

ImageScan

user manual

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section 1

INTRODUCTION

The *ImageScan*, from Martin Professional, is a high performance intelligent projector for promotional lighting. The rugged construction and quality components ensures that the *ImageScan* will perform reliably for years to come.

The *ImageScan* features

- SOURCES** • The MSD 200 or MSD 250 long-life, high intensity discharge lamps
- MOVEMENT** • 83° by 216°
 - 8 or 16-bit pan/tilt resolution
- PROJECTION** • 24 x 36 mm slides
 - 60 x 70 mm transparencies
 - E and D-size gobos
- SHUTTER** • High-speed shutter
- OPTICS** • Highly efficient optical system
 - Coated optics
 - Motorized focus
 - 17° beam angle
 - Optional 23° lens
- CONTROL AND PROGRAMMING** • DMX-512 and Martin protocols
 - Programmable stand-alone operation
 - Slave/master synchronization
 - Remote lamp ON / OFF
- COOLING AND SECURITY** • Fan cooling
 - Overheating protection

section 2

SAFETY PRECAUTIONS

- The *ImageScan* is NOT for domestic use.
- Read user manual before connecting or operating the fixture.
- Always disconnect the fixture from AC power when:
 - Changing the transformer or ballast settings
 - Installing or removing the lamp
 - Checking or replacing fuses
 - Removing any cover or part from the fixture except for the image holder.
- To reduce risk of fire or electrical shock, do NOT expose to rain or moisture.
- Keep the *ImageScan* at least 0.1 meters (4 inches) away from flammable materials.
- Keep the *ImageScan* at least 0.3 meters (12 inches) away from surfaces to be illuminated.
- Do NOT block fans or exhaust vents.
- Always secure the *ImageScan* with approved safety wire.
- When close to the *ImageScan*, do NOT look directly into the light.
- Do NOT operate the *ImageScan* with the lens or other parts removed. Discharge lamps can explode, and an unshielded lamp emits dangerous UV radiation that can cause burns and eye damage.
- Allow the *ImageScan* to cool for 15 minutes before replacing the lamp.
- Check voltage and frequency settings before applying power.
- Do NOT operate the *ImageScan* if the ambient temperature (t_a) exceeds 40°C (104°F).
- Refer service operations not described in this manual to a qualified technician.
- Always ship/transport the *ImageScan* in a flight case or its original packaging.

section 3

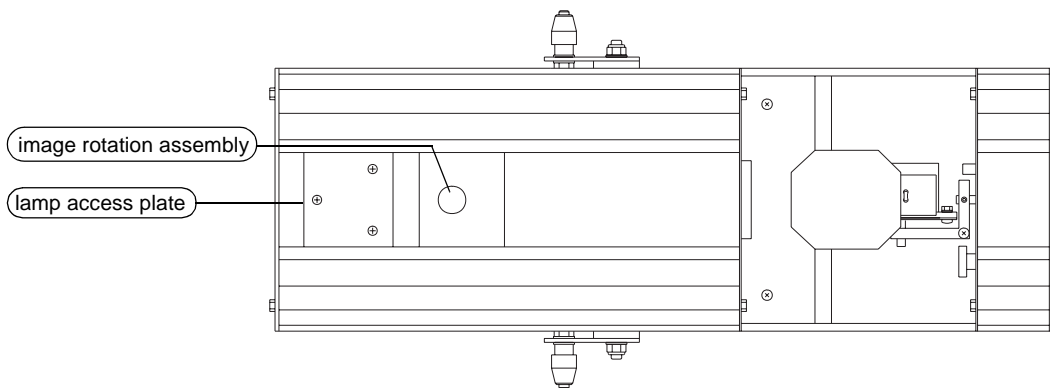
INSTALLATION

Before operating the *ImageScan* you must:

- **Install the MSD lamp (not included).**
- **Fit a mains plug.**
- **Check voltage and frequency settings.**
- **Rig the fixture in its permanent site.**
- **Insert the image to be projected.**

The *ImageScan* package comes complete with the following items:

- ***ImageScan***
- **5 meter XLR-XLR data link cable**
- **User manual**
- **3-prong power cord**



WARNING!

Before attempting any of the following, ensure that the fixture is isolated from the mains supply.

Installing the Philips MSD 200 or MSD 250 lamp

1. Remove the 3 screws from the lamp access plate and remove the plate.
2. Hold the lamp with a clean cloth and carefully insert it into the socket. Avoid touching the glass with your fingers: finger prints on the glass envelope reduce lamp life. Clean the lamp with the cleaning cloth supplied with the lamp if you touch the envelope with your fingers.
3. Replace the cover over the lamp socket assembly and tighten the screws.

NOTE: The lamp position is pre-adjusted and requires no further alignment.

Inserting an image

The *ImageScan* allows you to project standard 24 x 36 mm slides, 60 x 70 mm transparencies or overhead films, and E and D-size gobos. To use large format transparencies or overhead film, cut the film into a circle of the same diameter as the “open” gobo already installed.

1. Turn the 1/4-turn thumbscrew on the image rotation assembly CCW until it unlocks.
2. Remove the image rotation assembly.
3. Remove the spring which holds the open gobo in place and remove the open gobo.
4. Insert the image and secure it with the spring. If you are using a transparency or overhead film, place the open gobo over it to provide a sharp edge.
5. Insert the assembly into the projector and tighten the 1/4-turn screw (CW).

Fitting the mains plug

The *ImageScan* is delivered without a plug on the mains cable. Install a plug that matches your local mains outlet. The double-insulated mains cable contains three wires.

1. Connect the BROWN wire to the LIVE pin.
2. Connect the BLUE wire to the NEUTRAL pin.
3. Connect the YELLOW/GREEN wire to the GROUND (EARTH) pin.

Checking voltage and frequency settings

It is vital that the voltage and frequency settings match the local power supply. The factory settings are printed on the label at rear of the projector. If the settings do not match the local power supply, rewire the projector as follows:

WARNING!

Ensure that the *ImageScan* is isolated from the mains supply.

To access the transformer and ballast, unscrew the four hex-head screws securing the top cover to the chassis and remove the cover. The transformer is located in the center of the projector and the ballast is at the rear.

EU MODEL

1. Move the BROWN wire on the **ballast** to either the 230V, 240V or 250V terminal, according to the local mains voltage.
2. Move both the BROWN and PURPLE wires on the **transformer** to either the 225V or 240V terminal, according to the local mains voltage. It is vital that you move both the BROWN and the PURPLE wire - they should always be connected to the same terminal. Otherwise damage may occur to the projector.
3. Reassemble the projector.

NOTE: The EU model must only be operated on a 50 Hz mains supply.

US MODEL

1. Move the BROWN wire on the **ballast** to the either the 225V/**50Hz** or 225V/**60Hz** terminal, according to the local mains frequency.
2. Move both the BROWN wire on the **transformer** to either the 100V, 110V, 120V or 223V terminal, according to the local mains voltage.
3. Reassemble the projector.

Rigging the projector

You can now rig the projector by its mounting bracket. The mounting bracket allows you to mount it in any position. For safety, attach a safety wire to the mounting bracket and a secure point in the installation.

Connecting the Serial Link

The ImageScan may be used with DMX and Martin protocol controllers. The outputs on these controllers are different. DMX controllers usually have 5-pin XLR outputs and are wired with pin 2 cold (-) and pin 3 hot (+). Martin protocol controllers have 3-pin XLR outputs wired with pin 2 hot (+) and pin 3 cold (-). The ImageScan's XLR input is wired for the Martin standard. *When connecting an ImageScan to any DMX-standard device, you must swap the hot and cold signals with a phase-reversing cable.*

1. Connect the controller's data output to the ImageScan's input. If using a Martin-protocol controller, use a direct 3-pin to 3-pin XLR cable. If using a DMX controller, use a phase reversing cable, either 3-pin to 3-pin, or 5-pin to 3-pin, depending on the output of the controller.
2. Continue the link: connect the output of the fixture closest to the controller to the input of the next fixture. Use a direct cable when connecting same-standard fixtures. Use a phase-reversing cable only when connecting a DMX-standard fixture to a Martin fixture with pin 2 hot (Some Martin fixtures are wired to the DMX standard - the pin polarity is shown next to the connection socket). Up to 32 fixtures may be connected on a serial link.
3. Insert a 120 Ω XLR termination plug in the output of the last fixture on the link. The termination plug is simply a 3-pin male XLR plug with a 120 Ω resistor soldered between pins 2 and 3. *The termination plug is required for error-free communication when operating the ImageScan with a lighting controller.*

3-pin to 3-pin Phase Reversing Cable	
Connections	
Male	Female
1	1
2	3
3	2
P/N 11820006	

5-pin to 3-pin Phase Reversing Cable	
Connections	
Male	Female
1	1
2	3
3	2
4	
5	
P/N 11820003	

3-pin to 5-pin Phase Reversing Cable	
Connections	
Male	Female
1	1
2	3
3	2
	4
	5
P/N 11820002	

Addressing the projector

When using the ImageScan with a controller, you must set the DIP-switch to the start channel, also known as the address, which is the first channel the controller uses to send instructions to the ImageScan.

For independent control, each fixture must have its own address and control channels. Two or more ImageScans may have the same address; however, they will receive the same instructions and behave identically.

Martin mode: The ImageScan uses 1 channel to communicate with the controller. The address may be any channel between 1 and 32. DIP-switch pins 7 - 10 are always off.

DMX mode: The ImageScan may be operated in 2 DMX modes; see appendix a for more information. It uses 7 channels in mode 1 (8-bit pan and tilt resolution) and 9 channels in mode 2 (16-bit pan and tilt resolution). *The factory default is mode 1.* The address may be any channel up to 506 within the controller's range (504 if 9 channels are used).

Example: Four ImageScans using mode 2 (9 channels) can be addressed as follows:

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36
ImageScan No. 1 Address: 1									ImageScan No. 2 Address: 10									ImageScan No. 3 Address: 19									ImageScan No. 4 Address: 28								

Use the following procedure to set a Martin or DMX address.

1. Select an available address within the controller's range.
2. Find the DIP-switch setting on page 26.
3. Set the DIP-switch listed in the table.

Switching On

After applying power to the *ImageScan*, it will index all effects and return them to their default positions. As soon as data is transmitted from your controller, the *ImageScan* automatically detects whether it is connected to a Martin RS-485 or DMX 512 controller and will respond accordingly.

section 4

USING THE OPTIONAL REMOTE CONTROL

NOTE: To use the remote control with the *ImageScan*, set the DIP-switch pins 3 and 10 to “on.”

The remote control offers an easy way to program the *ImageScan* for stand-alone operation. It works by programming electronic memory within the *ImageScan* itself, which holds up to 61 *scenes*. Once you have programmed the *ImageScan* you may disconnect the remote control.

Programming the *ImageScan*'s memory will not interfere with operation via a controller.

Programming with the remote control is different than using a conventional controller. Even if you are an experienced lighting programmer it is suggested that you read the following section before attempting to program the projector.

The remote control package comes with the following items:

- **Remote control with battery**
- **5 meter XLR cable**

Useful terms

- | | |
|------------------|--|
| Program | The contents of the memory in the <i>ImageScan</i> that determine the behavior of the scanner when operating. |
| Edit Mode | The mode where the remote control is used to change the program. When the scanner is switched on it will automatically enter ‘execute’ mode and perform its program. Pressing any button on the remote control automatically puts the scanner in edit mode. |
| Scene | A group of settings for a lighting fixture. For the <i>ImageScan</i> a scene contains: <ul style="list-style-type: none">• Mirror position• Shutter position (light on/off)• Focus• Image position or rotation direction and speed• Scene duration |
| Sequence | <ul style="list-style-type: none">• One or more scenes executed one after the other in a continuous loop. The <i>ImageScan</i> organizes all scenes into one sequence. |

Setting up

1. Ensure that the remote control and *ImageScan* are switched off: connecting or disconnecting the cable while the power is on may cause noise spikes that in the worst case can erase the program.
2. Connect the remote control to the *ImageScan* using the XLR-XLR cable supplied with the remote control. Additional *ImageScans* may be serially connected (input to output), however, there is no way of addressing the individual scanners and the battery lifetime will be reduced.
3. Set the DIP-switches on the projector(s) so that switches #3 and #10 are ON and the rest OFF.
4. Apply power to the *ImageScan* and wait until the projector has finished its reset.
5. Switch on the remote control. When you press a button on the remote control the projector will enter programming mode.

IMPORTANT

DO NOT insert a termination plug into the *ImageScan*: the resistor will drain the battery very quickly.

Functions of the remote control

The remote control is divided into five sections. The POSITION, IMAGE and FOCUS sections control the *ImageScan*'s moving parts. The PROGRAM section is used to edit and manipulate the memory. The TIMER section is used to set scene timing. (In edit mode the scanner ignores scene times.)

POSITION SECTION

HOME

The HOME button sends the mirror to its default 'home' position.

ARROW BUTTONS

The four arrow buttons move the mirror up, down, left and right.

IMAGE SECTION

ON/OFF

The ON/OFF button toggles the shutter on and off.

IMAGE ROTATION

The two lower buttons to the left and right control rotation. The left button rotates the image counterclockwise and the right button rotates it clockwise.

The longer a button is held, the faster the image rotates. If the image is already rotating in one direction, pressing the button for the opposite direction will slow down the rotation speed and then change the direction.

IMAGE ORIENTATION

The two upper buttons control the image position. This position is stored in memory so that whenever a scene contains an position index, the image will rotate to that exact position. If you want the image to be in an exact position, use the index position. Just stopping the rotation with the continuous rotation buttons will leave the image in an undefined position.

It is not possible to store both an index position and continuous rotation: one excludes the other.

SELECT

The SELECT button is reserved for future projectors. With the *ImageScan* it has no function.

FOCUS SECTION

NEAR / FAR

The NEAR and FAR buttons control the focus.

PROGRAM SECTION

To understand how the program buttons work, think of the sequence as a cycle with no first or last scene. When the last scene is reached the sequence automatically loops to the first scene and starts over. All programming is done in the *current* scene, which is the scene that the scanner currently is displaying.

STORE

The STORE button saves changes to the current scene. No changes to the current scene are saved unless STORE is pressed after editing the scene. If you advance to the next scene without pressing STORE the changes are lost.

DELETE

The DELETE button erases the current scene. If the current scene is the only scene in memory, this scene is stored with default values (cleared).

INSERT

The INSERT button adds a new scene after the current scene. The contents of the new scene are the current settings including timing information. If the timer control is at *no change (N/C)* the scanner will store a *blackout* time (see more about time control below).

If you insert a scene when the memory is full (max. 61 scenes), the scanner advances to the next scene without generating a new scene.

Example: The scanner displays a logo upright on a wall. In edit mode, this scene is changed to project the logo on the floor with clockwise rotation. If you press the STORE button, the 'wall' scene is changed to the 'floor' scene, but if you press INSERT, the 'floor' scene is inserted after the 'wall' scene, which is left unchanged.

NEXT

The NEXT button advances through the scenes.

PREV.

The PREV. (previous) button steps backwards through the scenes.

VIEW

The VIEW button starts execute mode. This mode is identical to running the program without the remote control connected. It is also the only way to check scene times. Press any key to return to edit mode.

RESET

The RESET button resets all moving parts. It is identical to the power-on reset. It does not affect the memory.

CLEAR

The CLEAR button clears the current scene and sends all effects to their default positions. It does not delete the scene.

To completely erase all scenes from memory, press CLEAR and STORE at the same time. The scanner creates a default scene with the light on to let you know that the memory has been cleared.

TIMER SECTION**SCENE TIME**

The timer knob controls the *scene time*, the length of time a scene is displayed. The *scene time* may be between 1 and 120 seconds. Due to slight variations in the components, do not expect precise timing - use the indicator as a guide only.

The *scene time* also effects the transition from the previous scene to the current one. The maximum time for mirror movement is 25 seconds. If the timing control is set for 40 seconds, the mirror movement will still take 25 seconds, but the next scene will not be triggered for another 15 seconds. To have the mirror snap to a new position and then stay there for 30 seconds, program a scene with a time of 1 second and the new mirror position, and then program the next scene with the same position and a time of 30 seconds.

To change the *scene time* without changing any of the other settings, set the timer control to the desired time and press store.

BLACKOUT

Blackout time closes the shutter, thus blacking out the light, while the mirror moves between scene positions. Use blackout when you do not wish to see this movement. When using *blackout time* all effects move at maximum speed.

NO CHANGE

No change tells the projector **not** to overwrite a previously programmed scene time when saving a scene. If you are editing a sequence, and just want to adjust the position, set the timer to *no change*.

EXAMPLE

It is assumed that the *ImageScan* contains no program in memory:

1. Apply power to the *ImageScan* and the remote control.
2. Wait until the *ImageScan* has finished its reset procedure.
3. If there is no light from the scanner press the ON/OFF button.
4. Set the timing control for 1 second.
5. Use the arrow keys to position the image.
6. Use the focus NEAR/FAR to get a sharp image.
7. Press the STORE button.

SCENE 1

- SCENE 2**
8. Move the mirror to another position.
 9. Set the image to clockwise rotation.
 10. Adjust the focus.
 11. Press INSERT.
- SCENE 3**
12. Use the index position control to position the image upright.
 13. Press INSERT.
- SCENE 4**
14. Move the mirror to a third position and focus.
Press INSERT.
- VIEWING THE PROGRAM**
15. Press the VIEW button to see the sequence. If you want to change anything stop the sequence by pressing PREV or NEXT. Now use PREV or NEXT buttons to step through the scenes and change any settings you want - however do keep the overall idea for now and do not change the mirror position in scenes 2 and 3. Remember to STORE any changes.
- SCENE 1**
16. When you are happy with the scenes, use PREV/NEXT to go to the first scene.
 17. Set the timing control to 2 seconds
 18. Press STORE to save the time setting.
 19. Press NEXT to go to scene 2.
- SCENE 2**
20. Set the timing control to 5 seconds.
 21. Press STORE to store the time setting.
 22. Press NEXT to go to scene 3.
- SCENE 3**
23. Set the timing control to 10 seconds.
 24. Press STORE to store the time setting.
 25. Press NEXT to go to scene 4.
- SCENE 4**
26. Set the timing control to the BLACKOUT position.
 27. Press STORE to store the time setting.
- REVIEWING THE PROGRAM**
28. Press VIEW to see the effects of the scene time settings.
The mirror moves to the scene 1 position in 2 seconds, the time set for scene 1. As soon as the mirror arrives, it starts to move to the scene 2 position and the image rotates clockwise. This takes 5 seconds. When the image gets to the scene 3 position, it rotates to an upright position and remains there for 10 seconds. Finally, it snaps to the third position, with the light blacked out, and then starts over again.

Programming tips

Image indexing time does not take into account the time required to stop rotation before starting rotation to an indexed position. If the image was rotating in the scene before a scene with an indexed position, the indexing time will not match the scene time. This can be solved by programming a scene with no rotation before a scene with indexed position.

For short movements over a long time, the speed calculation may not be exact. The result may be seen as one of the effects continuing to move a little bit after the other effects have stopped. This often may be fixed by adjusting the positions in the current scene or the previous one, or by changing the time slightly.

When programming it is probably a good idea to divide the static and time programming into two separate sessions. Program the scenes' looks first and then add the scene times. To do so, leave the timer control on 1 second while programming the static information, then go back and set the time for each scene. Remember to STORE each scene to save the time information to memory.

Replacing the battery

The remote control is powered by a 9V battery (PP3). You can expect 10 hours of operation from a battery. To preserve the battery switch off the remote control when not in use.

The remote control measures the battery's voltage and sends a message to the *ImageScan* when the voltage drops below 7 volts. The *ImageScan* responds to a low battery by moving the mirror to the upper right corner and then stops functioning as long as the remote control is connected.

To replace the battery, loosen the two screws at the front of the control. Withdraw the inner section and replace the battery.

section 5

SYNCHRONIZED OPERATION

When using several *ImageScans* together in stand-alone mode, their programs may be synchronized by linking them together and designating one unit to be the “master” and the other units to be the “slaves.” The master unit sends a timing signal along the data link that the slaves use when executing their independently programmed scenes. This is different from what is normally known as master/slave operation, in which slaves fully mimic the master.

Synchronization Modes

The DIP switch settings for each mode are shown in appendix b.

SYNCHRONIZED START

The master sends out a sync pulse every time it executes scene 1. Slaves respond by snapping to scene 1 and restarting the sequence. Slaves execute their programs using their own scene times. If a slave fixture completes its program before the master, it will not loop to scene 1 but will hold and wait for the next scene 1 sync pulse.

SYNCHRONIZED SCENE TIME

The master transmits the scene time each time it executes a scene. Slaves use the master's scene times for their own scenes. Slaves execute all scenes in their program sequence and then loop to the first scene. Thus, if fixtures have different numbers of scenes, sequence start is not synchronized.

SYNCHRONIZED START AND SCENE TIME

The master transmits the scene 1 sync pulse, as in mode 1, and the scene time as in mode 2. All fixtures execute the same scene number with the same scene timing. If a slave is programmed with fewer scenes than the master, it will not wait at the end of its sequence, but will loop back to the start. If a slave has more scenes than the master, it will never get to execute them.

Implementation

Link the fixtures as described on page 8 but do NOT terminate the link.

Any one fixture, but only one, may act as master. The DIP switches MUST be set prior to powering up the fixture. See page 21 for DIP-switch settings.

Fixtures may be programmed normally with the remote control. The remote control may be connected to the link; however, any programming will affect all fixtures on the link. To program an individual fixture, disconnect the XLR link cables.

Best results are obtained when scene times on the master are 1 second or more.

To use the view function, press and hold the view button while switching off the remote. Otherwise, there is a slight chance that a transmission “collision” could cause the program to be erased. The most likely consequence is that the master will stop transmitting sync signals or that the slaves will stop receiving them. If this happens, stop playback by pressing any button except view: the fixtures will recover after 15-20 seconds.

Removing the image holder while the fixture is running in slave mode may make the shutter behave unpredictably. Disconnect the *ImageScan* from AC power if changing the image while it is in slave mode.

When the master fixture is powered on, it sends a standby signal to synchronize the start of scene 1. This start-up synchronization will only work if all fixtures are powered up at the same time, or if the master fixture is the last to be powered up. This is only important if mode 2 is used.

appendix a

DMX PROTOCOL

DMX MODE-SETUP

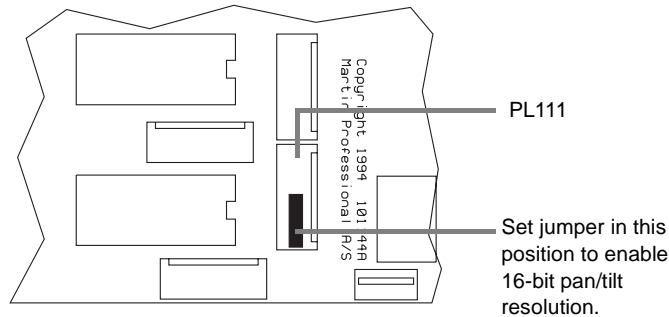
DMX Mode	Vector/Tracking	Pan/Tilt Resolution	DMX Channel Requirements	PL111 Jumper Setting
1 FACTORY DEFAULT	Vector / Tracking	8 Bit	7 Channels	No Jumper
2	Vector / Tracking	16 Bit	9 Channels	Pins 1 and 3

The *ImageScan* can be set to run one of two DMX modes. The two modes are listed in the table above. To change the jumper setting, follow this instruction:

WARNING!

Before attempting the following, ensure that the *ImageScan* is isolated from the mains supply.

1. At each end of the projector the top cover is fixed by means of two hexagon screws. Unscrew these and remove the cover. At the front end of the fixture you will now see the PCB.
2. Locate PL111 (near the lamp relay) and set the jumper between pins 1 and 3 to enable 16-bit pan/tilt resolution.
3. Re-assemble the fixture.



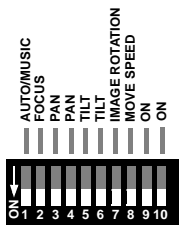
DMX PROTOCOL

DMX Channel Offset		DMX Value	Description
MODE 1	MODE 2		
0	0	0 - 9 10 - 138 139 - 139 140 - 202 203 - 235 236 - 252 253 - 255	Light / Reset fixture / Lamp Light OFF Light ON Lamp power ON No effect Reset Lamp power ON Lamp power OFF NOTE: Lamp OFF only takes effect if all other channels are set to 255 and transmitted for 5 seconds or more.
1	1	0 - 218 219 - 255	Focus Far → near Focus near
2	2	0 - 4 5 - 94 95 - 184 185 - 199 200 - 249 250 - 255	Image Rotation and Orientation (coarse) Image stop Image rotation CCW, slow → fast Image rotation CW, fast → slow Image stop Image orientation (coarse) Image stop
3	3	0 - 255	Image Orientation (fine)
4	4	0 - 255	Pan coarse Left → right
-	5	0 - 255	Pan fine Left → right
5	6	0 - 255	Tilt coarse Up → down
-	7	0 - 255	Tilt fine Up → down
6	8	0 - 4 5 - 255	Pan/Tilt Speed Tracking Fast → slow (vector)

appendix b SPECIAL DIP-SWITCH SETTINGS

Stand-alone sequences

You can set the *ImageScan* to run a factory programmed stand-alone sequence or your own stand-alone sequenced programmed via the *ImageScan Remote Control*, by using the 10-way DIP-switch on the front of the projector. If you choose to use the factory programmed sequence, certain parameters may be set to your particular need. The diagram to the left and the table below shows the effect of each individual DIP-switch. To activate the remote programmed stand-alone sequence, set DIP-switch #3 and #10 to ON (the rest to OFF).



1	2	3	4	5	6	7	8	9	10	Parameter
OFF	OFF	ON	OFF	OFF	OFF	OFF	OFF	OFF	ON	Custom S/A*
OFF								ON	ON	Auto trigger
ON								ON	ON	Music trigger
	OFF							ON	ON	Focus near
	ON							ON	ON	Focus Far
		OFF	OFF					ON	ON	Pan default
		ON	OFF					ON	ON	Pan +/- 20°
		OFF	ON					ON	ON	Pan +/- 40°
		ON	ON					ON	ON	Pan +/- 107°
				OFF	OFF			ON	ON	Tilt default
				ON	OFF			ON	ON	Tilt +/- 10°
				OFF	ON			ON	ON	Tilt +/- 20°
				ON	ON			ON	ON	Tilt +/- 42°
						OFF		ON	ON	Image rotation OFF
						ON		ON	ON	Image rotation ON
							OFF	ON	ON	Slow movements
							ON	ON	ON	Fast movements

* Stand-alone sequence programmed via remote control.

Master settings for synchronized stand-alone operation

Set the master *ImageScan* DIP-switches as shown below.

1	2	3	4	5	6	7	8	9	10	Synchronization Mode
ON		ON							ON	Sequence Start
	ON	ON							ON	Scene Time
ON	ON	ON							ON	Seq. Start and Scene Time

Slave settings for synchronized stand-alone operation

Set all *ImageScan* slave DIP-switches as shown below.

1	2	3	4	5	6	7	8	9	10	Synchronization Mode
		ON							ON	All

Service sequences

The *ImageScan* has built-in programs for servicing. The table below shows the various settings:

1	2	3	4	5	6	7	8	9	10	Parameter
			ON						ON	LED chase* (music trigger)
ON			ON						ON	LED chase* (auto trigger)
ON				ON				ON	ON	Adjustment sequence

* Stepper motor driver test. Special test tool required (P/N 850750).

appendix c

TROUBLESHOOTING

Problem	Probable cause(s)	Suggested remedy
None of the projectors respond to the controller.	The controller is disconnected from the data link.	<ul style="list-style-type: none"> • Connect controller.
	Use of incorrect cable between the controller and the first projector on the data link.	<ul style="list-style-type: none"> • If using a DMX controller with standard 5-pin output socket, remember to use a 5 to 3-pin adapter cable that swaps pins 2 and 3, between the controller and the first projector on the data link.
One or more of the projectors does not respond to the controller or responds erratically.	Bad data link connection.	<ul style="list-style-type: none"> • Check connections/cables in the data link and correct accordingly.
	Data link not terminated with termination plug.	<ul style="list-style-type: none"> • Insert termination plug in the last projector on the data link.
	Incorrectly addressing (DIP-switch setting) of the projector.	<ul style="list-style-type: none"> • Ensure that all projectors are addressed in compliance with the controller configuration.
	Projector not powered On.	<ul style="list-style-type: none"> • Power On projector.
	Projectors have failed in the protocol auto-detection.	<ul style="list-style-type: none"> • Switch off the projectors and then back on again. In general, switch on the controller before the projectors.
	One of the projectors is defective and disturbs the data transmission on the link.	<ul style="list-style-type: none"> • By-pass one projector at a time until normal operation is regained. Do this by unplugging the XLR in and out connectors and then connect them directly together.
No light emission from some or all projectors.	The image rotation assembly does not activate the detection switch.	<ul style="list-style-type: none"> • Ensure that the image assembly is pressed firmly in place and the 1/4-turn screw is locked. If problem persists, contact your Martin dealer.
	The lamp does not strike due to insufficient mains voltage (too low).	<ul style="list-style-type: none"> • Measure mains voltage and check against ballast and transformer tapings. Correct tapings if necessary.
Projector appears to be completely dead (no reset when switching on).	Mains fuse blown.	<ul style="list-style-type: none"> • Replace mains fuse.
	PCB fuse(s) blown.	<ul style="list-style-type: none"> • Replace PCB fuse(s).

Problem	Probable cause(s)	Suggested remedy
After resetting, the mirror moves between middle and left twice and the image rotates rapidly.	Optical sensor malfunction.	<ul style="list-style-type: none"> • Make sure image holder is properly seated. • Check sensor wires for good connection. • Clean optical indexing sensor. • Contact your Martin dealer.
After resetting, the mirror moves between middle and left twice and the shutter does not remain open.	Image holder micro switch not closed.	<ul style="list-style-type: none"> • Make sure image holder sits properly in its slot and that the 1/4-turn thumbscrew is locked.
Projector continuously resets or the mirror describes a square and there is no response to the remote control.	Damaged or missing memory module.	<ul style="list-style-type: none"> • Replace memory module. • Contact your Martin dealer.
Lamp cuts out intermittently.	Ambient temperature is too high.	<ul style="list-style-type: none"> • Reduce room temperature.
	Fan efficiency reduced due to dirt and dust.	<ul style="list-style-type: none"> • Clean fan.
	Incorrect ballast and transformer tappings.	<ul style="list-style-type: none"> • Measure mains voltage and check against ballast and transformer tappings. Correct tapping if necessary.
The projector does not respond to remote control and mirror is in the upper right position.	Low battery in remote control.	<ul style="list-style-type: none"> • Replace battery.
The projector does not respond to remote control	Remote control not switched ON.	<ul style="list-style-type: none"> • Switch ON.
	Battery voltage in remote control to low.	<ul style="list-style-type: none"> • Replace battery.
	Projector not set to DIP-switch setting 3,10 (ON).	<ul style="list-style-type: none"> • Set DIP-switch 3 and 10 ON. The rest should be OFF.
	Break in cable between remote control and projector.	<ul style="list-style-type: none"> • Check cable and correct accordingly.
	False 'battery low' indication caused by link noise.	<ul style="list-style-type: none"> • Wait 10 seconds.

appendix d

TECHNICAL SPECIFICATIONS

- Dimensions incl. bracket (L x W x H):602 x 320 x 433 mm (23.7 x 12.6 x 17.0")
- Shipping dimensions (L x W x H):693 x 299 x 321 mm (27.4 x 11.8 x 12.7")

- Weight:16 kg (35.7 lb)
- Shipping weight:16.5 kg (36.8 lb)

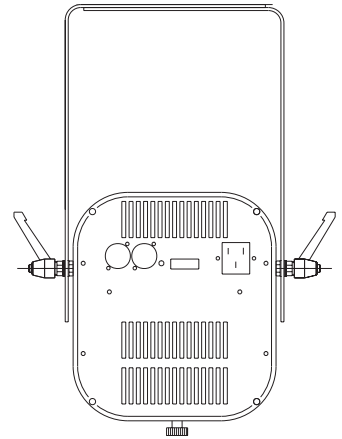
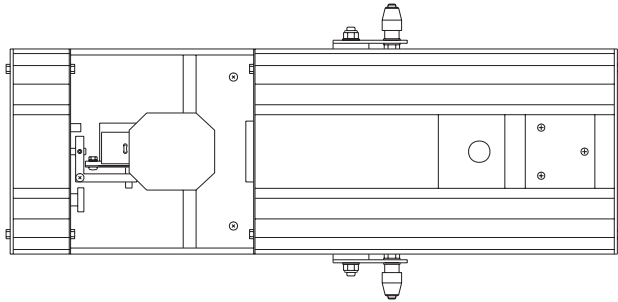
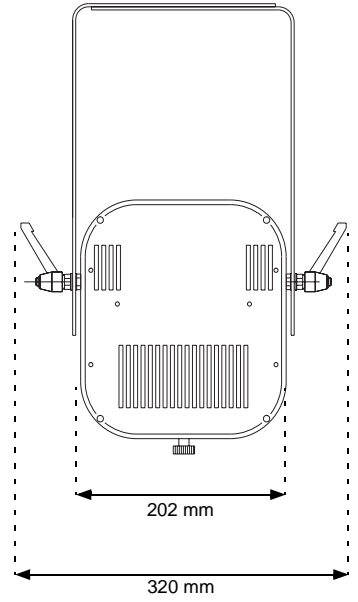
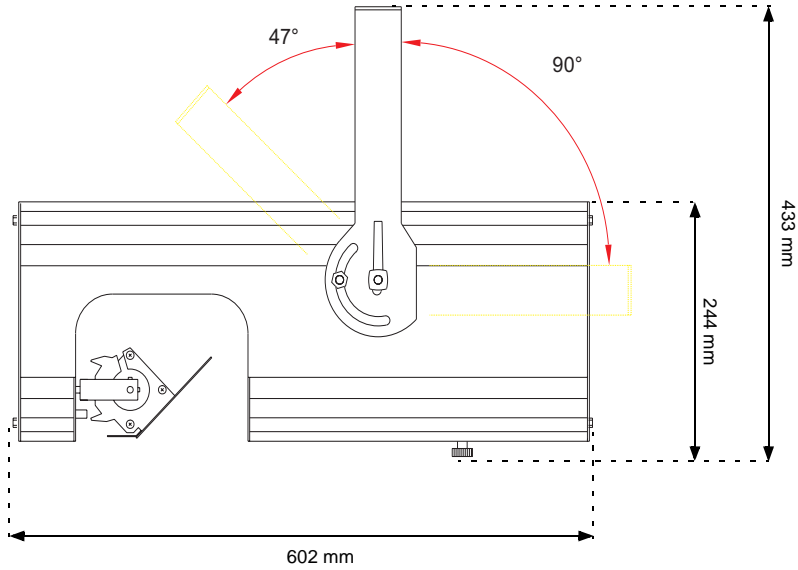
- Mains supply (EU model):.....230/240/250 V +/- 5%, 50 Hz
- Mains supply (US model):.....100/110/120 V +/-5%, 50 / 60Hz

- Power/current consumption (EU model): 275 W/1.4 A 230 V / 50 Hz
- Power/current consumption (US model): 275 W/2.8 A 120 V / 60 Hz

- Fuse (EU model):T 3.15 A
- Fuse (US model):T 6.3 A

- Maximum room temperature, t_a : 40° C (104° F)
- Minimum distance from flammable materials: 0.3 meters (12 in)

- Philips MSD 200 lamp200 W / 5800K / 2000 hours
- Philips MSD 250 lamp250 W / 6500K / 2000 hours



appendix e

DIP-SWITCH TABLE

To find a channel DIP-switch setting, locate the channel and then follow the row to the left to find the settings for pins 1 - 5; follow the column to the top to find the settings for pins 6 - 9. "0" means the pin is turned off and "1" means the pin is turned on. *Pin 10 is always switched OFF when setting an address.*

DIP-Switch Setting					#9	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1
0 = OFF					#8	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1
1 = ON					#7	0	0	1	1	0	0	1	1	0	0	1	1	0	0	1	1
					#6	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1
#1	#2	#3	#4	#5																	
0	0	0	0	0		32	64	96	128	160	192	224	256	288	320	352	384	416	448	480	
1	0	0	0	0	1	33	65	97	129	161	193	225	257	289	321	353	385	417	449	481	
0	1	0	0	0	2	34	66	98	130	162	194	226	258	290	322	354	386	418	450	482	
1	1	0	0	0	3	35	67	99	131	163	195	227	259	291	323	355	387	419	451	483	
0	0	1	0	0	4	36	68	100	132	164	196	228	260	292	324	356	388	420	452	484	
1	0	1	0	0	5	37	69	101	133	165	197	229	261	293	325	357	389	421	453	485	
0	1	1	0	0	6	38	70	102	134	166	198	230	262	294	326	358	390	422	454	486	
1	1	1	0	0	7	39	71	103	135	167	199	231	263	295	327	359	391	423	455	487	
0	0	0	1	0	8	40	72	104	136	168	200	232	264	296	328	360	392	424	456	488	
1	0	0	1	0	9	41	73	105	137	169	201	233	265	297	329	361	393	425	457	489	
0	1	0	1	0	10	42	74	106	138	170	202	234	266	298	330	362	394	426	458	490	
1	1	0	1	0	11	43	75	107	139	171	203	235	267	299	331	363	395	427	459	491	
0	0	1	1	0	12	44	76	108	140	172	204	236	268	300	332	364	396	428	460	492	
1	0	1	1	0	13	45	77	109	141	173	205	237	269	301	333	365	397	429	461	493	
0	1	1	1	0	14	46	78	110	142	174	206	238	270	302	334	366	398	430	462	494	
1	1	1	1	0	15	47	79	111	143	175	207	239	271	303	335	367	399	431	463	495	
0	0	0	0	1	16	48	80	112	144	176	208	240	272	304	336	368	400	432	464	496	
1	0	0	0	1	17	49	81	113	145	177	209	241	273	305	337	369	401	433	465	497	
0	1	0	0	1	18	50	82	114	146	178	210	242	274	306	338	370	402	434	466	498	
1	1	0	0	1	19	51	83	115	147	179	211	243	275	307	339	371	403	435	467	499	
0	0	1	0	1	20	52	84	116	148	180	212	244	276	308	340	372	404	436	468	500	
1	0	1	0	1	21	53	85	117	149	181	213	245	277	309	341	373	405	437	469	501	
0	1	1	0	1	22	54	86	118	150	182	214	246	278	310	342	374	406	438	470	502	
1	1	1	0	1	23	55	87	119	151	183	215	247	279	311	343	375	407	439	471	503	
0	0	0	1	1	24	56	88	120	152	184	216	248	280	312	344	376	408	440	472	504	
1	0	0	1	1	25	57	89	121	153	185	217	249	281	313	345	377	409	441	473	505	
0	1	0	1	1	26	58	90	122	154	186	218	250	282	314	346	378	410	442	474	506	
1	1	0	1	1	27	59	91	123	155	187	219	251	283	315	347	379	411	443	475	507	
0	0	1	1	1	28	60	92	124	156	188	220	252	284	316	348	380	412	444	476	508	
1	0	1	1	1	29	61	93	125	157	189	221	253	285	317	349	381	413	445	477	509	
0	1	1	1	1	30	62	94	126	158	190	222	254	286	318	350	382	414	446	478	510	
1	1	1	1	1	31	63	95	127	159	191	223	255	287	319	351	383	415	447	479	511	

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