LiteWare HO2

USER MANUAL

Ver. 1.5

Table of contents

> *FOR YOUR OWN SAFETY, PLEASE READ THIS USER MANUAL CAREFULLY*
> *BEFORE POWERING OR INSTALLING YOUR LiteWare HO2!*
> *Save it for future reference.*

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

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

Please consider that damages caused by manual modifications to the device are not subject to warranty.

1. Safety instructions

> *Do not short battery positive terminal to case as this will cause irreparable damage of the unit!*

This product is for professional use only. It is not for household use. This product presents risks of severe injury or death due to fire hazards, electric shock and falls.

Do not modify the unit or install other than genuine Robe parts. Do not stick filters, masks or other materials directly onto LEDs. Do not operate the unit if the ambient temperature exceeds 40 °C.

Do not install the unit near naked flames.

> *Warning!*
> *Do not place the unit display down. Do not transport or store the flight case upside-down.*
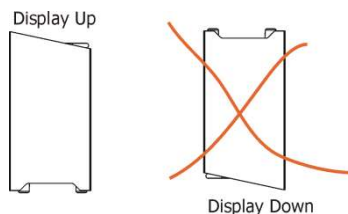
The charging flight case falls under protection class I. Therefore this flight case has to be connected to a mains socket outlet with a protective earthing connection.

> *LED light emission. Risk of eye injury.*
> *Do not look into the beam from a short distance without suitable protective eyewear.*
> *Do not look at LEDs with magnifiers or similar optical instruments that may concentrate the light output*.

Install units on a level, stable surface where they do not present a hazard of tripping or falling.

Avoid brute force when installing or operating the unit.

When choosing the installation spot, please make sure that the unit is not exposed to extreme heat or dust.

The unit must be properly ventilated when in use !

Avoid using the unit in locations subject to possible impacts.

> **Do not short battery positive terminal to case as this will cause irreparable damage of the unit.**

> **Only connect the unit to the „Robe" charging system!**

> **Before transportation of the LiteWare units in the charging case or keeping them for a longer time in the charging case which is not connected to mains , switch the LiteWare units off.**

Do not block the front LEDs with any object when the unit is under operation.

Only use a battery specified in the chapter „Technical specifications". We can not guarantee changer compatibillity with other batteries.

If the unit has been exposed to drastic temperature fluctuation (e.g. after transportation), do not switch it on immediately. The arising condensation water might damage your device. Leave the device switched off until it has reached room temperature.

Please consider that unauthorized modifications on the unit are forbidden due to safety reasons!

If used outside, the unit must be dried after use and before inserting into charging case.

2. Fixture exterior view
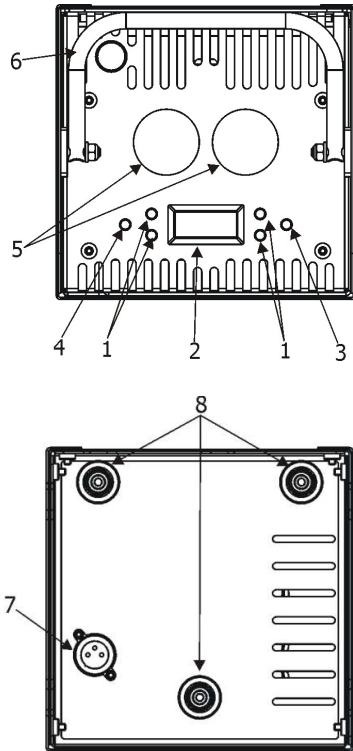
Top side
1. Control buttons
2. Display
3. On/Off button
4. Unlink button
5. Lenses
6. Handle

Bottom side
7. Charging input
8. Rubber feets

3. Installation

3.1 Switching the LiteWare HO2 on

Press and hold the ON/OFF button for 3 seconds and the first screen will appear.

WF signal level   Symbol of linking to DMX transmitter

Selected DMX mode   DMX address
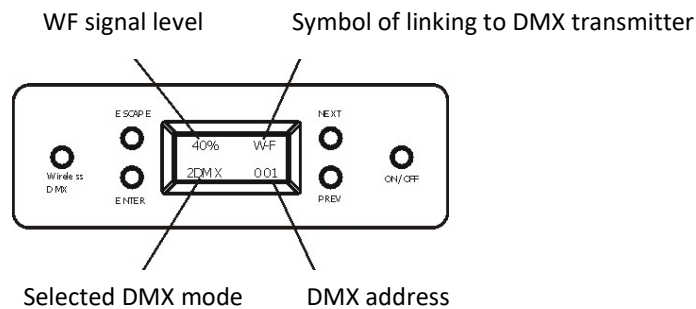
This screen blinks on a rota basic with the following screen which displayes battery capacity.
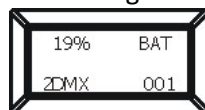
Battery capacity 19%

If DMX address flashes , the LiteWare does not receive DMX signal.
The LiteWare HO2 is equipped with 2-row LCD display which allows to set the fixture´s behaviour according to your needs, obtain information on its operation, test its various parts and lastly program it, if it has to be used in a stand-alone mode.

The six control buttons on the control panel have the following functions:
ESCAPE button-leaves menu without saving changes.
ENTER button- enters menu, confirms adjusted values and leaves menu.

PREV and - **NEXT** buttons - move between menu items on the same level, sets values.
Use the PREV/NEXT buttons to scroll through the various menu items. To select desired item, press the ENTER.

ON/OFF button – switches on and off the LiteWare. Press and hold the button for 3 seconds.
Wireless DMX button – unlinks the device from a wireless DMX transmitter.

3.2 Low battery

When the battery voltage becomes too low (10.8V and below), the battery base unit goes to sleep and light output is closed.
You must recharge the battery base unit before you can use it again.

3.3 Flight case charger system

> *Warning!*
> *Do not lay the flight case during charging the LiteWare units.*
> *The flight case has to be open during charging the LiteWare units as warm is generated.*

1. Ensure that the flight case is plugged into a mains supply with the supplied mains lead.
2. Place the LiteWare HO2 into the flight case. Do not cover the flight case.
   During battery charging, the display on the battery base shows level of battery charging. By pressing the PREV or NEXT button you can see the battery voltage, charging current and another data. When the battery is fully charged, the message "CHARGED" will appear.

3.4 Battery care

The LiteWare HO2 contains a sealed (GEL) lead-acid battery. The battery should not be left in a discharged state for long periods because this will reduce its capacity. We recommend leaving the LiteWare HO2 on charge permanently when not in use.

The following points should help maintain the long life of your LiteWare battery:
• When in use, the LiteWare HO2 automatically switches off when the battery voltage reaches a set lower limit. This is to avoid any deep discharge damage of the battery. It is not recommended that LiteWare batteries be left for any prolonged period in this state. Discharging the battery under 70% accelerates its aging process.
• The LiteWare HO2 should always be fully re-charged as soon as possible. Once fully charged LiteWare HO2 can be stored.
• If the LiteWare HO2 is to be unused for long periods, we recommend the LiteWare HO2 is charged every two months to keep the batteries topped up.
• From market data, the estimated number of uses in a normal environment is around 200 cycles.
This may be higher if the LiteWare HO2 is not run to 'turning off automatically' every time. We recommend replacing LiteWare battery every two years.
• Do not disconnect the LiteWare unit from the charging case before reaching 90% of the battery capacity.

3.5 Wireless DMX operation

All fixture channels are controlled by the wireless DMX controller that you use with the the LiteWare HO2.
The fixture allows to set 2 DMX modes:
Mode 1: 9 control channels
Mode 2: 4 control channels

To link the fixture with DMX transmitter.
The fixture can be only linked with the transmitter by running the link procedure at DMX transmitter .
After linking , the level of DMX signal (0-100 %) is displayed in the menu item "Signal" (Special -->Vireless -->Signal).

To unlink the fixture from DMX transmitter.
The fixture can be unlinked from transmitter by means of the Wireless DMX button or using menu item "Unlink"
(Special -->Vireless -->Unlink or DMX --> Vireless -->Unlink).

4. LiteWare HO2 - DMX protocol (ver. 1.1)

Mode 1	Mode 2	DMX Value	Function	Type of control
1	-	0-29	**Special functions** Reserved *To activate following functions, stop in DMX value for at least 3 sec. and shutter must be closed at least 3 sec. (Shutter channel 8 must be at range of 0-31 DMX). Corresponding menu items are temporily overrided except Acoustic alarm On/Off function.*	
		30-39	RGBW colour mixing mode	step
		40-49	CMY colour mixing mode	step
		50-59	Acoustic alarm On	step
		60-69	Acoustic alarm Off	step
		70-79	Display permanent lits	step
		80-89	Display permanent turned off	step
		90-99	Dimmer curve: linear	step
		100-109	Dimmer curve: square law	step
		110-114	Colour calibration mode On	step
		115-119	Colour calibration mode Off	step
		120-129	Load: Eco	step
		130-139	Load: Full	step
		140-255	Reserved	step
2	1	0-255	**Red (Cyan)** Red LEDs saturation control (0-100%)	proportional
3	2	0-255	**Green (Magenta)** Green LEDs saturation control (0-100%)	proportional
4	3	0-255	**Blue (Yellow)** Blue LEDs saturation control (0-100%)	proportional
5	4	0-255	**White (RGBW mode only)** White LEDs saturation control (0-100%)	proportional
6	-	0 1-255	**CT0** No function Colour temperature correction	step proportional
7	-	0	**Virtual colour wheel** No function	step
		1-2	White 2700 K	step
		3	White 2700 K (tungsten emulation)*	step
		4-5	White 3200 K	step
		6	White 3200 K (tungsten emulation)*	step
		7-9	White 4200 K	step
		10-12	White 5600 K	step
		13-15	White 8000 K	step
		16	**Blue** (Blue=full, Red+Green+White=0)	step
		17-55	Red=0, Green→up,Blue =full, White=0	proportional
		56	**Light Blue** (Red=0, Green=full, Blue =full, white=0)	step
		57 - 95	Red=0, Green=full, Blue→down, White=0	proportional
		96	**Green** (Red=0, Green=full, Blue =0, White=0)	step
		97 – 134	Red→up, Green=full, Blue=0, White=0	proportional
		135	**Yellow** (Red=full, Green=full, Blue=0,White=0)	step

		136 - 174	Red=full, Green→down, Blue=0, White=0	proportional
		175	**Red**(Red=full, Green=0, Blue=0, White=0)	step
		176 -214	Red=full, Green=0, Blue→up, White=0	proportional
		215	**Magenta** (Red=full, Green=0,Blue=full,White=0)	step
		216-246	Red→down, Green=0, Blue=full, White=0	proportional
		247	**Blue** (Red=0, Green=0, Blue=full, White=0)	step
		248	Rainbow effect(with fade time)	step
		249	Rainbow effect(without fade time)	step
		250-255	Reserved	
8	-		**Shutter/ Strobe**	
		0-31	Shutter closed	step
		32-63	Shutter open	step
		64-95	Strobe-effect from slow to fast	proportional
		96-127	Shutter open	step
		128-143	Opening pulses in sequences slow--> fast	proportional
		144-159	Closing pulses in sequences fast --> slow	proportional
		160-191	Shutter open	step
		192-223	Random strobe-effects from slow to fast	proportional
		224-255	Shutter open	step
9	-	0 - 255	**Dimmer** Dimmer intensity from 0% to 100%	proportional

*Halogen lamp effect during dimming

5. Control menu map

Default settings=Bold print

Menu Level 1	Menu Level 2	Menu Level 3	Menu Level 4	Menu Level 5	Menu Level 6
DMX	Set DMX	001-512			
	DMX Pres.	**Mode 1**, Mode 2			
	Wireless	Signal			
		Unlink			
InFo	POn. Time	Total			
		Reset			
	DM.In.	Spec.	0-255		
		:			
		Dimmer	0-255		
	Temp.	Current	Led		
			Board		
			Board 2		
		Highest	Led		
			Board		
			Board 2		
		High Res	Led		
			Board		
			Board 2		
	Battery	Capacity (%)			
		Voltage (V)			
		Current (mA)			
		Temp (°C)			
		Tot. Cap. (Ah)			
		Case Ver			
	Spec. F. State				
	Sw Ver.	IC1			
		IC2			

Menu Level 1	Menu Level 2	Menu Level 3	Menu Level 4	Menu Level 5	Menu Level 6
PErS	DMX Pres.	**Mode 1**			
		Mode 2			
	Alarm Setting	ENT. PASW.	1-255		
		Alarm On/Off	On, Off		
		Sensitivity	0…13…15		
	M. F.Time	0..**0.8**…25.5			
	Dimmer	**Square Law**			
		Linear			
	Display	On/Off T	On, **Off**		
		Contrast	0-**100**%		
		Bcklight	0-**100**%		
	Load	full			
		eco			
	Col. cal. mod.	**On**, Off			
	Col. mix. mod.	**RGBW**, CMY			
	Temp. Uni.	**°C**, °F			
	Aut. Off	**Off**			
		0.1h-25.5h			
	I. EF. Pos.	Spec.	0-255		
		:			
		Dimmer	0-255		
		Store			
	Defaults				
Manual	Spec.				
	:				
	Dimmer				
Test Prg					
Sta. Alone	Auto Run	**Off**			

Menu Level 1	Menu Level 2	Menu Level 3	Menu Level 4	Menu Level 5	Menu Level 6
		Test			
		Prog 1			
		:			
		Prog 3			
	Pr. Play	Test Prg			
		Prog 3			
	Pr. Edit	Prog 1	Step.01	Prg. En.	1-40
		:	:	Spec.	0-255
		Prog.3	Step.40	:	:
				S. Tim.	0-25.5 s
				F. Tim	0-25.5 s
				Copy	
Special	rdM Low				
	rdM High				
	Wireless	Signal			
		Unlink			
	Hold DMX	On**, Off**			
	Battery init	Start	**No**		
			Yes		
	Change password	OLD PASSW	1-255		
		NEW PASSW	1-255		
		CON. PASSW	1-255		
	Adjust	DMX Val.	Spec.	0-255	
			:		
			Dimmer	0-255	
		Cal. Col.			.
			Ready C.	Red C.	0-255
				Grn C.	0-255
				Blu C.	0-255
				Whi C.	0-255
				Store	

Menu Level 1	Menu Level 2	Menu Level 3	Menu Level 4	Menu Level 5	Menu Level 6
		Cal.temp	C. 2700K	Red	
			:	Green	
			C. 8000K	Blue	
				White	
			Cal. Def.	**No**	
				Yes	
	Case SW Upd				

6. Fixture menu

6.1 Fixture Address

```
50%
2DMX      001
```

Use this menu to set the DMX address and DMX mode of the fixture.
Set DMX --- **Set DMX address**. Select this submenu to set a DMX start address.
To set a DMX address.
1. Use the PREV/NEXT buttons to find "**Set DMX**".
2. Press the ENTER button.
3. Use the PREV/NEXT buttons to select desired start address.
4. Press the ENTER button to confirm the choice.

DMX Pres --- **DMX preset**. Select this menu item to set a desired DMX mode. Please refer to the chapter "DMX protocol" for detail description of each DMX mode.

Note: After switching on, the LiteWare HO2 will automatically detect whether DMX 512 data is received or not. If there is no data received at the DMX input, the display will start to flash with actually set address.

Wireless --- **Signal –** The item serves for reading of the level of DMX signal.
              Unlink - The item serves for unlinking the fixture from the transmitter.

6.2 Fixture information

```
Info
```

Use this menu to read useful information about the fixture status.
To display desired information.
1. Use the PREV/NEXT buttons to find the " InFo" menu.
2. Press the ENTER button.
3. Use the PREV/NEXT buttons to select the required menu item.
4. Press the ENTER button to confirm the choice.

Pon Time ---**Power On Time.** Use the menu item to read the number of operation hours of the fixture.

Total - the function shows the total number of the operation hours since the LiteWare HO2 has been fabricated.

Reset - the function shows the number of the operation hours that the LiteWare HO2 has been powered on since the counter was last reset.

In order to reset this counter to 0 you have to press the ENTER button, then by means of the PREV and NEXT buttons select "Yes"and press the ENTER button again.

DM In ---**DMX values**. Select this function to read DMX values of each channel received by the fixture.

Temp ---**Fixture Temperatures.** Select this menu to read the temperature of the fixture:

Current - the current temperature of the fixture inside.

Highest - the menu item shows the max. temperatures of the fixture inside since the LiteWare HO2 has been fabricated.

High Res. - the menu item shows the maximum temperatures of the fixture inside since the counter was last reset. In order to reset this counter, you have to press the ENTER button, then by means of the PREV and NEXT buttons select "Yes"and press the ENTER button again.

Measuring points: Led - temperature on the PCB with LEDs.

Board – first temperature on the PCB of the control electronic.

Board 2- second temperature on the PCB of the control electronic.

The temperatures can be displayed in either °C or °F units - see option "Temp. Uni." in the menu "Pers".

Spec. F. State ---**Special function stare.** The menu item shows current state of switching functions on DMX channel 1.

Battery ---**Battery information.** Select this menu to read the battery state.

Capacity - capacity of the battery in %. Fully charged battery shows 100%.

Note: in the Full mode, the LiteWare unit can be switched off automatically when capacity has fallen under 13%.

Voltage – voltage of the battery in V.

Current – current of the battery in mA. Symbol "–" means discharging, "+" means charging.

Temp – temperature of the electronic controlling the battery.

Tot. Cap. – Total capacity of the battery in Ah.

Case Ver. – Software version of the charging case.

Sw Ver ---**Software Version.** Select this function to read the software version of the LiteWare unit.

6.3 Personality

Pers

Use this menu to modify the LiteWare HO2 operating behaviour.

DMX Pres --- **DMX preset**. Select this menu item to set a desired DMX mode. Please refer to the chapter "DMX protocol" for detail description of each DMX mode.

Alarm Setting --- **Acoustic alarm** . If this alarm is on, the sensor signalizes unwanted relocation of the LiteWare unit.

After final placing, switch the acoustic alarm on (you can also use DMX command – see DMX chart, channel "Special function". Do not forget to switch the sensor off prior to manipulate with the LiteWare units!

To switch the acoustic alarm on:

1. Enter the "Alarm" menu.
2. Enter the password (default password is "001") using the PREV/NEXT buttons and confirm with the ENTER button .

3. Use the PREV/NEXT buttons to select menu item " Alarm On/Off", press the ENTER button and select option "On" (if you want to deactivate the acoustic alarm, select option "Off") and confirm with the ENTER button.

The menu item "Sensitiv" allows to set desired sensitivity (0-min. sensitivity, 15 max. sensitivity) of the acoustic alarm sensor. This sensitivity can be affected by material on which the LiteWare unit stands.

Note: the acoustic alarm is automatically set off if:
- the LiteWare unit is inserted into charging case, which is conected to mains.
- the LiteWare unit is 25.5 hours in a sleep mode (without action) out of the charging case or in the charging case which is not connected to mains.

M. F. Time --- **Max. fade time.** Select this menu item to set a desired max. fade time (0-25.5 sec.). This adjusted fade time influences fade of R,G,B,W and dimmer during DMX operation:

If time between two receiving DMX values is > than the fade time set in the item "M Ftime", the entire adjusted fade time will be used.

If time between two receiving DMX values is < than the fade time set in the item"M Ftime", the adjusted fade time will be reduced to fill entire time between the two receiving DMX values.

e.g "M Ftime"=2sec. and fixture has received Red=0 DMX, after 5 seconds will receive Red=255 DMX. It means, that red will go to full intensity during 2 seconds.

"M Ftime"=8 sec. and fixture has received Red=0 DMX, after 5 seconds will receive Red=255 DMX. It means, that red will go to full intensity during 5 seconds (max. fade time is reduced from 8 sec. to 5 sec.).

Dimmer --- **Dimmer curve.** The menu item allows to select dimmer curve: Linear or Square Law.

Display. --- **Display adjusting**. This function allows you to change the display settings.

On/Off T - This function allows you to keep the display permanent on or turn it off two seconds after last pressing any button on the control panel.The function is also available on the channel 1 (DMX range of 70-89).

Contrast - Use this function to adjust contrast of the display (0-100%).

Bcklight - Use this function to adjust backlight of the display (0-100%).

Load --- **LEDs power.** The menu allows to set two modes of LEDs power.

full – max. power of LEDs (500mA LED current), max light output.

eco – economic mode (350mA LED current), longer operation time of the LiteWare unit.

Col. cal. Mod. - **Colour calibration mode**. If the functin is on, the white output (2700K-8000K) from the fixture (and also mixed colours) is more uniform,. Each colour is dynamically corrected according to the value set in the menu "Cal Col." and "Cal Temp". (Special-> Adjust-> Cal. Col.).

Note: If colour calibration mode is on, the colour temperature of full RGBW (R+G+B+W=255DMX) is 8000K.

Col. mix. Mod. - **Colour mixing mode**. This item allows switching into RGBW or CMY mode. In the CMY mode, the white channel is not active.

Temp. Uni. --- **Temperature Unit.** Use this menu in order to display the fixture temperatures in desired units: °C or °F.

Aut Off. – **Automatic switching off**. The function allows to switch the LiteWare unit off automatically if DMX signal is missing. The time period after that the unit will be switched off can be set from 0.1hour to 25.5 hours.

I. Ef. Pos --- **Init effect positions.** Use this function to set all effects to the desired positions to which they will move after switching the fixture on (if DMX is not being received).

Defaults --- **Default Settings.**The menu item sets fixture parameters to the default (factory) values except menu items "Alarm Setting" and "Change Password" (from menu Special).

6.4 Manual mode

Manual

Use this menu for control the fixture without connected DMX console.
To control fixture channels.

4. Use the PREV/NEXT buttons to find " Manual" menu.
5. Press the ENTER button.
6. Use the PREV/NEXT buttons to select desired effect (channel).
   List of control channels:
   "Spec." – special functions
   "Red" - red LEDs saturations
   "Green" - green LEDs saturations
   "Blue" - blue LEDs saturations
   "White" - white LEDs saturations
   "C TC" - a colour temperature correction
   "C Wheel" - a virtual colour wheel
   "Strobe"- a strobe, shutter
   "Dimmer"- a dimmer
7. Press the ENTER button and use the PREV/NEXT buttons to set value , press the ENTER button to confirm it.
   Note: the switching functions as a colour mixing mode, acoustic allarm and colour calibration mode cannot be controlled from this menu, use the menu "Personality" for changing their settings.

6.5 Test program

Test Prog

Use this menu to run demo-test sequences without an external controller, which will show you some possibilities of using the LiteWare HO2.

6.6 Stand-alone setting

Sta Alone

The fixtures on a data link are not connected to the controller but can execute pre-set programs which can be different for every fixture.

<u>Auto Run</u> --- **Automatic playback**. This function allows you to select the program which will be played after switching the fixture on. Selected program will be played continuously in a loop.

1. Use the PREV/NEXT buttons to find " **Sta Alone**" menu.
2. Press the ENTER button.
3. Use the PREV/NEXT buttons to select " **Auto Run**" item.
4. Press the ENTER button.
5. Use the PREV/NEXT buttons to select desired program.
6. Press the ENTER button to confirm the choice.

<u>Pr. Play</u> --- **Playing program**. By enter to this menu a complete overview of all programs is offered, from which the program to be run can be selected.

1. Use the PREV/NEXT buttons to find "**Pr. Play**" menu.
2. Press the ENTER button.
3. Use the PREV/NEXT buttons to select desired program.
4. Press the ENTER button. The selected program runs in a loop.

<u>Pr. Edit</u> --- **Editing a program**. The fixture offers 3 freely editable programs (Prog.1-Prog.3) each up to 40 steps. Every program step includes a <u>fade time</u>-the time taken by the step´s channel status to reach the desired level and a <u>step time</u>-the total time occupied by the step in the program.

E.g. If "F.tim."=5 second and "S.tim."=20 second, effects will go to the desired position during 5 seconds and after that they will stay in this position for 15 seconds before going to the next prog. step

1. 1. Use the PREV/NEXT buttons to find " **Sta Alone**" menu and press the ENTER button.
2. Use the PREV/NEXT buttons to select "**Pr. Edit**" menu and press the ENTER button.
3. Use the PREV/NEXT buttons to select a program you want to edit (Prog.1-Prog.3) and press ENTER button.
4. Use the PREV/NEXT buttons to select a desired program step ("Step 01" - "Step 40") and press ENTER button.
5. Use the PREV/NEXT buttons to select a channel you want to edit and press the ENTER button.
   List of editable items:
   "Prg.En" - a number of last program step (value 1-40). This value should be set before start programming (e.g. if you want to create program with 10 steps, set Prg.En=10).
   "Spec." – special functions
   "Red" - red LEDs saturations
   "Green" - green LEDs saturations
   "Blue" - blue LEDs saturations
   "White" - white LEDs saturations
   "C TC" - a colour temperature correction
   "C Wheel" - a virtual colour wheel
   "Strobe"- a strobe, shutter
   "Dimmer"- a dimmer
   "F.tim."- a fade time, (0-25.5) seconds
   "S.tim."- step time, value (0-25.5) seconds
   "COPY". – this item duplicates the current prog. step to the next prog. step. The item "Prg En" is increased automatically.

6. Use the PREV/NEXT buttons to set a DMX value of the channel and then press the ENTER button.
7. Use the PREV/NEXT buttons to select next channel and press the ENTER button.
8. After having set all channels in the current program step, press the MODE button to go by one menu level back and select another program step.

6.7 Special functions

Special

rdM Low --- **RDM Code**.This menu item shows the first part of the RDM identification code.

rdM High --- **RDM Code**. This menu item shows the second part of the RDM identification code.

Wireless --- **Signal –** The item serves for reading of the level of DMX signal.
        Unlink - The item serves for unlinking the fixture from the transmitter.

HoLd DMX --- If the function is on, the last received DMX values are held in case, that DMX data receiving was interrupted (e.g. disconnected DMX controller).

Change password --- Use the munu to change your password. The password is required if you need to enter the menu "Alarm". Factory default password is "001".
To change password.

1. Enter the "Change password" menu.
2. Enter the old password using the PREV/NEXT buttons and confirm with the ENTER button .
3. Set the new password using the PREV/NEXT buttons and confirm with the ENTER button. As password you have to select one number from range 1-255.
4. Repeat the new password.

Note: when you enter old password menu, the sign "000" is displayed although some number was set.

Battery init ---**Battery initialization.** Use this function in a special case, e.g. after changing the battery.
The battery initialization runs in two steps (charging and discharging). When you select "Yes", and go to the first screen of the display, the sign " Battery Init St1" appears on a rota basic with the first screen. Place the LiteWare unit into charging case (connected to mains) until the battery is fully charged (message "CHARGED" is displayed). Place the LiteWare unit outside the case and switch the display on. The display shows " Battery Init St2" on a rota basic with the first screen and the unit lights. Let the battery discharge until light output is closed. Do not interrupt this action. During this step, DMX control and charging of the unit is disabled.
When the battery is discharged, the battery initialization is completed.
After charging the battery, the LiteWare unit is prepared for operation.
Note: during the battery initialization process, the LiteWare unit has to be switched into eco mode.

Adjust - **Adjustment**. The menu allows the fine adjustment of colours.
       DMX Val- **DMX values**. Use the menu to set DMX values of fixture´s channels.
       Cal Col - A calibration o red, green, blue and white colours by means of an automatic calibration with a factory equipment.
            Ready C. – when this item is displayed, the LiteWare unit stops receiving wireless DMX signal and starts receiving wired DMX via 3-pin XLR (charging connector).
                  Red C – red LEDs saturation (0-255)
                  Grn C – green LEDs saturation (0-255)
                  Blu C – blue LEDs saturation (0-255)
                  Whi C – white LEDs saturation (0-255)
                  Store – saves adjusted values
       Cal Temp – Selection of colour temperature for manual calibration: 2700K, 3200K, 4200K, 5600K, 8000K.

Manual colour calibration:
1. Switch the fixture on, set full mode (menu "Personality"), go to the menu "Manual" and set the shutter,dimmer, red, green, blue and white channel at 255DMX, aim the beam at wall in distance cca 5m and let the fixture heat up.
2. Go to the "Manual" menu and set the C Wheel at 1 DMX (2700K)
3. Go to the "Cal temp" menu, select "2700K" item and by means of the Red , Green, Blue and White items adjust the 2700K colour temperature as exactly as possible (Δu´v´= 0).
   After calibration, press the "Store" item to save adjusted values.
4. Go to the "Manual" menu and set the C Wheel at 4 DMX (3200K).
5. Go to the "Cal Temp" menu, select "3200K" item and by means of the Red , Green , Blue and White items adjust the 3200K colour temperature as exactly as possible (Δu´v´= 0).
   After calibration, press the "Store" item to save adjusted values.
6. Repeat this procedure for rest of colour temperatures (4200K, 5600K, 8000K).

7. Software update

The following are required in order to update software in the LiteWare unit or charging case:
- PC running Windows XP/Vista/7/8 /Linux/OSX with connection to the Internet
- ROBE RDM Uploader
- Robe Universal Interface WTX (RUNIT WTX)
Note: Both software update and case software update should execute a qualified person. If you lack qualification, do not attempt the update yourself and ask for help your ROBE distributor.
Before starting both updates, the LiteWare unit has to be charged!
Note: programs 1-3 and all items in the menu "PErS" and "Special" will be set to their default values (except menu "Alarm Setting") after software update.
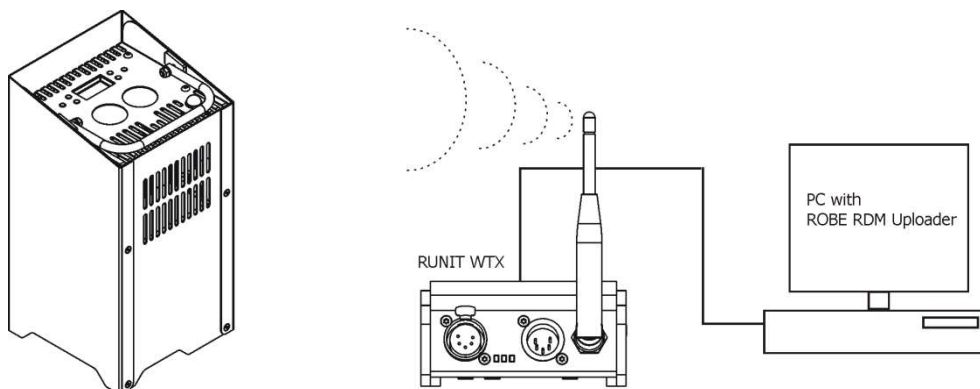
To update software in the LiteWare unit

NOTE: The Liteware unit must not be in charging case during software update.

I. Installation of the ROBE RDM Uploader.

1. ROBE RDM Uploader is available from the ROBE web site at WWW.robe.cz.
2. Make a new directory (e.g. Robe_Uploader) on your hard disk and download the software into it.
3. Install the software on your computer.

II. Fixture software updating.

1. Connect your PC with the USB input of the RUNIT WTX.

Turn both the computer and the LiteWare unit on (shutter should be closed).

We recommend to cancel all running programs before starting the ROBE RDM Uploader.

2. Run the ROBE RDM Uploader and perform software update of the LiteWare unit.

Avoid interrupting the update process.

To update software in the charging case

Install the RUNIT WTX and the ROBE RDM Uploader software as described above.

Note: The charging case has to be empty before case software update.

1. Take one charged LiteWare unit outside the case and switch it on (shutter has to be closed).
2. Use the PREV/NEXT buttons to find "**Special**" menu.
3. Press the ENTER button.
4. Use the PREV/NEXT buttons to find " **Case SW Upd**" item. Press the ENTER button.
5. The notice *" In case? no"* will appear.
6. Insert the LiteWare unit into case.
7. Use the PREV/NEXT buttons to select *"yes"* item, confirm by pressing the ENTER button.
8. The sign *" wait"* will appear.
9. Run the ROBE RDM Uploader and perform software update of the charging case.
   It may last several minutes to perform software update.

8. RDM

This fixture is ready for RDM operation.RDM (Remote Device Management) is a bi-directional communications protocol for use in DMX512 control systems, it is the new open standard for DMX512 device configuration and status monitoring.

The RDM protocol allows data packets to be inserted into a DMX512 data stream without adversely affecting existing non-RDM equipment. By using a special „Start Code," and by complying with the timing specifications for DMX512, the RDM protocol allows a console or dedicated RDM controller to send commands to and receive messages from specific moving lights.

RDM allows explicit commands to be sent to a device and responses to be received from it.

The list of commands for LiteWare HO2 is the following.

Parameter ID	Discovery command	SET command	GET command
DISC_UNIQUE_BRANCH	*		
DISC_MUTE	*		
DISC_UN_MUTE	*		
DEVICE_INFO			*
SUPPORTED_PARAMETERS			*
SOFTWARE_VERSION_LABEL			*
DMX_START_ADDRESS		*	*
IDENTIFY_DEVICE		*	*
DEVICE_MODEL_DESCRIPTION			*
MANUFACTURER_LABEL			*
DEVICE_LABEL		*	*
SENSOR_DEFINITION			*
SENSOR_VALUE			*
DISPLAY_LEVEL		*	*
DEVICE_RESET		*	
DMX_PERSONALITY		*	*
DMX_PERSONALITY_DESCRIPTION			*
STATUS_MESSAGES			*
STATUS_ID_DESCRIPTION			*
DEVICE_HOURS			*

9. Information and error messages

CHARGED – the LiteWare is fully charged and ready for operation.
CHARGE NOW – the battery of the LiteWare is discharged and has to be placed to the flight case in order to charge it.
CHECK BATTERY – run the "Battery init" procedure from the menu Special.

10. Technical specifications

Power supply
- Battery supply
- flight case charger system

Optic & Effects
- Light source: 2 x high power RGBW multichip
- Optical system: 22°
- RGBW or CMY colour mixing
- Virtual colour wheel with preset whites (2700K, 3200K, 4200K, 5600K, 8000K)
- Adjustable strobe sequences

Control
- 2-row LCD display & 4 control buttons + 2 function buttons (On/Off, Unlink)
- Control: USITT DMX 512 (RDM support)
- DMX protocol modes: 2 (4, 9 control channels)
- Operations modes: Wireless DMX, Stand-alone
- Two LED load modes: eco and full
- Manual control of all effects via control panel
- 3 user editable programs each up to 40 steps

Wireless DMX/RDM module
- Compliance with USITT DMX-512 (1986 & 1990) and 512-A
- Full DMX fidelity and frame integrity
- Auto sensing of DMX frame rate and frame size
  <5ms DMX latency
- Operational frequency range of 2402-2480 MHz
- Producer: LumenRadio

Strobe
- Strobe effect with variable speed
- Pre-programmed random strobe pulse-effects

Dimmer
- Smooth dimmer from 0 - 100 %

Connection
- Charging input: 3-pin XLR (male)

Battery
- GEL OGiV 12260 L

Runtime from fully charged battery

	RGB/RGBW full	Two colours full	One colour full
Full mode	5	16	23
Eco mode	8	24	34

These are representative values measured with new battery, actual values will vary slightly due to the battery aging process.

Charging cycle
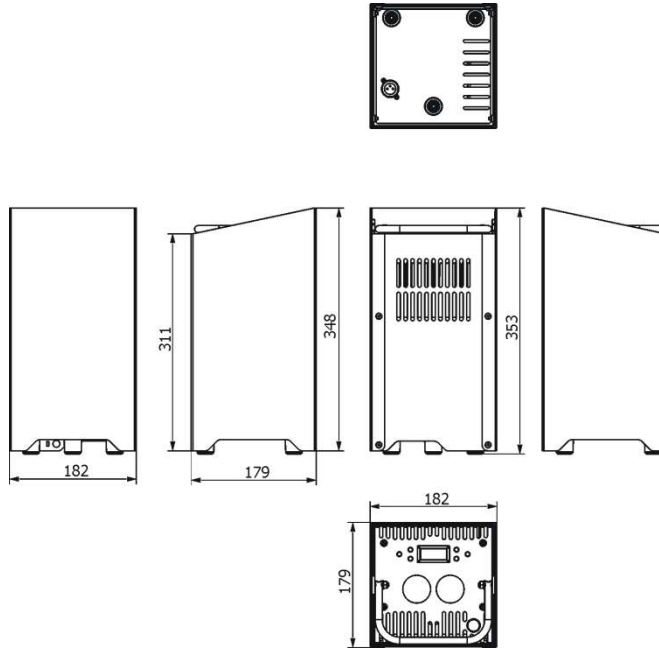- Approximately 11 hours

Ambient operating temperature range
- -15°C ~ 40° C

Battery capacity decreases from its nominal capacity when it is operated below nominal operating temperature (25°C).

	40°C	100%
Capacity affected by	25°C	100%
temperature (20hr)	0°C	86%
	-15°C	65%

Dimensions (mm)

Weight
- 15 kg

Ingress protection
- IP 45

Charging flight case
- weight: 45 kg (empty)
- dimensions (W x L x H): 500mm x 735mm x775mm
- Input voltage: 100V-240V
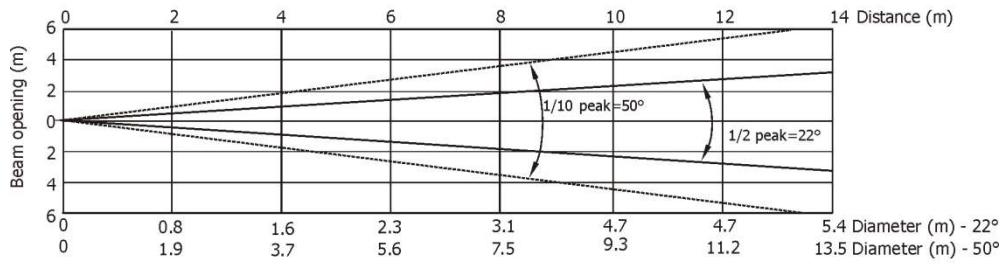- Max. power consumption: 320W

Included items
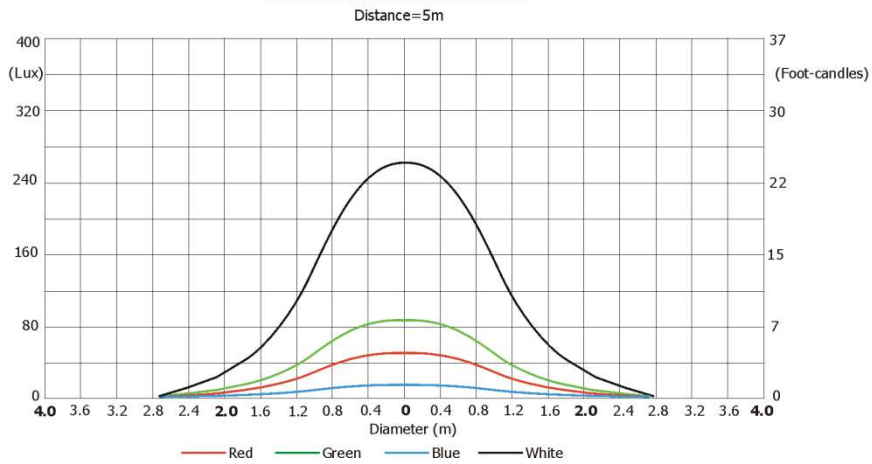- 6 x LiteWare HO2
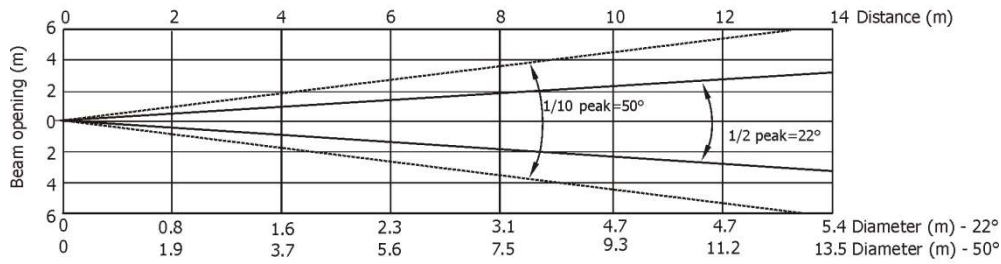- 1 x Flight charging case

Light output

LED load mode: Full

Distance (m)	2	4	5	6	8	10	12	14	
Red	312/29	78/7	50/4.6	35/3.2	20/1.8	13/1.2	9/0.8	6/0.6	
Green	544/51	136/13	87/8	60/5.6	34/3.2	22/2	15/1.4	11/1	Intensity (center) Lux/Footcandles
Blue	106/10	27/2.5	17/1.6	12/1.1	7/0.6	4/0.4	3/0.3	2/0.2	
White	1663/155	416/39	266/25	184/17	104/10	67/6	46/4	34/3	

Illuminance distribution

Distance=5m

LED load mode: Eco

Distance (m)	2	4	5	6	8	10	12	14	
Red	270/25	67/6	43/4	30/2.8	17/1.6	11/1	8/0.7	6/0.5	
Green	394/37	98/9	63/6	44/4	25/2.3	16/1.5	11/1	8/0.7	Intensity (center) Lux/Footcandles
Blue	75/7	19/1.7	12/1.1	8/0.8	5/0.4	3/0.3	2/0.2	1.5/1.1	
White	1312/122	328/31	210/20	146/14	82/8	53/5	37/3.4	27/2.5	

Illuminance distribution
Distance=5m
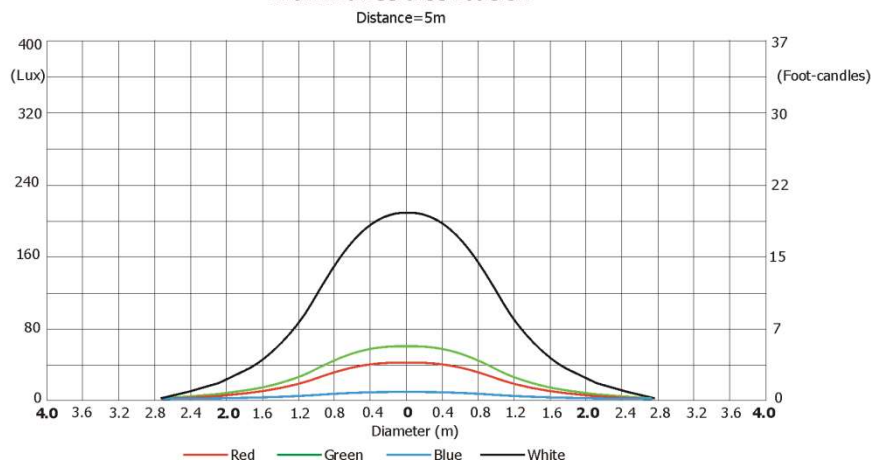
11. Cleaning and maintenance

Disconnect from the charging flight case before starting any cleaning or maintenance work

A soft lint-free wet cloth and a neutral soap is recommended for cleaning, under no circumstances should alcohol or solvents be used!
Maintenance and service operations are only to be carried out by a qualified person.
If you remove the battery, please observe the correct polarity upon reconnection.
Should you need any spare parts, please use genuine parts.

11.1 Disposing of the product

To preserve the environment please dispose or recycle this product at the end of its life according to the local regulations and codes.

Specifications are subject to change without notice.
January 11, 2017