ROBE.

ROBIN® Actor 12
Actor 12 Wireless DMX
CRMX

ROBIN®
Innovative Technology

USER MANUAL

ROBE® lighting s.r.o. • Czech Republic • www.robe.cz

Version 1.2

Robin Actor 12

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FOR YOUR OWN SAFETY, PLEASE READ THIS USER MANUAL CAREFULLY BEFORE POWERING OR INSTALLING YOUR ROBIN Actor 12 !

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.

The Robin Actor 12 was designed for indoor use and it is intended for professional application only. It is not for household use.

1. Safety instructions

DANGEROUS VOLTAGE CONSTITUTING A RISK OF ELECTRIC SHOCK IS PRESENT WITHIN THIS UNIT!

Make sure that the available voltage is not higher than stated on the fixture.
This fixture should be operated only from the type of power source indicated on the marking label. If you are not sure of the type of power supplied, consult your authorized distributor or local power company.

Always disconnect the fixture from AC power before cleaning, removing or installing the fuses, or any part.

The power plug has to be accessible after installing the fixture. Do not overload wall outlets and extension cords as this canresult in fire or electric shock.

Do not allow anything to rest on the power cord. Do not locate this fixture where the cord may be damaged by persons walking on it.

Make sure that the power cord is never crimped or damaged by sharp edges. Check the fixture and the power cord from time to time.

Refer servicing to qualified service personnel.

This fixture falls under protection class I. Therefore this fixture has to be connected to a mains socket outlet with a protective earthing connection.

Do not connect this fixture to a dimmer pack.

LED light emission. Risk of eye injury. Do not look into the beam at a distance of less than 2 meters from the front surface of the product. Do not view the light output with optical instruments or any device that may conncentrate the beam

If the fixture 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.

Do not shake the fixture. Avoid brute force when installing or operating the fixture.

This fixture was designed for indoor use only, do not expose this unit to rain or use near water.

When choosing the installation spot, please make sure that the fixture is not exposed to extreme heat, moisture

or dust.

Air vents and slots in the fixture´s head and base are provided for ventilation, to ensure reliable operation of the device and to protect it from overheating.

> **Do not block the LEDs array with any object when the fixture is under operation.**

The openings should never be covered with cloth or other materials, and never must be blocked.

This fixture should not be placed in a built-in installation unless proper ventilation is provided.

Only operate the fixture after having checked that the housing is firmly closed and all screws are tightly fastened.

Always use a secondary safety cable when mounting this fixture.

Make sure that the area below the installation place is blocked when rigging, derigging or servicing the fixture.

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

The fixture becomes very hot during operation. Allow the fixture to cool approximately 20 minutes prior to manipulate with it.
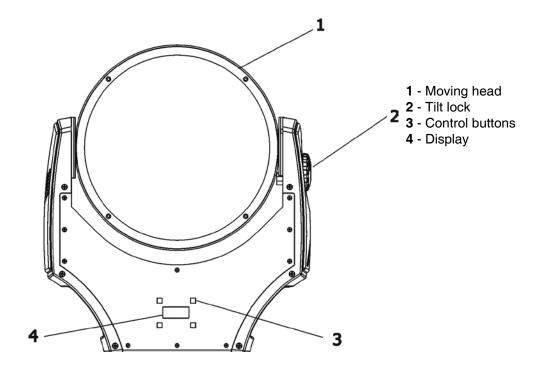
Operate the fixture only after having familiarized with its functions. Do not permit operation by persons not qualified for operating the fixture. Most damages are the result of unprofessional operation!

Please use the original packaging if the fixture is to be transported.
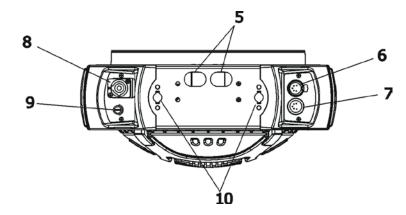
Please consider that unauthorized modifications on the fixture are forbidden due to safety reasons!

If this device will be operated in any way different to the one described in this manual, the product may suffer damages and the guarantee becomes void. Furthermore, any other operation may lead to dangers like short-circuit, burns, electric shock, crash etc.

2. Fixture exterior view

1 - Moving head
2 - Tilt lock
3 - Control buttons
4 - Display

5 - Apertures for safety chain
6 - DMX out
7 - DMX in
8 - PowerCon socket
9 - Fuse holder
10 - Apertures for quick-turn
      fasteners

3. Installation

> ⚡ *Fixtures must be installed by a Qualified electrician in accordance with all national and local electrical and construction codes and regulation.*

3.1 Connection to the mains

For protection from electric shock, the fixture must be earthed!

The Robin Actor 12 is equipped with auto-switching power supply that automatically adjusts to any 50-60Hz AC power source from 100-240 Volts.

If you need to install a suitable plug on the power cord, note that the cores in the power cord are coloured according to the following table. The earth has to be connected!
If you have any doubts about proper installation, consult a qualified electrician.

Core (EU)	Core (US)	Connection	Plug Terminal Marking
Brown	Black	Live	L
Light blue	White	Neutral	N
Yellow/Green	Green	Earth	⏚

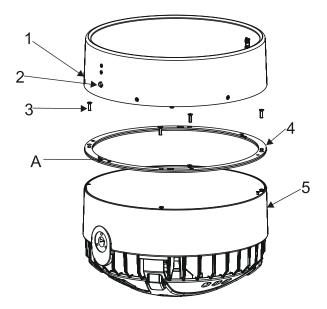This device falls under class one and must be earthed (grounded)!

3.2 Installing the top hat

Switch off the fixture before top hat installation

1.Unscrew the four fastening screws (3) which securing flange (4) to the head (5) and install new flange. Keep its right position- the cutouts (A) in the flange must look towards the arms.

Original flange   New flange

2.Place the top hat (1) on the head (5), press locks (2) and turn the top hat counter-clockwise until it snap into slots (B) in the flange.
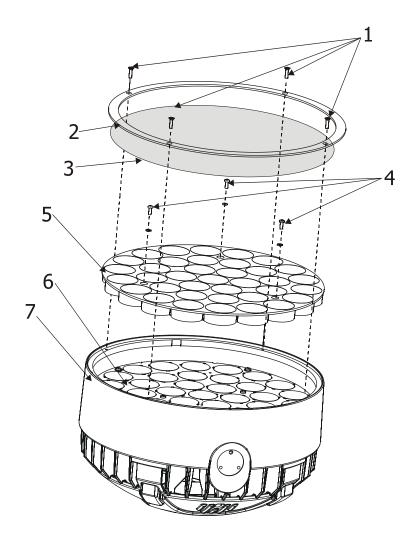
3.3 Installing the eggcrate

Switch off the fixture before top hat installation

1. Unscrew the four fastening screws (1) which securing top flange (2) to the head (7) and remove both flange and transparent plastic cover (3) from the head.

2. Unscrew the three fastening screws (4) which securing black eggcrate (5) to the zoom module (6) and remove it.

3. Put the transparent eggcrate on the zoom module (6) and screw it with three screws (4) with washers to the zoom module (6).

4. Place the transparent cover (3) and the top flange (2) back to the head and secure it with four screws (1).

3.3 Rigging the fixture

The overhead installation must always be secured with a secondary safety attachment, e.g. an appropriate safety rope. This secondary safety attachment must be constructed in a way that no part of the installation can fall down if the main attachment fails.

When rigging, derigging or servicing the fixture staying in the area below the installation place, on bridges, under high working places and other endangered areas is forbidden.

The operator has to make sure that safety-relating and machine-technical installations are approved by an expert before taking into operation for the first time and after changes before taking into operation another time.

The operator has to make sure that safety-relating and machine-technical installations are approved by an expert after every four year in the course of an acceptance test.

The operator has to make sure that safety-relating and machine-technical installations are approved by a skilled person once a year.

The fixture should be installed outside areas where persons may walk by or be seated.

IMPORTANT! OVERHEAD RIGGING REQUIRES EXTENSIVE EXPERIENCE, including (but not limited to) calculating working load limits, installation material being used, and periodic safety inspection of all installation material and the projector. If you lack these qualifications, do not attempt the installation yourself, but instead use a professional structural rigger. Improper installation can result in bodily injury or damage to property. The fixture has to be installed out of the reach of people.

If the fixture shall be lowered from the ceiling or high joists, professional trussing systems have to be used. The fixture must never be fixed swinging freely in the room.
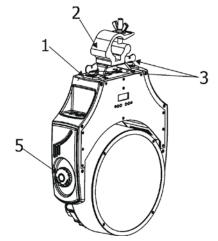
Caution: Fixture may cause severe injuries when crashing down! If you have doubts concerning the safety of a possible installation, do not install the moving head!
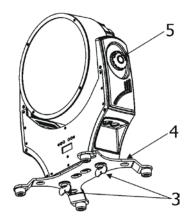
Before rigging make sure that the installation area can hold a minimum point load of 10 times the fixture's weight.

> **When installing the device, make sure there is no highly inflammable material (decoration articles, etc.) in a distance of min. 1 m.**
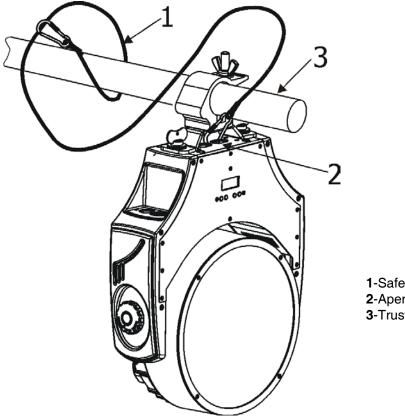
> **CAUTION!**
> **Use an appropriate clamp to rig the fixture on the truss.**
> **Follow the instructions mentioned at the bottom of the base.**
> **Make sure that the device is fixed properly! Ensure that the structure (truss) to which you are attaching the fixtures is secure.**

The fixture can be placed directly on the stage floor by means of the removable stand (4) or rigged HORIZON-TALLY ONLY on a truss by means of the omega holder (1) and clamp (2) . Both removable stand and omega holder can be fastened with two 1/4-turn locks to the bottom of the fixture. Adjust fixture´s head to desired position and tighten tilt lock (5) to secure the head position.

For securing the fixture to the truss install a safety wire that can hold at least 10 times the weight of the fixture. Use only a safety wire with screw-on snap-hook. **Thread the snap-hook through two apertures in the fixture base and the wire around the truss as shown on the picture below.**

1-Safety wire
2-Apertures for safety wire
3-Trust

When installing fixtures side-by-side, avoid illuminating one fixture with another!

3.4 DMX-512 connection

The fixture is equipped with 5-pin XLR sockets for DMX input and output. Only use a shielded twisted-pair cable designed for RS-485 and 5-pin XLR-plugs and connectors in order to connect the controller with the fixture or one fixture with another.

DMX - output
XLR mounting-sockets (rear view):

1 - Shield
2 - Signal (-)
3 - Signal (+)
4 - Not connected
5 - Not connected

DMX-input
XLR mounting-plugs (rear view):

1 - Shield
2 - Signal (-)
3 - Signal (+)
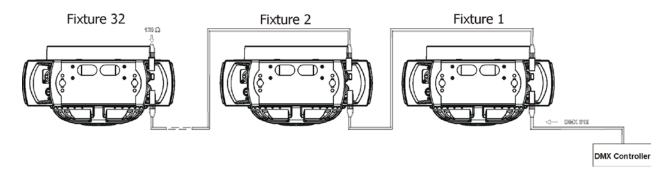**4** - Not connected
5 - Not connected

 If you are using the standard DMX controllers, you can connect the DMX output of the controller directly with the DMX input of the first fixture in the DMX-chain. If you wish to connect DMX controllers with other XLR-outputs, you need to use adapter cables.

Building a serial DMX-chain:
Connect the DMX-output of the first fixture in the DMX-chain with the DMX-input of the next fixture. Always connect one output with the input of the next fixture until all fixtures are connected. Up to 32 fixtures can be interconnected.
Caution: At the last fixture, the DMX-cable has to be terminated with a terminator. Solder a 120 Ω resistor between Signal (–) and Signal (+) into a 5-pin XLR-plug and plug it in the DMX-output of the last fixture.

4. Control menu map

Default settings=Bold print

Level 1	Level 2	Level 3	Level 4	Level 5	Level 6	Level 7
DMXA	Set DMXA	001-255				
Zoom						
Vir C						
Dimm						
MENU	**Info**	POn Time	Total			
			Reset			
		DMX In	Pover	0-255		
			:			
			Dimm F	0-255		
		Temp	Current			
			Highest			
			High Res			
		Sw Ver	IC-1			
			IC-2			
			IC-3			
	Pers					
		DMX Pres	**Mode 1**			
			:			
			Mode 6			
		DMX In	Wired			
			Wireless			
		Display	Turn			
			On/Off T	On, **Off**		
			Contrast	0-100%		
			Backlight	0-100%		
		C Cal M	On, **Off**			
		C Mix M	**RGBW**, CMY			
		Mic Sens	0...**10**...19			
		Fans	**Auto**, High			
		Temp Uni	**°C**, °F			
		I Ef Pos	Pan			
			:			
			Dimm F			
			Store			
		Defaults				
	Test Prg					
	Manual	Pres Eff	Pover	Pos 1-Pos 3		
			:			
			Dimmer	Pos 1- Pos 5		
		Manual	Pover	0-255		
			Dimm F	0-255		
	Sta Alone	Music T	On, **Off**			
		Aut Run	**Off**			
			Test			
			Prog 1			
			Prog 2			
			Prog 3			
		Pr Play	Test Prg			

Level 1	Level 2	Level 3	Level 4	Level 5	Level 6	Level 7
			Prog 1			
			Prog 2			
			Prog 3			
		Pr Edit	Prog 1	Step 1	Pan	
			Prog 2	:	:	
			Prog 3	Step 40	F.Tim	0-25.5
					S.Tim	0-25.5
					COPY	
					Prg End	1-40
	Reset					
	Special	RDM Low				
		RDM Hight				
		Wireless	Stat			
			Unlink			
		Adjust	DMX Val	Pover	0-255	
				:		
				Dimm F	0-255	
			Calib	Red C	0-255	
				Gren C	0-255	
				Blue C	0-255	
				Whit C	0-255	
				Store		
		Sw Upd	On, **Off**			

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5. Robin Actor 12 - DMX chart

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Mode/Channel						Value	Function	Type of control
1	**2**	**3**	**4**	**5**	**6**			
					1		**No function**	
					2		**No function**	
					3		**No function**	
					4		**No function**	
					5		**No function**	
1	1	1	1	1	6	0 - 9	**Special functions** Reserved *To activate following functions , stop in DMX value for at least 3sec. and shutter must be closed at least 3sec. (Shutter channel 38/14/9/4/4/43 must be at range of 0-31DMX). Corresponding menu items are temporily overrided except DMX Input.*	
						10 - 14	DMX input: Wired DMX *	step
						15 - 19	DMX input: Wireless DMX*	step
							* function is active only10 seconds after switching the fixture on	
						20-29	Reserved	
						30-39	RGBW colour mixing mode	step
						40-49	CMY colour mixing mode	step
						50-169	Reserved *To activate following reset function, stop in DMX value for at least 3 sec.*	
						170 - 179	Save current DMX values into fixture **	step
						180 - 189	Zoom reset	step
						190 - 199	Reserved	
						200 - 209	Total reset	step
						210 - 239	Reserved	
						240	Disable "Silent mode" of fans	step
						241 - 255	"Silent mode of fans":fans noise from min. to max.	proportional
-	2	2	-	-	-	0-255	**Red/Cyan (8 bit) - all zones** Red or cyan LEDs saturation control (0-100%)	proportional
-	3	-	-	-	-	0-255	**Red/Cyan fine(16 bit) - all zones** Fine red or cyan LEDs saturation control	proportional
-	4	3	-	-	-	0-255	**Green/Magenta (8 bit) - all zones** Green or magenta LEDs saturation control(0-100%)	proportional
-	5	-	-	-	-	0-255	**Green/Magenta fine (16 bit) - all zones** Fine green or magenta LEDs saturation control	proportional
-	6	4	-	-	-	0-255	**Blue/Yellow (8 bit) - all zones** Blue or yellow LEDs saturation control (0-100%)	proportional
-	7	-	-	-	-	0-255	**Blue/Yellow fine (16 bit) - all zones** Fine blue or yellow LEDs saturation control	proportional
-	8	5	-	-	-	0-255	**White (8 bit) - all zones** *If RGBW mode is selected:* White colour saturation control coarse (0-100%) *If CMY mode is selected:* No function	proportional
-	9	-	-	-	-	0-255	**White fine (16 bit) - all zones** Fine white LEDs saturation control (RGBW mode)	proportional
2	-	-	-	9	7	0-255	**Red/Cyan (8 bit) - zone 1** Red or cyan LEDs saturation control (0-100%)	proportional
3	-	-	-	10	8	0-255	**Red/Cyan fine (16 bit) - zone 1** Fine red or cyan LEDs saturation control	proportional

Mode/Channel						Value	Function	Type of control
1	2	3	4	5	6			
4	-	-	-	11	9	0-255	**Green/Magenta (8 bit) - zone 1** Green or magenta LEDs saturation control(0-100%)	proportional
5	-	-	-	12	10	0-255	**Green fine (16 bit) - zone 1** Fine green or magenta LEDs saturation control	proportional
6	-	-	-	13	11	0-255	**Blue/Yellow (8 bit) zone 1** Blue or yellow LEDs saturation control (0-100%)	proportional
7	-	-	-	14	12	0-255	**Blue/Yellow (16 bit) zone 1** Fine blue or yellow LEDs saturation control)	proportional
8	-	-	-	15	13	0-255	**White (8 bit) - zone 1** *If RGBW mode is selected:* White colour saturation control coarse (0-100%) *If CMY mode is selected:* No function	proportional
9	-	-	-	16	14	0-255	**White (16 bit) - zone 1** Fine white LEDs saturation control (RGBW)	proportional
10	-	-	-	17	15	0-255	**Red/Cyan (8bit) - zone 2** Red or cyan LEDs saturation control (0-100%)	proportional
11	-	-	-	18	16	0-255	**Red/Cyan fine (16 bit) - zone 2** Fine red or cyan LEDs saturation control	proportional
12	-	-	-	19	17	0-255	**Green/Magenta (8 bit) - zone 2** Green or magenta LEDs saturation control(0-100%)	proportional
13	-	-	-	20	18	0-255	**Green/Magenta fine (16 bit) - zone 2** Fine green or magenta LEDs saturation control	proportional
14	-	-	-	21	19	0-255	**Blue/Yellow (8 bit) - zone 2** Blue or yellow LEDs saturation control (0-100%)	proportional
15	-	-	-	22	20	0-255	**Blue/Yellow fine (16 bit) - zone 2** Fine blue or yellow LEDs saturation control	proportional
16	-	-	-	23	21	0-255	**White (8 bit) - zone 2** *If RGBW mode is selected:* White colour saturation control coarse (0-100%) *If CMY mode is selected:* No function)	proportional
17	-	-	-	24	22	0-255	**White (16 bit) - zone 2** Fine white LEDs saturation control (RGBW mode)	proportional
18	-	-	-	25	23	0-255	**Red/Cyan (8 bit) - zone 3** Red or cyan LEDs saturation control (0-100%)	proportional
19	-	-	-	26	24	0-255	**Red/Cyan fine (16 bit) - zone 3** Fine red or cyan LEDs saturation control	proportional
20	-	-	-	27	25	0-255	**Green/Magenta (8 bit) - zone 3** Green or magenta LEDs saturation control(0-100%)	proportional
21	-	-	-	28	26	0-255	**Green/Magenta fine (16 bit) - zone 3** Fine green or magenta LEDs saturation control	proportional
22	-	-	-	29	27	0-255	**Blue/Yellow (8 bit) zone 3** Blue or yellow LEDs saturation control (0-100%)	proportional
23	-	-	-	30	28	0-255	**Blue/Yellow fine (16 bit) zone 3** Fine blueoe yellow LEDs saturation control	proportional
24	-	-	-	31	29	0-255	**White (8 bit) zone 3** *If RGBW mode is selected:* White colour saturation control coarse (0-100%) *If CMY mode is selected:* No function	proportional
25	-	-	-	32	30	0-255	**White fine (16 bit) zone 3** Fine white LEDs saturation control (RGBW mode)	proportional

Mode/Channel						Value	Function	Type of control
1	**2**	**3**	**4**	**5**	**6**			
26				33	31	0-255	**Red/Cyan (8 bit) - zone 4** Red or cyan LEDs saturation control (0-100%)	proportional
27				34	32	0-255	**Red/Cyan fine (16 bit) - zone 4** Fine red or cyan LEDs saturation control	proportional
28				35	33	0-255	**Green/Magenta (8 bit) - zone 4** Green or magenta LEDs saturation control(0-100%)	proportional
28				36	34	0-255	**Green/Magenta fine (16 bit) - zone 4** Fine green or magenta LEDs saturation control	proportional
30				37	35	0-255	**Blue/Yellow (8 bit) zone 4** Blue or yellow LEDs saturation control (0-100%)	proportional
31				38	36	0-255	**Blue/Yellow fine (16 bit) zone 4** Fine blueoe yellow LEDs saturation control	proportional
32				39	37	0-255	**White (8 bit) zone 4** *If RGBW mode is selected:* White colour saturation control coarse (0-100%) *If CMY mode is selected:* No function	proportional
33				40	38	0-255	**White fine (16 bit) zone 4** Fine white LEDs saturation control (RGBW mode)	proportional
34	10	6	-	7	39	0 1-255	**CTC** No function Colour temperature correction from 20000K to 2700K)	step proportional
35	11	7	2	8	40	0 1-2 3 4-5 6 7-9 10-12 13-15 16 17-55 56 57 - 95 96 97 – 134 135 136 - 174 175 176 -214 215 216 - 246 247 248 249 250 251 252 253 254 255	**Virtual Colour Wheel** For detailed description see " Virtual colour wheel- colour mixing chart No function White 2700 K White 2700 K (Halogen lamp mode***) White 3200 K White 3200 K (Halogen lamp mode***) White 4200 K White 5600 K White 8000 K Blue (Blue=full, Red+Green+White=0) Red=0, Green->up,Blue =full, White=0 Light Blue (Red=0, Green=full, Blue =full, White=0) Red=0, Green=full, Blue->down, White=0 Green (Red=0, Green=full, Blue =0, White=0) Red->up, Green=full, Blue=0, White=0 Yellow (Red=full, Green=full, Blue=0, White=0) Red=full, Green->down, Blue=0, White=0 Red(Red=full, Green=0, Blue=0, White=0) Red=full, Green=0, Blue->up, White=0 Magenta (Red=full, Green=0, Blue=full, White=0) Red -> down, Green=0, Blue=full, White=0 Blue (Red=0, Green=0, Blue=full, White=0) -- *Speed of the following effects can be controlled by the Shutter/Strobe channel (DMX values of 96-127)* Rainbow effect (with fade time) Rainbow effect Zone effect 1 Zone effect 2 Zone effect 3 Zone effect 4 Zone effect 5 Zone effect 6	step step step step step step step step step proportional step proportio-nalstep proportional step proportional step proportional step proportional step step step step step step step step step

Mode/Channel						Value	Function	Type of control
1	2	3	4	5	6			
36	12	8	3	2	41	0 - 255	**Zoom (8 bit)** Zoom from min. to max. beam angle	proportional
37	13	-	-	3	42	0 - 255	**Zoom fine (16 bit)** Fine zooming from min. to max.	proportional
38	14	9	4	4	43		**Shutter/Strobe**	
						0-31	Shutter closed	step
						32-63	Strobe effect from slow--> fast (zone 4 only)	proportional
						64-95	Strobe effect from slow--> fast (All zones together)	proportional
							--------------Set value on Virtual colour wheel-------------	
						96-111	Zone effects+rainbow effects speed control, slow--> fast	proportional
						112-127	Zone effects+rainbow effects speed control, fast--> slow /opposite direction/	proportional
							--	
						128-143	Opening pulses in sequences from slow--> fast (All zones together)	proportional
						144-159	Closing pulses in sequences from fast--> slow (All zones together)	proportional
						160-175	Random strobe effect from slow--> fast (random zone)	proportional
						176-191	Random strobe effect from slow--> fast (random zone + random strobe)	proportional
						192-223	Random strobe effect from slow --> fast (All zones together)	proportional
						224-239	Random strobe effect from slow --> fast (random LEDs)	proportional
						240-255	Shutter open	step
39	15	10	5	5	44	0-255	**Dimmer (8 bit)** Dimmer intensity from 0% to 100%	proportional
40	16	-	-	6	45	0-255	**Dimmer fine (16 bit)** Fine dimming	proportional

** DMX values of all channels are saved into fixture and will be recall after switching the fixture on (without DMX controller connected).

***In the Halogen lamp mode the Dimmer channel imitates behaviour of the halogen lamp during dimming.

5.1 Virtual colour wheel - colour mixing chart

Scale*	Virtual Colour Wheel	Red	Green	Blue	White
	DMX	DMX	DMX	DMX	DMX
	1-2 (White 2700K)	250	118	0	63
	3 (White 2700K /Hal.mode/)	250	118	0	63
	4-5 (White 3200K)	255	141	5	89
	6 (White 3200K /Hal.mode/)	255	141	5	89
	7-9 (White 4200K)	254	141	3	255
	10-12 (White 5600K)	254	207	37	255
	13-15 (White 8000K)	228	255	79	255
	16	0	0	255	0
	17	0	3	255	0
	18	0	6	255	0
	19	0	9	255	0
	20	0	12	255	0
	21	0	15	255	0
	22	0	18	255	0
	23	0	21	255	0
	24	0	24	255	0
	25	0	27	255	0
	26	0	30	255	0
	27	0	36	255	0
	28	0	41	255	0
	29	0	46	255	0
	30	0	52	255	0
	31	0	58	255	0
	32	0	64	255	0
	33	0	68	255	0
	34	0	74	255	0
	35	0	80	255	0
	36	0	86	255	0
	37	0	92	255	0
	38	0	98	255	0
	39	0	104	255	0
	40	0	110	255	0
	41	0	119	255	0
	42	0	129	255	0
	43	0	138	255	0
	44	0	147	255	0
	45	0	156	255	0
	46	0	165	255	0
	47	0	174	255	0
	48	0	183	255	0
	49	0	192	255	0
	50	0	201	255	0
	51	0	210	255	0
	52	0	219	255	0
	53	0	228	255	0
	54	0	237	255	0
	55	0	246	255	0
	56	0	255	255	0
	57	0	255	246	0
	58	0	255	237	0
	59	0	255	228	0
	60	0	255	219	0
	61	0	255	210	0
	62	0	255	201	0
	63	0	255	192	0

Scale*	Virtual Colour Wheel	Red	Green	Blue	White
	DMX	DMX	DMX	DMX	DMX
	64	0	255	183	0
	65	0	255	174	0
	66	0	255	165	0
	67	0	255	156	0
	68	0	255	147	0
	69	0	255	138	0
	70	0	255	129	0
	71	0	255	119	0
	72	0	255	110	0
	73	0	255	104	0
	74	0	255	98	0
	75	0	255	92	0
	76	0	255	86	0
	77	0	255	80	0
	78	0	255	74	0
	79	0	255	68	0
	80	0	255	64	0
	81	0	255	58	0
	82	0	255	52	0
	83	0	255	46	0
	84	0	255	41	0
	82	0	255	36	0
	86	0	255	30	0
	87	0	255	27	0
	88	0	255	24	0
	89	0	255	21	0
	90	0	255	18	0
	91	0	255	15	0
	92	0	255	12	0
	93	0	255	9	0
	94	0	255	6	0
	95	0	255	3	0
	96	0	255	0	0
	97	3	255	0	0
	98	6	255	0	0
	99	9	255	0	0
	100	12	255	0	0
	101	15	255	0	DMX
	102	18	255	0	0
	103	21	255	0	0
	104	24	255	0	0
	105	27	255	0	0
	106	30	255	0	0
	107	36	255	0	0
	108	41	255	0	0
	109	46	255	0	0
	110	52	255	0	0
	111	58	255	0	0
	112	64	255	0	0
	113	68	255	0	0
	114	74	255	0	0
	115	80	255	0	0
	116	86	255	0	0
	117	92	255	0	0
	118	98	255	0	0

Scale*	Virtual Colour Wheel	Red	Green	Blue	White
	DMX	DMX	DMX	DMX	DMX
	119	104	255	0	0
	120	110	255	0	0
	121	119	255	0	0
	122	129	255	0	0
	123	138	255	0	0
	124	147	255	0	0
	125	156	255	0	0
	126	165	255	0	0
	127	174	255	0	0
	128	183	255	0	0
	129	192	255	0	0
	130	201	255	0	0
	131	210	255	0	0
	132	219	255	0	0
	133	228	255	0	0
	134	240	255	0	0
	135	255	255	0	0
	136	255	246	0	0
	137	255	237	0	0
	138	255	228	0	0
	139	255	219	0	0
	140	255	210	0	0
	141	255	201	0	0
	142	255	192	0	0
	143	255	183	0	0
	144	255	174	0	0
	145	255	165	0	0
	146	255	156	0	0
	147	255	147	0	0
	148	255	138	0	0
	149	255	129	0	0
	150	255	119	0	0
	151	255	110	0	0
	152	255	104	0	0
	153	255	98	0	0
	154	255	92	0	0
	155	255	86	0	0
	156	255	80	0	0
	157	255	74	0	0
	158	255	68	0	0
	159	255	64	0	0
	160	255	58	0	0
	161	255	52	0	0
	162	255	46	0	0
	163	255	41	0	0
	164	255	36	0	0
	165	255	30	0	0
	166	255	27	0	0
	167	255	24	0	0
	168	255	21	0	0
	169	255	18	0	0
	170	255	15	0	0
	171	255	12	0	0
	172	255	9	0	0
	173	255	6	0	0

Scale*	Virtual Colour Wheel	Red	Green	Blue	White
	DMX	DMX	DMX	DMX	DMX
	174	255	3	0	0
	175	255	0	0	0
	176	255	0	3	0
	177	255	0	6	0
	178	255	0	9	0
	179	255	0	12	0
	180	255	0	15	0
	181	255	0	18	0
	182	255	0	21	0
	183	255	0	24	0
	184	255	0	27	0
	185	255	0	30	0
	186	255	0	36	0
	187	255	0	41	0
	188	255	0	46	0
	189	255	0	52	0
	190	255	0	58	0
	191	255	0	64	0
	192	255	0	68	0
	193	255	0	74	0
	194	255	0	80	0
	195	255	0	86	0
	196	255	0	92	0
	197	255	0	98	0
	198	255	0	104	0
	199	255	0	110	0
	200	255	0	119	0
	201	255	0	129	0
	202	255	0	138	0
	203	255	0	147	0
	204	255	0	156	0
	205	255	0	165	0
	206	255	0	174	0
	207	255	0	183	0
	208	255	0	192	0
	209	255	0	201	0
	210	255	0	210	0
	211	255	0	219	0
	212	255	0	228	0
	213	255	0	237	0
	214	255	0	246	0
	215	255	0	255	0
	216	246	0	255	0
	217	237	0	255	0
	218	228	0	255	0
	219	219	0	255	0
	220	210	0	255	0
	221	201	0	255	0
	222	192	0	255	0
	223	183	0	255	0
	224	174	0	255	0
	225	165	0	255	0
	226	156	0	255	0
	227	147	0	255	0
	228	138	0	255	0

Scale*	Virtual Colour Wheel	Red	Green	Blue	White
	DMX	DMX	DMX	DMX	DMX
	229	129	0	255	0
	230	119	0	255	0
	231	110	0	255	0
	232	104	0	255	0
	233	98	0	255	0
	234	91	0	255	0
	235	84	0	255	0
	236	77	0	255	0
	237	70	0	255	0
	238	63	0	255	0
	239	56	0	255	0
	240	49	0	255	0
	241	42	0	255	0
	242	35	0	255	0
	243	28	0	255	0
	244	21	0	255	0
	245	14	0	255	0
	246	7	0	255	0
	247	0	0	255	0
	248-255 (Rainbow+ zone effects)	****	****	****	****
* Colour scale as an illustration only					

6. Control menu

The Robin Actor 12 is equipped with 2-line 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.

Control panel:
[ESCAPE] button used to leave the menu without saving changes.
[NEXT] , [PREV] buttons for moving between menu items and for value adjusting.

Note: Press and hold the [ESCAPE]
button to turn the display

ESCAPE   NEXT

```
┌──────────────┐
│    DMXA      │
│    0001      │
└──────────────┘
```

ENTER   PREV

[ENTER] button used to enter the selected menu (menu item) and to confirm adjusted value.

After switching the fixture on, display shows current DMX address.

QUICK ACCESSIBLE ITEMS (DMXA, Zoom, Vir C, Dimm)

6.1 Addressing (DMXA)

Set DMXA- Use this menu item to set the DMX start address of the fixture, which is defined as the first channel from which the Robin Actor 12 will respond to the controller.
If you set, for example, the address 36, the Robin Actor 12 will use channels 36 - 75 for control (if Mode 1 is selected).
Please, be sure that you do not have any overlapping channels in order to control each Robin Actor 12 correctly and independently from any other fixture on the DMX data link.
If there is no data received at the DMX input, the display will start to flash "0001" with actually stored DMX address.

6.2 Zoom (Zoom)

The motorized zoom with silent running allows zoom range of 8°-53° (1/2 beam).

6.3 Virtual colour wheel (Vir C)

The virtual colour wheel allows choosing of 237 pre-defined colours including whites 2700K, 3200K, 4200K, 5600K, 8000K ; rainbow effect and six zone-effects available.

6.4 Dimmer (Dimm)

The electronic dimmer allows fine dimming in range 0-100%.

STANDARD MENU (MENU)

6.5 Fixture information (Info)

Pon Time - **Power on time**. Select this menu to read the number of fixture operation hours.
        Total - The item shows the total number of the operation hours since the Robin Actor 12 has been fabricated.
        Reset - The item shows the number of the operation hours that the Robin Actor 12 has been powered on since the counter was last reset.
        In order to reset this counter to 0, press and hold both [NEXT] and [PREV] buttons and the [Enter] button at the same time.

DMX In - DMX readout. The menu is used to read DMX values of each channel received by the fixture.

Temp - **Temperature**. The menu shows temperature in the LED module.

> **Current** - A current temperature of the LED module.
> **Highest** - A maximum temperature of the the LED module since the fixture has been fabricated.
> **High Res** - A maximum temperature of the the LED module since the counter was last reset.
> In order to reset this counter, press and hold both [NEXT] and [PREV] buttons and the [Enter] button at the same time.

Sw Ver - **Software versions**. Select this item to read the software version of the fixture modules.

> **IC-1** - A display processor 1
> **IC-2** - A display processor 2
> **IC-3** - LED control processor 1
> **IC-4** - LED control processor 2

6.6 Personality (Pers)

DMX Pres - **DMX preset**. Use the menu to select desired channel mode.

> **Mode 1** - 40 control channels
> **Mode 2** - 16 control channels
> **Mode 3** - 10 control channels
> **Mode 4** - 5 control channels
> **Mode 5** - 40 control channels
> **Mode 6** - 45 control channels (equivalent to the LEDWash 1200 in mode 1)

DMX In - **DMX input**. Use the menu to select mode of receiving DMX signal.

> **Wired** - DMX signal is received by means of the standard DMX cable.
> **Wireless** - DMX signal is received by means of the inbuilt wireless module.

Display - **Display adjusting**. This menu allows you to adjust the display behaviour.

> **Turn** - This function turns the display by 180°.
> **On/Off T** - This function allows you to keep the display permanent on or turn it off two minutes after last pressing any button on the control panel.
> **Contrast**- Use this function to adjust contrast of the display (0-100%).
> **Backlight**- Use this function to adjust backlight of the display (0-100%).

C Cal M - **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 "Calibrate Effects" (Special-> Adjust-> Calib).

C Mix M - **Colour mixing mode**. This item allows switching into RGBW or CMY mode. In the CMY mode, the white(8bit)/white (16 bit) channels are not active.

Mic Sens - **Microfon sensitivity**. Enter the menu if you want to adjust the microphone sensitivity (1-max., 19-min.).

Fans - **Fan mode**. Use the menu to set the fixture fans to max. fan power mode ("**High**") or to auto- control mode ("**Auto**").

Temp Uni - **Temperature unit**. Use the menu item to change temperature unit from °C to °F.

I Ef Pos - **Init effect positions**. Use the menu to set all effects to the desired positions at which they will stay after switching the fixture on without DMX signal connected.
Defaults - The menu item allows to set all fixture parameters to the default (factory) values.

6.7 Manual Control (Manual)

Pres Eff - **Preset effects**. Use the menu to show preset positions of each channel effect.

Manual C - **Manual control**. Use the menu to control all fixture channels by means of the control panel.

6.8 Test program (Test Prg)

Use this menu item to run a special demo-test sequences without an external controller, which will show you some possibilities of using Robin Actor 12.

6.9 Stand-alone (St Alone)

Music T - **Music trigger**. Select this function to enable the sound control of the running program via the built-in microphone.

Auto Run - **Presetting playback**. This function allows you to select the program which will be played in the stand-alone mode after switching the fixture on. Selected program will be played continuously in a loop.

> **Off** - The option disables „Auto Run" function.
> **Test** - The option will start built-in test program.
> **Prog 1** - The option will start user-created program 1
> **Prog 2** - The option will start user-created program 2
> **Prog 3** - The option will start user-created program 3

Pr Play - **Playing program**. Select this menu to run a user-created program in a loop.

> **Test Prg** - The option runs built-in test program.
> **Prog 1** - The option runs user-created program 1
> **Prog 2** - The option runs user-created program 2
> **Prog 3** - The option runs user-created program 3

Select the program you wish and press [ENTER]. The selected program starts running. By Pressing [ENTER] again, program pauses running.

Pr Edit - **Editing program**. Select this menu to edit or create the program. The Robin Actor 12 has one built-in program and one user-editable program up to 40 steps. Each program step has a step time - during which effects last in the current step and a fade time- during which effects move to new positions.
To edit program:

Procedure:
1. Press [NEXT] or [PREV] to select the menu "Edit" and press [ENTER].
2. Press [NEXT] or [PREV] to select the desired program step and press [ENTER] button.
3. Press [NEXT] or [PREV] to select the desired item and press [ENTER] button. Now you can edit by [NEXT] or [PREV] buttons the DMX value (0-255) for selected item:

Prg End.	a total number of the program steps (value 1-40). This value you should be set before starting of programming (e.g. if you want to create program with the 10 steps, set Prg End=10).		
Power	power/special functions	CTC	a colour temperature correction
R Led 1 (2/3/4)	red coarse -zone 1 (2,3,4)	Virt C	a virtual colour
G Led 1 (2/3/4)	green coarse - zone 1(2,3,4)	Strob	a strobe/shutter
B Led 1 (2/3/4)	blue coarse - zone 1(2,3,4)	Dimmer	a dimmer coarse
W Led 1 (2/3/4)	white coarse - zone 1(2,3,4)	Dimm F	a dimmer fine
		F.Tim	a fade time (0-25.5 sec)
		S.Tim	a step time (0-25.5 sec)
		COPY	copying the current prog. step to the next prog. step

4. Press [ENTER] button to confirm adjusted value .
5. Press [ESCAPE] button, select next prog. step, press [ENTER] button and repeat steps 3 - 5).

6.10 Reset

This option enables the Robin Actor 12 to index all effects and return to their standard positions.

6.11 Special functions (Special)

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

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

Wireless - **Wireless DMX status**. The menu serves for reading of the wireless operation status.
  r.InF. - **Wireless DMX information**. The menu item shows level of received signal in %.

If the fixture is not linked to the transmitter, "no.LI" is displayed.
r.UnL. - Wireless DMX unlink. The item serves for unlinking the fixture from transmitter.

<u>**Adjust**</u> - **Adjustment**. The menu allows the fine adjustment of colours.
> <u>**DMX Val**</u>- **DMX values**. Use the menu to set DMX values of fixture´s channels.
> <u>**Calib**</u> - A calibration of colour saturations

Calibration of the colour saturations via the control board
1. Disconnect DMX controller from the fixture , open shutter and dimmer and set the Virtual wheel channel   to DMX=10 (white 5600K). Aim the light beam on the lux meter (e.g. Minolta CL-200 Chroma meter)
   which is placed at min distance of 2.5m from the fixture
2. Set the menu item "Colour Calibration Mode" to On (Pers-> C Cal M-> On).
3. Enter the menu "Calib".
4. Use the [up arrow] and [down arrow] to find desired colour and touch it to enter the fine effect
   adjustment screen.
5. By means of the Red, green, Blue and White items adjust the 5600K colour temperature as exactly as
   possible ($\Delta u´v´= 0$).
7. After adjusting 5600K colour temperature, select [Store to save all adjusted values and reset
   the fixture.

Note: you can also use DMX controler for colour calibration stated above, calibration protocol is the following:

Effect	*Mode 1*	*Mode 2*	*Mode 3*	*Mode 4*	*Mode 5*
Red - red saturation	channel 41	channel 17	channel 11	channel 6	channel 41
Green- green saturation	channel 42	channel 18	channel 12	channel 7	channel 42
Blue - blue saturation	channel 43	channel 19	channel 13	channel 8	channel 43
White - white saturation	channel 44	channel 20	channel 14	channel 9	channel 44

<u>**Sw Upd**</u> - **Software update**. The menu item allows you to update software in the fixture via either serial or USB port of PC.
The following are required in order to update software:
- PC running Windows 95/98/2000/XP/7 or Linux
- DMX Software Uploader
- Flash cable RS232/DMX No.13050624 (if you want to use a serial port of PC)
- Robe Universal Interface (if you want to use an USB port of PC)

Note 1: Software update should execute a qualified person. If you lack qualification, do not attempt the update yourself and ask for help your ROBE distributor.

Note 2: DMX address, , programs 1-3 and all items in the menu "Pers" will be set to their default (factory) values.

To update software in the fixture:
I. Installation of the DMX Software Uploader.
> 1. DMX Software Uploader program 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 to it.
> 3. Unpack the program to the directory.
II.Fixture software updating.
> 1.Determine which of your ports is available on your PC and connect it:
> - with the DMX input of the fixture if you using the flash cable RS232/DMX
> - with the DMX output of the Robe Universal Interface if you using the USB cable.
> Disconnect the fixture from the other fixtures in a DMX chain. Turn both the computer and
> the fixture on. Make sure the lamp is switched off (only if the fixture involves a lamp).
> 2. Switch the fixture to the updating mode by selecting the "SW Upd " item and press [ENTER].
> Note: If you do not want to continue in software update, you have to switch off and on the fixture
> to escape from this menu.
> We recommend to cancel all running programs before starting the Software Uploader.
> 3. Run the Software Uploader program. Select desired COM and then click on the Connect button.
> (Select COM if the serial port is used or Robe Universal Interface if the USB port is used).
> If the connection is OK, click on the "Start Uploading button" to start uploading. It will take several
> minutes to perform software update.
> If the option "Incremental Update" is not checked, all processors will be updated (including

processors with the same software version).

If you wish to update only later versions of processors, check the "Incremental Update box".

Avoid interrupting the process. Update status is being displayed in the Info Box window.

When the update is finished, the line with the text "The fixture is successfully updated" will appear in this window and the fixture will reset with the new software.

Note: In the case of an interruption of the upload process (e.g. power cut), the fixture keeps the updating mode and you have to repeat the software update again.

7. RDM

This fixture supports 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 Robin Actor 12 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_INVERT		*	*
DISPLAY_LEVEL		*	*
DEVICE_RESET		*	
DMX_PERSONALITY		*	*
DMX_PERSONALITY_DESCRIPTION			*
STATUS_MESSAGES			*
STATUS_ID_DESCRIPTION			*
DEVICE_HOURS			*
PARAMETER_DESCRIPTION			*

8. Wireless DMX operation

The wireless version of the Actor 12 is equipped with the Lumen Radio CRMX module and antenna for receiving DMX signal. CRMX module operates on the 2.4 GHz band.

The item " Wireless " from the menu "DMX Input" allows you to activate receiving of wireless DMX (Pers- -> DMX In -->Wireless.). The options from the "DMX Input" menu are stated in DMX chart as well (channel Power/Special functions , range of 10-19 DMX). If DMX input option is changed by DMX command, the change is permanently written into fixture´s memory.

DMX range of 10-19 switching fixture to the wired/wireless operation is active only during first 10 sec-

onds after switching the fixture on.

After switching the fixture on, the fixture checks both modes of receiving DMX in the following order:

1. For the first five seconds, the fixture receives DMX signal from the wired input. If the Power/Special functions channel is set at some DMX input option, the fixture will receive DMX value according to this option. If DMX input option is set to the wired input , this option is saved and checking procedure is finished. If DMX input option is not set, the fixture continues next 5 seconds in scanning wireless DMX signal-see point 2.

2. For the next 5 seconds the fixture receives wireless DMX signal and again detects if the Power/Special functions channel is set at some DMX input option, if not, the fixture will take option which is set in the fixture menu "DMX Input".

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 "Wireless " (Special -->Wireless -->Stat).

To unlink the fixture from DMX transmitter.
The fixture can be unlinked from receiver via the menu item " Unlink " (Special --> Wireless --> Unlink).

9. Error and information messages

L. Z. 1 Short Err.

The message informs you that short circuit has occured on the PCB of LED zone 1.

L. Z. 2 Short Err
The message informs you that short circuit has occured on the PCB of LED zone 2.

L. Z. 3 Short Err
The message informs you that short circuit has occured on the PCB of LED zone 3.

L. Z. 4 Short Err
The message informs you that short circuit has occured on the PCB of LED zone 3.

10. Technical Specifications

Electrical

Power supply:.........................electronic auto-ranging
Input voltage range:............... supply 100-240V, 50-60Hz
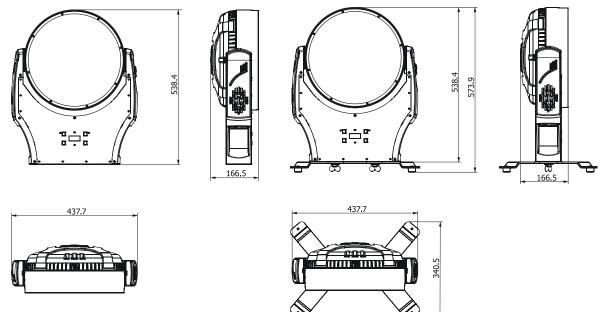Fuse:.......................................T 8A/250V ~

Power consumption *:........ 680W @230V,power factor=0,97, I=1.86A (R+G+B+W=full)
*Allow for a deviation of +/-10%

Optic

Light source: 61 Osram Ostar RGBW multichips (SMT LE RTDUW S2W)
4 LED zones with individual colour control of each
Typical Lumen Maintenance: 70% @ 60,000 hours
LED life expectancy: 60.000 hours
RGBW or CMY colour mixing +CTC

Virtual colour wheel

      237 colours including whites (2700K, 3200K, 4200K, 5600K and 8000K)
      Halogen lamp effect at whites 2700K and 3200K
      Rainbow effect with in both directions with variable speed
      Zone effects in both directions with variable speed

Strobe

      All LED zones together:
            Strobe effect with variable speed (0.3 - 20Hz)
            Random strobe pulse-effect with variable speed
            Opening/closing pulse effect with variable speed
      Independent strobe effect with variable speed (0.3 - 20Hz) at zone 4
      Random strobe and random LED zone effect

Dimmer

      Smooth dimmer from 0 - 100 %

Zoom

      Motorized zoom

Control

      2-line LCD display & 4 push buttons
      Readout fixture usage, receiving DMX values, temperatures, etc
      Built-in analyzer for easy fault finding, error messages
      Built-in demo sequences
      Silent fans cooling,
      Stand-alone operation
      3 user editable programs, each up to 40 steps
      Supported protocols: USITT DMX 512, RDM,
      Support of RDM (Remote Device Management)
      6 DMX modes (40, 16, 10, 5, 40, 45 control channels)

Connection

      DMX data in/out: Locking 5-pin XLR
      AC power input: Chassis connector Neutrik PowerCon, A-type, NAC3MPA

Rigging

      Mounting points: pair of 1/4-turn locks
      Mounting horizontally via omega holder

      Tilt adjusting range: 230°

Temperatures

      Maximum ambient temperature : 45° C
      Maximum housing temperature : 80° C

Distances

      Min. distance from flammable surfaces: 1 m
      Min. distance to lighted object: 1.5 m

Total heat dissipation

      2320 BTU/h (calculated)

Weight (net)

      12.44 kg (without floor stand)
      2.35 kg (floor stand)

Dimensions (mm)

Accessories

        1 x Omega holder (No.99010420)
        1 x Floor stand (No.99013633)
        1 x EggCrate Robin 1200 LEDWash-black (No. 19520091)

Optional accessories

        Top hat-black (No.10980112)

11. Maintenance and cleaning

```
                    DANGER !
 Disconnect from the mains before starting any
                  maintenance work
```

A soft lint-free cloth moistened with any good glass cleaning fluid is recommended, under no circumstances should alcohol or solvents be used!

```
 Never use alcohol or solvents for cleaning lenses in the fixture!
                     Use wet cloth only.
```

It is absolutely essential that the fixture is kept clean and that dust, dirt and smoke-fluid residues must not build up on or within the fixture. Otherwise, the fixture's light-output will be significantly reduced. Regular cleaning will not only ensure the maximum light-output, but will also allow the fixture to function reliably throughout its life. A soft lint-free cloth moistened with any good glass cleaning fluid is recommended, under no circumstances should alcohol or solvents be used!

Lenses may require monthly cleaning as smoke-fluid tends to building up residues, reducing the light-output very quickly. The cooling fans should be cleaned according to the situation (at least annually).
The interior of the base should be cleaned at least annually using a vacuum-cleaner or an air-jet.

More complicated maintenance and service operations are only to be carried out by authorized distributors.

11.1 Replacing fuse

Before replacing the fuse, unplug mains lead!

1. Remove the fuse holder on the bottom side of the fixture arm with a fitting screwdriver from the housing (anti-clockwise).
2. Remove the old fuse from the fuse holder.
3. Install the new fuse in the fuse holder (only the same type and rating).
4. Replace the fuse holder in the housing and fix it.

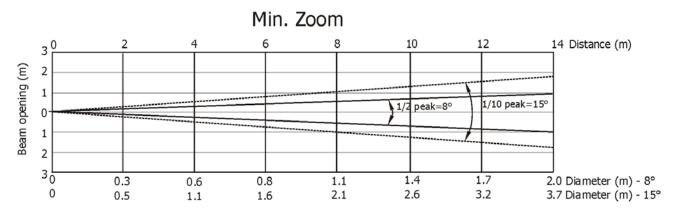# 12. ChangeLog

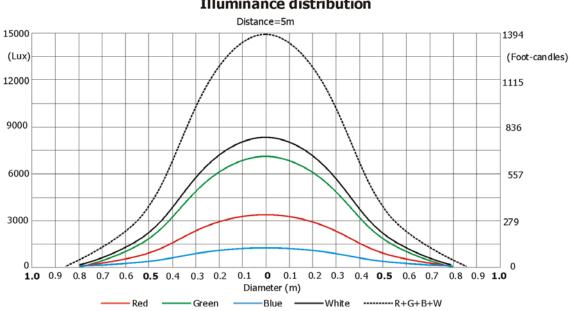This section summarizes all types of changes in the user manual.

Version of the manual	Date of issue	Description of changes
1.1	25/10/2012	New version of DMX protocol.
1.2	30/10/2012	New photometric diagrams

Specifications are subject to change without notice.
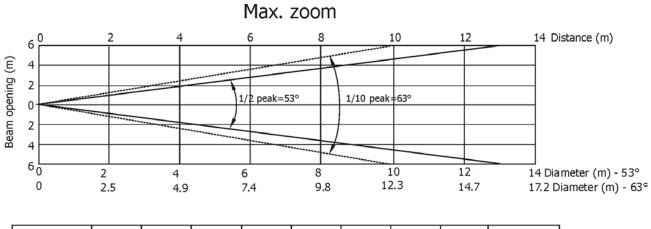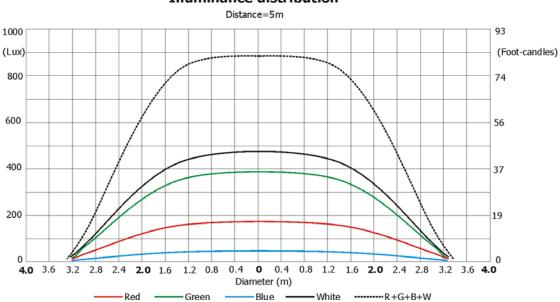*October 30, 2012*

13. Photometric diagrams

Min. Zoom

Distance (m)	2	4	5	6	8	10	12	14	
Red	20250/1881	5062/470	3240/301	2250/209	1266/118	810/75	563/52	413/38	
Green	44062/4093	11015/1023	7050/655	4895/455	2754/256	1762/164	1224/114	899/84	Intensity (center) Lux/Footcandles
Blue	5625/523	1406/131	900/84	625/58	352/33	225/21	156/15	115/11	
White	50187/4663	12547/1165	8030/746	5576/518	3137/291	12007/187	1394/130	980/91	
R+G+B+W	94750/8803	23687/2200	15000/1394	10528/978	5922/550	3790/352	2632/245	1934/180	

Illuminance distribution

Distance=5m

Max. zoom

Distance (m)	2	4	5	6	8	10	12	14	
Red	1150/106	288/27	184/17	129/12	72/7	46/4	32/3	24/2	
Green	2438/227	609/57	390/36	271/25	152/14	98/6	68/6	50/5	
Blue	331/31	83/8	53/5	37/3.4	20/2	13/1	9/0.9	7/0.6	Intensity (center) Lux/Footcandles
White	3000/278	750/70	480/45	333/31	188/17	120/11	83/8	61/6	
R+G+B+W	5563/517	1391/129	890/83	618/57	348/32	222/21	154/14	114/11	

Illuminance distribution

Distance=5m