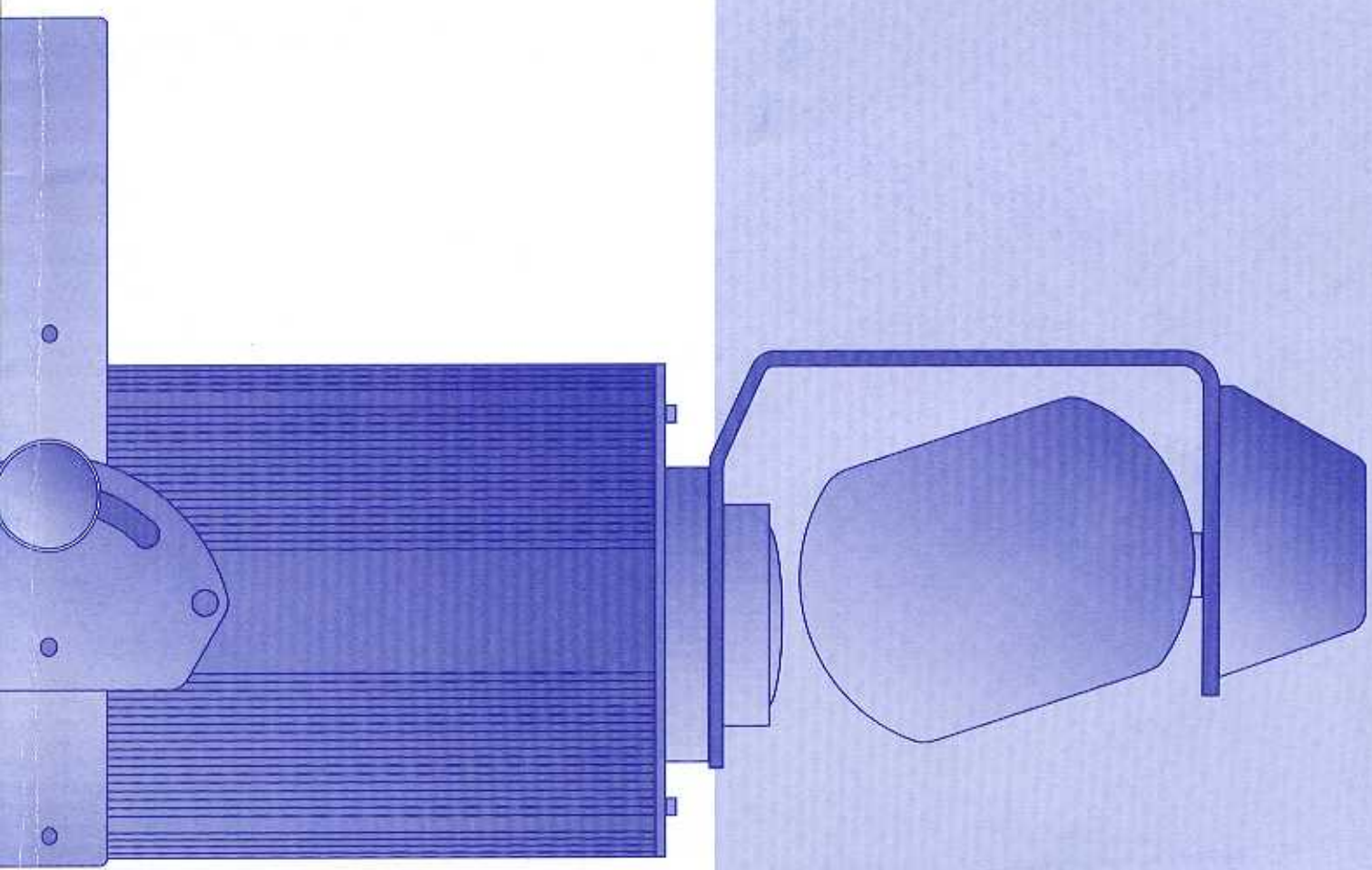
SGM
ELECTRONIC LIGHT

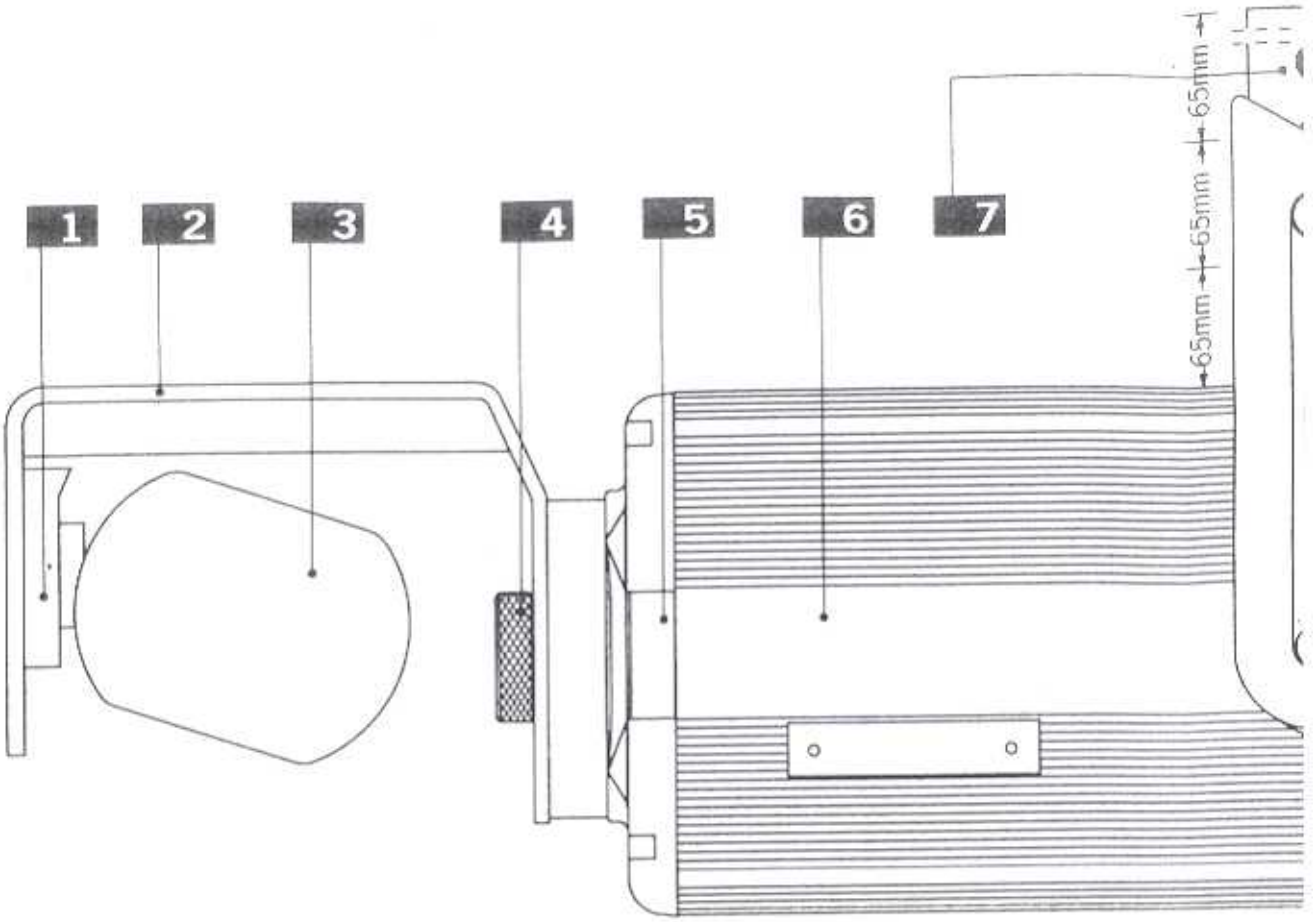
GALILEO II 575 H.P.

GALILEO II 1200 H.P.

AUTOMATED LUMINAIRES

INSTRUCTIONS MANUAL
MANUALE DI ISTRUZIONI
MANUEL D'INSTRUCTIONS

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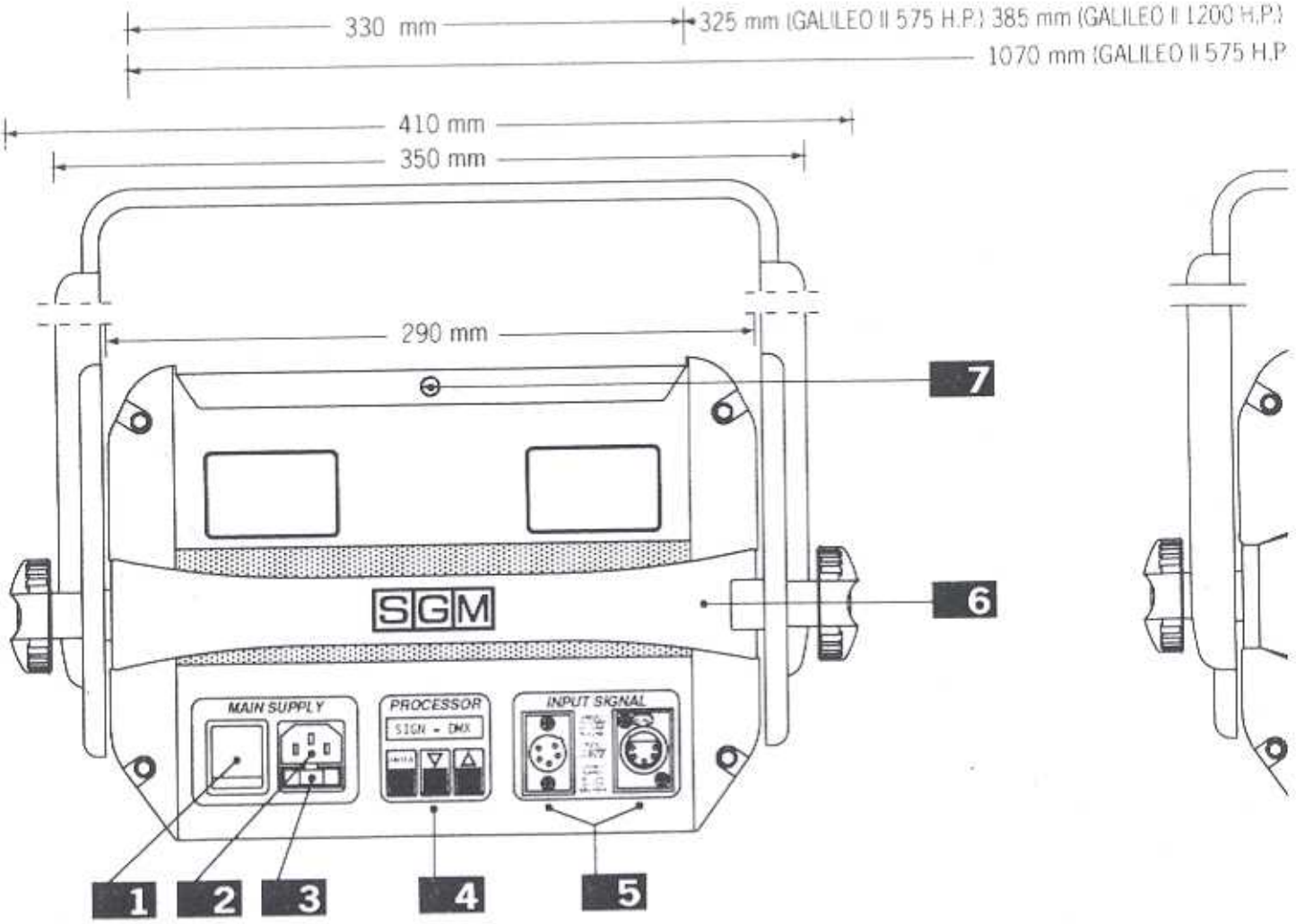
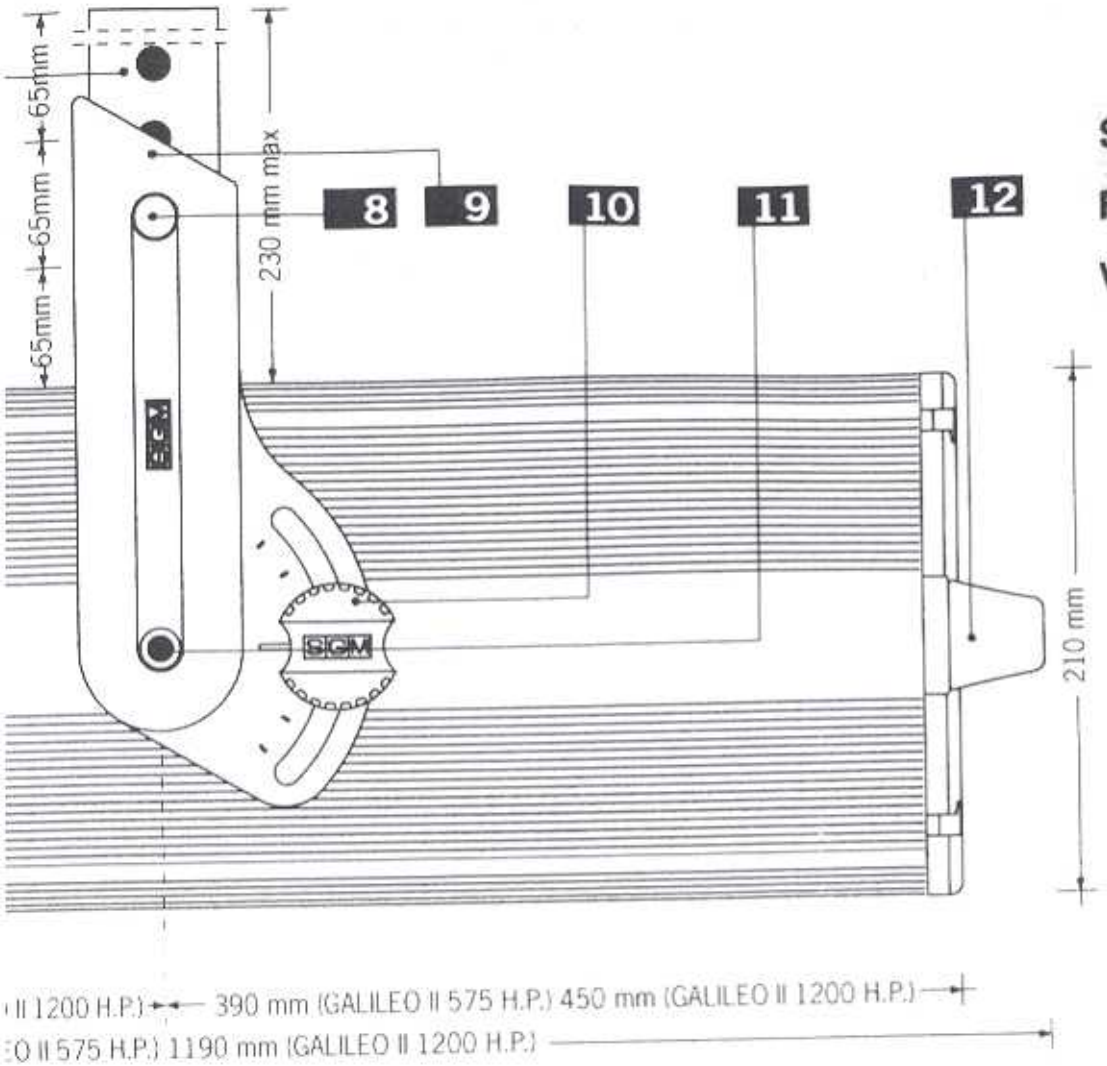

330 mm
325 mm (GALILEO II 575 H.P.) 385 mm (GALILEO II 1200 H.P.)
1070 mm (GALILEO II 575 H.P
410 mm
350 mm
290 mm
7
6
SGM
MAIN SUPPLY
PROCESSOR
SIGN - DMX
INPUT SIGNAL
1
2
3
4
5



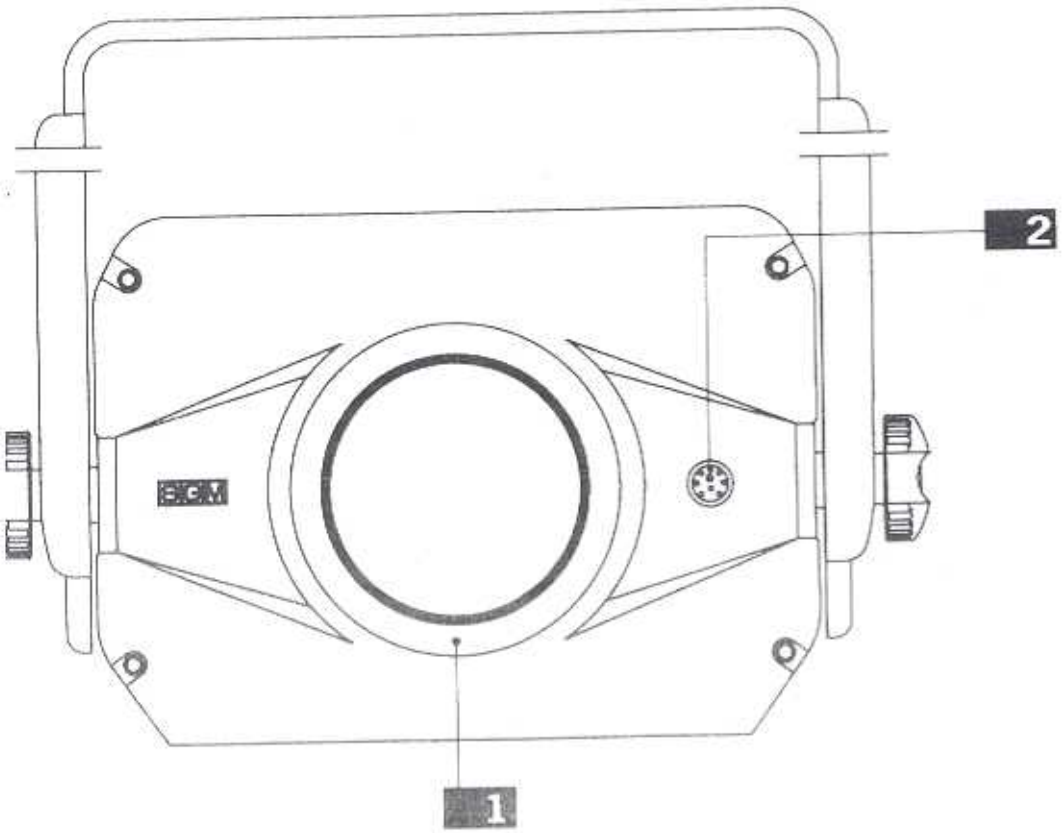
SIDE

FIANCO

VUE DE COTE

GALILEO II 575 H.P.

GALILEO II 1200 H.P.



REAR

RETRO

FACE ARRIERE

FRONT

FRONTE

FACE AVANT

SIDE

1. PAN Motor guard
2. Scanner head support
3. PAN/TILT movement mirror
4. Screw focusing lens
5. Front panel
6. Fixture Body
7. Mounting bracket
8. Mounting screw
9. Yoke
10. Yoke regulator/locking knob
11. Long screw
12. Rear Panel

REAR

1. Illuminated mains switch
2. Mains power socket
3. Mains fuse
4. Processor with luminous display
5. Dual in/out DMX512 in/out RS232/423 connector
6. Handle
7. Casing opening screw

FRONT

1. Scanner group lock ring
2. Mirror movement connector socket

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GENERAL WARNINGS

Please carefully read the enclosed instructions that include important points about the safety for the installation, usage and maintenance.

Please keep this booklet with the unit for future consultation. If you sell the unit to another user be sure that he also gets this instruction booklet. The new owner will thus have all information about usage and relevant general warning.

- After having opened the package, check the entire unit.
- In case of any doubt with this unit do not use until having consullted an authorized service centre.
- All possibly harmful parts of the package (plastic bags, foamed polystyrene, nails, etc.) should be kept out of chilldren's reach.
- **Protect our enviroment/ Do not dispose of the packing cardboard boxes with household waste!**

Please return them to a recycling centre or a collecting site for special waste.

- This unit must be used only by adults. Do not let children tamper with it or play with it.
- The electricity work that is necessary for installation must be made by a qualified electrician or professional.
- Before connecting the unit, check that the data on the registration plate is the same as that of the electrical grid.
- It the socket and the plug are different, the socket should be changed and adapted by a professionally qualified person. He must also make sure that the sections of the socket cables suit the power absorbed by the unit. Do not use adapters, multiple sockets and/or extension cords. Should they be necessary only use simple or multiple adapters and extension cords that compy with safety regulations regarding quality and current-carryng capacity.
- Always disconnect the line cord from the socket by pulling its plug.
- Wet hands are dangerous. A violent shock could derive by touching the socket with wet hands. Do not put any object on the line cord and never bend the cord at acute angle.
- Install the fixture in an airy room at about 15 cm. from the walls.
- Never use the fixture under the following conditions:

- In places subject to excessive humidity.
- In places subject to vibrations or bumps.
- Do not expose to temperatures above 45° C for long periods..
- Do not use in places with temperatures under 2°C.
- Protect the fixture from excessive dryness or humidity (less than35% or more 80%).

- Do not dismantle or modify the fixture.
- Make certain that no inflammable liquids, water or metal objects enter the fixture, in that case immediately disconnect the main power.
- If you spill water on the unit be very careful, as a fire could break out or there could be a dangerous shock. Immediately disconnect the main power and contact the nearest SGM dealer.
- In the event of serious operating problems, stop using the unit immediately and either contact the nearest SGM sales point for a check, or contact the manufacturer directly.
- Do not open the unit. There are no user serviceable parts inside.
- Never try and repair the unit yourself. Repairs carried out by unskilled people can lead to damage or malfunctioning. Please contact the nearest authorized Technical Assistance Centre. Always require genuine spare parts.

CE

It conforms to regulations 89/336.

MAIN FEATURES

Galileo II H. P. is a high-power intelligent projector which stands out for its advanced technology and unequalled performance, such as: high speed colorchanger, high-speed gobo-changer, quiet, high-speed iris and gobo/prism rotation, precise smooth dimmer, high-speed strobe, 16-bit scanning resolution and sound sync of color and gobo changers and strobe.
SGM's numerous years' experience in the lighting control field has enabled the development of highly reliable precise electronics. SGM's great advantage over other its competitors is in the fact that electronics and mechanism are entirely designed by its own research lab; this ensures complete control of the quality:price ratio. The entire easily accessed electronic system is modular, so every motor/function has its own electronic card independent from the others, and all cards are interchangeable, greatly facilitating maintenance and the possibility of using the fixture even when one or more function cards are damaged. The new Galileos are fitted with an additional power supply circuit which, in compliance with the strictest EEC norms, protects the fixture and nearby units from RF interference. As well their very fast scanning time (0.4sec. for 180° Pan and 0.2sec. for 90° Tilt), they also stand out for their smooth, linear movement, even at low speeds, which is possible thanks to very sophisticated control software and new stepper motors - the most precise on the market and those with the highest number of microsteps. From the dedicated controller, the Regia 512s36, it is possible to reduce the fixture's working area to that actually used, thus further improving movement-related performance. The 16-bit "enhanced" control ensures unbeatable linear movement. Real PAN and TILT movement microsteps have thus been increased from 256 to 6,400 and 1600 respectively. It is also possible to invert head scanning and set the centre point of the remote controlled work area, allowing faster installation and avoiding having to change presets during mobile applications. The optics group comprises special lenses which have undergone special treatment resulting in an increase in light yield compared with previous versions (already among the most luminous in their category) and perfectly even lighting. The numerous functions, briefly described here, are controlled via 9 channels. The decision not to limit the number of channels allows excellent function control and programming. The new Galileos can be easily controlled by the new Pilot 1600 and Regia 512s36 desks or any other control system with DMX512 or RS232/423 serial digital output.

COLORS: Galileo II H.P. has 16 colours, given by a colour wheel fitted with 7 top quality, carefully selected dichroic filters, which can be combined with the colour temperature filter. All the dichroic filters are interchangeable. Colorchanger in fixed or intermediate positions. Two-tone beam facility obtained with intermediate color wheel settings. High-speed color changes: 0.06sec. Color change with or without blackout. Rainbow effect by means of variable speed color wheel rotation. Audio sync color change in intermediate (Music Soft) or fixed (Music hard) positions.

UV FILTER: Galileo II H.P. has also a black-light filter, to obtain spectacular black-light effect; suitable to be used with wash beam.

COLOR TEMPERATURE CONVERSION: The color temperature conversion filter can be combined with the entire range of colors available and offer operators the possibility of lowering the color temperature, to obtain warmer color emission.

FROST FILTER: The Galileoll H. P. has frost filter which give softer light beams, to create washes and a numerous combination of color settings.

GOBOS: Galileo II H. P. has rotating 1 wheel with 4 gobos. The exclusive reliable gobo rotating system gives unbeatable gobo change speed. Direction and speed of the gobo wheel can be set according to operators' requirements: sophisticated software also enables the projected image to be kept in a perfectly horizontal position during all beam movement. Gobo change with or without black out. Gobo changes in sync with the music's bass beat. Fast gobo change times: 0.07sec. (the fastest of those on the market). All gobos can be easily interchanged and their is also a wide range of designs to choose from in our catalogue. Custom gobos are also available at reasonable prices. Dichroic gobos able to project very high resolution designs can also be made and fitted.

PRISM: Thanks to the use 1 prism lens, there is a great increase in the range of effects. The prism can be selected following the needs of the lighting designers. It multiplies the projected image into 4 identical ones.

DIAPHRAGM: The innovative exclusive diaphragm group and the opening/closing system ensures unbeatable operating speed; so as well as being used for just reducing the light beam according to operators' needs, can also give unusual visual effects not found on other fixtures. The system's low noise level (less than 30dB), enables it to be used in places where this feature is indispensable (theatre/TV). Opening/closing speed 0.01sec.

SHUTTER: The shutter acts instantly to shut off the beam output.

STROBE: The quiet, high speed strobe has a strobe rate which is adjustable from 0.5 to 12 flashes per second. The high number of flashes at the full rate is very similar to units manufactured for that purpose alone. The closing system, by means of 2 blades rather than one, ensures total blackout of the light beam. The possibility of running the strobe at full rate in sync with the music creates effects unobtainable with other projectors.

TECHNICAL SPECIFICATIONS

POWER REQUIREMENTS : 220-240 VAC 50/60Hz (100/120V on request)
LAMP: HMI 575, powered by means of a built-in power supply. Lamp life 750 hr. approximately. Base sfc 10-4. Color temperature 5.600 K. Flux Lumens 49.000.
HMI 1200, powered by means of a built-in power supply. Lamp life 750 hr. approximately. Base sfc 15.5-6. Color temperature 5.600 K. Flux Lumens 110.000.

CONSUMPTION: With HMI 575: 750W, with HMI 1200: 1500W, internal power factor correction.

MOTORS:
8 stepper motors + 4 DC microprocessor controlled micromotors.

OPTIC SYSTEM: Internal optic group with high performance mirrored reflector with double condenser. Standard optics: 1:5.5/180mm. with screw focus adjustment.

MIRROR ADAPTOR: head with 140° rotation, detachable from fixture body. High grade mirror. Rotation via 2 microprocessor controlled stepper motors. Constantly variable rotation speed - maximum values: PAN = 400ms/180°, TILT = 200ms/90°. Smooth continuous movement thanks to high number of microsteps.

CONTROL SYSTEM:

CH	GALILEO II H. P.
1	DIAPHRAGM
2	COLOR
3	GOBOS
4	STROBE
5	PAN
6	TILT
7	ROT GOBO
8	DIMMER
9	FROST/PRISM/COLOR TEMP.FILTER
10	RESET/LAMP*
11	PAN LOW (16 bit)
12	TILT LOW (16 bit)

* THE LAMP ON/OFF CIRCUIT IS OPTIONAL

INPUTS: The Galileo II H. P. can accept the following digital signals from controllers or computers: DMX512 and RS232/423.

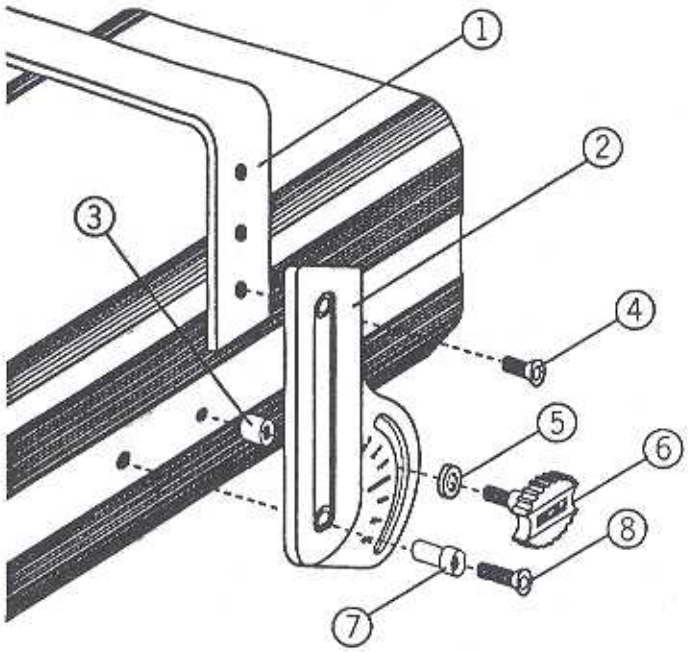
SAFETY DEVICES: The Galileo II H. P. has been manufactured to comply with current safety norms. Protection to IP20. 2-metre mains cable with extractable connector complying with international norms (CEI 12-13). Automatic power cut-off in the event of overheating or cooling system failure. Automatic power cutoff in the event of the effect's casing being opened or the lamp being replaced.

CONSTRUCTION: Body in extruded and die-cast aluminium. Epoxy finish. Sheet metal yoke. 3 installation positions with 75mm pitch. Adjustable inclination to 110°. Operates in any position up to 90° above or below the horizontal.

GALILEO II H.P. 575 DIMENSIONS: 21x 102,5 x 29 cm. **Weight:** 29,5 kg.
GALILEO II H.P. 1200 DIMENSIONS: 21x 114,5 x 29 cm. **Weight:** 39,5 kg.

YOKE MOUNTING

All necessary components are in the plastic bag inside the packing case. Assemble the fixture's yoke as shown in the illustration. An appropriately sized steel safety hook should always be used for each fixture.

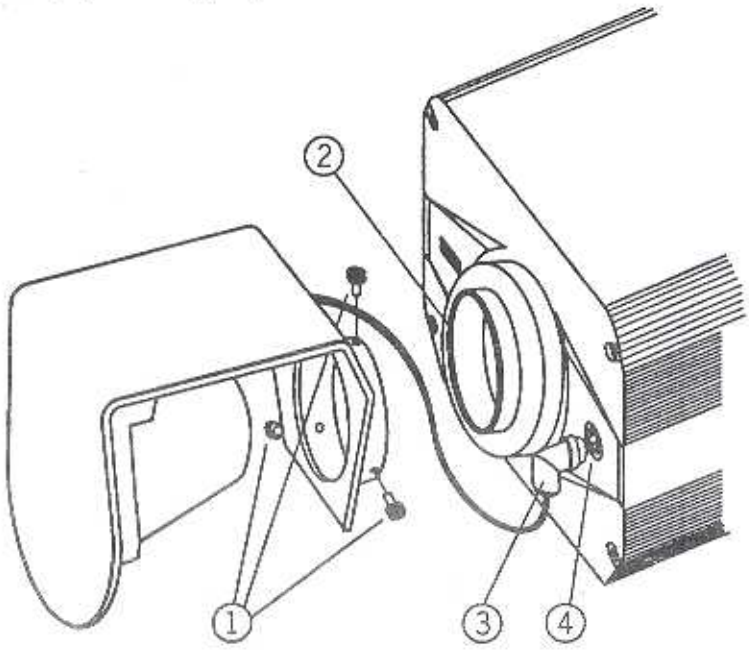


1 - Yoke
2 - Tilting bracket
3 - Knob spacer
4 - Short screw
5 - Nylon washer
6 - Knob
7 - Fulcrum spacer
8 - Long screw

FITTING SCANNER HEAD

The scanner head is in a separate box from the fixture. To fit it to the fixture body, proceed as follows:

- Unscrew the screws (1) until the scanner head fits on to the mounting ring (2)
- Tighten the screws (1) without tightening them, to allow the scanner group to rotate on the mounting ring (2), these allows easy positioning; tighten the screws after final positioning.
- Insert the connector (3) in the appropriate socket (4) on the front of the fixture and tighten the threaded ring.



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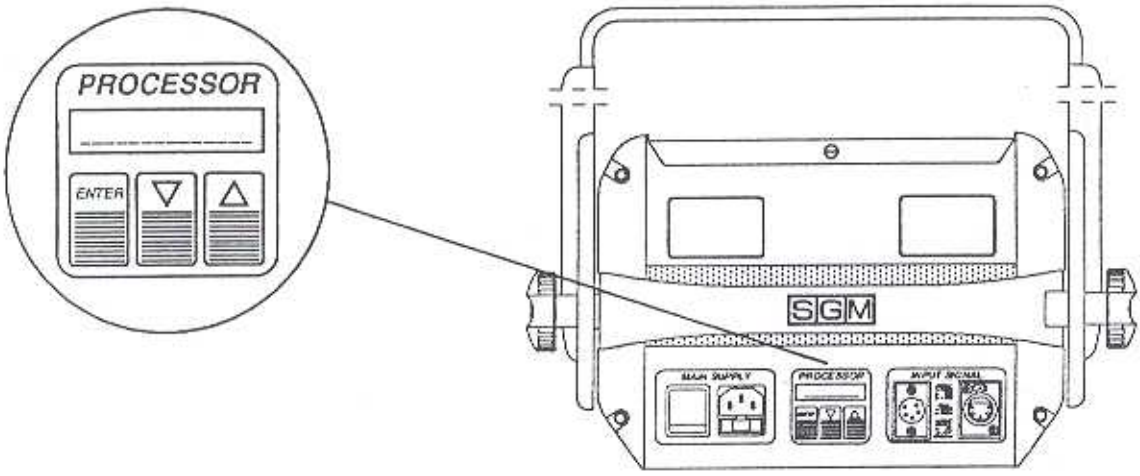
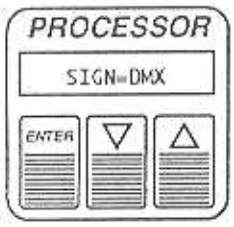
XXXXXXXXXX	XXX
TITLE	*LUMINOUS DISPLAY (PROCESSOR) REFERENCE*

LUMINOUS DISPLAY FUNCTIONS | PROCESSOR

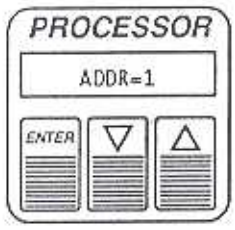


PRESENCE AND TYPE OF SIGNAL | SIGN=DMX/RS232



The display is always set at "SIGN" and even after other functions have been chosen, returns to this item. This function indicates which the type of signal (DMX512 or RS232) there is (for connections, see paragraph "INPUT SIGNALS), and if there is no signal or in the event of incorrect wiring, will indicate "NO SIGNAL". To change the type of signal, press ENTER and with the [▲] [▼] arrows enter the signal connected (DMX or RS232) and press ENTER to quit the operation.

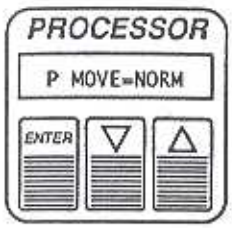
CODING AND ADDRESSING THE FIXTURE | ADDR=n.



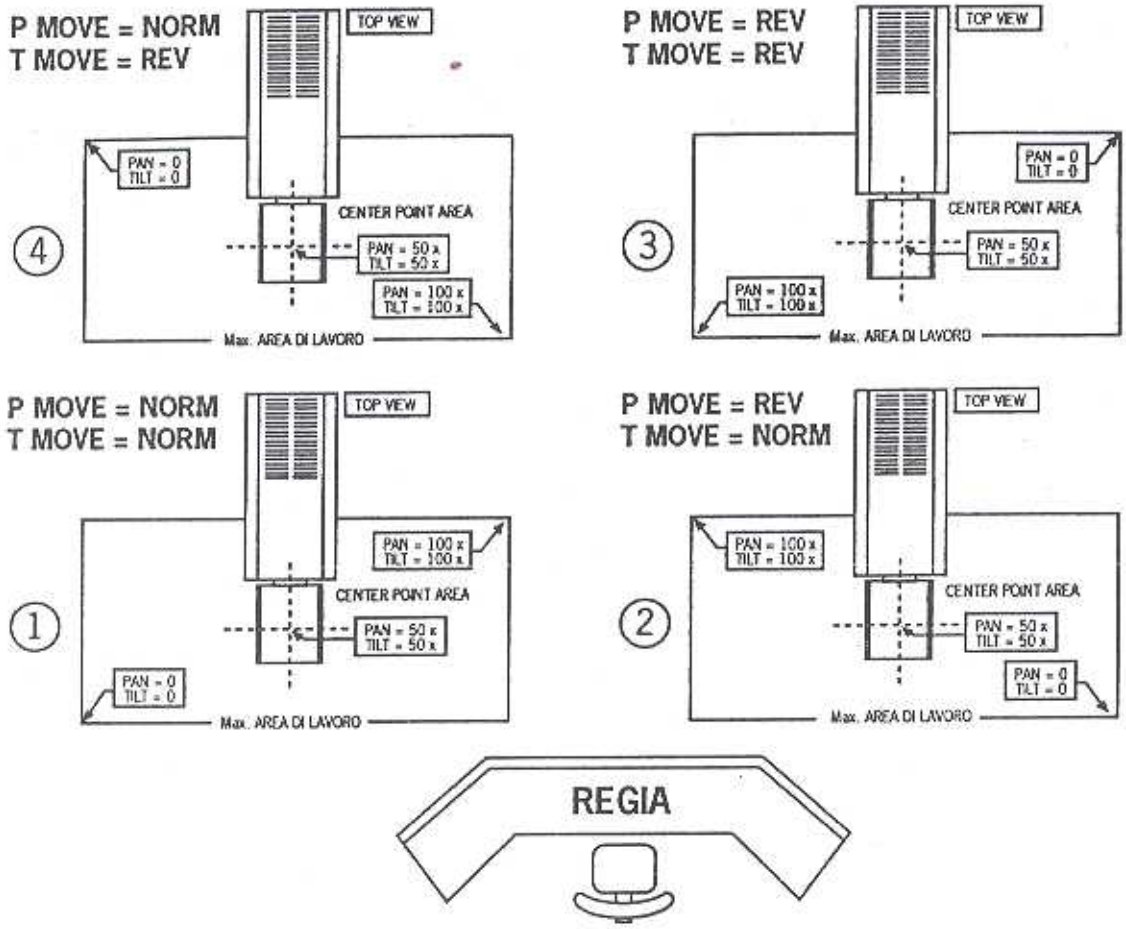
For RS232 or DMX512 connections, each fixture must be configured appropriately. So to identify on each fixture which channels it has to be controlled with, move to "ADDR" using the [▲] [▼] arrows and press ENTER: when ADDR starts flashing, use the [▲] [▼] arrows to set the fixture's start channel. E.g. with the Galileo II HP, which uses 12 channels, (with control on 16 bit), the first fixture must be set at 1, the 2nd at 13, the 3rd at 25 etc. The configuration can be changed even when the fixture is on. Press ENTER again to quit this operation.

SCANNER REVERSING

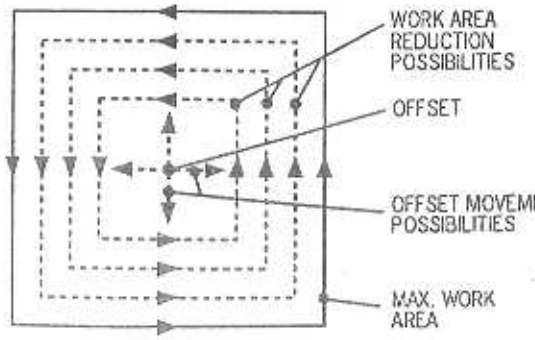
P MOVE/T MOVE = NORM/REV



The PAN MOVE and TILT MOVE functions are used to reverse the direction of pan and tilt.
E.g.: In the event of two Galileo II HP units being installed opposite each other, by moving the joy-stick (dx/sx or up/down), the fixtures will move in opposite directions, so to match their mirror scanning, change the PAN MOVE/TILT MOVE on one of them. Move with the [▲] [▼] arrows to P MOVE, to reverse the Pan or T MOVE to reverse the Tilt. Press ENTER: the voce chosen will start flashing, choose NORM with the [▲] [▼] arrows for normal Tilt or REV to reverse it. Press ENTER again to quit this operation.



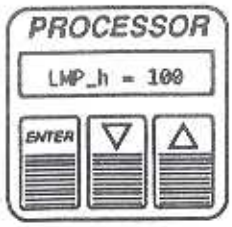
OFFSET AND AREA SETTING



Whereas OFFSET, which regulates the position of the light beam, and AREA, which regulates the maximum movement of the light beam (see illustration), could be adjusted on the Galileo I and II using the dip-switches on the rear panel, this can now be done remotely (Ex.:Regia 512s36).

LAMP ELAPSED TIME COUNTER

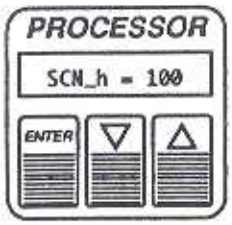
LMP_ h = h.



Go to LMP_h with the [▲] [▼] arrows: in place of "h.", the working life of the lamp currently installed is displayed; knowing the average life of an HMI 575/1200 metal halide lamp (750 hr. approx.), it is possible to replace it in advance to avoid an unwanted fixture blackout. After having replaced the lamp, reset the counter at 0 as follows: select LMP_h and press [▼] ENTER: the LMP_h will start flashing and the elapsed time counter will reset at 0. Press ENTER again to quit the operation.

FIXTURE LIFE

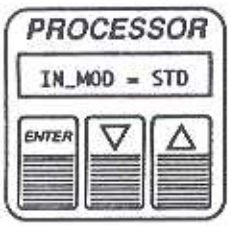
SCN _ h = h.



Go to SCN_h with the [▲] [▼] arrows: in place of "h.", the overall working life of the fixture is displayed. This function is important for knowing when to carry out a partial or complete check-up of the fixture. This counter cannot be reset, but is progressive and continuous from the moment the fixture is switched on.

TYPE OF INPUT

IN _ MOD = STD/SGM



Galileo can accept DMX512 and RS232/423 8(STD) or 16 (SGM) bit standard signals. 16-bit control ensures absolutely linear mirror movement (only has effect on PAN and TILT). The SGM controller enabled for this function is the REGIA 512s36. For access to this function, go to IN_MOD using the [▲] [▼] keys. press ENTER and set the type of input required with the [▲] [▼] keys: STANDARD (STD) or ADVANCED (SGM); press ENTER again to quit the operation. The following two tables show the different channel set-up obtained when the STD or SGM input is selected.

IN_MOD = STD

CH	GALILEO II H. P.
1	DIAPHRAGM
2	COLOR
3	GOBOS
4	STROBE
5	PAN
6	TILT
7	ROT GOBO
8	DIMMER
9	FROST/PRISM/COL. TEMP.
10	RESET/LAMP*

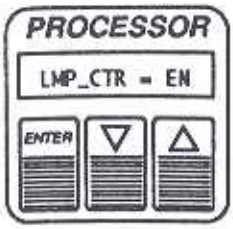
* THE LAMP ON/OFF CIRCUIT IS OPTIONAL

IN_MOD = SGM

CH	GALILEO II H. P.
1	DIAPHRAGM
2	COLOR
3	GOBOS
4	STROBE
5	PAN
6	TILT
7	ROT GOBO
8	DIMMER
9	FROST/PRISM/COL.TEMP.
10	RESET/LAMP*
11	PAN LOW (16 bit)
12	TILT LOW (16 bit)

* THE LAMP ON/OFF CIRCUIT IS OPTIONAL

LAMP CONTROL — LMP _ CTR = DS/EN

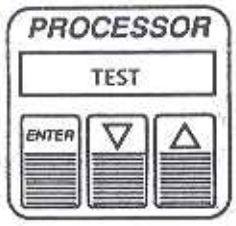


To enable or disable the lamp remote on/off switching, go to LMP_CTR using the ▲ ▼ arrows and press ENTER. When the message starts to flash, use the ▲ ▼ arrows to set at DS to disable control of the lamp from the desk and EN to enable it. Press ENTER to quit this operation.

FIXTURE RESET — RST _ CTR = DS/EN

This function (which can be carried out remotely) enables the fixture to be reset (without dousing the lamp) in the event of it having been effected by RF interference which has caused total or partial fixture blockage has altered one or more function. Go to RST_CTR with the ▲ ▼ arrows and press ENTER. The fixture will reset itself without dousing the lamp. With the ▲ ▼ arrows, set DS to disable the remote reset control or EN to enable it. Press ENTER again to quit this operation.

FIXTURE SELF-TEST — TEST



Move to TEST with the ▲ ▼ arrows and press ENTER. "TEST" will start flashing and the fixture will start testing all its functions. This operation allows a fast check of the correct operation of all the fixture's functions. Press ENTER again to quit this operation.

MICROPROCESSOR VERSION — GAL 2 V...

Moving to GAL 2 V... with the ▲ ▼ arrows, (numbers will appears in place of ...), the type of microprocessor installed in the fixture will be displayed.

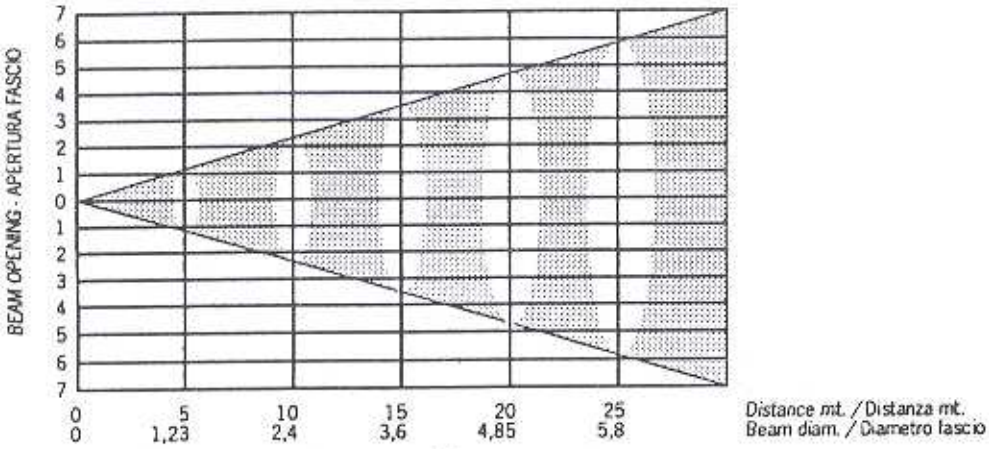
DIAPHRAGM • CH 1 •

- Adjustable by channel 1: enables linear regulation of beam width.
- The Galileo diaphragm is manufactured to an SGM design: this new system enables very high speed opening/closing (100ms) and extremely low noise level (less than 30dB), made possible by an almost total absence of friction between the components.
- Since the opening and closing is so fast, Galileo II enables to obtain very pleasant, original effects, not available with other projectors.

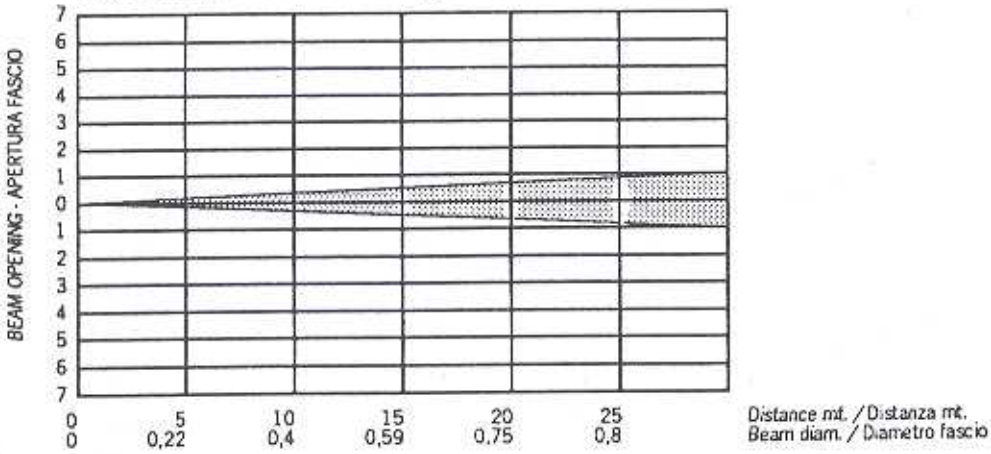
LEVEL TABLE

%	DMX512 level range 0 - 255	FUNZIONE
0%	0	MINIMUM APERTURE
0 ÷ 100%	0 ÷ 255	LINEAR REGULATION
100%	255	MAXIMUM APERTURE

Iris full open/Iris tutto aperto
Standard lens/Obiettivo standard: 1:5,5/180



Iris full closed/Iris tutto chiuso
Standard lens/Obiettivo standard: 1:5,5/180



COLOR • CH 2 •

The colourchange is selected from channel 2, here below the table with relative values. All colours can be combined with colour temperature filter, which is selectable from channel 9, doubling the number of the colours.
The change over from one color to another can be done directly or with a blackout between them; this function is controlled by Ch.4 (shutter/strobe), with the "Autoshade on colors" function.

LEVEL TABLE

DMX512 level range 0 - 255		FUNCTION		
LINEAR VALUES FIELD C=COLOUR CENTRE LEVEL	C = 0	COLOUR	WHITE	COLOR SOFT analogic colour selection, on any position
	C = 16	COLOUR	YELLOW	
	C = 32	COLOUR	MAGENTA	
	C = 48	COLOUR	RED	
	C = 64	COLOUR	CYANO	
	C = 80	COLOUR	BLUE	
C = 96		COLOUR	GREEN	
112 ÷ 119		SPEED	1	RAINBOW SOFT analogic continuos rotation of colours on adjustable speed
120 ÷ 127		SPEED	2	
128 ÷ 135		SPEED	3	
136 ÷ 143		SPEED	4	
144 ÷ 157		COLOUR	WHITE	COLOR HARD digital colour selection on centred position
158 ÷ 171		COLOUR	YELLOW	
172 ÷ 185		COLOUR	MAGENTA	
186 ÷ 199		COLOUR	RED	
200 ÷ 213		COLOUR	CYANO	
214 ÷ 227		COLOUR	BLUE	
228 ÷ 240		COLOUR	GREEN	
241 ÷ 255		MUSIC DIGITAL COLOUR CHANGE ON THE TREBLE BAND		MUSIC HARD CHANGE

LIGHT FILTER/GOBO • CH 3 • GALILEO II H. P.

Gobos are selected using channel 3. The gobo group comprises 2 independent wheels, each with 4 designs and a blank position. As can be seen from the table alongside, 25 design combinations can be obtained by layering the two wheels. The change over from one gobo to another is done directly or with a blackout between the images: this function is controlled by channel 4 (shutter/strobe) with the "Autoshade on gobo" function. Gobo changing speed, (with either rotary or fixed gobos), is without doubt one of the fastest among the fixtures in this category on the market, but the operator can also chose a "slow" gobo changing, by selecting the right value from channel 4 (OPEN slow gobochange analogic: 222 : 238). Furthermore the gobo wheel can be rotated continously, at 3 selectable speeds (see table). The gobos can also be changed in sync with low frequencies with the MUSIC CHANGE GOBO function; when this is set, gobo changing is random, with no sync between the various fixtures. On the Galileo IV, all the gobos can be rotated clockwise or counter-clockwise. Rotation speed is constantly variable from very slow to very fast. The Galileo III on the other hand has just one rotary gobo wheel and the other is fixed. Complex software enables the position of each gobo to be stored and a fixed horizontal position to be kept during mirror movement. All gobos are easily interchangeable (see "Gobo replacement") and have a diameter of 48mm. Each Galileo is supplied with 8 gobos already mounted on the wheels and 7 different extra gobos, held inside the fixture's packing case. A wide range of metal gobos is available, and there is also a fast, reasonably priced custom gobo service. As well as metal gobos, Galileo can also be fitted with gobos made from dichroic filters, which enable extremely high resolution images to be projected (similar to photos) as well as 3D images not available with normal metal light filters.

LEVEL TABLE

%	DMX512 level range 0 - 255	FUNCTION	
0 : 3,1	0 : 8	WHITE - A	WHITE - B
3,5 : 6,6	9 : 17	WHITE - A	GOBO 1B
7,0 : 10,2	18 : 26	WHITE - A	GOBO 2B
10,5 : 13,7	27 : 35	WHITE - A	GOBO 3B
14,1 : 17,2	36 : 44	WHITE - A	GOBO 4B
17,6 : 20,7	45 : 53	GOBO 4A	WHITE - B
21,1 : 24,3	54 : 62	GOBO 3A	WHITE - B
24,7 : 27,8	63 : 71	GOBO 2A	WHITE - B
28,2 : 31,3	72 : 80	GOBO 1A	WHITE - B
31,7 : 34,9	81 : 89	GOBO 1A	GOBO 1B
35,2 : 38,4	90 : 98	GOBO 2A	GOBO 1B
38,8 : 41,9	99 : 107	GOBO 3A	GOBO 1B
42,3 : 45,4	108 : 116	GOBO 4A	GOBO 1B
45,8 : 49,0	117 : 125	GOBO 4A	GOBO 2B
49,4 : 52,5	126 : 134	GOBO 3A	GOBO 2B
52,9 : 56,0	135 : 143	GOBO 2A	GOBO 2B
56,4 : 59,6	144 : 152	GOBO 1A	GOBO 2B
60,0 : 63,1	153 : 161	GOBO 1A	GOBO 3B
63,5 : 66,6	162 : 170	GOBO 2A	GOBO 3B
67,0 : 70,1	171 : 179	GOBO 3A	GOBO 3B
70,5 : 73,7	180 : 188	GOBO 4A	GOBO 3B
74,1 : 77,2	189 : 197	GOBO 4A	GOBO 4B
77,6 : 80,7	198 : 206	GOBO 3A	GOBO 4B
81,1 : 84,3	207 : 215	GOBO 2A	GOBO 4B
84,7 : 87,8	216 : 224	GOBO 1A	GOBO 4B
88,2 : 90,9	225 : 232	SPEED 1	
91,3 : 94,1	233 : 240	SPEED 2	
94,5 : 97,2	241 : 248	SPEED 3	
97,6 : 100	249 : 255	MUSIC CHANGE GOBO	

A

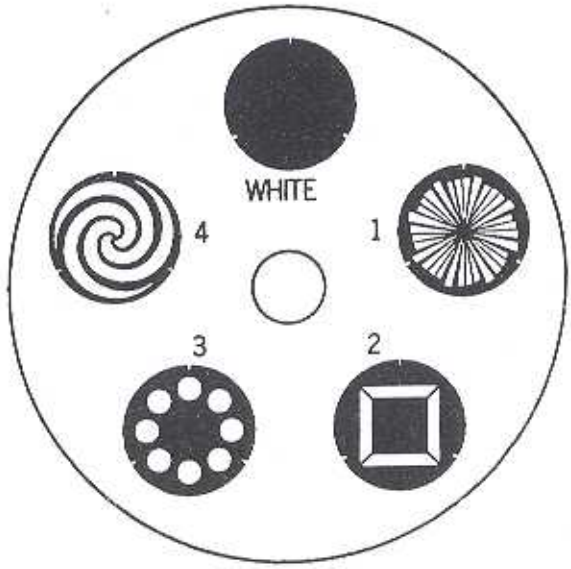
B

GOBO ROTATION • CH 7 •

Channel 7 controls the variable speed rotation in both directions or the projection angle of the 4 rotary gobos. An extremely important feature of the Galileo is its complex software system which enables to keep the projected image in a fixed position during the entire movement of the mirror. The exclusive gobo rotation system ensures smooth rotation and very high rpm maximum speed. Minimum complete rotation speed is 1.5 rpm, maximum 46rpm.

LEVEL TABLE

%	DMX512 level range 0 - 255	FUNCTION
Ø ÷ 49,8	Ø ÷ 127	POSITIONING da Ø a 360°
50,2 ÷ 68,6	128 ÷ 175	MAX DOWNWARD ROTAT. MIN DOWNWARD ROTAT.
69,0 ÷ 79,2	176 ÷ 202	STOPPED
79,6 ÷ 100	203 ÷ 255	MAX UPWARD ROTAT. MINI UPWARD ROTAT.



SHUTTER/STROBE • CH 4 •

The shutter/strobe is controlled by channel 4. It is possible to combine strobe and dimmer functions to obtain a strobe effect with adjustable light output. The two blades which create the strobe effect give an unbeatable FPS rate (see table), giving a real blackout of the light beam. We also suggest the use of "Music Flash", which consists in running the strobe in sync with 2 audio frequency bands, giving high impact visual effects. The Autoshade function enables the operator to change the gobo (range 171_187) or color (range 188_204) with blackout, or both of them (range 205 - 221).

LEVEL TABLE

DMX512 level range 0 - 255	VALORE CENTRALE	FUNZIONE
0 : 7	4	CHIUSO
8 : 15	12	STROBO 0.5 Hz
16 : 23	20	STROBO 1.42 Hz
24 : 31	28	STROBO 1.7 Hz
32 : 39	36	STROBO 2 Hz
40 : 47	44	STROBO 2.42 Hz
48 : 55	52	STROBO 2.9 Hz
56 : 63	60	STROBO 3.46 Hz
64 : 71	68	STROBO 4.15 Hz
72 : 79	76	STROBO 4.89 Hz
80 : 87	84	STROBO 5.93 Hz
88 : 95	92	STROBO 6.91 Hz
96 : 103	100	STROBO 8.29 Hz
104 : 111	108	STROBO 9.95 Hz
112 : 119	116	STROBO 11.83 Hz
120 : 136	128	SHUTTER STROBE low: strobe effect at maximum rate, in sync with low frequency. A low music note triggers the strobe, the next stops it, etc.
137 : 153	145	MUSIC FLASH low: shutter opening/closing synchronized with the low frequencies.
154 : 170	162	MUSIC FLASH HIGH
171 : 187	179	OPEN and AUTO-SHADE on the gobos
188 : 204	196	OPEN and AUTO-SHADE on the colors
205 : 221	213	OPEN and AUTO-SHADE on gobo and colours
222 : 238	230	OPEN slow gobochange, analogic.
239 : 255	247	OPEN

DIMMER • CH 8 •

Controlled by Channel 8, the dimmer enables linear regulation of light intensity. The Galileo dimmer is manufactured to SGM design, and its new system allows very high speed up/down time (100ms) and a very low noise level (less than 30dB). This is possible thanks to an almost total absence of friction between components. The dimmer can also be used in combination with the strobe function to obtain a strobe effect with adjustable light power.

LEVEL TABLE

%	DMX512 level range 0 - 255	FUNCTION
0	0	MINIMUM APERTURE (0%)
0 : 100	0 : 255	LINEAR REGULATION
100	255	MAXIMUM APERTURE

PRISM/FROST/COLOR TEMP. • CH 9 •

Channel 9 is used to select the so-called special effects.
4 faced prisma to multipley the projected image.
Frost lens to obtain wash beams and to create coloured background.
Colour temperature filter which can be combined with all dichroic filters to double the number of the colours.

LEVEL TABLE - GALILEO II -

DMX512 level range 0 - 255	FUNCTION
0 : 31	NO EFFECT
32 : 63	FIXED PRISMA
64 : 95	PRISMA + FILTER
96 : 127	FILTER
128 : 159	FILTER + FROST
160 : 191	FROST
192 : 223	FROST + WOOD
224 : 255	WOOD

FIXTURE RESET/LAMP ON/OFF • CH 10 •

If RST_CTR and LMP_CTR functions are enabled on the Galileo, fixture reset and lamp on/off can both be controlled remotely. This function is optional and must be requested when ordering the fixture.

LEVEL TABLE

%	DMX512 level range 0 - 255	FUNCTION	
0 : 23,5	0 : 60	OFF	LAMP
23,9 : 50,5	61 : 129	HYSTERESIS	
50,9 : 70,1	130 : 179	ON	
70,5 : 93,7	180 : 239	HYSTERESIS	RESET
94,1 : 100	240 : 255	RESET	

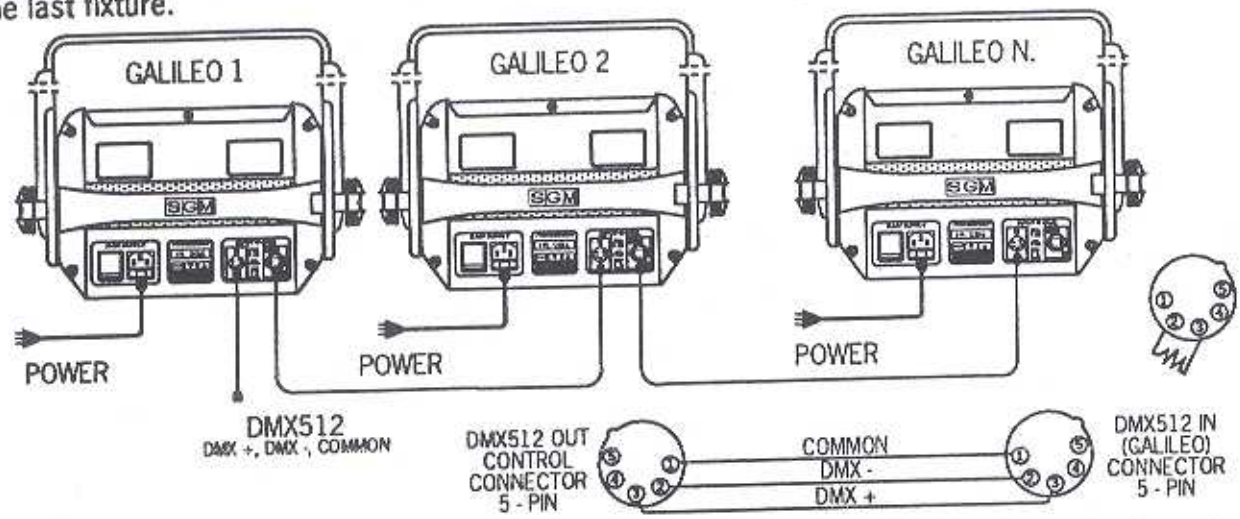
Hysterisis means that the range of values shown has no effect; e.g. if the lamp is on (value over 130) and the slider is lowered to 80, the lamp will not go off. The hysterisis range for both the lamp and the reset ensures that operators have a safety margin, as accidental intervention in this function could cause programs to run incorrectly.

I N P U T S I G N A L S

Galileo II H. P. accepts either DMX512 or RS232/423 signals. Connection uses the same socket; operators must set the type of signal connected using the processor; see "Presence and type of signal". If no signal reaches the fixture due to incorrect connection, "NO SIGNAL" will appear on the display on the rear panel.

CONNECTION WITH DMX512 DIGITAL SERIAL SIGNAL

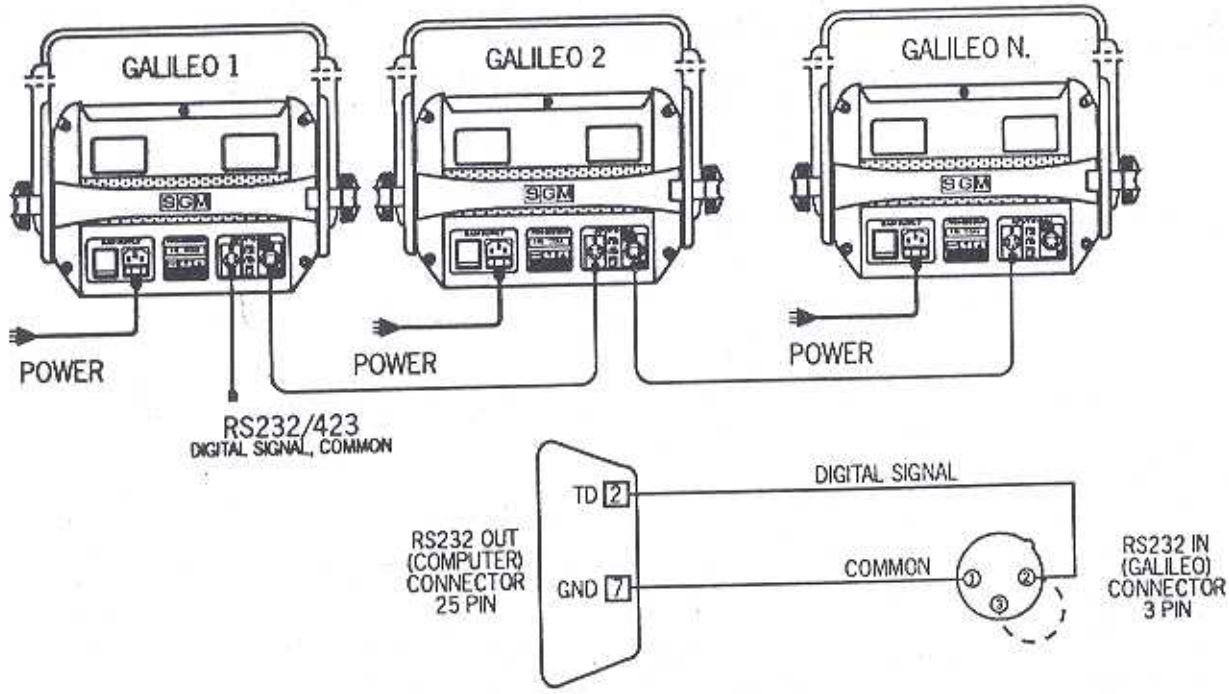
For connection, use a good quality balanced microphone cable (e.g. RF 60/12 2 x 0.25 sq.mm. or similar) to avoid signal transmission problems and consequent faulty fixture operation. It is always advisable to close the signal with a 120 Ohm resistance connected to PINS 2 and 3 of the last fixture.



ATTENTION: The cable screen (braid) must never be connected to the ground of the electric system, as this could cause fixture damage or faulty operation.

CONNECTION WITH DM232/423 DIGITAL SERIAL SIGNAL

For connection, use a good quality screened or coaxial cable (e.g. RG 58 52 Ohms) to avoid signal transmission problems and consequent faulty unit operation.



MAINTENANCE

LAMP FITTING AND REPLACEMENT

ATTENTION - Before replacing the lamp:
- Make certain that replacement is really necessary: average lamp life is approx. 750 hr. The life of the lamp at present fitted can be checked on the luminous display (LMP_LIFE h=...);
- Disconnect the fixture's mains power supply;
- If the unit was on, allow 6/10 min. for the lamp and internal mechanical parts to cool down before opening the cover;
- Now unscrew the screw located on the rear of the unit and remove the cover. The lamp is near the centre of the fixture;
- Move the heat shield above the lamp, then remove the burnt-out lamp;
- Make certain to avoid touching optics, reflector or lamp with unprotected hands, as high temperatures cause residue on the skin to burn and cause the parts to blacken;
- Following the instructions supplied, fit the new lamp, placing it carefully in the socket and locking in place. Attention - it is very important to replace the heat shield. Each time the lamp is replaced, a thorough cleaning is advisable and the lamp elapsed time counter must be reset;

OPTICS CLEANING

The cleaning of internal and external optics must be carried out periodically, as it is decisive for optimum light output. Cleaning frequency depends above all on the environment in which the fixture operates: damp, smoky or particularly dusty surrounding in particular cause greater accumulation of dirt on the unit's optics, optical sensors and ventilation vent. Clean with a soft cloth, using normal glass cleaning products (or methylated spirits) and always dry the parts carefully. Clean the external optics (head mirror and lens) at least once every 15/20 days. Clean the internal optics (condenser lenses, reflector and optical sensors) at least every 40/60 days. Also clean the diaphragm leaves and the ventilation vents with compressed air do avoid dust building up and the obstruction with resultant faulty unit operation.

GOBO REPLACEMENT

Disconnect the fixture from the mains power supply. Remove the cover and if the fixture was on, wait (approx. 10min.) until the lamp and internal mechanism to cool down. Unscrew just two of the three screws, remove the gobo, fit the new one and tighten the locking screws again. Attention: the screws must not block the gobo, but some play must be left to allow for expansion due to heat. Close the cover. It is advisable to use a small magnetized screwdriver.

REPLACING DICHROIC FILTERS

After having disconnected the fixture from the power supply, remove the projector cover by unscrewing the screw which holds it from behind. If the fixture was on, wait (approx. 10 min.) for the lamp and internal mechanism to cool down: after having removed the clips which hold the locking discs, pull them apart at the point in which the filter is to be replaced, pull out the dichroic filter, fit the new one and replace the clips. Close the cover correctly.

PERIODIC CHECKS

For a perfectly efficient unit, a general check is advisable every 750 running hours. Electrical parts must be checked by qualified technical personnel.

TROUBLE SHOOTING

SYMPTOMS	POSSIBLE CAUSE OF THE PROBLEM
The lamp does not light not run its reset. (pilot light off)	• No mains supply (220V a.c.) • The 3-pin connector's fuse has blown.
The lamp lights up, the fixture runs its reset, but does not respond to the commands.	• Signal cable not connected. (NO SIGNAL appears on the display). • Connector plug wrongly wired. • Start address switch not correctly set for the control channels.
The lamp has problems lighting up.	• Low voltage (see specs. page 6). • Lamp life is finished.
The image is not very bright	• Lamp burnt out • Dirty optics (for cleaning, see p.19). • The lamp has not munted correctly in the projector.

For further tests, contact the nearest SGM sales point or the manufacturer.