ROBE.

REDBlinder 2●96

USER MANUAL

version 1.0

REDBlinder 2•96

Table of contents

> **CAUTION!**
> **Unplug mains lead before opening the housing!**

FOR YOUR OWN SAFETY, PLEASE READ THIS USER MANUAL CAREFULLY BEFORE YOU INITIAL START - UP!

1. Safety instructions

Every person involved with installation and maintenance of this product has to:
- be qualilfied
- follow the instructions of this manual

> **CAUTION!**
> **Be careful with your operations. With a high voltage you can suffer a dangerous electric shock when touching the wires inside the unit!**

This product 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.

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

Always ground the unit.

The electric connection, repairs and servicing must be carried out by a qualified employee.

Do not connect this unit to a dimmer pack.

Use a source of AC power that complies with local building and electrical rules.AC power has to have both overload and short circuit protection.

> CAUTION!
> Avoid looking directly into the LED light beam at close range!

2. Operating determinations

This product was designed for indoor use only.

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 unit. Leave the unit switched off until it has reached room temperature.

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, moisture or dust.

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

The maximum ambient temperature 40° C must never be exceeded.

Operate the unit only after having familiarized with its functions. Do not permit operation by persons not qualified for operating the unit. Most damages are the result of unprofessional operation!
Please use the original packaging if the product is to be transported.
Please consider that unauthorized modifications on the unit are forbidden due to safety reasons!

3. Description of the REDBlinder 2•96
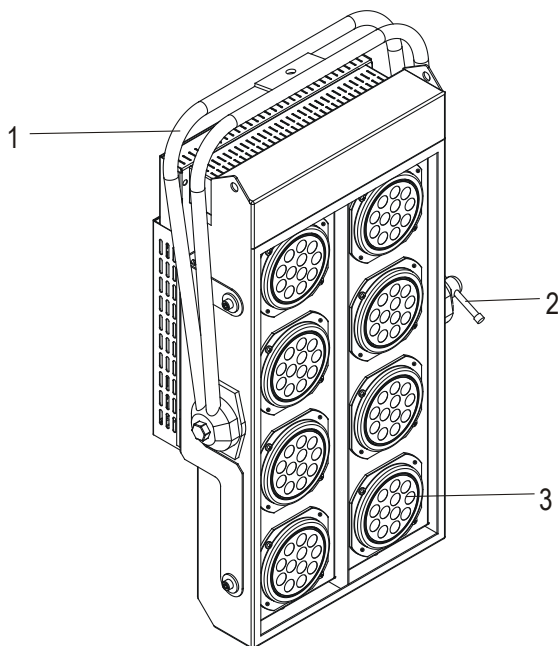
1 - Mounting yoke
2 - "T" bar
3 - LED modules

Control board
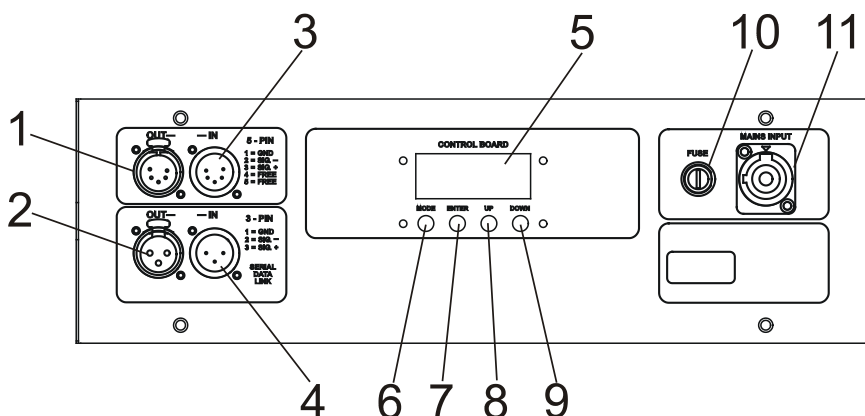
1 - 5-pin DMX output
2 - 3-pin DMX output
3 - 5-pin DMX input
4 - 3-pin DMX input
5 - LED display
6 - Mode-button
7 - Enter-button
8 - Up-button
9 - Down-button
10 - Fuse holder
11 - Mains input

4. Installation

4.1. Connection to the mains

The REDBlinder 2•96 is equipped with auto-switching power supply that automatically adjusts to any 50/60 Hz AC power source from 100-240 volts.
Connect the REDBlinder 2•96 to the mains with the power cord.
If the plug on the flexible cord is not the right type for your socket outlets,do not use an adaptor,but remove the plug from the cord and discard.Carefully prepare the end of the the supply cord and fit a suitable plug.
The earth has to be connected!

Cord plug connections:

Cable (EU)	Cable (US)	Pin	International
Brown	Black	Live	L
Light blue	White	Neutral	N
Yellow/Green	Green	Earth	⏚

4.2 DMX-512 connection/connection between fixtures

The fixture is equipped with both 3-pin and 5-pin XLR sockets for DMX input and output.The sockets are wired in parallel.
Only use a shielded twisted-pair cable designed for RS-485 and 3-pin or 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

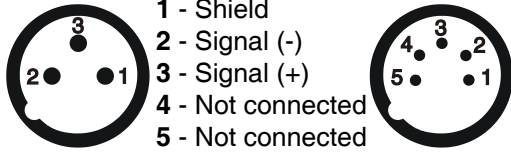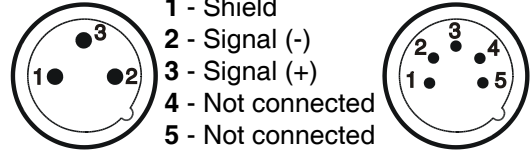If you are using the standard DMX controllers, you can connect the DMX output of the controller directly with the DMX input of the first fixture in the DMX-chain. If you wish to connect DMX-controllers with other XLR-outputs, you need to use adapter-cables.

Master/slave operation

Controller operation

DMX Controller

DMX 512

120 Ω
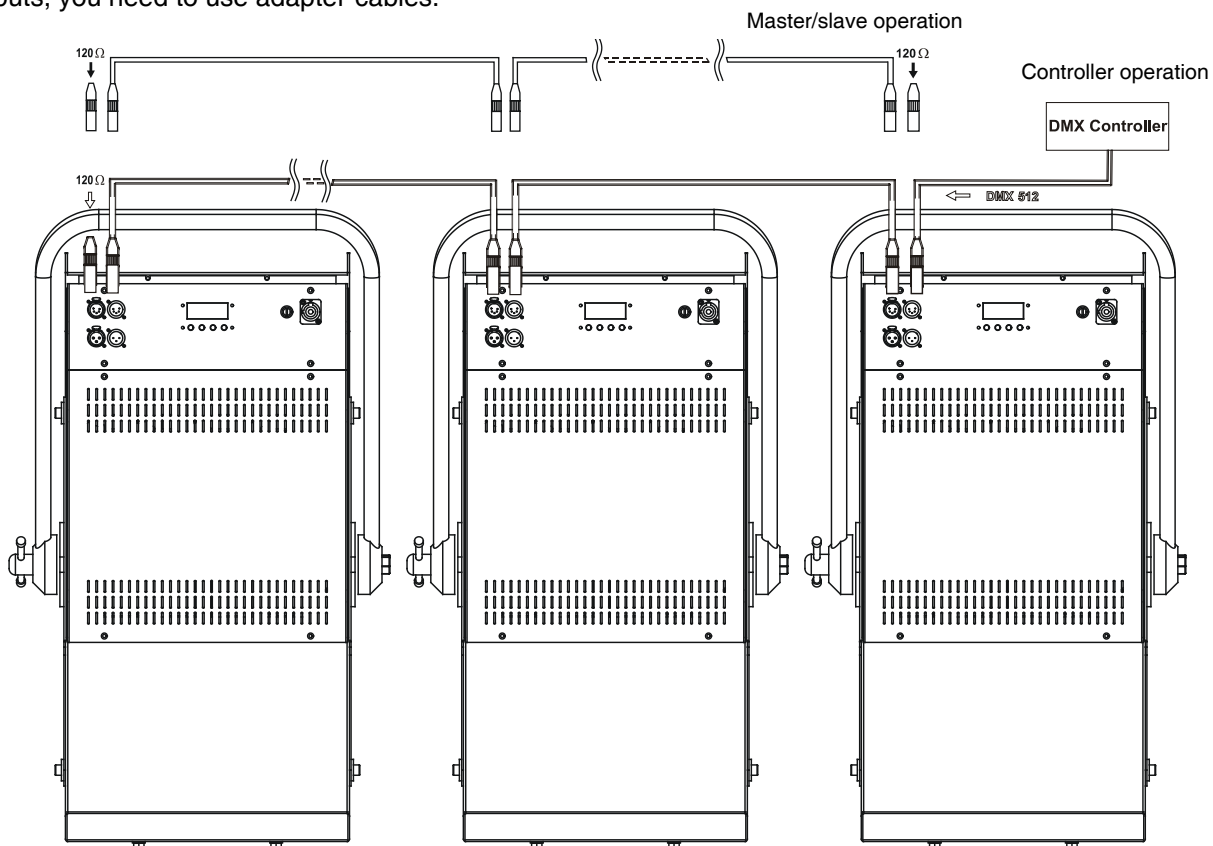
Building a serial DMX-chain:
Connect the DMX-output of the first fixture in the DMX-chain with the DMX-input of the next fixture. Always connect one output with the input of the next fixture until all fixtures are connected.
Caution: At the last fixture, the DMX-cable has to be terminated with a terminator. Solder a 120 Ω resistor between Signal (−) and Signal (+) into a 3-pin XLR-plug and plug it in the DMX-output of the last fixture.

Building a master/slave-chain:
Connect the DMX-output of the master fixture in the data-chain with the DMX-input of the first slave. Always connect output with the input of the next slave until all slaves are connected (up to 9 fixtures).
Caution: It's necessary to insert the XLR termination plug (with 120 Ohm) into the input of the master fixture and into the output of the last slave fixture in the link in order to ensure proper transmission on the data link.

4.3 Rigging the fixture

Please consider the respective national norms during the installation!

The fixture should be hung on a truss structure using a mounting clamp (not included).Mounting yoke has a 13 mm diamer hole for fixing the mounting clamp.The fixture can be tilted + - 180°.The required tilt angle of the fixture can be adjusted by means of the "T" bar on the side of the fixture.

The installation must always be secured with a secondary safety attachment, e.g. an appropriate cord .Fasten the safety cord through the mounting yoke and over the trussing system.

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 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 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 and.or damage to property.

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: Fixtures may cause severe injuries when crashing down! If you have doubts concerning the safety of a possible installation, do not install the fixture!

Before rigging make sure that the installation area can hold a minimum point load of 10 times the fixture's weight.

Danger of fire !
When installing the device, make sure there is no highly inflammable material in a distance of min. 0.5m.

CAUTION!
Make sure that the device is fixed properly! Ensure that the structure (truss)to which you are attaching the fixtures is secure. Instal the device in a ventilated location.Never cover air vents!

4.4 Fitting the frost filtr

The REDBlinder 2•96 is supplied with clear glasses covering LED modules. If you wish to use a diffusive light , it is possible to order glass or film frost filter sets and fix them on the LED modules by two fastenig screws.
Glass filters- soft frost light
Film filters-dense frost light

Fastening screws

Glass (film) set

7
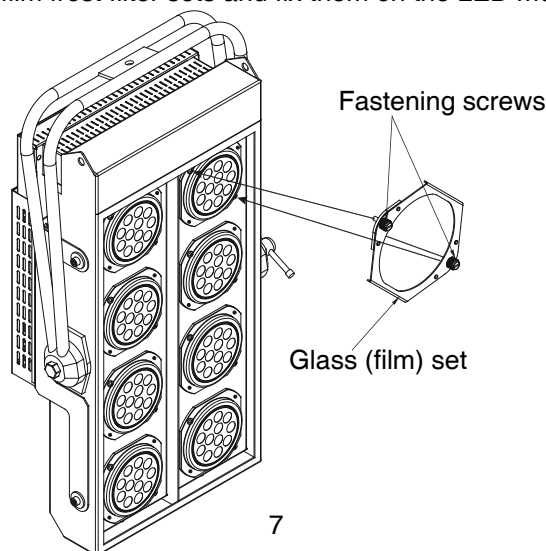
5.REDBlinder 2•96 - DMX protocol ,version 1.0

| Mode/Channel				Value	Function	Type of control
1	**2**	**3**	**4**			
					Zone 1	
1	1			0-255	**Red LEDs 1** Red LEDs saturation control (0-100%)	proportional
2	2			0-255	**Green LEDs 1** Green LEDs saturation control (0-100%)	proportional
3	3			0-255	**Blue LEDs 1** Blue LEDs saturation control (0-100%)	proportional
					Zone 2	
4	4			0-255	**Red LEDs 2** Red LEDs saturation control (0-100%)	proportional
5	5			0-255	**Green LEDs 2** Green LEDs saturation control (0-100%)	proportional
6	6			0-255	**Blue LEDs 2** Blue LEDs saturation control (0-100%)	proportional
					Zone 3	
7	7			0-255	**RED LEDs 3** Red LEDs saturation control (0-100%)	proportional
8	8			0-255	**GREEN LEDs 3** Green LEDs saturation control (0-100%)	proportional
9	9			0-255	**BLUE LEDs 3** Blue LEDs saturation control (0-100%)	proportional
					Zone 4	
10	10			0-255	**RED LEDs 4** Red LEDs saturation control (0-100%)	proportional
11	11			0-255	**GREEN LEDs 4** Green LEDs saturation control (0-100%)	proportional
12	12			0-255	**BLUE LEDs 4** Blue LEDs saturation control (0-100%)	proportional
					Common channels for all Zones	
		1	1	0-255	**RED LEDs** All red LEDs saturation control (0-100%)	proportional
		2	2	0-255	**GREEN LEDs** All green LEDs saturation control (0-100%)	proportional
		3	3	0-255	**BLUE LEDs** All blue LEDs saturation control (0-100%)	proportional
13		4			**MACRO SELECTION**	
				0-7	No function	step
				8-15	Macro 1	step
				16-23	Macro 2	step
				24-31	Macro 3	step
				32-39	Macro 4	step
				40-47	Macro 5	step
				48-55	Macro 6	step
				56-63	Macro 7	step
				64-71	Macro 8	step
				72-79	Macro 9	step
				80-87	Macro 10	step
				88-95	Macro 11	step
				96-103	Macro 12	step
				104-111	Macro 13	step
				112-119	Macro 14	step
				120-127	Macro 15	step

13		4		128-135	Macro 16	step
				136-143	Macro 17	step
				144-151	Macro 18	step
				152-159	Macro 19	step
				160-167	Macro 20	step
				168-175	Macro 21	step
				176-183	Macro 22	step
				184-191	Macro 23	step
				192-199	Macro 24	step
				200-207	Macro 25	step
				208-215	Macro 26	step
				216-223	Macro 27	step
				224-231	Macro 28	step
				232-239	Macro 29	step
				240-247	Macro 30	step
				248-255	Macro 31-rainbow effect from slow to fast	proportional
14		5			**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 from slow to fast	proportional
				144-159	Closing pulses in sequences from fast to slow	proportional
				160-191	Shutter open	step
				192-223	Random strobe-effects from slow to fast	proportional
				224-255	Shutter open	step
15		6			**DIMMER**	
				0-255	Dimmer intensity from 0% to 100%	proportional

Zone positions:
(every zone contains two LED modules)

Zone 1
Zone 2
Zone 3
Zone 4
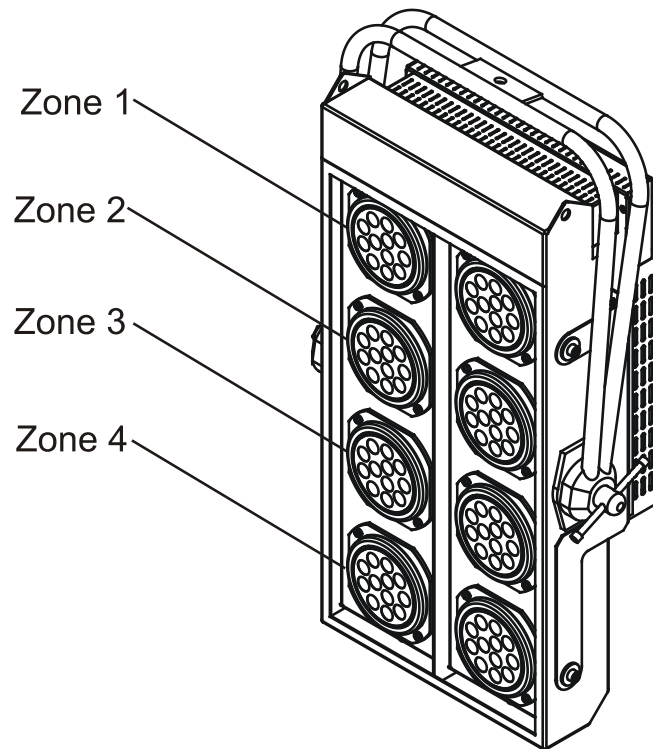
6.REDBlinder 2•96 - Control menu map

Default settings=Bold print

A001 *(001-498)*

ProG
- EPG.1
- EPG.2
- EPG.3
- PrG.1
- :
- PrG.6
- Auto *(**OFF**,On)*
- Edit.
  - EPG.1
  - EPG.2
  - EPG.3
    - St.01
    - :
    - St.30
      - P.End
      - rEd 1 *(0-255)*
      - :
      - dimr. *(0-255)*
      - F.tim.*(0-255)*
      - S.tim. *(0-255)*
      - COPY.

MAn.C
- rEd *(0-255)*
- GrEE. *(0-255)*
- bLuE *(0-255)*
- :
- MACr *(0-255)*
- Stro. *(0-255)*
- dimr. *(0-255)*

tESt

St.AL.
- MASt.
  - EPG.1
  - :
  - PrG.6
- SLA.

SPEC
- VErS.
- bALA. *(On,**OFF**)*
- tEMP.
- C.bAL.
  - rEd.b. *(0..**200**..255)*
  - GrE.b.*(0..**255**)*
  - bLu.b. *(0..**215**..255)*
- dM.Pr.
  - Mod.1
  - **Mod.2**
  - Mod.3
  - Mod.4
- i.bLi *(**On**,Off*
- UPd.*(**no**,YES)*

10
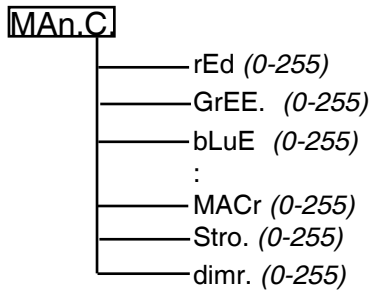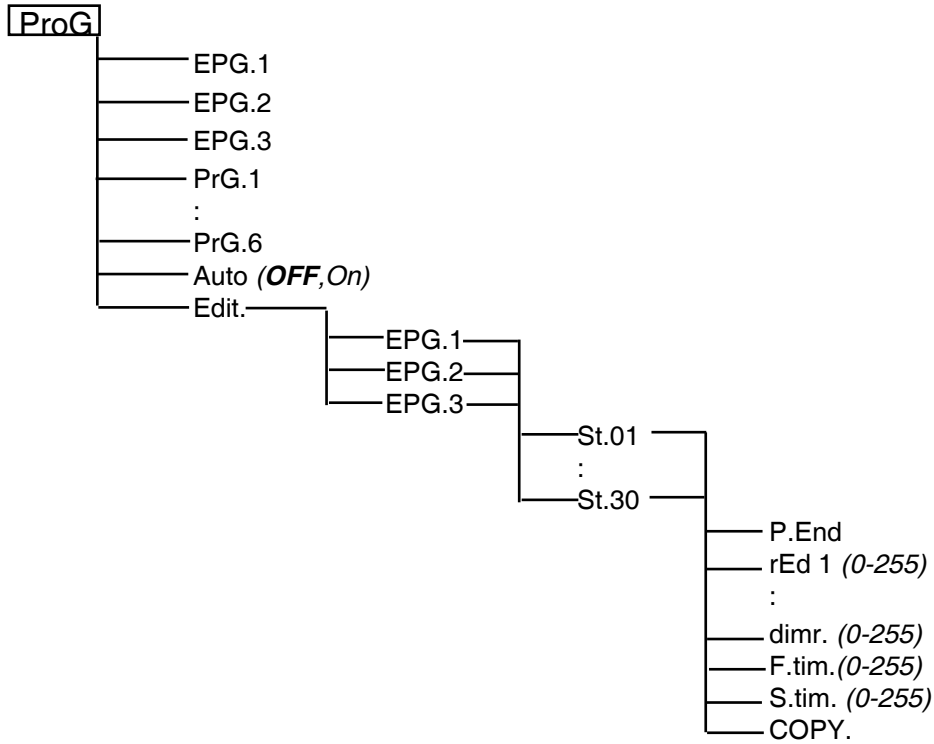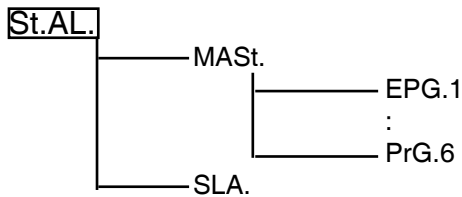
7.Control board

The control panel situated on the top cover of the REDBlinder 2•96 allows DMX addressing,calling build-in programs and setting the fixture behaviour.

Control elements on the control board:
[MODE] button-leaves menu without saving changes.
[ENTER] button- enters menu,confirms adjusted values and leaves menu.
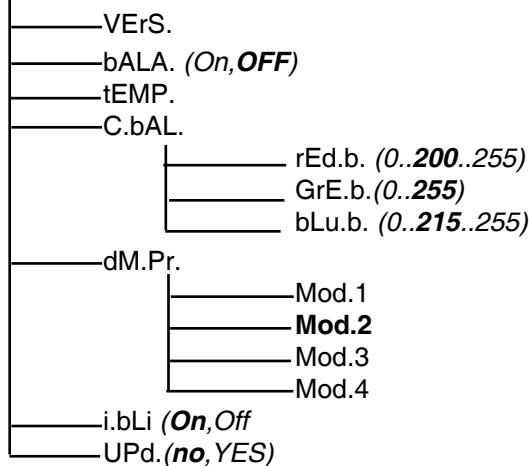[UP] button and[DOWN] button- moves between menu items on the the same level, sets values.
After switching the fixture on,the display shows the initial screen:

```
A001
```

Use [UP],[DOWN] to browse through the menu. To select a function or submenu,press [ENTER].

7.1 Addressing the REDBlinder 2•96

```
A001
```

The fixture can be operated in the two modes:**DMX mode**-fixture is controlled via DMX 512 by an external DMX controller
Stand-alone mode - fixture uses build-in programs and is able to control other fixtures in the master/slave chain.
See the chapter "Stand-alone mode" for detail description.

For DMX mode is important the DMX start address that is defined as the first channel from which the REDBlinder 2•96 will respond to the DMX controller.

Setting the DMX start channel for DMX operating:
1. Connect REDBlinder 2•96 to the mains.
2. Browse through the menu by pressing the [UP] and [DOWN] buttons until the display shows current addres **"A001"**.Confirm by pressing [ENTER] button and **"A001"** will start to flash frequently.
3. Use the [UP] and [Down] buttons to select the desired address.
4. Confirm by pressing [ENTER].After having addressed REDBlinder 2•96, you may now start operating RED-Blinder 2•96 via your DMX controller.

7.2 Program running

```
ProG
```

By enter to this menu a complete overview of all programs is offered,from which the program to be run can be selected by pressing [ENTER] button.Selected program runs in a loop.The fixture includes 6 built-in programs (PrG.1-PrG.6) and 3 free editable programs (EPG.1-EPG.3),each up to 30 steps.Each program step has a fade time-the time during which effects go to the current step and a Standing time-the time,during which effects last in the current step.

```
                          current step
        |--------------------------------------------------|
        |   Fade time       |         Standing time        |
```
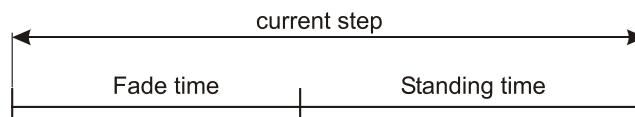
Programming procedure:
1. Enter "Edit." menu
2. Press [UP] or [DOWN] to select the desired program which you wish to edit and press [ENTER].
3. Press [UP] or [DOWN] to select the desired program step ("St.01" - "St.30") and press [ENTER].
4. Press [UP] or [DOWN] to select the desired item and press [ENTER]-button.Now you can edit by using [UP] or [DOWN] buttons the DMX values of selected item:

> **P.End. -** a total number of the program steps (value 1-30).This value you must set before start programming(e.g. if you want to create program with 10 steps,set P.End=10).

rEd.1   - a red LEDs 1 saturation,value 0-255   **rEd.2**   - a red LEDs 2 saturation,value 0-255
GrE.1   - a green LEDs 1 saturation,value 0-255   **GrE.2**   - a green LEDs 2 saturation,value 0-255
bLu.1   - a blue LEDs 1 saturation,value 0-255   **bLu.2**   - a blue LEDs 2 saturation,value 0-255

rEd.3 - a red LEDs 3 saturation,value 0-255   **rEd.4** - a red LEDs 4 saturation,value 0-255
GrE.3 - a green LEDs 3 saturation,value 0-255   **GrE.4** - a green LEDs 4 saturation,value 0-255
bLu.3 - a blue LEDs 3 saturation,value 0-255   **bLu.4** - a blue LEDs 4 saturation,value 0-255

Following item are common for all zones:
MACr. - a macro selection,value 0-255
Stro. - a strobe,value 0-255
dimr. - a dimmer,value 0-255
F.tim. - fade time,value 0-255 *
S.tim. - standing time,value 0-255 *
COP. - copying the current prog. step to the next prog. step.

Press [ENTER]-button to confirm adjusted value .
5.Repeat steps 3 and 4 for next prog.step.If you want to copy current prog. step to the next prog.step, select option "COPY."and confirm it by pressing [ENTER].

*Both Fade time and Standing time use the same conversion table in order to convert DMX value to the time value:

DMX	Time [sec.]	DMX	Time [min.]	DMX	Time [min.]	DMX	Time [min.]	DMX	Time [min.]
1	0.1	**50**	4.2	**105**	18.4	**160**	42.7	**215**	77
2	0.4	**55**	5	**110**	20.2	**165**	45.4	**220**	80.7
5	2.5	**60**	6	**115**	22	**170**	48.2	**225**	84.4
10	10	**65**	7	**120**	24	**175**	51	**230**	88.2
15	22.5	**70**	8.2	**125**	26	**180**	54	**235**	92
20	40	**75**	9.4	**130**	28.2	**185**	57	**240**	96
25	62.5	**80**	10.7	**135**	30.4	**190**	60.2	**245**	100
30	90	**85**	12	**140**	32.7	**195**	63.4	**250**	104
35	122.5	**90**	13.5	**145**	35	**200**	66.7	**255**	108
40	160	**95**	15	**150**	37.5	**205**	70		
45	202.5	**100**	16.7	**155**	40	**210**	73.5		

Exact expression of the time value follows the formula: time[sec.]=(DMX value)^2/10.
If Item "**Auto**" is On,the fixture in DMX mode remembers last running program and this program will run after switching on the fixture.

7.3 Manual mode

```
NAn.C
```

This menu gives access to the control of the fixture channels by means of the control buttons.
Use [UP] and [DOWN] buttons until the display shows "**MAn.C.**" menu.Press [ENTER] button and by using [UP] and [DOWN] buttons select desired effect,press [ENTER] and and by using [UP] and [DOWN] buttons adjust desired DMX value for selected effect.Confirm by [ENTER].

rEd.1 - a red LEDs 1 saturation,value 0-255   **rEd.2** - a red LEDs 2 saturation,value 0-255
GrE.1 - a green LEDs 1 saturation,value 0-255   **GrE.2** - a green LEDs 2 saturation,value 0-255
bLu.1 - a blue LEDs 1 saturation,value 0-255   **bLu.2** - a blue LEDs 2 saturation,value 0-255

rEd.3 - a red LEDs 3 saturation,value 0-255   **rEd.4** - a red LEDs 4 saturation,value 0-255
GrE.3 - a green LEDs 3 saturation,value 0-255   **GrE.4** - a green LEDs 4 saturation,value 0-255
bLu.3 - a blue LEDs 3 saturation,value 0-255   **bLu.4** - a blue LEDs 4 saturation,value 0-255

MACr. - a macro selection,value 0-255   **rEd** - all red LEDs saturation,value 0-255
Stro. - a strobe,value 0-255   **GrEE.** - all green LEDs saturation,value 0-255
dimr. - a dimmer,value 0-255   **bLuE** - all blue LEDs saturation,value 0-255

7.4 Test sequences

```
tESt
```

Use the item to run a special demo-test sequences without an external controller,which will show you some possibilities of using the fixture.

7.5 Stand-alone mode

```
StAL.
```

Synchronous operation of multiple fixtures requires that they must be connected on a data link and one of them is set as a master ("MASt.") and the rest as the slaves ("SLA.").Only one fixture can be set as the master.The slaves mimic the behavior of the master.Effect actions are triggered by an internal timer of the master fixture.

Important!: Disconect the fixtures from the DMX controller before master/slave operating ,otherwise data collisions can occur and the fixtures will not work properly!

MASt. --- **Master.**Enter this menu if you want to set the the fixture as a master.Use [UP] and [DOWN] buttons to select desired program and press [ENTER] to confirm selection.

SLA. --- **Slave.**Enter this menu if you want to set the the fixture as a slave.

The master fixture starts simultaneous program start in the other slave fixtures.All fixtures are synchronized in every prog.steps.The fixtures run their programs repeatedly (e.g. if master runs its program "PrG.5",all slaves will be executed program "PrG.5" too).

7.6 Special functions

```
SPEC.
```

Use this menu for special services.

VErS. --- **Software Version**.Select this function to read the number of the fixture software.

tEMP. --- **Fixture temperature**.Current temperature on PCB board.

bALA. --- **Balance**.Select this function to enable (On) or disable (OFF) the white balance which is set in "White colour balance" menu below.If this function is set OFF,REDBlinder 2•96 will use maximum values (255) of saturation for red, green and blue channel.

C.bAL. --- **White colour balance.** Using this menu you can set white balance:
1. Browse through the menu by pressing the [UP] and [DOWN] buttons until the display shows "**C.bAL**." menu.Press [ENTER] button and **"rEd.b."** will appear on the display.
2.Press [ENTER] button again and use [UP] and [DOWN] buttons to adjust the new maximum value required for the red channel.Confirm your choice by pressing [ENTER].Use the [UP] and [Down] buttons to select next colour.
3.Repeat step 2 for green channel "**GrE.b.**" and for blue channel "**bLu.b**".

dM.Pr. --- **DMX presetting**.The function makes possible to select from the 2 DMX- channels settings.Use [UP] and [DOWN] buttons to select desired channel modes **("Mod.1,Mod.2")** and press [ENTER] to confirm .
For detail description of all channels see DMX protocol.

i.bLi. --- **Initial blink**.If this function is on,Led Blinder 296 makes auto-calibration (All LEDs light on 100% for a short time) after switching it on.If this function is set off,you have to set manually every colour on max.brightness after switching on the driver before starting regular operating.This action should last min. one second.

UPd. --- **Software update** - Using this function you can update software in the fixture via PC and serial link.
The following are required in order to update software:
        - PC running Windows 95/98/2000/XP or Linux

- DMX Software Uploader
- Flash cable RS232/DMX (No.13050624)

Note1: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 and all settings will be set to their default values

To update software in the fixture:

1.Installation of 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 from the archive. Program file has name:DSU_name of corresponding

  fixture_SoftwareID.SoftwareID describes the versions of fixture software included in DMX Software

  Uploader. Higher number means later software versions.

2.Fixture software updating:

  1.Determine which of your COM port is available on your PC and connect it with to the DMX input

  of the fixture using the Flash cable. Do not extend this cable! Disconnect the fixture from the

  other fixtures in DMX chain! Turn on the computer and the fixture.

  2.Switch the fixture to the update mode by selecting the option Software update in menu Special

  Functions on the fixture control panel:SPEC-->UPd-->yES.(From this option you cannot return back

  to the main menu. If you do not want to continue in software update, you have to switch off and on

  the fixture to leave this option!)

  3.It is recommended that you exit all programs before running the Software Uploader.

  4.Start the Software Uploader program. Select desired COM and then click Connect button.

  If the conection is OK, click Start Uploading button to start uploading. It will take several minutes to

  perform software update.All processors will be updated (including processors with the same

  software version).

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

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

  When the update is finished, the line with the text "The fixture is successfuly updated' will appear

   in this window and the fixture will reset with the new software.

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

For example: The fixture was switched off before finishing software upload. After switching the fixture on again, the fixture is still in the update mode and the display is dark. Restart the Software Uploader program and repeat software update from your PC.

8.Technical Specifications

Power supply:
Input Voltage:100-240V AC, 50/60 Hz
Fuse:T 3.15A
Max.Pover Consumption: 260 VA

Input:
Control:DMX 512
DMX connection: 3-pin or 5-pin XLR-sockets

DMX channels:
Mode 1: 15 channels
Mode 2: 12 channels
Mode 3: 6 channels
Mode 4: 3 channels

LED device:
Luxeon K2
4 pairs of 12-LEDs modules

LED beam angle:
Each LED has 25° beam angle

Control and programming:
Protocol: USITT DMX-512
Control options:DMX,Auto-trigger
Operation modes:Master/Slave,Stand alone
Programs:6 build-in programs+3 user editable programs up to 30 steps each
Display:4 digit LED
White colour balance adjusting
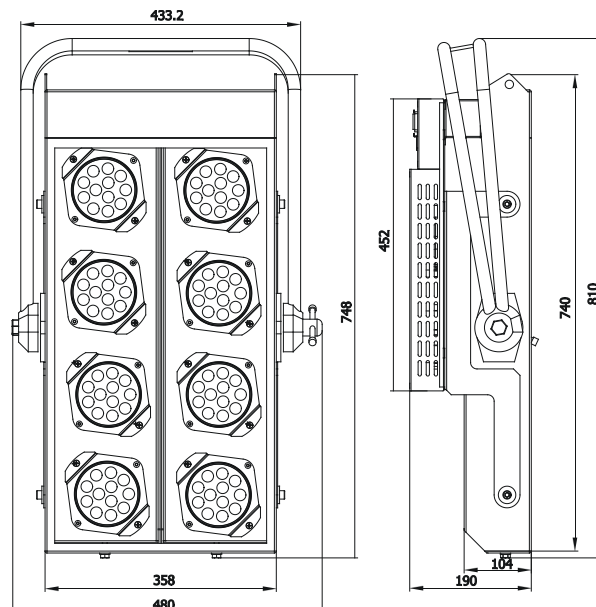Manual control of all DMX channels with LED control panel

Temperatures
Maximum ambient temperature : 40° C
Maximum housing temperature: 80 °C

Minimum distances
Min.distance from flammable surfaces: 0.5m
Min.distance to lighted object: 1.3 m

Dimensions(mm):

Weight:

19 kg

Optional Accessories
Set glass frost (No.99011539)
Set film frost (No.99011540)
Cover for LED Blinder 196/296 (No.10980037)

9.Maintenance

Keep the Led Blinder 296 dry.
Operate only in places where the sufficient airflow to cool the fixture is present
Periodically clean the front transparent cover of LED modules
Use a moist, lint-free cloth. Never use alcohol or solvents!
In order to maintain adequate cooling,dust must be cleaned from the air vents.

Replacing the fuse
1.Before replacing the fuse, unplug mains lead!
2.Unscrew the fuse holder on the rear side of the REDBlinder 2•96 with a fitting screwdriver from the housing (anti-clockwise).
3.Remove the old fuse from the fuse holder.
4.Install the new fuse in the fuse holder.

Specifications are subject to change without notice.