JB LIGHTING

P 18 MK2 PROFILE

Operating instructions
Version 1.16
Software >= 1.1.5

P18 MK2 Profile

Inhalt

1. Introduction

1.1 P18 MK2 Profile models

The P18 MK2 Profile is available in 3 models. The models differ in the light module and partly in the color filters and in the CTC filters. The differences can be found in the DMX channel functions.

- P18 MK2 Profile HP (High Power)
- P18 MK2 Profile HC (High CRI)
- P18 MK2 Profile WW (Warm white)

Specification	HP - High Power	HC - High CRI	WW - Warm White
Color temperature	6800 K	5800 K	3200 K
Luminous flux	72.000 lm (40.000 lm Output)	49.000 lm (28.500 lm Output)	42.000 lm (23.000 lm Output)
CRI	>= 70 (with CRI filter >= 90)	>= 90	>= 91
Correction filter	linear CTO 6800 K to 2700 K	linear CTO 5800 K to 2500 K	linear CTB 3200 K to 6500 K

1.2 Important differences between the models HP/HC/WW

The differences between the models **High Power / High CRI / Warm White** are as follows:

DMX channel 26 (40)

color wheel - color no. 8 is: at the **HP model a HCRI filter**
                                  at the **HC** and **WW model a pink filter**

DMX channel 30 (47/48)

color temperature correction: at the **HP** and **HC model a CTO filter**
                                  at the **WW model a CTB filter**

Detailed information see DMX channel assignment on page 23.

P 18 M K 2 Profile

2. Dimensions

258,4

140

140

630

480,5

475

541

267

307

755

480,5

475

3. Product overview

Bottom cover

Top cover

Arm cover

Handles

LCD display

Function keys

Head

Front lens

Tilt lock

Arm

PowerCON TRUE1 Output

Pan lock

DMX/Ethernet/USB ports

Base

PowerCON TRUE1 Input
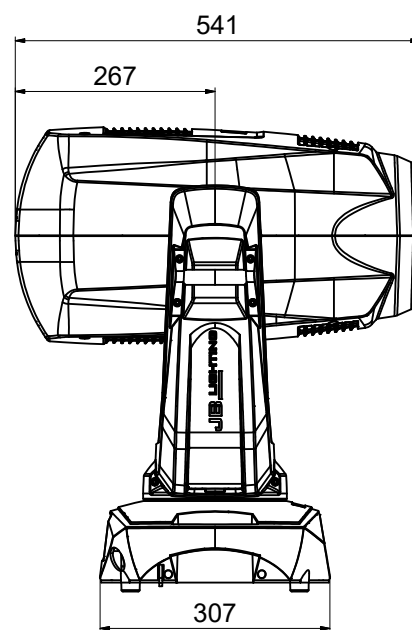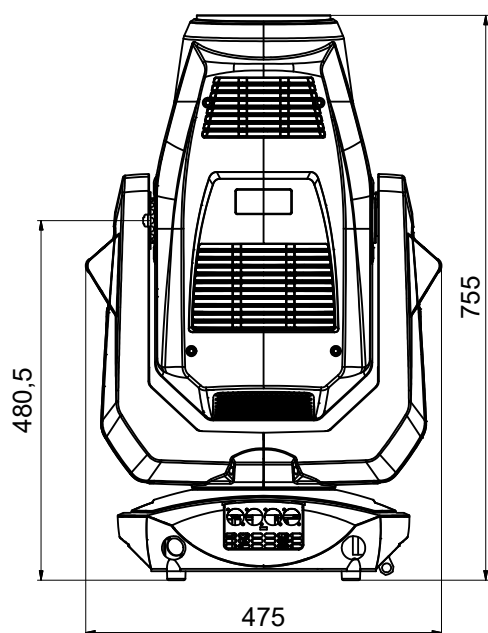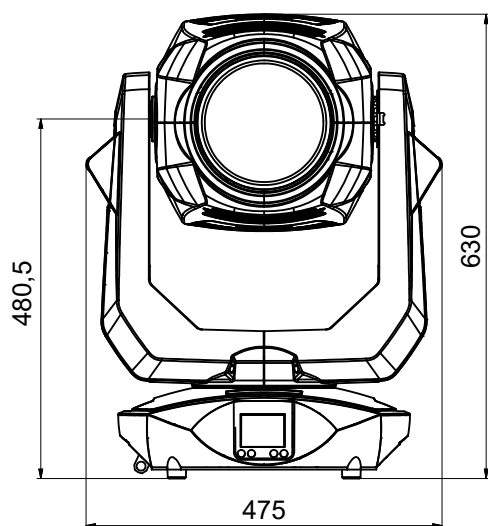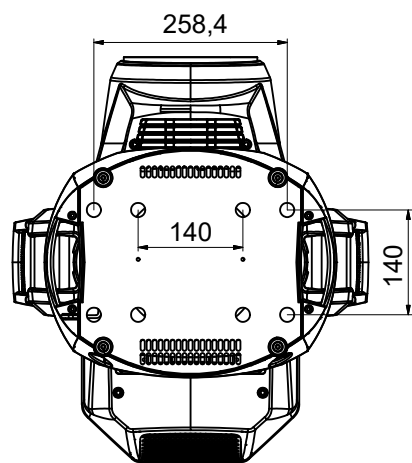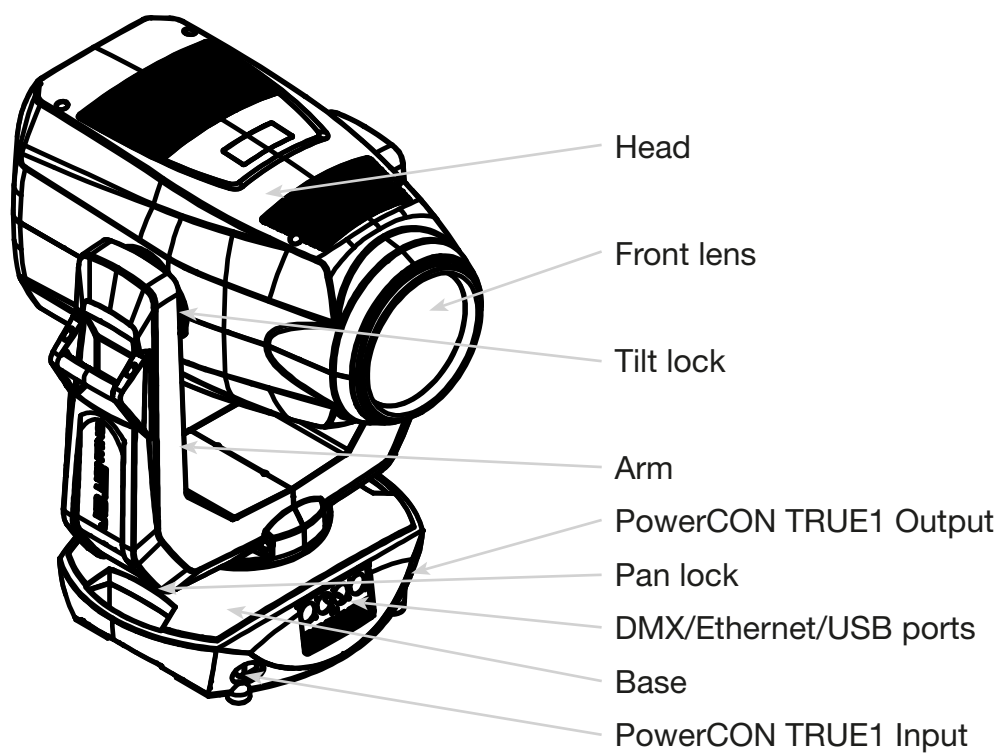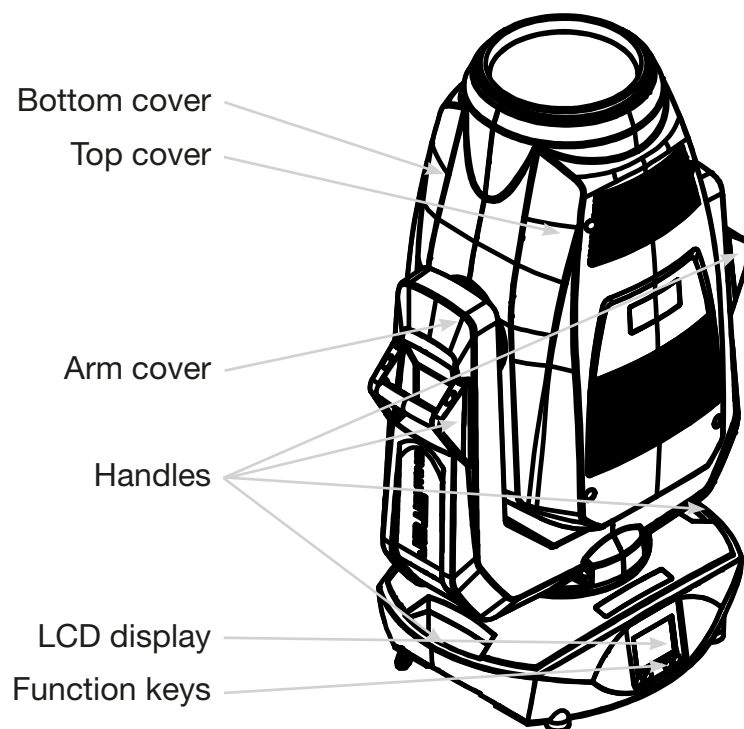
4. Safety instructions

ATTENTION: For your own safety, please read these operating instructions carefully before first use.

This spotlight has left our company in excellent condition. To maintain this condition and to ensure safe operation, it is absolutely essential to observe the following safety instructions and warnings which are described in this operating manual.

The manufacturer accepts no liability for damage caused to the device by disregard of these operating instructions or unauthorised modifications.

Please note that damage caused by manual modifications to this unit is not covered by the warranty.

ATTENTION: This device is only suitable for professional use! Protection class IP 20 - only for use in dry environments (indoors)!

ATTENTION: JB-Lighting Lichtanlagentechnik GmbH does not authorise the use of its devices in life support systems. Life-supporting systems are systems whose purpose is to maintain or stabilise life and whose defect or malfunction may result in death or injury to persons.
The product in this manual complies with the following EU directives:
- Low Voltage Directive 2014/35/EU
- EMC Directive 2014/30/EU

ATTENTION: Allow the device to cool down and disconnect the device from the mains before opening the device. Touching live parts (high voltage) can give you an electric shock.

Ensure that the mains voltage to be connected is not higher than that indicated on the type plate. This device should only be operated with the power source indicated on the type plate. If you are not sure what type of power supply you have, contact your dealer or power supplier.

Always disconnect the device from the power supply before carrying out cleaning work or before replacing fuses or parts.

The mains plug must always be accessible after the spotlight has been installed. Do not overload the sockets or extension cables as this could result in fire or electric shock. Do not place any objects on the power cable. Do not install the spotlight in such a way that people can trip over or step on the power cable. Make sure that the power cable can never be crushed or damaged by sharp edges. Check the unit and the power cable from time to time.

Leave maintenance work to a qualified technician!

⚠ ATTENTION: This fixture corresponds to protection class I. For this reason, this spotlight must be connected to a mains socket with earthing contact.

Never connect this device to a dimmer pack.

During first use, some smoke and odour may occur. This is normal and does not necessarily mean that the device is defective.

The device becomes hot during operation. Never touch the device with bare hands during operation!

When replacing fuses, only use the same types with identical values! Only have fuse replacement carried out by a qualified technician

⚠ ATTENTION: DAMAGE TO EYES! Do not look into the light source for long periods during operation. This can be harmful to the eyes. Attention: potentially hazardous radiation - Risk group 2 based on DIN EN 62471

If the device has been exposed to strong temperature fluctuations (e.g. after transport), the device must not be switched on immediately. The resulting condensation can damage your device. Leave the device switched off until it has reached room temperature.

If the P18 MK2 Profile is operated below 20°C, gobo/prism swapping and gobo/prism rotation are reduced in speed. This is a protective mechanism of the P18 MK2 Profile, as at low temperatures the lubricant is relatively viscous in the rotational mechanism and can therefore cause the effect to be slurred. From indoor temperatures of 21°C and upwards, the spotlight runs normally! This temperature is quickly reached under normal operation (LED engine on).

Do not shake or knock the device. Avoid brute force during installation or operation.

This light was designed for indoor use only. Do not expose this device to rain or moisture.

When choosing a mounting location, make sure that the device is not exposed to extreme heat, moisture or dust.

Ventilation openings and slots in the head and foot of the spotlight are used for ventilation to ensure reliable operation of the device and to protect it from overheating, these openings must not be covered.

Never cover the front lens when the spotlight is in use.

The openings should never be covered with substances or other objects so that the airways are blocked.

This device must not be operated in an environment without adequate ventilation.

The device may only be operated when the housing is closed and all screws/Camlocs are firmly tightened.

The device must always be secured with an additional safety device.

Ensure that the area below the spotlight is clear during installation, alteration and removal.

> ⚠️ ATTENTION: Allow a fixture distance of at least 1 metres from easily flammable material and the distance between the light emission and the surface to be illuminated must be at least 4 meters.

The maximum ambient temperature of 45°C must not be exceeded.

> ⚠️ ATTENTION: The front lens must be replaced if it is visibly damaged to the extent that its function is impaired, e.g. by cracks or deep scratches!

Do not operate the device until you have become familiar with its functions. Prevent operation by persons who are not qualified to use the device. Most damage is the result of improper operation!

Please use the original packaging or specially adapted flight cases if the device is to be transported. When using the original packaging, the locks must not be closed!

> ⚠️ ATTENTION: To avoid damaging the internal parts of the light head, never let sunlight shine directly into the front lens.

5. Installation

5.1 Unpacking the device

Contents of the packaging: This spotlight, two Omega brackets with original Camloc fasteners, powerCON-TRUE1 Schuko cable and a safety note. Open the packaging at the top and remove the powerCON TRUE1 cable, the inlay and the safety instructions. The Omega brackets are located under the spotlight. Check the P18 MK2 Profile for possible transport damage. This should be communicated immediately to the transport company.

5.2 Connection of the fixture to the power supply
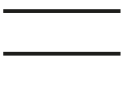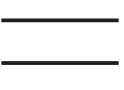
The P18 MK2 Profile is supplied with an assembled Schuko power cable with the powerCON-TRUE1 plug (only the powerCON-TRUE1 plug is included in the US version). The connection of the P18 MK2 Profile to the power supply (100-240 volts, 50 - 60 hertz) must comply with the connection rules of the respective country.

Connection in Germany/Europe:

Wire colour	Function	Symbol
Brown	Phase	"L"
Blue	Neutral wire	"N"
Green/Yellow	Protective earth	"PE" ⏚

Connection outside Europe:

The P18 MK2 Profile may only be operated on the following power supply systems:

	Mains		P18
2 wires, 1 phase	L N		L N PE
3 wires, 1 phase	L N L		L N
4 wires, 3 phases	L_1 L_2 L_3 N		L N PE

⚠️ ATTENTION:
In Canada, the P18 MK2 Profile may only be operated in a 2-wire, 1 phase network with a maximum voltage of 120V!

5.3 Mains connection

Connected loads: Voltage 100-240 V, frequency 50 - 60 Hz, power max. 1500 VA

The electrical safety and function of the device can only be guaranteed if it is connected to a properly installed protective conductor system. It is very important that this basic safety requirement is met. If in doubt, have the electrical installation checked by a specialist. The manufacturer cannot be held responsible for damage caused by a missing or interrupted protective conductor (e.g. electric shock)! Only use the device when it is completely assembled so that no electrical components can be touched. **(Danger 100-240 V)**

If you have observed the listed points, you can plug in the devices or have them connected to the mains by a specialist.

⚠️ ATTENTION: The P18 MK2 Profile can light up immediately if standalone operation is activated or a DMX signal is present!

5.4 Wiring the power feed-through

⚠️ ATTENTION: Only have it carried out by a specialist!

The P18 MK2 Profile has a powerCON-TRUE1 out power output. Depending on the local conditions several devices can be linked by powerCON-TRUE1 in and powerCON-TRUE1 out. Connect a maximum of two (when using 230V/16A) P18 MK2 Profiles in a row.
Use an approved three-core cable with a cross-section of at least 1.5 mm². Cabling must be done with the original Neutrik coded plugs. The installation instructions of the manufacturer (www.neutrik.com) and the colour coding of the cable must be observed.

Wire colour	Function	Symbol
Brown	Phase	"L"
Blue	Neutral wire	"N"
Green/Yellow	Protective earth	"PE" ⏚

5.5 Signal connections

5.5.1 DMX cabling

The DMX cabling (signal lines) should be done with a 4-pin cable with shielding. We recommend a DMX cable (110 Ohm, $4\times0.22mm^2$), alternatively a 2-pole micro cable can be used. The plugs and sockets are 5-pin XLR connectors, which can be purchased in specialist shops.

Pin assignment:
Pin1 = Ground/Shielding
Pin2 = DMX -
Pin3 = DMX +
Pin4 = not connected
Pin5 = not connected
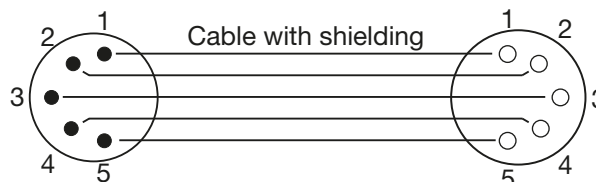
The P18 MK2 Profile has a DMX-in and DMX-out connector. Now connect the DMX output of your controller to the 1st P18 MK2 Profile (Controller DMX-Out -> P18 MK2 Profile DMX-In). Then the 1st P18 MK2 Profile with the 2nd P18 MK2 Profile (P18 MK2 Profile DMX-Out -> P18 MK2 Profile DMX-In) and so on. In some cases it is advisable to insert a so-called end connector (XLR connector with a 120 Ohm resistor between pin 2 and pin 3). Whether an end connector is required depends on various factors, including the cable lengths used and the number of devices. However, as long as no problems occur in the DMX line, this is not necessary.

5.5.2 Ethernet cabling

Ethernet cabling can be done with standard network lines. The sockets on the device are Neutrik etherCON sockets. Special cables with etherCON connectors are recommended by Neutrik. The two sockets on the P18 MK2 Profile are connected to each other via a switch. Up to 10 devices can be connected in series without any delay. Of course, the spotlights can also be supplied in a star configuration via an external switch. The received signal can be output via DMX. To do this, set the DMX OUTPUT CONFIG setting to ON in the PERSONALITY menu. After confirming with ENTER, the spotlight emits the entire received universe.

⚠ ATTENTION: Make sure that there is no signal at the DMX input at the same time !!

5.5.3 Wireless reception

The P18 MK2 Profile is equipped as standard with a **LumenRadio** CRMX receiver for wireless DMX. The receiver can process both DMX and RDM. If a cable and wireless connection are connected to the P18 MK2 Profile, the cable connection has priority! The received signal can be output via DMX. To do this, set the DMX OUTPUT CONFIG setting to ON in the PERSONALITY menu. After confirming with ENTER, the spotlight emits the entire received universe.

⚠ ATTENTION: Make sure that there is no signal at the DMX input at the same time !!

5.6 Mounting the devices

⚠️ ATTENTION: Allow a fixture distance of at least 1 metres from easily flammable material and the distance between the light emission and the surface to be illuminated must be at least 4 meters.

The P18 MK2 Profile can be placed on the floor or hang on a hanging system, for example a trussing system. **Mounting horizontally to the truss (see picture) is only possible with our special mounting plate.**

When placing the unit on the floor make sure that it stands on rigid ground, because the air inlets in the base must not be covered with anything!

This type of assembly only with special mounting plate
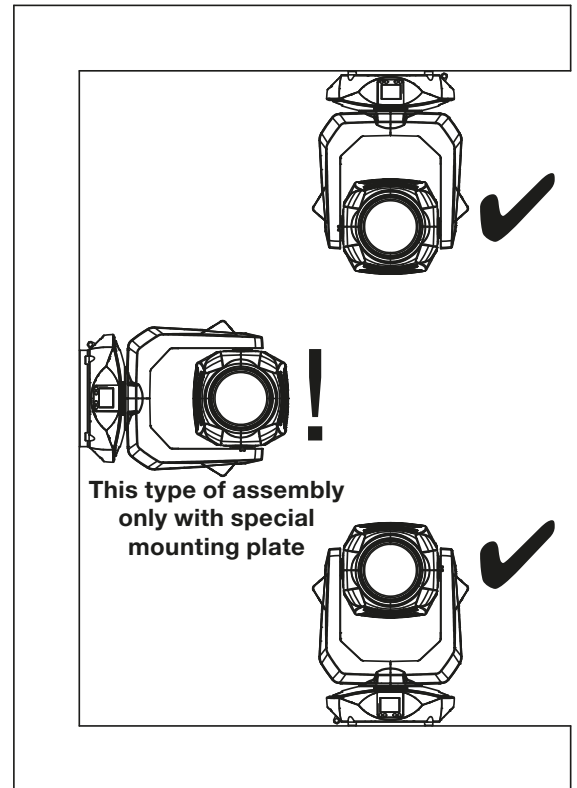
To mount the unit on a hanging system for example on a truss system use min. two of the original JB-Lighting omega brackets with original Camloc-connectors. You have following possibilities to mount the omega brackets.

140
1
140
258,4

2

3

4
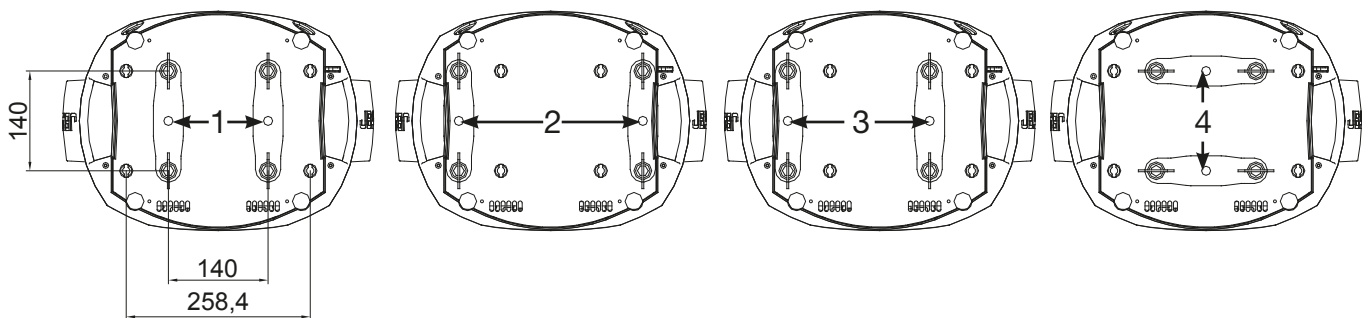
The Camlocs must snap in to be locked properly. Ensure that the structure (for example a truss system) to which you are attaching the fixture is secure. If you install the fixture to a hanging system (for example to a truss system) always attach a safety cable, that can hold at least 10 times the weight of the fixture. There is a corresponding eyelet on the fixture for the secondary safety device (see picture).

eyelet for the secondary safety device

P18 MK2 Profile

6. Control panel

The P18 MK2 Profile has a graphic colour display that can be rotated 180° when installed in a suspended position. The display can be rotated in the PERSONALITY MENU or via short cut ENTER + UP in the main screen.

All parameters of the P18 MK2 Profile can be set on the control panel (see menu overview page 13).

Function and operation of the display
The main menu provides information regarding the set DMX mode and, when the wireless mode is switched on, the field strength of the associated transmitter module. "ENTER" calls up a sub-menu or confirms an input. "ESC" is used to exit a function or a menu item. "UP" and "DOWN" are used to navigate within the menu and to enter values.

Special areas can only be called up using a specific key combination. To do this, press and hold the "ENTER" key and then use the opposite "ESC" key to access the menu. To exit the function, proceed in reverse order.

This applies in the SERVICE area for the FINE ADJUST function and in the STANDALONE area for the MODIFY, RUN and REMOTE functions.

The main menu can also be locked to prevent unintentional access. It is also locked by pressing the "ENTER" key (keep it pressed) and then additionally locking it with the opposite "ESC" key.

Display illumination as function display
The display illumination remains switched off during the reset. Slowly flashing display illumination when "JB-Lighting" is displayed means no DMX signal is present.

A very rapidly flashing display illumination when "JB-Lighting" is displayed means that a new error has been stored in the "ERROR LIST", also an error message in the display (e.g. *PAN TIMEOUT) indicates this current error. This error occurs during this reset or in the operation. This error is now automatically set to "read", but remains in the "ERROR LIST".

A rapidly flashing display illumination shows an error in the "ERROR LIST" is still in it but has already been confirmed or was automatically confirmed. Only when the error has been deleted from the ERROR LIST does the P18 MK2 Profile start again without error signalling.

If errors occur again and again contact the dealer / distributor or our service department.

If the P18 MK2 Profile receives a DMX signal, the display illumination goes out after a short time.

Further settings for the display illumination see page 18 BACKLIGHT MODE.

BACKLIGHT MODE
- OFF
- ON
- AUTO

DISPLAY ORIENTA.
- STANDARD
- FLIP

MAIN SCREEN MO
- STANDARD
- USER ID

SAFE MODE SWIT
- OFF
- ON

USER FIXTURE ID
- ID +/- →

LED FADE OUT
- STANDARD
- SOFT

BLMODE
- RAW
- MOVE/ANGLE

SERVICE

RESET FIXTURE	SURE? →			
ERROR LIST	LIST	PAN TIMEOUT	COUNT: 1	CLEAR?
	CLEAR	SURE?		
FUNCTION TEST	START TEST	TEST RUNNING		
DMX TEST	DMX CHANNEL	CH 001: --- +/-		
INIT PAN/TILT	SURE?			
DISPLAY CONTR.	D. CONTR: +000 +/-			
FINE ADJUST	OFS PAN	OFS PAN +/-		
	OFS TILT	OFS TILT +/-		
	OFS FOCUS	OFS FOCUS +/-		
	ADJ BL	SET BLROT		
		SET BL1 LOWER		
		SET BL2 UPPER		
		SET BL3 LEFT		
		SET BL4 RIGHT		
		STORE BL ADJ		
IDENTIVY DEVICE	SURE? →			

STANDALONE

EDIT → STEP NR. +/-
- MODIFY
- CAPT DMX
- INSERT
- DELETE
- RESET STEP
- CLEAR ALL

MODIFY:

FADE TIME	FADE TIME +/-
NEXT TIME	NEXT TIME +/-
PAN	PAN +/-
TILT	TILT +/-
CONTROL	CONTROL +/-
SHUTTER	SHUTTER +/-
DIMMER	DIMMER +/-
FOCUS	FOCUS +/-
ZOOM	ZOOM +/-
AUTOFOCUS DIS.	AUTOFO DIS +/-
RESERVED	RESERVED
IRIS	IRIS +/-
GOBO1	GOBO1 +/-
GOBO2	GOBO2 +/-
GOBO2 ROT	GOBO2 ROT +/-
ANIMATION	ANIMATION +/-
BL 1A	BL 1A +/-
BL 1B	BL 1B +/-
BL 2A	BL 2A +/-
BL 2B	BL 2B +/-
BL 3A	BL 3A +/-
BL 3B	BL 3B +/-
BL 4A	BL 4A +/-
BL 4B	BL 4B +/-
BL ROT	BL ROT +/-
COLOR	COLOR +/-
CYAN	CYAN +/-
MAGENTA	MAGENTA +/-
YELLOW	YELLOW +/-
CTO	CTO +/-

SPARKLE	SPARKLE +/-
SPARKLE SP	SPARKLE SP +/-
PRISM	PRISM +/-
PRISM ROT	PRISM ROT +/-
PRISM 2	PRISM 2 +/-
PRISM ROT 2	PRISM ROT 2 +/-
FROST	FROST +/-
FROST 2	FROST 2 +/-
RESERVED	RESERVED +/-
SPEED P/T	SPEED P/T +/-
SPEED EFF	SPEED EFF +/-
MOVE B-OUT	MOVE B-OUT +/-

RUN

TIMEBASE
- 1 SEC
- 1/10 SEC

REMOTE

INFO
- SOFTWARE VER.
- FIXTURE ID
- TOT OP. TIME
- TOT LAMP TIME
- TOT BAT CHARGE T.
- TEMP BASE LCD
  - ACTUAL
  - MAX — RESET?
- TEMP BASE PS
  - ACTUAL
  - MAX — RESET?
- TEMP HEAD MAIN
  - ACTUAL
  - MAX — RESET?
- TEMP HEAD DRV
  - ACTUAL
  - MAX — RESET?
- TEMP HEAD LED
  - ACTUAL
  - MAX — RESET?
- TEMP HEAD AMB.
  - ACTUAL
  - MAX — RESET?

6.2 FACTORY DEFAULTS - Factory settings

To reset P18 MK2 Profile to factory settings, go to the menu item FACTORY DEFAULTS, LOAD DEFAULTS. After confirming the security query SURE? by pressing the "ENTER" button for 2 seconds, all parameters are reset to the factory settings.

6.3 USER DEFAULTS - User settings

If the user has set the P18 MK2 Profile in the PERSONALITY menu to their personal settings, these can be saved and loaded in the USER DEFAULTS menu. In order to prevent unintentional alteration of the data, you must enter the following password during the saving process: Buttons "ESC DOWN UP ENTER"

6.4 DMX / NET ADDRESS - DMX addressing / Artnet addressing / sACN addressing

The DMX addressing can be done either directly in the display. Press the "UP" or "DOWN" button to set the desired DMX address. The value is confirmed with the "ENTER" key. However, the DMX addressing can also be done within the menu item DMX / NET ADDR, and there under DMX ADDRESS.

To set the Artnet address, the menu item ARTNET ADDRESS must be selected in the DMX / NET ADDR menu. The Artnet address can now be set using the UP / DOWN buttons. The Artnet address is displayed in the form 000.00.00. This display corresponds to: Net.Subnet.Universum. The sACN address can then be selected in the DMX / NET ADDR -> sACN ADDRESS menu. The address can now be set using the UP / DOWN buttons. The sACN address is displayed in the form 00000.

6.5 PERSONALITY - Personal settings

DMX INPUT CONFIG

In this menu item the options WIRELESS and NETWORK are available.

Under WIRELESS -> ON / OFF the factory-installed radio DMX receiver module of Lumen-Radio can be activated or deactivated and via WIRELESS -> UNLINK the connection to the connected transmitter can be deleted. In order to connect the fixture to a transmitter, wireless must be set to ON on the fixture and the connection button must be pressed briefly on the transmitter. The transmitter is now looking for all fixtures where wireless is enabled and fixtures that are not connected to a transmitter. If the P18 has successfully connected to the transmitter, the display shows a level indication of the current reception quality. If the P18 is additionally connected via the DMX / etherCON connection sockets, these signals have priority over the radio link. Using the key shortcut ESC and DOWN, pressed in the main menu, the headlamp can be booked out of the booked transmitter (see page 20).

Under NETWORK -> MODE you can toggle between Artnet operation and sACN operation.

For network operation, the IP address of the spotlight must be selected or set under NETWORK -> IP ADDRESS. Each headlight has a unique standard IP address.

Under IP ADDRESS -> DEFAULT IP this can be changed from the network 10.xxx.xxx.xxx to a network 2.xxx.xxx.xxx. For your own self-definable IP address, you can set your own desired IP address under IP ADDRESS -> USER-IP. This address is divided into BYTE1 to BYTE 4 and can be set one after the other.

DMX OUTPUT CONFIG - configuration of the DMX output
Under this menu item, the DMX output of the headlamp can be activated, that is a received Art-net, or wireless DMX signal can be output by activating this menu item -> ON via the DMX socket again. Make sure that there is no signal at the DMX input at the same time !!

DMX MODE - setting the operation mode
The P18 MK2 Profile has 2 operating modes (see channel assignment page 23). All parameters of P18 MK2 Profile can be operated via mode 1. However, all channels (except pan/tilt) are controlled with 8 bits. By selecting Mode 2 - 16 Bit the gobo, prism rotation, CMY/CTO, dimmer, focus, zoom, the complete shutter slide unit as well as pan/tilt are controlled via 16 Bit.

CURVES - setting dimmer, RGB/CMY, frost curve
Dimmer curve:
The dimmer curve can be changed from linear to square and to square inv. The square dimmer curve (factory setting) causes the dimmer to fade in and out optically more smoothly.
RGB/CMY curve:
6 different curves can be set for the RGB / CMY curve. LINEAR and SQUARE INV., The square-inv. curve causes a visually more even retraction. LINEAR MK1 and SQUARE INV. MK1, are the two adapted curves on the P18 MK1. LINEAR LEGACY and SQUARE INV. LEGACY are the two original curves of the P18 MK2, the square-inv.-legaycy curve was measured for e.g. ETC consoles.
Frost curve:
The frost curves can be changed from invers exponential (square inv.) to linear. The "invers exponential" frost curve causes the frost to fade in and out more smoothly.

CAMERA MODE - setting the repetition frequency of the LEDs
To avoid flickering during TV recordings, the P18 MK2 Profile can be adjusted from 50 Hertz (PAL, Secam) to 60 Hertz (NTSC) for different camera systems. Flex mode is set when using different camera systems or when shooting with mobile phone cameras or similar non-professional cameras. A HighFlex mode is also available. In this mode, the repetition frequencies are set to 3 kHz, which is necessary to ensure smooth movements in dimmed lighting scenes. The factory setting of the P18 MK2 Profile is 60 Hertz. The changeover is also possible with the light mixing console via the control channel.

COOLING MODE - adjustment of brightness and fan volume
In the COOLING MODE menu item you can set the fan control and the brightness of the P18 MK2 Profile. The following settings are available.

THEATRE WHISPER: Brightness 30.000lm (model HP), volume 29dB(a). In this mode, the spot-light runs at the same brightness up to an ambient temperature of 40°C. It is not necessary to speed up the fans in this mode.

THEATRE SILENT: Brightness 33.500lm (model HP), from 40°C ambient temperature the spot-light regulates the fans a little up thus remains that the brightness is always the same level.

STANDARD: Brightness 38.000lm (model HP), from an ambient temperature of approx. 36°C the fans run to cool the LED accordingly. The brightness remains constant.

BOOST: Brightness 40000lm (model HP), the fans run a little stronger in this mode, from approx. 40° ambient temperature the fans run again accordingly.

LONGLIFE: Brightness 33.500lm (model HP), the fans run a little stronger in this mode, from approx. 40° ambient temperature the fans run again accordingly. We would recommend this mode for permanent installations, as the LED module runs cooler and thus more "stress-free".

There is no danger to the life of the device in any mode, as the P18 MK2 Profile has a temperature safety shutdown. In addition, the LED module is switched off from an ambient temperature of 60°C!

PAN TILT SPEED - setting pan/tilt speed
In the PAN TILT SPEED menu you can set the maximum speed, the acceleration and thus also the movement volume of the P18 MK2 Profile. The following setting options are available.

WHISPER: The speed of Pan / Tilt is reduced so much that a volume of 29dB (A) is not exceeded.

SILENT: The speed of Pan / Tilt is slightly faster and thus louder as compared to the Whisper setting.

MEDIUM: The acceleration and deceleration ramps are set very soft so that the headlamp brakes softly and starts.

FAST: The acceleration and deceleration ramps are set very hard so that the headlamp moves very fast and directly at maximum speed.

EFFECT SPEED - setting effect speed
In the menu item EFFECT SPEED you can set the maximum speed, the effects and thus also the volume of the effects of the P18 MK2 Profile. The following setting options are available.

WHISPER: The speed of the effects is reduced so much that a volume of 29dB (A) is not exceeded.

SILENT: The speed of the effects is slightly faster and thus a bit louder than with the Whisper setting.

MEDIUM: The acceleration and deceleration ramps of the effects are set very soft, so that the effects are very soft and thus cause little noise.

FAST: The acceleration and deceleration ramp effects are set to maximum speed. Very fast gobo and color changes are possible!

BACKLIGHT MODE - setting the display backlight
This menu item controls the backlight of the display.
OFF: The backlight of the display is always off. The lighting only switches on when a button is pressed. Errors that are indicated by flashing are not displayed in this mode.
ON: The backlight of the display is always on.
AUTO: The backlight is switched on / off due to the action.

DISPLAY ORIENTATION - setting the display orientation
This menu item turns the display orientation. The display can also be rotated when the shortcut ENTER and UP is pressed in the main screen.

MAIN SCREEN MODE - view of the main screen
With this menu item the display of the main screen can be changed. Either the standard (STANDARD) screen is displayed with DMX address and DMX mode or the USER FIXTURE ID. This ID is used to number the headlights and to display this number in the display.

SAFE MODE SWITCH - setting of the safe mode switch
This setting can be used to decide whether switching the menu item COOLING MODE can be done directly "OFF" or whether for safety the dimmer and the shutter of the fixture must be closed before switching. -> "ON"

USER FIXTURE ID - adjustment of the user fixture ID
Used to set the USER FIXTURE ID (0-65535). This can be displayed via MAIN SCREEN MODE and serves as an info display of the headlight number.

LED FADE OUT - type of dimming
Used to set how to dim the lower range from 0-5%.
STANDARD: When dimming the headlamp, all LED's dim out at the same time.
SOFT: When the headlamp is dimmed, the LED's are dimmed out in groups (in a row) one row after the other.

BLMODE - Type of shutter control
Serves to switch the shutter control. With the RAW setting, the two motors of the individual apertures are controlled separately via DMX. With the MOVE/ANGLE setting, one channel is used as a movement channel and the angle of the individual aperture is set via the second channel.

6.6 STANDALONE operation

In standalone operation, up to 10 program steps can be stored in the P18 MK2 Profile, which can then run in an endless loop. The images can be saved in two ways. Either you program the desired DMX values directly on P18 MK2 Profile and save them, or you set the DMX values via a connected DMX console and then store them in the P18 MK2 Profile.
The menu items MODIFY, RUN and REMOTE can only be called up using a specific key combination. To do this, press and hold "ENTER", and also press "ESC". Before activating these menu items, remove all other devices in the DMX line that send DMX, e.g. consoles or other spotlights that are not configured as slave devices, as otherwise damage to the DMX drivers may occur.

Programming the standalone programme on the spotlight display:
Call up the STANDALONE, EDIT menu item. In the STEP NR+/- menu item, select the desired step and you can change it and its channel parameters in the following menu items: In the MODIFY menu item, set the desired lighting scene and position and determine the individual sequence times of the steps with FADE TIME and NEXT TIME (time for the complete step).
Use INSERT to insert an additional programming step. The DMX values of the previous step are copied to the new step.
Use DELETE to delete a step. The display shows STEP NR: 1/X. Use the selection keys to move to the desired step.
With RESET STEP you reset one step to its default values (DMX 000). The display shows STEP NR: 1/X. Use the selection keys to select your step. CLEAR ALL resets the complete standalone programming steps. Under MODIFY you will find STEP1/1 again. In the STANDALONE, TIMEBASE menu item you have the possibility to change the Fade Time and Next Time from 1 second to 1/10 second.

Accept the DMX values from an external console:
To accept the DMX values of a connected console, you must first enable the Capture DMX input. To do this, go to the CAPT DMX menu item. The display now shows CAPTURE DMX 01/01, press the Enter key to switch to START CAPTURE. Now the P18 MK2 Profile reacts to the signals from the external console.

Launch the standalone program:
Call up the STANDALONE menu and navigate to the RUN submenu. Confirm the selection by pressing the key combination "ENTER" (press and hold) and simultaneously "ESC". The display then shows: S-ALONE: 01/XX and the program runs in an endless loop.
Deactivation: Press and hold the "ESC" key and then also press "ENTER". The menu jumps back one level and RUN appears in the display.

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Operation via master-slave function:

Connect the P18 MK2 Profile via DMX lines and activate the REMOTE menu item for all slave devices. To do this, navigate in the STANDALONE menu to the REMOTE sub-menu. Activate the REMOTE function by pressing and holding "ENTER", and also pressing "ESC". The spotlight is in slave mode when the display shows the status REMOTE INACTIVE or REMOTE ACTIVE.

REMOTE INACTIVE: The P18 MK2 Profile is in slave mode but does not receive a DMX signal.

REMOTE ACTIVE: The P18 MK2 Profile is in slave mode and receives a DMX signal.

The master device is programmed via the MODIFY menu item and started via RUN (press and hold "ENTER" and also press "ESC").

6.7 INFO-menu

The Info menu informs you about the respective software and thwe fixture ID status, about the total operating time and the different temperatures of the spotlight. The first two menu items in the Info area are the software version and the firmware version, whereby the software version is an important source of information for our service requests. Under the menu item TOT OPERATE TIME the complete operating time of the headlight is displayed. The menu item TOT LAMP TIME provides information about the pure operating time of the LED module. TOT BAT CHARGE TIME shows the complete charging time of the battery (battery backup). The TOT OPERATE TIME and the TOT BAT CHARGE TIME can not be deleted! The following temperatures are also displayed:

TEMP BASE LCD, the temperature on the display board

TEMP BASE PS, the temperature of the power supply unit

TEMP HEAD MAIN, the temperature of the head board

TEMP HEAD DRV, the temperature of the LED driver board

TEMP HEAD LED, the temperature of the LED module

TEMP HEAD AMBIENT, the temperature in the head next to the air inlet (ambient temperature)

Both the current temperature and the maximum temperature are displayed. The maximum temperatures can be individually deleted.

6.8 Shortcuts - quick access

ESC + DOWN
Pressing the ESC and DOWN buttons in the main menu will log the fixture off the programmed Lumen Radio Wireless transmitter. The fixture is now ready to be logged in another transmitter.

ENTER + UP
If ENTER + UP is pressed in the main screen, the screen orientation is rotated by 180 °.

ENTER + ESC
By pressing the ENTER and ESC key, the headlight is locked for user input -> LOCKED. ESC and ENTER release the lock again!

7. Control options

7.1 DMX

7.1.1 Operating modes P18 MK2 Profile

The P18 MK2 Profile has 2 different DMX modes. The respective mode can be set in the PERSONALITY, DMX MODE menu item. The set mode is displayed in the main menu.

	Mode 1(M1)	Mode 2 (M2)
Channel 1	Pan	Pan
Channel 2	Pan fine	Pan fine
Channel 3	Tilt	Tilt
Channel 4	Tilt fine	Tilt fine
Channel 5	Control channel	Control channel
Channel 6	Shutter	Shutter
Channel 7	Dimmer	Dimmer
Channel 8	Focus	Fine dimmer
Channel 9	Zoom	Focus
Channel 10	Autofocus distance	Fine focus
Channel 11	Reserved	Zoom
Channel 12	Iris	Fine zoom
Channel 13	Gobo 1	Autofocus distance
Channel 14	Gobo 2	Reserved
Channel 15	Gobo 2 rotation	Iris
Channel 16	Animation wheel	Fine iris
Channel 17	Aperture 1a	Gobo 1
Channel 18	Aperture 1b	Gobo 2
Channel 19	Aperture 3a	Gobo 2 rotation
Channel 20	Aperture 3b	Gobo 2 fine rotation
Channel 21	Aperture 2a	Animation wheel
Channel 22	Aperture 2b	Aperture 1a
Channel 23	Aperture 4a	Aperture 1a fine
Channel 24	Aperture 4b	Aperture 1b
Channel 25	Aperture rotation	Aperture 1b fine
Channel 26	Colour wheel	Aperture 3a
Channel 27	Cyan	Aperture 3a fine
Channel 28	Magenta	Aperture 3b
Channel 29	Yellow	Aperture 3b fine
Channel 30	CTO (CTB model WW)	Aperture 2a
Channel 31	Sparkle	Aperture 2a fine
Channel 32	Sparkle speed	Aperture 2b
Channel 33	Prism 1	Aperture 2b fine
Channel 34	Prism 1 rotation	Aperture 4a
Channel 35	Prism 2	Aperture 4a fine
Channel 36	Prism 2 rotation	Aperture 4b
Channel 37	Frost 1	Aperture 4b fine
Channel 38	Frost 2	Aperture rotation
Channel 39	Reserved	Fine aperture rotation
Channel 40	Pan/tilt speed	Colour wheel
Channel 41	Effect speed	Cyan
Channel 42	Blackout Move	Fine cyan

Channel 43	Magenta
Channel 44	Fine magenta
Channel 45	Yellow
Channel 46	Fine yellow
Channel 47	CTO (CTB model WW)
Channel 48	CTO fine (CTB fine model WW)
Channel 49	Sparkle
Channel 50	Sparkle speed
Channel 51	Prism 1
Channel 52	Prism 1 rotation
Channel 53	Prism 1 fine rotation
Channel 54	Prism 2
Channel 55	Prism 2 rotation
Channel 56	Prism 2 fine rotation
Channel 57	Frost 1
Channel 58	Frost 2
Channel 59	Reserved
Channel 60	Pan/tilt speed
Channel 61	Effect speed
Channel 62	Blackout Move

7.1.2 DMX channel functions P18 MK2 Profile

M1	M2	M3	Function	DMX
1	1		**Pan** (X) movement 546,74°	000-255
2	2		**Pan** (X) fine (16 Bit)	000-255
3	3		**Tilt** (Y) movement 281.16°	000-255
4	4		**Tilt** (Y) fine (16 Bit)	000-255
5	5		**Control channel** To enable uniform dimming manually via faders for all light mixing consoles, 5 different settings for the DMX smoothing are available. If the DMX signal is interrupted or too few packets are sent on some DMX consoles, the response of the Sparx 18/30 can be adjusted with this channel. The Minimum DMX Smoothing setting should work on most popular consoles. The values for DMX smoothing must be permanent. For the other values, such as cooling mode, color temperature, zoom modes, camera mode, reset, the values must be applied for 2 seconds, then the device will be permanently switched (Same setting as in the PERSONALITY menu). **Setting for minimal DMX smoothing** (A dimmed shutter sequence is possible) Dimmer fade out via fader (fast - slow) not used **Setting for minimum / medium DMX smoothing** Dimmer fade out via fader (fast - slow) not used **Setting for medium DMX smoothing** Dimmer fade out via fader (fast - slow) not used **Setting for medium / maximum DMX smoothing** Dimmer fade out via fader (fast - slow) **BACKLIGHT MODE - Display backlight configuration** AUTO - the fixture controls the backlight automatically ON - the backlight is always on OFF - the backlight is always off until a key is pressed **DISPLAY ORIENTATION - display flip or not** STANDARD - the display can be read when the headlamp is on a surface FLIP - the display orientation is rotated by 180 °, hanging readable not used **MAIN SCREEN MODE - view of the main screen** STANDARD - the main screen displays the DMX address, the DMX mode, and when wireless is enabled, the field strength. USER FIXTURE ID - the main screen displays the user definable fixture ID / headlight number not used **USER FIXTURE ID SET - set of fixture number** SET - the USER ID can be set. The headlamp takes the 16-bit value of Pan for the USER ID not used **Setting for maximum DMX smoothing** Dimmer fade out via fader (fast - slow)	000-007 008-031 032-039 040-063 064-071 072-095 096-103 104-104 105-105 106-106 107-107 108-108 109-109 110-110 111-111 112-112 113-113 114-127 128-135
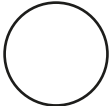
			DIMMER CURVE - selection of dimmer curve	
			LINEAR - linear dimmer curve	136-136
			SQUARE - exponential dimmer curve	137-137
			SQUARE INVERSE - exponential inverse dimmer curve	138-138
			not used	139-139
			RGB/CMY CURVE - selection of RGB/CMY curve	
			LINEAR - linear RGB/CMY curve	140-140
			SQUARE INVERSE - Exponential inverse RGB/CMY curve	141-141
			LINEAR MK1 - linear RGB/CMY curve adapted to P18 MK1	142-142
			FROST CURVE - selection of frost curve	
			LINEAR - linear frost curve	143-143
			SQUARE INVERSE - Exponential inverse frost curve	144-144
			not used	145-145
			PAN/TILT SPEED - selection of PAN/TILT speed	
			WHISPER	146-146
			SILENT	147-147
			MEDIUM	148-148
			FAST	149-149
			EFFECT SPEED - selection of effect speed	
			WHISPER	150-150
			SILENT	151-151
			MEDIUM	152-152
			FAST	153-153
			LED FADE OUT MODE - selection of dimming out	
			STANDARD	154-154
			SOFT	155-155
			BLMODE - type of shutter control	
			RAW	156-156
			MOVE/ANGLE	157-157
			not used	158-159
			COOLING MODE - Adjust the fan volume and brightness	
			This takes place with dimmer / shutter set to closed (DMX 000) then after 2 seconds the fixture will switch this option, except the switch "SAFE MODE SWITCH" in the PERSONALITY menu is set to OFF, then the changeover can take place directly without dimmer and shutter having to be closed.	
			THEATRE WHISPER	160-160
			THEATRE SILENT	161-161
			STANDARD	162-162
			BOOST	163-163
			LONGLIFE	164-164
			not used	165-207
			CAMERA MODE - Setting the LED refresh rate	
			50Hz	208-215
			60Hz	216-223
			FLEX - 600Hz	224-227
			High FLEX - 3kHz	228-231
			not used	232-239
			RESET - a basic reset of the fixture is carried out	
			Reset	240-247
			not used	248-255

6	6		**Shutter**	
			Shutter closed	000-015
			Shutter open	016-095
			Open pulsing shutter >20Hz (rapid - slow)	096-110
			Shutter open	111-111
			Fade effect with dimmer (slow - rapid)	112-125
			Shutter open	126-126
			Shutter closed	127-126
			Open pulsing shutter <20Hz (rapid - slow)	128-142
			Shutter open	143-143
			Close pulsing shutter >20Hz (rapid - slow)	144-158
			Shutter closed	159-159
			Shutter fade, 0% (rapid - slow)	160-174
			Shutter open	175-175
			Shutter fade, 100% (rapid - slow)	176-190
			Shutter closed	191-191
			Random shutter 100% (rapid - slow)	192-206
			Shutter open	207-207
			Random shutter 0% (rapid - slow)	208-222
			Shutter closed	223-223
			Random shutter fade, 0% (rapid- slow)	224-238
			Shutter open	239-239
			Random shutter fade, 100% (rapid- slow)	240-254
			Shutter open	255-255
7	7		**Dimmer** 0 - 100%	000-255
	8		**Fine dimmer** (16Bit)	
8	9		**Focus** 0-100%	000-255
	10		**Fine focus** (16 Bit)	000-255
9	11		**Zoom** 0 -100% (near 6.5° - far 54°)	000-255
	12		**Fine zoom** (16 Bit)	000-255
10	13		**Auto focus distance** works from version 1.5	
			Auto focus off	000-001
			Auto focus 0 m - 25,5 m (0=off, DMX / 10 = distance)	002-255
11	14		**Reserved**	
			not used	000-255
12	15		**Iris** 0-100% (open -> closed)	000-255
	16		**Fine iris** (16Bit)	000-255
13	17		**Gobo wheel 1**	
			Gobo 0	000-007
			Gobo 1	008-015

			Gobo 2		016-023
			Gobo 3		024-031
			Gobo 4		032-039
			Gobo 5		040-047
			Gobo 6		048-055
			Gobo 7		056-063
			Gobo 8		064-191
			Gobo wheel rotation, right (fast - slow) Gobo wheel rotation, left (slow - fast)		192-223 224-255
14	18		**Gobo wheel 2 - rotating gobos** Gobo 0		000-007
			Gobo 1		008-015
			Gobo 2		016-023
			Gobo 3		024-031
			Gobo 4		032-039
			Gobo 5		040-047
			Gobo 6		048-127

		Gobo 0 shake (fast - slow) Gobo 1 shake (fast - slow) Gobo 2 shake (fast - slow) Gobo 3 shake (fast - slow) Gobo 4 shake (fast - slow) Gobo 5 shake (fast - slow) Gobo 6 shake (fast - slow) Gobo wheel rotation (fast - slow) Gobo wheel rotation (slow - fast)		128-135 136-143 144-151 152-159 160-167 168-175 176-191 192-223 224-255
15	19	**Gobo positioning/rotation 2** Gobo positioning 0° - 540° Gobo rotation, right (rapid - slow) Stop gobo rotation Gobo rotation, left (slow - rapid)		 000-191 192-222 223-224 225-255
	20	**Fine gobo positioning/rotation 2** (16 Bit)		000-255
16	21	**Animation wheel** Open Faded water effect, middle position Stop faded water effect Faded water effect (slow -> rapid) Open Water effect switched, middle position Stop switched water effect Switched water effect (slow -> rapid) Open Faded fire effect, middle position Stop faded fire effect Faded fire effect (slow -> rapid) Open Switched fire effect, middle position Stop switched fire effect Switched fire effect (slow -> rapid)		 000-000 001-001 002-002 003-063 064-064 065-065 066-066 067-127 128-128 129-129 130-130 131-191 192-192 193-193 194-194 195-255
17	22	**Aperture 1a** 0-100%		000-255
	23	**Aperture 1a fine** (16 Bit)		000-255
18	24	**Aperture 1b** 0-100%		000-255
	25	**Aperture 1b fine** (16 Bit)		000-255
19	26	**Aperture 3a** 0-100%		000-255
	27	**Aperture 3a fine** (16 Bit)		000-255
20	28	**Aperture 3b** 0-100%		000-255
	29	**Aperture 3b fine** (16 Bit)		000-255
21	30	**Aperture 2a** 0-100%		000-255
	31	**Aperture 2a fine** (16 Bit)		000-255
22	32	**Aperture 2b** 0-100%		000-255

shaper rotation
center DMX 128
DMX 000 -65° DMX 255 65°
1A 1B
4B 2A
4A 2B
3B 3A

fixture standing with display to the front
Pan: center DMX 128
Tilt: lens looking backwards DMX 200

	33	**Aperture 2b fine** (16 Bit)	000-255
23	34	**Aperture 4a** 0-100%	000-255
	35	**Aperture 4a fine** (16 Bit)	000-255
24	36	**Aperture 4b** 0-100%	000-255
	37	**Aperture 4b fine** (16 Bit)	000-255
25	38	**Aperture slider rotation** -65° / +65°	000-255
	39	**Fine aperture slider rotation** (16 Bit)	000-255
26	40	**Colour wheel** White White / Red Red Red / Yellow Yellow Yellow / Magenta Magenta Magenta / Green Green Green / Orange Orange Orange / Dark Blue Dark Blue Dark Blue / HCRI (Pink model HC and WW) HCRI (Pink model HC and WW) HCRI (Pink model HC and WW) / White Linear colours: White - Red - Yellow - Magenta - Green - Orange - Dark Blue - HCRI (Pink model HC and WW) - White Colour cycle, right (rapid - slow) Colour cycle, left (slow - rapid)	 000-001 002-003 004-005 006-007 008-009 010-011 012-013 014-015 016-017 018-019 020-021 022-023 024-025 026-027 028-029 030-031 064-191 192-223 224-255
27	41	**Cyan** (8 Bit) 0-100%	000-255
	42	**Fine cyan** (16 Bit)	000-255
28	43	**Magenta** (8 Bit) 0-100%	000-255
	44	**Fine magenta** (16 Bit)	000-255
29	45	**Yellow** (8 Bit) 0-100%	000-255
	46	**Fine yellow** (16 Bit)	000-255
30	47	**CTO** (8 Bit) 0-100% (**CTB** model WW (8 Bit) 0-100%)	000-255
	48	**Fine CTO** (16 Bit) (**Fine CTB** model WW (16 Bit))	000-255
31	49	**Sparkle - Glitter effect** Sparkle effect inactive Sparkle effect intensity (minimum - maximum)	 000-000 001-255

32	50		**Sparkle speed**	
			Faded sparkle effect (slow -> rapid)	000-031
			Switched sparkle effect (slow -> rapid)	032-063
			Repetition of the fading and switching blocks	064-255
33	51		**Prism 1**	
			Open	000-007
			Prism 1 (5-fold linear)	008-255
34	52		**Prism 1 positioning/rotation**	
			Prism positioning (0° - 540°)	000-191
			Prism rotation, right (rapid -> slow)	192-222
			Stop prism rotation	223-224
			Prism rotation, left (slow -> rapid)	225-255
	53		**Prism 1 fine positioning/rotation** (16 Bit)	000-255
35	54		**Prism 2**	
			Open	000-007
			Prism 2 (3-fold circular)	008-255
36	55		**Prism 2 positioning/rotation**	
			Prism positioning (0° - 540°)	000-191
			Prism rotation, right (rapid -> slow)	192-222
			Stop prism rotation	223-224
			Prism rotation, left (slow -> rapid)	225-255
	56		**Prism 2 fine positioning/rotation** (16 Bit)	000-255
37	57		**Frost 1**	
			Frost 0-100%	000-255
38	58		**Frost 2**	
			Frost 0-100%	000-255
39	59		**Reserved**	
			not used	000-255
40	60		**Pan/tilt speed**	
			Real-time motion	000-003
			Delayed motion (rapid - slow)	004-255
41	61		**Effects speed**	
			Real-time effects	000-003
			Delayed effects (rapid - slow)	004-255
42	62		**Blackout Move**	
			Not assigned	000-095
			Blackout during pan/tilt	096-127
			Blackout during Gobo, Colour, Prism, CMY, Iris, Frost	128-159
			Blackout during Gobo, Colour, Prism, CMY, Iris, Frost, Zoom, Focus	160-191
			Blackout during Gobo, Colour, Prism, CMY, Iris, Frost, Pan/Tilt	192-223
			Blackout during Gobo, Colour, Prism, CMY, Iris, Frost, Zoom, Focus, Pan/Tilt	224-255

P18 MK2 Profile

7.1.3 Control channel

Via the control channel different functions of the fixture can be permanently switched. The following functions can be switched via the control channel.

Response of the headlamp when dimming via faders
BACKLIGHT MODE - display backlight
DISPLAY ORIENTATION - display orientation
MAIN SCREEN MODE - main screen view
USER FIXTURE ID SET - set headlight number
DIMMER CURVE - dimmer curve adjustment
RGB / CMY CURVE - adjust the RGB / CMY curve
FROST CURVE - setting the frost curve
PAN / TILT SPEED - pan / tilt speed
EFFECT SPEED - effect speed
LED FADE OUT MODE - type of dimming
BL-MODE - type of shutter control
COOLING MODE - adjust the fan volume and brightness
CAMERA MODE - sets the LED refresh rate
RESET - a basic reset of the headlight is performed

For details, see DMX Channel functions for the P18 MK2 Profile on page 23.

7.1.4 Sparkle effect, sparkle speed

Animation effects can be created via this channel in connection with the focus. Depending on the intensity, the projection can be made to shake more or less. This effect can be dimmed or switched.

7.1.5 Auto focus

To activate the autofocus function, set the autofocus distance channel to around 50%. Then best use gobo wheel 2 for fine adjustment of the system and set the focus accordingly to 125 (32000): Then set the distance to the headlight by focusing the headlight using the autofocus distance. As a guideline, DMX value divided by 10 corresponds to the distance (DMX 100/10 distance = 10m). Now the headlight can be operated with autofocus via the zoom. Using the following table, the focus values for the individual effects can now be preselected and zoomed in with autofocus.

	Animation	Gobo1	Gobo2	Open	Shaper	Iris
Focus 8Bit	55	95	145	185	195	215
Focus 16Bit	14080	24320	37120	47360	49920	55040

7.2 Artnet

The spotlight can be controlled via Artnet - ArtNET 4. To do this, set the Artnet address via the menu item DMX / NET ADDR -> ARTNET ADDRESS and also select it via the menu item PERSONALITY -> DMX INPUT CONFIG -> NETWORK -> MODE -> ARTNET. In addition, define the IP address of the spotlight via PERSONALITY -> DMX INPUT CONFIG -> NETWORK -> IP ADDRESS. Further details and setting options can be found on page 16.

7.3 Streaming ACN

The headlight can be controlled via sACN - Streaming ACN. To do this, set the sACN address via the menu item DMX / NET ADDR -> SACN ADDRESS and also select it via the menu item PERSONALITY -> DMX INPUT CONFIG -> NETWORK -> MODE -> SACN. In addition, define the IP address of the spotlight via PERSONALITY -> DMX INPUT CONFIG -> NETWORK -> IP ADDRESS. Further details and setting options can be found on page 16.

7.4 Wireless-DMX

The P18 MK2 Profile is equipped with a Lumen Radio CRMX receiver for wireless DMX. The receiver can process both DMX and RDM. If there is a cable and wireless connection to the P18, the cable connection has priority! The received signal can be output via the DMX connection. To do this, set the DMX OUTPUT CONFIG setting to ON in the PERSONALITY menu. After confirming with ENTER, the spotlight will output the entire universe received via wireless DMX.

7.5 RDM

The P18 MK2 Profile can communicate via RDM (Remote Device Management) in accordance with ESTA American National Standard E1.20-2006. RDM is a bidirectional communication protocol for use in DMX512 control systems. It is the open standard for the configuration and status monitoring of DMX-512 devices. The RDM protocol enables data packets to be inserted into a DMX-512 data stream without affecting existing non-RDM devices. It enables a console or dedicated RDM controller to send commands to specific devices and receive messages. The P18 MK2 Profile can send and receive RDM via DMX and Artnet 4. The spotlight is also designed to send RDM via sACN and receive it via Artnet. The RDM functionality depends on the lighting control desk used, the operating instructions of the respective desk manufacturer must also be observed.

7.5.1 RDM-UID

Every P18 MK2 Profile has a factory-set RDM-UID (unique identification number), which makes it addressable and identifiable in RDM systems.

7.5.2 RDM-PIDs

The P18 MK2 Profile supports the RDM PIDs (parameter IDs) required by ESTA as well as manufacturer-specific PIDs.

7.5.3 Standard RDM parameter IDs

RDM parameter ID	GET	SET	DISCO-VERY	Note
RDM identification				
DISC_UNIQUE_BRANCH			✔	is used for fixture identification
DISC_MUTE			✔	is used for fixture identification
DISC_UN_MUTE			✔	is used for fixture identification
RDM status determination				
QUEUED_MESSAGE	✔			
STATUS_MESSAGES	✔			
STATUS_ID_DESCRIPTION	✔			
CLEAR_STATUS_ID		✔		
RDM information				
SUPPORTED_PARAMETERS	✔			
RDM configuration				
DEVICE_MODEL_DESCRIPTION	✔			
MANUFACTURER_LABEL	✔			
FACTORY_DEFAULTS		✔		
SOFTWARE_VERSION_LABEL	✔			
DMX_PERSONALITY		✔		
DMX_PERSONALITY_DESCRIPTION	✔			
DMX_START_ADDRESS		✔		
SENSOR_DEFINITION	✔			

DEVICE_HOURS	✔			
LAMP_HOURS	✔			
IDENTIFY_DEVICE		✔		
RESET_DEVICE		✔		
PERFORM_SELFTEST		✔		
SELFTEST_DESCRIPTION	✔			

7.5.4 Manufacturer specific RDM parameter IDs

RDM parameter ID	GET	SET	DISCO-VERY	Note
RDM configuration				
Battery Charge Hours	✔			
Error Number	✔			
Error	✔			
Select Next Error		✔		
Remove Error		✔		
Remove New Error Flag		✔		
User Defaults		✔		
User Fixture ID		✔		
Fixture Lock On/Off	✔	✔		
Dimmer Curve	✔	✔		
RGB Curve	✔	✔		
Frost Curve	✔	✔		
Camera Mode	✔	✔		
Cooling Mode	✔	✔		
Pan Tilt Speed	✔	✔		
Effect Speed	✔	✔		
Backlight Mode	✔	✔		
Disp Orientation	✔	✔		
Main Screen Mode	✔	✔		
Safe Mode Switch	✔	✔		
LED Fade Out Mode	✔	✔		
Blade Mode	✔	✔		

7.5.5 RDM sensor IDs

RDM sensor ID	GET	SET	DISCO-VERY	Note
RDM sensors				
Temp Sens Base LCD	✔	✔		
Temp Sens Base PS	✔	✔		
Temp Sens Head PCB	✔	✔		
Temp Sens Head Drv	✔	✔		
Temp Sens Head LED	✔	✔		
Temp Sens Head Air	✔	✔		

8. Service

8.1 Service menu

RESET FIXTURE

Upon the "Reset" command, P18 MK2 Profile will initialise to its initial values. It is the same procedure as after switching on the P18 MK2 Profile. If an error message appears in the display, this could be the first step to correct it.

ERROR LIST

The P18 MK2 Profile stores all occurring errors internally. An error message can have a harmless cause. If you experience frequent error messages, please contact your dealer or the JB-Lighting service department. All error messages are displayed with the respective frequency and can be deleted.

FUNCTION TEST

This function allows you to test all functions of the P18 MK2 Profile without using a light mixer. The pan/tilt reset is deactivated in the process.

DMX TEST

This menu item is used to test the DMX input. Use the function keys to select the DMX channel to be tested. The display shows the incoming value, at the same time the P18 MK2 Profile reacts accordingly.

INIT PAN TILT

The P18 MK2 Profile is calibrated in the pan/tilt position at the factory. If it loses this calibration, i.e. it strikes against the stop or no longer finds its position, it can be re-initialised using this function. This process takes about 3-4 minutes and ends with a reset of the spotlight.

FINE ADJUST

The FINE ADJUST area is protected by a key combination. Focus, shapers, shaper rotation, pan and tilt are calibrated at the factory. If there are large deviations in the calibration between the individual headlights, this can be corrected in the FINE ADJUST menu. For more information please contact our service.

IDENTIFY DEVICE

The RDM command IDENTIFY DEVICE can be called up or deactivated via this menu item.

8.2 Gobo handling instructions

The used Gobo material for coating has low reflection and therefore it need to be handled according to following specification.
- Store all gobos in a dust free environment with appr. 50 % humidity
- Always use clean protection gloves when handling the gobos.
- Avoid touching the coated side of the gobos.
- Clean only with dust and oil free compressed air on the coating side.
- Glass side can be cleaned with lens cleaner and recommended tissues.
- Avoid scratching the coating side and the glass side as well.
- Never place a gobo with the coating facing down on any surface.
- Reflective side of the gobo "looks" to the lamp

8.3 Changing gobos

⚠️ ATTENTION: Allow the device to cool down and disconnect the device from the mains before opening the device. Touching live parts (high voltage) can give you an electric shock.

To open the device (from the right side) place the spotlight on a firm base as shown in the picture, the display (1) facing you, the tilt lock (2) is on the right side and the spotlight head facing away from you (3) (Or look through the grille into the spotlight from behind and look at the arrow showing the cover to be opened).

To lift off the cover, open the four camlocks (4) by half a turn, lift off the cover and unhook the safety lanyard. Now open the two knurled screws (5) and remove the gobo insert. The following figure (1) shows the gobo insert of the P18 MK2 Profile.

(1)
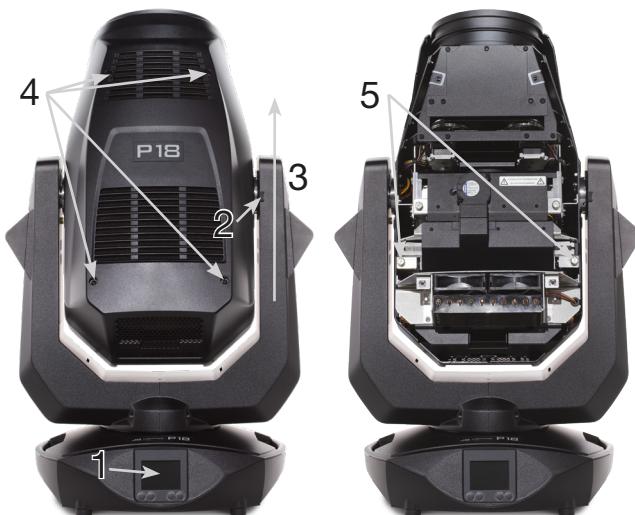
To change the rotating gobos, press the entire silver gobo holder on the outside of the wheel slightly downwards (Fig. 2) and remove the entire gobo holder. Turn the gobo holder (Fig. 3) over and remove the clamping ring A. You can then replace the gobo and replace the ring. To change the fixed gobo (Fig. 4), remove the clamping ring with a pointed object and remove the gobo from the holder. Then place the new gobo in the holder and secure the gobo again with the clamping ring (A). When inserting glass gobos, ensure that the coated side is facing the lens. Gobos that must not twist, e.g. logos, should be additionally secured against twisting with a drop of silicone adhesive.

(2)

A

(3)

A
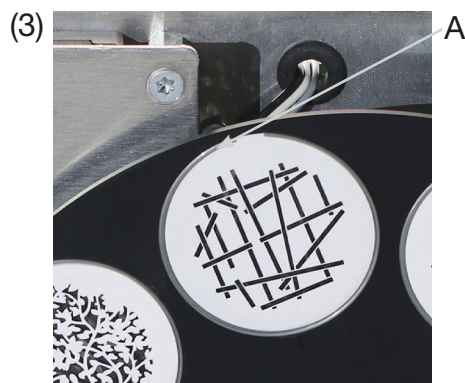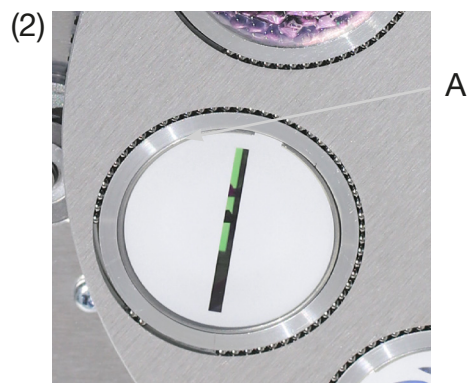
8.4 Gobo size

If you want to have your own gobos produced, please note the following dimensions:

Usable diameter, rotating. Gobos: 28.00 mm
Usable diameter, fixed gobos: 26.00mm
Outer diameter: 33.90 mm (+0/-0.2 mm)
Maximum thickness: 1.1 mm
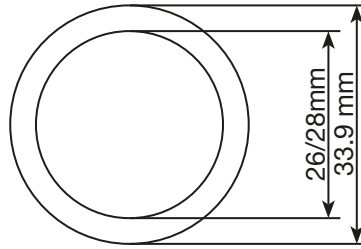
8.5 Cleaning the device

You should check the function of the fans in the head and foot at regular intervals. Above all, you should make sure that the air inlets and the inside of the P18 MK2 Profile are free of fluff and dust. Also make sure that the dust filters in the covers are clean.

Open the head cover (4x camlocks with a half turn) and the bottom plate on the foot. You can clean the P18 MK2 Profile with a brush and a vacuum cleaner. Also vacuum the dust protection mats in the lids. If the dust protection mats are no longer clean, they must be replaced. In addition, you can remove the gobo insert (1) and the shutter slide insert (2) by loosening the knurled screws (3) and sliding the focus carriage towards the lens. Then you can clean the colour filters, glass gobos and CMY panes with a soft cloth and a little window cleaner. To clean the frost flaps, prisms and zoom/focus unit, remove the three Phillips screws (Fig. 4) and then the zoom cover (see Fig. 5). Ensure that you do not bend or damage any parts during cleaning. When cleaning is complete, reconnect the flap, replace the Phillips screws (4) and return the inserts to the unit.

(4)

(5)
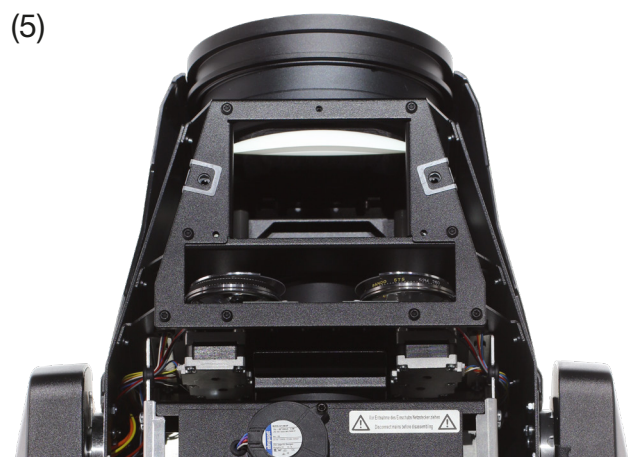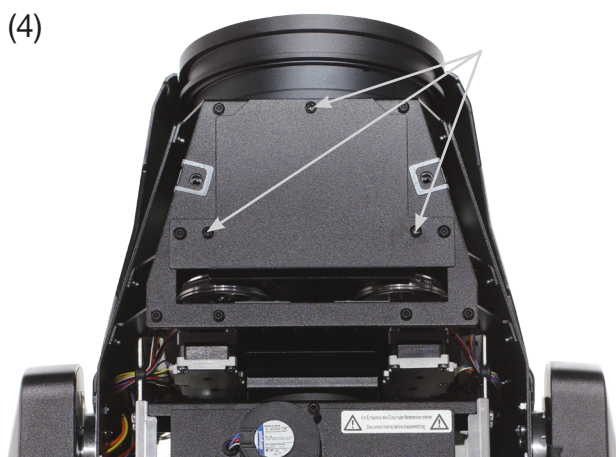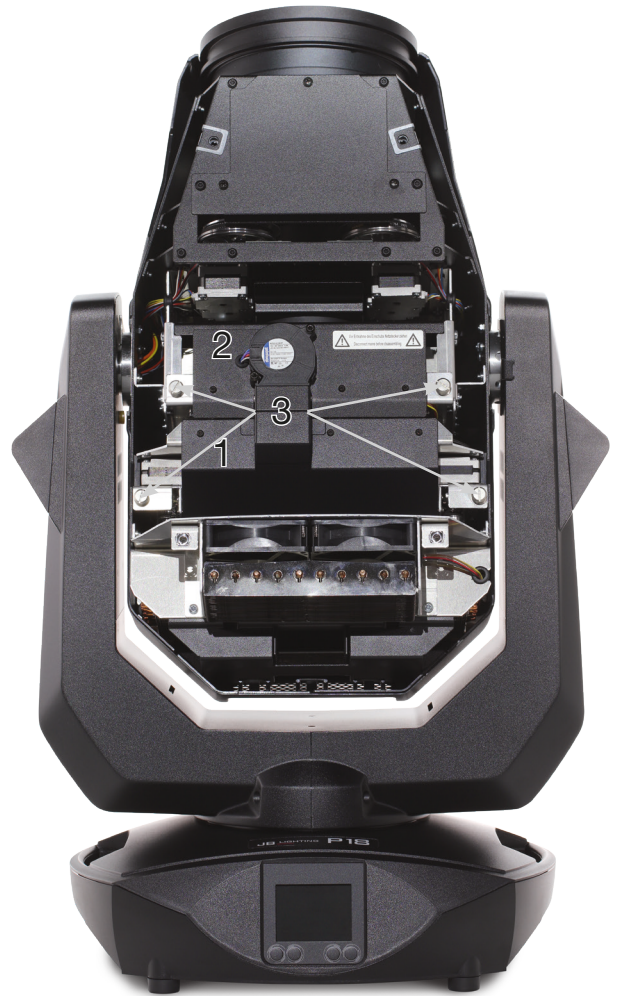
8.6 Service and maintenance

⚠ ATTENTION: Allow the device to cool down and disconnect the device from the mains before opening the device. Touching live parts (high voltage) can give you an electric shock.

8.6.1 Inspection of lubricated moving parts

On the P18 MK2 Profile, the zoom/focus guide rails, the rotating gobos and the shutter slide bearings should be checked at regular intervals - once a year - for sufficient lubrication. To do this, open the head cover (4x camlocks with a half turn) and remove the gobo- and shaper modul (2 knurled screws each).

It should be noted that the rotating gobos and the guide rails do not run dry. If necessary, the rotating gobos must be lightly oiled/greased with our special lubricant using a syringe and the guide rails using a brush. The brass bearings of the individual shutter blades must also be checked for sufficient lubrication and re-oiled/greased if necessary. For the right lubricant, please contact our service.

After the shutter blades bearings, gobos and the rails have been checked and oiled, reinsert the slide-in units. After completing the work, put the head cover back on the fixture and test all functions of the headlight.

8.6.2 Checking the plastic parts

The plastic parts of the P18 MK2 Profile should be checked regularly for damage and the onset of cracks. If a plastic part is cracked, do not use this fixture until the damaged part is replaced. Cracks or other damage to the plastic parts can be caused by transport or manipulation by third parties, as well as the aging process can affect plastic materials.

This check is required for both permanent installations and when preparing rental equipment. All damaged plastic parts must be replaced immediately! Defective plastic parts can also lead to further damage in the headlight.

8.7 Software update

The P18 MK2 Profile can be updated via a USB stick with micro-USB connection. To do this, copy the file directly into the root directory of the USB stick. Then press and hold the right key below the display. Now switch on the P18 MK2 Profile, as soon as the message "Insert USB stick" appears on the display than release the key. Now plug in the USB stick on the back of the device below the signal connections and follow the instructions on the display. The P18 MK2 Profile completes the software update with a reset. You will find the latest software on our home-page.

8.8 Testing of electrical equipment

According to the German Social Accident Insurance (DGUV) Regulation 3 / Regulation 4, electrical systems and equipment must be subjected to regular inspections. The fixing screw of the DMX 5-pin socket can be used as measuring point for insulation and residual current measurement. The screw is connected to all sheet metal parts via a contact washer.

PE measuring point

8.9 Optional pan/tilt limitation

The P18 Mk2 profile from serial number 182982 offers the option of installing a pan/tilt limitation.
The following parts are included with the limitation:

2x Tilt stop with fastening screw

2x Pan stop with fastening screw

8.9.1 Installation of the limitation

For installation, tweezers or needle-nose pliers, a Torx TX10 and a Torx TX20 are required.

In order to install the pan/tilt limitation, the two arm side parts must first be removed. To do this, 6 screws each must be loosened in order to be able to remove the side panel. See image.

In the next step, the rotating parts for the tilt limitation are installed. To do this, use tweezers/ nose-nosed pliers to insert the rotating part between the head and the arm, place it in the corresponding hole from behind and tighten the screw with the Torx TX20 screwdriver. Repeat this procedure accordingly for the 2nd stop. For example to get a limited movment from -66° to 66° you have to put the stops in hole 6 for the first stop an hole 23 for the second stop.
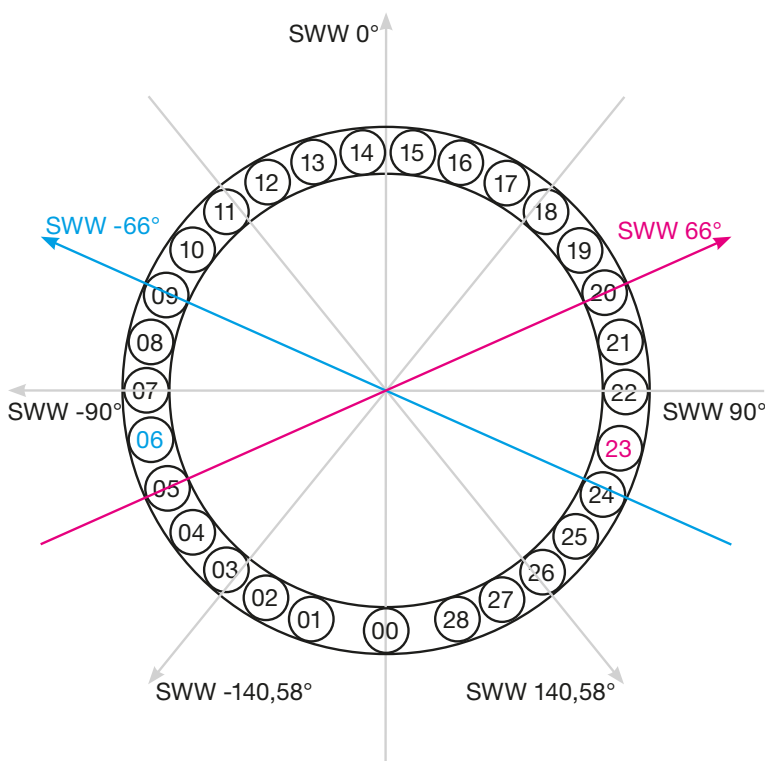
Pos	AN1	SWW	Pos	AN2	SWW
00	0°	-140,58°	00	360°	140,58
01	18°	-126°	28	342°	126°
02	30°	-114°	27	330°	114°
03	42°	-102°	26	318°	102°
04	54°	-90°	25	306°	90°
05	66°	-78°	24	294°	78°
06	78°	-66°	23	282°	66°
07	90°	-54°	22	270°	54°
08	102°	-42°	21	258°	42°
09	114°	-30°	20	246°	30°
10	126°	-18°	19	234°	18°
11	138°	-6°	18	222°	-6°
12	150°	6°	17	210°	6°
13	162°	18°	16	198°	18°
14	174°	30°	15	186°	30°
15	186°	42°	14	174°	42°
16	198°	54°	13	162°	54°
17	210°	66°	12	150°	66°

SWW -> max tilt angle of the fixture
AN -> stop
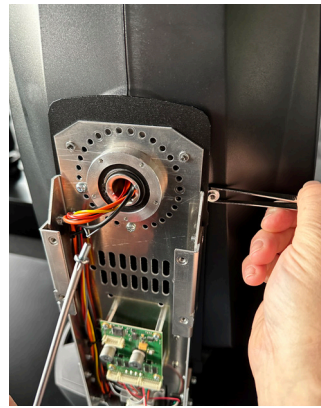
This results in a tilt path as shown in the two images on the right, as in the example from -66° to 66°

Now the parts for the PAN limitation are installed. To do this, place the perforated bricks on the intended screw holes according to the desired angle and fix them with the two TX10 screws (see pictures). An overview about the angles you will see at the following page.
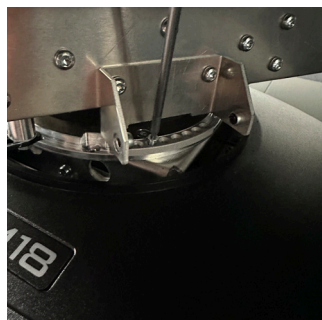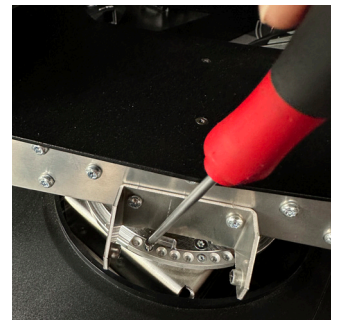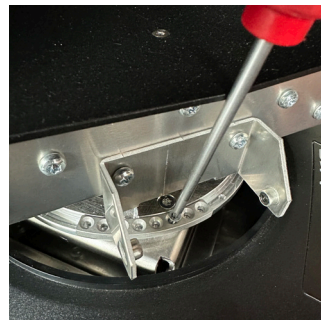
This results in a pan path as shown in the two images on the right, as in the example.

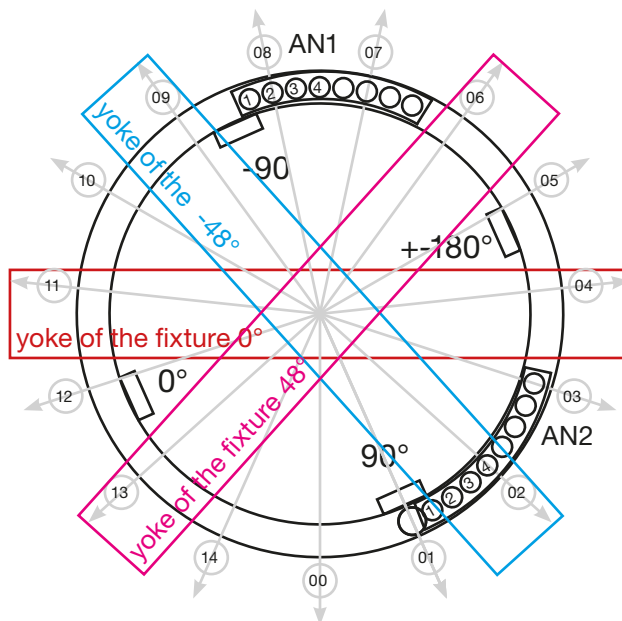| SWW	Pos.		AN1
-288	00	1	00°
-282		2	06°
-276		3	12°
-270		4	18°
-264	01	1	24°
-258		2	30°
-252		3	36°
-246		4	42°
-240	02	1	48°
-234		2	54°
-228		3	60°
-222		4	66°
-216	03	1	72°
-210		2	78°
-204		3	84°
-198		4	90°
-192	04	1	96°
-186		2	102°
-180°		3	108°
-174°		4	114°
-168°	05	1	120°
-162°		2	126°
-156°		3	132°
-150°		4	138°
-144°	06	1	144°
-138°		2	150°
-132°		3	156°
-126°		4	162°
-120°	07	1	168°
-114°		2	174°
-108°		3	180°
-102°		4	186°
-96°	08	1	192°
-90°		2	198°
-84°		3	204°
-78°		4	210°
-72°	09	1	216°
-66°		2	222°
-60°		3	228°
-54°		4	234°
-48°	10	1	240°
-42°		2	246°
-36°		3	252°
-30°		4	258°
-24°	11	1	264°
-18°		2	270°
-12°		3	276°
-6°		4	282°
0°	12	1	288°
6°		2	294°
12°		3	300°
18°		4	306°
24°	13	1	312°
30°		2	318°
36°		3	324°
42°		4	330°
48°	14	1	336°
54°		2	342°
60°		3	348°
66°		4	354°
72°	00		360°

SWW	Pos.		AN2
-108°		1	-12°
-102°	09	4	-18°
-96°		3	-24°
-90°		2	-30°
-84°		1	-36°
-78°	10	4	-42°
-72°		3	-48°
-66°		2	-54°
-60°		1	-60°
-54°	11	4	-66°
-48°		3	-72°
-42°		2	-78°
-36°		1	-84°
-30°	12	4	-90°
-24°		3	-84°
-18°		2	-78°
-12°		1	-72°
-6°	13	4	-66°
0°		3	-60°
6°		2	-54°
12°		1	-48°
18°	14	4	-42°
24°		3	-36°
30°		2	-30°
36°		1	-24°
42°	00	4	-18°
48°		3	-12°
54°		2	-06°
60°		1	00°
66°	01	4	06°
72°		3	12°
78°		2	18°
84°		1	24°
90°	02	4	30°
96°		3	36°
102°		2	42°
108°		1	48°
114°	03	4	54°
120°		3	60°
126°		2	66°
132°		1	72°
138°	04	4	78°
144°		3	84°
150°		2	90°
156°		1	96°
162°	05	4	102°
168°		3	108°
174°		2	114°
180°		1	120°
186°	06	4	126°
192°		3	132°
198°		2	138°
204°		1	144°
210°	07	4	150°
216°		3	156°
222°		2	162°
228°		1	168°
234	08	4	174°
240		3	180°
246		2	186°
252		1	192°

display of the fixture

SWW -> max tilt angle of the fixture
AN -> stop

Now the fixture has to be taught that it has new end points for Pan/Tilt. To do this, press and hold buttons 1 and 3 below the display and plug in the fixture. As soon as the main menu appears, the buttons can be released. The fixture will jump to the SET PAN/TILT TYPE selection. To activate the pan/tilt limit, press the 2nd button from the left (LIMIT). The spotlight now carries out an INIT PAN/TILT and thus finds its 2 limits and saves them. This init is completed by a reset. Finally, all that remains is to reinstall the two arm covers and the fixture is now ready for limited pan/tilt movement!

8.9.2 Removal/dismantling of the limitation

In order to remove the travel limitation again, the two arm side parts must be removed. To do this, 6 screws each must be loosened in order to be able to remove the side panel. Then remove all the built-in additional parts and switch the headlight back to "without" limitation. To do this, press and hold buttons 1 and 3 below the display and plug in the headlight. As soon as the main menu appears, the buttons can be released. The fixture will jump to the SET PAN/TILT TYPE selection. To deactivate the pan/tilt limitation, press the 1st button from the left (MAX). The spotlight now performs an INIT PAN/TILT and finds its stop (Hall sensor) again and saves this value. This init is completed by a reset. Finally, only the two arm covers have to be reinstalled and the headlight is now ready for a "full" pan/tilt ride.
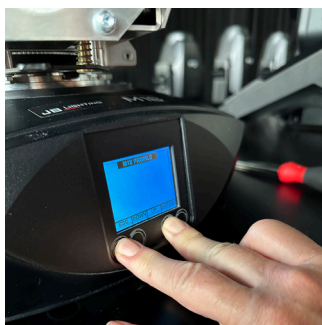
9. Overview of error codes for all fixtures

PAN TIMEOUT	Pan	
TILT TIMEOUT	Tilt	
GOBO1 TIMEOUT	Gobo wheel 1 position	
GROT1 TIMEOUT	Gobo wheel 1 rotation	
GOBO2 TIMEOUT	Gobo wheel 2 position	
GROT2 TIMEOUT	Gobo wheel 2 rotation	
COLOR TIMEOUT	Color wheel	
CYAN TIMEOUT	Cyan	
MAGENT TIMEOUT	Magenta	
YELLOW TIMEOUT	Yellow	
CTC TIMEOUT	CTB / CTO	
IRIS TIMEOUT	Iris	
BLADEROT TIMEOUT	Blades Rotation	
BLADE1A TIMEOUT	Blade1A	
BLADE1B TIMEOUT	Blade1B	
BLADE2A TIMEOUT	Blade2A	
BLADE2B TIMEOUT	Blade2B	
BLADE3A TIMEOUT	Blade3A	
BLADE3B TIMEOUT	Blade3B	
BLADE4A TIMEOUT	Blade4A	
BLADE4B TIMEOUT	Blade4B	
ZOOM TIMEOUT	Zoom	
FOCUS TIMEOUT	Focus	
PRISM1 TIMEOUT	Prism 1 (linear)	
PRISM1ROT TIMEOUT	Prism 1 rotation	
PRISM2 TIMEOUT	Prism 2 (circular)	
PRISM2ROT TIMEOUT	Prism 2 rotation	
ANI TIMEOUT	Animation wheel	
ANIROT TIMEOUT	Animation wheel rotation	
FAN B1 ER	Error Fan Base 1	
FAN B2 ER	Error Fan Base 2	
FAN B3 ER	Error Fan Base Transformer	SPARX ONLY
FAN H1 ER	Error Fan Head 1	
FAN H2 ER	Error Fan Head 2	
FAN H3 ER	Error Fan Head 3	
FAN H4 ER	Error Fan Head 4	
FAN H5 ER	Error Fan Head 5	
FAN H6 ER	Error Fan Head 6	
FAN H7 ER	Fan Blades (P18) / CMY P12	
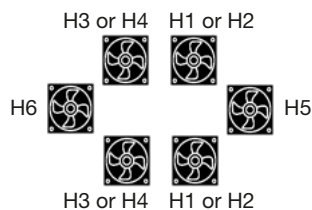
TSENS BPS ER	Sensor Error Base Power Supply AC/DC	
TSENS BLCD ER	Sensor Error Base LCD	
TSENS BAIR ER	Sensor Erroe Base Air	SPARX ONLY
TSENS HMAIN ER	Sensor Error Head Main PCB	
TSENS HDRV ER	Sensor Error Head LED Driver PCB	
TSENS HLED ER	Sensor Error Head LED	
TSENS HAIR ER	Sensor Error Head Air (Ambient)	
HIGH TEMP BLCD	High Temperature Base LCD PCB	
HIGH TEMP BAIR	High Temperatur Base Air (SPARX ONLY)	
HIGH TEMP BPS	High Temperature Base PSU AC/DC	
HIGH TEMP HMAIN	High Temperature Head Main PCB	
HIGH TMP HDRV	High Temperature Head LED Driver PCB	
HIGH TMP H LED	High Tempperature Head LED Module	
HIGH TEMP HEAD AIR	High Temperature Head Air (Ambient)	
CPU1 NOT RESPONDING	CPU Display PCB	
CPU2 NOT RESPONDING	CPU Pan/Tilt PCB	
CPU3 NOT RESPONDING	CPU Main Head PCB	
CPU4 NOT RESPONDING	CPU Main Head PCB: MK2 MAIN HEAD, P12 CMY, MK1 BLADES	
CPU5 NOT RESPONDING	CPU Blades PCB: MK1 LED DRIVER PCB	
CPU6 NOT RESPONDING	CPU LED Driver PCB: MK1 N.A.	

10. Specifications

Dimensions and weight

Length . . . . 307 mm
Width. . . . . 435 mm
Height . . . . 754 mm
Net weight . . . . 32 kg

Electronic system

Mains connection . . . . 100-240 V AC, 50-60Hz
Maximum power consumption . . . . .1500 VA
Power consumption in standby. . . . . .200 VA

Temperature

Maximum ambient temperature . . . . 45 °C
Minimum ambient temperature . . . . .5 °C

Optics, Photometric Data

Light source. . . . . White light LED module 1100W
Luminous flux HP . . . . 40000 Lumen @ 20°C
Luminous flux HC . . . . 31000 Lumen @ 20°C
Luminous flux WW . . . . 28000 Lumen @ 20°C

Effects

Pan . . . . 546.74°
Tilt . . . . 281.16°
Zoom . . . . .6,5° - 54°

Construction

Colour . . . . black
Housing . . . . PC ABS
Protection class. . . . . IP 20
Plug-in technology . . . . .yes

Installation

Installation site. . . . . indoors
Holder . . . . .2x Omega brackets
Position . . . . .any
Minimum fixture distance to flammable objects . . . . 1 m
Minimum distance between the light emission and the surface to be illuminated . . . . 4 m

Connections

Power input . . . . Neutrik powerCON TRUE1
Power feed-through . . . . Neutrik powerCON TRUE1
DMX/RDM in/out USITT DMX512 . . . . .5-pin, in/out XLR
Ethernet in/out. . . . . Neutrik etherCON
Micro-USB. . . . . Software update

11. Declaration of Conformity

Declaration of Conformity

in the sense of the Directive: 2014/35/EU Low Voltage Directive,
(Directive 2014/35/EU of the European Parliament and of the Council of 26/02/2014 to approximate
the laws of the Member States relating to electrical equipment designed
for use within certain voltage limits)

in the sense of the Directive: 2014/30/EU Electromagnetic compatibility
(Directive 2014/30/EU of the European Parliament and of the Council of 26/02/2014 to approximate the
laws of the Member States relating to electromagnetic compatibility)

The manufacturer,   **JB-Lighting Lichtanlagentechnik GmbH**
Sallersteigweg 15
89134 Blaustein-Wippingen

declares that the product: **P18 MK2 Profile**

complies with the essential protection requirements of the directives. The following standards were used for conformity assessment:

Emissions requirements **per EN 55022:2010**	**Information technology equipment, radio interference characteristics -** **Limit values and measuring methods - Limit value class A**
Conducted interference emission EN 55022:2010	requirements for information technology equipment, radio interference characteristics - Limit values and measuring methods - Limit value class A
Radiation EN 55022:2010	Information technology equipment, radio interference characteristics - Limit values and measuring methods - Limit value class A
Harmonic currents EN 61000-3-2:2015	Electromagnetic compatibility Part 3-2: Limits, testing of harmonic currents (for devices with an input current < 16A per phase)
Flicker EN 61000-3-3:2013	Electromagnetic compatibility (EMC) Part 3-3: Limits, limitation of voltage changes, Voltage fluctuations and flicker in low-voltage networks (for devices with an input current < 16A per phase)
Immunity - requirements **per EN 61000-6-2:2005**	**Electromagnetic compatibility (EMC) - Part 6-2:** **Generic standard - Immunity in industrial areas**
EN 61000-4-2:2009	Part 4-2: Immunity to static electricity discharge
EN 61000-4-3:2006 +A1:2008 +A2:2010	Part 4-3: Immunity to high-frequency electromagnetic fields
EN 61000-4-4:2012	Part 4-4: Immunity against fast transient electrical disturbances (burst)
EN 61000-4-5:2006	Part 4-5: Interference voltages against surge voltages
EN 61000-4-6:2014	Part 4-6: Immunity to conducted disturbances, induced by HF
EN 61000-4-8:2010	Part 4-8: Immunity to magnetic fields with power technology frequencies
EN 61000-4-11:2004	Part 4-11: Immunity against voltage dips, short-term interruptions and voltage fluctuations

Blaustein, 31.07.2020

_____
Jürgen Braungardt
CEO

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