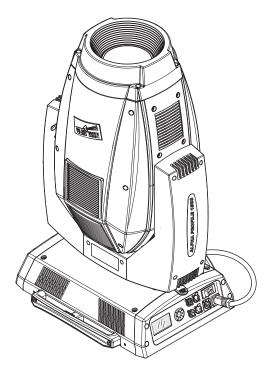


# ALPHA PROFILE 1500 ALPHA PROFILE 1500 ST

C61330 C61331

## **INSTRUCTION MANUAL**



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Congratulations on choosing a Clay Paky product! We thank you for your custom.

Please note that this product, as all the others in the rich Clay Paky range, has been designed and made with total quality to ensure excellent performance and best meet your expectations and requirements.

Carefully read this instruction manual in its entirety and keep it safe for future reference. It is essential to know the information and comply with the instructions given in this manual to ensure the fitting is installed, used and serviced correctly and safely.

CLAY PAKY S.p.A. disclaims all liability for damage to the fitting or to other property or persons deriving from installation, use and maintenance that have not been carried out in conformity with this instruction manual, which must always accompany the fitting.

CLAY PAKY S.p.A. reserves the right to modify the characteristics stated in this instruction manual at any time and without prior notice.

### SAFETY INFORMATION

### SAFETY INFORMATION

IMPORTANT: Clay Paky recommends you carefully read and keep the safety information on this product, also available in digital format at the following link: http://www.claypaky.it/en

Ref: [FIS00Q - Safety Information Alpha 1500]

IT

EN

### **INFORMAZIONI DI SICUREZZA**

IMPORTANTE: Clay Paky raccomanda di leggere accuratamente e conservare le informazioni di sicurezza relative a questo prodotto, sempre reperibili in versione digitale al seguente link: http://www.claypaky.it/en/download Rif: [FIS00Q - Safety Information Alpha 1500]

DE

### **INFORMATIONEN ZUR SICHERHEIT**

WICHTIG: Clay Paky empfiehlt, die Sicherheitsinformationen bezüglich dieses Produkts genau zu lesen und aufzubewahren. Sie sind in Digitalversion immer unter folgendem Link auffindbar: http://www.claypaky.it/en/download Ref: [FIS00Q - Safety Information Alpha 1500]

ES

### **INFORMACIONES DE SEGURIDAD**

IMPORTANTE: Clay Paky recomienda leer detenidamente y conservar la información de seguridad relativa a este producto. Además, está disponible una versión digital de la misma en el siguiente enlace: http://www.claypaky.it/en/download Ref: [FIS00Q - Safety Information Alpha 1500]

FR

### **CONSIGNES DE SÉCURITÉ**

IMPORTANT: Clay Paky recommande de lire attentivement et de conserver les informations de sécurité relatives à ce produit, disponibles en version digitale au lien suivant: http://www.claypaky.it/en/download Réf. : [FIS00Q - Safety Information Alpha 1500]

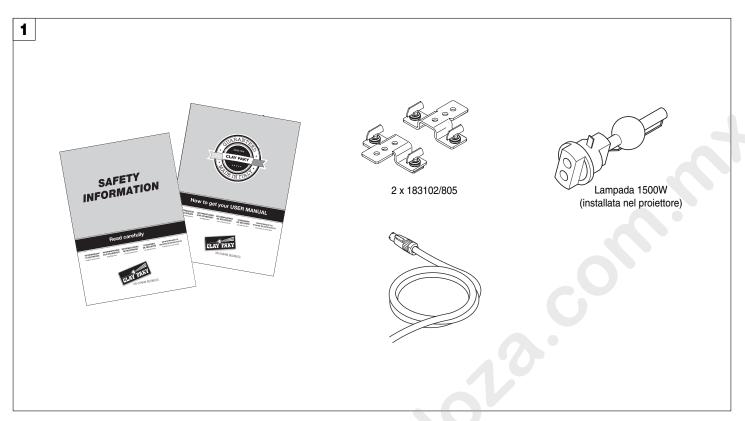
| 1   |   |
|-----|---|
| K I |   |
|     | - |

### ИНСТРУКЦИЮ ПО ТЕХНИКЕ БЕЗОПАСНОСТИ

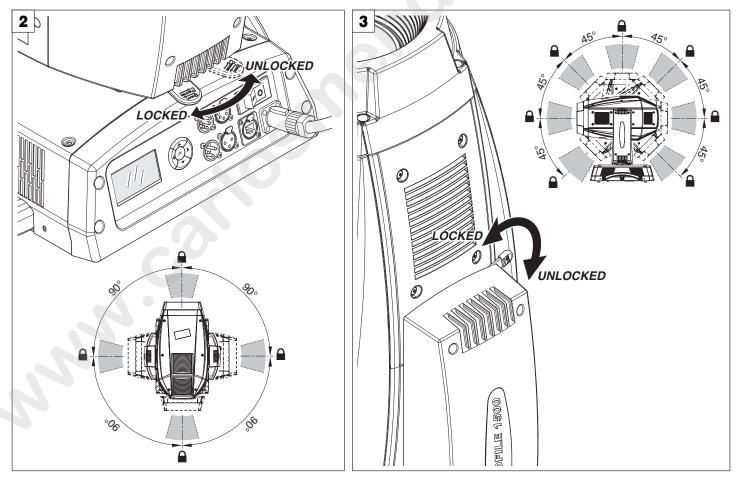
ВАЖНО: Clay Paky рекомендует внимательно прочитать и сохранить инструкцию по технике безопасности данного изделия, которая всегда доступна в электронном формате по следующей ссылке: http://www.claypaky.it/en/download

Наименование: [FIS00Q - Safety Information Alpha 1500]

## **UNPACKING AND PREPARATION**



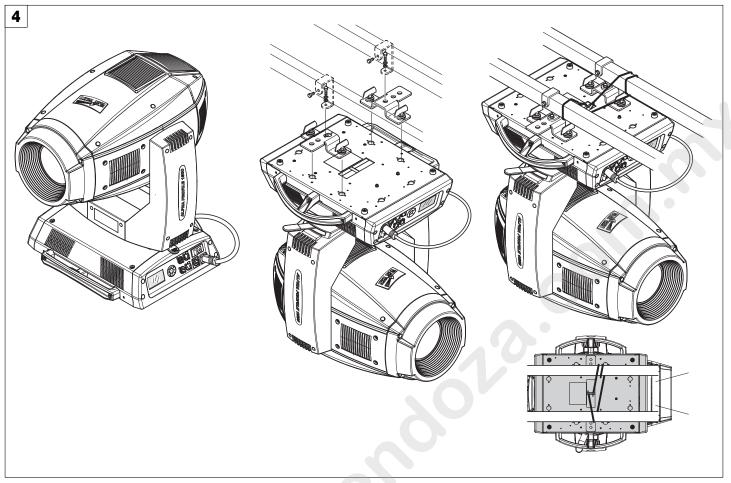
### Packing contents - Fig. 1



PAN Mechanism Lock and Release (every 90°) - Fig. 2

TILT Mechanism Lock and Release (every 45°) - Fig. 3

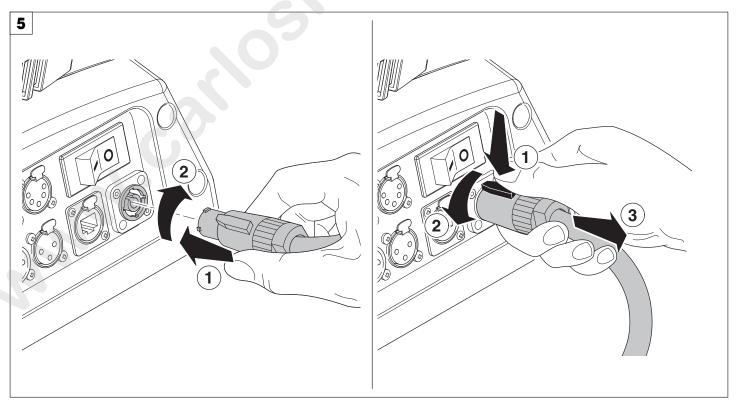
### **INSTALLATION AND START-UP**



Installing the projector - Fig. 4

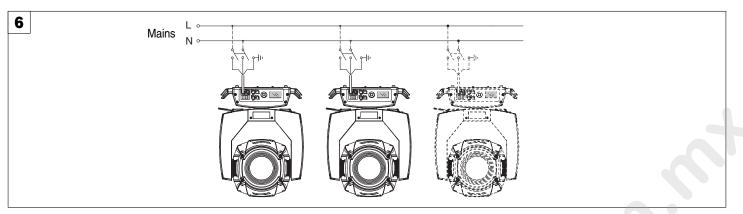
The projector can be installed on the floor resting on special rubber feet, on a truss or on the ceiling or wall.

WARNING: with the exception of when the projector is positioned on the floor, the safety cable must be fitted. (Cod. 105041/003 available on request). This must be securely fixed to the support structure of the projector and then connected to the fixing point at the centre of the base.

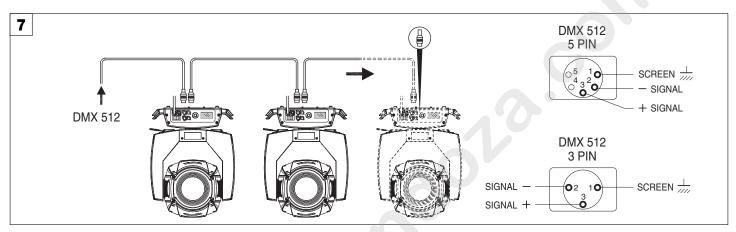


Connecting and disconnecting power cable - Fig. 5

### **CONTROL PANEL**

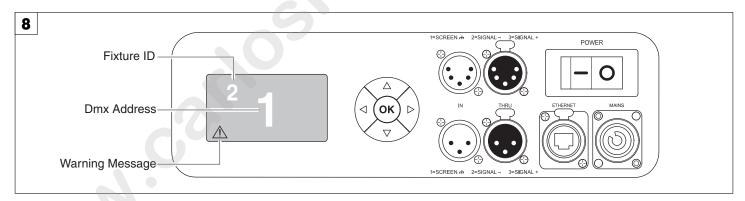


Connecting to the mains supply - Fig. 6



### Connecting to the control signal line (DMX) - Fig. 7

Use a cable conforming to specifications EIA RS-485: 2-pole twisted, shielded, 1200hm characteristic impedance, 22-24 AWG, low capacity. Do not use microphone cable or other cable with characteristics differing from those specified. The end connections must be made using XLR type 3 or 5-pin male/female connectors. A terminating plug must be inserted into the last projector with a resistance of 1200hm (minimum 1/4 W) between terminals 2 and 3. **IMPORTANT:** The wires must not make contact with each other or with the metal casing of the connectors. The casing itself must be connected to the shield braid and to pin 1 of the connectors.

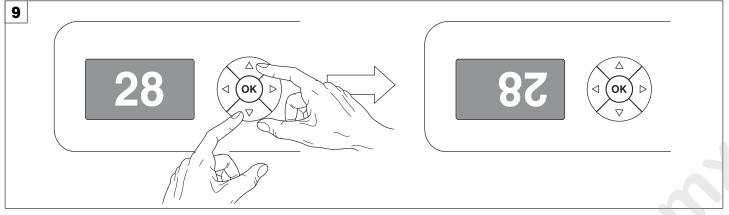


#### Switching on the projector - Fig. 8

Press the switch. The projector starts resetting the effects. At the same time, the following information scrolls on the display:



On conclusion of resetting in case of absence of dmx signal, Pan and Tilt move to the "Home" position (Pan 128 bit - Tilt 128 bit). The control panel (Fig. 8) has a display and buttons for the complete programming and management of the projector menu. The display can be in one of two conditions: rest status and setting status. When it is in the rest status, the display shows the projector's DMX address and the Fixture ID address (if set). During menu setting status, after a wait time (about 30 seconds) without any key having been pressed, the display automatically returns to rest status. It should be noted than when this condition occurs, any possible value that has been modified but not yet confirmed with the (R) key will be cancelled.



### Reversal of the display - Fig. 9

To activate this function, press UP 
and DOWN 
keys simultaneously while the display is in the rest mode. This status will be memorised and maintained even for the next time it will be switched on. To return to the initial state, repeat the operation all over again.

### Setting the projector starting address

On each projector, the starting address must be set for the control signal (addresses from 1 to 512).

The address can also be set with the projector switched off.

#### Setting the projector Fixture ID

On each projector, the Fixture ID address must be set for an easy identification of the fixtures in an installation (ID from 1 to 255). The Fixture ID address can be set with the projector switched off.

### Functions of the buttons - Using the menu

|    | (OK)  | Confirms the displayed value, or activates the displayed function, or enters the successive menu. |
|----|-------|---|
|    | DOWN  | Decreases the value displayed (with auto-repetitions) or passes to the next item in the menu.     |
|    | UP    | Increases the value displayed (with auto-repetitions) or passes to the previous item in a menu.   |
|    | LEFT  | Return to the top level   |
| 20 | RIGHT | Commute from units, tens, hundreds, in the "Address", "Fixture ID" and "Calibration" menù.        |

### USING THE MENU:

1) Press 🛞 once – "Main Menu" appears on the display.

- 2) Use the UP (and DOWN (keys to select the menu to be used:
- Setup (Setup Menu): To set the setting options.
- Option (Option Menu): To set the operating options.
- Informations (Informations Menu): To read the counters, software version and other information.
- Manual Control (Manual control Menu): To trigger the test and manual control functions.
- Test (Test Menu): To check the proper functionning of effects.

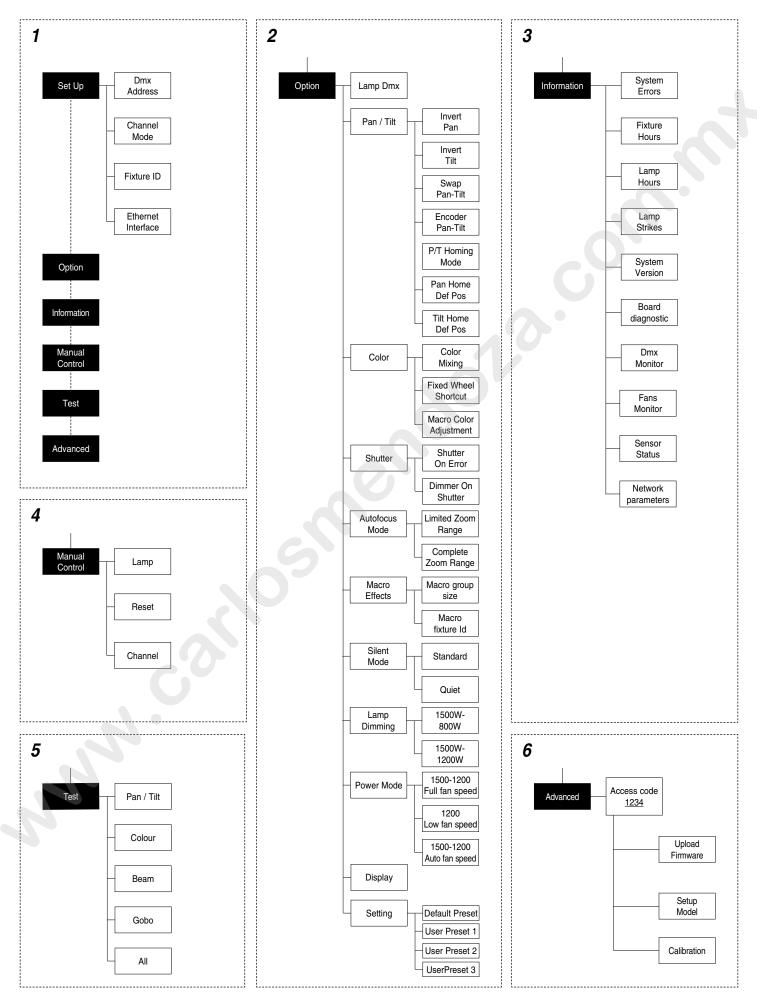
• Advanced (Advanced Menu): Access to the "Advanced menu" is recommended for a trained technical personnel.

- 3) Press is to display the first item in the selected menu.
- 4) Use the UP (and DOWN (keys to select the MENU items.

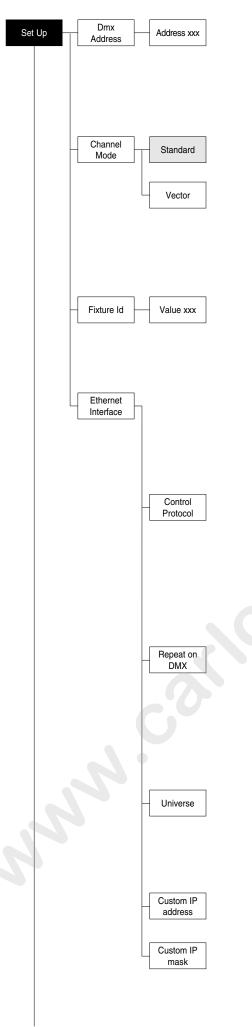
#### Setting addresses and options with the projector disconnected

The projector's DMX address, as well as other possible operating options, can also be set when the appliance is disconnected from the electricity supply. All that is needed is to press (b) to momentarily activate the display and thus access the settings. Once the required operations have been carried out, the display will switch off again after a wait time of 30 seconds.

### **MENU SETTING**



### NOTE: On grey the default options



### SET UP MENU

### DMX ADDRESS

**NOTE: without the DMX signal the Address (XXX) flashing** Allows you to select the DMX ADDRESS

1) Press ( - the current DMX Adress appear on the display.

- 2) Use the UP (a), DOWN (c), RIGHT (b) keys to plan the DMX Address.
- 3) Press (k) to confirm the selection or LEFT (1) to keep current settings.

### CHANNEL MODE

Allows you to select a channel arrangement from the two available.

- 1) Press 🐼 the current settings appear on the display (Standard or Vector).
- - Standard
  - Vector
- 3) Press (k) to confirm the selection or LEFT (1) to keep current settings.

#### **FIXTURE ID**

Allows you to select the FIXTURE ID

- 1) Press 🐼 the current Fixture ID appear on the display.
- 2) Use the UP ( , DOWN , RIGHT ) keys to plan the Fixture ID.
- 3) Press (iv) to confirm the selection or LEFT ( to keep current settings.

#### ETHERNET INTERFACE

It lets you set the Ethernet settings to be attributed to the projector.

- 1) Premere 🐼.
- Use the UP 

   and DOWN 
   keys to select the "Ethernet Interface" options to set:

#### **Control Protocol**

It lets you select the "Control Protocol" Art-net to assign according to the control unit used:

- 1) Press is the current setting appears on the display.
- - Art-net on IP 2
  - Art-net on IP 10

3) Press 🛞 to confirm the selection or LEFT 🕥 to keep the current setting.

#### Repeat on DMX

It lets you enable the transmission of the Ethernet protocol by DMX signal to all the connected projectors.

1) Press ( the current setting appears on the display.

- 2) Use the UP (and DOWN () keys to select one of the following settings:
  - **Disabled:** DMX transmission disabled.
  - Enabled on primary: DMX transmission enabled.
- 3) Press ( to confirm the selection or LEFT ( to keep the current setting.

#### Universe

It lets you assign the "Universe" number to be assigned to a series of projectors.

1) Press – the current Universe address appears on the display.

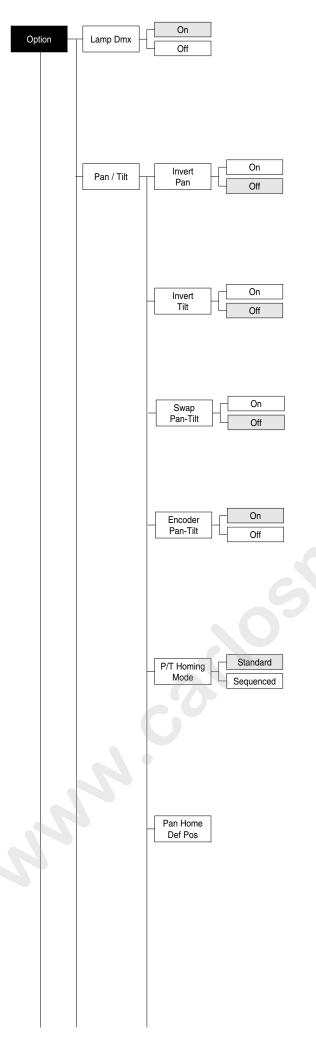
2) Use the UP , DOWN , RIGHT keys to set the Universe address.
3) Press of to confirm the selection or LEFT to keep the current setting.

#### **Custom IP address**

Allows you to set the IP address manually by the user default.

#### Custom IP mask

Allows you to set manually the Subnet Mask by the user default.



### **OPTIONS MENU**

### LAMP DMX

Used for enabling lamp remote control channel.

- 1) Press 🐵 the current settings appear on the display (On or Off).
- Use the UP and DOWN keys to enable (On) or disable (Off) the lamp remote control channel.
- 3) Press 🛞 to confirm the selection or LEFT 🕥 to keep current settings.

### PAN / TILT

### Invert pan

Used for reversing Pan movement.

- 1) Press 🐵 the current settings appear on the display (On or Off).
- Use the UP and DOWN keys to enable (On) or disable (Off) PAN inversion.
- 3) Press (K) to confirm the selection or LEFT (1) to keep current settings.

### Invert tilt

Used for reversing tilt movement.

- 1) Press 🐵 the current settings appear on the display (On or Off).
- Use the UP → and DOWN → keys to enable (On) or disable (Off) Tilt inversion.
- 3) Press 🛞 to confirm the selection or LEFT 🕥 to keep current settings.

### Swap Pan-Tilt

Used for swapping Pan and Tilt channels (as well as Pan fine and Tilt fine). 1) Press () - the current settings appear on the display (On or Off).

- Use the UP → and DOWN → keys to enable (On) or disable (Off) Pan and Tilt channel swap.
- 3) Press (K) to confirm the selection or LEFT (1) tto keep current settings.

### **Encoder Pan-Tilt**

Used for enabling the Pan / Tilt encoders.

- 1) Press ( the current settings appear on the display (On or Off).
- Use the UP → and DOWN → keys to enable (On) or disable (Off) Pan / Tilt encoders.

#### P/T Homing Mode

Lets you set the initial projector Reset mode.

- 1) Press (1), the current setting appears on the display.
- Use the UP and DOWN keys to select one of the following settings:

Standard: Pan & Tilt are simultaneously reset.

Sequenced: Tilt is reset first followed by Pan.

Press ( to confirm the selection or LEFT ( to keep the current setting.

### Pan Home Def Pos

Lets you assign the Pan channel "home" position at the end of Reset, without a DMX input signal.

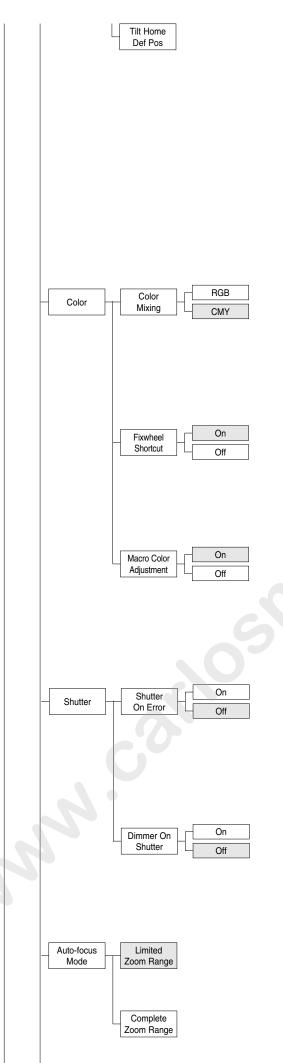
- 1) Press (6), the current setting appears on the display.
- Use the UP and DOWN keys to select one of the following settings:

0 degree

90 degrees

### 180 degrees

- 270 degrees (default)
- 3) Press 🛞 to confirm the selection or LEFT 🕥 to keep the current setting.



### Tilt Home Def Pos

Lets you assign the Tilt channel "home" position at the end of Reset, without a DMX input signal.

- 1) Press M, the current setting appears on the display.
- Use the UP and DOWN keys to select one of the following settings:
  - 0%
  - 12.5% 25%
  - 50% (default)
  - 75%
- 87.5%
- 100%
- 3) Press 🛞 to confirm the selection or LEFT 🕥 to keep the current setting.

#### COLOR Color mixing

Used for reversing the CMY color mixing system.

- 1) Press ( the current settings appear on the display (On or Off).
- 2) Use the UP (and DOWN (keys select one of the following settings: RGB color mixing mode
- CMY color mixing mode
  3) Press (1) to keep current settings.

### Fixed wheel short-cut

Used for optimizing color change time so that the disc turns in the direction that requires shorter movement.

- 1) Press or the current settings appear on the display (On or Off).
- 2) Use the UP ( ) and DOWN ( ) keys to enable (On) or disable (Off) color change optimization.
- 3) Press 🛞 to confirm the selection, or LEFT 🕥 to keep current settings.

### Macro color adjustment

It lets you enable the overwriting of a "Macro Colour" with the Cyan, Magenta, Yellow, CTO and Colour wheel channels.

Press is the current setting appears on the display.

- 1) Use the UP ( and DOWN ( keys to enable (On) or disable (Off) the overwriting.
- 2) Press is to confirm the selection or LEFT () to keep the current setting.

#### SHUTTER Shutter on error

Used for automatically closing the stop/strobe in the event of Pan/Tilt position error.

- 1) Press 🛞 the current settings appear on the display (On or Off).
- Use the UP → and DOWN → keys to enable (On) or disable (Off) automatic stop/strobe closing in the event of Pan/Tilt position error.
- 3) Press  $\textcircled{\otimes}$  to confirm the selection, or LEFT ( ) to keep current settings.

### **Dimmer on Shutter**

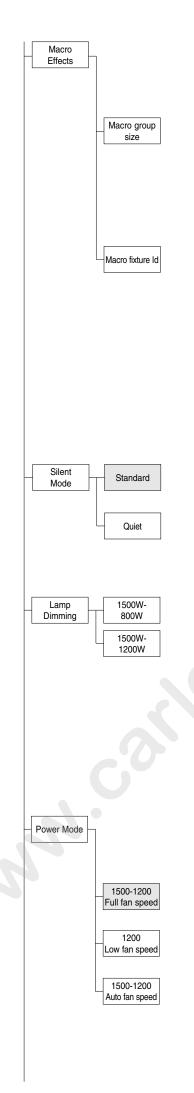
Enables automatic closing of the dimmer when the strobe is completely closed.

- 1) Press  $\bigotimes$  the current settings appear on the display (On or Off).
- Use the UP → and DOWN → keys to enable (On) or disable (Off) the automatic closing of the dimmer.
- 3) Press to confirm the selection or LEFT ( ) to keep current settings.

### AUTO-FOCUS MODE

- It lets you select the "Auto-focus Mode" from the two available.
- 1) Press the current setting appears on the display.
- Use the UP 

   and DOWN 
   keys to select one of the following settings:
   Limited Zoom Range: The "Autofocus" works only in the optical run that was specifically designed for the projector in question.
   Complete Zoom Range: The "Autofocus" also works in overrun
- 3) Press ( to confirm the selection or LEFT ( to keep the current setting.



### MACRO EFFECTS

It lets you select the "Macro Effects" from the two available.

1) Press 🛞 the current setting appears on the display.

2) Use the UP (and DOWN () keys to select one of the following settings:

### Macro group size

It lets you set the number of projectors to be included in the macro mode operation.

1) Press 🕅

- Use the UP 

   , DOWN 
   , RIGHT keys to set the number of projectors to be included in the "Macro Effect" operation.
- 3) Press ( to confirm the selection or LEFT ( to keep the current setting.

### Macro fixture Id

It lets you attribute an ID address to the projector for the phase displacement for the scene's starting time in Macro mode.

- 1)Press 🞯
- Use the UP → and DOWN → keys to select one of the following settings: Fixed to X. (to assign to all the projectors to be included in the Macro operation).

Auto by DMX Address: According to the DMX address, it automatically detects the starting sequence of the scene in the Macro mode (to assign to all the projectors to be included in the Macro operation).

3) Press 🛞 to confirm the selection or LEFT 🕥 to keep the current setting.

### SILENT MODE

It lets you select the "Silent Mode" from the two available.

- 1) Press 🛞 the current setting appears on the display.
- Use the UP 

   and DOWN → keys to select one of the following settings:

   Standard: Maximum speed and consequently maximum effects noise level.
   Quiet: reduces the speed of some effects, thereby reducing their noise level.
- 3) Press 🛞 to confirm the selection or LEFT 🕢 to keep the current setting.

### LAMP DIMMING

This lets you select the lamp "dimmer" mode, selecting one of the two available modes:

- 1500W-800W: Default settings, the lamp electronically "dims" from 1500W to 800W and mechanically dims from 800W to 0. Visually, the Dimmer curve is high performance but a slight flicker is noted in some dimming positions.
- 1500W-1200W: The lamp electronically "dims" from 1500W to 1200W and mechanically dims from 1200W to 0. No lamp flicker is visible when this option is selected. The "dimmer" blades are subject to higher thermal stress. Thus, more frequent "dimmer" blade maintenance may be required.

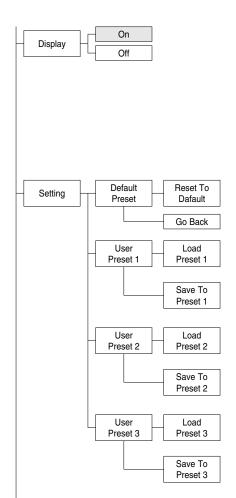
### POWER MODE

Allows you to select a Power Mode from the three available.

- 1) Press the current settings appear on the display.
- Use the UP (▲) and DOWN ( →) keys to select one of the following settings:
   -1500-1200W Full fan speed: Lamp can change from full-power (1500W) to half-power (1200W) using the LAMP CONTROL channel. Fans always work at Full speed
  - -1200W Low fan speed: Lamp constantly works in half-power mode (1200W) while the Fan always works at Low speed. With LAMP CONTROL channel you can only switch the lamp ON and OFF.

-1500-1200W Auto fan speed: Lamp can change from full-power (1500W) to half-power (1200W) using the LAMP CONTROL channel. Automatically the fans switch from Full speed to Low speed respectively.

3) Press ( to confirm the selection or LEFT ( to keep current setting.



### DISPLAY

Used for automatically reduce brightness on the display after about 30 seconds in idle.

- 1) Press 🔿 the current settings appear on the display (On or Off).
- Use the UP and DOWN keys to enable (On) or disable (Off) the decreasing of display brightness.
- 3) Press 🛞 to confirm the selection or LEFT 🜒 to keep current settings.

### SETTING

Used to save 3 different settings of the items in the options menu and relative submenus.

- 1) Press 🐵 "Default preset" appears on the display.
- 2) Use the UP ( ) and DOWN ( ) keys to select one of the following configurations:
  - Default preset (\*)
  - User preset 1
  - User preset 2
  - User Preset 3

3) Press 🛞 - "Load preset X" appears on the display.

- 4) Use the UP ( and DOWN ( keys to select:
  - Load preset X to recall a previously stored configuration.Save to preset X to store the current configuration.
  - a confirmation message (Are you sure?) appears on the display.
- 5) Select YES to confirm the selection or NO to keep the current setting and return to the next higher level.

### (\*) DEFAULT PRESET

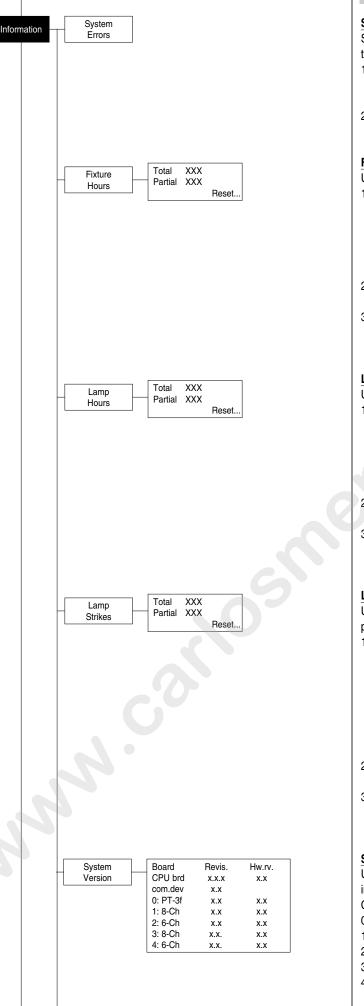
By pressing the RIGHT () key and the LEFT () key simultaneously once entered in the "main menu" it is possible to quickly (short cut) reset the default settings (DEFAULT PRESET).

Used for restoring default values on all options menu items and relevant submenus.

1) Press ∞, a confirmation message (Are you sure?) appears on the display.

2) Select YES to confirm the selction or NO to keep current setting.

| ,                      | •                         |
|------------------------|---------------------------|
| OPTION                 | DEFAULT                   |
| Lamp DMX               | On                        |
| Invert Pan             | Off                       |
| Invert Tilt            | Off                       |
| Swap Pan-Tilt          | Off                       |
| Encoder Pan-Tilt       | On                        |
| P/T Homing Mode        | Standard                  |
| Pan Home Def Pos       | 270 degrees               |
| Tilt Home Def Pos      | 50%                       |
| Colour mixing          | CMY                       |
| Fixed Wheel Shortcut   | On                        |
| Macro Color Adjustment | On                        |
| Shutter on error       | Off                       |
| Dimmer on Shutter      | Off                       |
| Auto-focus mode        | Limited zoom range        |
| Silent mode            | Standard                  |
| Power mode             | 1500-1200w full fan speed |
| Display                | On                        |
|                        |                           |



### **INFORMATION MENU**

### SYSTEM ERRORS

Shows a list of warnings and messages relevant to errors occurred since the fixtures switching-on.

- Pressing ( you are allowed to reset the SYSTEM ERRORS list. A confirmation message (Are you sure you want to clear error list ?) appears on the display.
- 2) Select YES to reset the list or NO to go back.

### FIXTURE HOURS

Used for displaying projector operating hours (total and partial).

1) Press 🐵 - Hours total and partial appears on the display.

## Total counter

Counts the number of projector working life hours (from manufacture to date). Partial counter

Counts the number of partial projector working life hours since the last reset to date.

- 2) Press (k) to reset partial projector working hours a confirmation message (Are you sure?) appears on the display.
- 3) Select YES to reset partial projectors counter or NO to keep the current setting and return to the top menu level.

### LAMP HOURS

Used for displaying the lamp working hours (total and partial).

1) Press 🐵 - Hours total and partial appears on the display.

### Total counter

Counts the number of projector working hours with the lamp on (from manufacture to date).

### Partial counter

Counts the number of lamp working hours since the last reset to date.

- 2) Press (K) to reset partial lamp working hours, a confirmation message (Are you sure ?) appears on the display.
- 3) Select YES to reset partial counter or NO to keep the current setting and return to the top menu level

### LAMP STRIKES

Used for displaying the number of times the lamp was turned on (total and partial).

1) Press 🐵 - the number of times the lamp was turned on (total and partial) appears on the display.

### Total counter

Counts the number of times the lamp was turned on (from manufacture to date).

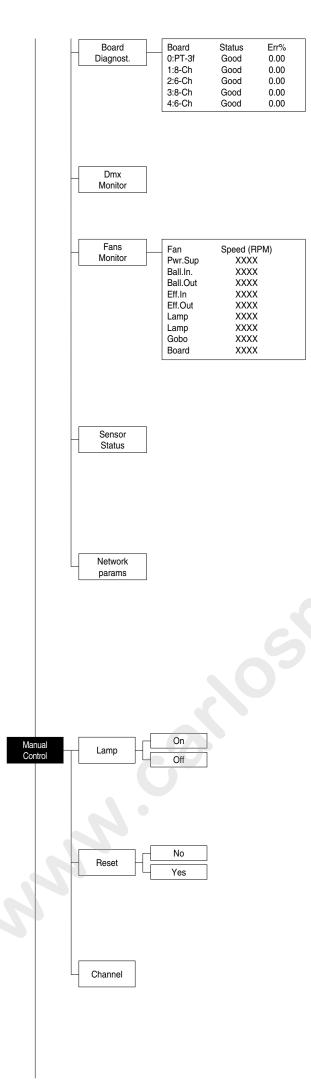
### Partial counter

Counts the number of times the lamp was turned on since the last reset to date.

- 2) Press (K) to reset partial lamp strikes hours, a confirmation message (Are you sure ?) appears on the display.
- 3) Select YES to reset partial counter or NO to keep the current setting and return to the top menu level

### SISTEM VERSION

Used for displaying the software and hardware version of each board installed in the projector. CPU brd (CPU board) 0: PT-3f (Pan / Tilt board) 1: 8-Ch (8 channel board) 2: 6-Ch (6 channel board) 3: 8-Ch (8 channel board) 4: 6-Ch (6 channel board)



### BOARD DIAGNOSTIC

Used for displaying the status error of each board installed in the projector: 0: PT-3f (Pan / Tilt board)

- 1: 8-Ch (8 channel board)
- 2: 6-Ch (6 channel board)
- 3: 8-Ch (8 channel board)
- 4: 6-Ch (6 channel board)

### DMX MONITOR

Used for displaying the projector DMX channel level in bit (Val) and in percentage (Perc).

### FANS MONITOR

Used for displaying the speed of each fan installed in the projector: Pwr.Sup (Power supply Fan) Ball. IN (Ballast IN Fan) Ball. Out (Ballast OUT Fan) Eff.OUT (Effects IN Fan) Eff.OUT (Effects OUT Fan) Lamp (Lamp Fan) Gobo (Gobo Fan) Board (Yoke Board Fan)

### SENSOR STATUS

It lets you check the correct operations of each "sensor" installed in the projector, each channel is associated with one of the following three parameters:

- n.a.= sensor not available
- ON= sensor working
- OFF= sensor defective

### NETWORK PARAMS

Allows the "Network" parameters of the projector to be displayed or: IP address: Internet Protocol address (two projectors must not have the

same IP address)

IP mask: 255.0.0.0

Mac address: Media Access Control: the projector's Ethernet Address.

### MANUAL CONTROL

#### LAMP

- Used for turning lamp on and off from the projector control panel.
- 1) Press 🐼 the current settings appear on the display (On or Off).
- 2) Use the UP (and DOWN (keys to turn the lamp on (On) or off (Off)
- 3) Press ( to confirm the selection or LEFT ( to keep current settings and return to the top level.

#### RESET

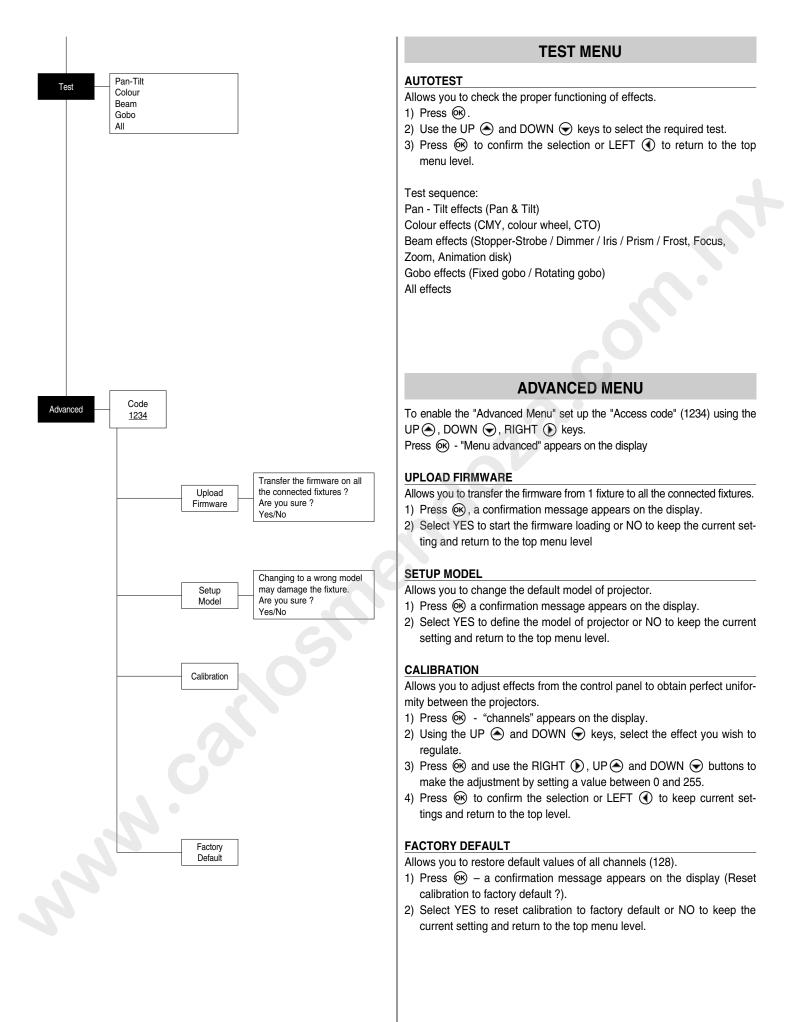
Used for resetting the projector.

- Press is to reset the projectors, a confirmation message (Are you sure ?) appears on the display.
- Select YES to starting reset the fixture or NO to keep the current setting and return to the top menu level.

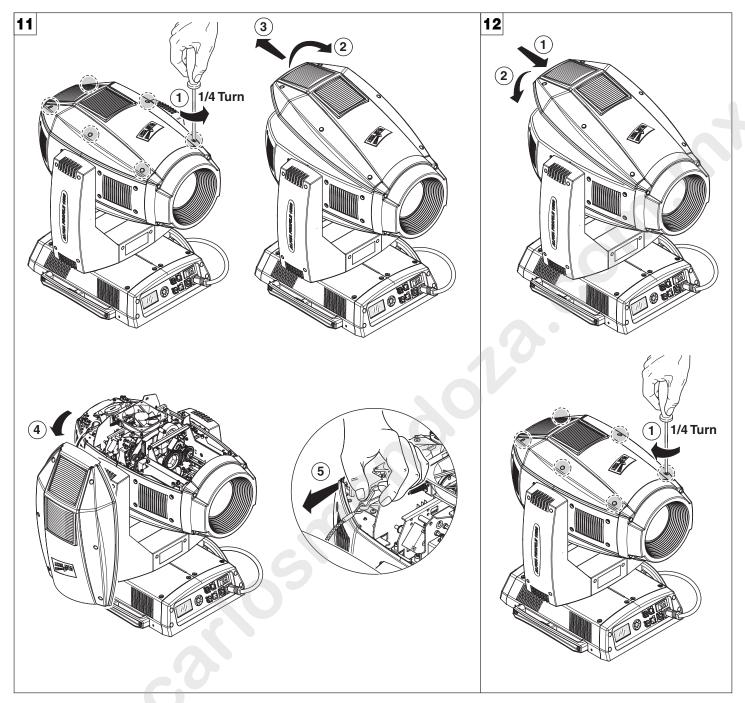
### CHANNEL

Used for setting channel levels from the projector control panel.

- 1) Press 🛞 the first channel appears on the display.
- 2) Use the UP  $\bigcirc$  and DOWN  $\bigcirc$  keys to select the required channel:
- 3) Press ∞ and use the UP and DOWN keys to select the required DMX level (value between 0 and 255).
- 4) Press LEFT ( to return to the top menu level.

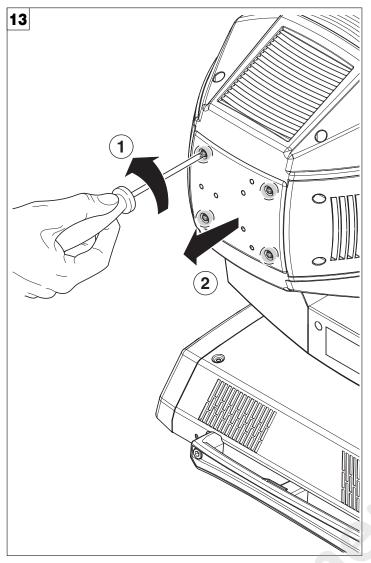


## MAINTENANCE

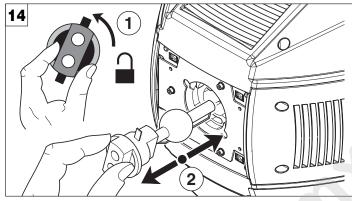


Locking and releasing Pan and Tilt movements - Refer to the instructions in the UNPACKING AND PREPARATION section. Opening the head covers - Fig. 11.

Closing the head covers - Fig. 12.

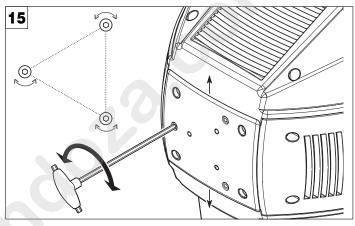


Opening and closing lamp compartment - Fig. 13



### Lamp change - Fig 14

Take the new lamp out of its package and insert in the fitting. WARNING: do not touch the lamp's envelope with bare hands. Should this happen, clean the bulb with a cloth soaked in alcohol and dry it with a clean, dry cloth.

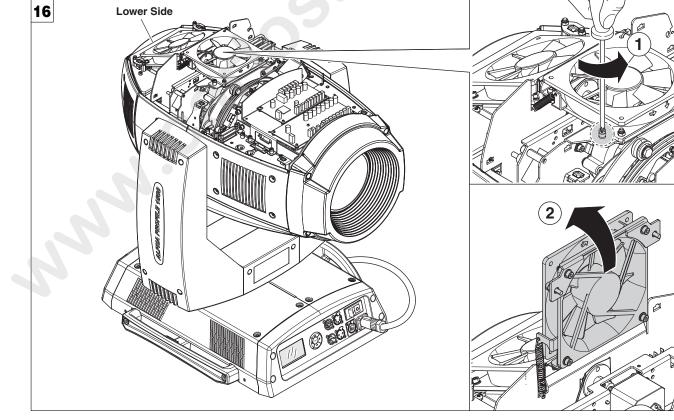


## Lamp regulation - Fig. 15

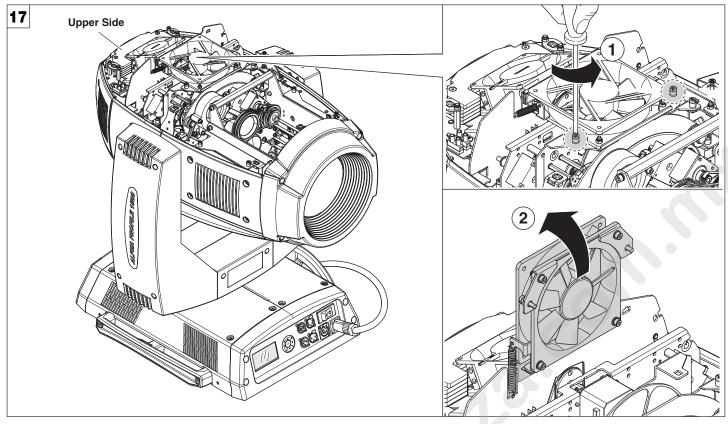
## To centre the lamp, turn the three adjusting screws as shown in the figure.

### CAUTION:

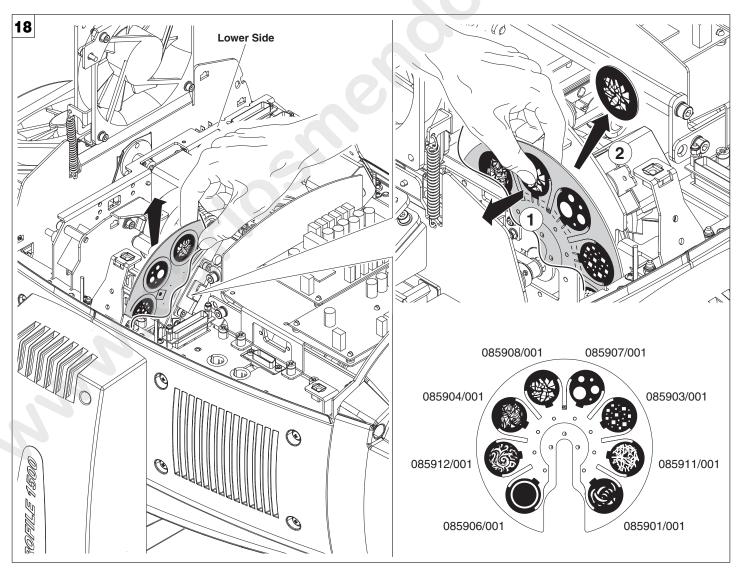
Fast lamp ON-OFF cycles (for example 10 minutes ON / 10 minutes OFF) will reduce the lamp life.



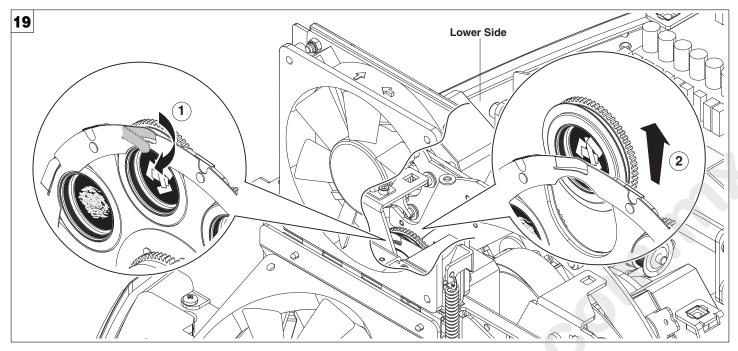
Fan support plate opening and closing (Lower side) - Fig. 16



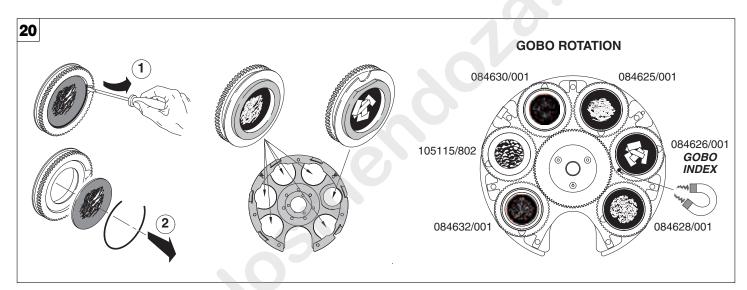
Fan support plate opening and closing (Upper side) - Fig. 17



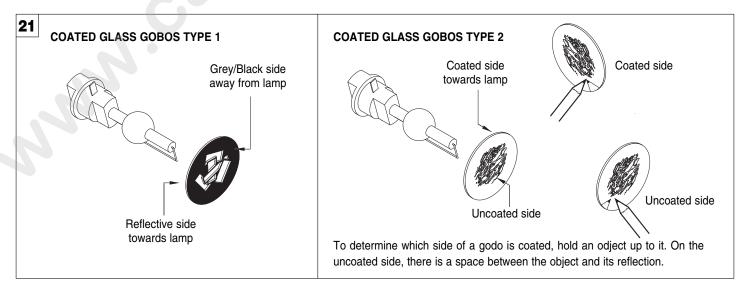
**Replacing fixed gobos (ø 31.5 mm - max 25 mm image - thickness max 1 mm) -** Fig. 18 **IMPORTANT: Please contact CLAY PAKY before using customized gobos.** 



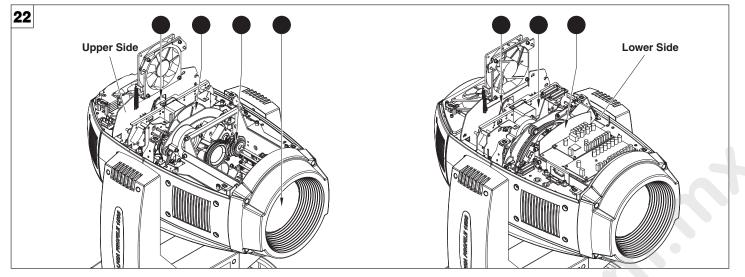
Bearing group replacement - Fig. 19



Replacing rotating gobos (ø 37.5 mm - max 25 mm image – thickness 1 mm) - Fig. 20 IMPORTANT: Please contact CLAY PAKY before using customized gobos. IMPORTANT: Use only glass gobos on the rotating gobos wheels.



**Gobo orientation** - Fig. 21 The pictures shown the correct gobos orientation.

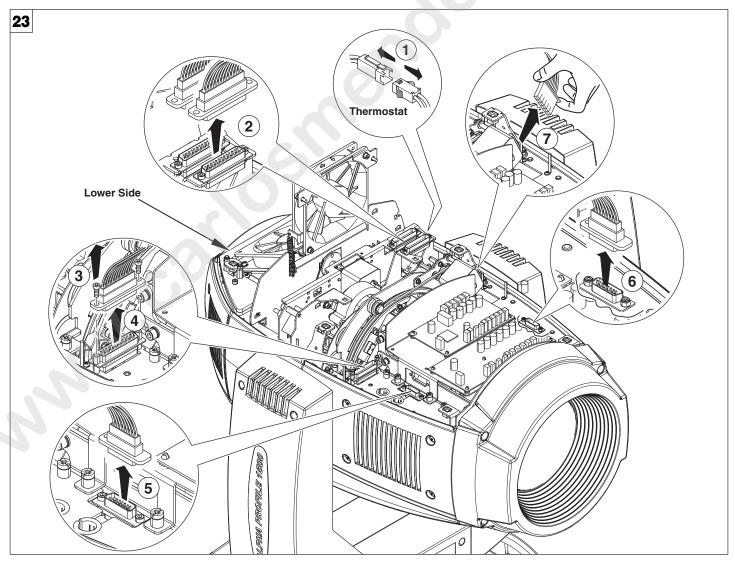


### Periodical cleaning - Fig. 22

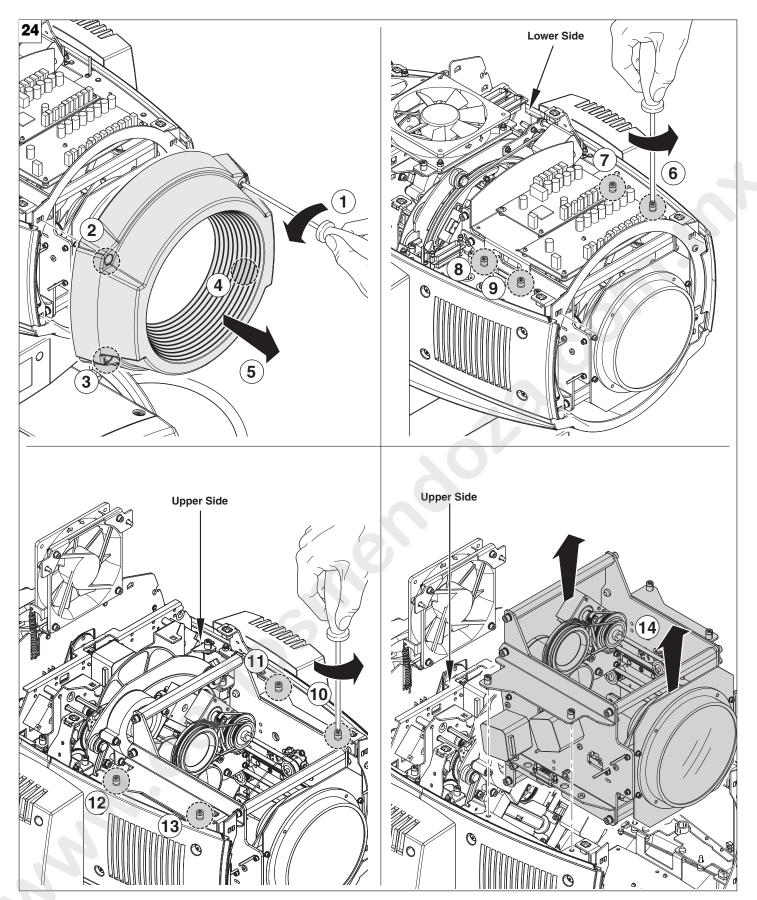
To ensure optimal operation and performance for a long time it is essential to periodically clean the parts subject to dust and grease deposits. The frequency with which the following operations are to be carried out depends on various factors, such as the amount of the effects and the quality of the working environment (air humidity, presence of dust, salinity, etc.).

Use a soft cloth dampened with any detergent liquid for cleaning glass to remove the dirt from the reflectors, from the lenses and filters. It is recommended that the projector undergoes an annual service by a qualified technician for special maintenance involving at least the following operations:

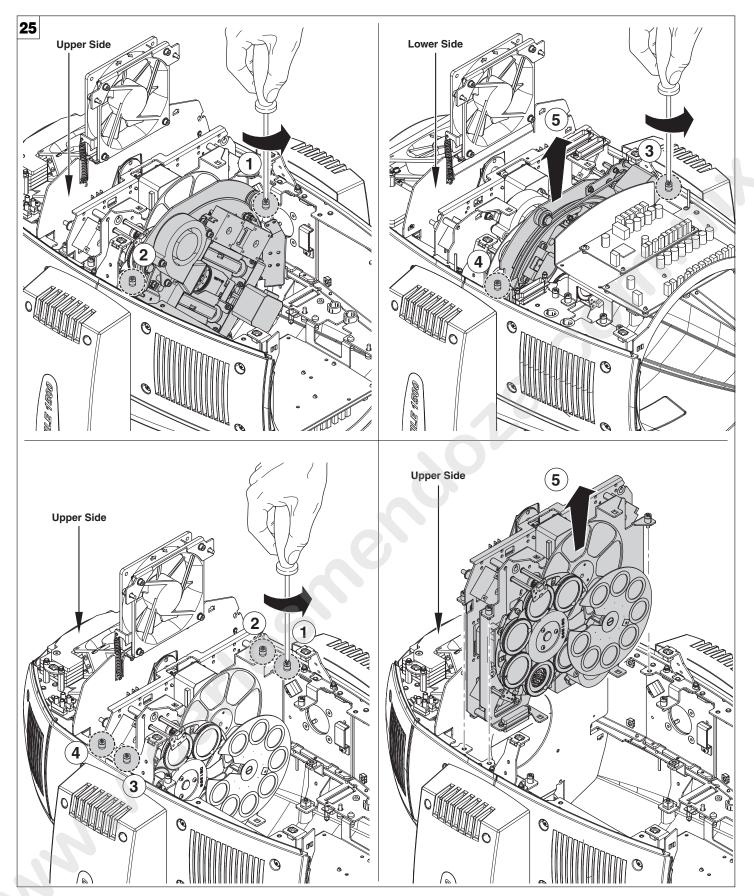
- General cleaning of internal parts.
- Restoring lubrication of all parts subject to friction, using lubricants specifically supplied by Clay Paky.
- General visual check of the internal components, cabling, mechanical parts, etc.
- Electrical, photometric and functional checks; eventual repairs.



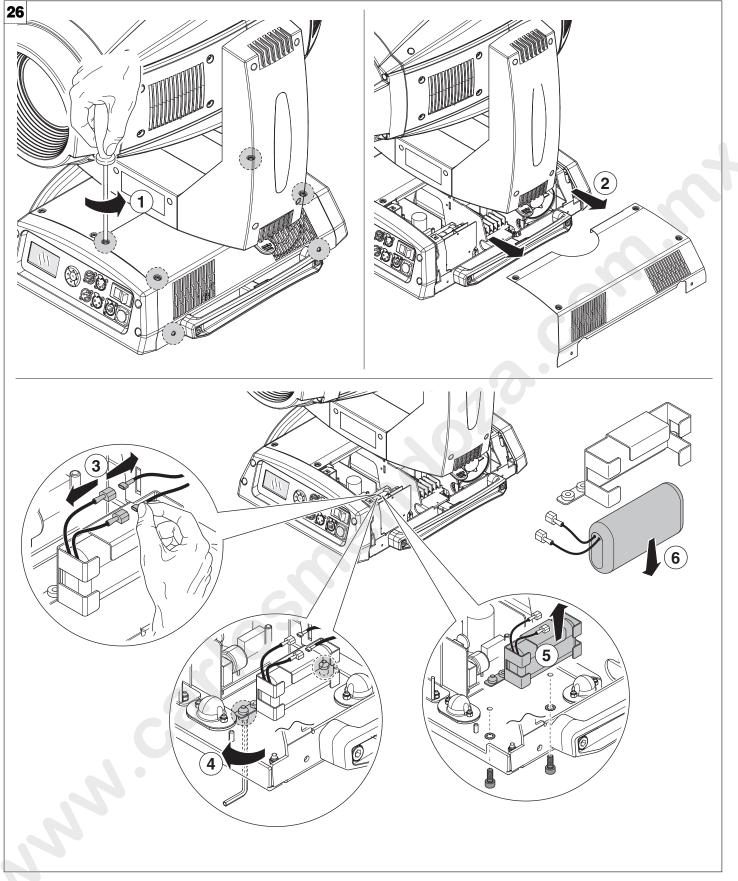
Extraction of the effect modules: Preliminary operations - Fig. 23



Extraction of the effect modules - Fig. 24 IMPORTANT: Grasp the modules using the support structure and not the details which could get damaged. Insertion of the effect modules: Repeat the operations indicated in Fig. 24 and 25 in reverse order



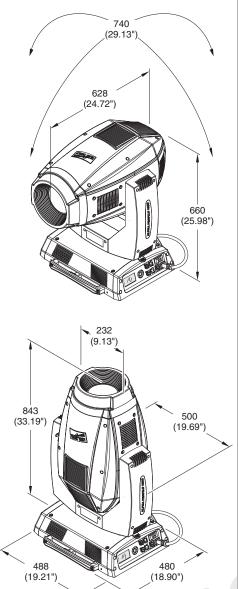
Extraction of the effect modules - Fig 25 IMPORTANT: Grasp the modules using the support structure and not the details which could get damaged. Insertion of the effect modules: Repeat the operations indicated in Fig. 24 and 25 in reverse order



### Battery removal - Fig. 26



This product contains a rechargeable lithium iron tetraphosphate battery. To preserve the environment, please dispose the battery at the end of its life according to the regulation in force.



Power supplies available 200-240V 50/60Hz

Input power 2000VA a 230V 50Hz.

Total output Profile 1500: Max 27000 lumens. Profile 1500 ST: 24400 lumens.

#### Lamp

- Discharge lamp. Type HTI 1500W/60/P50-L Lok-it Osram (L10102)
- Cap PGJ50
- Colour temperature 6000 K
- Luminous flux 135000 lm
- Average life 750 h
- Any working position

#### Motors

31 stepper motors, operating with microsteps, totally microprocessor controlled.

#### **Optical unit**

Elliptic reflector with high luminous efficiency

#### Channels

Max 41 control channels.

### Inputs

- DMX 512
- Ethernet

### Movable body

- Movement by means of two stepper motors, controlled by microprocessor.
- Automatic repositioning of PAN and TILT after accidental movement not controlled by control unit.
- Travel:
- PAN = 540°
- TILT = 252°
- Maximum speeds:
- PAN = 4.0 sec (360°)
- TILT = 3.2 sec (252°)
- Resolution:
- PAN = 2.11°
- PAN FINE = 0.008°
- TILT = 0.98°
- TILT FINE =  $0.004^{\circ}$

### **CAUSE AND SOLUTION OF PROBLEMS**

|           | τн | THE PROJECTOR WILL NOT SWITCH ON                                      |     |                              |                                       |          |  |
|-----------|----|---|-----|------------------------------|---------------------------------------|----------|--|
|           |    | EL  | ECT | RONICS NON-OPERATIONAL       |                                       |          |  |
|           |    |   | DE  | FECTIVE PROJECTION           |                                       | PROBLEMS |  |
|           |    |   |     | REDUCED LUMINOSITY           |                                       |          |  |
|           |    |   |     | POSSIBLE CAUSES              | CHECKS AND REMEDIE                    | ES       |  |
| •         |    |   |     | No mains supply.             | Check the power supply voltage.       |          |  |
| $\bullet$ |    |   |     | Lamp exhausted or defective. | Replace the lamp. (See instructions). |          |  |
|           | •  | Signal transmission cable faulty or disconnected. Replace the cables. |     |                              |                                       |          |  |
|           | •  | Incorrect addressing. Check addresses (see instructions).             |     |                              |                                       |          |  |
|           | •  | Fault in the electronic circuits. Call an authorised technician.      |     |                              |                                       |          |  |
|           |    | Lenses or reflector broken     Call an authorised technician.         |     |                              |                                       |          |  |
|           |    | Dust or grease deposited.     Clean (see instructions).               |     |                              |                                       |          |  |

### IP20 protection rating

**TECHNICAL INFORMATION** 

- Protected against the entry of solid bodies larger than 12mm (0.47").
- No protection against the entry of liquids.

#### Safety Devices

- Bipolar circuit breaker with thermal protection.
- Automatic break in power supply in case of overheating or failed operation of cooling system.

#### Cooling

Forced ventilation with axial fans.

#### Body

- Aluminium structure with die-cast plastic cover.
- Two side handles for transportation.
- Device locking PAN and TILT mechanisms for transportation and maintenance.

#### Working position

Functioning in any position.

#### Weights

50.35 Kg (110lbs, 12ozs).

## **CHANNEL FUNCTION**

## **ALPHA PROFILE 1500**

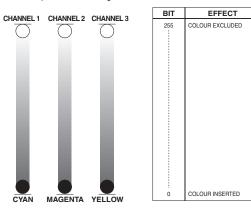
NB: To prevent accidental breakage of the effects, which could collide with each other during transport, before switching the projector OFF check that all the projector Channels have been excluded (DMX level = 0 bit).

|         | CHANNI                                   | EL MODE                                  |  |  |
|---------|--|--|--|--|
| CHANNEL | STANDARD                                 | VECTOR                                   |  |  |
| 1       | CYAN                                     | CYAN                                     |  |  |
| 2       | MAGENTA                                  | MAGENTA                                  |  |  |
| 3       | YELLOW                                   | YELLOW                                   |  |  |
| 4       | С.Т.О                                    | С.Т.О                                    |  |  |
| 5       | COLOUR WHEEL                             | COLOUR WHEEL                             |  |  |
| 6       | MACRO COLOURS                            | MACRO COLOURS                            |  |  |
| 7       | STOP/STROBE                              | STOP/STROBE                              |  |  |
| 8       | DIMMER                                   | DIMMER                                   |  |  |
| 9       | DIMMER FINE                              | DIMMER FINE                              |  |  |
| 10      | IRIS                                     | IRIS                                     |  |  |
| 11      | STATIC GOBO CHANGE                       | STATIC GOBO CHANGE                       |  |  |
| 12      | ROTATING GOBO CHANGE                     | ROTATING GOBO CHANGE                     |  |  |
| 13      | GOBO ROTATION                            | GOBO ROTATION                            |  |  |
| 14      | GOBO FINE                                | GOBO FINE                                |  |  |
| 15      | ROTATING PRISM CHANGE                    | ROTATING PRISM CHANGE                    |  |  |
| 16      | PRISM ROTATION                           | PRISM ROTATION                           |  |  |
| 17      | FROST INSERTION                          | FROST INSERTION                          |  |  |
| 18      | BLADE UP1                                | BLADE UP1                                |  |  |
| 19      | BLADE UP2                                | BLADE UP2                                |  |  |
| 20      | BLADE DW1                                | BLADE DW1                                |  |  |
| 21      | BLADE DW2                                | BLADE DW2                                |  |  |
| 22      | BLADE RG1                                | BLADE RG1                                |  |  |
| 23      | BLADE RG2                                | BLADE RG2                                |  |  |
| 24      | BLADE LF1                                | BLADE LF1                                |  |  |
| 25      | BLADE LF2                                | BLADE LF2                                |  |  |
| 26      | FRAMING ROTATION                         | FRAMING ROTATION                         |  |  |
| 27      | FOCUS                                    | FOCUS                                    |  |  |
| 28      | FOCUS FINE                               | FOCUS FINE                               |  |  |
| 29      | ZOOM                                     | ZOOM                                     |  |  |
| 30      | AUTOFOCUS DISTANCE                       | AUTOFOCUS DISTANCE                       |  |  |
| 31      | AUTOFOCUS ADJUSTMENT                     | AUTOFOCUS ADJUSTMENT                     |  |  |
| 32      | MACRO EFFECTS                            | MACRO EFFECTS                            |  |  |
| 33      | PAN                                      | PAN                                      |  |  |
| 34      | PAN FINE                                 | PAN FINE                                 |  |  |
| 35      | TILT                                     | TILT                                     |  |  |
| 36      | TILT FINE                                | TILT FINE                                |  |  |
| 37      | FUNCTION                                 | FUNCTION                                 |  |  |
| 38      | RESET                                    | RESET                                    |  |  |
| 39      | LAMP CONTROL (with Option "Lamp DMX" ON) | LAMP CONTROL (with Option "Lamp DMX" ON) |  |  |
| 40      |  | PAN-TILT TIME                            |  |  |
| 41      |  | COLOUR TIME                              |  |  |
| 42      |  | BEAM TIME                                |  |  |
| 43      |  | GOBO TIME                                |  |  |

#### NOTE: On conclusion of resetting in case of absence of DMX signal, Pan & Tilt move to the "Home" position (Pan 128 bit - Tilt 128 bit) all the others channels stay at 0 bit.

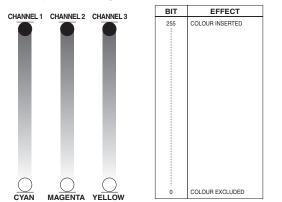
#### • COLOUR MIXING - channel 1 - 2 - 3

Operation with option color mixing: RGB

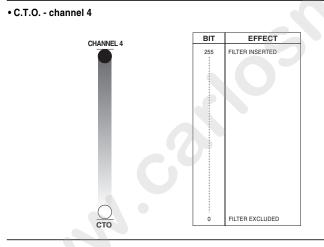


**IMPORTANT:** The lamp dim to half power 1 second after all the 3 channels stay at 0 bit level. The lamp goes back to full power when the channels level is put higher than 0 bit.

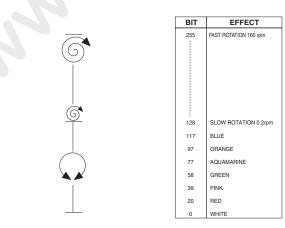
Operation with option color mixing: CMY



**IMPORTANT:** The lamp dim to half power 1 second after all the 3 channels stay at 255 bit level. The lamp goes back to full power when the channels level is put lower than 255 bit.



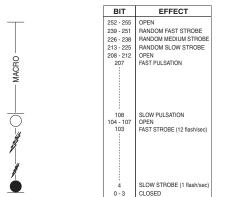
• COLOUR WHEEL - channel 5



• MACRO COLOURS - channel 6

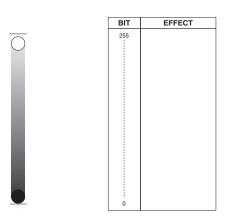
| Half Crayan144-1434.244.240.2003.41900Lighter blue144-14335.335.225.22001491380Funch pank144-14133535.235.235.235.235.235.335   | COLOR NAME               | BIT     | ROSCO<br>CODE | LEE<br>CODE | CYAN<br>BIT | MAGENTA<br>BIT | YELLOW<br>BIT | CTO<br>BIT | WHEEL<br>BIT |
|---|--------------------------|---------|---------------|-------------|-------------|----------------|---------------|------------|--------------|
| Lighter blue         14.4         333         333         226         0         149         138         0           Glader blue         142-143         352         255         200         0         129         138         0           Mallard grame         139-137         323         233         127         0         0         280         77         120           34 CT Onape         139-137         233         233         127         0         60         19         86         75         33           34 CT Onape         139-131         248         248         60         19         86         75         33           14 CTO         128-127         205         205         25         28         45         131         0           14 CTB         121-13         121         201         203         75         54         91         109         0         0         10         10         100 <td>Unused Range</td> <td>148-255</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td></td>  | Unused Range             | 148-255 | -             | -           | -           | -              | -             | -          |              |
| Discription         142-143         382         382         220         0         129         138         0           Discription         140-141         345         345         109         186         77         120         0           Side         138-139         323         323         127         0         182         77         333           344 CT         138-131         238         235         285         0         6         17         73           344 CT         138-131         248         248         60         71         88         75         38           Max geen         130-131         248         240         0         44         58         234         0           142 CTO         128-121         203         275         28         71         88         0         0           141 CTB         116-117         201         201         94         79         80         0         0           120 CTD         118-119         120         201         94         79         80         0         120           120 CTD         118-119         102         102         224         10  |                          |         |               |             |             | -              |               |            |              |
| Fuschia pink         140-141         345         345         109         186         77         120         0           Maland grann         138-137         323 <td>° I</td> <td>-</td> <td></td> <td></td> <td>-</td> <td>-</td> <td></td> <td></td> <td></td>                                | ° I                      | -       |               |             | -           | -              |               |            |              |
| Mailard green         139-139         325         255         10         0         128         58           Jack         139-155         2255         2255         0         56         17         70           3/4 CTB         131-155         2255         2255         0         75         77         75         75         75           3/4 CTD         132-151         244         244         60         71         856         75         39           Muus green         123-121         205         205         255         271         14         70         10  | Glacier blue             | 142-143 | 352           | 352         | 220         | 0              | 129           |            |              |
| Jade         Top         S23         S23         S23         S23         S23         S23         S33         S33         S34         S34         S35         S35 <td>Fuschia pink</td> <td>140-141</td> <td>345</td> <td>345</td> <td>109</td> <td>186</td> <td>77</td> <td>120</td> <td>0</td> | Fuschia pink             | 140-141 | 345           | 345         | 109         | 186            | 77            | 120        | 0            |
| 34 CT Oange         134-13         285         285         0         38         61         217         0           34 CTB         132-13         281         281         85         79         87         74         0           Minus green         132-13         247         247         600         71         686         75         39           Minus green         124-12         205         255         25         26         45         131         0           L1 CTD         124-12         204         204         0         44         58         0         0         0         0         0         0         10         0         10         0         10         0         10            | Mallard green            | 138-139 | 325           | 325         | 255         | 0              | 0             | 236        | 58           |
| 34 CT Oange         134-13         285         285         0         38         61         217         0           34 CTB         132-13         281         281         85         79         87         74         0           Minus green         132-13         247         247         600         71         686         75         39           Minus green         124-12         205         255         25         26         45         131         0           L1 CTD         124-12         204         204         0         44         58         0         0         0         0         0         0         10         0         10         0         10         0         10            | •                        | 136-137 | 323           | 323         | 127         | 0              | 162           | 0          | 77           |
| 34 CTB         132-133         281         281         865         79         87         54         0           Half minus green         130-131         248         248         601         19         86         75         38           1/4 CTO         128-122         206         206         62         71         123         122           1/4 CTD         124-122         203         203         75         54         91         109         100           1/4 CTB         124-12         203         203         75         54         91         109         205           1/4 CTB         116-117         201         244         78         80         0         255         0           Corpo Blue         112-111         180         1165         156         210         73         106         88         0         120         10         120         100         120         100         120         100         120         100         120         100         120         100         120         100         120         100         120         100         120         100         120         100         120         100         1  |                          |         |               |             |             | -              |               |            |              |
| Half minus green         130-131         248         249         600         19         86         75         33           Minus green         128-120         247         600         71         123         20           1/2 CTO         124-125         206         205         25         25         45         31         0           1/2 CTD         124-125         203         203         75         51         9         0         0           1/2 CTB         118-117         201         201         94         75         80         0         0           Alce Blue         114-115         197         197         206         51         0         205         0           Congo Blue         112-113         181         181         181         251         21         0         121         40         79           Deep Lawender         106-10         170         170         100         122         77         120         0           Deight Blue         106-10         170         170         105         88         0         199         102         100         100         100         100         100         100  | •                        |         |               |             | -           |                |               |            |              |
| Minus green         128-12         247         247         60         71         86         75         38           1/4 CTO         128-12         206         225         25         25         45         13         0           Ful CTO ange         124-12         206         205         25         54         61         10         0           1/4 CTB         121-12         203         203         75         54         61         0  |                          |         |               |             |             | -              |               |            |              |
| 1/4 CTO     126 127     206     206     62     71     123     122       1/2 CTO     124 125     205     205     25     26     45     131     00       1/4 CTS     120-121     203     203     75     54     91     009     00       1/2 CTB     118-119     202     226     85     71     84     89     0       Alce Blue     114-115     197     197     226     51     0     205     0       Dark Lawndar     110-111     180     180     195     170     0     160     0       Corop Bue     106-107     170     170     100     122     77     120     0       Daylight Blue     100-10     165     165     210     73     105     88     0       Bastard amber     96-97     162     162     164     0     255     227     295     97       Pile cose     96-97     162     162     164     0     255     255     0       Daylight Blue     100-10     155     156     177     176     169     0     255     0       Pile cose     90-91     154     154     0     48 <td>Half minus green</td> <td>130-131</td> <td>248</td> <td>248</td> <td>60</td> <td>19</td> <td>86</td> <td>75</td> <td>39</td>   | Half minus green         | 130-131 | 248           | 248         | 60          | 19             | 86            | 75         | 39           |
| 1/2 CTO     1/2 4-125     205     205     25     26     45     131     0       1/2 CTO     120-12     204     204     0     44     58     234     0       1/2 CTB     118-119     202     202     85     71     84     89     0       1/2 CTB     118-117     201     201     94     79     80     0     0       2/2 CTB     114-115     181     181     251     241     0     255     0       Congo Bue     112-113     181     181     181     251     241     0     255     0       Chard Lawender     106-107     172     172     224     0     122     77     120     0       Liagon bue     106-107     172     172     224     0     125     277     20     0       Liagon bue     106-10     165     166     210     73     136     0     189     0       Daright Bue     104-10     165     166     210     73     136     38     0       Dep Lawender     96-97     162     162     0     255     10     255     0       Daright Bue     96-97     162 <td< td=""><td>Minus green</td><td>128-129</td><td>247</td><td>247</td><td>60</td><td>71</td><td>86</td><td>75</td><td>39</td></td<>   | Minus green              | 128-129 | 247           | 247         | 60          | 71             | 86            | 75         | 39           |
| Full CT Orange         122-12         204         204         0         44         58         234         0           14 CTB         120-12         203         75         54         91         109         0           Ful CTB         116-117         201         201         44         79         80         0         0           Alce Blue         114-115         197         206         55         0         255         0           Corong Blue         114-113         180         180         195         170         0         121         40         79           Dark Lawneher         106-10         172         172         170         100         129         77         120         0           Dapt Lawneher         106-10         165         166         210         73         105         88         0           Bastard amber         96-97         162         162         162         164         0         255         0         0         189         0         189         0         189         0         189         0         189         0         189         0         189         0         189         0   | 1/4 CTO                  | 126-127 | 206           | 206         | 62          | 71             | 123           | 122        | 0            |
| Full CT Orange         122-12         204         204         0         44         58         234         0           14 CTB         120-12         203         75         54         91         109         0           Ful CTB         116-117         201         201         44         79         80         0         0           Alce Blue         114-115         197         206         55         0         255         0           Corong Blue         114-113         180         180         195         170         0         121         40         79           Dark Lawneher         106-10         172         172         170         100         129         77         120         0           Dapt Lawneher         106-10         165         166         210         73         105         88         0           Bastard amber         96-97         162         162         162         164         0         255         0         0         189         0         189         0         189         0         189         0         189         0         189         0         189         0         189         0   | 1/2 CTO                  | 124-125 | 205           | 205         | 25          | 26             | 45            | 131        | 0            |
| 1/4 CTB       120-121       203       203       75       54       91       109       0         1/2 CTB       118-119       202       202       85       71       84       89       0         Alce Bue       114-115       197       197       236       51       0       205       0         Congo Blue       112-113       181       181       1251       241       0       255       0         Lagoon blue       106-107       172       172       224       0       121       40       79         Deep Lavender       104-107       170       170       100       129       77       120       0         Dapight Blue       100-101       165       166       210       73       105       109       0       255       0       75         Paie foad       164       164       164       0       255       127       255       0       96 <t< td=""><td></td><td></td><td></td><td></td><td>-</td><td>-</td><td></td><td></td><td></td></t<>  |                          |         |               |             | -           | -              |               |            |              |
| 1/2 CTB     118-119     202     202     85     71     84     89     0       Ful CTB     116-117     201     94     79     80     0     0       Congo Blue     112-113     181     181     251     241     0     255     0       Dark Lavender     110-111     180     189     170     0     98     255     0       Lagon blue     106-107     172     172     224     0     121     40     77       Deep Lavender     104-105     170     170     100     129     377     120     0       Lina cint     102-101     165     165     210     73     105     88     0       Palegona     98-99     164     164     0     255     227     255     0       Pale Codd     88-89     157     157     0     158     148     0     255     0       Pale Codd     88-89     152     152     150     60     98     139     0       Pale Codd     88-89     147     147     0     81     55     255     0       Pale Codd     88-89     147     147     0     0     255     0 </td <td>· ·</td> <td></td> <td></td> <td></td> <td>-</td> <td></td> <td></td> <td></td> <td></td>   | · ·                      |         |               |             | -           |                |               |            |              |
| Full CTB         116-117         201         201         94         79         80         0         0           Alce Blue         114-115         197         197         235         51         0         255         0           Dark Lavender         110-111         180         180         195         170         0         160         0           Dark Lavender         104-105         170         172         172         224         0         121         0           Lianc Int         102-103         166         166         210         73         105         88         0         184         255         255         0           Deep Lavender         104-105         170         170         100         129         77         120         0         0           Deep Congo         Deep Orange         9-97         162         166         0         255         0         255         0           Pick         92-93         157         157         0         159         0         255         0           Pick         92-93         152         152         0         0         0         255         0         0<  |                          |         |               |             | -           |                |               |            |              |
| Alice Blue         114.115         197         197         236         51         0         205         0           Congo Blue         112.113         181         181         251         241         0         255         0           Dark Laverder         110-111         180         180         195         170         0         98         255         255         0           Lagoon blue         100-107         172         172         224         0         121         40         79           Deep Lavender         104-105         165         165         210         73         105         88         0           Elamered         98-99         164         164         0         255         227         255         0           Pale God         98-99         155         158         158         0         148         0         285         0         0         227         255         0           Pale God         88-87         157         157         0         189         0         235         0         235         0         235         0         235         0         235         0         235         0  | 1/2 CTB                  | 118-119 | 202           | 202         | 85          | 71             | 84            | 89         | 0            |
| Congo Blue         112-113         181         181         251         241         0         255         0           Dark Lawnerer         110-111         180         180         195         170         0         160         0           Lagoon blue         106-107         172         172         224         0         121         40         77           Deep Lawnerder         104-105         170         170         100         129         77         120         00           Daylight Blue         100-101         165         165         210         73         105         88         0           Bastard amber         96-97         162         162         0         26         0         265         0           Pale rose         90-91         154         154         154         164         88         0         255         0         255         0           Pale rose         90-91         154         154         164         88         0         225         0         255         0         0         225         0         255         0         0         225         0         277         138         138         <  | Full CTB                 | 116-117 | 201           | 201         | 94          | 79             | 80            | 0          | 0            |
| Dark Lavender         110-111         180         180         195         170         0         160         160         0           Chrome Orange         108-109         172         172         224         0         121         40         78           Deep Lavender         104-105         170         170         100         129         77         120         0           Lilla clint         102-103         168         164         164         164         173         105         165         0         189         0         0         0         0         0         0         0         0         0         109         0         255         0         0         189         0         0         0         255         0         0         109         0         255         0         0         109         0         255         0         0         109         0         255         0         0         100         0         231         157         157         10         100         0         231         177         174         147         148         140         122         121         100         0         231         177   | Alice Blue               | 114-115 | 197           | 197         | 236         | 51             | 0             | 205        | 0            |
| Dark Lavender         110-111         180         180         195         170         0         160         160         0           Chrome Orange         108-109         172         172         224         0         121         40         78           Deep Lavender         104-105         170         170         100         129         77         120         0           Lilla clint         102-103         168         164         164         164         173         105         165         0         189         0         0         0         0         0         0         0         0         0         109         0         255         0         0         189         0         0         0         255         0         0         109         0         255         0         0         109         0         255         0         0         109         0         255         0         0         100         0         231         157         157         10         100         0         231         177         174         147         148         140         122         121         100         0         231         177   |                          |         |               |             |             |                |               |            |              |
| Chrome Orange         108-109         179         172         224         0         121         40         79           Lagoon blue         104-107         172         172         224         0         121         40         79           Deep Lavender         104-105         170         160         184         164         164         164         164         164         164         164         164         164         174         177         0         81         55         255         0           Pale Rose         90-91         154         154         164         148         0         255         0         255         0         255         0         277         133         130         0         255         0         275         77         133         130         130         130         130         130         130         130         130  | •                        |         |               |             |             |                |               |            |              |
| Lagon blue         106-107         172         172         224         0         121         40         77           Deep Lavender         104-105         170         170         100         129         77         120         00           Daylight Blue         100-101         165         165         210         73         105         88         0           Daylight Blue         100-101         165         168         210         73         105         88         0           Deep Orange         94-95         158         158         0         144         255         255         0           Pale cod         88-97         152         0         48         0         129         0         255         0           Pale cod         88-87         148         148         0         255         0         255         0           Bright Bue         82-83         141         141         182         0         99         92         77           Pinaxy green         76-77         133         135         0         255         255         0         0           Sepial Lavender         72-73         136  |                          |         |               |             |             |                |               |            |              |
| Dep Lavender         104.105         170         170         100         129         77         120         0           Lilia tint         102-103         169         164         41         59         39         120         0           Dayüght Blue         100-101         165         166         210         73         105         88         0           Bastard amber         96.97         162         162         0         26         0         199         0           Deep Orange         94.95         158         158         0         148         0         255         0         255         0           Pale Gold         88.99         152         152         0         60         98         138         0           Prinary green         80.81         141         144         182         0         99         92         77           Pale Gold         88.98         131         131         183         105         0         129         100         0         255         0         0         77         136         138         105         0         179         100         0         255         100         107 <td>Chrome Orange</td> <td>108-109</td> <td>179</td> <td>179</td> <td>0</td> <td>98</td> <td>255</td> <td>255</td> <td>0</td>   | Chrome Orange            | 108-109 | 179           | 179         | 0           | 98             | 255           | 255        | 0            |
| Deep Lavender         104.105         170         170         100         129         77         120         0           Lilla Lint         102-103         169         164         164         0         255         227         255         97           Bastard amber         96.97         162         162         0         26         0         199         0           Deep Change         94.95         158         158         0         148         255         255         0           Pale cose         90.91         154         154         0         48         0         189         0           Pale cose         90.91         154         152         0         0         90         255         0           Pale Cold         88.98         152         152         0         0         255         0         0         255         0         0         255         0         0         255         0         77         138         138         105         0         179         100         0         255         255         255         0         0         0         255         255         255         0         0  | Lagoon blue              | 106-107 | 172           | 172         | 224         | 0              | 121           | 40         | 79           |
| Liliac tint         102-103         169         169         41         59         39         120         0           Daylight Blue         100-101         165         165         210         73         105         88         0           Flame red         98-99         164         164         0         225         227         255         97           Bastard amber         96-97         152         152         0         160         48         0         198         0         255         255         0         0         90         0         255         0         255         0         255         0         255         0         255         0         255         0         255         0         255         0         255         0         255         0         255         0         255         0         255         0         255         0         0         255         0         277         136         138         105         0         121         121         0         0         255         0         0         77         107         100         0         255         255         0         0         277  | Deep Lavender            | 104-105 | 170           | 170         | 100         | 129            | 77            | 120        | 0            |
| Daylight Blue         100-101         105         165         210         73         105         88         0           Flame red         98-99         164         164         0         255         227         255         97           Bastard amber         96-97         162         162         0         148         255         255         0           Deep Orange         94-95         158         158         0         148         0         48         0         189         0         255         0         255         0         255         0         255         0         255         0         255         0         255         0         255         0         255         0         255         0         255         0         255         0         255         0         255         0         255         0         255         0         77         138         138         105         0         129         100         0         255         0         77         78         71         135         135         0         255         255         255         255         255         0         0         0         0 <td< td=""><td>· ·</td><td></td><td></td><td></td><td></td><td>-</td><td></td><td></td><td></td></td<>  | · ·                      |         |               |             |             | -              |               |            |              |
| Flam erd         98-99         164         164         0         255         227         255         97           Bastard Amber         96-97         152         152         0         26         0         199         0           Deep Orage         94-95         158         158         0         148         255         255         0           Pale cose         90-91         154         154         0         48         0         189         0           Pale code         88-89         152         152         0         60         98         138         0           Bright Dee         82-83         141         141         182         0         99         92         77           Primary green         80-81         139         139         0         0         0         255         0         77           Pale green         76-77         138         138         105         0         179         100         0         0         90         92         77         77         136         136         73         102         244         10         0         0         0         0         0         0  |                          |         |               |             |             |                |               |            |              |
| Bastard amber         96.97         162         162         0         26         0         199         0           Deep Orange         94-95         158         158         0         148         255         255         0           Paie rose         90-91         154         154         0         48         0         189         0           Paie cold         88-89         152         152         0         60         98         138         0           Aricot         84-85         147         147         0         81         55         255         0           Bright rose         86-87         148         141         141         182         0         99         92         77           Primay green         80-81         139         139         0         0         0         255         0         77           Paie green         76-77         138         133         105         0         125         255         55         0         6         6         77         135         135         0         255         10         77         7         77         7         77         77         7   | , .                      |         |               |             | -           | -              |               |            |              |
| Deep Orange         94-95         158         158         0         148         255         255         0           Pink         92-93         157         157         0         159         0         255         0           Pale code         90-91         154         154         0         48         0         189         0           Bight Blue         86-87         148         148         0         255         0         255         0           Primary green         80-81         139         139         0         0         0         231         58           Light green         76-77         138         138         105         0         179         100         0           Special Lawender         72-73         136         136         73         102         44         120         0           Deep golden amber         68-69         134         134         0         142         234         110         0           Golden amber         68-69         134         134         0         142         235         127         77           Marine blue         64-65         131         131         60   | Flame red                | 98-99   | 164           | 164         | 0           | 255            | 227           | 255        | 97           |
| Deep Orange         94-95         158         158         0         148         255         255         0           Pink         92-93         157         157         0         159         0         255         0           Pale code         90-91         154         154         0         48         0         189         0           Bight Blue         86-87         148         148         0         255         0         255         0           Primary green         80-81         139         139         0         0         0         231         58           Light green         76-77         138         138         105         0         179         100         0           Special Lawender         72-73         136         136         73         102         44         120         0           Deep golden amber         68-69         134         134         0         142         234         110         0           Golden amber         68-69         134         134         0         142         235         127         77           Marine blue         64-65         131         131         60   | Bastard amber            | 96-97   | 162           | 162         | 0           | 26             | 0             | 199        | 0            |
| Prik         92-93         157         157         0         159         0         255         0           Pale rose         90-91         154         154         0         48         0         189         0           Pale rose         90-91         154         152         0         60         98         138         0           Pale rose         86-87         148         147         0         81         55         255         0           Bright Bue         82-83         141         141         182         0         99         92         77           Primary green         80-81         139         138         0         0         0         255         0         77           Pale green         76-77         138         138         105         0         179         100         0           Special Lavender         72-73         136         136         73         102         44         120         0         0           Deep goiden amber         68-69         134         134         0         142         234         110         0           Mairue blue         64-65         128         1  |                          |         |               |             | 0           | -              |               |            |              |
| Paie rose         90-91         154         154         0         48         0         189         0           Paie Gold         88-89         152         152         0         60         98         138         0           Bright rose         86-87         144         148         0         255         0         255         0           Bright rose         86-87         144         144         80         255         0         255         0           Primary green         80-81         139         139         0         0         0         231         88           Light green         78-79         121         121         0         0         255         0         77           Paie green         76-77         138         133         105         0         179         100         0           Special Lavender         72-73         136         136         73         102         44         120         0         0           Golden amber         66-67         132         132         255         152         127         0         77           Marine blue         66-67         122         122   | 1 0                      |         |               |             | -           | -              |               |            | -            |
| Paie Gold         88-89         152         0         60         98         138         0           Bright rose         86-87         148         148         0         255         0         255         0           Bright Bue         82-85         141         147         0         81         55         255         0           Bright Bue         82-83         141         141         182         0         99         92         77           Primary green         80-81         139         138         105         0         179         100         0           Special Lavender         74-75         137         137         97         105         72         90         0           Pale Lavender         72-73         136         136         73         102         44         120         0           Deep golden amber         68-69         134         134         0         142         234         110         0           Medium blue         64-65         131         131         60         255         0         255         77         7           Bright pink         62-63         128         128         0<   |                          |         |               |             | -           |                |               |            |              |
| Bright rose         86-87         148         148         0         255         0         255         0           Bright Blue         82-83         141         147         0         81         55         255         0           Bright Blue         82-83         141         141         182         0         99         92         77           Primary green         80-81         139         139         0         0         255         0         77           Pale green         76-77         138         138         105         0         179         100         0           Special Lavender         74-75         137         137         97         105         72         90         0           Pale Lavender         70-71         135         136         0         255         255         255         255         0         100         0           Maine blue         66-67         132         132         225         152         127         0         77           Bright pink         62-63         128         128         0         255         0         255         74           Ferm Green         58-59  |                          |         |               |             | -           | -              | -             |            |              |
| Apricol         84-85         147         147         0         81         55         255         0           Bright Bue         82-83         141         141         182         0         99         92         77           Primary green         80-81         139         139         0         0         0         231         58           Light green         76-77         138         138         105         0         179         100         0           Special Lavender         72-73         136         136         73         102         44         120         0           Deep golden amber         66-67         132         132         255         152         127         0         77           Marine blue         66-67         132         132         255         162         197         0           Mauve         60-61         126         128         0         255         0         255         197         0           Bright pink         62-63         121         121         121         136         0         241         64         0         0         77           Bright pink         62-53  | Pale Gold                | 88-89   | 152           | 152         | 0           | 60             | 98            | 138        | 0            |
| Apricol         84-85         147         147         0         81         55         255         0           Bright Bue         82-83         141         141         182         0         99         92         77           Primary green         80-81         139         139         0         0         0         231         58           Light green         76-77         138         138         105         0         179         100         0           Special Lavender         72-73         136         136         73         102         44         120         0           Deep golden amber         66-67         132         132         255         152         127         0         77           Marine blue         66-67         132         132         255         162         197         0           Mauve         60-61         126         128         0         255         0         255         197         0           Bright pink         62-63         121         121         121         136         0         241         64         0         0         77           Bright pink         62-53  | Bright rose              | 86-87   | 148           | 148         | 0           | 255            | 0             | 255        | 0            |
| Bright Blue         82-83         141         141         182         0         99         92         77           Primary green         80-81         139         139         0         0         0         231         58           Light green         78-79         121         121         0         0         255         0         77           Pale green         76-77         137         137         97         105         72         90         0           Special Lavender         72-73         136         136         73         102         44         120         0           Deeg golden amber         68-69         134         134         0         142         234         110         0           Medium blue         66-67         132         132         255         152         127         0         73         77           Bright pink         62-63         128         128         0         255         0         255         74           Fern Green         58-59         122         122         173         0         235         89         0         144         64         0         77         144  | -                        | 84-85   | 147           | 147         | 0           | 81             | 55            |            | 0            |
| Primary green         80-81         139         139         0         0         231         58           Light green         78-79         121         121         0         0         255         0         77           Pale green         76-77         138         138         105         0         179         100         0           Special Lavender         74-75         136         136         73         102         44         120         0         0           Pale Lavender         72-73         136         136         73         102         44         120         0         0           Deep golden amber         66-67         132         132         255         152         127         0         77           Marine blue         66-67         128         128         0         255         0         255         74           Fern Green         58-59         122         122         173         0         235         88         0         0           Lagt green         56-57         121         121         136         0         145         138         0         0         77           Dark blue<  |                          |         |               |             | -           | -              |               |            | -            |
| Light green         78-79         121         121         0         0         255         0         77           Pale green         76-77         138         138         105         0         179         100         0           Special Lavender         74-75         137         137         97         105         72         90         0           Pale Lavender         72-73         136         136         73         102         444         120         0           Deep golden amber         70-71         135         135         0         255         255         255         0         177           Marine blue         66-67         132         132         255         152         127         0         77           Bright pink         62-63         128         128         0         255         0         197         0           Mauve         60-61         126         126         0         255         129         58         128         77           Dark blue         54-57         121         121         136         0         241         64         0           Deep glue         54-55         120 <td></td> <td></td> <td></td> <td></td> <td></td> <td>-</td> <td></td> <td></td> <td></td>   |                          |         |               |             |             | -              |               |            |              |
| Paie green         76-77         138         138         105         0         179         100         0           Special Lavender         74-75         137         137         97         105         72         90         0           Pale Lavender         72-73         136         136         73         102         44         120         0           Deep golden amber         70-71         135         135         0         255         255         255         0           Golden amber         68-69         134         134         0         142         234         10         0           Marine blue         64-65         131         131         60         0         106         73         77           Bright pink         62-63         128         128         0         255         0         255         74           Fern Green         58-57         121         121         136         0         241         64         0           Lad green         56-57         121         121         136         0         128         138         0           Steel blue         54-55         120         120 <td< td=""><td>Primary green</td><td>80-81</td><td></td><td>139</td><td>-</td><td>-</td><td></td><td></td><td>58</td></td<>   | Primary green            | 80-81   |               | 139         | -           | -              |               |            | 58           |
| Special Lavender         74-75         137         137         97         105         72         90         0           Pale Lavender         72-73         136         136         73         102         44         120         0           Deep golden amber         68-69         134         134         0         142         234         110         0           Medium blue         66-67         132         132         255         152         127         0         77           Bright pink         62-63         128         128         0         255         0         255         74         79           Marve         60-61         126         126         0         255         0         255         74         79           Deep Blue         54-55         120         120         255         229         58         128         77           Dark blue         50-51         118         118         245         0         145         138         0           Steel blue         44-45         115         115         136         0         128         91         77           Deacock blue         44-45         11   | Light green              | 78-79   | 121           | 121         | 0           | 0              | 255           | 0          | 77           |
| Pale Lavender         72-73         136         136         73         102         44         120         0           Deep golden amber         70-71         135         135         0         255         255         255         0           Golden amber         68-69         134         134         0         142         234         110         0           Medium blue         66-67         132         132         255         152         127         0         77           Marine blue         66-67         132         132         255         0         255         74           Fern Green         58-59         122         122         173         0         235         89         0           Lad green         56-57         121         121         136         0         241         64         0         0         77           Dark blue         50-51         118         118         245         0         145         138         0         0         77           Dark blue         50-51         118         118         245         0         145         138         0         0         77 <td< td=""><td>Pale green</td><td>76-77</td><td>138</td><td>138</td><td>105</td><td>0</td><td>179</td><td>100</td><td>0</td></td<>   | Pale green               | 76-77   | 138           | 138         | 105         | 0              | 179           | 100        | 0            |
| Pale Lavender         72-73         136         136         73         102         44         120         0           Deep golden amber         70-71         135         135         0         255         255         255         0           Golden amber         68-69         134         134         0         142         234         110         0           Medium blue         66-67         132         132         255         152         127         0         77           Marine blue         66-67         132         132         255         0         255         74           Fern Green         58-59         122         122         173         0         235         89         0           Lad green         56-57         121         121         136         0         241         64         0         0         77           Dark blue         50-51         118         118         245         0         145         138         0         0         77           Dark blue         50-51         118         118         245         0         145         138         0         0         77 <td< td=""><td>Special Lavender</td><td>74-75</td><td>137</td><td>137</td><td>97</td><td>105</td><td>72</td><td>90</td><td>0</td></td<>  | Special Lavender         | 74-75   | 137           | 137         | 97          | 105            | 72            | 90         | 0            |
| Deep golden amber         70-71         135         135         0         255         255         255         0           Golden amber         68-69         134         134         0         142         234         110         0           Medium blue         66-67         132         132         255         152         127         0         77           Marine blue         64-65         131         131         60         0         106         73         77           Bright pink         62-63         128         128         0         255         0         255         74           Fern Green         58-59         122         122         173         0         235         89         0           Leaf green         56-57         121         121         136         0         241         64         0           Deep Blue         54-55         120         120         255         161         0         0         77           Light blue         50-51         118         118         245         0         145         138         0           Steel blue         48-49         117         117         167 <td>•</td> <td>-</td> <td></td> <td></td> <td>-</td> <td></td> <td>44</td> <td></td> <td></td>   | •                        | -       |               |             | -           |                | 44            |            |              |
| Golden amber         68-69         134         134         0         142         234         110         0           Medium blue         66-67         132         132         255         152         127         0         77           Marine blue         64-65         131         131         60         0         106         73         77           Bright pink         62-63         128         128         0         255         0         197         0           Mauve         60-61         126         126         0         255         0         255         74           Fern Green         58-59         122         121         126         0         255         29         58         128         77           Dark blue         52-53         119         119         255         161         0         0         77           Light blue         50-51         118         118         245         0         145         138         0           Steel blue         48-49         117         117         167         0         141         165         0           Dark pink         42-43         111 <td< td=""><td></td><td>-</td><td></td><td></td><td>-</td><td>-</td><td></td><td></td><td>-</td></td<>   |                          | -       |               |             | -           | -              |               |            | -            |
| Medium blue         66-67         132         132         255         152         127         0         77           Marine blue         64-65         131         131         60         0         106         73         77           Bright pink         62-63         128         128         0         255         0         197         0           Mauve         60-61         126         126         0         255         0         255         74           Fern Green         58-59         122         122         173         0         235         89         0           Leaf green         56-57         121         121         136         0         241         64         0         77           Light blue         50-51         118         118         245         0         145         138         0           Steel blue         48-49         117         117         167         0         141         165         0           Medium blue green         46-47         116         116         189         0         157         91         77           Peacock blue         44-45         115         115  |                          | 70-71   |               |             | 0           |                |               |            | 0            |
| Marine blue         64-65         131         131         60         0         106         73         77           Bright pink         62-63         128         128         0         255         0         197         0           Mauve         60-61         126         126         0         255         0         255         74           Fern Green         58-59         122         122         173         0         235         89         0           Leaf green         56-57         121         121         136         0         241         64         0           Deep Blue         54-55         120         120         255         229         58         128         77           Dark blue         50-51         118         118         245         0         145         138         0           Steel blue         48-49         117         117         167         0         141         165         0           Medium blue green         46-47         116         118         189         0         128         91         77           Pacock blue         44-45         115         115         136  | Golden amber             | 68-69   | 134           | 134         | 0           | 142            | 234           | 110        | 0            |
| Bright pink         62-63         128         128         0         255         0         197         0           Mauve         60-61         126         126         0         255         0         255         74           Fern Green         58-59         122         122         173         0         235         89         0           Leaf green         56-57         121         121         136         0         241         64         0           Deep Blue         54-55         120         120         255         229         58         128         77           Dark blue         50-51         118         118         245         0         141         165         0           Medium blue green         46-47         116         116         189         0         157         91         77           Paccock blue         44-45         115         115         136         0         128         91         77           Dark pink         42-43         111         111         0         139         0         220         0           Light salmon         40-41         109         109         50   | Medium blue              | 66-67   | 132           | 132         | 255         | 152            | 127           | 0          | 77           |
| Bright pink         62-63         128         128         0         255         0         197         0           Mauve         60-61         126         126         0         255         0         255         74           Fern Green         58-59         122         122         173         0         235         89         0           Leaf green         56-57         121         121         136         0         241         64         0           Deep Blue         54-55         120         120         255         229         58         128         77           Dark blue         50-51         118         118         245         0         141         165         0           Medium blue green         46-47         116         116         189         0         157         91         77           Paccock blue         44-45         115         115         136         0         128         91         77           Dark pink         42-43         111         111         0         139         0         220         0           Light salmon         40-41         109         109         50   | Marine blue              | 64-65   | 131           | 131         | 60          | 0              | 106           | 73         | 77           |
| Mave         60-61         126         126         0         255         0         255         74           Fern Green         58-59         122         122         173         0         235         89         0           Leaf green         56-57         121         121         136         0         241         64         0           Deep Blue         54-55         120         120         255         229         58         128         77           Dark blue         52-53         119         119         255         161         0         0         77           Light blue         50-51         118         118         245         0         141         165         0           Medium blue green         46-47         116         116         189         0         128         91         77           Peacock blue         44-45         115         115         136         0         128         91         77           Dark pink         42-43         111         111         0         139         0         220         0           Light salmon         40-41         109         109         50  |                          |         |               |             |             | -              |               |            |              |
| Ferr Green         58-59         122         122         173         0         235         89         0           Leaf green         56-57         121         121         136         0         241         64         0           Deep Blue         54-55         120         120         255         229         58         128         77           Dark blue         52-53         119         119         255         161         0         0         77           Light blue         50-51         118         118         245         0         145         138         0           Steel blue         48-49         117         117         167         0         141         165         0           Medium blue green         46-47         116         116         189         0         128         91         77           Peacock blue         44-45         111         111         0         139         0         220         0           Light Salmon         40-41         109         109         50         121         58         230         0           English rose         38-39         108         108         0 <td>• •</td> <td></td> <td></td> <td></td> <td>-</td> <td></td> <td></td> <td></td> <td></td>   | • •                      |         |               |             | -           |                |               |            |              |
| Leaf green         56-57         121         121         136         0         241         64         0           Deep Blue         54-55         120         120         255         229         58         128         77           Dark blue         52-53         119         119         255         161         0         0         77           Light blue         50-51         118         118         245         0         145         138         0           Steel blue         48-49         117         117         167         0         141         165         0           Medium blue green         46-47         116         116         189         0         128         91         77           Peacock blue         44-45         115         115         136         0         128         91         77           Dark pink         42-43         111         111         0         139         0         220         0           English rose         38-39         108         108         0         62         0         241         0           Jight rose         36-37         107         107         0  | Mauve                    | 60-61   | 126           | 126         | 0           | 255            | 0             | 255        | 74           |
| Deep Blue         54-55         120         120         255         229         58         128         77           Dark blue         52-53         119         119         255         161         0         0         77           Light blue         50-51         118         118         245         0         145         138         0           Steel blue         48-49         117         117         167         0         141         165         0           Medium blue green         46-47         116         116         189         0         157         91         77           Peacock blue         44-45         115         115         136         0         128         91         77           Dark pink         42-43         111         111         0         139         0         220         0           Light Salmon         40-41         109         108         0         62         0         247         0           Light nose         38-39         108         108         0         62         0         0         220         0           Primary red         34-35         106         182   | Fern Green               | 58-59   | 122           | 122         | 173         | 0              | 235           | 89         | 0            |
| Deep Blue         54-55         120         120         255         229         58         128         777           Dark blue         52-53         119         119         255         161         0         0         777           Light blue         50-51         118         118         245         0         145         138         0           Steel blue         48-49         117         117         167         0         141         165         0           Medium blue green         46-47         116         116         189         0         157         91         777           Peacock blue         44-45         115         115         136         0         128         91         777           Dark pink         42-43         111         111         0         139         0         220         0           Light Salmon         40-41         109         109         50         121         58         230         0           Light rose         38-39         106         182         0         0         0         220         0           Primary red         34-35         106         182         0 <td>Leaf green</td> <td>56-57</td> <td>121</td> <td>121</td> <td>136</td> <td>0</td> <td>241</td> <td>64</td> <td>0</td>  | Leaf green               | 56-57   | 121           | 121         | 136         | 0              | 241           | 64         | 0            |
| Dark blue         52-53         119         119         255         161         0         0         777           Light blue         50-51         118         118         245         0         145         138         0           Steel blue         48-49         117         117         167         0         141         165         0           Medium blue green         46-47         116         116         189         0         157         91         77           Peacock blue         44-45         115         115         136         0         128         91         77           Dark pink         42-43         111         111         0         139         0         220         0           Light Salmon         40-41         109         108         0         62         0         247         0           Light nose         36-37         107         107         0         95         0         220         0           Primary red         34-35         106         182         0         0         0         20           Orange         32-33         105         105         0         182 <td< td=""><td>•</td><td></td><td>120</td><td>120</td><td></td><td>220</td><td>58</td><td>128</td><td>77</td></td<>  | •                        |         | 120           | 120         |             | 220            | 58            | 128        | 77           |
| Light blue         50-51         118         118         245         0         145         138         0           Steel blue         48-49         117         117         167         0         141         165         0           Medium blue green         46-47         116         116         189         0         157         91         77           Peacock blue         44-45         115         115         136         0         128         91         77           Dark pink         42-43         111         111         0         139         0         220         0           Light salmon         40-41         109         109         50         121         58         230         0           English rose         38-39         106         182         0         0         0         220         0           Primary red         34-35         106         182         0         0         0         220         0           Orange         32-33         105         105         0         182         255         76         0           Deep amber         30-31         104         104         0   |                          |         |               |             |             |                |               |            |              |
| Seel blue         48-49         117         117         167         0         141         165         0           Medium blue green         46-47         116         116         189         0         157         91         77           Peacock blue         44-45         115         115         136         0         128         91         77           Peacock blue         44-45         115         115         136         0         128         91         77           Dark pink         42-43         111         111         0         139         0         220         0           Light Salmon         40-41         109         109         50         121         58         230         0           English rose         38-39         108         108         0         62         0         247         0           Primary red         34-35         106         182         0         0         0         0         220         0         0           Orange         32-33         105         105         0         182         255         76         0         0         223         0         0         171  |                          |         |               |             |             |                |               |            |              |
| Medium blue green         46-47         116         116         189         0         157         91         777           Peacock blue         44-45         115         115         136         0         128         91         777           Dark pink         42-43         111         111         0         139         0         220         0           Light Salmon         40-41         109         109         50         121         58         230         0           English rose         38-39         108         108         0         62         0         247         0           Light rose         36-37         107         107         0         95         0         220         0           Primary red         34-35         106         182         0         0         0         0         220         0           Orange         32-33         105         105         0         182         255         76         0           Deep amber         30-31         104         104         0         26         199         223         0           Straw         28-29         103         103         58  | Light blue               | 50-51   | 118           | 118         | 245         | 0              | 145           | 138        | 0            |
| Medium blue green         46-47         116         116         189         0         157         91         777           Peacock blue         44-45         115         115         136         0         128         91         777           Dark pink         42-43         111         111         0         139         0         220         0           Light Salmon         40-41         109         109         50         121         58         230         0           English rose         38-39         108         108         0         62         0         247         0           Light rose         36-37         107         107         0         95         0         220         0           Orange         32-33         105         105         0         182         255         76         0           Deep amber         30-31         104         104         0         26         199         223         0           Straw         28-29         103         103         58         17         104         176         0           Light amber         26-27         102         102         0 <t< td=""><td>Steel blue</td><td>48-49</td><td>117</td><td>117</td><td>167</td><td>0</td><td>141</td><td>165</td><td>0</td></t<>  | Steel blue               | 48-49   | 117           | 117         | 167         | 0              | 141           | 165        | 0            |
| Peacock blue         44-45         115         115         136         0         128         91         777           Dark pink         42-43         111         111         0         139         0         220         0           Light Salmon         40-41         109         109         50         121         58         230         0           English rose         38-39         108         108         0         622         0         247         0           Light rose         36-37         107         107         0         95         0         220         0           Primary red         34-35         106         182         0         0         0         0         220         0           Orange         32-33         105         105         0         182         255         76         0           Deep amber         30-31         104         104         0         26         199         223         0           Straw         28-29         103         103         58         17         104         176         0           Light amber         26-27         102         102         0   |                          |         |               |             |             | 0              | 157           |            | 77           |
| Dark pink         42-43         111         111         0         139         0         220         0           Light Salmon         40-41         109         109         50         121         58         230         0           English rose         38-39         108         108         0         62         0         247         0           Light rose         36-37         107         107         0         95         0         220         0           Primary red         34-35         106         182         0         0         0         0         200           Orange         32-33         105         105         0         182         255         76         0           Deep amber         30-31         104         104         0         26         199         223         0           Straw         28-29         103         103         58         17         104         176         0           Light amber         26-27         102         102         0         171         193         0           Spring yellow         22-23         100         100         80         0         227   | •                        |         |               |             |             | -              |               |            |              |
| Light Salmon         40-41         109         109         50         121         58         230         0           English rose         38-39         108         108         0         62         0         247         0           Light rose         36-37         107         107         0         95         0         220         0           Primary red         34-35         106         182         0         0         0         0         200           Orange         32-33         105         105         0         182         255         76         0           Deep amber         30-31         104         104         0         26         199         223         0           Straw         28-29         103         103         58         17         104         171         193         0           Yellow         24-25         101         101         0         255         149         0           Spring yellow         22-23         100         100         80         0         227         157         0           Dark Yellow Green         20-21         90         90         255         0 <td></td> <td></td> <td></td> <td></td> <td></td> <td>-</td> <td></td> <td></td> <td></td>   |                          |         |               |             |             | -              |               |            |              |
| English rose         38-39         108         108         0         62         0         247         0           Light rose         36-37         107         107         0         95         0         220         0           Primary red         34-35         106         182         0         0         0         0         200           Orange         32-33         105         105         0         182         255         76         0           Deep amber         30-31         104         104         0         26         199         223         0           Straw         28-29         103         103         58         17         104         176         0           Light amber         26-27         102         102         0         171         193         0           Yellow         24-25         101         101         0         0         227         157         0           Dark Yellow Green         20-21         90         90         255         0         255         204         0           Lime green         18-19         88         88         118         0         241   | · .                      |         |               |             |             |                |               |            |              |
| Light rose         36-37         107         107         0         95         0         220         0           Primary red         34-35         106         182         0         0         0         0         200           Orange         32-33         105         105         0         182         255         76         0           Deep amber         30-31         104         104         0         26         199         223         0           Straw         28-29         103         103         58         17         104         176         0           Light amber         26-27         102         102         0         0         171         193         0           Yellow         24-25         101         101         0         0         227         157         0           Dark Yellow Green         20-21         90         90         255         0         255         204         0           Just Blue         16-17         79         79         255         77         0         204         0           Tokyo Blue         14-15         71         71         255         255  | Light Salmon             | 40-41   | 109           | 109         | 50          | 121            | 58            | 230        | 0            |
| Light rose         36-37         107         107         0         95         0         220         0           Primary red         34-35         106         182         0         0         0         0         200           Orange         32-33         105         105         0         182         255         76         0           Deep amber         30-31         104         104         0         26         199         223         0           Straw         28-29         103         103         58         17         104         176         0           Light amber         26-27         102         102         0         0         171         193         0           Yellow         24-25         101         101         0         0         227         157         0           Dark Yellow Green         20-21         90         90         255         0         255         204         0           Just Blue         16-17         79         79         255         77         0         204         0           Tokyo Blue         14-15         71         71         255         255  | English rose             | 38-39   | 108           | 108         | 0           | 62             | 0             | 247        | 0            |
| Primary red         34-35         106         182         0         0         0         0         20           Orange         32-33         105         105         0         182         255         76         0           Deep amber         30-31         104         104         0         26         199         223         0           Straw         28-29         103         103         58         17         104         176         0           Light amber         26-27         102         102         0         0         171         193         0           Yellow         24-25         101         101         0         0         255         149         0           Dark Yellow Green         20-21         90         90         255         0         255         204         0           Lime green         18-19         88         88         118         0         241         124         0           Just Blue         16-17         79         79         255         77         0         204         0           Tokyo Blue         12-13         068         068         245         777  | *                        | 36-37   | 107           | 107         | 0           | 95             | 0             | 220        | 0            |
| Orange         32-33         105         105         0         182         255         76         0           Deep amber         30-31         104         104         0         26         199         223         0           Straw         28-29         103         103         58         17         104         176         0           Light amber         26-27         102         102         0         0         171         193         0           Yellow         24-25         101         101         0         0         255         149         0           Dark Vellow Green         20-21         90         90         255         0         255         204         0           Just Blue         16-17         79         79         255         77         0         204         0           Tokyo Blue         14-15         71         71         255         255         0         180         77           Sky blue         12-13         068         068         245         77         64         173         0           Lavender         8-9         058         058         165         186   | ů l                      |         |               |             |             |                |               |            |              |
| Deep amber         30-31         104         104         0         26         199         223         0           Straw         28-29         103         103         58         17         104         176         0           Light amber         26-27         102         102         0         0         171         193         0           Yellow         24-25         101         101         0         0         255         149         0           Spring yellow         22-23         100         100         80         0         227         157         0           Dark Yellow Green         20-21         90         90         255         0         255         204         0           Just Blue         16-17         79         79         255         77         0         204         0           Tokyo Blue         14-15         71         71         255         255         0         180         77           Sky blue         12-13         068         068         245         77         64         173         0           Lavender         8-9         058         058         165         186  |                          |         |               |             |             | -              |               |            |              |
| Straw         28-29         103         103         58         17         104         176         0           Light amber         26-27         102         102         0         0         171         193         0           Yellow         24-25         101         101         0         0         255         149         0           Spring yellow         22-23         100         100         80         0         227         157         0           Dark Yellow Green         20-21         90         90         255         0         255         204         0           Lime green         18-19         88         88         118         0         241         124         0           Just Blue         16-17         79         79         255         77         0         204         0           Tokyo Blue         14-15         71         71         255         255         0         180         77           Sky blue         10-11         063         063         122         0         112         127         0           Lavender         8-9         058         058         165         186   | *                        |         |               |             |             |                |               |            |              |
| Light amber         26-27         102         102         0         0         171         193         0           Yellow         24-25         101         101         0         0         255         149         0           Spring yellow         22-23         100         100         80         0         227         157         0           Dark Yellow Green         20-21         90         90         255         0         255         204         0           Lime green         18-19         88         88         118         0         241         124         0           Just Blue         16-17         79         79         255         77         0         204         0           Tokyo Blue         14-15         71         71         255         255         0         180         77           Sky blue         12-13         068         068         245         77         64         173         0           Lavender         8-9         058         063         122         0         112         127         0           Bright Red         6-7         026         026         255         21   | Deep amber               | 30-31   | 104           | 104         | 0           | 26             | 199           | 223        | 0            |
| Light amber         26-27         102         102         0         0         171         193         0           Yellow         24-25         101         101         0         0         255         149         0           Spring yellow         22-23         100         100         80         0         227         157         0           Dark Yellow Green         20-21         90         90         255         0         255         204         0           Lime green         18-19         88         88         118         0         241         124         0           Just Blue         16-17         79         79         255         77         0         204         0           Tokyo Blue         14-15         71         71         255         255         0         180         77           Sky blue         12-13         068         068         245         77         64         173         0           Lavender         8-9         058         063         122         0         112         127         0           Bright Red         6-7         026         026         255         21   | Straw                    | 28-29   | 103           | 103         | 58          | 17             | 104           | 176        | 0            |
| Yellow         24-25         101         101         0         0         255         149         0           Spring yellow         22-23         100         100         80         0         227         157         0           Dark Yellow Green         20-21         90         90         255         0         255         204         0           Lime green         18-19         88         88         118         0         241         124         0           Just Blue         16-17         79         79         255         77         0         204         0           Tokyo Blue         14-15         71         71         255         255         0         180         77           Sky blue         12-13         068         068         245         77         64         173         0           Pale blue         10-11         063         063         122         0         112         127         0           Lavender         8-9         058         058         165         186         77         0         0           Bright Red         6-7         026         026         255         21  |                          |         |               |             |             |                |               |            |              |
| Spring yellow         22-23         100         100         80         0         227         157         0           Dark Yellow Green         20-21         90         90         255         0         255         204         0           Lime green         18-19         88         88         118         0         241         124         0           Just Blue         16-17         79         79         255         77         0         204         0           Tokyo Blue         14-15         71         71         255         255         0         180         77           Sky blue         12-13         068         068         245         77         64         173         0           Pale blue         10-11         063         063         122         0         112         127         0           Lavender         8-9         058         058         165         186         77         0         0           Bright Red         6-7         026         026         0         255         21         Med Yellow         4-5         010         010         48         0         239         115         0 <td>•</td> <td></td> <td></td> <td></td> <td></td> <td>-</td> <td></td> <td></td> <td>-</td>  | •                        |         |               |             |             | -              |               |            | -            |
| Dark Yellow Green         20-21         90         90         255         0         255         204         0           Lime green         18-19         88         88         118         0         241         124         0           Just Blue         16-17         79         79         255         77         0         204         0           Tokyo Blue         14-15         71         71         255         255         0         180         77           Sky blue         12-13         068         068         245         77         64         173         0           Pale blue         10-11         063         063         122         0         112         127         0           Lavender         8-9         058         058         165         186         77         0         0           Bright Red         6-7         026         026         0         255         211         Med Yellow         4-5         010         010         48         0         239         115         0           Med bastard amber         2-3         004         004         0         62         78         159         0<  |                          |         |               |             |             | -              |               |            |              |
| Lime green         18-19         88         88         118         0         241         124         0           Just Blue         16-17         79         79         255         77         0         204         0           Tokyo Blue         14-15         71         71         255         255         0         180         77           Sky blue         12-13         068         068         245         77         64         173         0           Pale blue         10-11         063         063         122         0         112         127         0           Lavender         8-9         058         058         165         186         77         0         0           Bright Red         6-7         026         026         0         255         0         255         21           Med Yellow         4-5         010         010         48         0         239         115         0           Random Macro Color         1         -         -         -         -         -         -         -         -   | Spring yellow            | 22-23   | 100           | 100         | 80          | 0              | 227           | 157        | 0            |
| Just Blue         16-17         79         79         255         77         0         204         0           Tokyo Blue         14-15         71         71         255         255         0         180         77           Sky blue         12-13         068         068         245         77         64         173         0           Pale blue         10-11         063         063         122         0         112         127         0           Lavender         8-9         058         058         165         186         77         0         0           Bright Red         6-7         026         026         0         255         0         255         21           Med Yellow         4-5         010         010         48         0         239         115         0           Random Macro Color         1         -         -         -         -         -         -  | Dark Yellow Green        | 20-21   | 90            | 90          | 255         | 0              | 255           | 204        | 0            |
| Just Blue         16-17         79         79         255         77         0         204         0           Tokyo Blue         14-15         71         71         255         255         0         180         77           Sky blue         12-13         068         068         245         77         64         173         0           Pale blue         10-11         063         063         122         0         112         127         0           Lavender         8-9         058         058         165         186         77         0         0           Bright Red         6-7         026         026         0         255         0         255         21           Med Yellow         4-5         010         010         48         0         239         115         0           Med bastard amber         2-3         004         004         0         62         78         159         0           Random Macro Color         1         -         -         -         -         -         -         -  | Lime green               | 18-19   | 88            | 88          | 118         | 0              | 241           | 124        | 0            |
| Tokyo Blue         14-15         71         71         255         255         0         180         777           Sky blue         12-13         068         068         245         77         64         173         0           Pale blue         10-11         063         063         122         0         112         127         0           Lavender         8-9         058         058         165         186         77         0         0           Bright Red         6-7         026         026         0         255         0         255         21           Med Yellow         4-5         010         010         48         0         239         115         0           Med bastard amber         2-3         004         004         62         78         159         0   | •                        |         |               |             |             | -              |               |            | -            |
| Sky blue         12-13         068         068         245         77         64         173         0           Pale blue         10-11         063         063         122         0         112         127         0           Lavender         8-9         058         058         165         186         77         0         0           Bright Red         6-7         026         026         0         255         0         255         21           Med Yellow         4-5         010         010         48         0         239         115         0           Med bastard amber         2-3         004         004         0         62         78         159         0  |                          |         |               |             |             |                |               |            | -            |
| Pale blue         10-11         063         063         122         0         112         127         0           Lavender         8-9         058         058         165         186         77         0         0           Bright Red         6-7         026         026         0         255         0         255         21           Med Yellow         4-5         010         010         48         0         239         115         0           Med bastard amber         2-3         004         004         0         62         78         159         0           Random Macro Color         1         -         -         -         -         -         -         -  |                          |         |               |             |             |                |               |            | 77           |
| Lavender         8-9         058         058         165         186         77         0         0           Bright Red         6-7         026         026         0         255         0         255         21           Med Yellow         4-5         010         010         48         0         239         115         0           Med bastard amber         2-3         004         004         0         62         78         159         0           Random Macro Color         1         -         -         -         -         -         -  | Sky blue                 | 12-13   | 068           | 068         | 245         | 77             | 64            | 173        | 0            |
| Lavender         8-9         058         058         165         186         77         0         0           Bright Red         6-7         026         026         0         255         0         255         21           Med Yellow         4-5         010         010         48         0         239         115         0           Med bastard amber         2-3         004         004         0         62         78         159         0           Random Macro Color         1         -         -         -         -         -         -  | · .                      |         |               |             |             | 0              | 112           |            | 0            |
| Bright Red         6-7         026         026         0         255         0         255         21           Med Yellow         4-5         010         010         48         0         239         115         0           Med bastard amber         2-3         004         004         0         62         78         159         0           Random Macro Color         1         -         -         -         -         -         -         -  |                          |         |               |             |             | -              |               |            | -            |
| Med Yellow         4-5         010         010         48         0         239         115         0           Med bastard amber         2-3         004         004         0         62         78         159         0           Random Macro Color         1         -         -         -         -         -         -         -  |                          |         |               |             |             |                |               |            | -            |
| Med bastard amber         2-3         004         004         0         62         78         159         0           Random Macro Color         1         - <td>Bright Red</td> <td>6-7</td> <td>026</td> <td>026</td> <td>0</td> <td>255</td> <td>0</td> <td>255</td> <td>21</td>   | Bright Red               | 6-7     | 026           | 026         | 0           | 255            | 0             | 255        | 21           |
| Random Macro Color 1  | Med Yellow               | 4-5     | 010           | 010         | 48          | 0              | 239           | 115        | 0            |
| Random Macro Color 1  |                          |         |               |             | -           | -              |               |            |              |
|   |                          |         | 004           |             | Ŭ           | <u> </u>       |               | 100        |              |
| (only tor Macro effects)  |                          | 1       | -             | .           | -           | -              | -             | -          | -            |
|   | (only for Macro effects) |         |               |             |             |                |               |            |              |

#### • STOP / STROBE - channel 7



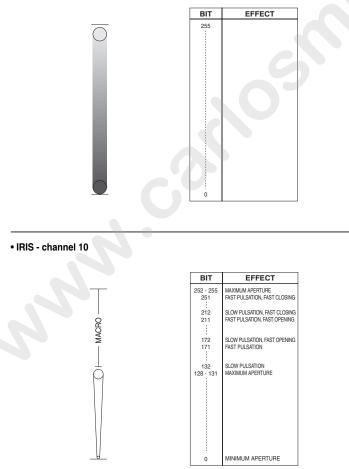
**IMPORTANT:** The lamp dim to half power 1 second after the channel stay at 0 bit level. The lamp goes back to full power when the channel level is put higher than 0 bit.

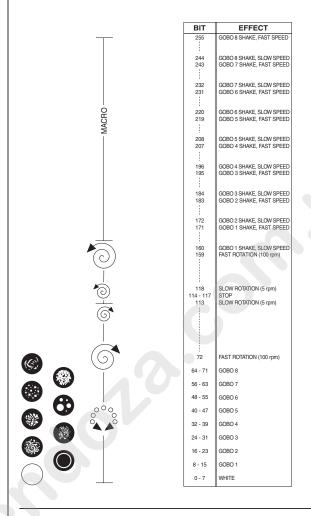
#### • DIMMER - channel 8



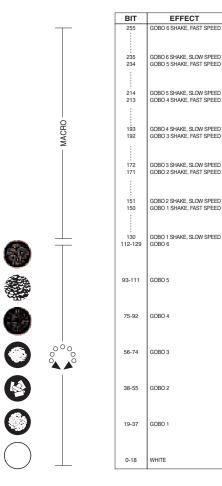
The lamp is linearly dimmed from full power to half power electronicaly and mechanically from half power to off.

#### • DIMMER FINE - channel 9

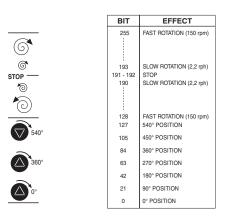




#### • ROTATING GOBO CHANGE - channel 12



• GOBO ROTATION - channel 13



BIT

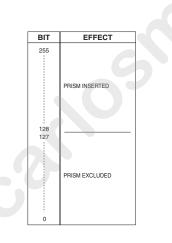
255

• GOBO FINE - channel 14



127

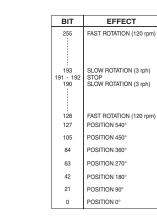
• PRISM INSERTION - channel 15



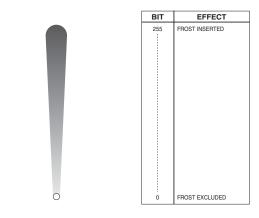
### • PRISM ROTATION - channel 16

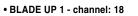
G STOP TOP

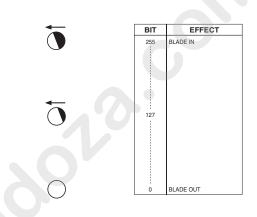
540°



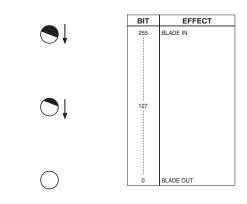
• FROST - channel 17





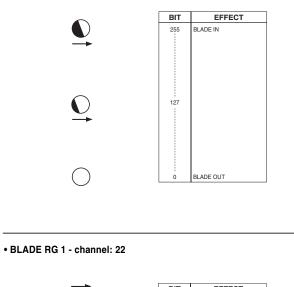


• BLADE UP 2 - channel: 19

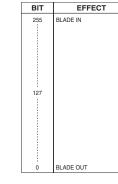


• BLADE DW 1 - channel: 20

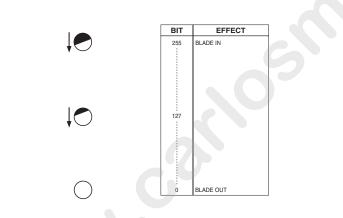
|                     | BIT | EFFEC     |
|---------------------|-----|-----------|
| <b>†</b> €          | 255 | BLADE IN  |
| $\uparrow \bigcirc$ | 127 |           |
| $\bigcirc$          | 0   | BLADE OUT |



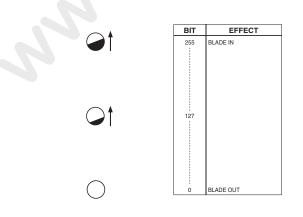




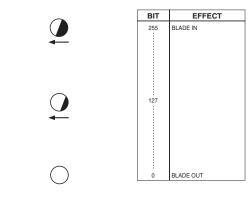
• BLADE RG 2 - channel: 23



• BLADE LF 1 - channel: 24



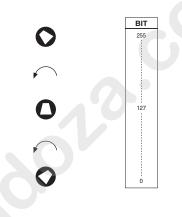
• BLADE LF 2 - channel: 25



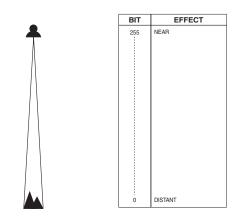
Important:

The lamp automatically dim to half power in any condition in which the blades completely shut the light beam.

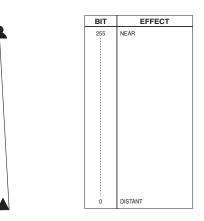
#### • FRAMING ROTATION - channel: 26

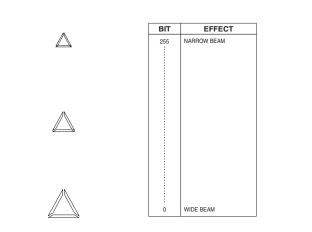


#### • FOCUS - channel 27



### • FOCUS FINE - channel 28





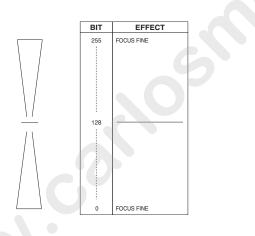
#### • AUTOFOCUS DISTANCE - channel 30

#### AUTOFOCUS priority:

- 1 Blades
- 2 Rotating Gobo
- 3 Static Gobo
- 4 Iris

| BIT | EFFECT        |
|-----|---------------|
| 255 | 100 METRES    |
| 128 | 50 METRES     |
| 102 | 40 METRES     |
| 77  | 30 METRES     |
| 51  | 20 METRES     |
| 26  | 10 METRES     |
| 7   | 3 METRES      |
| 0-6 | AUTOFOCUS OFF |

#### • AUTOFOCUS ADJUSTMENT - channel 31

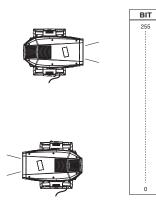


### MACRO EFFECTS - channel 32

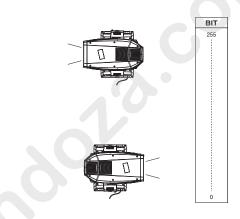
| BIT     | EFFECT         |
|---------|----------------|
| 232-255 | STAND BY BLACK |
| 220-231 | RANDOM MACRO 8 |
| 208-219 | RANDOM MACRO 7 |
| 196-207 | RANDOM MACRO 6 |
| 184-195 | RANDOM MACRO 5 |
| 172-183 | RANDOM MACRO 4 |
| 160-171 | RANDOM MACRO 3 |
| 148-159 | RANDOM MACRO 2 |
| 136-147 | RANDOM MACRO 1 |
| 112-135 | STAND BY BLACK |
| 100-111 | MACRO 8        |
| 88-99   | MACRO 7        |
| 76-87   | MACRO 6        |
| 64-75   | MACRO 5        |
| 52-63   | MACRO 4        |
| 40-51   | MACRO 3        |
| 28-39   | MACRO 2        |
| 16-27   | MACRO 1        |
| 12-15   | STAND BY BLACK |
| 8-11    | STAND BY       |
| 0-7     | MACRO OFF      |

### • PAN - channel 33

Operation with option InvertPan  $\,^{\circ}$  Off (Tilt conventionally represented at 35 bit and option Invert Tilt  $\,^{\circ}$  Off)

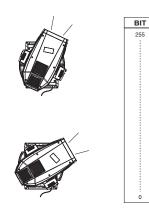


Operation with option InvertPan  $\,\hat{\circ}\,$  On (Tilt conventionally represented at 35 bit and option Invert Tilt  $\,\hat{\circ}\,$  Off)

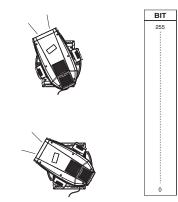


#### • PAN FINE - channel 34

Operation with option InvertPan  $\circ$  Off (Tilt conventionally represented at 35 bit and option Invert Tilt  $\circ$  Off)



Operation with option InvertPan  $\,\,\hat{\circ}\,\,$  On (Tilt conventionally represented at 35 bit and option Invert Tilt  $\,\,\hat{\circ}\,\,$  Off)



• TILT - channel 35

Operation with option Invert Tilt 🗘 Off

(Pan conventionally represented at 0 bit and option Invert Pan  $\,\hat{\lor}\,$  Off)

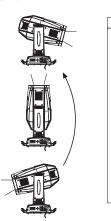
**BIT** 255

128

BIT

255

128

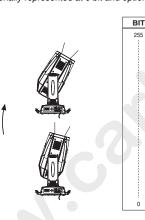


Operation with option Invert Tilt  $\,^{\circ}$  On (Pan conventionally represented at 0 bit and option Invert Pan  $\,^{\circ}$  Off)



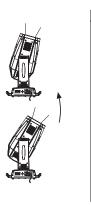
#### • TILT FINE - channel 36

Operation with option Invert Tilt  $\degree$  Off (Pan conventionally represented at 0 bit and option Invert Pan  $\degree$  Off)



Operation with option Invert Tilt  $\circ$  On (Pan conventionally represented at 0 bit and option Invert Pan  $\circ$  Off)

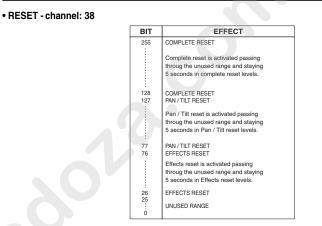
255



• FUNCTION - channel: 37

| BIT       | EFFECT                        |  |
|-----------|-------------------------------|--|
| 255<br>63 | FREE                          |  |
| 51-62     | LINEAR (Default) DIMMER CURVE |  |
| 38-50     | CONVENTIONALFUNCTION          |  |
| 25-37     | NORMALPAN-TILT                |  |
| 12-24     | FAST (Default) FUNCTION       |  |
| 0-11      | UNUSED RANGE                  |  |

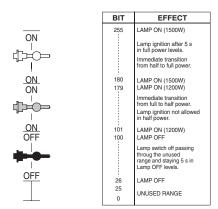
The functions are actived passing through unused range and staying 5 seconds in necessary level.



The functions are actived passing through unused range and staying 5 seconds in necessary level.

#### • LAMP CONTROL (only with option LAMP DMX On) - channel: 39

IMPORTANT: Alpha Profile 1500 is not provided with hot restrike igniter



The functions are actived passing through unused range and staying 5 seconds in necessary level.

### **TIMING CHANNELS**

|    | Timing Channel  | Channel function                  |  |  |
|----|---|-----------------------------------|--|--|
| 40 | Pan - Tilt time   | Pan – Tilt – Pan Fine – Tilt Fine |  |  |
| 41 | 1 Colour time Cyan - Magenta - Yellow - C.T.O Color wheel                 |                                   |  |  |
| 42 | 2 Beam time Dimmer – Zoom – Focus – Frost/Prism – Iris - Framing Rotation |                                   |  |  |
| 43 | Gobo time Fix Gobo –Rotating Gobo change                                  |                                   |  |  |

### TIME TABLE

| 0       1       2       3       4       5       6       7       8       9       10       11       12       13       14 | Full<br>0.2<br>0.4<br>0.6<br>0.8<br>1<br>1.2<br>1.4<br>1.6<br>1.8<br>2<br>2.2<br>2.4<br>2.6<br>2.8<br>3<br>0.6          | 43<br>44<br>45<br>46<br>47<br>48<br>49<br>50<br>51<br>52<br>53<br>54<br>55<br>56<br>57<br>57 | 8.6         8.8         9         9.2         9.4         9.6         9.8         10         10.2         10.4         10.6         11         12 | 86<br>87<br>88<br>90<br>91<br>92<br>93<br>94<br>95<br>96<br>97<br>98 | 24<br>25<br>26<br>27<br>28 | 129<br>130<br>131<br>132<br>133<br>134<br>135<br>136<br>137<br>138<br>139   | 41<br>42<br>43<br>44 | 172<br>173<br>174<br>175<br>176<br>177<br>178<br>179<br>180<br>181                      | 58<br>59<br>60<br>65 | 216<br>217<br>218<br>219<br>220<br>221<br>222<br>223<br>223<br>224 | 170<br>180<br>190<br>200 |
|--|---|--|---|--|----------------------------|---|----------------------|---|----------------------|--|--------------------------|
| 2<br>3<br>4<br>5<br>6<br>7<br>8<br>9<br>10<br>11<br>12<br>13   | $\begin{array}{c} 0.4 \\ 0.6 \\ 0.8 \\ 1 \\ 1.2 \\ 1.4 \\ 1.6 \\ 1.8 \\ 2 \\ 2.2 \\ 2.4 \\ 2.6 \\ 2.8 \\ 3 \end{array}$ | 45<br>46<br>47<br>48<br>49<br>50<br>51<br>52<br>53<br>54<br>55<br>56<br>57                   | 9         9.2         9.4         9.6         9.8         10         10.2         10.4         10.6         11                                    | 88<br>89<br>90<br>91<br>92<br>93<br>94<br>95<br>96<br>97<br>98       | 25<br>26<br>27             | 131           132           133           134           135           136           137           138           139 | 42                   | 174           175           176           177           178           179           180 | 59<br>60             | 218<br>219<br>220<br>221<br>222<br>223                             | 180                      |
| 3       4       5       6       7       8       9       10       11       12       13                                  | 0.6<br>0.8<br>1<br>1.2<br>1.4<br>1.6<br>1.8<br>2<br>2.2<br>2.4<br>2.4<br>2.6<br>2.8<br>3                                | 46<br>47<br>48<br>49<br>50<br>51<br>52<br>53<br>54<br>55<br>56<br>57                         | 9.2         9.4         9.6         9.8         10         10.2         10.4         10.6         11  | 89<br>90<br>91<br>92<br>93<br>94<br>95<br>96<br>97<br>98             | 26                         | 132           133           134           135           136           137           138           139               | 43                   | 175<br>176<br>177<br>178<br>179<br>180  | 60                   | 219<br>220<br>221<br>222<br>223                                    | 190                      |
| 4       5       6       7       8       9       10       11       12       13  | 0.8<br>1<br>1.2<br>1.4<br>1.6<br>1.8<br>2<br>2.2<br>2.4<br>2.6<br>2.8<br>3  | 47<br>48<br>49<br>50<br>51<br>52<br>53<br>54<br>55<br>56<br>57                               | 9.4         9.6         9.8         10         10.2         10.4         10.6         11  | 90<br>91<br>92<br>93<br>94<br>95<br>96<br>97<br>98                   | 26                         | 133           134           135           136           137           138           139                             | 43                   | 176<br>177<br>178<br>179<br>180   | 60                   | 220<br>221<br>222<br>223   | 190                      |
| 5<br>6<br>7<br>8<br>9<br>10<br>11<br>12<br>13  | $ \begin{array}{r} 1\\ 1.2\\ 1.4\\ 1.6\\ 1.8\\ 2\\ 2.2\\ 2.4\\ 2.6\\ 2.8\\ 3\\ \end{array} $                            | 48<br>49<br>50<br>51<br>52<br>53<br>54<br>55<br>56<br>57                                     | 9.6<br>9.8<br>10<br>10.2<br>10.4<br>10.6<br>11  | 91<br>92<br>93<br>94<br>95<br>96<br>97<br>98                         | 27                         | 134<br>135<br>136<br>137<br>138<br>139  | 43                   | 177<br>178<br>179<br>180  | 60                   | 221<br>222<br>223  |                          |
| 6<br>7<br>8<br>9<br>10<br>11<br>12<br>13   | 1.2         1.4         1.6         1.8         2         2.2         2.4         2.6         2.8         3             | 49<br>50<br>51<br>52<br>53<br>54<br>55<br>56<br>57   | 9.8<br>10<br>10.2<br>10.4<br>10.6<br>11   | 92<br>93<br>94<br>95<br>96<br>97<br>98                               | 27                         | 135<br>136<br>137<br>138<br>139   |                      | 178<br>179<br>180   |                      | 222<br>223   |                          |
| 7       8       9       10       11       12       13  | 1.4         1.6         1.8         2         2.2         2.4         2.6         2.8         3                         | 50<br>51<br>52<br>53<br>54<br>55<br>56<br>57   | 10<br>10.2<br>10.4<br>10.6<br>11  | 93<br>94<br>95<br>96<br>97<br>98                                     | 27                         | 136<br>137<br>138<br>139  |                      | 179<br>180  |                      | 223  |                          |
| 8<br>9<br>10<br>11<br>12<br>13   | 1.6         1.8         2         2.2         2.4         2.6         2.8         3                                     | 51<br>52<br>53<br>54<br>55<br>56<br>57   | 10.2           10.4           10.6           11   | 94<br>95<br>96<br>97<br>98   |                            | 137<br>138<br>139   | 44                   | 180   |                      |  | 200                      |
| 9<br>10<br>11<br>12<br>13  | 1.8           2           2.2           2.4           2.6           2.8           3                                     | 52<br>53<br>54<br>55<br>56<br>57   | 10.4<br>10.6<br>11  | 95<br>96<br>97<br>98   |                            | 138<br>139  | 44                   |   | 65                   | 224  | 200                      |
| 10       11       12       13  | 2<br>2.2<br>2.4<br>2.6<br>2.8<br>3  | 53<br>54<br>55<br>56<br>57   | 10.6<br>11  | 96<br>97<br>98   | 28                         | 139   |                      | 181   | 65                   |  | 1                        |
| 11<br>12<br>13   | 2.2<br>2.4<br>2.6<br>2.8<br>3   | 54<br>55<br>56<br>57   | 11  | 97<br>98   | 28                         |   |                      |   | 65                   | 225  |                          |
| 12<br>13   | 2.4<br>2.6<br>2.8<br>3  | 55<br>56<br>57   |   | 98   |                            |   |                      | 182   |                      | 226  |                          |
| 13   | 2.6<br>2.8<br>3   | 56<br>57   |   |  |                            |   | 40 45                | 183   | 70                   | 227  | 210                      |
|  | 2.8<br>3  | 57   | 12  |  |                            | 141   | 184                  |   | 228                  | L  |                          |
| 14   | 3   |  | 14  | 99   | 29                         | 142   | 46                   | 185   | 75                   | 229  | 220                      |
|  |   |  | 12  | 100  |                            | 143   |                      | <u>186</u><br>187   | 75                   | 230  | 220                      |
| 15   |   | 58   | 13  | 101  |                            | 144   |                      | 188   |                      | 231  |                          |
| 16   | 3.2   | 59   |   | 102  | 30                         | 145   | 47                   | 189   | 80                   | 232  | 230                      |
| 17   | 3.4   | 60   |   | 103  |                            | 146   |                      | 190   |                      | 233  |                          |
| 18   | 3.6   | 61   | 14  | 104  | 31<br>32                   | 147   | 48                   | 191   | 85<br>90             | 234  | 240                      |
| 19   | 3.8   | 62   |   | 105  |                            | 148   |                      | 192   |                      | 235  |                          |
| 20   | 4   | 63   | 15  | 106  |                            | 149   |                      | 193   |                      | 236  |                          |
| 21   | 4.2   | 64   | 10  | 107  |                            | 150   |                      | 194   |                      | 237  | 250                      |
| 22   | 4.4   | 65   |   | 108  |                            | 151   |                      | 195   |                      | 238  |                          |
| 23   | 4.6   | 66   | 16  | 109  | 33                         | 152   |                      | 196   | 95                   | 239  | 260                      |
| 24   | 4.8   | 67   | <u> </u>  | 110  |                            | 153   | 50                   | 197   |                      | 240  | <u> </u>                 |
| 25   | 5   | 68   | 17  | 111  |                            | 154   |                      | 198   |                      | 241  |                          |
| 26   | 5.2   | 69   |   | 112  | 34                         | 155   | 51                   | 199   | 100                  | 242  | 270                      |
| 27   | 5.4   | 70   |   | 113  |                            | 156   |                      | 200   |                      | 243  |                          |
| 28   | 5.6   |  | 18  | 114  | 35                         | 157   |                      | 201   | 110                  | 244  | 280                      |
| 29   | 5.8   | 72   |   | 115  |                            | 158   | 52                   | 202   |                      | 245  |                          |
| 30   | 6   | 73   | 19  | 116  |                            | 159   |                      | 203   |                      | 246  |                          |
| 31   | 6.2   | 74   |   | 117  | 36                         | 160   | 53                   | 204   | 120                  | 247  | 290                      |
| 32   | 6.4   | 75   |   | 118  |                            | 161   |                      | 205   |                      | 248  |                          |
| 33   | 6.6   |  | 20  | 119  | 37                         |   | 162                  | 206   | 130                  | 249  | 300                      |
| 34   | 6.8   | 77   |   | 120  |                            | 163   | 54                   | 207   | 150                  | 250  |                          |
| 35   | 7   | 78   |   | 121  | 38                         | 164   |                      | 208   | 140                  | 251  |                          |
| 36   | 7.2   | 79   | 21  | 122  |                            | 165   | 55                   | 209   |                      | 252  | 310                      |
| 37   | 7.4   | 80   | <u> </u>  | 123  |                            | 166   |                      | 210   |                      | 253  |                          |
| 38   | 7.6   | 81   | 22  | 124  | 39                         | 167   | 50                   | 211   | 150                  | 254  | <b></b>                  |
| 39   | 7.8   | 82   |   | 125  |                            | 168   | -                    | 212   |                      | 255  | Follow cue               |
| 40   | 8   | 83   |   | 126  | <u> </u>                   | 169   |                      | 213   | 100                  |  | Data                     |
| 41   | 8.2   | 84   | 23  | 127  | //// / /-                  | 170   | 57                   | 214   | 160                  |  |                          |
| 42   | 8.4   | 85   |   | 128  |                            | 171   |                      | 215   |                      |  |                          |

CLAY PAKY s.p.A. - Via Pastrengo, 3/b - 24068 Seriate (BG) Italy - Tel. +39-035-654311 - Fax +39-035-301876 - www.claypaky.it