02) Touch the **ENTER** button to confirm the selection.

### 6.6.4. Info

In this menu you can view the currently installed firmware version, operation mode, DMX address and other parameters of the device.

01) Touch the **UP/DOWN** buttons to scroll through the 8 available options:




- Version: Shows the current software version
- Running Mode: Shows the current running mode
- DMX Address: Shows the current DMX address
- LED Temp: Shows the current LED temperature
- Hours: Shows the total amount of hours the device has been running
- Channels (see 6.6.4.1. Channels)
- Errors (see 6.6.4.2. Errors)
- RDM UID: Shows the current RDM UID address

02) Touch the **ENTER** button to confirm the selection.

#### 6.6.4.1. Channels

In this submenu you can view the channel parameters.

Touch the **UP/DOWN** buttons to see all available parameters and their current value.




- Pan: Shows the Pan value (000–255)
- Pan Fine: Shows the Pan Fine value (000–255)
- Tilt: Shows the Tilt value (000–255)
- Tilt Fine: Shows the Tilt Fine value (000–255)
- Tilt Infinite: Shows the Tilt Infinite value (000–255)
- Pan Tilt Speed: Shows the Pan Tilt Speed value (000–255)
- Dimmer: Shows the Dimmer value (000–255)
- Strobe: Shows the Strobe value (000–255)
- Color Macro: Shows the Color Macro value (000–255)
- Red: Shows the Red value (000–255)
- Red Fine: Shows the Red Fine value (000–255)
- Green: Shows the Green value (000–255)
- Green Fine: Shows the Green Fine value (000–255)
- Blue: Shows the Blue value (000–255)
- Blue Fine: Shows the Blue Fine value (000–255)
- White: Shows the White value (000–255)
- White Fine: Shows the White Fine value (000–255)
- CTC: Shows the CTC value (000–255)
- Zoom: Shows the Zoom value (000–255)
- Zoom Fine: Shows the Zoom Fine value (000–255)
- Control: Shows the Control value (000–255)

#### 6.6.4.2. Errors

In this submenu you can view whether there are any system errors.

If you have selected Errors and there are no errors the display shows:




- No Errors

**Note:**

For more information about the complete list of error messages (see 7.1. Error Messages on page 41), refer to Error Messages. If you can not solve the problem, discontinue the use of the device and contact your Highlite International dealer for more information.

### 6.6.5. Service

In this menu you can adjust the service parameters.

01) Touch and hold down **ENTER** button for 5 seconds, the display shows:




02) Touch the **UP/DOWN** buttons to insert the password: 6468
03) Touch the **ENTER** button to confirm the password.
04) Touch the **UP/DOWN** buttons to select a service mode. There are 3 options:



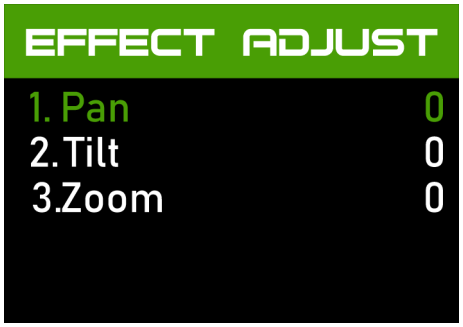

- Effect Adjust (see 6.6.5.1. Effect Adjust)
- Reset Hours (only for Highlite International service personnel)
- Factory Reset (only for Highlite International service personnel)

05) Touch the **ENTER** button to confirm the selection.

#### 6.6.5.1. Effect Adjust

In this submenu you can adjust the settings of the dynamic effects.

01) Touch the **UP/DOWN** buttons to scroll through the 3 available options:




- Pan: Pan adjustment (-127 to 127)
- Tilt: Tilt adjustment (-127 to 127)
- Zoom: Zoom adjustment (-127 to 127)

02) Touch the **ENTER** button to confirm the selection.
03) Touch the **UP/DOWN** buttons to increase/decrease the values to change the home position. The adjustment range is -127–127.
04) Touch the **ENTER** button to confirm the selection.

## 6.7. DMX Channels

### 6.7.1. 13 Channels, 21 Channels

| 13 CH | 21 CH | Function | Value | Setting | Color |
|---|---|---|---|---|---|
| 1 | 1 | Pan | 000–255 | Pan adjustment 0°–540° | |
| | 2 | Pan Fine | 000–255 | Pan adjustment, 16-bit | |
| 2 | 3 | Tilt | 000–255 | Tilt adjustment 0°–280° | |
| | 4 | Tilt Fine | 000–255 | Tilt adjustment, 16-bit | |
| 3 | 5 | Tilt Infinite | 000–005 | No function | |
| | | | 006–130 | Clockwise rotation (CW), from slow to fast | |
| | | | 131–255 | Counterclockwise color rotation (CCW), from slow to fast | |
| | 6 | Pan/Tilt Speed | 000–255 | From fast to slow | |
| 4 | 7 | Dimmer | 000–255 | From low to high intensity (0–100 %) | |
| 5 | 8 | Strobe | 000–004 | No function | |
| | | | 005–009 | Open | |
| | | | 010–089 | Synchronized strobe, from low to high frequency | |
| | | | 090–169 | Pulse strobe, from low to high frequency | |
| | | | 170–250 | Random strobe, from low to high frequency | |
| | | | 251–255 | Open | |
| 6 | 9 | Color Macro | 000–001 | No function | |
| | | | 002–004 | White | |
| | | | 005–009 | Color 1 (red) | |
| | | | 010–014 | Color 2 (yellow) | |
| | | | 015–019 | Color 3 (green) | |
| | | | 020–024 | Color 4 (orange) | |
| | | | 025–029 | Color 5 (magenta) | |
| | | | 030–034 | Color 6 (cyan) | |
| | | | 035–039 | Color 7 (blue) | |
| | | | 040–044 | Color 8 (rose red) | |
| | | | 045–049 | Color 9 (lime) | |
| | | | 050–054 | Color 10 (CTO) | |
| | | | 055–059 | Color 11 (CTB) | |
| | | | 060–064 | Color 12 (purple) | |
| | | | 065–069 | Color 13 (congo blue) | |
| | | | 070–255 | Reserved | |
| 7 | 10 | Red | 000–255 | 0–100% | |
| | 11 | Red Fine | 000–255 | Fine adjustment | |
| 8 | 12 | Green | 000–255 | 0–100% | |
| | 13 | Green Fine | 000–255 | Fine adjustment | |
| 9 | 14 | Blue | 000–255 | 0–100% | |
| | 15 | Blue Fine | 000–255 | Fine adjustment | |
| 10 | 16 | White | 000–255 | 0–100% | |
| | 17 | White Fine | 000–255 | Fine adjustment | |
| 11 | 18 | CTC | 000–004 | No function | |
| | | | 005–255 | 2800 K – 6500 K | |
| 12 | 19 | Zoom | 000–255 | Wide to narrow | |

| 13 CH | 21 CH | Function | Value | Setting | Color |
|---|---|---|---|---|---|
| | **20** | **Zoom Fine** | 000–255 | Fine adjustment | |
| | | | 000–015 | No function | |
| | | | 016–023 | Pan invert | |
| | | | 024–031 | Pan normal | |
| | | | 032–039 | Tilt invert | |
| | | | 040–047 | Tilt normal | |
| | | | 048–055 | No function | |
| | | | 056–063 | Dimmer curve Linear | |
| | | | 064–071 | Dimmer curve Square | |
| | | | 072–079 | Dimmer curve Inv-Square | |
| | | | 080–087 | Dimmer curve S-curve | |
| | | | 088–095 | No function | |
| | | | 096–103 | PWM 1200 Hz | |
| | | | 104–111 | PWM 2000 Hz | |
| | | | 112–119 | PWM 4000 Hz | |
| | | | 120–127 | PWM 6000 Hz | |
| **13** | **21** | **Control** | 128–135 | PWM 15000 Hz | |
| | | | 136–143 | No function | |
| | | | 144–151 | Color Mixing RGBW | |
| | | | 152–159 | Color Mixing CMY | |
| | | | 160–167 | No function | |
| | | | 168–175 | Tilt Range 280° | |
| | | | 176–183 | Tilt Range 360° | |
| | | | 184–191 | No function | |
| | | | 192–199 | Blackout during pan/tilt movement on | |
| | | | 200–207 | Blackout during pan/tilt movement off | |
| | | | 208–215 | Blackout during zoom movement on | |
| | | | 216–223 | Blackout during zoom movement off | |
| | | | 224–231 | No function | |
| | | | 232–239 | Pan Tilt Reset | |
| | | | 240–247 | Zoom Reset | |
| | | | 248–255 | Reset All | |

## 6.8. RDM Information

This device supports RDM (see 6.8.2. Supported RDM PIDs (Parameter IDs)).

### 6.8.1. RDM Details

- Responder ID: 29B4:105XXXXX
- Manufacturer's ID: Showtec (Highlite International B.V.)
- Manufacturer Label: Showtec
- Model Description: Xpression 2000W - WashBeam
- Model ID: 261 (105 hexadecimal)
- Device Label: Xpression 2000W - WashBeam

**Note:**

An RDM responder ID consists of 3 parts:

- 1st part – 4 digits – Manufacturer's ID
- 2nd part – 3 digits – Model ID
- 3rd part – 5 digits – Unique ID

The RDM responder IDs of all products of Highlite International start with the same 4 digits. The first 7 digits of the RDM responder ID for each model are the same. The last 5 digits are different for each device.

### 6.8.2. Supported RDM PIDs (Parameter IDs)

| RDM Parameter ID | Value | Required | GET | SET |
|---|---|---|---|---|
| SUPPORTED_PARAMETERS | 0x0050 | * | * | |
| DEVICE_MODEL_DESCRIPTION | 0x0080 | | * | |
| MANUFACTURER_LABEL | 0x0081 | | * | |
| DEVICE_LABEL | 0x0082 | | * | * |
| DMX_PERSONALITY | 0x00E0 | | * | * |
| DMX_PERSONALITY_DESCRIPTION | 0x00E1 | | * | |
| DMX_START_ADDRESS | 0x00F0 | * | * | * |
| DEVICE_HOURS | 0x0400 | | * | * |
| PAN_INVERT | 0x0600 | | * | * |
| TILT_INVERT | 0x0601 | | * | * |
| PAN_TILT_SWAP | 0x0602 | | * | * |

# 7. Troubleshooting

This troubleshooting guide contains solutions to problems which can be carried out by an ordinary person. The device does not contain user-serviceable parts.

Unauthorized modifications to the device will render the warranty void. Such modifications may result in injuries and material damage.

Refer servicing to instructed or skilled persons. Contact your Highlite International dealer in case the solution is not described in the table.

| Problem | Probable cause(s) | Solution |
|---|---|---|
| The device does not function at all | No power to the device | • Make sure that the device is connected to power supply and the cables are plugged in |
| | Main fuse is blown | • Replace the fuse (see 8.3.1. Replacing the Fuse on page 43) |
| The device responds erratically | The factory settings of the device are changed | • Reset the parameters of the device to the default factory settings |
| The device does not respond to DMX control | The controller is not connected | • Connect the controller |
| | The signal is reversed. The 3-pin DMX OUT of the controller does not match the DMX IN of the device | • Install a phase-reversing cable between the controller and the device |
| | The controller is defective | • Try using another controller |
| The device responds erratically to DMX control | Connections are defective | • Examine connections and cables. Correct defective connections. Repair or replace damaged cables |
| | The data link is not terminated with a 120 Ω termination plug | • Insert a termination plug in the DMX OUT connector of the last device on the link |
| | Incorrect addressing | • Make sure that the address settings are correct |
| | In case of a setup with multiple devices, one of the devices is defective and disturbs data transmission on the link | • To find out the defective device, bypass one device at a time until normal operation is restored |
| No light or LEDs cut out intermittently | LEDs are damaged | • Disconnect the device and contact your Highlite International dealer, refer to Corrective Maintenance |
| | The input power parameters of the device do not match the local AC voltage and frequency | • Disconnect the device. Make sure that the local current, voltage and frequency match the input voltage, current and frequency specified on the information label on the device |

## 7.1. Error Messages

In case one of the error messages below appear on the error information screen, refer to Error Info (see 6.6.4.2. Errors on page 35). If you can not solve the problem, discontinue the use of the device and contact your Highlite International dealer for more information.

| Error code | Explanation |
|---|---|
| CPU-B | CPU-B error (Pan/tilt) |
| CPU-C | CPU-C error (color/gobo) |
| EEPROM Error | Eeprom error |
| Temp High | Temperature too high |
| Temp Sensitive | Temperature error |
| Pan Encoder Error | Pan error |
| Tilt Encoder Error | Tilt error |
| Tilt Sensor | Tilt infinite error |
| Zoom Sensor | Zoom error |

# 8. Maintenance

## 8.1. Safety Instructions for Maintenance



**DANGER**
**Electric shock caused by dangerous voltage inside**

Disconnect power supply before servicing or cleaning.

## 8.2. Preventive Maintenance



**Attention**
**Before each use, examine the device visually for any defects.**

Make sure that:

- All screws used for installing the device or parts of the device are tightly fastened and are not corroded.
- The safety devices are not damaged.
- There are no deformations on housings, fixings and installation points.
- The lens is not cracked or damaged.

The power cables are not damaged and do not show any material fatigue.

### 8.2.1. Basic Cleaning Instructions

The external lens of the device must be cleaned periodically in order to optimize the light output. The cleaning schedule depends on the conditions at the site where the device is installed. When smoke or fog machines are used at the site, the device will need more frequent cleaning. On the other hand, if the device is installed in well-ventilated area, it will need less frequent cleaning. To establish a cleaning schedule, examine the device at regular intervals during the first 100 hours of operation.

To clean the device, follow the steps below:

01) Disconnect the device from the electrical power supply.
02) Allow the device to cool down for at least 15 minutes.
03) Remove the dust collected on the external surface with dry compressed air and a soft brush.
04) Clean the lens with a damp cloth. Use a mild detergent solution.
05) Dry the lens carefully with a lint-free cloth.
06) Clean the DMX and other connections with a damp cloth.



**Attention**

- Do not immerse the device in liquid.
- Do not use alcohol or solvents.

Make sure that the connections are fully dry before connecting the device to the power supply and to other devices.

## 8.3. Corrective Maintenance

The device does not contain user-serviceable parts. Do not open the device and do not modify the device.

Refer repairs and servicing to instructed or skilled persons. Contact your Highlite International dealer for more information.

### 8.3.1. Replacing the Fuse



**DANGER**
**Electric shock caused by short-circuit**

- Do not bypass the thermostatic switch or fuses.
- Replace fuses only with the same type and rating.

Power surges, short-circuit or incorrect electrical power supply may cause a fuse to burn out. If the fuse burns out, the device will not function anymore. If this happens, follow the steps below:

01) Disconnect the device from the electrical power supply.
02) Allow the device to cool down for at least 15 minutes.
03) Loosen the fuse cover with a screwdriver and remove the fuse holder.
04) If the fuse is brown or unclear, it is burned out. Remove the old fuse.
05) Insert a new fuse in the fuse holder. Make sure that the type and the rating of the replacement fuse are the same as the ones specified on the information label of the product.
06) Replace the fuse holder in the opening and tighten the fuse cover.

# 9. Deinstallation, Transportation and Storage

## 9.1. Instructions for Deinstallation

**WARNING**
**Incorrect deinstallation can cause serious injuries and damage of property.**

- Let the device cool down before dismounting.
- Disconnect power supply before deinstallation.
- Always observe the national and site-specific regulations during deinstallation and derigging of the device.
- Wear personal protective equipment in compliance with the national and site-specific regulations.

## 9.2. Instructions for Transportation

- Use the original packaging to transport the device, if possible.
- Always observe the handling instructions printed on the outer carton box, for example: "Handle with care", "This side up", "Fragile".

## 9.3. Storage

- Clean the device before storing (see 8.2.1. Basic Cleaning Instructions on page 42).
- Store the device in the original packaging, if possible.

# 10. Disposal



**Correct disposal of this product**

Waste Electrical and Electronic Equipment

This symbol on the product, its packaging or documents indicates that the product shall not be treated as household waste. Dispose of this product by handing it to the respective collection point for recycling of electrical and electronic equipment. This is to avoid environmental damage or personal injury due to uncontrolled waste disposal. For more detailed information about recycling of this product contact the local authorities or the authorized dealer.

# 11. Approval

Check the respective product page on the website of Highlite International (www.highlite.com) for an available declaration of conformity.