SGM
LIGHT TECHNOLOGY

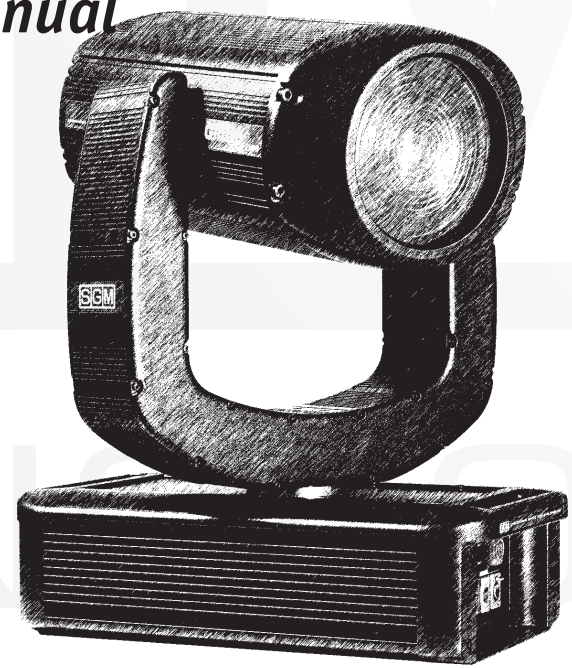
Adobe Acrobat® version

Giotto WASH 1200

professional moving head wash luminaire

rel. 1.00

user manual



General instructions

Read the instructions in this handbook carefully, as they give important information regarding safety during installation, use and maintenance.

Be sure to keep this instruction manual with the fixture in order to consult it in the future. If the fixture is sold or given to another operator, make certain that it always has its manual, to enable the new owner to read about its operation and relative instructions.

- This unit is not intended for home use.
- After having removed the packaging, check that the fixture is not damaged in any way. If in doubt, don't use it and contact an authorized SGM Technical Service Centre.
- Packaging material (plastic bags, polystyrene foam, nails, etc.) must not be left within children's reach, as it can be dangerous.
- This fixture must only be operated by adults. Do not allow children to tamper or play with it.
- Electrical work necessary for installing the fixture must be carried out by a qualified electrician or experienced person.

Never use the fixture under the following conditions:

- In places subject to excessive humidity
- In places subject to vibrations or bumps.
- In places with a temperature of more than 45°C or less than 2°C
- Protect the fixture from excessive dryness or humidity (ideal conditions are between 35% or more 85%).

- The fixture must not be installed less than 1.5m. from the surface or object to be lit.
- Do not dismantle or modify the fixture.
- Make certain that no inflammable liquids, water or metal objects enter the fixture.
- Should any liquid be spilled on the fixture, disconnected the power supply to the lighting control desk immediately.
- In the event of serious operating problems, stop using the fixture immediately and either contact the nearest SGM sales point for a check or contact the manufacturer directly.
- Do not open the fixture - there are no user serviceable parts inside.
- Never try to repair the fixture yourself. Repairs by unqualified people could cause damage or faulty operation. Contact your nearest authorized service centre.

Always insist that original spare parts are fitted.

Safeguard the environment: don't throw batteries, accumulators or packaging material into your waste bin - return them to your reseller or take them to the nearest special waste collection point.

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LIGHT TECHNOLOGY

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1. Giotto Wash 1200 features

1.1 Main Features

This new SGM professional moving head wash luminaire is the result of our lengthy experience in manufacturing intelligent fixtures controlled by DMX 512 serial digital signals.
The quality and design policy used are those which all SGM products have had in common for many years and the sophisticated electronics used, combined with the avant-garde performance ensure that these fixtures are definitely among the world's top products. The severe tests they undergo during the design stage, accurate study of their functions, the innovative materials and constant technical updating, have resulted in truly unique fixtures.
Mechanism, optics and electronics were entirely designed in our R&D labs, ensuring complete control of the know-how and optimization of the quality:price ratio.
As with all other SGM products, before being put on the market, the Giotto underwent a long, severe test period, from which it came out with flying colours: further confirmation of high quality and reliability, up to SGM's usual standards.
The smart lines and optimisation of the outer structure to ensure user-friendliness enable the fixture to be installed in absolutely any position and any maintenance work can be carried out extremely rapidly.
Giotto Wash is designed and built to current CE norms.

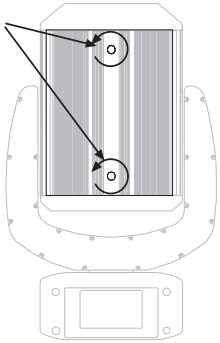
1.2 Technical Specifications

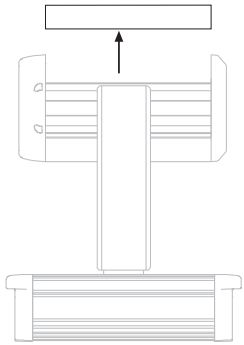
Power supply	90÷240VAC (universal, electronic ballast) 50 or 60Hz
Power absorbed	1500W
Electronics	CS00246 (input signal); CS0244 + 0245 (electronic ballast) 0252 (striker); CS0247 + 0248 + 0250 (drivers)
Settings	via built-in "Control" microcomputer
Inputs/Outputs	- DMX IN and DMX OUT with 5-pin XLR-F connectors - Powercon Neutrik mod. NAC3MPA three-pin socket
DMX channels	13 (18 when using the motorized barndoor accessory)
Colours	CMY system + selected dichroic filters
Conversion filters	3.200°K conversion filter
Optics	200mm motorized Fresnel lens, aperture from 18 to 35°
Body	in sheet metal and extruded and die-cast aluminium with epoxy power finish
Max. dimensions	53 x 47.5 x 76.5 cm. - Weight 30kg.

SGM Elettronica reserves the right to improve or modify their products at any time without prior notice. Always consult the handbook of the unit being used to avoid errors and differences between the actual functions and those shown in the book.

2 - Fixture Maintenance

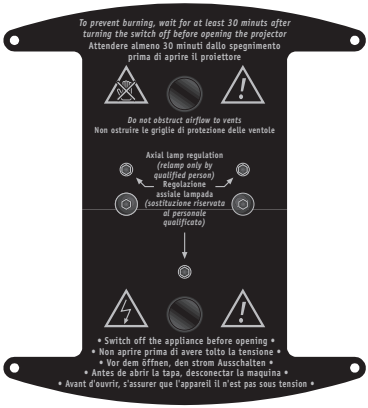
2.1 Access to internal components

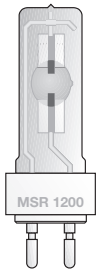




Giotto fixtures have a simple mechanism for opening the moving head. To open fixture, just turn the two locking screws shown in the design through 180°, then lift the cover.
Before opening the fixture after it has been used, wait for at least 30 minutes to allow all the parts to cool down and avoid burns
All work must ALWAYS be carried out by qualified technical personnel.
When the work is finished, close the fixture again, making certain that the mechanical parts fit perfectly together.

2.2 Lamp fitting, adjustment and replacement

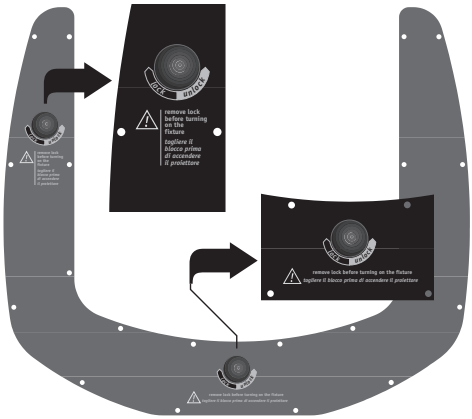




To ensure the ideal lamp/optics combination, every time a new lamp is fitted, a little adjustment may be required to optimize light output.
On the rear of Giotto's moving head, there's a flange with two large screws, which enable the removal of the flange, on the rear of which the lampholder is fitted.
ATTENTION: making certain that the fixture is switched off and the parts are not sufficiently hot to cause burns (wait for at least 30 minutes after switching the unit off).
Once the lamp has been fitted in the lampholder, make certain that it has been fitted perfectly and then lock the flange back in place on the rear of the fixture.
There are three hexagonal screws on the centre of the flange for centring the lamp, which must be done with the fixture on, without dimming the light and (of course), with the shutter open and the strobe off.
This procedure requires precision and care and DEFINITELY MUST only be carried out by qualified experienced technical personnel.

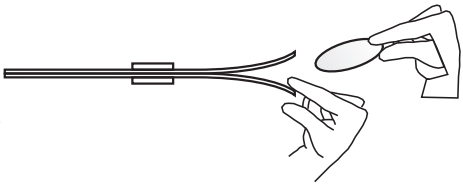
2.3 Lockng and unlocking the mechanism

Giotto fixtures have a mechanical locking system for the moving parts.
Moving head and yoke must be locked every time the fixture is transported, using either a suitable flightcase or the original packaging, which have suitable shock-resistant support devices.
ALWAYS remember to unlock the mechanism BEFORE switching the fixture on!!!
Locking and unlocking procedure is carried out by turning the two knobs on the yoke, following the printed instructions.



2.4 Replacing dichroic filters

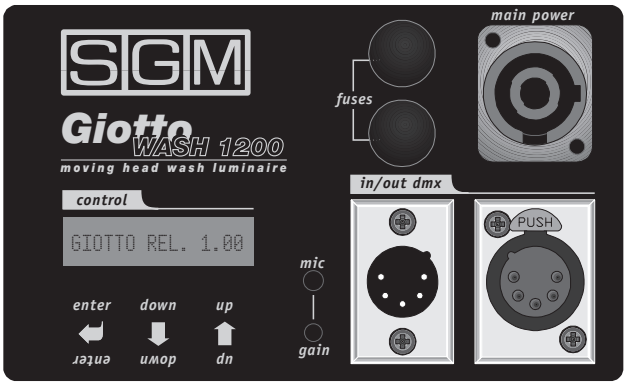
As well as the CMY mixing system, the Giotto also has a wheel fitted with 5 high quality selected dichroic filters (ø51.8mm). If operators require to replace these with other colours, once the cover has been opened (see chapter 2.1) find the filter wheel, open it extremely carefully, remove the old filter and fit the replacement.
This procedure must be carried out by qualified personnel with the fixture switched off and after waiting at least 30 minutes for the internal parts of the moving head to cool down.



2.5 Periodic cleaning and checks

The fixture should be cleaned every 300 approximately (or whenever necessary) using compressed air to remove dust which may have built up.
The paint used can be cleaned with alcohol or similar products: in this case, always use a non-abrasive cloth. Make absolutely certain to avoid damaging the display by pressing too hard on it.
To ensure perfect fixture efficiency, an overall check every 600 running hours is advisable.
Electrical and mechanical parts must be checked by qualified technical personnel.

3. Functions of the built-in “Control” computer



On the Giotto’s input panel, as well as the power and signal connectors, there’s also a built-in “Control” microcomputer
By means of this fundamental part of the fixture, it’s possible to carry out all the regulations necessary for correct installation, as well as running a test of all the functions and enabling the operator to “interrogate” the fixture about some very important parameters.
To access the functions, scroll with the Up/Down arrows to the required voce desiderata, then press ENTER to access the variation (also done with Up/Down) and then confirm the new data with ENTER.

In working conditions, DMX Signal appears on the display, showing that the input signal is DMX and is correctly received. After having modified the parameters “Control” micro-computer, the display automatically returns to this condition after a few seconds.

When there’s no signal, the flashing message indicates no signal .

3.1 Start address

Every unit in a DMX chain needs a start address in order to accept only the controls sent to that specific unit. To address the fixture press ENTER: Addr=001 will appear on the display, with the word “Addr” flashing. The Up/Down keys now allow the value required to be entered. Press ENTER again to confirm the new value.

3.2 Pan direction

This function allows to set the direction of rotation of Giotto’s moving head and is indispensable when several fixture’s are installed, in order that the operator can have fixtures set opposite each other moving in the same direction when a command is received. Scrolling the menu with Up/Down, Pmove=Norm or Pmove=Rev will appear. To change the direction of rotation press ENTER and then change from Norm to Rev (or vice versa) with the Up/Down keys, then press ENTER to confirm the new choice.

3.3 Limiting Pan

The Giotto fixture has a 540° Pan range (one and a half turns). If the total movement is not required, two parameters enable to limit the start and stop angle. The only limit is the minimum difference between start (MIN) and stop (MAX), set at 4°.

To set the new start angle, scroll with Up/Down until PP_MIN=xxx appears, where xxx is a number between 0 and 540. After pressing ENTER, this value can be changed with the Up/Down keys, setting whatever is required. To confirm the choice, press ENTER again.

To set the new stop angle on the other hand, scroll with Up/Down until PP_MAX=xxx appears, where xxx is a number between 0 and 540. After pressing ENTER, this value can be changed with the Up/Down keys, setting whatever is required. To confirm the choice, press ENTER again.
When the Giotto is used with 16-bit resolution (the mode giving smoother, more precise movement), the entire arc of 540° is divided into 65,536 steps. This means that a movement of 1° is divided in approximately 121 parts: this ensures remarkable positioning precision.
Limiting Pan movement enables this already high quality to be considerably increased, since the steps are still 65,536, but the angle can be reduced, as already mentioned, to just 4°. This is a datum of potential precision, as the movement tolerance in the motors actually reduces the number of steps available.

3.4 Tilt direction

This function allows to set the tilt direction of Giotto's mobile head, and is indispensable when several fixture's are installed, in order that the operator can have fixtures set opposite each other moving in the same direction when a command is received. Scrolling the menu with Up/Down, Tmove=Norm or Tmove=Rev will appear. To change the direction of rotation press ENTER and then change from Norm to Rev (or vice versa) with the Up/Down keys, then press ENTER to confirm the new choice.

3.5 Limiting Tilt

The Giotto fixture has a 270° Tilt range (3/4 of a turn). If the total movement is not required, two parameters enable to limit the start and stop angle. The only limit is the minimum difference between start (MIN) and stop (MAX), fixed at 4°.

To set the new start angle, scroll with Up/Down until TP_MIN=xxx appears, where xxx is a number between 0 and 270. After pressing ENTER, this value can be changed with the Up/Down keys, setting whatever is required. To confirm the choice, press ENTER again.

To set the new stop angle on the other hand, scroll with Up/Down until TP_MAX=xxx appears, where xxx is a number between 0 and 270. After pressing ENTER, this value can be changed with the Up/Down keys, setting whatever is required. To confirm the choice, press ENTER again.
When the Giotto is used with 16-bit resolution (the mode giving smoother, more precise movement), the entire arc of 270° is divided into 65,536 steps. This means that a movement of 1° is divided in approximately 121 parts: this ensures remarkable positioning precision.
Limiting Pan movement enables this already high quality to be considerably increased, since the steps are still 65,536, but the angle can be reduced, as already mentioned, to just 4°. This (as with Pan) is a datum of potential precision, as the movement tolerance in the motors actually reduces the number of steps available.

3.6 Pan/Tilt inversion

This function also allows to optimize the movement of Giotto's moving head according to the operator's position, in order to simplify all positioning work.

For access to this function press ENTER, then scroll with Up/Down until SWAP=on or SWAP=off appears. If SWAP is on, this means that the Pan data are being swapped (exchanged) with Tilt data and vice versa. Select the required value with Up/Down and press ENTER again.

3.7 Lamp elapsed time meter

Giotto's microcomputer stores various data in its memory, including those relative to the number of hours the lamp has been in operation. This is useful to know in advance when it's almost time to replace the lamp, which has a life of approximately 800 hours.
To know how long a lamp has been in operation, press ENTER and then scroll with Up/Down until LMP_h=xxx appears on the display, where xxx is the number of hours the lamp has been used.
To reset the counter (procedure to be carried out when relamping), press ENTER until the display starts flashing. Then press DOWN to zero the counter, or UP to restore the value (Undo function).

3.8 Lamp ignition meter

Giotto's microcomputer stores various data in its memory, including those relative to the number of times the lamp has been switched on. This is important because switching the lamp on needlessly causes stress to the components and can therefore contribute to a reduction of lamp life.
To find out how often a lamp has been switched on, press ENTER and then scroll with Up/Down until LMP_st=xxx appears on the display, where xxx is the number of times it has been switched on.
To reset the counter (procedure to be carried out when relamping), press ENTER until the display starts flashing. Then press DOWN to zero the counter, or UP to restore the value (Undo function).

3.9 Fixture elapsed time meter

This function allows to know how many hours the fixture has been used. This counter cannot be reset.
To find out how many hours a fixture has been used, press ENTER, then scroll with Up/Down until SCN_h=xxx appears on the display, where xxx is the number of hours the fixture has been used.
This information is fundamental for programming Giotto's maintenance, which as already mentioned involves cleaning every 300 hours and a general check every 600.

3.10 Input signal

This function allows to choose which type of input signal is to be used, choosing between DMX 512 and RS-232.

For access to this function, scroll with Up/Down until SIGN=DMX or SIGN=RS232 appears. Then press ENTER, use Up/Down to select the required value, then press ENTER again.

3.11 Pan/Tilt resolution

This function allows to set the resolution of the required movement at either 16 or 8 bits. As mentioned in chapters 3.3 and 3.5, these differ for the number of steps into which the mobile head's movement is divided.
In 16-bit (SGM) mode, the 540° Pan and 270° Tilt are divided into 65,536 steps, ensuring very smooth precise movement. In 5-bit (STD) mode, there are 256 steps, which nevertheless give precise movement.

To access this function, scroll with Up/Down until IN_MOD=SGM or IN_MOD=STD appears.
Then press ENTER, use Up/Down to select the required value, then press ENTER again.
Remember to use the correct parameters in the configuration of the fixture in the Soft Patch of the controller or desk to be used.

3.12 Remote lamp switching

Operators can decide if the lamp has to be switched on from the controller or automatically.

To access to this function, scroll with Up/Down until LMP_CTR=EN or LMP_CTR=DS appears, where EN means enabled (active, i.e. via remote control) and DS disabled (not active, therefore automatic). Then press ENTER, use Up/Down to select the value required, then press ENTER again.
Remember to use the correct parameters in the configuration of the fixture in the Soft Patch of the controller or desk to be used.

3.13 Remote fixture reset

Operators can decide when the Giotto can be reset from the controller or only run automatically when the fixture is switched on.

For access to this function, scroll with Up/Down until RST_CTR=EN or RST_CTR=DS appears, where EN stands for enabled (active, therefore under remote control) and DS for disabled (not active, so automatic). Then press ENTER, use Up/Down to select the required value, then press ENTER. again
Remember to use the correct parameters in the configuration of the fixture in the software Patch of the controller or desk which is to be used.

3.14 Dimming the display

Operators can select either standard or very low brightness on Giotto's display. This option has been included for theatre and television use, where excessive light emission can cause problems.

To access this function, scroll using Up/Down until BRIGH=xxx appears.
The possible settings, expressed as a percentage, are 0, 6, 13, 20, 27, 40, 53 and 100. 0 is the minimum brightness for reading the display correctly.
Press ENTER, select the required value with Up/Down, then press ENTER again.

3.15 Display reading angle

When the fixture is hung "head downwards" from a structure, the display messages can be rotated through 180°, thus facilitating access to the programming menus for operators on the structures.

For access to this function, scroll with Up/Down until DSPL_FLIP appears.
When ENTER is pressed, the messages on the display will appear rotated through 180°.

3.16 Reserved functions

Some of the fixture's functions aren't available to operators as they access sections of the software which are still being defined in this firmware release. When RESERVED appears on the display, you're in this section. Access is forbidden.

4. Giotto control channels

4.1 – Ch 01/02 – Pan

DMX channels 1 and 2 control the fixture's Pan in LSB and MSB mode respectively.
The two channels are used together for 16-bit commands, and only channel 2 is used for 8-bit commands (see chapter 3).

4.2 – Ch 03/04 – Tilt

DMX channels 3 and 4 control the fixture's Tilt in LSB and MSB mode respectively.
The two channels are used together for 16-bit commands, and only channel 4 is used for 8-bit commands (see chapter 3).

4.3 - Ch 5 - Colour wheel + Conversion filter

Giotto has a wheel fitted with five high quality selected dichroic colour filters (ø51.8 mm), which can be used individually or along with the colour conversion filter and CMY colour mixing system. Channel 5 also controls the 3.200°K colour conversion filter (ideal for television use) which can also be used over the colours created by the CMY system.

Value	*Colour / Conversion Filter*
0÷22	white
23÷42	green
43÷63	pink
64÷84	amber
85÷105	blue
106÷127	orange
128÷149	orange + 3.200°K conv. filt.
150÷170	blue + 3.200°K conv. filt.
171÷192	amber + 3.200°K conv. filt.
193÷212	pink + 3.200°K conv. filt.
213÷233	green + 3.200°K conv. filt.
234÷255	3.200°K conv. filt.

4.4 - Ch 6 - CMY system - Cyan Wheel

This channel is part of the CMY colour mixing group, which creates colours using an additive method; i.e. superimposing the three basic colours from which it takes its name: Cyan, Magenta and Yellow.
This channel gives continuous regulation of the Cyan colour wheel's addition.
Possible values go from 0 to 255.

4.5 - Ch 7 - CMY system - Magenta wheel

This channel is part of the CMY colour mixing group, which creates colours using an additive method; i.e. superimposing the three basic colours from which it takes its name: Cyan, Magenta and Yellow.
This channel gives continuous regulation of the Magenta colour wheel's addition.
Possible values go from 0 to 255.

4.6 - Ch 8 - CMY system - Yellow wheel

This channel is part of the CMY colour mixing group, which creates colours using an additive method; i.e. superimposing the three basic colours from which it takes its name: Cyan, Magenta and Yellow.
This channel gives continuous regulation of the Yellow colour wheel's addition.
Possible values go from 0 to 255.

4.7 – Ch 9 – Dimmer

Channel 9 controls Giotto's dimmer. This system for regulating the amount of light emitted uses a combination of electronic and mechanical regulation, ensuring extremely precise regulation.
Possible values go from 0 to 255 (respectively 0 and 100%).

4.8 - Ch 10 - Shutter and Strobe

This channel controls the opening and closing of the shutter and the Giotto's strobe effect. The strobe is enabled according to the values shown on the table alongside.

Value	*Shutter / Strobe*
0÷15	shutter closed
16÷31	strobe - 0.5Hz
32÷47	strobe - 1.42Hz
48÷63	strobe - 1.7Hz
64÷79	strobe - 2Hz
80÷95	strobe - 2.42Hz
96÷111	strobe - 2.9Hz
112÷127	strobe - 3.46Hz
128÷143	strobe - 4.15Hz
144÷159	strobe - 4.89Hz
160÷175	strobe - 5.93Hz
176÷191	strobe - 6.91Hz
192÷207	strobe - 8.29Hz
208÷223	strobe - 9.95Hz
224÷239	strobe - 11.83Hz
240÷255	shutter open

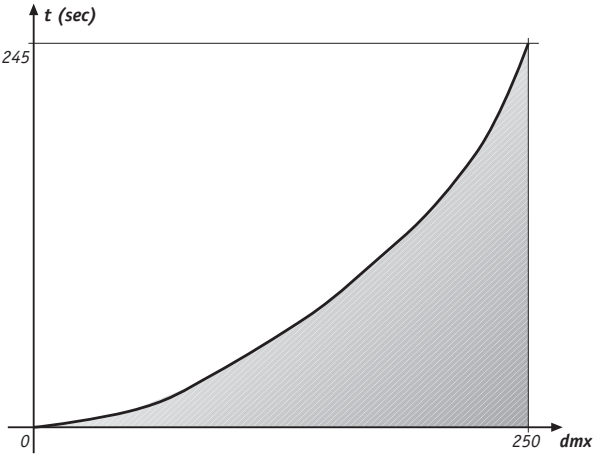
4.9 – Ch 11 – Zoom

The Giotto's 200mm. Fresnel lens is the hub of the Zoom effect and thanks to its motor, enables the aperture of the fixture's light beam to be regulated smoothly.

Value	*Zoom*
0	zoom in (18° angle)
0÷255	linear variation
255	zoom out (35° angle)

4.10 - Ch 12 - Setting movement speed

The channel is used to control fixture movement speed, which can be set at operators' discretion.
The parameter set (from 0 to 250), decides the time the fixture must take to complete a continuous movement (e.g. a full Pan) and can vary from 1 to 245 seconds.
The curve of the speed in relationship to the DMX value set is shown alongside.
When the value set is between 251 and 255, the time depends on the cross-fade time set on the controller.



4.11 - Ch 13 - Remote lamp switching and reset

When the operator enables the remote lamp switching function (see chapter 3.12), it can be carried out setting channel 13 according to the table alongside.

When enabled, (see chapter 3.13), remote fixture reset can also be carried out by setting channel 13 as shown in the table.

Value	*Remote functions*
0÷60	LAMP - off
61÷129	LAMP - hysteresis
130÷179	LAMP - on
180÷239	RESET - hysteresis
240÷255	RESET - reset projector

cod. M001190

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