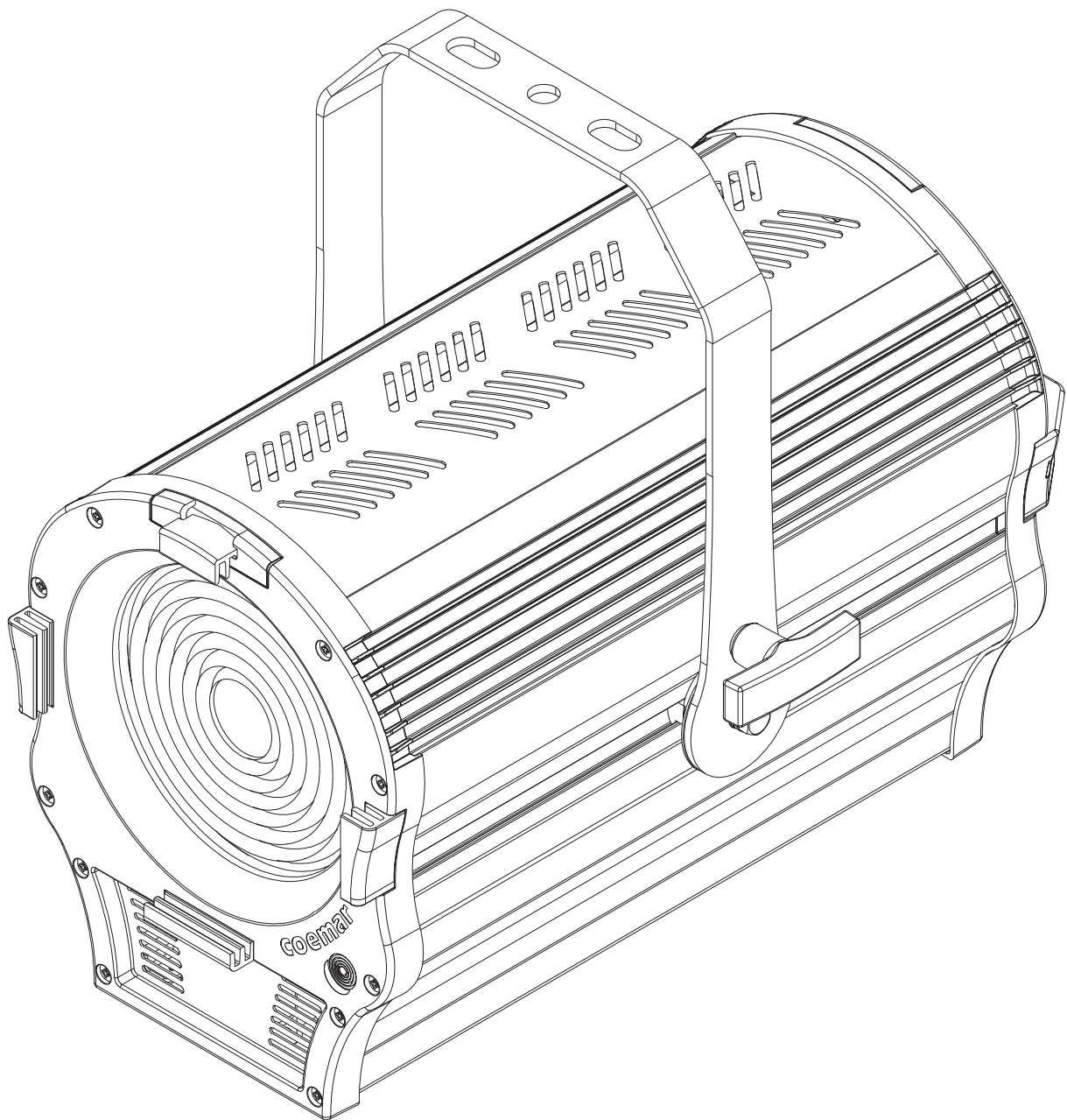


# Otello HD FullSpectrum



# Otello HD

# FullSpectrum

Serial Number:

.....

Purchase date:

.....

Dealer:

.....

Address:

.....

Suburb:

.....

Country:

.....

Phone / Fax:

.....

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

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

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Congratulations on having purchased a **Coemar** product. You have assured yourself of a fixture of the highest quality, both in componentry and in the technology used. We renew our invitation to you to complete the service information on the previous page, to expedite any request for service information or spares (in case of problems encountered either during, or subsequent to, installation). This information will assist in providing prompt and accurate advice from your **Coemar** service centre. 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 e-mail, and inform them you will formally notify them in writing through registered letter.

### Packing list

Ensure the packaging contains:

- 1 Otello HD FullSpectrum**
- 1 Instruction manual**
- 1 Main power plugs**

## 1.2 Transportation

The **Otello HD FullSpectrum** should be transported in either its original packaging or in an appropriate flight case.

# 2. General information

## 2.1 Safety informations

### Fire prevention:



1. Never locate the fixture on any flammable surface.
2. Minimum distance from flammable materials: 0,5 m.
3. Minimum distance from the closet illuminable surface: 0,5 m.
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.

### Prevention 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 **Otello HD FullSpectrum** 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 LED 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 under warranty for 36 months from the purchase date against factory defections.
2. Damage ought to unskillfulness, inappropriate use, or lack of suggested maintenance are excluded from the warranty.
3. Warranty expires when the projector is opened by unauthorized personnel.
4. Warranty doesn't include the replacement of the fixture.
5. Serial number and model of the fixture are necessary to retrieve informations and assistance from the dealer.

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## **2.3 EC Norms**

The projector meets all fundamental applicable EC requirements.

## 3. Product specifications

### 3.1 Technical characteristics - Otello 6

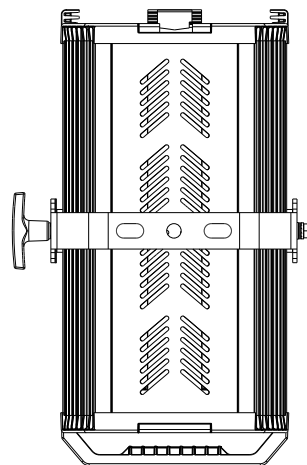
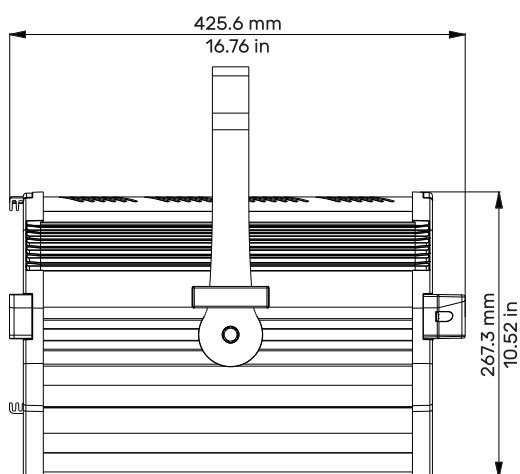
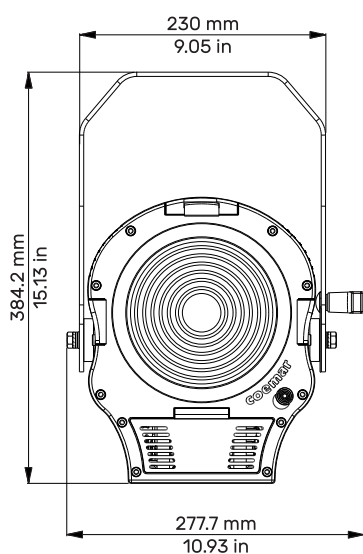
<b>Power supply</b>	90-264 V, auto-sensing, 50/60 Hz
<b>Maximum current</b>	0.98 A a 230 V - 1.86 A a 115 V
<b>Power factor</b>	Cosφ = 0.93 min.
<b>Max power consumption</b>	210 W
<b>Color temperature</b>	Red, Green, Blue, Cyan, Lime, Amber color mixing CCT from 2.700 to 6.500 K
<b>Color Rendering Index (CRI)</b>	Avg. > 95
<b>Weight</b>	9.5 Kg (20.94 lbs)
<b>Maximum ambient temperature</b>	+35°C / +95°F
<b>IP rating</b>	20

### 3.2 Technical characteristics - Otello 8

<b>Power supply</b>	80-264 V, auto-sensing, 50/60 Hz
<b>Maximum current</b>	1.57 A a 230 V - 3.02 A a 115 V
<b>Power factor</b>	Cosφ = 0.94 min.
<b>Max power consumption</b>	340 W
<b>Color temperature</b>	Red, Green, Blue, Cyan, Lime, Amber color mixing CCT from 2.700 to 6.500 K
<b>Color Rendering Index (CRI)</b>	Avg. > 95
<b>Weight</b>	13.5 Kg (29.76 lbs)
<b>Maximum ambient temperature</b>	+35°C / +95°F
<b>IP rating</b>	20

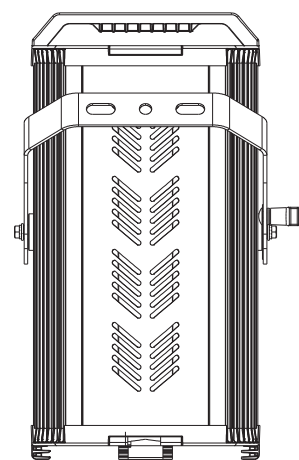
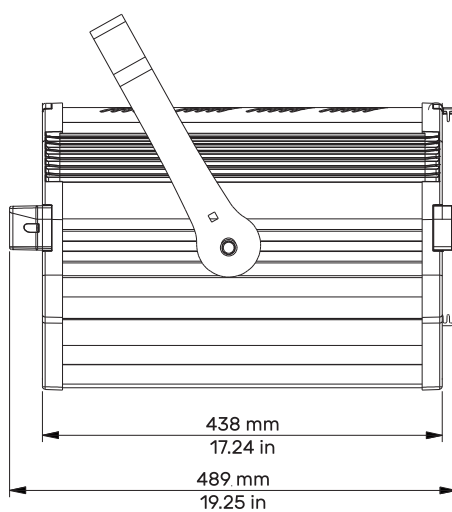
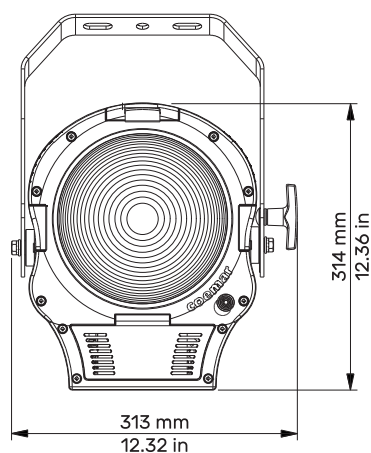
## 4. Projector dimensions

### 4.1 Otello 6



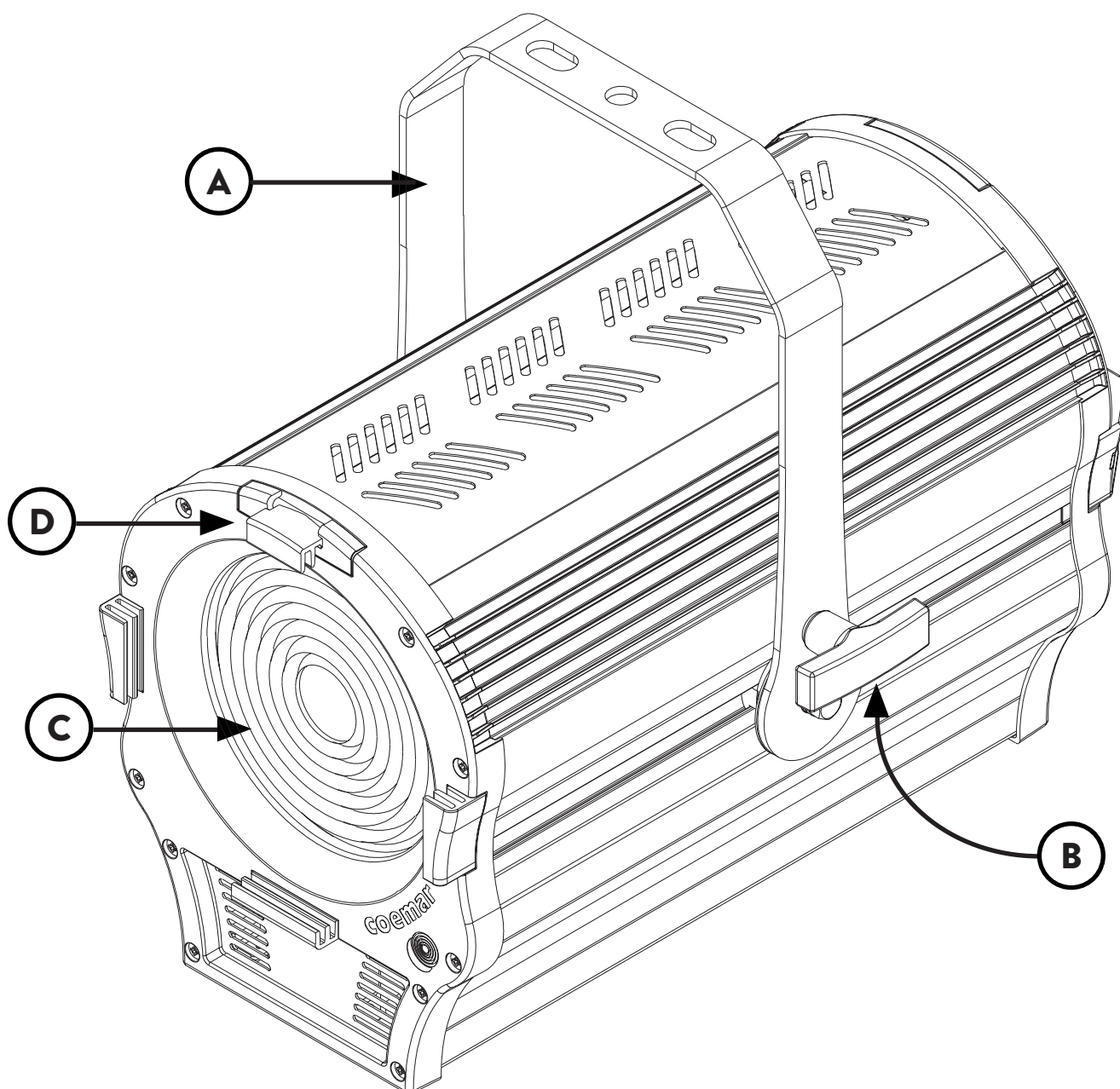
\*motorized zoom version

### 4.2 Otello 8



\*motorized zoom version

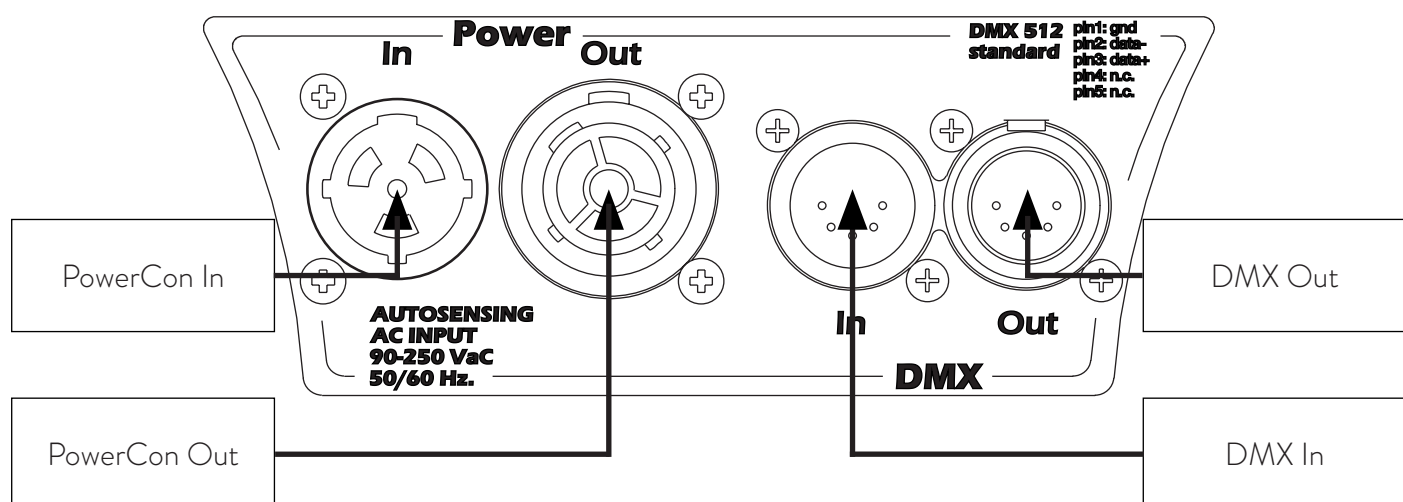
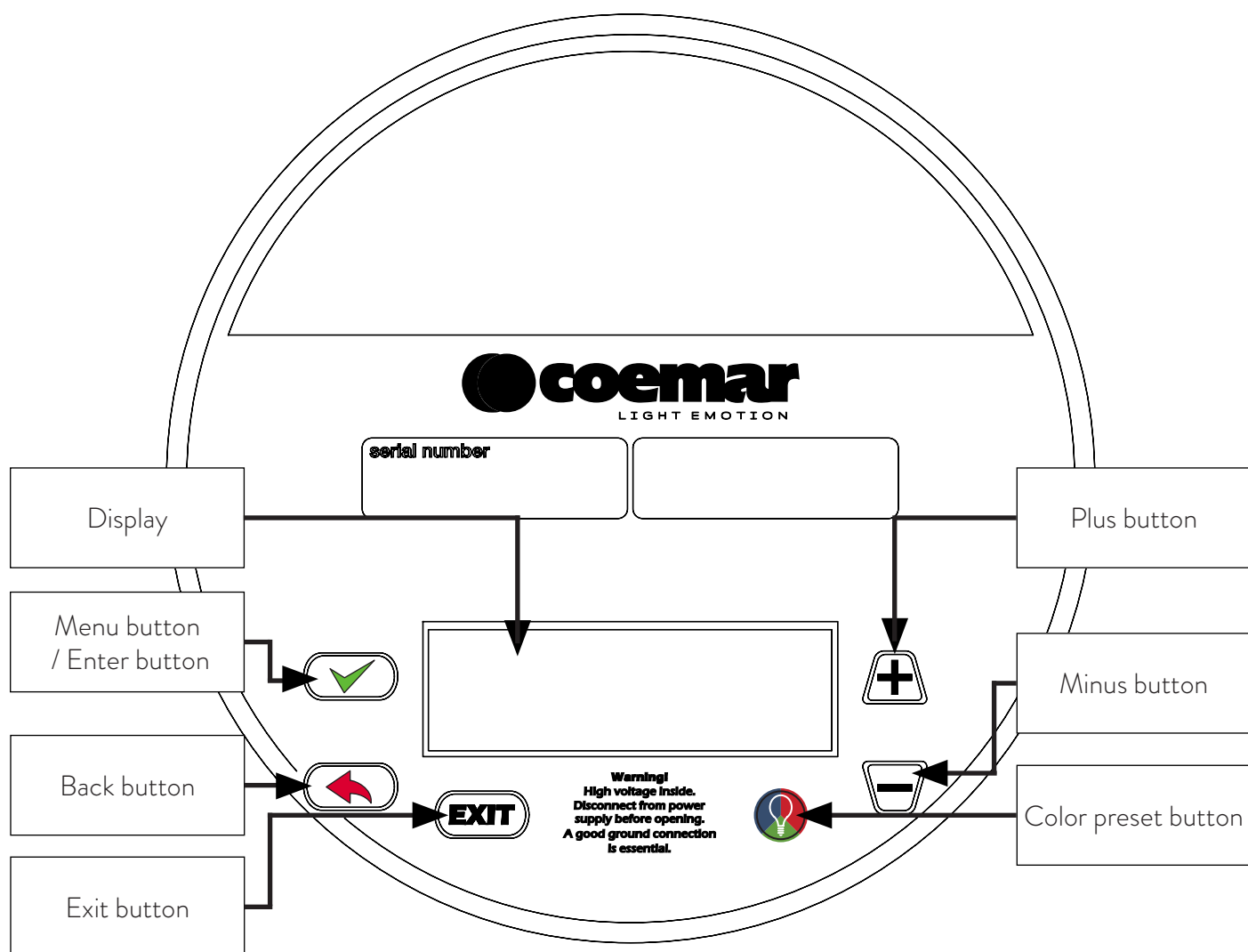
## 4.3 Unit's main components



Components description	
<b>A</b>	Adjustable yoke
<b>B</b>	Yoke locking handle
<b>C</b>	Fresnel lens
<b>D</b>	Color frame holder



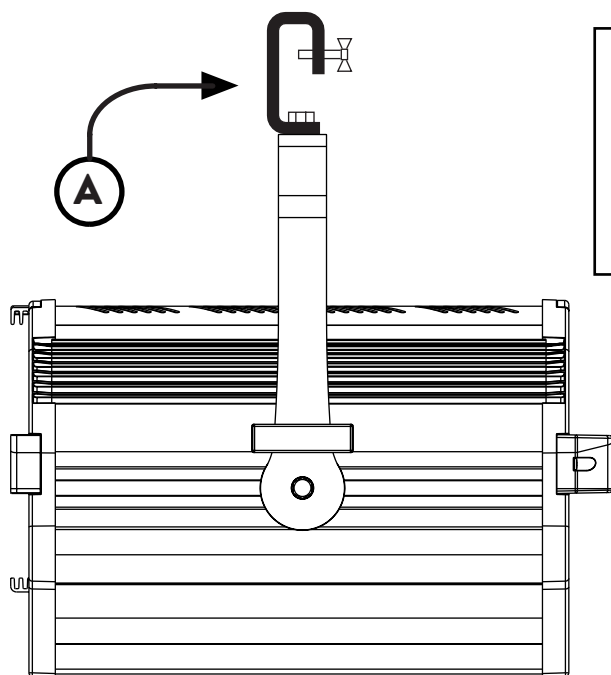
## 4.4 Back panel description



## 5. Installation

### 5.1 Mechanical installation

**Otello HD FullSpectrum** may be hung from an appropriate structure in any position or on tripod. If hanging the fixture from a lighting truss or similar, we recommend the use of an appropriate clamp “A”, as shown in the following diagram.



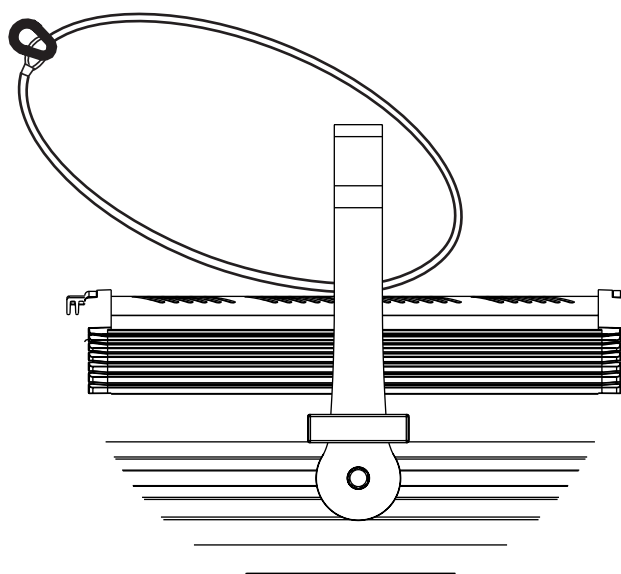
#### **Warning!!**

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

### 5.2 Safety chain

When hanging it is recommended to use a safety chain, as required by current legislation. The safety chain must pass through the handles of the unit and then attached to the structure.

If using steel cables and chains not's production, make sure they are suitable to support the weight of the unit according to normative UL/ETL (required: the weight of 6 complete devices for at least one hour).



### 5.3 Adjusting the unit tilt

In order to adjust the tilt of the unit simply loose the side handle adjust the tilt and lock the yoke by tightening the handle again.

## 6. Powering up

### 6.1 Operating voltage and frequency

The unit may operate at voltage ranges from 80 to 264 V at a frequency of 50 or 60 Hz. It is not needed to effect any setup procedures: **Otello HD FullSpectrum** will automatically adjust its operation to suit any frequency or voltage within this range.

### 6.2 Connection to mains power

#### Mains cable characteristics

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

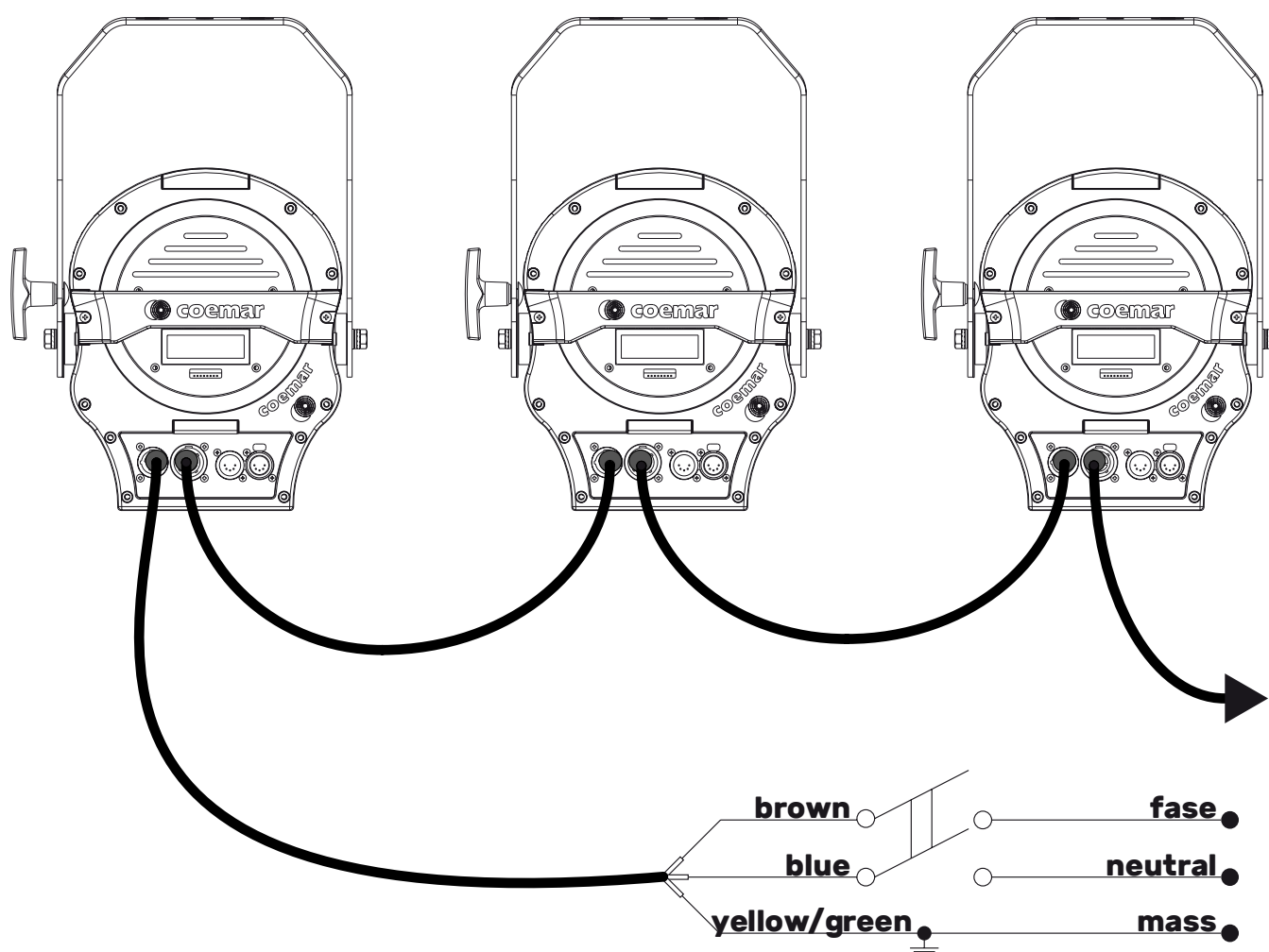
**Note:** in case of cable replacement, similar cable with comparable thermal resistant qualities must be used exclusively (cable 3 X 1,5 ø external 10 mm, rated 300/500 V, tested to 2 KV, operating temperature -40°C + 180°C, Coemar cod. CV5311).

#### Connection to mains power

**Otello HD FullSpectrum** is equipped with two power connectors, one as input and one as output, which can be used to feed up to 8 (at 230 V) or 4 (at 115 V) fixtures.

The max absorption of **Otello HD FullSpectrum** is reported in the following table:

Otello 6	- 230 V - 0.98 A constant during normal exercise.
	- 115 V - 1.86 A constant during normal exercise.
Otello 8	- 230 V - 1.57 A constant during normal exercise.
	- 115 V - 3.02 A constant during normal exercise.



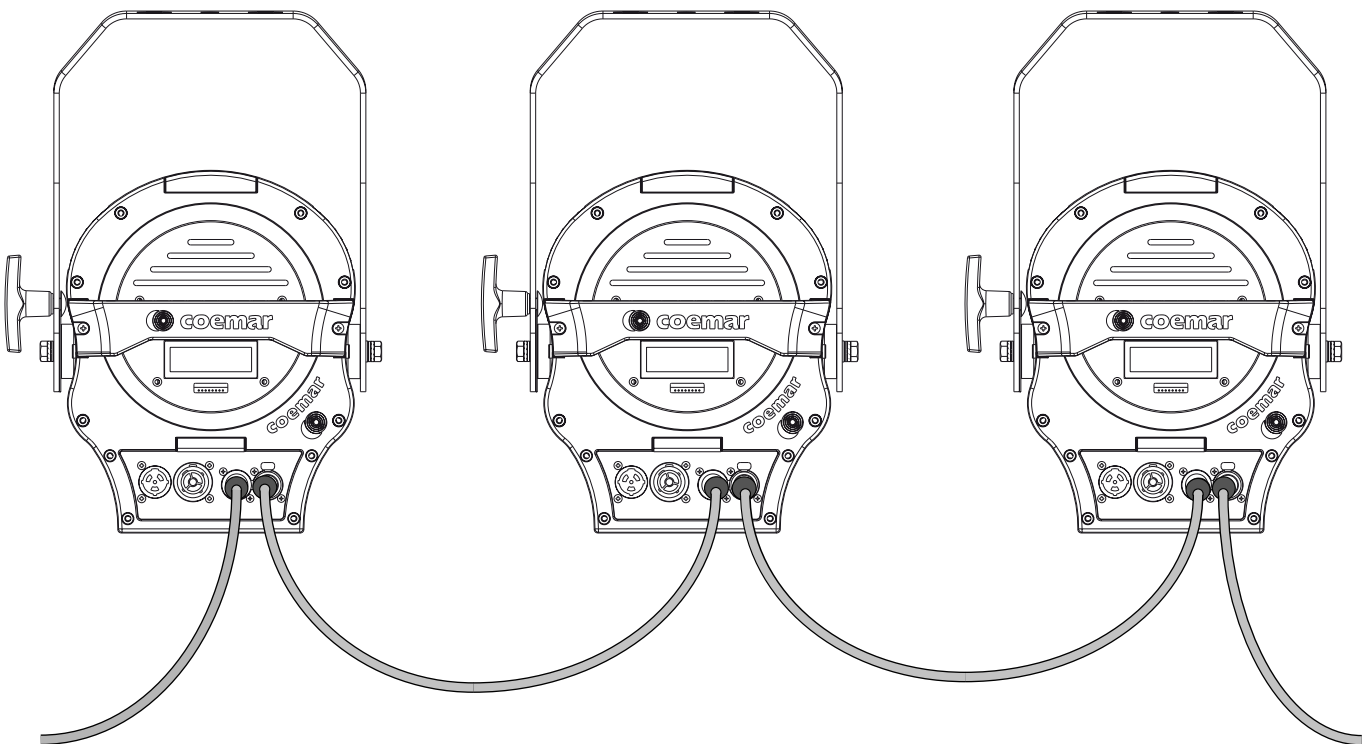
### Warning!!

- The use of a thermal/magnetic circuit breaker is recommended. Strict adherence to regulatory norms is strongly recommended.
- **Otello HD FullSpectrum** 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 the use of **Otello HD FullSpectrum**.
- All cabling and connections should be carried out by a suitably qualified personnel.

## 7. Control signal connections

### 7.1 Control signal connection by XLR5 plugs

The digital control signal is transmitted to the projector via a two pole cable screened in according to the International standards for DMX 512 data transmission. The connection must be serial, using connectors XLR5 male and female located on the back of **Otello HD FullSpectrum** labelled DMX512 IN e OUT.



### 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 must never be connected to the power supply unit.

## 8. Turning the projector on

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, suddenly it will show the current DMX addressing. If the address blinks, it means that the DMX signal has not been received. Check the connection cable and the mixer functioning.

### 8.1 DMX address of the unit (motorized zoom version)

Each projector can use 17 / 8 address channels and Studio / RGB mode for its complete operation and is controlled by a DMX 512 signal.

#### DMX addressing

When powered up initially, each projector will show A001, which indicates DMX address 001; for example, when set at 17 channels a projector thus addressed will respond to commands of channel 1 to 17 from your DMX 512 controller. A second unit must be addressed as A0018, a third one as A035 and so on. The operation must be carried out on every **Otello HD FullSpectrum** which has an address different from A001.

#### Altering the 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.

# 9. DMX chart

## 9.1 DMX chart 17, 8 channels (motorized zoom version)

channel		function	type of control	effect	decimal		percentage	
17	8							
1	1	master dimmer	proportional	adjust luminous output intensity from 0 to 100%	0	- 255	0%	- 100%
2	2	red	proportional	proportional control of the color percentage from 0 % to 100 %	0	- 255	0%	- 100%
3	3	green	proportional	proportional control of the color percentage from 0 % to 100 %	0	- 255	0%	- 100%
4	4	blue	proportional	proportional control of the color percentage from 0 % to 100 %	0	- 255	0%	- 100%
5	5	cyan	proportional	proportional control of the color percentage from 0 % to 100 %	0	- 255	0%	- 100%
6	6	lime	proportional	proportional control of the color percentage from 0 % to 100 %	0	- 255	0%	- 100%
7	7	amber	proportional	proportional control of the color percentage from 0 % to 100 %	0	- 255	0%	- 100%
8	-	strobe effect	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	162	- 207	64%	- 81%
			step	stop strobe	208	- 209	82%	- 82%
			proportional	random strobe effect with variable speed from slow to fast	210	- 255	82%	- 100%
9	-	dimmer fine	proportional	fine dimmer control 16 bit	0	- 255	0%	- 100%
10	-	special functions	step	no effect	0	- 9	0%	- 4%
				no effect	10	- 22	4%	- 9%
				reset of all the motors (only once)	23	- 35	9%	- 14%
				no effect	36	- 48	14%	- 19%
				fan at low-noise speed	49	- 61	19%	- 24%
				fan at studio speed	62	- 74	24%	- 29%
				fan at auto-silent speed	75	- 87	29%	- 34%
			proportional	fan speed control	88	- 100	35%	- 39%
			step	enables the automatic display blackout	101	- 113	40%	- 44%
				disables the automatic display blackout	114	- 126	45%	- 49%
				no effect	127	- 255	50%	- 100%

11'	-	red tone	step	no effect	0	-	9	0%	-	4%
				R24 - Scarlet red	10	-	34	4%	-	13%
				R02 - Bastard amber	35	-	59	14%	-	23%
				R313 - Light relief yellow	60	-	84	24%	-	33%
				R18 - Flame	85	-	109	33%	-	43%
				R331 - Shell pink	110	-	134	43%	-	53%
				R25 - Orange red	135	-	159	53%	-	62%
				R46 - Magenta	160	-	184	63%	-	72%
				R08 - Pale gold	185	-	209	73%	-	82%
				R27 - Medium red	210	-	234	82%	-	92%
				R318 - Mayan sun	235	-	255	92%	-	100%
12'	-	green tone	step	no effect	0	-	9	0%	-	4%
				R4460 - Calcolor 60 green	10	-	34	4%	-	13%
				R2004 - Storaro green	35	-	59	14%	-	23%
				E730 - Liberty green	60	-	84	24%	-	33%
				E088 - Lime green	85	-	109	33%	-	43%
				R90 - Kelly green	110	-	134	43%	-	53%
				R395 - Teal green	135	-	159	53%	-	62%
				R91 - Primary green	160	-	184	63%	-	72%
				R393 - Emerald green	185	-	209	73%	-	82%
				R393 - Leaf green	210	-	234	82%	-	92%
				R86 - Pea green	235	-	255	92%	-	100%
13'	-	blue tone	step	no effect	0	-	9	0%	-	4%
				R2008 - Storaro indigo	10	-	34	4%	-	13%
				E5058 - French lilac	35	-	59	14%	-	23%
				R369 - Tahitian blue	60	-	84	24%	-	33%
				R347 - Belladonna rose	85	-	109	33%	-	43%
				R381 - Baldassari blue	110	-	134	43%	-	53%
				R57 - Lavander	135	-	159	53%	-	62%
				R55 - Lilac	160	-	184	63%	-	72%
				R4790 - Calcolor 90 magenta	185	-	209	73%	-	82%
				R92 - Turquoise	210	-	234	82%	-	92%
				R370 - Italian blue	235	-	255	92%	-	100%
14	-	white tone	step	no effect	0	-	9	0%	-	4%
				2.700 K	10	-	24	4%	-	9%
			proportional	proportional value from 2.700 K to 3.200 K	25	-	39	10%	-	15%
			step	3.200 K	40	-	54	16%	-	21%
			proportional	proportional value from 3.200 K to 4.000 K	55	-	69	22%	-	27%
			step	4.000 K	70	-	84	27%	-	33%
			proportional	proportional value from 4.000 K to 5.000 K	85	-	99	33%	-	39%
			step	5.000 K	100	-	114	39%	-	45%
			proportional	proportional value from 5.000 K to 5.600 K	115	-	129	45%	-	51%
			step	5.600 K	130	-	144	51%	-	56%
			proportional	proportional value from 5.600 K to 7.000 K	145	-	159	57%	-	62%
			step	7.000 K	160	-	174	63%	-	68%
			proportional	proportional value from 7.000 K to 8.000 K	175	-	189	69%	-	74%
			step	8.000 K	190	-	204	75%	-	80%
			proportional	proportional value from 8.000 K to 9.000 K	205	-	219	80%	-	86%
			step	9.000 K	220	-	234	86%	-	92%
			proportional	proportional value from 9.000 K to 10.000 K	235	-	249	92%	-	98%
			step	10.000 K	250	-	255	98%	-	100%

15 <sup>2</sup>	-	green saturation	step	no effect	0		0%	
			proportional	exalts the green color in the mixing and diminishes the presence of magenta	1	-	127	0% - 20%
			step	no effect	128		50%	
			proportional	diminishes the presence of green in the mixing and exalts the magenta color	129	-	254	51% - 99%
			step	no effect	255		100%	
16 <sup>3</sup>	-	saturation	proportional	the white tone fades to the tone built with the RGBCLA channels	0	-	255	0% - 100%
17	8	zoom	proportional	proportional control of zoom from narrow to wide beam	0	-	255	0% - 100%
<b>Note 1:</b> channels involving 11 - 12 - 13 macro colors can also be obtained by mixing channels 2 - 3 - 4 - 5 - 6 - 7.								
<b>Note 2:</b> the rest position of the green saturation is 128. Diminishing the DMX value augments the presence of the green color. Increasing the DMX value augments the presence of magenta.								
<b>Note 3:</b> increasing the value of the saturation DMX channel the white tone (channel 14) will fade to the color selected by the channel 2 - 3 - 4 - 5 - 6 - 7.								



## 9.2 DMX chart Studio mode (motorized zoom version)

channel	function	type of control	effect	decimal			percentage		
<b>1</b>	master dimmer	proportional	adjust luminous output intensity from 0 to 100%	0	-	255	0%	-	100%
<b>2</b>	white tone	step	2.700 K	0	-	24	0%	-	9%
		proportional	proportional value from 2.700 K to 3.200 K	25	-	39	10%	-	15%
		step	3.200 K	40	-	54	16%	-	21%
		proportional	proportional value from 3.200 K to 4.000 K	55	-	69	22%	-	27%
		step	4.000 K	70	-	84	27%	-	33%
		proportional	proportional value from 4.000 K to 5.000 K	85	-	99	33%	-	39%
		step	5.000 K	100	-	114	39%	-	45%
		proportional	proportional value from 5.000 K to 5.600 K	115	-	129	45%	-	51%
		step	5.600 K	130	-	144	51%	-	56%
		proportional	proportional value from 5.600 K to 7.000 K	145	-	159	57%	-	62%
		step	7.000 K	160	-	174	63%	-	68%
		proportional	proportional value from 7.000 K to 8.000 K	175	-	189	69%	-	74%
		step	8.000 K	190	-	204	75%	-	80%
		proportional	proportional value from 8.000 K to 9.000 K	205	-	219	80%	-	86%
		step	9.000 K	220	-	234	86%	-	92%
		proportional	proportional value from 9.000 K to 10.000 K	235	-	249	92%	-	98%
		step	10.000 K	250	-	255	98%	-	100%
<b>3<sup>1</sup></b>	green saturation	step	no effect	0			0%		
		proportional	exalts the green color in the mixing and diminishes the presence of magenta	1	-	127	0%	-	20%
		step	no effect	128			50%		
		proportional	diminishes the presence of green in the mixing and exalts the green color	129	-	254	51%	-	99%
		step	no effect	255			100%		
<b>4<sup>2</sup></b>	saturation	proportional	the white tone fades to the tone built with the HUE channel	0	-	255	0%	-	100%
<b>5</b>	hue	proportional	reproduce the color crossfades around the color space	0	-	255	0%	-	100%
<b>6</b>	dimmer fine	proportional	fine dimmer control 16 bit	0	-	255	0%	-	100%
<b>7</b>	special functions	step	no effect	0	-	9	0%	-	4%
			no effect	10	-	22	4%	-	9%
			reset of all the motors (only once)	23	-	35	9%	-	14%
			no effect	36	-	48	14%	-	19%
			fan at low-noise speed	49	-	61	19%	-	24%
			fan at studio speed	62	-	74	24%	-	29%
			fan at auto-silent speed	75	-	87	29%	-	34%
		proportional	fan speed control	88	-	100	35%	-	39%
		step	enables the automatic display blackout	101	-	113	40%	-	44%
			disables the automatic display blackout	114	-	126	45%	-	49%
			no effect	127	-	255	50%	-	100%
<b>8</b>	zoom	proportional	proportional control of zoom from narrow to wide beam	0	-	255	0%	-	100%

**Note 2:** increasing the value of the saturation DMX channel (channel 4) the white light will fade to the color selected with the HUE channel (channel 5)

## 9.3 DMX chart RGB mode (motorized zoom version)

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	dimmer fine	proportional	fine dimmer control 16 bit	0	- 255	0%	- 100%
3	red	proportional	proportional control of the color percentage from 0 % to 100 %	0	- 255	0%	- 100%
4	green	proportional	proportional control of the color percentage from 0 % to 100 %	0	- 255	0%	- 100%
5	blue	proportional	proportional control of the color percentage from 0 % to 100 %	0	- 255	0%	- 100%
6'	white tone	step	no effect	0	- 9	0%	- 4%
			2.700 K	10	- 24	4%	- 9%
		proportional	proportional value from 2.700 K to 3.200 K	25	- 39	10%	- 15%
		step	3.200 K	40	- 54	16%	- 21%
			proportional value from 3.200 K to 4.000 K	55	- 69	22%	- 27%
		step	4.000 K	70	- 84	27%	- 33%
			proportional value from 4.000 K to 5.000 K	85	- 99	33%	- 39%
		step	5.000 K	100	- 114	39%	- 45%
			proportional value from 5.000 K to 5.600 K	115	- 129	45%	- 51%
		step	5.600 K	130	- 144	51%	- 56%
			proportional value from 5.600 K to 7.000 K	145	- 159	57%	- 62%
		step	7.000 K	160	- 174	63%	- 68%
			proportional value from 7.000 K to 8.000 K	175	- 189	69%	- 74%
		step	8.000 K	190	- 204	75%	- 80%
			proportional value from 8.000 K to 9.000 K	205	- 219	80%	- 86%
		step	9.000 K	220	- 234	86%	- 92%
			proportional value from 9.000 K to 10.000 K	235	- 249	92%	- 98%
		step	10.000 K	250	- 255	98%	- 100%
7	saturation	proportional	the white tone fades to the tone built with the RGB channels	0	- 255	0%	- 100%
8	strobe effect	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	162	- 207	64%	- 81%
		step	stop strobe	208	- 209	82%	- 82%
		proportional	random strobe effect with variable speed from slow to fast	210	- 255	82%	- 100%

9	special functions	step	no effect	0	-	9	0%	-	4%
			no effect	10	-	22	4%	-	9%
			reset of all the motors (only once)	23	-	35	9%	-	14%
			no effect	36	-	48	14%	-	19%
			fan at low-noise speed	49	-	61	19%	-	24%
			fan at studio speed	62	-	74	24%	-	29%
			fan at auto-silent speed	75	-	87	29%	-	34%
		proportional	fan speed control	88	-	100	35%	-	39%
		step	enables the automatic display blackout	101	-	113	40%	-	44%
			disables the automatic display blackout	114	-	126	45%	-	49%
			no effect	127	-	255	50%	-	100%
10	zoom	proportional	proportional control of zoom from narrow to wide beam	0	-	255	0%	-	100%

## 9.4 DMX chart 16, 7, 1 channels (manual / P.O. version)

channel			function	type of control	effect	decimal			percentage		
16	7	1									
1	1	1	master dimmer	proportional	adjust luminous output intensity from 0 to 100%	0	-	255	0%	-	100%
2	2	-	red	proportional	proportional control of the color percentage from 0 % to 100 %	0	-	255	0%	-	100%
3	3	-	green	proportional	proportional control of the color percentage from 0 % to 100 %	0	-	255	0%	-	100%
4	4	-	blue	proportional	proportional control of the color percentage from 0 % to 100 %	0	-	255	0%	-	100%
5	5	-	cyan	proportional	proportional control of the color percentage from 0 % to 100 %	0	-	255	0%	-	100%
6	6	-	lime	proportional	proportional control of the color percentage from 0 % to 100 %	0	-	255	0%	-	100%
7	7	-	amber	proportional	proportional control of the color percentage from 0 % to 100 %	0	-	255	0%	-	100%
8	-	-	strobe effect	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 (one color)	162	-	207	64%	-	81%
				step	stop strobe	208	-	209	82%	-	82%
				proportional	random strobe effect with variable speed from slow to fast (six colors in alternation)	210	-	255	82%	-	100%
9	-	-	dimmer fine	proportional	fine dimmer control 16 bit	0	-	255	0%	-	100%
10	-	-	special functions	step	no effect	0	-	9	0%	-	4%
					no effect	10	-	48	4%	-	19%
					fan at low-noise speed	49	-	61	19%	-	24%
					fan at studio speed	62	-	74	24%	-	29%
					fan at auto-silent speed	75	-	87	29%	-	34%
				proportional	fan speed control	88	-	100	35%	-	39%
				step	enables the automatic display blackout	101	-	113	40%	-	44%
					disables the automatic display blackout	114	-	126	45%	-	49%
					no effect	127	-	255	50%	-	100%

11'	-	-	red tone	step	no effect	0	-	9	0%	-	4%
					R24 - Scarlet red	10	-	34	4%	-	13%
					R02 - Bastard amber	35	-	59	14%	-	23%
					R313 - Light relief yellow	60	-	84	24%	-	33%
					R18 - Flame	85	-	109	33%	-	43%
					R331 - Shell pink	110	-	134	43%	-	53%
					R25 - Orange red	135	-	159	53%	-	62%
					R46 - Magenta	160	-	184	63%	-	72%
					R08 - Pale gold	185	-	209	73%	-	82%
					R27 - Medium red	210	-	234	82%	-	92%
					R318 - Mayan sun	235	-	255	92%	-	100%
12'	-	-	green tone	step	no effect	0	-	9	0%	-	4%
					R4460 - Calcolor 60 green	10	-	34	4%	-	13%
					R2004 - Storaro green	35	-	59	14%	-	23%
					E730 - Liberty green	60	-	84	24%	-	33%
					E088 - Lime green	85	-	109	33%	-	43%
					R90 - Kelly green	110	-	134	43%	-	53%
					R395 - Teal green	135	-	159	53%	-	62%
					R91 - Primary green	160	-	184	63%	-	72%
					R393 - Emerald green	185	-	209	73%	-	82%
					R393 - Leaf green	210	-	234	82%	-	92%
					R86 - Pea green	235	-	255	92%	-	100%
13'	-	-	blue tone	step	no effect	0	-	9	0%	-	4%
					R2008 - Storaro indigo	10	-	34	4%	-	13%
					E5058 - French lilac	35	-	59	14%	-	23%
					R369 - Tahitian blue	60	-	84	24%	-	33%
					R347 - Belladonna rose	85	-	109	33%	-	43%
					R381 - Baldassari blue	110	-	134	43%	-	53%
					R57 - Lavander	135	-	159	53%	-	62%
					R55 - Lilac	160	-	184	63%	-	72%
					R4790 - Calcolor 90 magenta	185	-	209	73%	-	82%
					R92 - Turquoise	210	-	234	82%	-	92%
					R370 - Italian blue	235	-	255	92%	-	100%
14	-	-	white tone	step	no effect	0	-	9	0%	-	4%
					2.700 K	10	-	24	4%	-	9%
				proportional	proportional value from 2.700 K to 3.200 K	25	-	39	10%	-	15%
				step	3.200 K	40	-	54	16%	-	21%
				proportional	proportional value from 3.200 K to 4.000 K	55	-	69	22%	-	27%
				step	4.000 K	70	-	84	27%	-	33%
				proportional	proportional value from 4.000 K to 5.000 K	85	-	99	33%	-	39%
				step	5.000 K	100	-	114	39%	-	45%
				proportional	proportional value from 5.000 K to 5.600 K	115	-	129	45%	-	51%
				step	5.600 K	130	-	144	51%	-	56%
				proportional	proportional value from 5.600 K to 7.000 K	145	-	159	57%	-	62%
				step	7.000 K	160	-	174	63%	-	68%
				proportional	proportional value from 7.000 K to 8.000 K	175	-	189	69%	-	74%
				step	8.000 K	190	-	204	75%	-	80%
				proportional	proportional value from 8.000 K to 9.000 K	205	-	219	80%	-	86%
				step	9.000 K	220	-	234	86%	-	92%
				proportional	proportional value from 9.000 K to 10.000 K	235	-	249	92%	-	98%
				step	10.000 K	250	-	255	98%	-	100%

15 <sup>2</sup>	-	-	green saturation	step	no effect	0		0%	
				proportional	exalts the green color in the mixing and diminishes the presence of magenta	1	-	127	0% - 20%
				step	no effect	128		50%	
				proportional	diminishes the presence of green in the mixing and exalts the magenta color	129	-	254	51% - 99%
				step	no effect	255		100%	
16 <sup>3</sup>	-	-	saturation	proportional	the white tone fades to the tone built with the RGBWLA channels	0	-	255	0% - 100%
<b>Note 1:</b> channels involving 11 - 12 - 13 macro colors can also be obtained by mixing channels 2 - 3 - 4 - 5 - 6 - 7.									
<b>Note 2:</b> the rest position of the green saturation is 128. Diminishing the DMX value augments the presence of the green color. Increasing the DMX value augments the presence of magenta.									
<b>Note 3:</b> increasing the value of the saturation DMX channel the white tone (channel 14) will fade to the color selected by the channel 2 - 3 - 4 - 5 - 6 - 7.									

## 9.5 DMX chart Studio mode (manual / P.O. version)

channel	function	type of control	effect	decimal		percentage		
<b>1</b>	master dimmer	proportional	adjust luminous output intensity from 0 to 100%	0	- 255	0%	-	100%
<b>2</b>	white tone	step	2.700 K	10	- 24	4%	-	9%
		proportional	proportional value from 2.700 K to 3.200 K	25	- 39	10%	-	15%
		step	3.200 K	40	- 54	16%	-	21%
		proportional	proportional value from 3.200 K to 4.000 K	55	- 69	22%	-	27%
		step	4.000 K	70	- 84	27%	-	33%
		proportional	proportional value from 4.000 K to 5.000 K	85	- 99	33%	-	39%
		step	5.000 K	100	- 114	39%	-	45%
		proportional	proportional value from 5.000 K to 5.600 K	115	- 129	45%	-	51%
		step	5.600 K	130	- 144	51%	-	56%
		proportional	proportional value from 5.600 K to 7.000 K	145	- 159	57%	-	62%
		step	7.000 K	160	- 174	63%	-	68%
		proportional	proportional value from 7.000 K to 8.000 K	175	- 189	69%	-	74%
		step	8.000 K	190	- 204	75%	-	80%
		proportional	proportional value from 8.000 K to 9.000 K	205	- 219	80%	-	86%
		step	9.000 K	220	- 234	86%	-	92%
		proportional	proportional value from 9.000 K to 10.000 K	235	- 249	92%	-	98%
		step	10.000 K	250	- 255	98%	-	100%
<b>3'</b>	green saturation	step	no effect	0		0%		
		proportional	exalts the green color in the mixing and diminishes the presence of magenta	1	- 127	0%	-	20%
		step	no effect	128		50%		
		proportional	diminishes the presence of green in the mixing and exalts the green color	129	- 254	51%	-	99%
		step	no effect	255		100%		
<b>4<sup>2</sup></b>	saturation	proportional	the white tone fades to the tone built with the HUE channel	0	- 255	0%	-	100%
<b>5</b>	hue	proportional	reproduce the color crossfades around the color space	0	- 255	0%	-	100%
<b>6</b>	dimmer fine	proportional	fine dimmer control 16 bit	0	- 255	0%	-	100%
<b>7</b>	special functions	step	no effect	0	- 9	0%	-	4%
			no effect	10	- 48	4%	-	19%
			fan at low - noise speed	49	- 61	19%	-	24%
			fan at studio speed	62	- 74	24%	-	29%
			fan at auto - silent speed	75	- 87	29%	-	34%
		proportional	fan speed control	88	- 100	35%	-	39%
			enables the automatic display blackout	101	- 113	40%	-	44%
			disables the automatic display blackout	114	- 126	45%	-	49%
			no effect	127	- 255	50%	-	100%

**Note 2:** increasing the value of the saturation DMX channel (channel 4) the white light will fade to the color selected with the HUE channel (channel 5)

## 9.6 DMX chart RGB mode (manual / P.O. version)

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	dimmer fine	proportional	fine dimmer control 16 bit	0	- 255	0%	- 100%
3	red	proportional	proportional control of the color percentage from 0 % to 100 %	0	- 255	0%	- 100%
4	green	proportional	proportional control of the color percentage from 0 % to 100 %	0	- 255	0%	- 100%
5	blue	proportional	proportional control of the color percentage from 0 % to 100 %	0	- 255	0%	- 100%
6'	white tone	step	no effect	0	- 9	0%	- 4%
			2.700 K	10	- 24	4%	- 9%
		proportional	proportional value from 2.700 K to 3.200 K	25	- 39	10%	- 15%
		step	3.200 K	40	- 54	16%	- 21%
			proportional value from 3.200 K to 4.000 K	55	- 69	22%	- 27%
		step	4.000 K	70	- 84	27%	- 33%
			proportional value from 4.000 K to 5.000 K	85	- 99	33%	- 39%
		step	5.000 K	100	- 114	39%	- 45%
			proportional value from 5.000 K to 5.600 K	115	- 129	45%	- 51%
		step	5.600 K	130	- 144	51%	- 56%
			proportional value from 5.600 K to 7.000 K	145	- 159	57%	- 62%
		step	7.000 K	160	- 174	63%	- 68%
			proportional value from 7.000 K to 8.000 K	175	- 189	69%	- 74%
		step	8.000 K	190	- 204	75%	- 80%
			proportional value from 8.000 K to 9.000 K	205	- 219	80%	- 86%
		step	9.000 K	220	- 234	86%	- 92%
			proportional value from 9.000 K to 10.000 K	235	- 249	92%	- 98%
		step	10.000 K	250	- 255	98%	- 100%
7	saturation	proportional	the white tone fades to the tone built with the RGB channels	0	- 255	0%	- 100%
8	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 (one color)	162	- 207	64%	- 81%
		step	stop strobe	208	- 209	82%	- 82%
		proportional	random strobe effect with variable speed from slow to fast (six colors in alternation)	210	- 255	82%	- 100%
9	special functions	step	no effect	0	- 9	0%	- 4%
			no effect	10	- 48	4%	- 19%
			fan at low-noise speed	49	- 61	19%	- 24%
			fan at studio speed	62	- 74	24%	- 29%
			fan at auto-silent speed	75	- 87	29%	- 34%
		proportional	fan speed control	88	- 100	35%	- 39%
		step	enables the automatic display blackout	101	- 113	40%	- 44%
			disables the automatic display blackout	114	- 126	45%	- 49%
			no effect	127	- 255	50%	- 100%



# 10. Display panel functions

## 10.1 Quick guide to menu

To access the functions menus just press the MENU button. Then press + or – buttons to scroll the pages and press the ENTER button to access to any other function.

By suitably using all the functions of **Otello HD FullSpectrum**, 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.

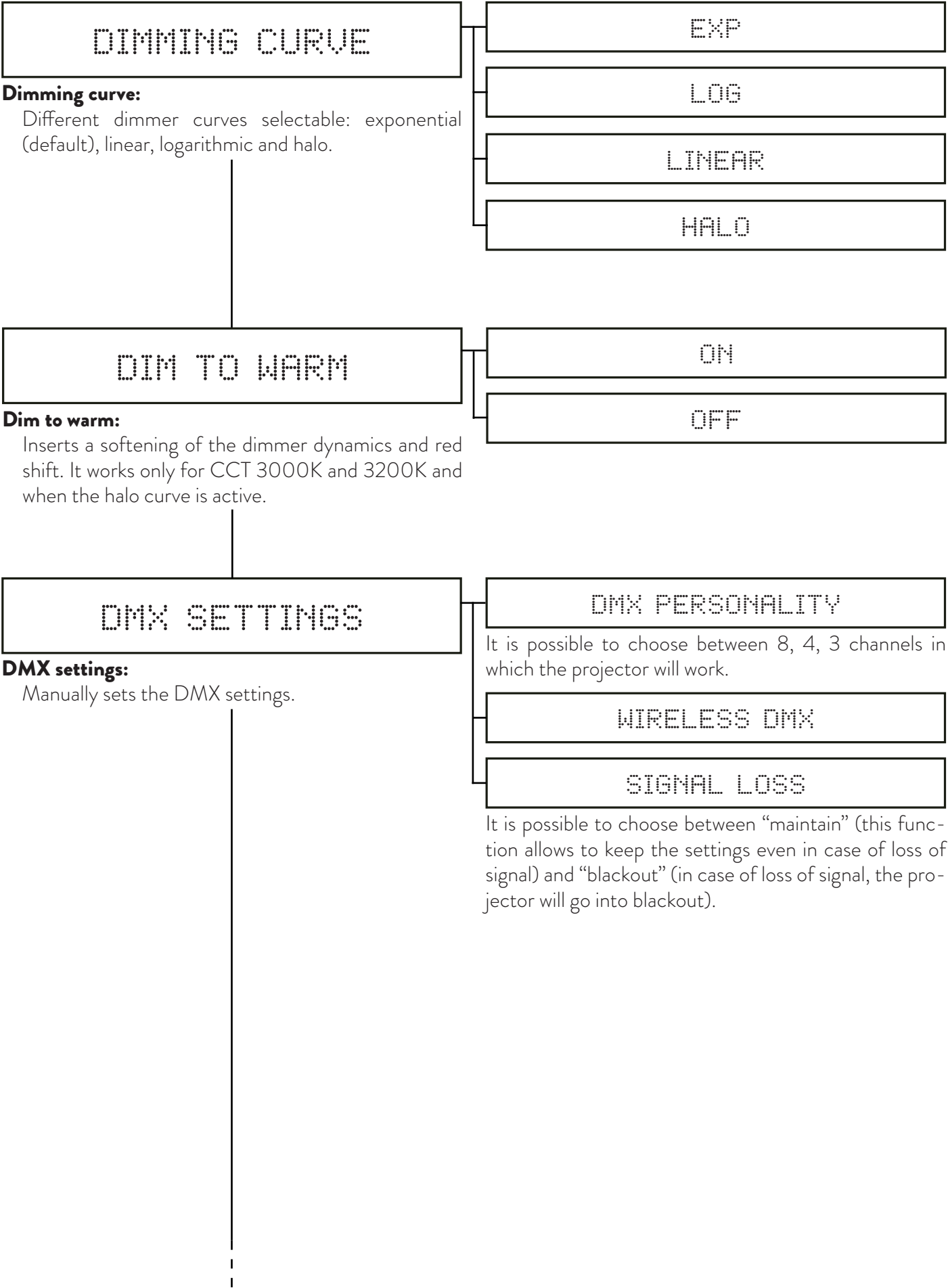
## 10.2 Rapid count

Through the display panel of **Otello HD FullSpectrum** 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 number to jump to the lowest value.

# 10.3 Main functions menu

By pressing the Enter key “✓” you enter Otello main menu.



## FAN MODE

### Fan mode:

3 different fan mode manually selectable.

### AUTOMATIC

Fan with automatic operating speed to guarantee maximum light output in all conditions of use, ideal for live events, exhibitions and architectural installations.

### STUDIO

Fan at automatic operation speed with limited speed to guarantee silent operation of the product (moderately limited light output, will decrease in case of overheat) ideal for broadcast or theatre applications.

### LOW NOISE

This setting will keep the speed of the fan at the minimum level (moderately limited light output, will decrease in case of overheat) ideal for environments that require maximum silence.

## DISPLAY – KEYBOARD

### BRIGHTNESS

Increase or decrease the brightness of the screen (from 0% to 100%).

### 180° REVERSE

Turn by 180° the reading of the display.

### DISPLAY TIME OUT

Turn off the display after 10 seconds.

### KEYBOARD LOCK

Lock the keys. Press any key for 5 seconds to unlock.

## DEFAULT SETTINGS

### Default Settings:

Restore the factory default settings, with exception of DMX address and LED alignment.

## MEASURES

## 10.4 Measures

### TEMPERATURE

#### Temperature:

Current temperature values of the fixture.

	LED	BOARD
NOW:	-°C	-°C
MIN:	-°C	-°C
MAX:	-°C	-°C
HISTORY		
MIN:	-°C	-°C
MAX:	-°C	-°C

**LED:** LED module temperature.

**Board:** electronic board temperature.

**History:** history temperature of the LED and electronic board temperature.

### PSU VOLTAGE

#### PSU Voltage:

Power supply voltage.

### FAN LEVEL

#### Fan level:

Percentage fan usage.

LEVEL:	-%
VOLTAGE:	-V
ROTATION:	-RPM

### DMX REFRESH RATE

#### DMX Refresh Rate:

Displays the refresh rate of the DMX signal per second

### DMX INPUT

#### DMX Input:

It measures the DMX value (0-255) received by each DXM channel of the unit

## LED STATUS

### LED status:

Percentage value of the LED status.

## FIXTURE LIFETIME

### Fixture lifetime:

Hour counter of the fixture.

UNIT LIFE: —

LED LIFE: —

MODULE LIFE: —

**Unit life:** hours of life of the fixture.

**LED life:** LED module life.

**Module life:** LED module life currently installed.

**Note:** this items can be reset in case of LED module replacement.

## ALARM

### Alarm:


This menu shows the alarm statuses if there is any.

## FIRMWARE VERSION

### Firmware version:

Firmware version currently installed on the fixture.

# 10.5 Color presets

By pressing the **color preset** button “”, on the rear panel, the user will enter the gels preset menu.

INTENSITY

**Intensity:**  
Adjust the luminous output intensity.

WHITE TONE GELS

**White tone gels:**  
This channel offers a preset library of various white CCT with a range that goes from 2.700 K and up to 10.000 K, manually selectable without the need of a DMX console.

2700 K

3000 K

3200 K

3500 K

4000 K

4500 K

5000 K

5500 K

5600 K

...

10000 K

GREEN SATURATION

**Green saturation:**  
Once the color temperature is selected, the green saturation function will automatically be activated, which allows to increase or decrease the presence of green and magenta.

## COLOR GELS

### Factory gels:

This channel offers a preset library of various color gels.

R24 - SCARLET RED

R02 - BASTARD AMBER

R313 - LIGHT RELIEF YELLOW

R18 - FLAME

R331 - SHELL PINK

R25 - ORANGE RED

R46 - MAGENTA

R08 - PALE GOLD

R27 - MEDIUM RED

R318 - MAYAN SUN

R4460 - CALCOLOR 60 GREEN

R2004 - STORARO GREEN

E730 - LIBERTY GREEN

E088 - LIME GREEN

R90 - KELLY GREEN

R395 - TEAL GREEN

R91 - PRIMARY GREEN

R393 - EMERALD GREEN

R393 - LEAF GREEN

R86 - PEA GREEN

R2008 - STORARO INDIGO

E5058 - FRENCH LILAC

## CREATE NEW GEL

### Add new gel:

Create customized color gels. Once the color gel has been created, it will be possible to choose which of the factory gels to replace; then enter the desired name. The color gel overwritten, will be substituted also in the DMX configuration.

**Note:** each personalized gel will have a submenu with the following entries: Apply, Modify, Remove (if the custom gel will be removed, the factory gel previously overwritten will appear).

## STROBE

### Strobe:

Manually set the strobe DMX channel.

## ZOOM

### Zoom:

This function allows you to set the motorized zoom from minimum to maximum (only in the motorized zoom version).

## DEMO

### Demo:

Performs an increasing and decreasing simulation of the dimmer.

R369 - TAHITIAN BLUE

R347 - BELLADONNA ROSE

R381 - BALDASSARI BLUE

R57 - LAVANDER

R55 - LILAC

R4790 - CALCOLOR 90 MAGENTA

R92 - TURQUISE

R370 - ITALIN BLUE

RED

GREEN

BLUE

CYAN

LIME

AMBER

STORE GEL



## 10.6 Special functions of the fixture

### Storing the DMX signal

To use the fixture without an active DMX console it is possible to store the DMX settings in two ways:

- Through the menu;
- Disconnecting the DMX signal when the fixture is on. When the signal is unconnected the fixtures stores the signal;

### Automatic fan standby

To decrease the noise and the power consumption the cooling fan turns off after 10 minutes of fixture inactivity.

## 10.7 Error messages

If a malfunction occurs, **Otello HD FullSpectrum** 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.

Error code	Description
DATA ERROR	<b>Data error</b> Initial data loading has failed the projector loaded the default data settings: restart the fixture again, and if the error persists contact the <b>Coemar</b> assistance center.
ADDRESS ERROR	<b>Address error</b> The projector does not receive all channels of DMX needs to function properly. Check the DMX address indicated on the display and the number of channels generated by the mixer control. We recall in this connection that some controllers do not generate all the 512 channels.
SENSOR NOT DETECTED	<b>Sensor not detected</b> LED temperature sensor missing or damaged.
SENSOR SHORTED	<b>Sensor shorted</b> Error of the LED's sensor circuit.
FAN NOT ROTATING	<b>Fan not rotating</b> Auto diagnostic routine found that the Fan may be damaged, contact Coemar assistance for the module replacement. <b>IMPORTANT:</b> To ensure the sensor is giving correct readings or that the fan rotates correctly, set the fan to the maximum level.

# 11. Maintenance

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## 11.1 Firmware update

The firmware of **Otello HD FullSpectrum** can be updated through the RDM protocol (ANSI E1.20). Contact Coemar assistance to receive the software and the device updater.

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## 11.2 Periodic cleaning

### Lenses

Even a thin layer of dust can reduce the luminous output and alter the consistency of the beam. Regularly clean all filters and lenses using a soft cotton cloth, dampened with a special 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.

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## 11.3 Periodic controls

### Mechanical components

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.

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## 11.4 Fuses

**Otello HD FullSpectrum** 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 a qualified personnel or just contact your **Coemar** service near you.

Question	Possible solution
<b>Otello HD FullSpectrum</b> does not emit light	<b>Projector not powered on:</b> <ul style="list-style-type: none"><li>• Make sure the power cord is plugged in or test the input voltage;</li></ul> <b>Wrong DMX address:</b> <ul style="list-style-type: none"><li>• Check the DMX Address setting and the output signal of the controller;</li></ul>
<b>Otello HD FullSpectrum</b> is not responding to DMX signal	<b>DMX signal may not reach Otello HD FullSpectrum:</b> <ul style="list-style-type: none"><li>• Inspect the cable connection, correct poor connections or inefficient repair or replace damaged cables;</li><li>• Check DMX address of the unit;</li></ul>

## User notes

This image shows a full page of white paper with horizontal dotted lines. The lines are evenly spaced and run across the width of the page, providing a guide for handwriting practice. There are no margins, text, or other markings on the page.

 	Information on disposal of the equipment
	<p>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.</p>



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**Coemar** reserves the right to change specifications without prior notice