

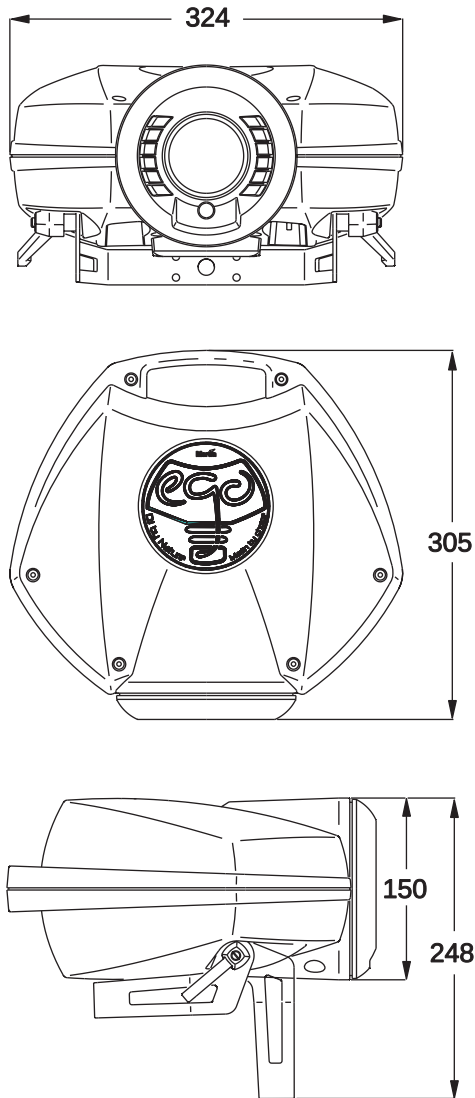
Ego X Series

user manual



Ego X4 – Ego X5 – Ego X6

Measurements are expressed in millimeters.



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INTRODUCTION

Thank you for selecting a dynamic lighting fixture from the Martin Ego X Series. Ego X4, Ego X5 and Ego X6 fixtures feature a 250 watt long-life halogen lamp and sharp projection quality optics in a moulded composite casing. All models feature precise focus adjustment that gives crisp projections.

Fixtures in the Ego X Series feature a range of intelligent lighting effects that give multiple moving light beams, patterns and colors. Full details of the effects available in individual models are given in “*Effects*” on page 14 of this manual.

All models can be controlled using DMX or operate in stand-alone mode, where effects can be triggered automatically or by music. In stand-alone mode, fixtures have master/slave capabilities that make it possible to synchronize light shows with other Ego X Series fixtures of the same type without using a DMX controller.

In DMX mode, features include twelve factory-designed macros that allow light shows to be created quickly with minimal programming

A convenient handle and lens protection ring make for easy transport and handling.

The most recent version of this user manual is available from the Support area of the Martin Professional website at <http://www.martin.com>

UNPACKING

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

Ego X Series fixtures are supplied with the following:

- User manual
- 3 meter (10 ft) IEC power cable with Shuko (Euro) connector
- 3 meter (10 ft) IEC power cable with US connector
- 3 meter (10 ft) IEC power cable without connector
- 24 V / 250 W long-life lamp (installed)

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. Refer any service operation not described in this manual to a qualified technician. Do not modify the fixture or install other than genuine Martin accessories and upgrade kits.

Avoiding electric shocks

- 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.

Protecting 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.
- Ensure that the air flow through fans and vents is free and unobstructed.
- 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 damaged, thermally deformed, defective or worn out, or when average service life is reached. When replacing the lamp, allow the fixture to cool for at least 15 minutes before opening the fixture or removing the lamp.
- Never place filters or other materials over the lens or mirror.
- The exterior of the fixture can become hot. Allow the fixture to cool for at least 15 minutes before handling.
- Do not operate the fixture if the ambient temperature (T_a) exceeds 40° C (104° F).
- Do not stare directly into the light.
- Never operate the fixture without all lenses and covers installed: an unshielded lamp emits UV radiation that can cause burns and eye damage.
- If any component, cover, shield or lens is visibly damaged, stop using the fixture immediately and do not operate it again until the damaged component is replaced.

Preventing injuries 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
- Use an approved means of secondary attachment such as a safety cable.
- Block access below the work area when installing or removing the fixture.

INSTALLATION

AC POWER

Ego X Series fixtures have an auto-ranging power supply that can operate in the following nominal voltage ranges at 50/60 Hz:

- 100-120 Volts AC
- 208-240 Volts AC

Installing a plug on the power cable

Your fixture's power cable may require a grounding-type (earthed) power plug 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 power distribution system must have overload and ground-fault (earth fault) protection.*

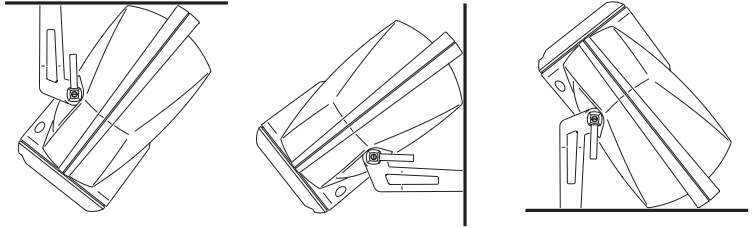
Important! *Verify that all power cables are undamaged and rated for the current requirements of all connected devices before use.*

Following the power plug 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/earth		green

MOUNTING

Ego X Series fixtures can be flown using a clamp (available from your Martin dealer), or fastened to a horizontal or vertical surface.



Surface mounting options

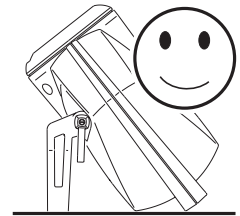
Warning! *Block access below the work area before proceeding. Always use a secure means of secondary attachment.*

Do not operate the fixture without fastening it securely to a structure or surface.

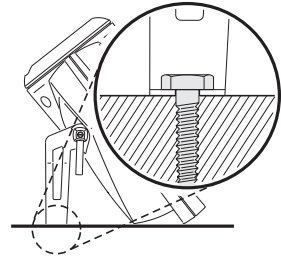
Do not install the fixture without the mounting bracket extended, as this reduces the air flow to the fan and may cause overheating.

To mount an Ego X Series fixture:

1. Check that the mounting structure or surface can support at least 10 times the weight of all installed fixtures, clamps, cables, auxiliary equipment, and other items.
2. If hanging the fixture with a rigging clamp, check that the clamp is undamaged and is designed for the fixture's weight. Bolt the clamp securely to the fixture's mounting bracket with a grade 8.8 (minimum) M12 bolt and lock nut, or as recommended by the clamp manufacturer.
3. If mounting the fixture on a surface, install an eyebolt that can hold ten times the weight of the fixture in the mounting surface for the safety cable.

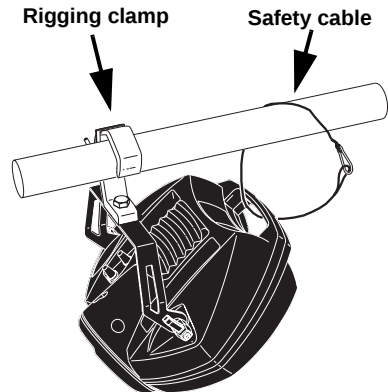


4. Working from a stable platform, fasten the fixture to the structure or surface. If mounting on a surface, use a grade 8.8 (minimum) M12 bolt or screwbolt, passing it through the hole in the fixture's mounting bracket (see illustration).



5. Install a safety cable that can hold at least 10 times the weight of the fixture, passing it **through the fixture's handle** (see illustration) and around the mounting structure or through the eyebolt in the mounting surface.

Warning! *Do not simply pass the safety cable through the fixture's mounting bracket, as this will leave the fixture unsecured.*



6. Loosen the swivel locks, tilt the fixture to the desired angle, and retighten.
7. Check that the fixture is held securely.
8. Check 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.
9. Check that the clearance around the air vents is at least 0.1 meters (4 in.), and that airflow around the vents is free and unobstructed.

DATA CONNECTION

You need to create a serial data link to:

- Control fixtures via a DMX control device.
- Operate two or more Ego X Series fixtures of the same type in master/slave stand-alone mode, where all fixtures run a synchronized light show without a separate DMX control device.

Creating a data link

Fixtures on a serial data link must be daisy-chained in one single line, maximum 500 meters (1640 ft.) long, with maximum 32 fixtures. To exceed 32 fixtures or 500 meters, or to add branches, an optically isolated amplifier-splitter such as the Martin RS-485 Opto-Splitter (P/N 90758060) must be used.

A reliable data connection requires suitable 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 suitable high quality cable in various lengths.

Data cable can be connected to the Ego X Series via XLR connectors on the control panel that are wired with pin 1 to ground (earth), pin 2 to signal - (cold), and pin 3 to signal + (hot). This is compatible with the standard for DMX devices.

One or more adaptor cables may be required to connect fixtures to the controller and/or other types of fixture, because some devices have 5-pin connectors and others may have reversed signal polarity (pin 2 hot and pin 3 cold). Signal polarity is normally indicated on the fixture.

5-pin to 3-pin Adaptor	
Male	Female
1	1
2	2
3	3
4	
5	
P/N 11820005	

3-pin to 5-pin Adaptor	
Male	Female
1	1
2	2
3	3
	4
	5
P/N 11820004	

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

Installing a data link for DMX controller operation

1. Connect a suitable cable to the DMX output of the controller. If connecting to a controller with a 5-pin XLR output, use a 5-pin male to 3-pin female adaptor (P/N 11820005).
2. Connect the cable to the male XLR data input of the first fixture on the link.
3. Continue connecting fixtures output to input. If connecting two fixtures with opposing polarity on pins 2 and 3, insert a phase-reversing cable between the two fixtures.

4. Terminate the link by inserting a male XLR termination plug (P/N 91613017) into the data output of the last fixture. A termination plug is simply a connector with a 120 Ohm, 0.25 W resistor soldered across pins 2 and 3.

Male Termination Plug	Female Termination Plug
Male XLR 1 2  120 Ohm 3  120 Ohm	Female XLR 1 2  120 Ohm 3  120 Ohm
P/N 91613017	P/N 91613018

Installing a data link for master/slave operation

Ego X Series fixtures can operate in master/slave mode with other Ego X Series fixtures of the same type. This means that Ego X4 fixtures can operate with other X4s but not X5s or X6s, for example.

To install a data link for master/slave operation:

1. Insert a female XLR termination plug into the data input of the first fixture. Using suitable cable, connect the data output of the first fixture to the data input of the next fixture.
2. Connect additional fixtures output to input. Up to 32 may be connected.
3. Insert a male XLR termination plug into the data output of the last fixture.

Note that:

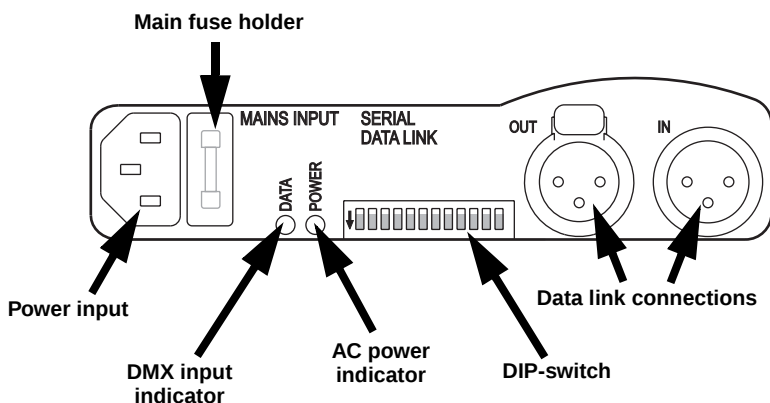
- The female termination plug may not be required if the first fixture on the link is the master.
- A termination plug is simply a connector with a 120 ohm, 0.25 W resistor soldered across pins 2 and 3.

GENERAL OVERVIEW

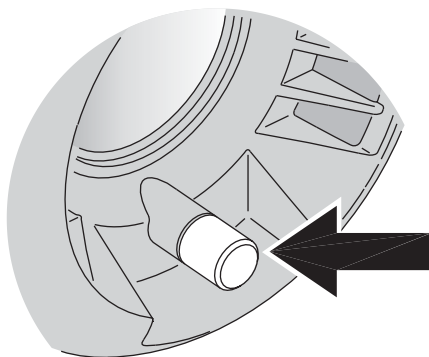
The lamp turns on as soon as power is applied.

To achieve optimal results, the use of smoke effects together with your fixtures is recommended.

CONNECTIONS/CONTROL PANEL



FOCUSING



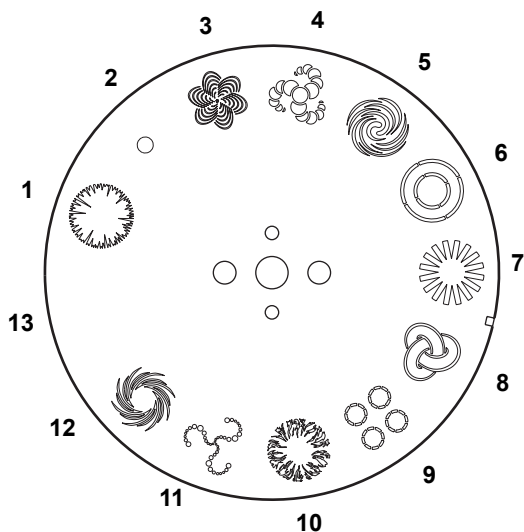
Adjust the focus using the thumb screw next to the lens.

Note that this thumb screw is for focus adjustment only. For access to the lens and other optical components, see “*Cleaning optical components*” on page 25.

EFFECTS

Ego X4 effects

The Ego X4 features a rotating parabolic reflector with multiple mirrors that gives multiple rotating light beams. As well as the rotating mirror dish, the Ego X4 contains the effect wheel described below, with 12 gobo/color combination positions, and a closed position.



Position	Gobo	Color
1	Burst	Open (white)
2	Dot	Light green 204
3	Sound wave	Magenta 507
4	Jester	Blue 111/Primary green 206 M/Magenta 507
5	Whirlpool	Blue 101
6	Target	Blue 106
7	Nippon	Flame red 304
8	Mobius	Yellow 603
9	Fab-4	Light green 204/Orange 306/Magenta 507/Cyan 104
10	Solar flare	Orange 306

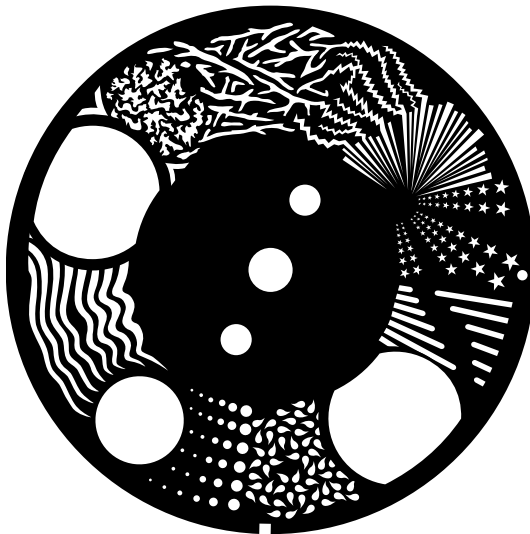
Position	Gobo	Color
11	DNA	Cyan 104/Magenta 507/Amber 604
12	Galaxy	Green 202
13	Closed	Closed (black/no color)

When operating the Ego X4 under DMX control:

- The parabolic reflector dish can be rotated continuously clockwise or counter-clockwise. Rotation speed can be varied. Shake options are also available.
- Individual positions on the gobo/color wheel can be selected.
- The gobo/color wheel can be rotated continuously clockwise or counter-clockwise. Rotation speed can be varied. Shake options are also available.
- Music trigger using the built-in sensor can be applied to the entire fixture or to individual effects.

Ego X5 effects

The Ego X5 features a rotating kaleidoscopic mirror tunnel that gives dynamic light effects in a symmetrical pattern. This fixture also contains the rotating color/gobo combination effects wheel with 13 positions illustrated below.



When operating the Ego X5 under DMX control:

- The mirror tunnel can be rotated continuously clockwise or counter-clockwise. Rotation speed can be varied. Shake options are also available.
- Individual positions on the effects wheel can be selected.
- The effects wheel can be rotated continuously clockwise or counter-clockwise. Rotation speed can be varied. Shake options are also available.
- Music trigger using the built-in sensor can be applied to the entire fixture or to individual effects.

Ego X6 effects

The Ego X6 features a rotating parabolic reflector dish with an arrangement of colored mirrors that gives multiple rotating light beams. Besides the reflector dish, the Ego X6 features a rotating color wheel with twinkle function and a rotating textured glass wheel. Combining these three features gives a spectacular array of light beams with dynamically changing colors and textures.

When operating the Ego X6 under DMX control:

- Individual positions on the textured glass wheel and color/twinkle wheels can be selected.
- Twinkle can be held static or activated with variable speed.
- The textured glass wheel and parabolic reflector dish can be rotated continuously clockwise or counter-clockwise. Rotation speed can be varied. Shake options are also available.
- Music trigger using the built-in sensor can be applied to the entire fixture or to individual effects.

STAND-ALONE OPERATION

The Ego X Series can be operated without a controller in stand-alone mode. In this mode, a fixture can be operated as a single unit or in a “master/slave” configuration together with other Ego X Series fixtures of the same type. In stand-alone mode, light effects are selected at random in response to either auto trigger or music trigger signals from the built-in sensor.

Several options are available to modify stand-alone operation. This chapter describes these options and explains how to select them using the DIP-switch on the connections panel.

Overviews of the DIP-switch settings for each Ego X Series model are included on pages 34 - 40 of this manual.

Important! *An Ego X Series fixture transmits a signal when it is set as master (i.e. DIP-switch pins 1 or 2 and 10 are set to ON). To avoid damage to the electronics, do not connect more than 1 transmitting device (master or controller) to the data link.*

Do not use DIP-switch pin 3 in stand-alone mode. When pin 3 and 10 are both set to ON, the fixture enters effect-wheel adjustment mode.

SINGLE-FIXTURE OPERATION

An Ego X Series fixture can be set to operate independently of other fixtures in music trigger or auto trigger mode. A data link is not needed.

Single-fixture mode can be selected by setting all DIP-switch pins to OFF, setting pin 10 to ON, then setting pin 1 to ON for music trigger or 2 to ON for auto trigger.



Single fixture
music trigger mode



Single fixture
auto trigger mode

MASTER / SLAVE OPERATION

Multiple Ego X Series fixtures of the same type can be connected together on a data link for “master/slave” operation, in which one fixture acts as master and sends out trigger signals to slave fixtures.

Note that different types of fixture cannot be mixed in master/slave operation. Ego X4 fixtures cannot control X5 or X6 fixtures, for example.

The procedure for connecting the data link is described in “*Installing a data link for master/slave operation*” on page 12.

Setting slave fixtures

Slaves can be set to either copy the master behavior exactly or respond to trigger signals but behave differently from the master. Setting random movement gives synchronized but unrelated effects compared with the master. Setting inverted movement gives a “mirror image” of the master.

To set a fixture as slave, set all the fixture’s DIP-switch pins to OFF. The slave will now copy exactly the behavior of the master fixture.

To set a slave fixture to respond to trigger signals but behave differently from the master:

1. Set all DIP-switch pins to OFF.
2. Set DIP-switch pin 10 to ON.
3. Depending on your Ego X Series model, set either random or inverted movement options as listed below.

Ego X4 slave options

- Set pin 6 to ON for random color/gobo wheel movement.
- Set pin 7 to ON for random mirror dish movement.
- Set pin 8 to ON for inverted color/gobo wheel movement.
- Set pin 9 to ON for inverted mirror dish movement.

Ego X5 slave options

- Set pin 6 to ON for random color/gobo wheel movement.
- Set pin 7 to ON for random mirror tunnel movement.
- Set pin 8 to ON for inverted color/gobo wheel movement.
- Set pin 9 to ON for inverted mirror tunnel movement.

Ego X6 slave options

- Set pin 7 to ON for random mirror dish movement.
- Set pin 9 to ON for inverted mirror dish movement.

Setting the master fixture

Important! Set only one fixture as master (DIP-switch pins 1 or 2 and 10 ON).

The master fixture can be set to either auto trigger or music trigger mode.
To set a fixture as master:

1. Set all DIP-switch pins to OFF.
2. Set DIP-switch pin 10 to ON.
3. *Either* set DIP-switch pin 1 to ON for music trigger mode *or* set DIP-switch 2 to ON for auto trigger mode.
4. Set DIP-switch pin 4 to ON for slow effects action or OFF for fast action.

DMX OPERATION

Ego X Series fixtures can be connected to and operated from a DMX controller.

DMX CONTROL ADDRESS

The DMX control address, also known as the start channel, is the first channel used to receive instructions from the controller. Each fixture needs its own control address set, and uses this address and subsequent control channels to receive instructions from a controller.

Ego X4 and Ego X5 fixtures use six control channels. Ego X6 fixtures use seven control channels. All fixtures read the data on the start channel and the next channels.

If an Ego X4 or Ego X5 has its control address set to 100, it uses channels 100, 101, 102, 103, 104 and 105. Channel 106 is available for use as control address for the next fixture.

If an Ego X6 has its control address set to 100, it uses channels 100, 101, 102, 103, 104, 105 and 106. Channel 107 is available for use as control address for the next fixture.

For independent control, each fixture must be assigned its own address and its own control channels. If two or more fixtures are set up with the same address, they will receive the same instructions and should behave identically. Setting up identical fixtures with the same address is a good tool for troubleshooting unexpected behavior and an easy way to achieve synchronized action.

Specifying a DMX address

DIP-switch pins 1-9 are used to set the control address:

1. Select an address for the fixture on your controller. If you are calculating the DMX addresses for multiple fixtures, you can save time by using the Martin Address Calculator at <http://www.martin.dk/service/utilities/AddrCalc/index.asp>
2. Look up the DIP-switch setting using the Martin DIP Switch Calculator (also available on the internet, at

<http://www.martin.dk/service/dipswitchpopup.htm>), or look for the address in the following DIP-switch settings table.

3. Disconnect the fixture from power.
4. Set pin 10 to OFF.
5. Set pins 1 through 9 to the ON (1) or OFF (0) position as listed in the table below.

Find the address in the following table. 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. Pin 10 is always OFF for DMX operation.

DIP-Switch Setting					#9	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1
0 = OFF 1 = ON					#8	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1
					#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	

EGO X4 DMX OPERATION

For full details of settings on DMX channels, refer to “*Ego X4 DMX protocol*” on page 32.

Channel 1 controls the strobe, stand-alone auto-triggering and reset. If stand-alone auto-triggering is selected on this channel, intensity will be automatically set to 100% and all other channels will be disabled until stand-alone is deselected on channel 1.

Channel 2 controls light intensity. When intensity is set to zero, the cooling fan will slow down significantly to reduce power consumption, prolong the life of the product, reduce noise and minimize cleaning. This channel is disabled during stand-alone auto-triggering operation.

Channel 3 controls the gobo/color wheel and is used to select effects and control rotation of the effect wheel. Fast, slow and dynamic music triggering of the wheel can also be selected. This channel is disabled during stand-alone auto-triggering operation.

Channel 4 controls the effect shake function. This channel is disabled during stand-alone auto-triggering operation.

Channel 5 controls the parabolic reflector’s rotation direction and speed. Fast, slow and dynamic music triggering of the wheel can also be selected. This channel is disabled during stand-alone auto-triggering operation.

Channel 6 allows one of 12 factory-set macros to be selected. The macros are mini-programs that use all the fixture’s effects. Select a macro if you want fast access to impressive light effects with minimal programming.

EGO X5 DMX OPERATION

For full details of settings on DMX channels, refer to “*Ego X5 DMX protocol*” on page 35.

Channel 1 controls the strobe, stand-alone auto-triggering and reset. If stand-alone auto-triggering is selected on this channel, intensity will be automatically set to 100% and all other channels will be disabled until stand-alone is deselected on channel 1.

Channel 2 controls light intensity. When intensity is set to zero, the cooling fan will slow down significantly to reduce power consumption, prolong the life of the product, reduce noise and minimize cleaning. This channel is disabled during stand-alone auto-triggering operation.

Channel 3 controls the effect wheel and is used to select effects and control rotation of the wheel. Fast, slow and dynamic music triggering of the wheel can also be selected. This channel is disabled during stand-alone auto-triggering operation.

Channel 4 controls the effect wheel shake function. This channel is disabled during stand-alone auto-triggering operation.

Channel 5 controls the rotation direction and speed of the kaleidoscopic mirror tunnel. A shake function is available, and fast, slow and dynamic music triggering of the mirror tunnel can also be selected. This channel is disabled during stand-alone auto-triggering operation.

Channel 6 allows one of 12 factory-set macros to be selected. The macros are mini-programs that use all the fixture’s effects. Select a macro if you want fast access to impressive light effects with minimal programming.

EGO X6 DMX OPERATION

For full details of settings on DMX channels, refer to “*Ego X6 DMX protocol*” on page 38.

Channel 1 controls the strobe, stand-alone auto-triggering and reset. If stand-alone auto-triggering is selected on this channel, intensity will be automatically set to 100% and all other channels will be disabled until stand-alone is deselected on channel 1.

Channel 2 controls light intensity. When intensity is set to zero, the cooling fan will slow down significantly to reduce power consumption, prolong the life of the product, reduce noise and minimize cleaning. This channel is disabled during stand-alone auto-triggering operation.

Channel 3 controls the textured glass wheel and is used to select texture effects and control rotation of the wheel. Fast, slow and dynamic music triggering of the wheel can also be selected. This channel is disabled during stand-alone auto-triggering operation.

Channel 4 controls the textured glass wheel shake function. This channel is disabled during stand-alone auto-triggering operation.

Channel 5 controls the color/twinkle wheel and is used to select colors, set auto color or select twinkle effects. Fast, slow and dynamic music triggering of the wheel can also be selected. This channel is disabled during stand-alone auto-triggering operation.

Channel 6 controls the rotation direction and speed of the colored mirror dish. A shake function is available, and fast, slow and dynamic music triggering of the mirror dish can also be selected. This channel is disabled during stand-alone auto-triggering operation.

Channel 7 allows one of 12 factory-set macros to be selected. The macros are mini-programs that use all the fixture’s effects. Select a macro if you want fast access to impressive light effects with minimal programming.

BASIC SERVICE

CLEANING

Regular cleaning of the elements in the optical path, as well as the fan and air vents, is vital to maintaining the operational quality of the Ego X Series.

Important! Excessive dust, smoke fluid and particle buildup degrades performance and causes overheating and damage to the fixture that is not covered by the warranty.

Cleaning the fan and air vents

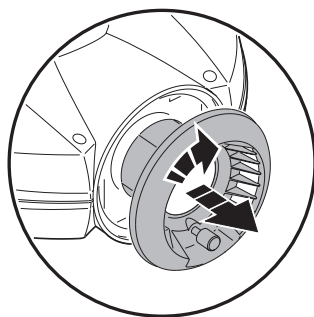
To maintain adequate cooling, dust must be cleaned from the fan and air vents periodically. Remove dust from the fan and air vents with a soft brush, cotton swab, vacuum, or compressed air.

Cleaning optical components

Clean the optical components regularly. The presence of smudges or dust on optical surfaces can reduce the strength of the light output and the quality of the effects.

Use care when cleaning optical components and work in a clean, well lit area. The coated surfaces are fragile and easily scratched. Do not use solvents that can damage plastic or painted surfaces.

1. Disconnect the fixture from power and allow the components to cool for at least 15 minutes.
2. Remove the front lens for cleaning by grasping the lens collar, twisting it **clockwise**, and sliding the lens out of the fixture.
3. Remove the fixture cover if you need to access the internal optical components. It can be a good idea to



remove the lamp during cleaning (see “*Installing a lamp in the Ego X Series*” on page 26).

4. Vacuum or gently blow away dust and loose particles with compressed air.
5. Remove stuck particles with an unscented tissue or cotton swab moistened with glass cleaner or distilled water. Do not rub the surface: lift the particles off with a soft repeated press.
6. Remove smoke and other residues with cotton swabs or unscented tissues moistened with isopropyl alcohol. A commercial glass cleaner may be used, but residues must be removed with distilled water. Clean with a slow circular motion from center to edge. Dry with a clean, soft and lint-free cloth or compressed air.
7. Replace the lens and fixture cover and tighten the access screws, taking care not to trap any loose wires.

LAMP MAINTENANCE

Warning! *Always disconnect the fixture from AC power and allow it to cool for at least 15 minutes before installing the lamp.*

The following lamp types are supported:

- Philips ELC/10H, 24 V / 250 W, 1000 hour halogen lamp
- Philips ELC/5H, 24 V / 250 W, 500 hour halogen lamp
- Osram ELC-7/X, 24 V / 250 W, 700 hour halogen lamp
- Philips ELC/8H, 24 V / 250 W, 800 hour halogen lamp
- Osram ELC, 24 V / 250 W, 50 hour halogen lamp

Important! *Installing any other lamp may damage the fixture.*

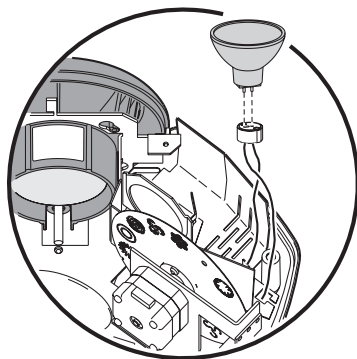
Allow the lamp to cool for at least 15 minutes before packing and moving the fixture. To avoid possible damage, remove the lamp when shipping the fixture.

As a general rule, the halogen lamps that have the shortest life span provide the greatest intensity.

Installing a lamp in the Ego X Series

1. Disconnect the fixture from AC power. If replacing a lamp, allow it to cool for at least 15 minutes before removing the lamp access cover. The lamp cools faster with the cover in place.

2. Remove the six access screws from the cover and lift it 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. Clean the glass bulb with the cloth supplied with the lamp, particularly if your fingers touched the glass. A clean, lint-free cloth wetted with alcohol may also be used.
6. Gently push the lamp into the holder until it snaps into place.
7. Replace the fixture cover and tighten the access screws, taking care not to trap any loose wires.



FUSES

Ego X Series fixtures use a time-delay fuse for protection against current overload. An indication that the fuse may have blown is that when power is applied the lamp does not light and the fan does not operate.

If the fuse blows repeatedly, there is a fault with the unit that requires service by a Martin technician.

Never bypass the fuse or replace it with one of another size or rating.

Replacing the main fuse

1. Unplug the power cable from the power input socket. The fuse holder is integrated into the power input socket.
2. Using a flathead screwdriver, lift the cover off the fuse holder and replace the fuse.
3. Replace the fuse holder cover and reconnect power.

FIRMWARE UPDATES

The factory installed software version is indicated on the serial number label.

The latest software is available from the support area of the Martin web site at <http://www.martin.com>. It can be installed using an MP-2, or via a PC serial data link using a hardware interface supported by the Software Uploader shareware (also available from the Martin web site). The following devices are currently supported (software version 5.5):

- DABS 1 (presently available with the MUM software package)
- ShowDesigner PCI DMX Interface Card (2048 channel version)
- LightJockey PCI DMX Interface Card (512 and 2048 channel versions)
- LightJockey PCMCIA DMX Interface
- LightJockey 4064 ISA DMX Interface Card (DJ and Club versions)

Note: Intermediate control systems such as the Martin Lighting Director (MLD) and the Martin Matrix must be bypassed when updating fixture software via the DMX link. These systems do not relay the update code correctly because it is not a DMX-compliant signal.

Normal update

To update fixture software, connect an upload device to the fixture just like a DMX controller and perform a DMX mode upload as described in the uploader's documentation.

When the upload is completed (and when booting up) the fixture performs a check-sum test of the memory and then resets.

In the unlikely event that a software upload is interrupted, the fixture must be powered off for at least 10 seconds to force a check-sum test. You can then repeat the DMX-mode upload. If an error occurs and the fixtures do not reset, data was interrupted or corrupted during transmission. Perform a boot mode upload as described below.

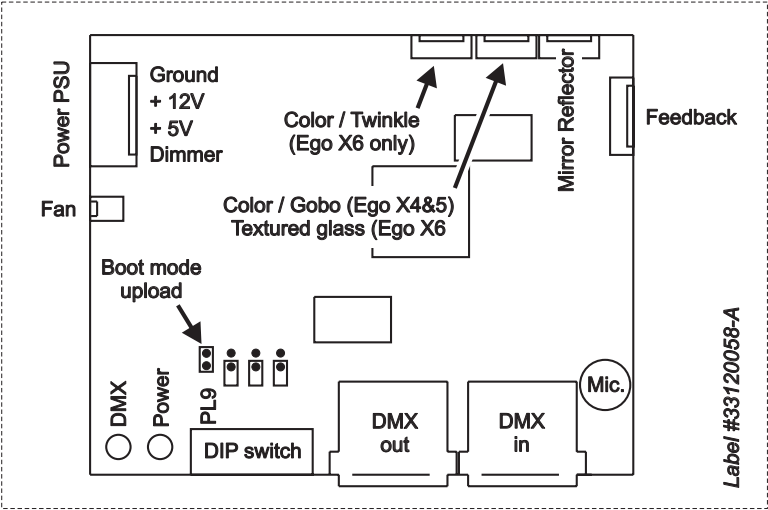
Boot mode upload

If the normal software upload procedure does not work, or if the software update notes call for a boot mode update, the fixture can be forced into boot mode for software uploading by setting a jumper on the PCB. This should cure any software problems that may be preventing successful upload.

To perform a boot mode upload:

1. Disconnect the fixture from AC power and allow to cool for at least 15 minutes.
2. Place the fixture with its mounting bracket facing down. Remove the six access screws from the cover and lift it off.
3. Locate jumper PL9 in the group of four jumpers on the PCB (see “*PCB layout*” on next page). Using long-nose pliers, reach in and relocate the cap on jumper PL9 so that it bridges the two pins, as shown in the diagram on the next page.
4. Reassemble the fixture and reconnect to power.
5. Perform the boot mode upload as described in the manual of the uploader that you are using.
6. Once the upload is complete, repeat steps 1 to 4 above, but relocate the jumper cap so that it no longer bridges the two pins.

PCB LAYOUT



TROUBLESHOOTING

problem	probable cause(s)	suggested remedy
No light	No power to the fixture	Check connections
	Blown fuse (power indicator LED will also be inactive)	Check and replace fuse if necessary.
	Burned out lamp	Install new lamp
	Fixture too hot	Allow to cool Clean fan and air vents Improve air flow around fixture
No music trigger action	Sound level too low to activate control circuit	Increase volume or reduce distance between loudspeakers and fixture
No action	Electrical malfunction	Refer to service technician
	Software checksum error	Update firmware. See " <i>Firmware updates</i> " on page 28.
Fuse blows repeatedly	Electrical malfunction	Refer to service technician
Fixture resets correctly but does not respond to controller.	DMX signal is not being transmitted	Check controller Check connections and cables
	Device with reversed polarity wrongly connected	Use phase-reversing cables or adaptors for this device
	Incorrect address or other DIP-switch setting	Check DIP-switch settings
Intermittent flicker or strange behavior.	Data link not terminated	Insert termination plug in output of the last fixture on the link
	One of the fixtures is transmitting as a master or is defective.	Bypass one fixture at a time until normal operation is regained: (to bypass, unplug fixture from data and plug connectors on data cable directly together). Have the defective fixture serviced by a qualified technician
Effect fails to reset correctly.	Effect requires mechanical adjustment	Contact Martin technician for service

Ego X4 DMX PROTOCOL

Channel	Value	Percent	Function
1	0-4	0-1	Strobe, music trig, reset
	5-68	2-26	No function
	69-100	27-39	Strobe, fast to slow
	101-249	40-97	Remote stand-alone auto trigger (disables other channels)
	250-255	98-100	Reserved Reset fixture, time > 3 seconds
2	0-255	0-100	Intensity 0-100%
3			Color / gobo wheel
			Continuous scroll: full positions
	0-9	0-3	Position 1 - Burst - no color
	10-19	4-7	Position 2 - Dot - Light green 204
	20-29	8-11	Position 3 - Sound wave - Magenta 507
	30-39	12-15	Position 4 - Jester - Blue/Primary green/ Magenta
	40-49	16-19	Position 5 - Whirlpool - Blue 101
	50-59	20-23	Position 6 - Target - Blue 106
	60-69	24-26	Position 7 - Nippon - Flame red 304
	70-79	27-30	Position 8 - Mobius - Yellow 603
	80-89	31-35	Position 9 - Fab-4 - Green/Orange/Magenta/Cyan
	90-99	36-38	Position 10 - Solar flare - Orange
	100-109	39-42	Position 11 - DNA - Cyan/Magenta/Amber
	110-119	43-46	Position 12 - Galaxy - Green 202
	120-129	47-50	Position 13 - Closed
	130-175	51-68	Reserved
			Continuous rotation
	176-207	69-81	Clockwise (fast to slow)
	208-239	82-93	Counter-clockwise (slow to fast)
			Stand-alone music trigger
	240-244	94-95	Music trigger - fast
	245-249	96-97	Music trigger - slow - (5 values)
	250-255	98-100	Music trigger - dynamic (5 values)
4			Color shake
	0-1	0	No function
	2-128	1-50	Narrow shake (slow to fast)
	129-255	51-100	Wide shake (slow to fast)

Channel	Value	Percent	Function
5	0-1	0	Parabolic mirror dish
	2-65	1-25	Stop
	66-129	26-50	Counter-clockwise rotation (fast to slow)
	130-192	51-75	Clockwise rotation (slow to fast)
	193-208	76-81	Shake (different shakes)
			Random shake
	209-239	82-93	Reserved
	240-244	94-95	Reserved (music trigger - fast)
	245-249	96-97	Reserved (music trigger - slow)
	250-255	98-100	Music trigger - dynamic
6	0-15	0-5	Macros
	16-31	6-11	No macro
	32-47	12-18	Macro 1
	48-63	19-24	Macro 2
	64-79	25-30	Macro 3
	80-95	31-37	Macro 4
	96-111	38-43	Macro 5
	112-127	44-49	Macro 6
	128-143	50-55	Macro 7
	144-159	56-62	Macro 8
	160-175	63-68	Macro 9
	176-191	69-74	Macro 10
	192-207	75-81	Macro 11
	208-255	82-100	Macro 12
			Reserved. No function

Ego X4 DIP-SWITCH SETTINGS

Fixture mode	Option	Pin setting (0 = OFF, 1 = ON)										
		1	2	3	4	5	6	7	8	9	10	11
Single and master	Music trigger	1	0								1	0
	Auto trigger	0	1								1	0
Master only	Slow movement				1						1	0
Slave only	Random color/gobo wheel movement						1				1	0
	Random mirror dish movement							1			1	0
	Inverted color/gobo wheel movement								1		1	0
	Inverted mirror dish movement									1	1	0
Demo program						1					1	0
DMX	Set DMX address										0	0
	Disable macro channel										0	1

Note that:

- Slow action can be set using pin 4 in master mode only. Otherwise, effects action is fast by default.
- If pin 10 is set to OFF, pins 1 - 9 determine the fixture's DMX address.
- Pin 12 is not used.
- Pin 3 must not be used in stand-alone mode. When pin 3 and 10 are both set to ON, the fixture enters effect-wheel adjustment mode.

Demo program

If DIP-switch pins 5 and 10 are both set to ON, the fixture runs a factory-set program that demonstrates all its effects.

Ego X5 DMX PROTOCOL

Channel	Value	Percent	Function
1	0-4	0-1	Music trig, reset
	5-68	2-26	No function
	69-100	27-39	Reserved, no function
	101-249	40-97	Remote stand-alone auto trigger (disables other channels)
	250-255	98-100	Reserved, no function Reset fixture, time > 3 seconds
2	0-255	0-100	Intensity 0-100%
3	0-175	0-68	Effect Wheel
			Full color positions Position 1 - Position 13
	176-207 208-239	69-81 82-93	Continuous rotation Clockwise (fast to slow)
			Counter-clockwise (slow to fast)
	240-244 245-249 250-255	94-95 96-97 98-100	Stand-alone music trigger
			Music trigger - fast
			Music trigger - slow Music trigger - dynamic
4	0-1	0	Effect shake
	2-128	1-50	No function
	129-255	51-100	Narrow shake (slow to fast) Wide shake (slow to fast)

Channel	Value	Percent	Function
5	0-1	0	Kaleidoscopic mirror tunnel
	2-65	1-25	Stop
	66-129	26-50	Counter-clockwise rotation (fast to slow)
	130-192	51-75	Clockwise rotation (slow to fast)
	193-208	76-81	Shake (various shakes)
			Random shake
	209-239	82-93	Reserved, stop
	240-244	94-95	Music trigger - fast
	245-249	96-97	Music trigger - slow
	250-255	98-100	Music trigger - dynamic
6	0-15	0-5	Macros
	16-31	6-11	No macro
	32-47	12-18	Macro 1
	48-63	19-24	Macro 2
	64-79	25-30	Macro 3
	80-95	31-37	Macro 4
	96-111	38-43	Macro 5
	112-127	44-49	Macro 6
	128-143	50-55	Macro 7
	144-159	56-62	Macro 8
	160-175	63-68	Macro 9
	176-191	69-74	Macro 10
	192-207	75-81	Macro 11
	208-255	82-100	Macro 12
			Reserved. No function

Ego X5 DIP-SWITCH SETTINGS

Fixture mode	Option	Pin setting (0 = OFF, 1 = ON)										
		1	2	3	4	5	6	7	8	9	10	11
Single and master	Music trigger	1	0								1	0
	Auto trigger	0	1								1	0
Master only	Slow movement				1						1	0
Slave only	Random color/gobo wheel movement						1				1	0
	Random mirror tunnel movement							1			1	0
	Inverted color/gobo wheel movement								1		1	0
	Inverted mirror tunnel movement									1	1	0
Demo program						1					1	0
DMX	Set DMX address										0	0
	Disable macro channel										0	1

Note that:

- Slow action can be set using pin 4 in master mode only. Otherwise, effects action is fast by default.
- If pin 10 is set to OFF, pins 1 - 9 determine the fixture's DMX address.
- Pin 12 is not used.
- Pin 3 must not be used in stand-alone mode. When pin 3 and 10 are both set to ON, the fixture enters effect-wheel adjustment mode.

Demo program

If DIP-switch pins 5 and 10 are both set to ON, the fixture runs a factory-set program that demonstrates all its effects.

Ego X6 DMX PROTOCOL

Channel	Value	Percent	Function
1	0-4	0-1	Strobe, music trig, reset Open
	5-68	2-26	Strobe, fast to slow
	69-100	27-39	Remote stand-alone auto trigger (disables other channels)
	101-249	40-97	Reserved, no function
	250-255	98-100	Reset fixture, time > 3 seconds
2	0-255	0-100	Intensity 0-100%
3			Textured glass wheel
			Continuous scroll, full positions:
	0-9	0-3	Textured glass 1
	10-19	4-7	Textured glass 2
	20-29	8-11	Textured glass 3
	30-39	12-15	Textured glass 4
	40-49	16-19	Textured glass 5
	50-59	20-23	Textured glass 6
	60-69	24-26	Textured glass 7
	70-79	27-30	Textured glass 8
	80-89	31-35	Textured glass 9
	90-99	36-38	Textured glass 10
	100-109	39-42	Textured glass 11
	110-119	43-46	Textured glass 12
	120-129	47-50	Textured glass 13
	130-175	51-68	Reserved
			Continuous rotation
	176-207	69-81	Clockwise (fast to slow)
	208-239	82-93	Counter-clockwise (slow to fast)
			Music trigger
	240-244	94-95	Music trigger - fast
	245-249	96-97	Music trigger - slow - (5 values)
	250-255	98-100	Music trigger - dynamic (5 values)
4			Textured glass wheel shake
	0-1	0	No function
	2-128	1-50	Narrow shake (slow to fast)
	129-255	51-100	Wide shake (slow to fast)

Channel	Value	Percent	Function
5	0-5	0-1	Color/twinkle wheel
	6-165	2-64	Open
	166-199	65-78	Position: first to last color
			Auto color (slow to fast)
	200-201	79	Twinkle stop
	202-235	80-92	Auto twinkle (slow to fast)
	236-239	93	Closed
	240-244	94-95	Music trigger - fast
	245-249	96-97	Music trigger - slow
	250-255	98-100	Music trigger - dynamic
6	0-1	0	Parabolic mirror dish
	2-65	1-25	Stop
	66-129	26-50	Counter-clockwise rotation (fast to slow)
	130-192	51-75	Clockwise rotation (slow to fast)
	193-208	76-81	Shake (slow to fast)
			Random shake
	209-239	82-93	Reserved, stop
	240-244	94-95	Reserved (music trigger - fast)
	245-249	96-98	Reserved (music trigger - slow)
	250-255	99-100	Music trigger - dynamic
7	0-15	0-5	Macros
	16-31	6-11	No macro
	32-47	12-18	Macro 1
	48-63	19-24	Macro 2
	64-79	25-30	Macro 3
	80-95	31-37	Macro 4
	96-111	38-43	Macro 5
	112-127	44-49	Macro 6
	128-143	50-55	Macro 7
	144-159	56-62	Macro 8
	160-175	63-68	Macro 9
	176-191	69-74	Macro 10
	192-207	75-81	Macro 11
	208-255	82-100	Macro 12
			Reserved. No function

Ego X6 DIP-SWITCH SETTINGS

Fixture mode	Option	Pin setting (0 = OFF, 1 = ON)										
		1	2	3	4	5	6	7	8	9	10	11
Single and master	Music trigger	1	0								1	0
	Auto trigger	0	1								1	0
Master only	Slow effects action				1						1	0
Slave only	Random mirror dish movement							1		0	1	0
	Inverted mirror dish movement							0		1	1	0
Demo program						1					1	0
DMX	Select DMX address										0	0
	Disable macro channel										0	1

Note that:

- Slow action can be set using pin 4 in master mode only. Otherwise, effects action is fast by default.
- If pin 10 is set to OFF, pins 1 - 9 determine the fixture's DMX address.
- Pin 12 is not used.
- Pin 3 must not be used in stand-alone mode. When pin 3 and 10 are both set to ON, the fixture enters effect-wheel adjustment mode.

Demo program

If DIP-switch pins 5 and 10 are both set to ON, the fixture runs a factory-set program that demonstrates all its effects.

EGO X SERIES SPECIFICATIONS

Physical

Size without bracket (L x W x H) 305 x 324 x 150 mm (12 x 12.8 x 5.9 in)
Weight 3.8 kg (8.4 lb)

Construction

Housing composite plastic
Finish black

Thermal

Maximum ambient temperature (T_a) 40° C (104° F)

Installation

Minimum distance to combustible materials 0.1 m (4 in)
Minimum distance to illuminated surfaces 0.3 m (12 in)
Minimum clearance around fan and air vents 0.1 m (4 in)

Dynamic effects - Ego X4

Motorized mirror dish clockwise or counter-clockwise rotation,
shake and music trigger available
Motorized gobo/color wheel 12 color/gobo positions plus closed
Macros 12 factory-programmed effects

Dynamic effects - Ego X5

Motorized mirror tunnel clockwise or counter-clockwise rotation,
shake and music trigger available
Motorized gobo/color wheel 12 color/gobo positions plus closed
Macros 12 factory-programmed effects

Dynamic effects - Ego X6

Motorized colored mirror dish clockwise or counter-clockwise rotation,
shake and music trigger available
Motorized textured glass wheel 13 positions, music trigger available
Motorized color/twinkle wheel 12 positions, auto twinkle, music trigger available
Macros 12 factory-programmed effects

Control and programming

Control options DMX, stand-alone single fixture or master/slave
DMX channels, Ego X4 and Ego X5 6
DMX channels, Ego X6 7
Stand-alone triggering music or auto (self-triggering)
Data I/O sockets 3-pin XLR male/female, pin 1=shield, pin 2 (-), pin 3 (+)
Control protocol USITT DMX-512 (1990)
Data link electrical standard RS-485

Electrical

AC Power auto-ranging 100-120 / 208-240 VAC nominal, 50/60 Hz
Input 3-prong IEC male socket

Typical power and current*

100 V, 50 Hz	.228 W, 2.3 A
100 V, 60 Hz	.228 W, 2.3 A
110 V, 60 Hz	.237 W, 2.2 A
120 V, 60 Hz	.247 W, 2.1 A
208 V, 60 Hz	.219 W, 1.1 A
220 V, 50 Hz	.226 W, 1.1 A
230 V, 50 Hz	.228 W, 1.0 A
240 V, 50 Hz	.232 W, 1.0 A

** Wattage and amperage figures are typical, not maximum.
Allow for a deviation of +/- 10%.*

Optics

Ego X5 full beam angle.	52°
Ego X6 full beam angle.	33°

Approvals



US safety UL 1573
Canadian safety. CSA C22.2 No. 166
EU safety EN 60598-1, EN 60598-2-17
EU EMC EN 55015, EN 55103-1, EN 55103-2

Included items

User manual
3-meter (10 ft) IEC power cable with Shuko (Euro) connector
3-meter IEC power cable with US connector
3-meter IEC power cable without connector
24 V / 250 W, 1000 hour halogen lamp (installed)

Accessories

Philips ELC/10H, 24 V / 250 W, 1000 hour halogen lamp	P/N 97000109
Osram ELC-7/X, 24 V / 250 W, 700 hour halogen lamp	P/N 97000108
Philips ELC/5H, 24 V / 250 W, 500 hour halogen lamp	P/N 97000107
Osram ELC, 24 V / 250 W, 50 hour halogen lamp	P/N 97000104
Half-coupler clamp	P/N 91602005
Main fuse (3.15 AT).	P/N 05020013
5-pin male to 3-pin female adaptor.	P/N 11820005
XLR termination plug	P/N 91613017

Ordering information

Ego X4	P/N 90428400
Ego X5	P/N 90428500
Ego X6	P/N 90428600

