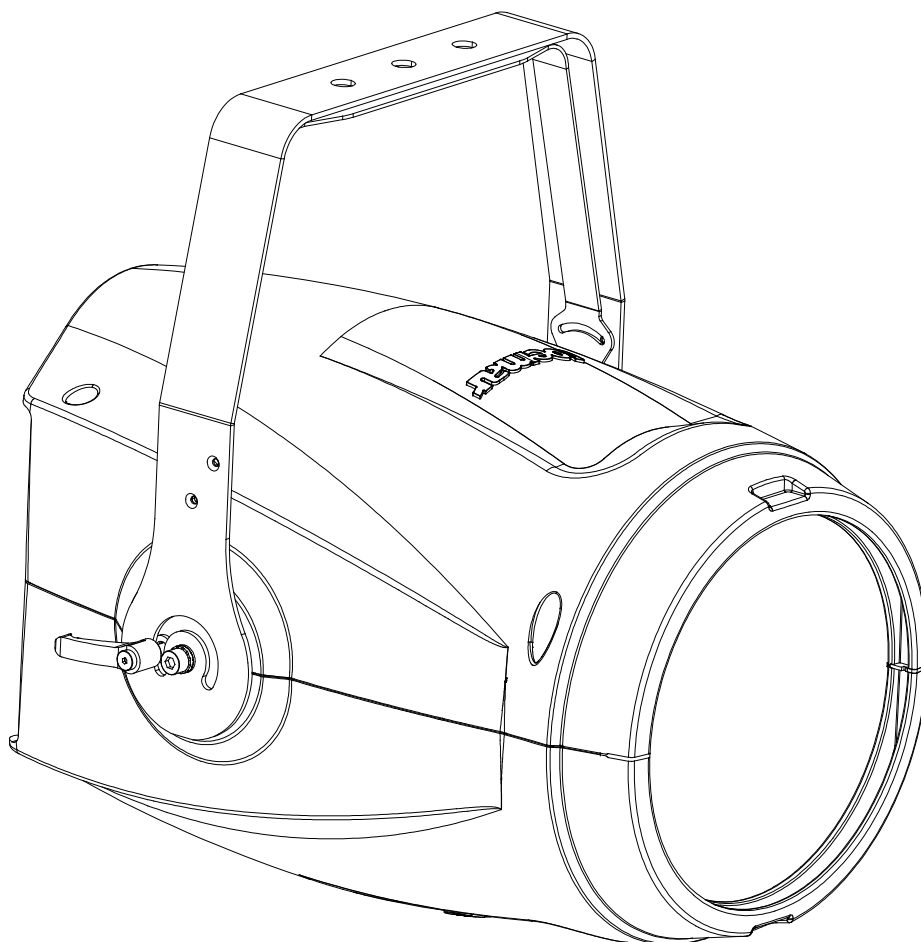


Reflection VariWhite



instruction manual
manuale di istruzioni

Version 1.0
DIS133



Reflection VariWhite

Serial number/numero di serie

Date of purchase/data di acquisto

Retailer/fornitore

Address/indirizzo

Suburb/cap/città

Capital city/provincial

State/stato

Tel./fax

Please note in the space provided above the relative service information of the model and the retailer from whom you purchased your **Reflection**: this information will assist us in providing spare parts, repairs or in answering any technical enquiries with the utmost speed and accuracy.

Prendete nota, nello spazio apposite, dei dati relative al modello e al rivenditore del vostro **Reflection** questi dati ci permetteranno di assistervi con la massima rapidità e precisione.

WARNING: the security of the fixture is granted only if these instructions are strictly followed; therefore it is absolutely necessary to keep this manual.

ATTENZIONE: la sicurezza dell'apparecchio è garantita solo con l'uso appropriato delle presenti istruzioni, pertanto è necessario conservarle.

User Manual Version 1.0
edition January 2011

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English

Congratulations on having purchased a Coemar product. You have assured yourself of a fixture of the highest quality, both in the componentry and in the technology used. We renew our invitation to you to complete the service information form on the previous page. This will assist in providing prompt and accurate advice from your Coemar service centre, which you can thoroughly trust and to which you can submit any requests for service or information. Following the instructions and procedures outlined in this manual will ensure the maximum efficiency of this product for years to come.

1. Packaging and transportation

1.1 Packaging

Open the packaging and make sure that no part of the equipment has suffered any damage during the transportation. In case of damage to the fixture, contact your carrier and your supplier immediately by telephone, fax or email, and inform them you will formally notify them in writing through registered letter.

Packing List

Make sure the packaging contains:

- 1 Reflection
- 2 This instruction manual.
- 3-main power plugs

1.2 Transportation

Reflection must be transported exclusively in its original packaging or in an appropriate flight case.

2. General information

2.1 Important safety information.

Fire prevention:

- 1.Never locate the fixture on any flammable surface.
- 2.Minimum distance from flammable materials: 0,5m.
- 3.Minimum distance from the closet illuminable surface: 0,5m.
- 4.Replace any blown or damaged fuse only with those of identical values. Refer to the schematic diagram if there is any doubt.
5. Connect the projector to mains power protected by a thermal magnetic circuit breaker.

Preventing from electric shock.

1. Presence of high voltage inside of the fixture. Insulate the projector from mains supply before opening or performing any function which involves touching the inside of the fixture, including lamp replacement..
2. For the connection to the mains, adhere strictly to the guidelines outlined in this manual.
3. The level of technology of **Reflection** requires the use of specialised personnel for all service applications; refer all work to your authorised **Coemar** service centre.
4. A good earth connection is essential for the proper functioning of the projector. Never connect the fixture if there is no earth connection.
- 5.Mains cables must not come into contact with other cables.
- 6.Do not operate the projector with wet hands or in an area where water is present.
- 7.The fixture must never be located in an exposed position, or in areas of extreme humidity.

Safety.

1. The projector must always be installed with bolts, clamps, or other fixing devices which are suitably rated to support the weight of the projector.
2. Always use a secondary safety fixing device with chain or steel wire of a suitable rating to sustain the weight of the unit in case of failure of the principal fixing point.
3. The external surfaces of the unit, at various points, may reach 60°C. Never handle the unit until at least 10 minutes have elapsed since the lamp was turned off
4. Never install the fixture in an enclosed area lacking sufficient air flow; the room temperature must not exceed 35°C.
5. The projector contains electronic and electrical components which must under no circumstances be in contact with water, oil or any other liquid. Failure to do so will compromise the proper functioning of the projector.

2.2 Warranty conditions

1. The fixture is guaranteed for a period of 12 months from the date of purchase against manufacturing or materials defects.
2. The warranty does not extend to damage caused by inappropriate usage, use by inexperienced operators or inadequate maintenance.
3. The warranty is immediately void if the projector has been tampered or opened by unauthorized personnel.
4. The warranty does not extend to fixture replacement.
5. Both the serial number and the model of the projector are required for any advice or service from your authorised service centre.

2.3 EC norms

The projector meets all fundamental applicable EC requirements.

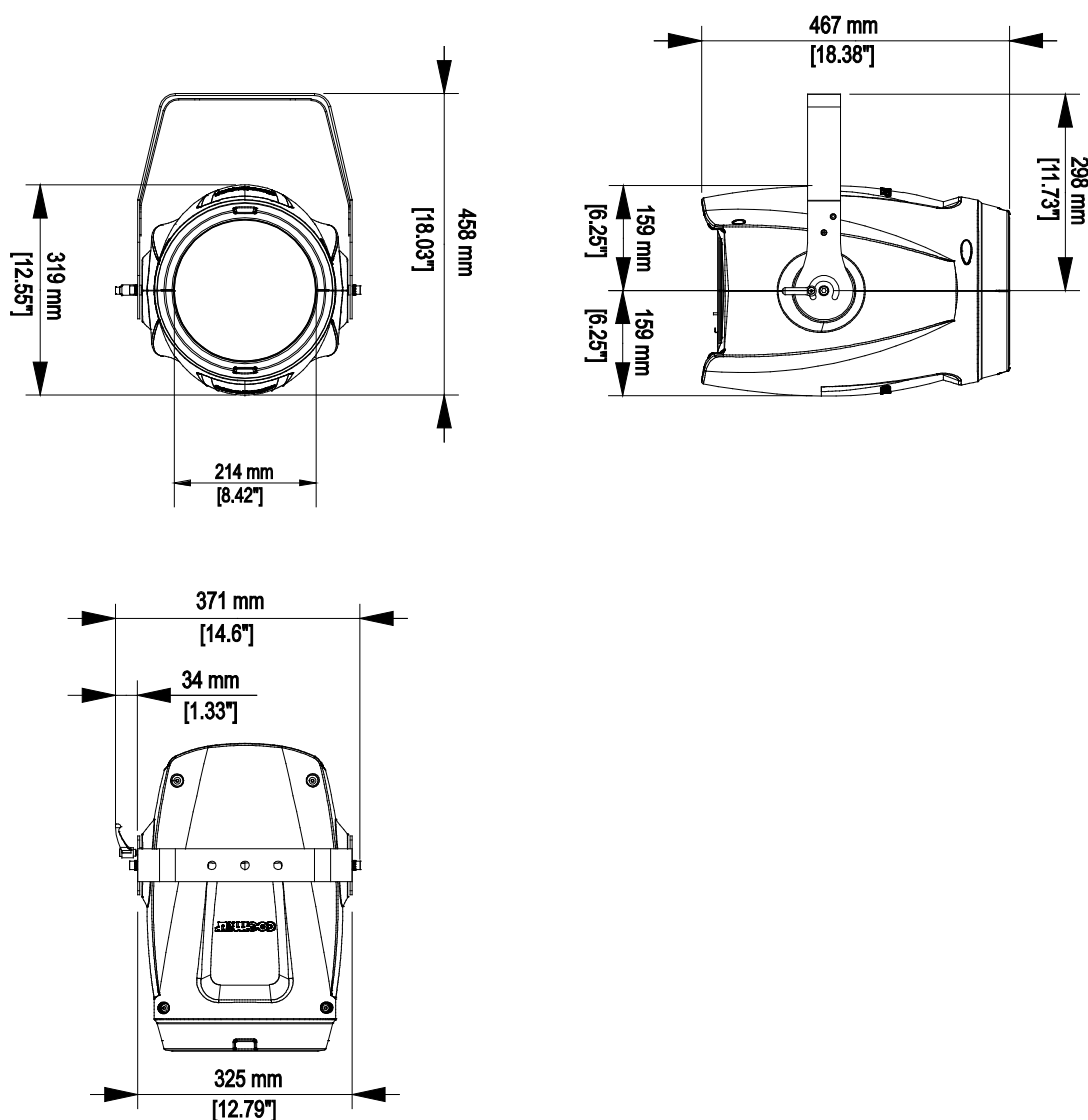
3. Product specifications

3.1 Technical characteristics

Power	90-250 Vac 50/60Hz Autosensing
Maximum current	0,88 A @230 Vac, - 2,14 A @115Vac
Power factor	Cos φ = 0,94
Power	194 W
Maximum room temperature	35°C/95°F
Weight	12,5 Kg./27.5 lbs
Grado di protezione	IP20

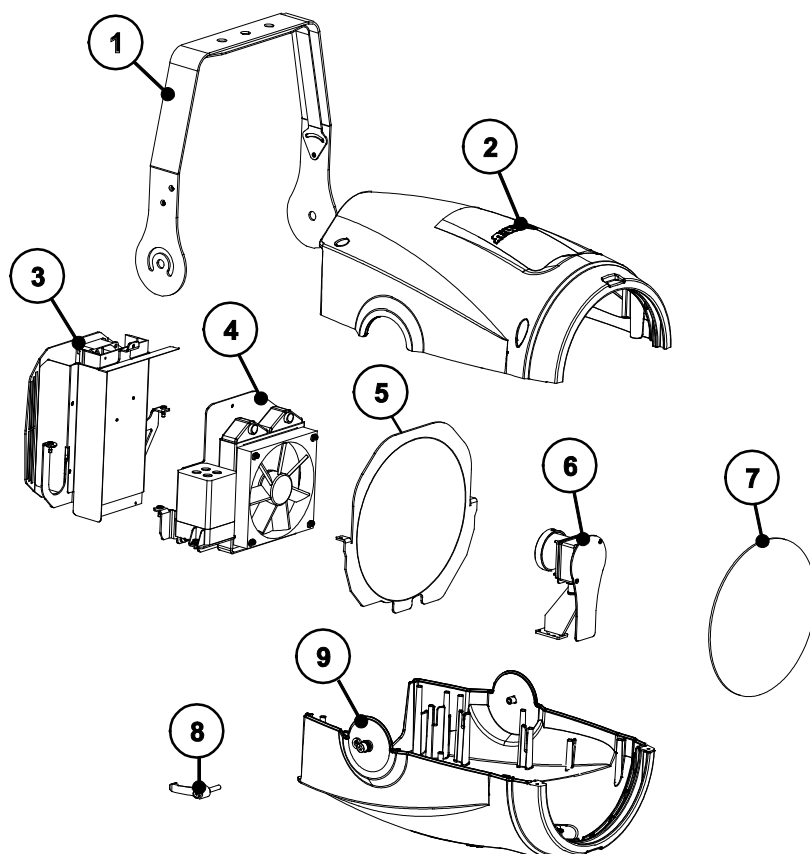
The innovative core of Reflection consists of a reflection system with a source made of powerful leds in it which casts a compact beam in infinite colors combination without any defect that any other classic multi lens led projector gives. Reflection has also an automatic zoom system that allows to modify the beam width.

3.2 Dimensions



English

3.3 Unit's main components



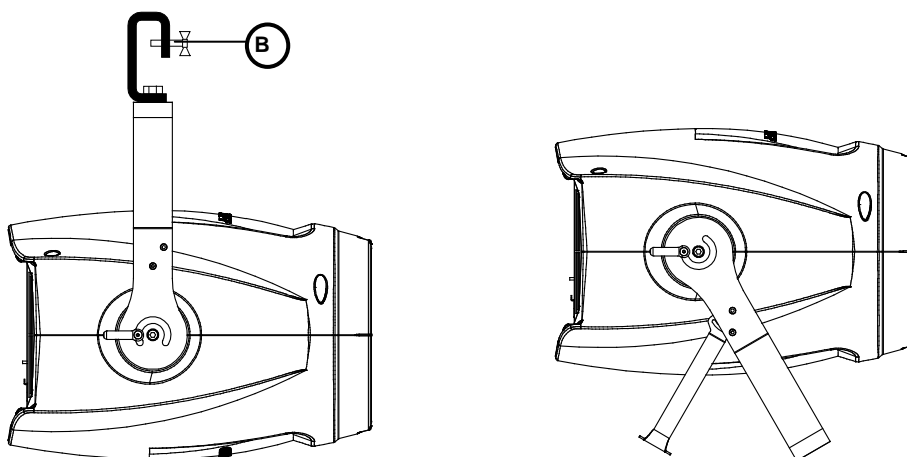
Components description	
1- Yoke	6- Light source
2- Upper casing	7- Polycarbonate screen
3- Rear header and electronic sector	8- Yoke lock handle
4- Cooling sector	9- Lower casing
5- Mirror	

4. Installation

4.1 Mechanical installation

Reflection may be floor mounted or hung from an appropriate structure in any position.

If hanging the fixture from a lighting truss or similar, we recommend the use of an appropriate clamp “B”, as shown in the following diagram.

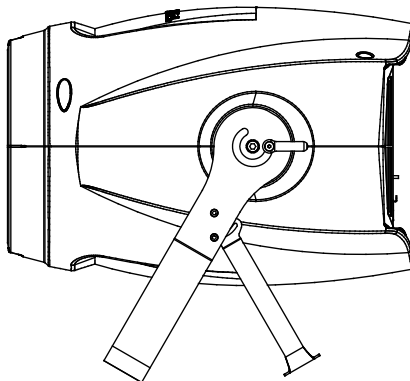


WARNING!

Always ensure that your support structure and fixing (bolts, clamps, etc...) are rated to support the weight of the fixture.

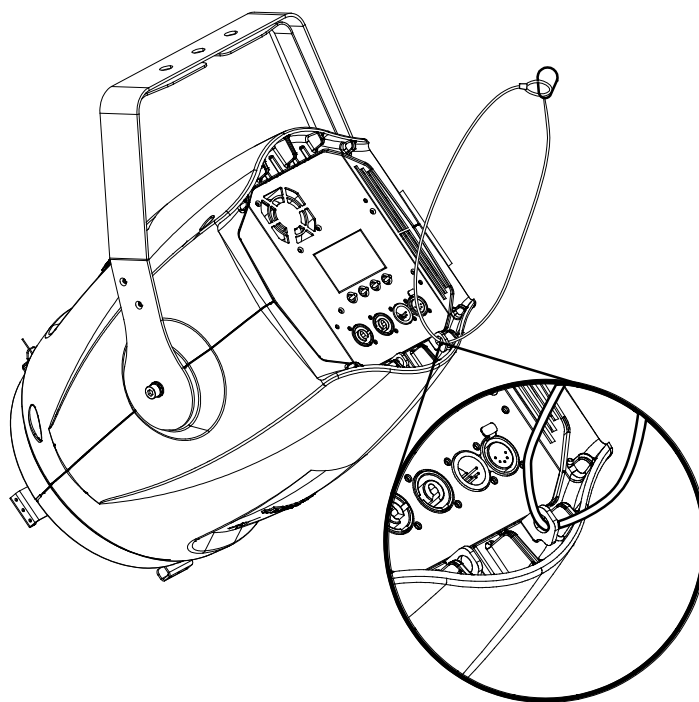
Floor installation

If the fixture is floor mounted, we recommend the using of the standard yoke which can be opened for allow an adequate support for the floor.

**4.2 Safety chain**

When hanging **Reflection** we recommend the use of a safety chain affixed to the body and to the suspension device. The safety chain should be either a metal rope or a metal chain, both suitably for the purpose.

In the case that the chain used is not produced by **Coemar**, ensure that it can bear the weight of the whole unit.



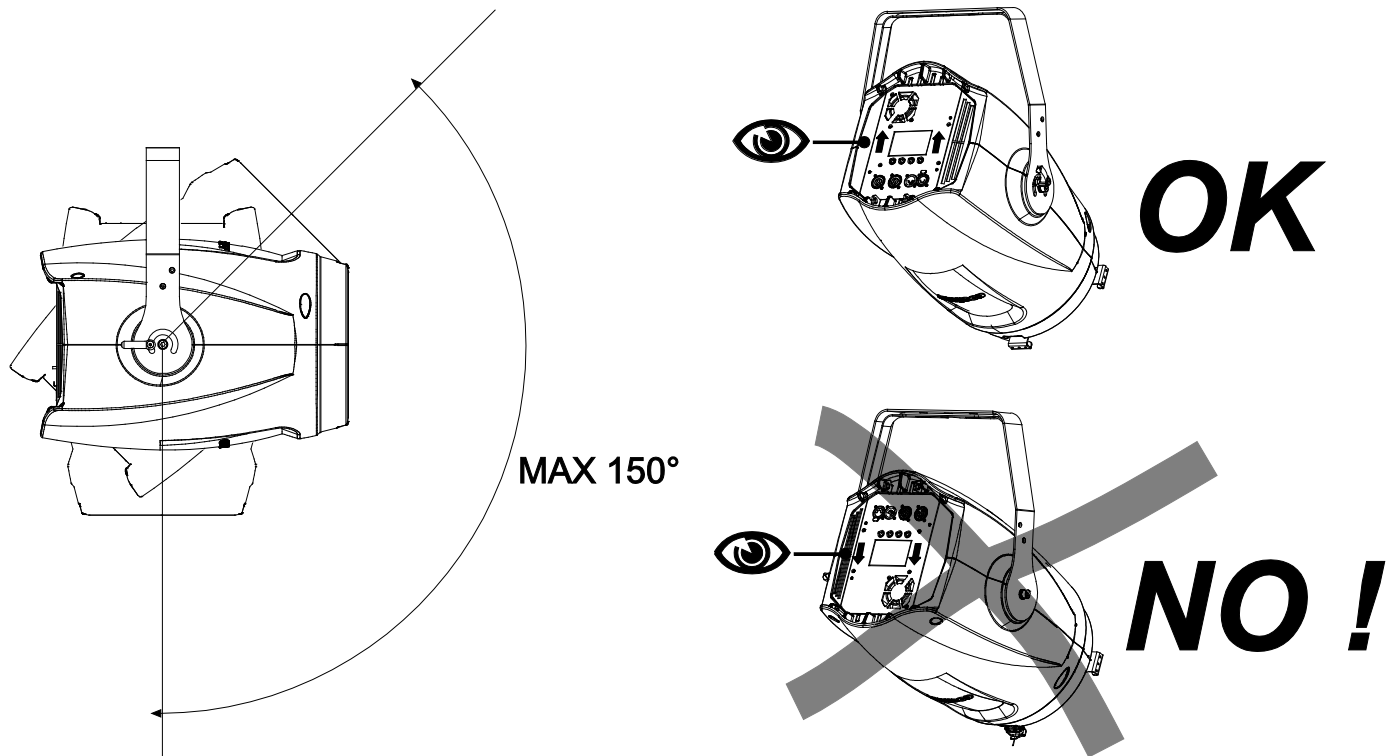
English

4.3 Adjusting unit's tilt

In order to adjust the tilt of the unit laying on the floor or hanged on a truss, simply loose the side handle adjust the tilt and lock the yoke again by tightening the handle again.

WARNING !

The unit never should be used upside-down; the arrows printed on the back of the unit indicate its upper side, do not use the unit if the arrows aim downwards. The unit allows an excursion angle of 150°.



5. Powering up

5.1 Operating voltage and frequency.

The unit may operate at voltage ranges from 90 to 250V_{aC} at a frequency of 50 or 60 Hz. It is not needed to effect any setup procedures: **Reflection** will automatically adjust its operation to suit any frequency or voltage within this range.

5.2 Connection to mains power

Mains cable characteristics

The mains cable provided is thermally resistant, complying to the most recent International standards.

Note: in case of cable replacement, similar cable with comparable thermal resistant qualities must be used exclusively (cable 3 X 1,5 \varnothing external 10 mm, rated 300/500V, tested to 2 KV, operating temperature -40°C + 180°C, **Coemar** cod. CV5311).

Connection to mains power

Reflection is equipped with two power connectors, one as input and one as output, which can be used to connect more fixtures in series (no more than 16 units @ 230V or 8 units @ 115V.).

The max absorption of **Reflection** is reported in the following table:

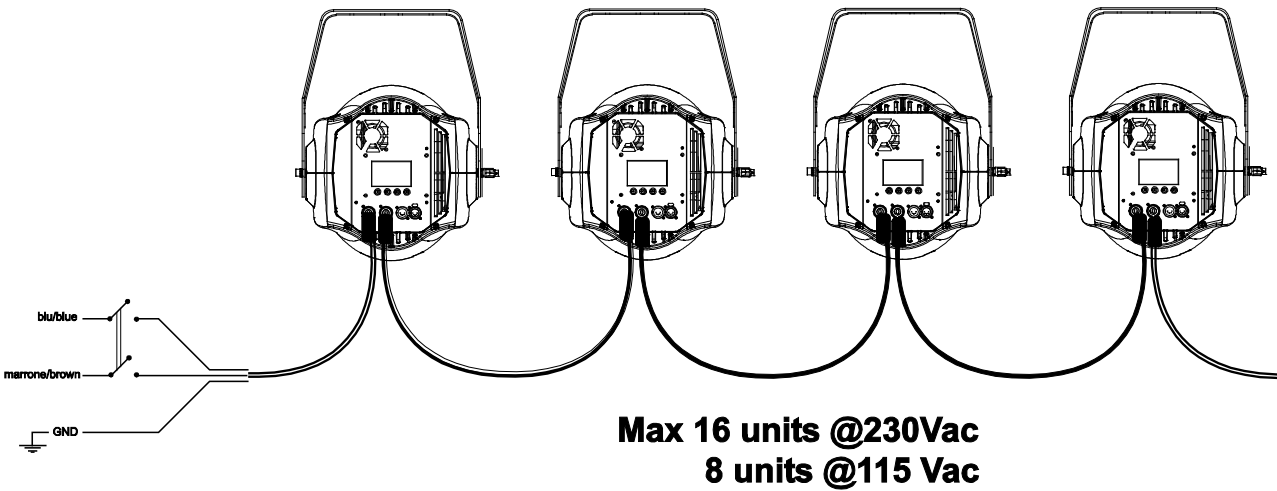
-230/240V 0,88 A constant during normal exercise.

-100/115V 2,14 A constant during normal exercise.

WARNING !

Never link more than 16 units at 230 V or 8 units at 115 V.

In the following figure you can see an example of series connection:



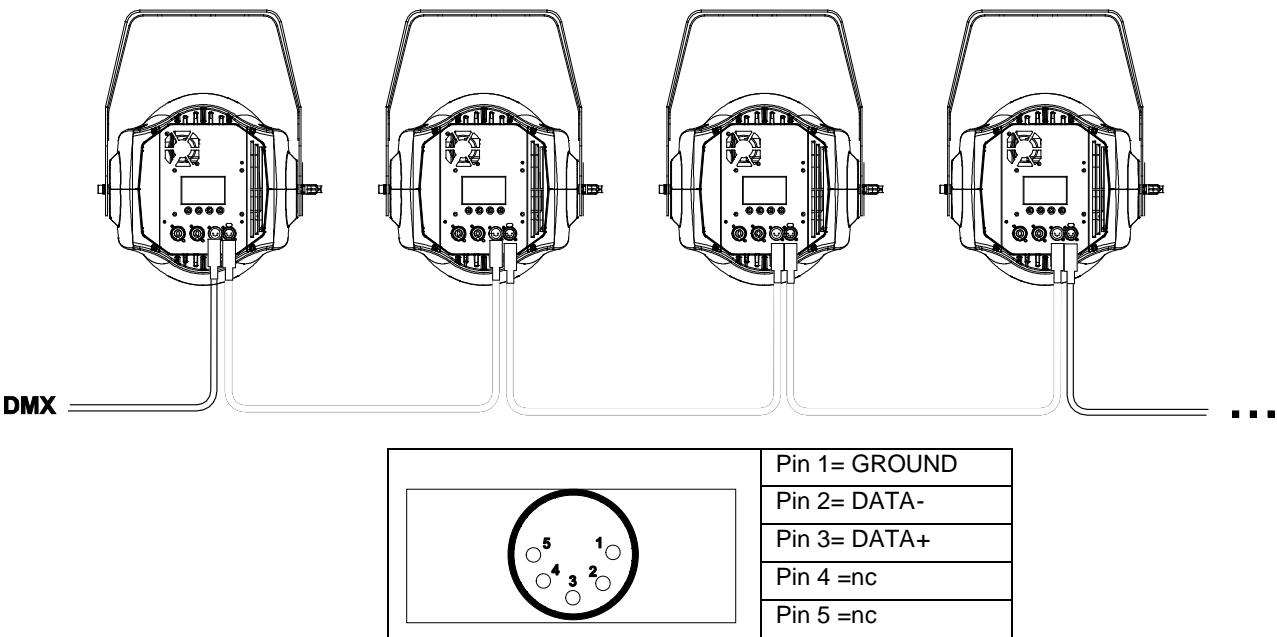
WARNING!

- The use of a thermal/magnetic circuit breaker is recommended. Strict adherence to regulatory norms is strongly recommended.
- Reflection should not be powered through a dimmer as this may damage the internal switching power supply.
- Prior to connecting the device to mains power, ensure that the mains characteristics are within the recommended range for use with Reflection.
- All cabling and connections should be carried out by suitably qualified personnel.

6. Control signal connections

6.1 Control signal connection by XLR5 plugs.

The digital control signal is transmitted to the projector via a two pole cable screened as per International standards for the transmission of DMX 512 data. The connection must be serial, using connectors XL5 male and female located on the back of **Reflection** labelled DMX512 IN e OUT (see diagram).



WARNING !

Make sure that screening and conductors are not in contact one another or with the metal housing of the connector. Pin#1 and housing never must be connected to the power supply unit.

7. Turning on the projector

After having followed the preceding steps described, proceed with the power supply and turn on the projector connecting it to the mains power.

The software version installed on the internal microprocessors will be shown on the display.

Reflection then, will promptly start the reset procedure; the operation will take some seconds allowing the correct positioning of the motor. At the end of the procedure the display will stop blinking and will show the current DMX addressing.



During reset the display will blink for some seconds....



...then will appear DMX addressing of the unit

If the address continues to blink and the "NO DMX SIGNAL" message appears, it means that the DMX signal has not been received. Check the connection cable and the mixer functioning.

7.1 DMX address of the unit

Each projector uses 5 DMX channels for its complete operation and is controlled by a DMX 512 signal (for further information, see section 7.2, DMX functions).

DMX addressing

When powered up initially, each projector will show A001, which indicates DMX address 001; a projector thus addressed will respond to commands of channel 1 to 5 from your DMX 512 controller. A second unit must be addressed as A006 a third one as A011 and so on. The operation must be carried out on every **Reflection** which has an address different from A001..

Altering DMX address.

1. Press the + or – button until the display shows the required DMX address. The digits on the display will blink to indicate that the variation has not been registered.
2. Press the *enter* key to confirm your selection. The digits on the display panel will cease to blink and the projector will now respond to the new address.

Note: by holding the + or – button down the scrolling will be faster; thus allowing a faster selection

WARNING!

If you alter the DMX address with no DMX signal connected, the digits on the display panel will continue to flash even after you have pressed ENTER button to confirm the address.

7.2 DMX functions

To set the configuration access the menu MAIN FUNCTIONS/DMX CHANNELS

channel	function	type of control	effect	decimal	percentage
1	master dimmer	proportional	adjust luminous output intensity from 0 to 100%	0 - 255	0% - 100%
2	white tone	step	select the primary WHITE color	0 - 9	0% - 4%
			WHITE 7000 °K	10 - 21	4% - 8%
			WHITE 6500 °K	22 - 33	9% - 13%
			WHITE 6000 °K	34 - 45	13% - 18%
			WHITE 5500 °K	46 - 57	18% - 22%
			WHITE 5000 °K	58 - 69	23% - 27%
			WHITE 4500 °K	70 - 81	27% - 32%
			WHITE 4000 °K	82 - 93	32% - 36%
			WHITE 3500 °K	94 - 105	37% - 41%
			WHITE 3200 °K	106 - 117	42% - 46%
			WHITE 3000 °K	118 - 128	46% - 50%
		proportional	adjust proportionally white color temperature from 3000°K to 7000°K	129 - 255	51% - 100%
3	zoom	proportional	proportional control of zoom from narrow to wide beam	0 - 255	0% - 100%
4	strobe	step	no effect	0 - 9	0% - 4%
		proportional	variable speed strobing effect, from slow to fast	10 - 57	4% - 22%
		step	stop strobe	58 - 59	23% - 23%
		proportional	sequenced pulse effect, slow closing, fast opening (variable speed pulsing, from slow to fast)	60 - 108	24% - 42%
		step	stop strobe	109 - 110	43% - 43%
		proportional	sequenced pulse effect, fast closing, slow opening (variable speed pulsing, from slow to fast)	111 - 159	44% - 62%
		step	stop strobe	160 - 161	63% - 63%
		proportional	random strobe effect with variable speed from slow to fast and synchronised colour temperature selected	162 - 207	64% - 81%
		step	stop strobe	208 - 209	82% - 82%
		proportional	random strobe effect with variable speed from slow to fast and non-synchronised colour temperature	210 - 255	82% - 100%
5	reset and special functions	step	park, no functions	0 - 9	0% - 4%
			no functions	10 - 71	4% - 28%
			reset	72 - 102	28% - 40%
			no functions	103 - 133	40% - 52%
			LCD display off	134 - 185	53% - 73%
			LCD display on	186 - 199	73% - 78%
			led control frequency tuning 1000 Hz	200 - 205	78% - 80%
			led control frequency tuning 1500 Hz	206 - 211	81% - 83%
			led control frequency tuning 2000 Hz	212 - 217	83% - 85%
			led control frequency tuning 2500 Hz	218 - 223	85% - 87%
			led control frequency tuning 3000 Hz	224 - 229	88% - 90%
			led control frequency tuning 3500 Hz	230 - 235	90% - 92%
			led control frequency tuning 4000 Hz	236 - 241	93% - 95%
			led control frequency tuning 4500 Hz	242 - 247	95% - 97%
			led control frequency tuning 5000 Hz	248 - 255	97% - 100%
NOTE 1: channel 2 macros are available in conjunction with dimmer					
Fixture: Reflection VariWhite		Table name: DMX 512 function			
Table number: 295 Edition: 0		Date: 30/08/2010			

By suitably using all the functions of **Reflection**, which can be activated through its display panel, it is possible to change some of the parameters and to add some functions.

Changing the preset settings made by **Coemar** can vary the functions of the projector so that it will respond differently to the controller; therefore carefully read about the functions described here before carrying out any possible selection..

8.1 Quick guide to menù

In order to access the functions, just press the menu button: one after the other, all the voices of the menu will be cyclically shown each time the key + or – will be pressed. To select the desired function, press *enter*.

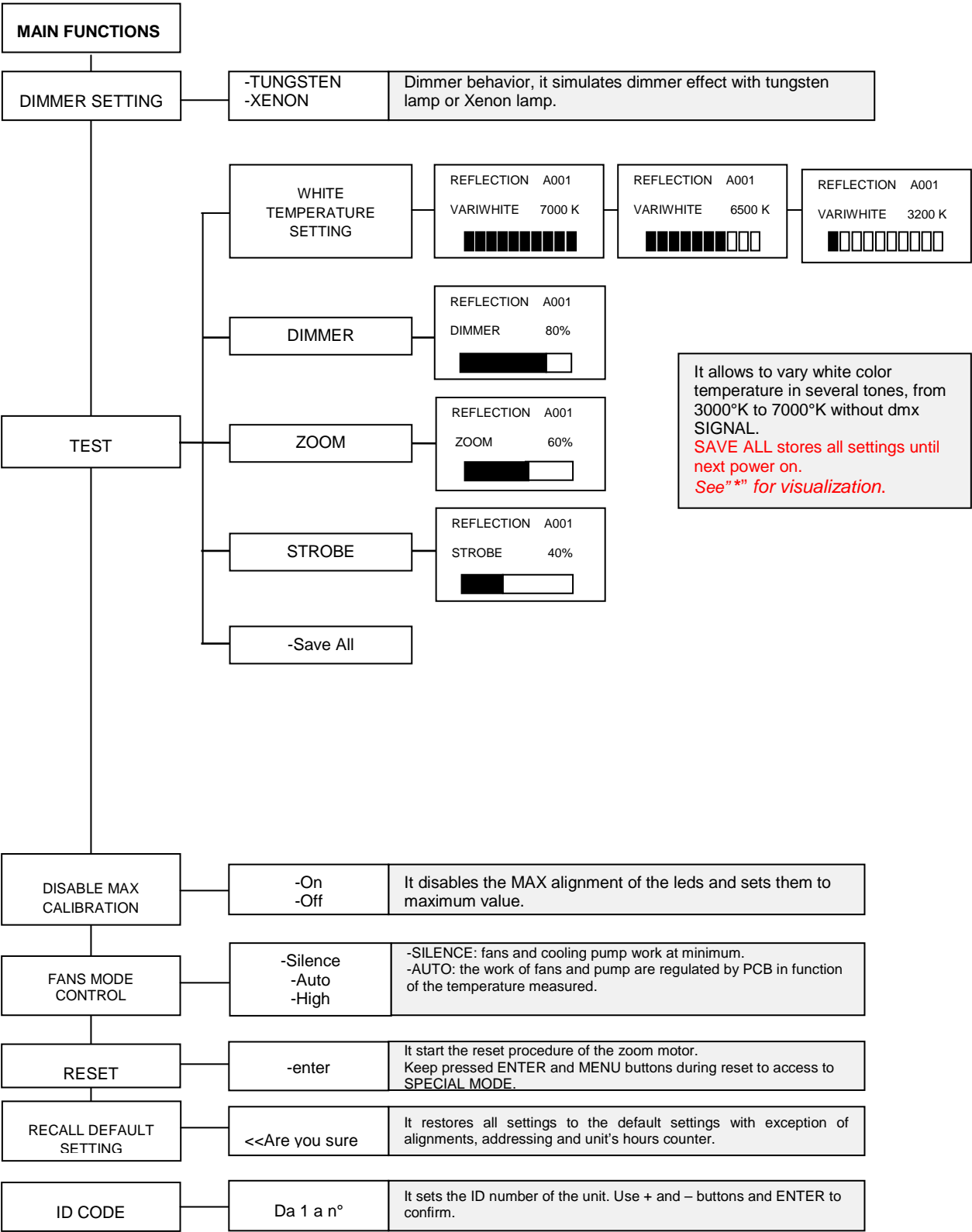
8.2 Rapid count

By the display panel of **Reflection** It is possible to quickly change the various numbers displayed for the different functions in the following 3 manners:

- 1.Pressing the + or – buttons will cause the count to be quicker.
- 2.Pressing first + and then – and then holding them down simultaneously will cause the numbers to jump to the highest value.
- 3.Pressing first – and then + and then holding them down simultaneously will cause the numbers to jump to the lowest value.

8.3 Main function menu (Main functions)

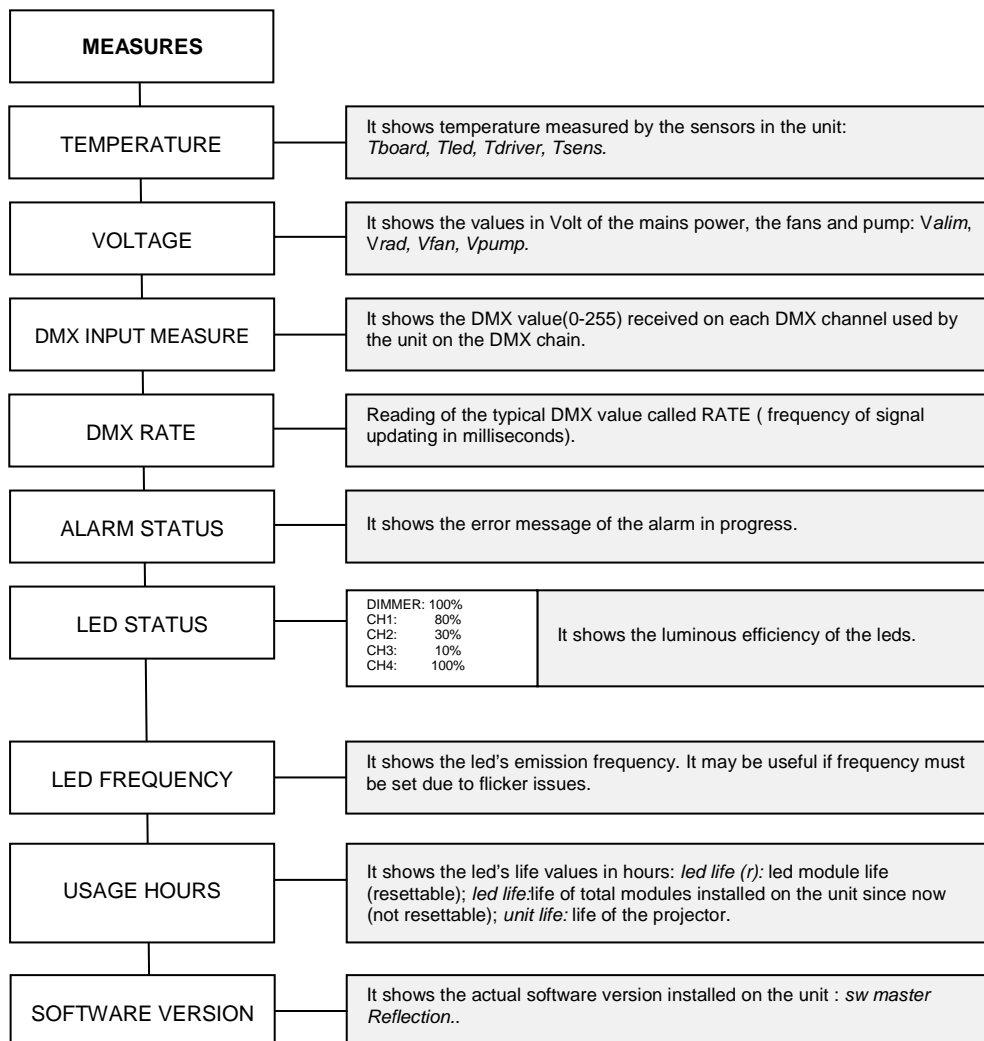
The projector gives the opportunity to change and customize some functional settings.



English

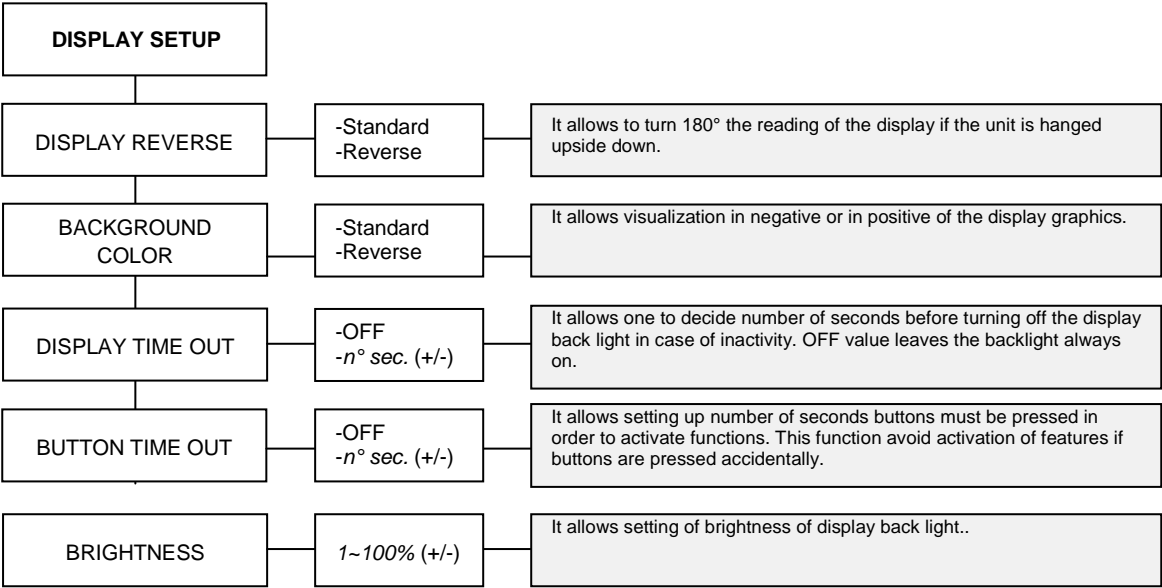
8.4 Tests and measures (Measures)

The internal microprocessor of Reflection allows for several diagnostic and output parameter to be displayed.



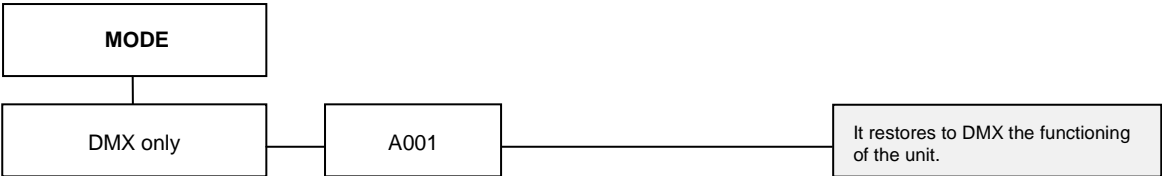
8.5 Display settings (Display Setup)

The fixture allows to set the display visualization preferences .



8.6 User settings (Mode)

The fixture permits three functional modes: DMX, MASTER and SLAVE.



English

8.7 Connecting DR1 and DR1 Plus

All features available in the menu can also be activated by DR1 (code CO9707) and DR1 Plus (cod.CO9709). DR1 and DR1 Plus is a tool designed for technicians who can operate the apparatus at the same time the programmer of the show, without having to physically intervene on headlamps, but controlling functions remotely. For example, DR1 and DR1 Plus eliminates the need to change a DMX address on the unit, (thus avoiding the technical climbing on the structure) and can read hours of lamp life and other functions normally accessible from the display. DR1 and DR1 Plus also allows updating the firmware of the projectors. To enable a projector to work with DR1 or DR1 Plus, you must set each unit of the line with its own, unique identity number (ID).

WARNING !

**-If you set as identification number "0 ", Reflection will not be recognized by DR1 and DR1 Plus
-Never assign the same ID to two or more units of a same DMX line. This causes the failure of the system. (DR1 and DR1 Plus will display an error message).**

For more information see the manual for DR1 or DR1 Plus.

8.8 Electronic alignment of the leds.

The display panel of Reflection allows the electronic alignment of the leds, this procedure is performed by Coemar at the time of testing, this procedure may be useful for special effects or in case of replacement of internal components (PCBs, leds, etc. ...). Altering the settings made by Coemar may radically alter the functioning of the projector's functions. Carefully read the following prior to attempting any changes.

WARNING !

This chapter should be considered for the exclusive use of technicians and highly skilled staff.

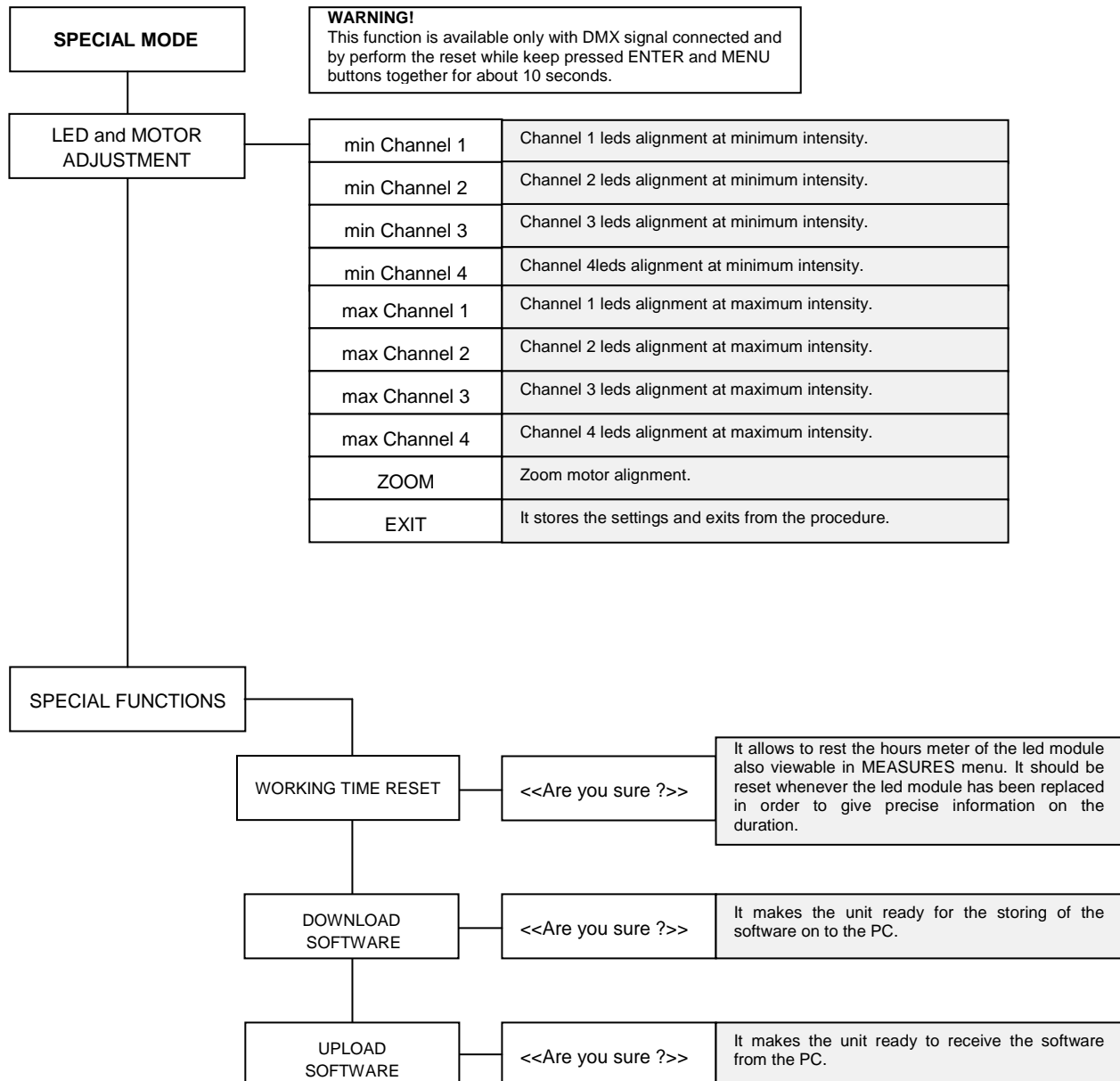
To access alignment function:

Activate the reset holding down the MENU and ENTER for at least 10 seconds. Screen is then displayed "SPECIAL MODE"

WARNING !

The electronic alignment procedure is only possible with DMX512 signal .

See the following diagram to enter in the function's details..



Nota: Simultaneously pressing + and – buttons will return the calibration value to 128 (default).

UPLD Function (Upload)

this function allows to upgrade the firmware of **Reflection** only by DR1 or DR1 Plus and a Personal Computer. Read DR1 or DR1 Plus manual for further information.

DULD Function (Download)

this function allows to download the software from **Reflection** only by DR1 or DR1 Plus and by a Personal Computer. Read DR1 or DR1 Plus manual for further information.

9. Error messages

If a malfunction occurs, **Reflection** has a self-diagnostic system that will show the error message on the display. The following table will explain in detail the most common errors. If, despite of suggested intervention, the problem persists, call the Coemar Service center near you.

Error message	Description and suggested solution.
Eeprom Failure	The initial configuration settings are faulty or have been loaded incorrectly. The unit has loaded its default configuration. Turn the unit off and on again and if the error persists, it means that the Eeprom is defective. Refer to your Coemar service center for the servicing.
CFG data Failure	The electronics of the unit found problems in loading data from Eeprom: it does not load custom settings but default factory settings. Contact your Coemar Service Center near you.
DMX address	The unit is not receiving all the DMX channels necessary for its operation. Check the DMX address and the control console operation. Note that some controllers may not generate all 512 channels of signal.
DMX frame	DMX signal present but frame too short; the controller has not enough channels to control the projector.
Internal FAN	The rear fan is damaged or stuck. Turn off the unit then turn it on again and if the error persist contact your Coemar Service Center near you.
Radiator FAN	The internal cooling fan is damaged or stuck. Turn off the unit then turn it on again and if the error persist contact your Coemar Service Center near you.
Pump FAILURE	The pump of the cooling system is damaged or stuck. Turn off the unit then turn it on again and if the error persist contact your Coemar Service Center near you.
Over TEMPERATURE	The light source has reached the maximum allowable temperature and so the unit shuts off. Check for water level in the cooling circuit, check fans and pump's functioning.

10. Accessories and spare parts

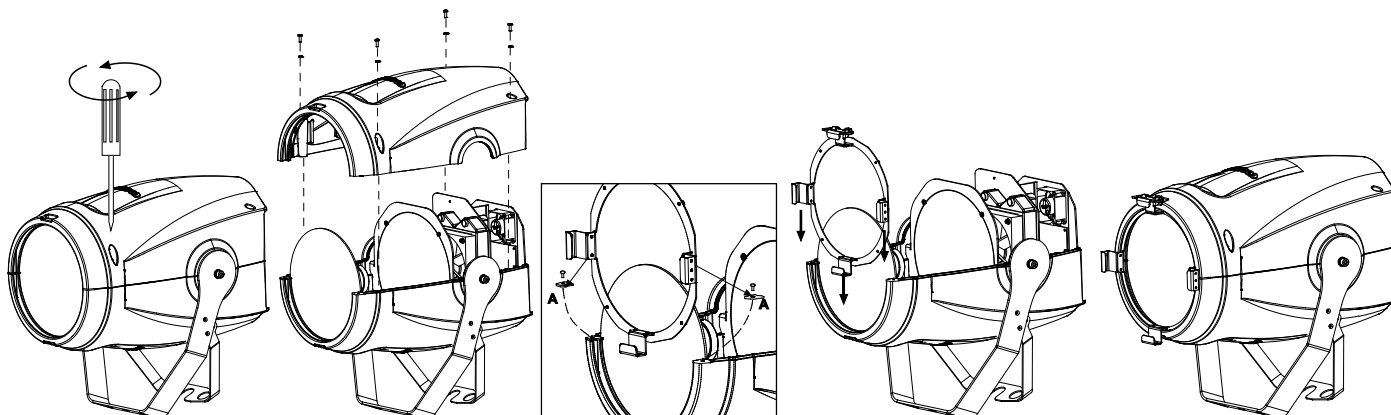
Reflection is a very versatile fixture, optional accessories for its customization are available under request:

Coemar order code	Description
CO002	4 blades barndoor
BC10001A000	accessories holder
CO001	Standard size gel frame

All the components of **Reflection** are available as spare parts from your Coemar dealer or Service. Accurate description of the fixture, model number and type will assist us in providing for your requirements in an efficient and effective manner

10.1 How to fix the optional accessories holder

- 1 Open the upper casing of the unit by unscrewing the 4 screws, temporary remove the two side plates "A".
- 2 Insert the gel frame holder in site as explained in the picture and fix again the two plates "A".
- 3 Close the unit by repeating to the contrary the step 1 of this procedure.



11. Maintenance

11.1 Periodic clearing

Polycarbonate screen

Even a fine layer of dust can reduce the luminous output and alter the compactness of the beam. Regularly clean all filters and lenses using a soft cotton cloth, dampened with a specialist lens cleaning solution.

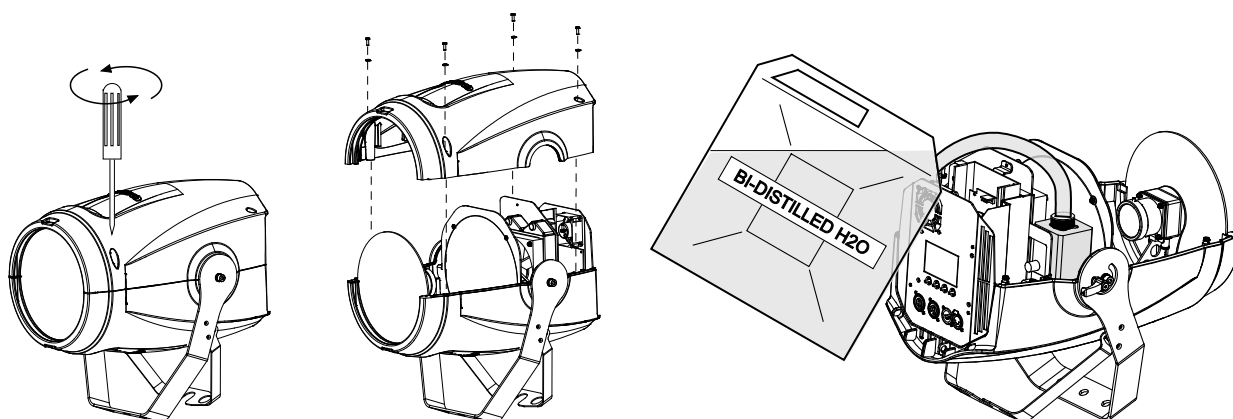
Cleaning of the unit

Use a soft brush or a common vacuum cleaner or a source of compressed air for removing dust. For the cleaning of the housing use a soft cloth and a non-aggressive cleaner. Check that the internal fans and heat exchanger must be perfectly clean.

11.2 Special controls

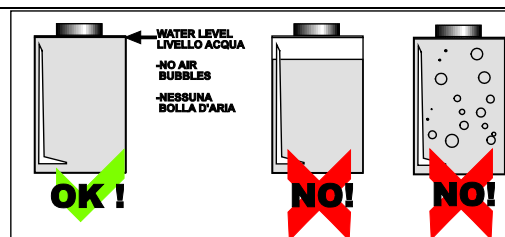
How to top up the water tank (to perform every 1500 hours):

- 1 Open the upper casing of the unit by unscrewing the 4 screws.
- 2 Locate the water tank which is site in the back-right of the unit, beside the mirror
- 3 Remove the cap from the tank and fill it up to the edge with bi-distilled water avoiding the formation of air bubbles.
- 4 Close tight the tank's cap.



WARNING !

- Periodically check the water level in the expansion tank; the tank must always be totally full.
- Check that the cap is well tightened.
- The lack of refrigerant can cause heavy damage to the leds so to require their replacement.



English

Mechanical parts

Check the correct working of the mechanical parts and, if needed, replace them. Make sure the projector is not mechanically damaged. If necessary, replace the worn parts.

Electrical components

Check all electrical connections, in particular for correct grounding and correct attachment of all extractable connectors. Press the connectors if necessary and reposition as before.


11.3 Fuses:

Reflection has an automatic fuse that in most cases does not need to be replaced.

12. F.A.Q. and answers

The following list shows common issues that may be simply solved. If issues persist, the unit must be repaired by qualified personnel or just contact your Coemar service near you.

Question	Possible cause	Suggested solution
Reflection does not power on.	-Projector not powered on:	1-Make sure the power cord is plugged in or test the input voltage.
Reflection does not answer to DMX signal.	DMX signal may not reach Reflection .	Inspect the cable connection, correct poor connections or inefficient repair or replace damaged cables. Check DMX address of the unit.
Reflection is not recognized by DR1 Plus.	ID set to 0 or another unit in the chain is set with the same number..	Set an ID number different from 0 and from any other unit in the chain.

	Information on disposal of the equipment
	The equipment at the end of its useful life must be disposed of at an appropriate recycling center for waste electrical and electronic equipment. The treatment and disposal of environmentally friendly, helps prevent potential negative environmental and health and promote the reuse and / or recycling of materials making up the equipment. Illegal disposal by the user includes the application of administrative sanctions provided by law.

DECLARATION OF CONFORMITY

No.: 2011-013

The undersigned as representant of the following manufacturer

Manufacturer identification: **COEMAR S.p.A.**

Address: **Via Inghilterra Z.I. Est
46042 Castel Goffredo (MN) - Italy**

declares that the following product

Reflection VariWhite

result in conformity with the essential requirements as mentioned from the following
EU Directives (comprise all applicable amendments)

Reference no.	title
2004/108/EC	Directive of the European Parliament and of the Council of 15 December 2004 on the approximation of the laws of the Member States relating to Electromagnetic Compatibility and repealing Directive 89/336/EEC (EMC)
2006/95/EC	Directive of the European Parliament and of the Council of 12 December 2006 on the harmonisation of the laws of Member States relating to electrical equipment designed for use within certain voltage limits (LVD)
2002/95/EC	Directive of the European Parliament and of the Council of 27 January 2003 on the restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS)
2002/96/EC & 2003/108/EC	Directive of the European Parliament and of the Council of 27 January 2003 on waste electrical and electronic equipments (WEEE)

and that are applied all standards or technical specifications mentioned below.

Last two numbers of the Year in which is affixed the CE label : 11



TCF reference nr. PC10001A003, PC10001A004,
PC10001A005

Place & Date February 28, 2011

Name and position Wilkinson Eric
Managing Director

Sign



DECLARATION OF CONFORMITY

No.: 2011-013

Reference to standards and/or technical specifications, or part of them, used for this Declaration of Conformity:

– Harmonized standards:

Ref. no.	edition	title	parts ¹
EN 61000-3-2	2006 +A1 (2009) +A2 (2009)	Electromagnetic compatibility (EMC), Part 3-2: Limits - Limits for harmonic current emissions (equipment input current ≤ 16 A per phase)	Complete std.
EN 61000-3-3	2008	Electromagnetic compatibility (EMC), Part 3-3: Limits - Limitation of voltage changes, voltage fluctuations and flicker in public low-voltage supply systems, for equipment with rated current ≤ 16 A per phase and not subject to conditional connection	Complete std.
EN 55103-1	1996	Electromagnetic compatibility - Product family standard for audio, video, audio-visual and entertainment lighting control apparatus for professional use -- Part 1: Emission	Complete std.
EN 55103-2	2009	Electromagnetic compatibility - Product family standard for audio, video, audio-visual and entertainment lighting control apparatus for professional use -- Part 2: Immunity	Complete std.
EN 60950-1	2006 +A11 (2006)	Information technology equipment - Safety -- Part 1: General requirements	Complete std.
EN 60065	2002 +A1 (2006) +A11 (2008)	Audio, video and similar electronic apparatus - Safety requirements	Complete std.
EN 60598-1	2008 +A11 (2009)	Luminaires -- Part 1: General requirements and tests	Complete std.
EN 60598-2-17	1989 +A2 (1991)	Luminaires -- Part 2: Particular requirements -- Section 17: Luminaires for stage lighting, television film and photographic studios (outdoor and indoor)	Complete std.
EN 62471	2008	Photobiological safety of lamps and lamp systems	Complete std.

- other standards and/or technical specifications:

Ref. no.	edition	title	parts ²
IEC Guide 112	2000-04	Guide on the safety of multimedia equipment	Complete std.
EN 62493	2010-03	Assessment of lighting equipment related to human exposure to electromagnetic fields	Complete std.

Other technical solution detailed in the technical documentation or Technical Construction Folder:

.....none.....

Other reference or informations required from the applicable EU Directives:

.....none.....

1) If appropriate, shall specify the parts or articles the harmonized standard.

2) If appropriate, shall specify the parts or articles the standard or technical specification.



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