USER INFORMATION

ENGLISH – VERSION 113

COBRA²
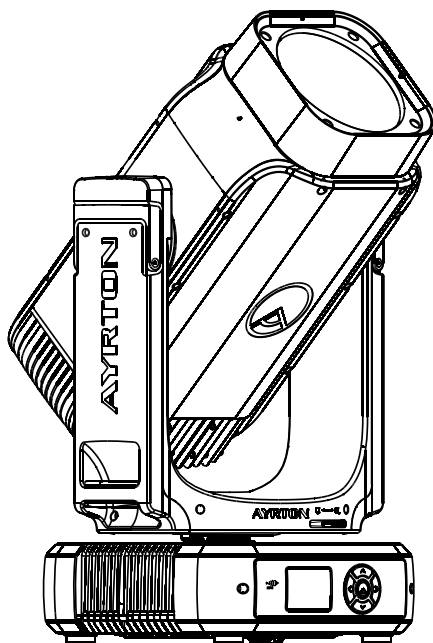
AYRTON
Digital Lighting

CONTENTS

COBRA² is the first factory standard AYRTON phosphor laser source luminaire, its laser source is sealed in a safe module, and the module is installed and sealed in a safe housing.

COBRA² pushes all the limits when it comes to beam definition, with native contrast never before achieved by a digital light source, an incredible beam angle of 0.6°. Fitted with a 170 mm frontal lens, the proprietary optical system uses 13 lenses, producing an unprecedented 38x zoom ratio and a zoom range of 0.6° to 23°. The continuous rotatio n of the pan and tilt movement, multiplying the possibilities for creating complex effects and making this luminaire a universal tool capable of meeting any challenge in all conditions.

COBRA² is provided with a highly innovative colour section including a CMY mixing system and a multi position wheel equipped with six corrective filters, 21 complementary colour filters, and a variable CTO. COBRA² has an unrivalled graphics capability, offering a wide choice of 92 fixed and rotating metal gobos distri buted on two wheels and incorporates an animation section on the gobo wheel. These gobos can be blended with two sections of four individually combinable rotating prisms allowing you to produce a multitude of volumetric lighting effects. A light and heavy frost filter complete COBRA²'s graphic tool palette. Well suited for use indoors as well as outdoors, COBRA² was developed as a unique versatile luminaire that incorporates all waterproof features.

Keep this manual for future needs.

1. SAFETY INSTRUCTIONS

1.1 › IMPORTANT SAFETY WARNINGS

This device has left the factory in perfect condition. In order to maintain this condition and to ensure safe operation, it is absolutely necessary for the user to follow the safety instructions and warning notes written in this user manual.

For safety reasons, please be aware that all modifications to the product are forbidden. We will not be liable for any damage or injury caused by installation, use, maintenance or service that not follow this manual.

In order to install, operate and maintain the lighting fixture safely and correctly we suggest that the installation and operation be carried out by qualified technicians and these instructions be carefully followed.

1.2 › PHOTOBIOLOGICAL SAFETY

The light source of this product is based on laser diodes. This product qualifies for the laser products safety standard **IEC 60825-1:2014**, edition 3, "part 4.4, Laser products designed to function as conventional lamps", under which it is classified as **CLASS 1 LASER PRODUCT**. Alternately evaluated under the standard **IEC 62471:2006** "Photobiological safety of lamps and lamp systems", the photobiological risk classification is assigned as **RISK GROUP 3 (RG3)**.

```
CLASS 1 / RG3 LASER PRODUCT
EN/BS 60825-1:2014/A11:2021 EU & UK
IEC 60825-1 Ed 3, 2014 US
+ IEC/EN 62471-5:2015
See Manual for Hazard Distance (HD)
```

RISK GROUP 3	
	Warning! Possibly hazardous optical radiation emitted from this product. do not look at operating lamp source. Eye injury may result.
	RG3 Hazard distance: Refer to the manual. Not for household use. **EN/IEC 62471**

- **CAUTION! Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.**
- The US Food and Drug Administration (FDA) requires that the owner of the product be a holder of a valid FDA CDRH laser light show variance and operate the product in accordance with the terms of the variance. (variance is a "permit" issued by FDA). It requires the operator (if not the owner) of the product to be a legal employee of the variance holder and to have completed a laser safety training course and an operators training course.
- This product is in conformity with performance standards for laser products under 21 CFR 1040, except with respect to those characteristics authorized by Variance Number FDA-2023-V-1465 effective (September 27, 2023)
- The product is in excess of the Exempt Risk Group, the viewer-related risk is dependent upon how the user installs and uses the product.
- Operators shall control access to the beam within the hazard distance or install the product at the height that will prevent spectators' eyes from being within the hazard distance.
- Hazard Distance (HD) is the distance from the projector's nearest point of human access where the beam radiance or irradiance exceeds the applicable exposure limit.

- The operators shall control the product to prevent human exposure to the luminaire(s) light within the HD. Hazard distances (according to different settings):

> US HD (United States Hazard Distance) = 380 meters (1,250 ft)
>
> Hazard Distance (worst case) is calculated at full power and narrowest beam angle for › 10 seconds. However, do not illuminate personnel closer than this distance under any circumstances.

- Do not operate with personnel exposure shorter than the declared hazard distance due to risk of skin or corneal burns.
- This Laser Product is designated as Class 1 / RG3 during all procedures of operation.
- Internal (embedded) laser parameters:
  - Laser Wavelengths: 445 - 455 nm.
  - Laser Power max: 45 W (at light engine aperture).
  - Beam Diameter: 27 mm.
  - Divergence: –1050 mrad.
  - Emissions: 1.2 kHz, varying duty cycle: 0 – 97%.
- Luminaire Wavelengths: 445 nm – 700 nm.
- **CAUTION! The user must not modify the unit or remove protective covers or housings except as required for service. The laser product is never to be operated if the unit is defective or the cover or seal is damaged.**
  - **Danger – class 4 laser light when open. Avoid eye or skin exposure to direct or scattered light.**
- No maintenance is required or allowed by the user.
- Service is only to be performed by trained and authorized personnel. Consult service manual for laser safety procedures before opening unit.
- As required by US state and federal OSHA requirements, maintenance and service is to be performed under the terms of ANSI Z136.1, "Safe Use of Lasers". Wear laser safety eyewear when servicing the unit.
- All laser light shows shall be under the direct and personal control of trained, competent operator(s). The operator(s) shall:
  - Be an employee of the variance holder who will be responsible for the training and the conduct of the operator.
  - Be located where all beam paths can be directly observed at all times.
  - Immediately terminate the emission of light show radiation in the event of any unsafe condition; or for outdoor shows, upon request by any air traffic control officials.
- Hazard distances (HD) for all relevant viewer-related risk groups below RG3: Not Applicable. In no case expose personnel closer than the Hazard Distance indicated above.

CAUTION	
	High voltage. Risk of severe or fatal electric shock.
	Always disconnect mains supply before removing any fixture covers.
	Never touch the device during operation. Covers may be hot.
	Fixture exposed to salt water should not be stored in its foam insert without being cleaned with fresh water first. It is best practice that fixture be stored dry.

⚠	Never look directly into the light source.
	Light collimation system This product contains internal light collimation system. Avoid intense light from any angle.
	Not suitable for household illumination.
	Not for residential use.
	Disposing. This product is supplied in compliance with european directive 2012/19/EU - Waste Electrical and Electronic Equipment (WEEE). To preserve the environment please dispose / recycle this product at the end of its life according to the local regulation.
FC	**Warning**: Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment. **Note:** This equipment has been tested and found to comply with the limits for a class a digital device, pursuant to part 15 of the fcc rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

1.3 › GENERAL GUIDELINES

Damage caused by the disregard of this user manual is not subject to warranty. The dealer and manufacturer will not accept liability for any resulting defects or problems.

- This fixture's external covers are made of magnesium alloy, care should be taken to avoid scratching the surface treatment of the covers. If it is accidentally scratched, need to repair the surface treatment and monitor regularly whether the repaired surface is corroded; if the corroded surface expands, need to replace the cover.
- This product is intended for the following applications: trade show or convention, indoor arena, outdoor arena, outdoor unenclosed arena, stage, studio, theater, event, venues, theme parks, architecture and similar applications.
- If the device has been exposed to temperature changes due to environmental conditions, do not power on immediately. The resulting condensation could damage the device. Leave the device powered off until it has reached room temperature.
- Ensure the sealing rubber covers of powerCON and XLR connectors are fitted properly when the device is not in use, to avoid water ingress.
- This device falls under protection-class I. Therefore, it is essential that the device be earthed.

- If either lenses or display are damaged (damage may include cracks or gashes in the material) they must be replaced.
- Electrical connections, such as replacing the power plug, must be performed by a qualified person.
- Make sure that the available voltage is not higher than that which is stated in this manual.
- Make sure the power cord is never crushed or damaged by sharp edges. If this should be the case, replacement of the cable must be done by an authorized dealer.
- If the external flexible power cord of this device is damaged, it shall be exclusively replaced by the manufacturer or their service agent or a similar qualified person in order to avoid injury.
- When the device is not in use or before performing maintenance or service, always disconnect the device from the mains. Only handle the power cord from the plug. Never pull the plug out of a socket by tugging the power cord.
- When powered on for the first time, some smoke or smell may occur. This is caused by coating on metal parts when heated and is normal. If you are concerned, please contact your distributor.
- Do not focus the beam onto flammable surfaces. The minimum distance between the exiting lens of the device and the illuminated surface must be min. 25.0 m. The minimum distance from fixture head to combustible materials must be min. 0.1 m. (for personnel exposure distances, refer to the above mentioned Hazard Distances).
- The projection system shall be securely mounted or immobilized to prevent unintended movement or misalignment. Beam masking will be provided as an inherent part of the system design to prevent overfilling of screens, beam stops, targets, etc.
- This fixture is only allowed to be operated within the maximum alternating current as stated in the technical specifications in section 2 of this manual.
- Handle the device with care, avoid shaking or using force when installing or maintaining the device.
- If you use the quick lock cam when rigging the device, make sure the quick lock fasteners are located in the quick lock holes correctly and securely.
- Operate the device only after having familiarized yourself with its functions. Do not permit operation by persons not qualified for operating the device. Most damage is the result of unprofessional operation.
- Please use the original packaging if the device is to be transported.
- The applicable temperature for the device is between -20 °C and 45 °C. Do not use the device outside of this temperature range. (Note: When the temperature detected by laser source between -20 °C and 0 °C, the fixture needs to wait for the heater to increase the internal temperature to be above 0 °C before illumination will occur.).

2. FEATURES

POWER SUPPLY
- AC100-240 V~, 50/60 Hz
- Power: 480 W maximum

OPTICS
- Beam aperture: 0.6° to 23°
- Fast motorised linear zoom

LIGHT SOURCE
- Laser 260 W, White, Colour Temperature 9,000~10,000 K
- Rated life (L70): up to 12,000 hours

MOVEMENT
- Highly accurate positioning; moving-head operated via either 8- or 16-bit resolution
- Pan and tilt automatic repositioning
- Moving-head range: infinite pan and tilt rotation

COLOURS
- Sophisticated CMY colour mixing
- Static colour wheel with progressive CTO, 6 colour temperature

correction and 21 complementary colour filters

GOBOS
- One indexable rotating gobo wheels with 12 metal gobos, plus open position
- Adjustable-speed rotating gobo in both directions
- Static multiposition gobo wheel with instant access to 80 metal gobos

FROST
- 2 frost filters: one light, one heavy

EFFECTS
- Monochromatic graphical animation effects wheel with continuous rotation in both directions
- 2 set of 4 combinable rotating and indexable prisms

DIMMER / STROBE
- Electronic dimmer, allowing perfect light adjustment from 0 to 100% without colour variation
- Strobe effect: 1 to 25 flashes per second

SOFTWARE FEATURES
- Local DMX addressing and optional parameters through its built-in LCD control panel
- Remote DMX addressing and optional parameters through a standard RDM DMX controller
- Information menu including hour counter, temperature, software version

HARDWARE FEATURES
- Graphic LCD display for addressing and special functions settings, with flip function
- 5 menu buttons to set functions
- Integrated wireless CRMX TiMo RDM receiver from LumenRadio™
- IP65 XLR-5 pin male and female connectors for DMX connection
- IP65 RJ45 IN / OUT connectors for ArtNet connection
- IP65 powerCON TRUE1 TOP male connector for power connection

CONTROL
- DMX 512 protocol, through DMX cable or a wireless system
- DMX-RDM compatible
- ArtNet & sACN protocol through Ethernet cable
- Local control panel, with IP65 LCD display
- Choice of 3 DMX modes (from 35 to 45 DMX channels)

COOLING SYSTEM
- Advanced liquid cooling system
- Self-adjusting variable speed fans for quiet operation (Auto mode)
- Selectable ventilation user modes with a new Silent Mode
- Safety protection against excess temperature

HOUSING
- IP65 protection rating (IP66 optional)

INSTALLATION
- 2 Omega ¼ turn brackets
- 4 ¼ turn mounting points
- Safety cable attachment point

OPERATING PARAMETERS
- Operating positions: all (device on floor or fixed to a support)
- Maximum permitted: 45 °C (113 °F)
- Minimum permitted: -20 °C (-4 °F)
- Minimum usage distance: 25 m (82.021 ft)

COMPLIANCE
- CE, UKCA, ETL

SIZE
- Product: 360 x 674 x 319 mm (l x h x d)
- Foam: 560 x 565 x 485 mm (l x h x d)

WEIGHT
- Product: 30.7 kg

3. GETTING STARTED

3.1 › UNPACKING

After unpacking, you will find the following items in the package:

- Cobra² fixture   1
- User Information manual   1
- Power Cable   1
- Omega Bracket   2

3.2 › PLACEMENT OF LABELS

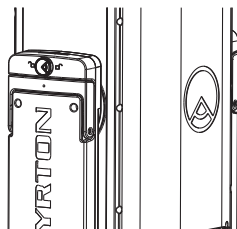Please check and read carefully the labels on the fixture before using:
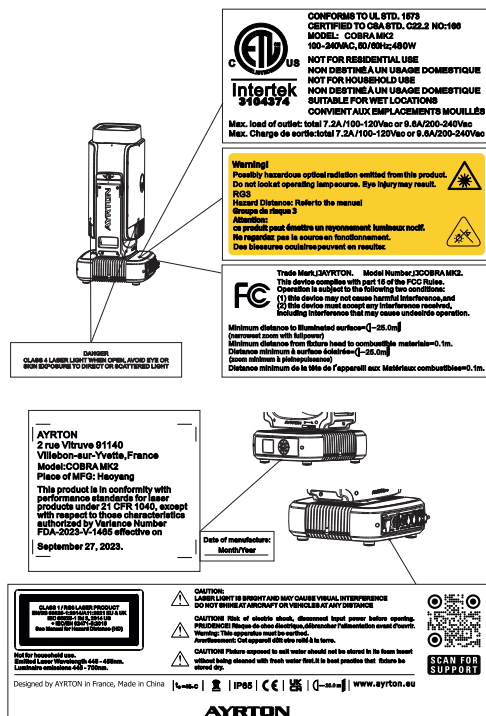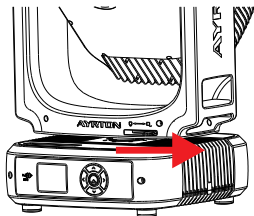
3.3 › FIXTURE OVERVIEW
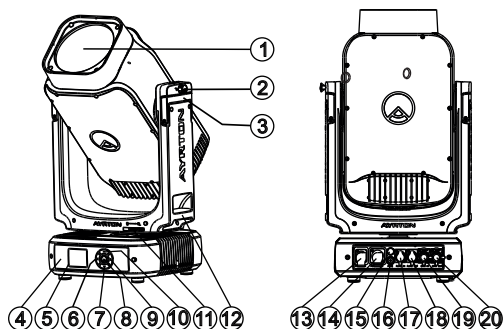
1. Front Lens	8. Center-button	15. Valve
2. Tilt Lock	9. Right-button	16. Fuse
3. Handle	10. Up-button	17. RJ45 In
4. NFC	11. Pan Lock	18. RJ45 Out
5. Display	12. Handle	19. DMX In
6. Left-button	13. Power In	20. DMX Out
7. Down-button	14. Power Out	

3.4 › UNLOCK THE PAN AND TILT BEFORE USING

Release the Tilt lock by pulling it out and turn 90°.

Release the Pan lock by pulling it to the right side.

3.5 › INSTALLATION INSTRUCTIONS - RIGGING THE FIXTURES

CAUTION

Please consider the respective national norms during the installation. the installation must only be carried out by a qualified person.

- The installation of the effect has to be built and constructed in a way that it can hold 10 times the weight for 1 hour without any harming deformation.
- The installation must always be secured with a secondary safety attachment, e.g. an apwpropriate safety rope.

- Never stand directly below the device when mounting, removing or servicing the fixture.
- The operator has to make sure the safety relating and machine technical installations are approved by an expert before taking the device into operation for the first time.
- These installations have to be approved by a skilled person once a year.

RIGGING USING THE OMEGA BRACKETS
- Fix the clamp to the bracket by tightening the M12 nut and bolt to the bracket through the Φ13 hole in the middle of the bracket.
- Insert the quick-lock fasteners of the first Omega holder into the respective holes on the bottom of the device. Tighten the quick-lock fasteners fully clockwise.
- Install the second Omega holder.
- Pull the safety cable through the holes on the bottom of the base and over the trussing system or another suitable rigging point. Insert the end into the carabiner and tighten the safety screw.

CAUTION

This step is very important to ensure safe rigging of the fixture.
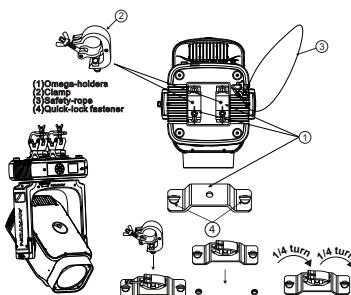
1. Omega bracket	3. Safety rope
2. Clamp	4. Quick-lock fastener

RIGGING DRAWINGS
The fixtures can be installed by sitting on floor, hanging on truss upside down (on ceiling) or hanging vertically (on wall), as shown on the drawing below:
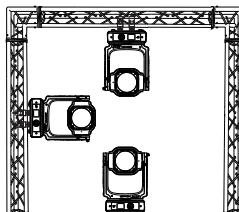
- Be sure this fixture is kept at least 0.1 m away from any flammable materials (decoration etc.).
- Always use and install a supplied safety cable as a safety measure to prevent accidental damage and/or injury in the event the clamp fails.
- Rig the projector high enough to provide clearance for people who may walk beneath the beam path or establishing a restricted access area that extends beyond the beam hazard distance.
- **WARNING! Please DO NOT let other external intense lights to shine through the fixture front lens, it may cause significant internal damages!**
- When install fixture outdoor at day time (with power off), please

make sure that the fixture front lens is NOT facing the sun.

- When use fixture outdoor at day time (with power on), please avoid fixture front lens facing the sun.
- When fixture is on standby outdoor at day time (with power on and no DMX signal), please make sure the "sun protection" mode is ON (default).

CAUTION

After installation in a corrosive environment, the external magnesium alloy covers surface shall not be in contact with other metal items (keep at least 5mm distance from other metal items).

This IP65 fixture is not designed for permanent use in a marine / corrosive environment. Following temporary use in such environments, clean fixture with fresh water and dry before storage.

If a permanent installation is planned, please select the IP66 version of this product, which is designed for these environments.

3.6 › CONNECTIONS – CONNECTING POWER AND SIGNAL CABLES

POWER CONNECTION

- Connect the power cable to the "Power In" socket of the fixture: Insert the power cable connector and turn clockwise until it clicks to lock.
- Connect the power cable plug to the mains: AC100-240 V~, 50/60 Hz, Power 480 W.

DMX-512 / ART-NET CONTROL CONNECTION

Connect the provided male side of the XLR cable to the female XLR output of your controller and the female side of the XLR cable to the male XLR input of the device. You can connect multiple devices together in a serial fashion. The cable needed should be two core, screened cable with XLR input and output connectors. Please refer to the diagram below.
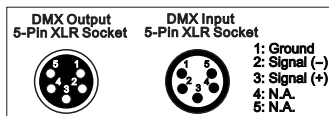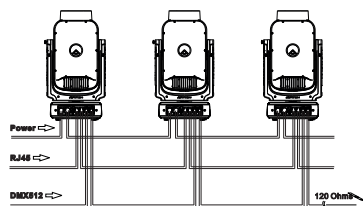
DMX-512 CONNECTION WITH DMX TERMINATOR

For installations where the DMX cable has to run over a long distance or is in an electrically noisy environment, such as in a discotheque, it is recommended to use a DMX terminator. This helps in preventing corruption of the digital control signal caused by electrical noise. The DMX terminator is an XLR plug with a 120 Ω resistor connected between pins 2 and 3, which is then plugged into the output (female) XLR socket of the last fixture in the chain. Please see illustrations below.
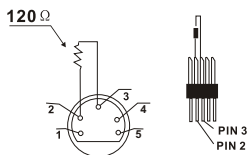
DEVICE DMX START ADDRES SETTING

All fixtures should be given a DMX starting address when using a DMX signal, so that the correct fixture responds to the correct control signals This digital starting address is the channel number from which the fixture starts to "listen" to the digital control information sent out from the DMX controller. The allocation of this starting address is achieved by setting the correct address number on the display located on the base of the device.

You can set the same starting address for all fixtures or a group of fixtures, or set different addresses for each fixture individually.

If you set the same address on all devices, all the devices will start to "listen" to the same control signal from the same channel number. In other words, changing the settings of one channel will affect all the fixtures simultaneously.

If you set a different address, each unit will start to "listen" to the channel number you have set, based on the quantity of control channels of the unit. That means changing the settings of one channel will affect only the selected device.

In the case of the moving head, in 45 channel mode, you should set the starting address of the first unit to 1, the second unit to 46 (45 + 1), the third unit to 91 (45+46), and so on.

3.7 › DISPLAY SETTINGS OPERATION

The fixture offers LCD Display and Buttons for setting display menus, you can use the buttons to set or check the Address, Mode, Options, Test, Info and Preset menus.

Center button	Double click to activate display, or confirm setting, or go into submenu; Long pressing 2s on main menu to access the shortcut menus; Long pressing 2s on submenu to exit or go back to previous menu.
Left button	Click to go left to other submenu.
Right button	Click to go right to other submenu.
Up button	Click to go up to other submenu, or increase the setting values.
Down button	Click to go down to other submenu, or decrease the setting values.

After accessing the submenu in edit mode, if no operation, it will automatically exit to the main menu after 15 seconds from the last button operation. When the fixture is powered on and the signal is connected, after 5 minutes, the display will switch off automatically.

USING THE DISPLAY MENUS

Double click to activate display, then on the main menu double click to enter into the following menus, click the up button or down button to browse and select the desired menus:

ADDRESS	To set the DMX address.
MODE	To set the user mode.
OPTIONS	To set the status setting, fan control, signal, dimming curve and others.
INFO	To check the time, software version, fan info and others.
TEST	To reset the fixture, do the calibration and others.
PRESET	To edit prog. and scenes.

DEFAULT SETTINGS SHADED – V113

Address

Address	DMX Address: 001-XXX Decimal Universe: XXXXX Net: XX Sub-Net: X Universe: X	DMX Address setting

Mode

User Mode	Extend Mode Stand Mode User Mode A User Mode B User Mode C	User's mode to change channel numbers
Edit User ModeA:	Max channel PAN :	Preset User modes A,B,C

Options

Status	No DMX Mode	Close/Hold/Auto	Auto run if no DMX
	Sun Protection	ON/OFF	Sun Protection movement
	Pan Reverse	ON/OFF	Pan Reverse movement
	Tilt Reverse	ON/OFF	Tilt Reverse movement
	Pan Degree	630/540	Pan Degree Select
	Tilt Degree	270/540	Tilt Degree
	Feedback	ON/OFF	Movement Feedback
	Init PAN	ON/OFF	Init PAN
	Init TILT	ON/OFF	Init TILT
	Prerig INIT	ON/OFF	Prerig INIT
	Reset Mode	Fast/All Rot Gobos	Reset Mode
	Pan/Tilt Spd	Medium/Fast/Slow	Movement Speed
	CMY Spd	Slow/Medium/Fast	CMY Spd
	CTO Control	Colour Wheel/Seperate Ch	CTO Control
	Zoom/Focus Spd	Fast/Medium/Slow	Zoom/Focus Spd
	Reset LASER Fade	ON/OFF	Reset LASER Fade
	Hibernation	OFF, 01M~99M	Stand by Mode
	DMX Output	ON/OFF	DMX Output
	Data Collect	Agree/Disagree	Data Collect
Service PIN	Service PIN	Password = XXX	Service Password"=050"
	Set IP	xxx.xxx.xxx.xxx	Set IP
	Set Mask IP	xxx.xxx.xxx.xxx	Set Mask IP
	Reset From Mac	ON/OFF	Reset From Mac
	DHCP	ON/OFF	DHCP
	Cross Load SW	ON/OFF	Cross Load SW
	Clr LASER Timer	ON/OFF	Clr LASER Timer
	Clr Error Info	ON/OFF	Clr Error Info
Fans Control	Fans Speed	Auto Stage Silence Super Silence	Fans Speed select
	Constant Fans	ON/OFF	Constant Fans
Disp.Setting	Shutoff Time	02~60m 05m	Display shutoff time
	Flip Display	ON/OFF	Reverse 180 degree
	Key Lock	ON/OFF	Key Lock
	DispFlash	ON/OFF	DispFlash
Signal Select	DMX WDMX Art-Net sACN		DMX WDMX Art-Net sACN

Options

Temp. C/F	Celsius Fahrenheit		Temperature switch between °C / °F
Initial Pos.	PAN =XXX		Initial effect position
Wireless DMX	Activate WDMX Rest WDMX		Activate WDMX Rest WDMX
Dim Curve	Square Law Linear		Dim Curve
Refresh Select	1.2K 2.4K 16K 25K		Refresh Select
Defog	OFF Auto ON		
Prism Mode	Simple/Full		Prism Mode
Reset P/T Fade	ON/OFF		Reset P/T Fade
Illumination Limit	25 m Distance/15 m Distance/8 m Distance		Illumination Limit
Beam Mode	Limited Range/Full Range		Beam Mode
Trigger	DMX Value Disp.	PAN......	DMX Value Disp.
	Set to Follow	Follow 1, Follow 2, Follow 3	Set to Follow
	Auto Program	Main/Alone	Auto Program
Reset Default	ON/OFF		Restore factory set.
Reset User set	Address	DMX address: 001-XXX Decimal Universe:XXXXX Net:XX Sub-Net:X Universe:X	DMX Address setting
	Mode	Stand Mode Basic Mode Extend Mode User Mode A User Mode B User Mode C	User's mode to change channel numbers
	Fans Speed	Auto Stage Silence Super Silence	Fans Speed select
	Constant Fans	ON/OFF	Constant Fans

Info

Time Info.	Current Time	XXXX(Hours)
	Ttl Life Hrs	XXXX(Hours)
	Last Run Hrs	XXXX(Hours)
	LASER Hours	XXXX(Hours)
	Timer PIN	Password = XXX
	Clr Last Run	ON/OFF
Temp. Info	Head Temp.	XXX°C/°F
Humidity	x%	Humidity Information
Fan Info.	xxxx RPM	Fan information
Software Ver	V1.0......	Software version
Signal Quality	xxx	IoT signal information
Network	IP, Mask, Mac	Network
Error Info.	Error Record 1	Error Info.
Blackout Info	Left........	Blackout Info
SN	Product:xxxxx... Laser:xxxxx...	SN

Test			
Home	All Pan&Tilt Colour Gobo Other		Reset All Reset Pan&Tilt Reset Colour Reset Gobo Reset Other
Test Channel	PAN		Test function
Manual Ctrl.	PAN =XXX .		Fine adjustment of the lamp
Calibration	-Password- PAN .		Password "050" Calbrate and adjust the effects to standard/right position
Gobo Replace	Gobo Wheel 1		Gobo Replace
Preset			
Select Prog.	Prog. Part 1 = Program 1 ~ 10 Program 1 Prog. Part 2 = Program 1 ~ 10 Program 2 Prog. Part 3 = Program 1 ~ 10 Program 3		Select programs to be run
Edit Prog.	Program 1 . Program 10	Program Test Step 01=SCxxx Step 64=SCxxx	Testing program Program in loop Save and exit
Edit Scenes	Edit Scene 001 ~ Edit Scene 250	Pan,Tilt,...... --Fade Time-- --Scene Time-- Input By Outside	Save and automatically return manual scenes edit
Scenes Input	XX~XX		Scenes Input

3.6.1 Address

Address
With this function, you can adjust the DMX address, the Universe and the selection of the control signal

3.6.2 Mode

User Mode
With this function, you can choose user defined channel orders.

Edit User Mode
With this function, you can edit user defined channel orders of User Mode A/B/C

3.6.3 Options

Status

No DMX Status
With this function, you can choose the unit behavior in case no signal is detected between Close (all dmx value to 0), Hold (keep the last dmx value), and Auto (start auto mode).

Sun Protection
When this function is activated, the unit will automatically tilt down its head toward the ground when no signal is detected.

Pan Reverse
With this function you can reverse the Pan-movement.

Tilt Reverse
With this function, you can reverse the Tilt-movement.

Pan Degree
With this function, you can select Pan degree between 630 or 540.

Tilt Degree
With this function, you can select Tilt degree for 270 or 540.

Feedback

This function allows you to activate or deactivate the automatic repositioning of the Pan & Tilt in case of an accidental/manual move of the yoke.

Init PAN
This function allows you to deactivate the Pan movement.

Init TILT
This function allows you to deactivate the Tilt movement.

Prerig INIT
Allows you to activate a special init process: Pan init then Tilt init process when unit is used in prerig trusses.

Reset Mode
This function allows you to choose the reset process for the gobo.
- Fast: The fixture only check the direction of the first gobo.
- All Rot Gobo: The fixture is checking all the position of each gobo to make sure all the gobo are in the same position (Useful if using a custom Gobo).

Pan/Tilt Spd
With this function, you can select Pan & Tilt speed from "Fast", "Medium", "Slow".

CMY Spd
With this function, you can select CMY speed from "Fast", "Medium", "Slow".

CTO Control
With this function, you can select if the control of the CTO is on the Color Wheel channel or on a dedicated one.

Zoom/Focus Spd
With this function, you can select Focus speed from "Fast", "Medium", "Slow".

Reset LASER Fade
Allows the Light output to fade out and in during the reset process.

Hibernation: Standby mode
The device and stepper motors will be powered off if the unit stays without DMX signal for the User defined times (in Minutes). The fixture will perform a reset sequence once DMX is back.

DMX Output
With this function, the unit can transmit the signal received via WDMX or ArtNet/sACN through the DMX output.

Data Collect
With this Function, you can activate the collection of data information for the IoT(The optional board is needed to use this option).

Service PIN

Password
The Password for this function is "050".

Set IP
This function allows you to set the IP of the Unit.

Set Mask IP
This function allows you to set the IP Mask of the Unit.

Reset From Mac
This function allows the Unit to take its IP automatically using its Mac address.

DHCP
This function allows you to enable or disable the DHCP

Cross Load SW
This function allows you to upload the current SW version to other units using a DMX connection. Do not disconnect the units before the process is done.

Clr LASER Timer

This function allows you to clear the error info list.

Clr Error Info
This function allows you to clear the error info list

Fans Control

Fans Speed
With this function, you can set the fans speed. Settings are Auto, Stage, Silence, and Super Silence.
- Auto: The LASER module delivers high output and the fans ramp up and down depending on the ambient temperature and the temperature of the LASER module itself.
- Stage: The LASER module delivers full output and the fans remain at full speed regardless of the temperature of the LASER module.
- Silence: The LASER module is limited to medium output and the fans rotate at a slower speed.
- Super Silence: The LASER module is limited to a lower output and the fans rotate at the slowest speed.

For specific output details, refer to photometry document.

Constant Fans
Enables you to set the fans to run continuously, even when the LASER is off.

Disp. Setting

Shut off Time
With this function, you can select the delay before the LCD display turns off. Choose between 2 to 60 minutes. The default is 5 minutes.

Flip Display
With this function you can rotate the display by 180° (when the unit is rigged)

Key Lock
With this function you can activate the automatic key lock function. If this function is activated. the keys will be locked automatically after exiting the edit mode for 15 seconds. keeping press the <MODE/ESC> key for 3seconds if you do not need this function.

DispFlash
With this function activated, display will flash if no signal is detected.

Signal Select

With this function, you can select the input control between DMX/WDMX/sACN/Artnet.

Temperature C/F

With this function you can display the temperature in Celsius or Fahrenheit.

Initial Pos.

With this function you can display initial effect position.

Wireless DMX

From factory. this projector is prepared for wireless data transmission (W-DMX) .If you wish to de-activate W-DMX control. you can select the function "De-activate WDMX" by turning the encoder. With the function "rest". you can log out the projector from the wireless sender.

Dim Curve

With this function you can select the Dimmer Curve.

LINEAR	SQUARE LAW
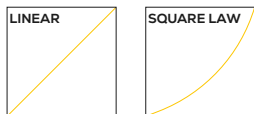
Refresh Select

With this function you can select the PWM rate.
- 1.2K & 2.4K : provides superior dimming quality, especially for smooth fadeouts at lower levels.
- 16K & 25K : are ideal for broadcast use.

Defog

This function allows you to set the defog mode as follows:
- **ON:** Activates the defog fan (excluding the LED module cooling fans), sets the dimmer to full, and zoom to minimum. This function should only be used when necessary.
- **AUTO:** Activates the defog fan (excluding the LED module cooling fans) when temperature and humidity reach a certain level. Zoom and dimmer are not affected.
- **OFF:** No defogging actions are performed, the defog fan will not rotate and the heaters are turned off.

If ON or AUTO are selected, the heater plate will turn on when the unit is powered on. the Heater will turn on and off as necessary to maintain a constant internal temperature of 45 °C

Prism Mode

This function lets you choose how the zoom behaves when a prism is inserted. Previously, the zoom range was limited to prevent the prism from blocking light or cutting off beams inside the fixture. With Prism Mode enabled, the full zoom range is available, giving the user full control over the effect—even if it means light loss may occur. (Enable by default)

Reset P/T Fade

This function allows you to choose the reset speed of the pan/tilt motors to avoid fast movement.

Illumination Limit

With this function, you can select different Illumination Limit, the power is limited to make the limit lower.

Beam Mode

With this function, you can select beetween two range for the zomm (Beam Mode only),
- Limited Range: Restricts the zoom to prevent reaching the maximum aperture.
- Full Range: Provides unrestricted zoom across the full aperture range.

Trigger

DMX Value Disp.
With this function you can display the DMX 512 value of each channel. The display automatically shows the channel with a value changing.

Set to Follow
With this function, you can define the device as follow.

Auto Program
With this function. you can run the internal program. You can select the desired program under "**Select program**". You can set the number of steps under "**Edit program**" . You can edit the individual scenes under "**Edit scenes**". With this function. you can run the individual scenes either automatically. i.e. with the adjusted Step-Time.

Reset Default

With this function, you can restore default setting (highlighted value in the above chart).

Reset User Set

With this function, you can define the following "restore user" values:
- Address
- Mode

- Fans Speed
- Constant Fans

3.6.4 Info

Time Info

Current Time
With this function, you can display the temporary running time of the device from the last power on. The display shows "XXXX", "XXXX" stands for the number of hours. The counter is reset after turning the device off.

Ttl Life Hrs
With this function, you can display the running time of the device. The display shows "XXXX", "XXXX" stands for the number of hours.

Last Run Hrs
With this function, you can display last the running time of the device. The display shows "XXXX", "XXXX" stands for the number of hours.

LASER Hours
With this function, you can display the time of LASER. The display shows "XXXX", "XXXX" stands for the time of LASER.

Timer PIN
With this function. you can display the timer password.

Clr Last Run
With this function, you can clear last run time of the fixture. The display shows "ON" or "OFF". Press "Enter" to confirm.

Temp.Info
With this function you can display the different temperature of the fixture.
- L: Light engine
- B: Base
- H: Head

Humidity
With this function you can display all the different humidity values available in the fixture.
- B: Base
- H: Head

Fan Info.
With this function, you can display all the fan speed values available in the unit.

Software Ver
With this function, you can display the software version of the device.

Signal Quality
When IOT Board is connected, this menu shows the signal quality (Wifi/4G).

Network
With this function, you can display the Network information.

Error Info
With this function, you can read the error record of the Unit.

Blackout Info
With this function, you can display the Blackout information.

SN
With this function, you can display the serial number of the Unit.

3.6.5 Test

Home
With this function you can reset the device. You can select which functions you want to reset by using the submenu.

Test Channel
With this function you can test each channel's function to ensure correct operation.

Manual Control
Allows you to manually control each feature of the unit.

Calibration
With this function, you can calibrate and adjust the effect wheels to their correct positions. The password of calibrate values is 050.

Gobo Replace
This function allows you to select the gobo you want to replace. The chosen gobo will be rotated into position, making it easy to swap out.

3.6.6. Preset

Run the auto program: A leader fixture can output to three different program signals to the follower fixture to operate. It means the host will send cyclically in the following orders (The host will keep operating the program of Part 1). Then the follower fixture will make the selectively receiving according to its own set.
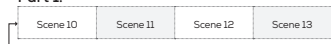
Auto Pro Part 1	Auto Pro Part 2	Auto Pro Part 3	Auto Pro Part 1	Auto Pro Part 2	Auto Pro Part 3	Auto Pro Part 1	Auto Pro Part 2	Auto Pro Part 3

- If the follower fixture chooses Run For Follower 1 from the menu of 1-3,then it will receive the part 1's automatic program from link, in the same way, when the follower fixture chooses Run For Follower 2, then it will receive the part 2's automatic program from link.
- Enter the menu of 1-3 Function Mode---Set To Follower. Here to set machine operate which part of the program during the host-follower connection
- Enter the menu of 1-4, 1-5 Function Mode---Set To Leader
- Enter the menu of 8-1 Edit Program---Auto Program Part1. The host outputs three groups driven program---Part1, Part2, Part3 (Part1 program runs the same effect as the host)
- Enter the menu of 8-2 Edit Program---Edit Program. Edit the program's connection, connect the scene in order
- The editor of the scene, there are as many as 250 scenario editors, and every scene can have a program connection of 10.

Note:
Part 2, Part 3 repeat in accordance with the Part1's repeat. For example: When Part 1 uses Program 2, Part 2 uses Program 4, Part 3 uses Program 6, Assume:Program 2 includes scene of 10, 11, 12, 13. Program 4 includes scene of 8, 9, 10; Program 6 includes scene of 12, 13, 14, 15. Then it will run as below.

Example:

Part 1:

Scene 10	Scene 11	Scene 12	Scene 13

Part 2:

Scene 8	Scene 9	Scene 10	Scene 8

Part 3:

Scene 12	Scene 13	Scene 14	Scene 15

3.6.7. Shortcut Menu

Flip display
With this function you can rotate the display by 180° (when the unit is rigged)

Restore Factory
With this function, you can restore default setting (highlighted value in the above chart).

Restore User
With this function, you can restore User settings (Setting can be edit under Options/Reset User Set).

Rst DMX addr 1
With this function you can only set the address to 1

Product SN
With this function, you can display the serial number of the Unit

Laser SN
With this function, you can display the serial number of the Laser

RDM UID
With this function, you can display the RDM UID of the Unit (Also QRCode)

Pressure
Under this menu you can manage the pressure of the Unit :
- Pressure Test : Under this menu you can Run the Pressure test
- Test Result : Under this menu you can display the result of the last pressure test

3.8 › NFC

When the fixture is powered on, you can use a NFC smartphone installed with the Ayrton NFC App to scan the NFC tag area of the fixture to read some of the information or settings inside the display menu, such as product name, software version, UID, DMX Start Address, Universe, User Mode, Options, Information, etc. You can also change some of the settings and push to write inside the fixture menu.

When the fixture is not powered on, you can still use the App to read the NFC info and write the settings into the NFC tag, the written data will be automatically synchronized into the fixture menu at next time the fixture is powered on.

Link to download the application: https://qrstud.io/ayrtonnfc

Note:
- *Before using, make sure there is NFC function on your smartphone and it is activated. Download and install the Ayrton NFC App;*
- *The NFC tag on the fixture is right under the LCD window;*
- *The NFC reader area vary on different smartphones, identify the correct area on your smartphone before scanning the NFC tag on the fixture;*
- *When scanning, make sure the NFC reader area of your smartphone close enough to the LCD window and hold still the smartphone for 3 seconds until reading successfully.*

3.9 › DMX PROTOCOL
Scan the QR code on the cover page to download the DMX CHART.

3.10 › SAFETY SETTINGS
For safety purposes, before the operator begins to control the fixture remotely, the operator must pre-define, from a computer (MAC or PC) App a safety (blanking) zone which prevents operations above the MPE (Maximum Permissible Exposure) within the safety zone(or other). The safety (blanking) zone should be set to include any area in which the fixture may be pointed where there is a reasonable expectation of the public being present. Where the operator determines there will be no members of the public present or no members of the public present within the Hazard Distance of the product (please see table below), no safety (blanking) zone is needed to be set.

> US HD (United States Hazard Distance) = 380 meters (1,250 ft)
>
> Hazard Distance (worst case) is calculated at full power and narrowest beam angle for › 10 seconds. However, do not illuminate personnel closer than this distance under any circumstances.

BLANKING ZONE SETTINGS
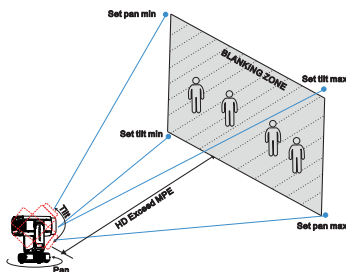
Steps to set blanking zone: please refer to the "Blanking zone setting guide"

SAFETY PROTECTION
This fixture had been designed with Safety Protection feature:
When error occurs, not only the light output itself will be cut immediately, but also the CMY filters, Colour filter and Frost filter will be brought into the light path and the Zoom will go to max immediately to block the light output lens to provide multi-protection layers.

SAFETY MONITORING SYSTEM – SEPARATE REDUNDANCY CONTROL
This fixture had been designed with a Safety Monitoring System with Separate Redundancy Control, the failure safety system shuts down or dims to safe level immediately when any safety monitored value is reported outside of expected value: when light output (as measured by current) is out of expected range; when Pan or Tilt are forced from proper location, or do not arrive at proper location; when zoom is forced from proper location, or do not arrive at proper location.
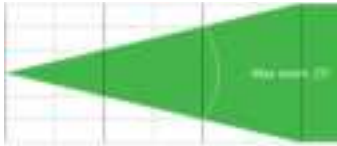
4. CONTROLS AND FUNCTIONS

4.1 › PAN AND TILT MOVEMENT, DMX CHANNELS 1–7

Pan movement   Tilt movement

4.2 › DIMMER INTENSITY (USE WITH STROBE CHANNEL AT FULL), DMX CHANNELS 9–10

4.3 › ZOOM (USE WITH FOCUS CHANNEL), DMX CHANNELS 14-15

4.4 › CMY, DMX CHANNELS 23-28

## 4.5 › COLOUR WHEEL WITH CTO, DMX CHANNELS 21-22

COLOUR WHEEL		
Outer Ring Colour		
1	Green	GP603050332620
2	Orange	GP603050332630
3	Blue	GP603050332640
4	Red	GP603050332650
5	Pink	GP603050332560
6	Medium Yellow	GP603050332770
7	Deep Purple	GP603050332750

8	Velvet Green	GP603050334490
9	Amber	GP603050332580
10	Light Blue	GP603050334480
11	Light Red	GP603050332720
12	Follies Pink	GP603050334470
13	Yellow	GP603050332780
14	Slate Blue	GP603050334500
15	Dark Green	GP603050334430
16	Dark Amber	GP603050332790
17	Medium Blue	GP603050334440
18	Magical Magenta	GP603050332740
19	Oklahoma Yellow	GP603050334460
Inner Ring Colour		
20	Congo Blue	GP603050332610
21	UV	GP603050332570
22	Minus Green 1/4	GP603050332540
23	Minus Green 1/2	GP603050332550
24	CTB 1/4	GP603050332590
25	CTB 1/2	GP603050332530
26	CTB	GP603050332680
27	Light Amber	GP603050334450

4.6 › ROTATING GOBOS, DMX CHANNELS 29-31
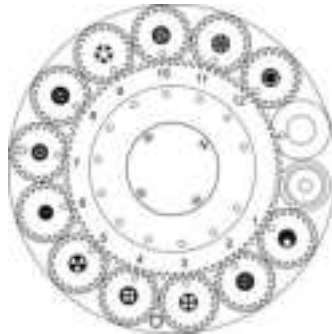
GOBO WHEEL 1			
Rotating Gobo			
1	**310**	Eccentric Dot	GP60303052013
2	**358**	Lines Mix	GP60303052029
3	**328**	Dot Square 4	GP60303052003
4	**332**	Square Beam 4	GP60303052030
5	**149**	Nuclear	GP60303052031

6	**314**	Dot Line 4	GP60303052073
7	**320**	Dot Ring 6	GP60303052015
8	**324**	Dot Mix	GP60303052032
9	**342**	Five Spokes	GP60303052033
10	**114**	Nested Half Rings	GP60303052066
11	**343**	Eight Spokes	GP60303052002
12	**111**	Nested Ring Lights	GP60303052034

4.7 › STATIC GOBOS, DMX CHANNELS 32

GOBO WHEEL

Rotating Gobo

1	302	80% Iris Beam		21	260	Arrows	
2	304	60% Iris Beam		22	265	Iris 8	
3	306	40% Iris Beam		23	326	Dot Mix 8	
4	308	20% Iris Beam		24	290	Quarter Beam NE	
5	312	Dot Line 2		25	291	Quarter Beam SE	
6	326	Dot Triangle 3		26	292	Quarter Beam SW	
7	328	Dot Square 4		27	293	Quarter Beam NW	
8	319	Dot Ring 5		28	296	Half Beam Up	
9	257	Zig Zag Light		29	295	Half Beam Down	
10	135	Vortex Light		30	298	Half Beam Left	
11	110	Spiral		31	299	Half Beam Right	
12	118	Helix 5		32	418	Crash Test Icon	
13	424	Triangle Beam		33	341	Split Triangle 4	
14	263	Daisy		34	426	Split Triangle 1	
15	373	Nested Star		35	419	Iron Ball Light	
16	368	Square Ring 8		36	351	Vertical Line	
17	439	Circular Saw 4		37	350	Bold Line	
18	099	Waves Light		38	371	Square Line 3 V	
19	274	Prison Bars 4		39	370	Square Line 3 H	
20	269	Ink Stain		40	353	Four Lines H	

41	354	Four Lines V	61	435	Nested Cross
42	330	Square Beam	62	421	Split Square 1
43	363	Rubik Cube	63	431	X Cross
44	437	Split Cross	64	348	Tilde
45	334	Square Beam 9	65	188	Mirror Ball 9
46	320	Dot Ring 6	66	417	Split Target
47	321	Dot Ring 7	67	422	Split Square 2
48	413	Split Circle 6	68	427	Split Triangle 2
49	324	Dot Mix	69	411	Split Circle 2
50	340	Triangle Beam	70	450	Number 0
51	374	Compass 4	71	451	Number 1
52	346	Star Line 5	72	452	Number 2
53	345	Star 5	73	453	Number 3
54	378	Star 8	74	454	Number 4
55	380	Star 10	75	455	Number 5
56	382	Star 12	76	456	Number 6
57	262	Arrow Ring 6	77	457	Number 7
58	117	Helix 3	78	458	Number 8
59	342	Five Spokes	79	459	Number 9
60	261	Arrow Ring 3			

4.8 › PRISMS (WITH FROST), DMX CHANNELS 33-45

AYRTON

Digital Lighting

SCAN
FOR
MORE
ayrton.eu