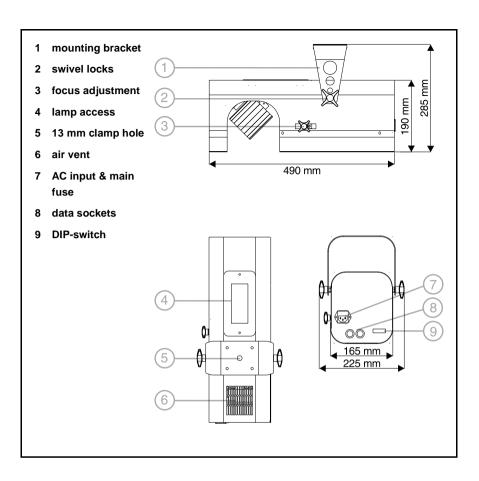
Acrobat user manual







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P/N 35000039, Revision B

INTRODUCTION

Thank you for selecting the Martin Acrobat. The Acrobat is an automated disco lighting fixture that provides strobe effects, continuous electronic dimming, 18 color/gobo effects, a revolving mirror drum with variable swivel angle, adjustable focus, and DMX and stand-alone control options.

ACROBAT SAFETY INFORMATION

Warning!

This product is not for household use. It presents risks of lethal or severe injury due to fire and heat, electric shock, and falls.

Read this manual before powering or installing the fixture, follow the safety precautions listed below and observe all warnings in this manual and printed on the fixture. If you have questions about how to operate the fixture safely, please contact a Martin distributor for assistance.

To protect yourself and others from electric shock

- Disconnect the fixture from AC power before removing or installing the lamp, fuses, or any part, and when not in use.
- Always ground (earth) the fixture electrically.
- Use only a source of AC power that complies with local building and electrical codes and has both overload and ground-fault protection.
- Do not expose the fixture to rain or moisture.
- Refer all service to a qualified technician.
- Never operate the fixture with missing or damaged lenses and/or covers.

To protect yourself and others from burns and fire

- Never attempt to bypass the thermostatic switch or fuses. Always replace defective fuses with ones of the specified type and rating.
- Keep all combustible materials (for example fabric, wood, paper) at least 0.1 meters (4 inches) away from the fixture. Keep flammable materials well away from the fixture.
- Do not illuminate surfaces within 0.3 meters (12 inches) of the fixture.
- Provide a minimum clearance of 0.1 meters (4 inches) around fans and air vents.
- Replace the lamp if it becomes defective or worn out. When replacing the lamp, allow the fixture to cool for at least 5 minutes before opening the fixture or removing the lamp. Protect your hands and eyes with gloves and safety glasses.
- Never place filters or other materials over the lens or mirror drum.
- The exterior of the fixture can reach temperatures up to 60° C (140° F). Allow the fixture to cool for at least 5 minutes before handling.
- Do not operate the fixture if the ambient temperature (Ta) exceeds 40° C (104° F).

To protect yourself and others from injury due to falls

- When suspending the fixture above ground level, verify that the structure can hold at least 10 times the weight of all installed devices.
- Verify that all external covers and rigging hardware are securely fastened and use an approved means of secondary attachment such as a safety cable.
- Block access below the work area whenever installing or removing the fixture.

UNPACKING

The packing material is carefully designed to protect the fixture during shipment - always use it to transport the fixture.

The Acrobat comes with:

- · mounting bracket
- 1.5-meter, 3-wire IEC power cable
- · user manual

Important! The mirror drum is secured for transport with a plastic tie. Cut and remove the tie before use.

The Acrobat uses a 24V, 250W ELC halogen lamp. Two models are available, an economical 300 hour lamp from Philips and a high-output 50 hour lamp from Osram. *Installing any other lamp may damage the fixture!*

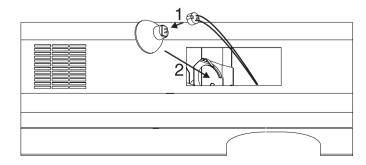
Lamp life can be extended beyond the stated average hours by reducing the lamp voltage slightly using DIP-switch pin 12. Set pin 12 to ON for longer lamp life, or OFF for maximum brightness.

Allow the lamp to cool for at least 5 minutes before packing and moving the fixture. To avoid possible damage, remove the lamp when shipping the fixture.

Warning! Always disconnect the fixture from AC power and allow it to cool for 5 minutes before installing the lamp.

To install a lamp in the Acrobat

- 1 Disconnect the fixture from AC power. If replacing a lamp, allow it to cool for 5 minutes before removing the lamp access cover. The lamp cools faster with the cover in place.
- 2 Remove both screws from the lamp access cover and lift the cover off.
- 3 If replacing a lamp, grasp the old lamp by the reflector and pull it out of the holder. Then pull the socket off the lamp. Do not pull the wires.
- 4 Push the socket fully onto the pins of the new lamp.
- 5 Gently push the lamp into the holder until it snaps into place.
- 6 Replace the lamp access cover and screws.



The Acrobat's operating voltage is printed on the serial number label near the AC input. Verify that the operating voltage closely matches the AC supply voltage before applying power. Contact your Martin dealer if the operating voltage differs from the supply voltage by more than five percent.

To install a plug on the mains lead

The fixture's mains lead may require a grounding-type cord cap that fits your power distribution cable or outlet. Consult a qualified electrician if you have any doubts about proper installation.

Warning! For protection from dangerous electric shock, the fixture must be grounded (earthed). The AC mains supply shall have overload and ground-fault protection.

Important! Verify that the feed cables are undamaged and rated for the current requirements of all connected devices before use.

 Following the cord cap manufacturer's instructions, connect the yellow and green wire to ground (earth), the brown wire to live, and the blue wire to neutral. The table below shows some pin identification schemes.

Wire	Pin	Marking	Screw color
brown	live	"L"	yellow or brass
blue	neutral	"N"	silver
yellow/green	ground	-	green

INSTALLATION

The Acrobat can be permanently installed or hung with a clamp (not included), or it can be placed on the floor as described below. For maximum lamp life, do not place the fixture directly on or beside a speaker cabinet or other source of strong vibrations

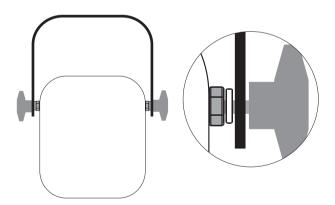
Once the Acrobat is installed and connected, the focus may be adjusted by loosening and sliding the focus adjustment knob.

Warning! Block access below the work area before proceeding.

Warning! Always use a secure means of secondary attachment.

To install the mounting bracket

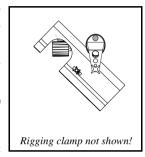
 Install the mounting bracket on the chassis as shown. Place the washers on the stud before the bracket.



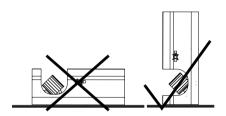
To install or hang the Acrobat

- 1 Verify that the structure can support at least 10 times the weight of all installed fixtures, clamps, cables, auxiliary equipment, etc.
- 2 If hanging the fixture with a rigging clamp, verify that the clamp is undamaged and is designed for the fixture's weight. Bolt the clamp securely to the bracket with a grade 8.8 (minimum) M12 bolt and lock nut, or as

- recommended by the clamp manufacturer, through the clamp hole in the mounting bracket.
- 3 If permanently installing the fixture, verify that the hardware (not included) and mounting surface can bear at least 10 times the fixture's weight. The four 6 mm holes and the clamp hole in the mounting bracket may be used for attachment.
- 4 Working from a stable platform, clamp or fasten the fixture to the structure.
- 5 Install a safety cable that can hold at least 10 times the weight of the fixture through/over the support and mounting bracket as shown.
- 6 Loosen the swivel locks, tilt the fixture to the desired angle, and retighten.
- 7 Verify that the fixture is at least 0.3 meters (12 in.) from the surface to be illuminated and at least 0.1 meters (4 in.) from any combustible materials. Verify that the clearance around the air vents is at least 0.1 meters (4 in.).

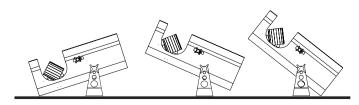


To use the bracket as a floor stand



The Acrobat may be placed on the floor by standing it squarely on the drum end or with the support of the mounting bracket. Never lay the fixture flat on its back!

- 1 Install the mounting bracket as described above.
- 2 Set the fixture flat on its drum end or in one of the positions shown below. Adjust the mounting bracket and tighten both swivel locks.
- 3 Verify (1) that the fixture is stable, (2) that the fixture is at least 0.3 meters (12 in.) from the surface to be illuminated and at least 0.1 meters (4 in.) from any combustible materials, and (3) that the clearance around the air vents is at least 0.1 meters (4 in.).



This section describes how to select the address, when used with a controller, and how to select various options using the DIP-switch.

DMX ADDRESS SELECTION

When the Acrobat is used with a DMX controller, its DIP-switch must be set to a control address. The control address, also known as the start channel, is the first channel used to receive instructions from the controller. For independent control, each fixture must be assigned its own control address and non-overlapping channels.

Two Acrobats may, however, share the same address if you want them to respond identically. In this case, the fixtures receive the same instructions and individual control is not possible.

The Acrobat uses 6 channels for full DMX operation. There is also a 1-channel DMX mode that is described on page 14.

To set a DMX address

- 1 Select an address for the fixture on your controller.
- 2 Look up the DIP-switch setting for the address on page 10.
- 3 Set pins 1 through 9 to the ON (1) or OFF (0) position as listed in the table.
- 4 Set pin 10 to the OFF position.
- 5 Set pin 11 to the OFF position for full 6-channel DMX operation or to the ON position for 1-channel DMX operation.

DIP-SWITCH ADDRESS TABLE

Find the address in the table below. Read the settings for pins 1 - 5 to the left and read the settings for pins 6 - 9 above the address. "0" means OFF and "1" means ON.

Important! Pins 10 and 11 must be OFF for full DMX control. Pin 10 must be OFF and pin 11 must be ON for 1-channel DMX control.

D	IP-Sv	/itch	Settin	ıq	#9	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1
					#8	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1
	0	= OF	F		#7	0	0	1	1	0	0	1	1	0	0	1	1	0	0	1	1
	1	10 =	١		#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		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	-
1	0	1	1	1		29	61	93	125	157	189	221	253	285	317	349	381	413	445	477	-
0	1	1	1	1		30	62	94	126	158	190	222	254	286	318	350	382	414	446	478	-
1	1	1	1	1		31	63	95	127	159	191	223	255	287	319	351	383	415	447	479	-

SPECIAL SETTINGS

DIP-switch pins 1 - 9 are used to select special options in stand-alone and master/slave mode. *To enable these options, pin 10 must be ON.*

Pin 11 toggles between 1 and 6 channel DMX control. It must be OFF for master/slave operation.

Lamp life can be extended by reducing the voltage slightly. Set DIP-switch pin 12 to ON for longer lamp life, or OFF for full output intensity.

Note: the fixture shall be disconnected from AC power when changing DIPswitch settings. Changes take effect only after the fixture has been turned off.

Important! Pin 10 must be ON to enable special settings on pins 1 - 9.

Pin	Setting	Effect
1	ON	Music trigger
1	OFF	Automatic trigger
2	ON	Stand-alone mode on, single or master fixture
2	OFF	Stand-alone mode off / slave fixture
3	ON	Test and adjustment program for service use
3	OFF	Normal operation
	ON	Slow mirror movement (set on master fixture)
4	OFF	Fast mirror movement
5	ON/OFF	No function
	ON	Random effect wheel position (set on slave fixture)
6	OFF	Effect wheel position same as master
7	ON	Inverted effect wheel position (set on slave fixture)
/	OFF	Normal effect wheel position
8	ON	Inverted tilt (set on slave fixture)
8	OFF	Normal tilt
9	ON	Inverted pan (set on slave fixture)
9	OFF	Normal pan
10	ON	Enable special settings with pins 1 - 9
10	OFF	Enable DMX address with pins 1 - 9
11	ON	1-channel mode on
11	OFF	1-channel mode off
12	ON	Reduced power / increased lamp life
12	OFF	Full power / maximum intensity

This section describes how to connect fixtures to a controller.

RECOMMENDED CABLE

A reliable data connection begins with the right cable. Standard microphone cable cannot transmit DMX data reliably over long runs. For best results, use cable specifically designed for RS-485 applications. Your Martin dealer can supply high quality cable in various lengths.

CONNECTIONS

The Acrobat's XLR data sockets are wired with pin 1 to ground, pin 2 to signal - (cold), and pin 3 to signal + (hot). This is the standard pin assignment for DMX devices.

One or more adaptor cables may be required to connect the Acrobat to the controller and/or other lights because many devices have 5-pin connectors and others may have reversed signal polarity, that is, pin 2 hot and pin 3 cold.

	to 3-pin aptor
Male	Female
2	1 2 3
P/N 11	820005

	o 5-pin ptor
Male	Female
2	1 2 3 4 5
P/N 11	820004

Phase-R	to 3-pin Reversing ptor
Male	Female
1 2 3	1 2 3
P/N 11	820006

To connect the data link

- 1 Connect a data cable to the controller's output. If controller has a 5-pin output, use a 5-pin male to 3-pin female adaptor cable (P/N 11820005).
- 2 Lead the data cable from the controller to the first fixture. Plug the cable into the fixture's data input.
- 3 Connect the output of the fixture closest to the controller to the input of the next fixture. If connecting two fixtures with reversed polarity on pins 2 and 3, insert a phase-reversing cable between the two fixtures.
- 4 Continue connecting fixtures output to input. Up to 32 devices may be connected on a serial link.
- 5 Terminate the link by inserting a male termination plug (P/N 91613017) into the data output of the last fixture. A termination plug is simply an XLR connector with a 120 ohm, 0.25 W resistor soldered across pins 2 and 3.

Male Termination Plug
Male XLR
1 2 3 3 ≤ 120
P/N 91613017

Female Termination Plug
Female XLR
1 2 3 ₹ 120
P/N 91613018

OPERATION

FULL DMX OPERATION

For DMX operation, connect the Acrobat to a DMX controller as described on page 12 and set the control address as described on page 9. The Acrobat automatically defaults to music-trigger stand-alone mode if there is no control signal.

DMX CHANNEL DESCRIPTION

See also the DMX protocol on page 18.

Channel 1 controls the light intensity and the strobe rate. It also allows you to execute a random "stand-alone" program using automatic or music trigger, and to reset the fixture to its home position.

Channel 2 controls the rotation of the parabolic reflector. This channel has no effect if the stand-alone program is selected on channel 1.

Channel 3 controls the color/gobo wheel. This channel functions even if the stand-alone program is selected. When strobe is selected, the wheel alternates between the selected position and the one before it. To strobe between open and closed, select the open position.

Channel 4 controls the mirror drum's pan (swivel) angle.

Channel 5 controls mirror drum rotation. Channels 4 and 5 have no effect if the stand-alone program is selected.

Channel 6 controls the drum's pan speed, allowing you to vary the speed with controllers without cross-fade times. If your controller has cross-faders and you use them, turn the speed function off by setting channel 6 to 0 percent. This channel has no effect if stand-alone is selected.

1-CHANNEL DMX OPERATION

The Acrobat may be operated in 1-channel mode with the MC-1 or any DMX controller. For 1-channel operation, connect the controller as described on page 12. *DIP-switch pin 11 must be set to ON*.

If using the MC-1, select DMX channel 1. If using a DMX controller, any channel within the controller's range may be assigned.

The single-channel controllable functions are shown below.

DMX value	Percent	Function
0 - 10 11 - 20 21 - 80 81 - 115 116 - 140 141 - 175 176 - 210 211 - 255	0 - 4 5 - 7 8 - 31 32 - 45 46 - 55 56 - 68 69 - 82 83 - 100	Blackout (light off) Open (light on) Strobe Random action with slow music trigger Random action with medium music trigger Random action with fast music trigger Random action with random music trigger Manual trigger area, crossover at 240 (94%)

STAND-ALONE OPERATION

Several stand-alone options are available; see "Special settings" on page 11.

MASTER / SLAVE OPERATION

Multiple Acrobats can be connected together for synchronized "master/slave" operation in which slave units mimic the master unit. To operate in this mode, the Acrobats must be connected together and *DIP-switch pin 2 must be set to off on all fixtures except the master.*

To setup units for master / slave operation

Important! Set only 1 fixture as master (with DIP-switch pin 2 and 10 ON): errors and damage can occur if there is more than 1 master.

- 1 Connect the output of one Acrobat to the input of the next Acrobat.
- 2 Connect additional Acrobats output to input. Up to 32 may be connected.
- 3 Terminate the link on both ends by inserting a female termination plug into the data input of the first fixture and a male termination plug into the data output of the last fixture. (See page 13). Do not connect the output of the last fixture to the input of the first fixture.
- 4 Select one fixture to be the master. Set DIP-switch pins 2 and 10 to ON. Set DIP-switch pins 3, 5, 6, 7, 8, 9, and 11 to OFF. Set DIP-switch pins 1, 4, and 12 ON or OFF, as desired, to select the options described on page 11.
- 5 On all other fixtures (slaves), set DIP-switch pin 1 to ON, set pins 2 11 to OFF, and set pin 12 ON for longer lamp life or OFF for higher intensity. To use the special settings described on page 11, set DIP-switch 10 to ON, set pins 1, 2, 3, 4, 5 and 11 to OFF, and set DIP-switch pins 6, 7, 8, and 9 ON or OFF, as desired.

SERVICE

There are no user-serviceable parts inside the Acrobat. Please refer all service to a Martin distributor, dealer, or service center.

To replace the main fuse

- 1 Unplug the mains cable from the input socket. Pry open the fuse holder and remove the fuse.
- 2 Replace the fuse with one of the same type. The fuse rating is listed on serial number label.

Problem	Probable cause(s)	Remedy	
	No power to fixture.	Check that power is switched on and cables are plugged in.	
Fixture is completely dead.	Primary fuse blown.	Replace fuse.	
	Secondary fuse blown.	Contact Martin technician for service.	
Fixture resets correctly but does	The DMX signal is not transmitted.	Connect controller. Inspect connections and cables. Correct poor connections. Repair or replace damaged cables.	
not respond to controller.	The DMX data signal is reversed.	Insert a phase-reversing cable in the link before the fixture.	
	Incorrect address or other DIP-switch setting.	Check DIP-switch settings.	
	Data link not terminated.	Insert termination plug in output of the last fixture on the link.	
Intermittent flicker or strange behavior.	One of the fixtures is transmitting as a master or is defective.	Bypass one fixture at a time until normal operation is regained: unplug both connectors and connect them directly together. Have the defective fixture serviced by a qualified technician.	
Effect fails to reset correctly.	The effect requires mechanical adjustment.	Contact Martin technician for service.	
No light.	Lamp missing or blown	Disconnect fixture and replace lamp.	
	Extreme vibrations.	Relocate fixture away from speakers.	
Lamp cuts out intermittently or	The operating voltage does not match AC supply.	Contact Martin technician for service.	
burns out too quickly.	Blocked air vent.	Increase clearance around fixture.	
	Dust buildup inside fixture.	Contact Martin technician for professional cleaning.	

DMX PROTOCOL



Channel	Value	Percent	Function
1	0 - 4 5 - 154 155 - 169 170 - 229 230 - 239 240 - 249 250 - 255	0 - 1 2 - 60 61 - 66 67 - 89 90 - 93 94 - 97 98 - 100	Dimmer, Strobe, Reset Light off Dimmer, closed to open Dimmer full open Strobe, fast to slow Stand-alone, music trigger Stand-alone, auto trigger Reset
2	0 - 1 2 - 122 123 - 132 133 - 253 254 - 255	0 - 1 1 - 48 49 - 52 52 - 99 99 - 100	Parabolic Reflector Stop CCW rotation, slow to fast Stop CW rotation, fast to slow Stop
3	0 - 11 12 - 23 24 - 35 36 - 47 48 - 59 60 - 71 72 - 83 84 - 95 96 - 107 108 - 119 120 - 131 132 - 143 144 - 155 156 - 167 168 - 179 180 - 191 192 - 203 204 - 215 216 - 227 228 - 239 240 - 255	0 - 4 5 - 8 9 - 13 14 - 18 19 - 23 24 - 27 28 - 32 33 - 37 38 - 41 42 - 46 47 - 51 52 - 55 56 - 60 61 - 65 66 - 70 71 - 74 75 - 79 80 - 84 85 - 88 89 - 96 97 - 100	Color / Gobo Wheel Open Worms Web Petals Spokes Cone Maze Crater Holes Cross Jagged Cross Atomic Dot Circle Nordic Aim Pie Tie Nova Triple Beam Blackout Random "stand-alone" position w/ music or auto trigger
4	0 - 255	0 - 100	Mirror Drum Swivel Left to right (127 = neutral)
5	0 - 1 2 - 122 123 - 132 133 - 253 254 - 255	0 - 1 1 - 48 49 - 52 52 - 99 99 - 100	Mirror Drum Rotation Stop CCW rotation, slow to fast Stop CW rotation, fast to slow Stop
6	0 - 2 3 - 255	0 - 1 2 - 100	Mirror Pan Speed Tracking (speed function off) Fast to slow

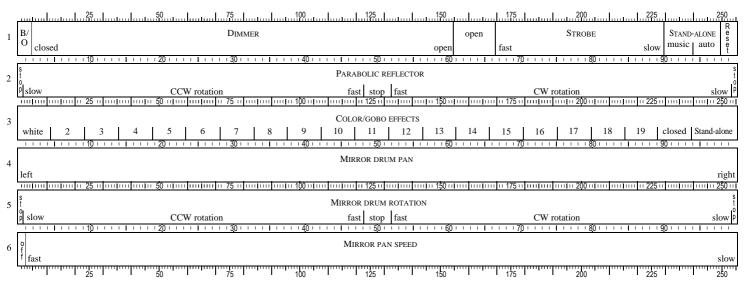
See also "1-channel DMX operation" on page 14.

SPECIFICATIONS

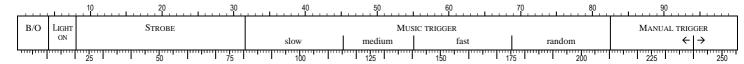


PHYSICAL
• Size (L x W x H)
• Weight
THERMAL
• Maximum ambient temperature (T_a)40° C (104° F)
Maximum surface temperature
CONTROL AND PROGRAMMING
• Data pin-out 3-pin locking XLR, pin 1 shield, pin 2 cold (-), pin 3 hot (+)
• Control protocol
• DMX channels
AC POWER
• Input
• Maximum power and current
• Primary fuse, EU version
• Primary fuse, US version
• Secondary fuse
INSTALLATION
Minimum distance to combustible materials
• Minimum distance to illuminated surfaces
Minimum clearance around fan and air vents
ACCESSORIES
• MC-1 controller, EU90718000
• MC-1 controller, US90718100
• Osram 24V/250W ELC 50 h halogen lamp97000104
• Philips 24V/250W ELC 300 h halogen lamp97000106
• G-clamp91602003
• Half-coupler clamp91602005

Acrobat 6-Channel DMX Protocol



Acrobat 1-Channel DMX Protocol



Martin Professional A/S