

American DJ®
FUSION
SCAN 250EX



User Instructions

American DJ®
6122 S. Eastern Ave.
Los Angeles Ca. 90040
www.americandj.com

Rev. 3/08

Fusion Scan 250 EX™

General Information

Unpacking: Thank you for purchasing the Fusion Scan 250 EX™ by American DJ®. Every Fusion Scan 250 EX™ has been thoroughly tested and has been shipped in perfect operating condition. Carefully check the shipping carton for damage that may have occurred during shipping. If the carton appears to be damaged, carefully inspect your fixture for any damage and be sure all equipment necessary to operate the unit has arrived intact. In the event damage has been found or parts are missing, please contact our toll free customer support number for further instructions. Please do not return this unit to your dealer without contacting customer support first.

Introduction: The Fusion Scan 250 EX™ is a six channel, DMX intelligent fixture. The fixture can be used in three different operating modes; stand alone, Master/Slave configuration, or DMX controlled. The Fusion Scan 250 EX™ can be used as a stand alone sound active fixture or used in multiples linked in a master/slave configuration. *For best results use fog or special effects smoke to enhance the beam projections.*

Customer Support: American DJ® provides a toll free customer support line, to provide help and to answer any question should you encounter problems during your set up or initial operation. You may also visit us on the web at www.americandj.com for any comments or suggestions. Service Hours are Monday through Friday 9:00 a.m. to 5:00 p.m. Pacific Standard Time.

Voice: (800) 322-6337

Fax: (323) 582-2941

E-mail: support@americandj.com

To purchase parts online visit <http://parts.americandj.com>

Warning! To prevent or reduce the risk of electrical shock or fire, do not expose this unit to rain or moisture.

Warning! *This may cause severe eye damage. Avoid looking directly into the light source at all times!*

To optimize the performance of this product, please read these operating instructions carefully to familiarize yourself with the basic operations of this unit. These instructions contain important safety information regarding the use and maintenance of this unit. Please keep this manual with the unit, for future reference.

- DMX-512 Protocol Compatible (Six DMX Channels)
- 3 Operating Modes - Master/Slave; Stand Alone; DMX Control
- Internal Microphone
- Digital Display for Address and Function Setting
- UC3 Controller (Not Included)

The Fusion Scan 250 EX™ carries a 1 year (365 days) limited warranty. Please fill out the enclosed warranty card to validate your purchase and warranty. You may also register your product online at www.americandj.com. All returned service items whether under warranty or not, must be freight pre-paid and accompany a return authorization (R.A.) number. If the unit is under warranty you must provide a copy of your proof of purchase invoice. Please contact American DJ® customer support for a R.A. number.

Caution! There are no user serviceable parts inside this unit. Do not attempt any repairs yourself, doing so will void your manufacturer's warranty. In the unlikely event your unit may require service please contact American DJ®.

During operation the housing may become extremely hot. Avoid touching the unit with bare hands while in use.

American DJ® will not accept any liability for any resulting damages caused by the non-observance of this manual or any unauthorized modification to this unit.



- Do not spill water or other liquids into or on to your unit.
- Be sure that the local power outlet match that of the required volt age for your unit.
- Do not attempt to operate this unit if the power cord has been frayed or broken. Please route your power cord out of the way of foot traffic.
- Do not attempt to remove or break off the ground prong from the electrical cord. This prong is used to reduce the risk of electrical shock and fire in case of an internal short.
- Disconnect from main power before making any type of connection.
- Do not remove the top cover under any conditions. There are no user serviceable parts inside.
- Never plug this unit in to a dimmer pack
- Always be sure to mount this unit in an area that will allow proper ventilation. Allow about 6" (15cm) between this device and a wall.
- Do not attempt to operate this unit, if it becomes damaged in any way.
- Never operate this unit when it's cover is removed.
- To reduce the risk of electrical shock or fire, do not expose this unit rain or moisture
- This unit is intended for indoor use only, use of this product out doors voids all warranties.
- During long periods of non-use, disconnect the unit's main power.
- Always mount this unit in safe and stable matter.
- Power Cord Protection - Power cords should be routed so they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords at plugs, convenience receptacles, and the point where they exit from the unit.
- Cleaning - Follow the directions on page 15.
- Heat -The unit should be situated away from heat sources such as radiators, heat registers, stoves, or other appliances (including amplifiers) that produce heat.

Power Supply: Before plugging your unit in, be sure the source voltage in your area matches the required voltage for your American DJ® Fusion Scan 250 EX.™ The American DJ® Fusion Scan 250 EX™ is available in a 120v and 220v version. Because line voltage may vary from venue to venue, you should be sure your unit voltage matches the wall outlet voltage before attempting to operate you fixture. Also be sure to only use the included I.E.C. power cable supplied with the unit, this cable matches the voltage and current requirements of the unit.

DMX-512: DMX is short for Digital Multiplex. This is a universal protocol used by most lighting and controller manufactures as a form of communication between intelligent fixtures and controllers. A DMX controller sends DMX data instructions from the controller to the fixture. DMX data is sent as serial data that travels from fixture to fixture via the DATA “IN” and DATA “OUT” XLR terminals located on all DMX fixtures (most controllers only have a DATA “OUT” terminal).

DMX Linking: DMX is a language allowing all makes and models of different manufactures to be linked together and operate from a single controller, as long as all fixtures and the controller are DMX compliant. *To ensure proper DMX data transmission, when using several DMX fixtures try to use the shortest cable path possible. The order in which fixtures are connected in a DMX line does not influence the DMX addressing. For example; a fixture assigned a DMX address of 1 may be placed anywhere in a DMX line, at the beginning, at the end, or anywhere in the middle. Therefore, the first fixture controlled by the controller could be the last fixture in the chain. When a fixture is assigned a DMX address of 1, the DMX controller knows to send DATA assigned to address 1 to that unit, no matter where it is located in the DMX chain.*

Data Cable (DMX Cable) Requirements (For DMX and Master/Slave Operation): The Fusion Scan 250 EX™ can be controlled via DMX-512 protocol. The Fusion Scan 250 EX™ a six channel DMX unit. The DMX address is set electronically using the controls on the side panel of the unit. Your unit and your DMX controller require a standard 3-pin XLR connector for data input and data output (Figure 1).



Figure 1

1). If you are making your own cables, be sure to use standard two

conductor shielded cable (This cable may be purchased at almost all professional sound and lighting stores). Your cables should be made with a male and female XLR connector on either end of the cable. Also remember that DMX cable must be daisy chained and cannot be split.

Notice: Be sure to follow figures two and three when making your own cables. Do not use the ground lug on the XLR connector. Do not connect the cable’s shield conductor to the ground lug or allow the shield conductor to come in contact with the XLR’s outer casing. Grounding the shield could cause a short circuit and erratic behavior.

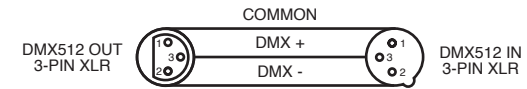


Figure 2

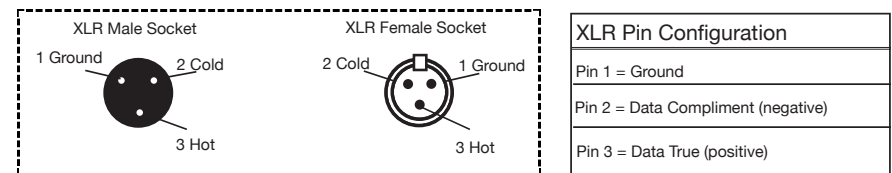


Figure 3

Special Note: Line Termination. When longer runs of cable are used, you may need to use a terminator on the last unit to avoid erratic behavior. A terminator is a 90-120 ohm 1/4 watt resistor which is connected between pins 2 and 3 of a male XLR connector (DATA + and DATA -). This unit is inserted in the female XLR connector of the last unit in your daisy chain to terminate the line. Using a cable terminator (ADJ part number Z-DMX/T) will decrease the possibilities of erratic behavior.



Termination reduces signal errors and avoids signal transmission problems and interference. It is always advisable to connect a DMX terminal, (Resistance 120 Ohm 1/4 W) between PIN 2 (DMX-) and PIN 3 (DMX +) of the last fixture.

Figure 4

5-Pin XLR DMX Connectors. Some manufactures use 5-pin XLR connectors for DATA transmission in place of 3-pin. 5-pin XLR fixtures may be implemented in a 3-pin XLR DMX line. When inserting standard 5-pin XLR connectors in to a 3-pin line a cable adaptor must be used, these adaptors are readily available at most electric stores. The chart below details a proper cable conversion.

3-Pin XLR to 5-Pin XLR Conversion		
Conductor	3-Pin XLR Female (Out)	5-Pin XLR Male (In)
Ground/Shield	Pin 1	Pin 1
Data Compliment (- signal)	Pin 2	Pin 2
Data True (+ signal)	Pin 3	Pin 3
Not Used		Pin 4 - Do Not Use
Not Used		Pin 5 - Do Not Use

Note: After making any adjustments in the operating system, there is a 10 second delay.

ADDR - DMX Address Setting.

1. Tap the MENU, UP, or DOWN buttons until “ADDR” is displayed, press ENTER.
2. A number between 1-512 will be displayed and flashing. Press the UP or DOWN buttons to find your desired address. Press ENTER to set your desired DMX address.

SLND - This will let you set unit as a master or slave in a master/slave configuration.

1. Tap the MENU button until “SLND” is displayed, press ENTER. “MSTR”, “SL 1” or “SL 2” will be displayed.
2. Tap the UP or DOWN buttons until your desired setting is displayed, press ENTER to confirm and exit.

BLND - Blackout or Stand by mode.

1. Tap the MENU button until “BLND” is displayed, press ENTER. Either Yes or No will be displayed.
2. To activate Blackout tap the UP or DOWN buttons until Yes is displayed, press ENTER to confirm and exit. The fixture will now be in Blackout mode. To deactivate Blackout mode, select No and press Enter.

I PAN - Pan Inversion

1. Tap the MENU button until “I PAN” is displayed, press ENTER. Either NO or 1 will be displayed.
2. To activate the Pan inversion tap the UP or DOWN buttons until I is displayed, press ENTER to confirm and exit. To deacti-

vate Pan inversion, select No and press Enter.

I TLT - Tilt Inversion

1. Tap the MENU button until “I TLT” is displayed, press ENTER. Either NO or 1 will be displayed.
2. To activate the Tilt inversion tap the UP or DOWN buttons until I is displayed, press ENTER to confirm and exit. To deactivate Tilt inversion, select No and press Enter.

LED - With this function you can have the LED display turn off after 10 seconds.

1. Tap the MENU button until “LED” is displayed, press ENTER.
2. The display will show either “ON” or “OFF”. Press the UP or DOWN buttons to select “ON” to keep the LED display on at all times, or “OFF” to switch to have the LED display switch off after 10 seconds.
3. Press ENTER to confirm and exit.

I DSP - This function will reverse the display 180°.

1. Tap the MENU button until “I DSP” is displayed, press ENTER.
2. Press ENTER to “flip” the display. Press ENTER to “flip” it again. To save the adjustment press any other button.

TEST - This function will run a self test program. The test program will test pan/tilt mirror movement, laser, and colors.

1. Tap the MENU button until “TEST” is displayed, press ENTER.
2. The fixture will now run a self test.

FHRS - With this function you can display the running time

of the unit.

1. Tap the MENU button until “FHRS” is displayed, press ENTER.
2. The display shows the running time of the unit. Press MENU to exit.

VER - With this function you can display the version software of the unit.

1. Tap the MENU button until “VER” is displayed, press ENTER.
2. The display will now display the version of software. Press MENU to exit.

RSET - Use this function to reset the unit.

1. Tap the MENU button until “RSET” is displayed, press ENTER.
2. The fixture will now reset.

Laser Aperture

CAUTION - CLASS 3R LASER
RADIATION WHEN OPEN AVOID
DIRECT EYE EXPOSURE



American DJ Supply, Inc.
4295 Charter Street
Los Angeles, CA 90058 USA

Manufactured:

Complies with FDA performance
standards for laser products
with the exception of deviation
pursuant to laser Notice
No.50, dated July 26, 2001



CAUTION - CLASS 3R
LASER RADIATION WHEN
OPEN AVOID DIRECT EYE
EXPOSURE

Operating Modes: The Fusion Scan 250 EX™ can operate in three different modes. This next section will detail the differences in the operating modes.

- **Stand alone mode -**

The unit will react to sound.

- **Master/Slave mode -**

You can daisy chain up to 16 units together to get a synchronized light show without the need of an external controller. The units will react to sound chasing through the several built-in programs.

- **DMX control mode -**

This function will allow you to control each individual fixtures traits with a standard DMX-512 controller such as the Elation® Show Designer.™

Universal DMX Control: This function allows you to use a Elation® universal DMX-512 controller to control mirror movement, the patterns and chases, and the shutter (strobe). A DMX controller allows you to create unique programs tailored to your individual needs.

1. The Fusion Scan 250 EX™ uses six DMX channels. See page 14 for detailed description of the DMX traits.
2. To control your fixture in DMX mode, follow the set-up procedures on pages 5-7 as well as the set-up specifications that are included with your DMX controller.
3. Use the controller's faders to control the various DMX fixture traits.
4. This will allow you to create your own programs.
5. Follow the instruction on page 8 to set the DMX address.
6. For longer cable runs (more than a 100 feet) use a terminator on the last fixture.
7. For help operating in DMX mode consult the manual included with your DMX controller.

Stand-Alone Operation (Sound Active Mode): This mode allows a single unit or several units linked together, to run to the beat of the music.

1. Once you plug the fixture in, Sound Active mode is activated automatically. You can adjust the sensitivity by turning the knob on the top of the fixture.
2. The optional *UC3 Controller* (not included) may be used to con-

trol different functions including blackout.

Master-Slave Operation (Sound Active): This function will allow you to link up to 16 units together and operate without a controller. The units will be sound activated. In Master-Slave operation one unit will act as the controlling unit and the others will react to the controlling units programs. Any unit can act as a Master or as a Slave.

- Using standard XLR microphone cables, daisy chain your units together via the XLR connector on the rear of the units. Remember the Male XLR connector is the input and the Female XLR connector is the output. The first unit in the chain (master) will use the female XLR connector only - The last unit in the chain will use the male XLR connector only. For longer cable runs we suggest a terminator at the last fixture.
- On the Master unit use the MENU button until "SLND" is displayed press ENTER. Either "MAST", "SL 1" or "SL 2" will be displayed. Press the UP or DOWN buttons to set the fixture to "MAST", and press ENTER.
- On the slave units tap the MENU button until "SLND" is displayed, press ENTER. Set the fixture to either "SL 1" or "SL 2" and press ENTER.
- The slave units will now follow the Master unit.

Note: When running fixtures in Master/Slave configuration "SL 1" will make the fixture do the opposite to the other fixture.

Example: Four fixtures linked together. On fixtures 1 and 3 set the fixture 1 to "MAST" and set fixture 3 to "SL 1", and set fixtures 2 & 4 to "SL 2". Fixtures 1 & 2 will run the same and fixtures 2 & 4 will run opposite. This makes a great light show.

- The optional UC3 Controller (not included) may be used to control different functions including blackout.

Stand by	Blackout the unit		
Function	1. Sync. Strobe 2. Sound Strobe 3. Two light Strobe	X/Y moving pattern selection (12 patterns)	Gobo/Color Selection
Mode	Strobe/Sound	Pattern/Sound	Chase/Sound

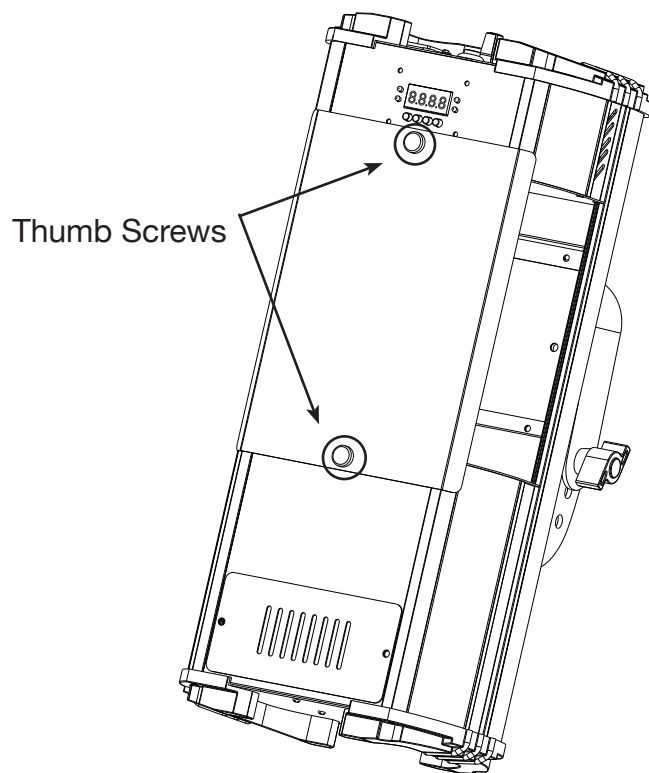
Channel	Value	Function
1	0 - 255	PAN
2	0 - 255	TILT
3 ↓	0 - 10	<u>COLOR WHEEL</u>
	11 - 21	WHITE
	22 - 32	RED
	33 - 43	DEEP BLUE
	44 - 54	GREEN
	55 - 65	YELLOW
	66 - 76	ORANGE
	77 - 87	PINK
	88 - 98	LIGHT BLUE
	99 - 109	UV PURPLE
	110 - 120	MAGENTA
	121 - 127	ORANGE + RED
128 - 255	LIGHT BLUE + MAGENTA RAINBOW EFFECT SLOW - FAST	
4 ↓	0 - 11	<u>GOBO WHEEL</u>
	12 - 23	OPEN
	24 - 35	GOBO 1
	36 - 47	GOBO 2
	48 - 59	GOBO 3
	60 - 71	GOBO 4
	72 - 83	GOBO 5
	84 - 95	GOBO 6
	96 - 107	GOBO 7
	108 - 119	GOBO 8
	120 - 127	GOBO 9
	128 - 255	GOBO 10 GOBO WHEEL ROTATION SLOW - FAST
5	0 - 7	<u>SHUTTER/STROBE</u>
	8 - 15	BLACKOUT
	16 - 131	SHUTTER OPEN
	132 - 247	STROBING SLOW - FAST
	248 - 255	GOBO SHAKE SLOW - FAST SHUTTER OPEN

Fusion Scan 250 EX™ DMX Traits

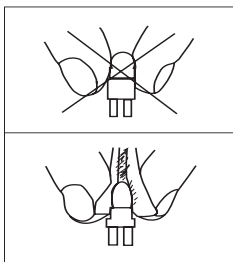
Channel	Value	Function
6	0 - 7	LASER
	8 - 15	LASER OFF
	16 - 131	LASER ON
	132 - 247	LASER INTENSITY (VERY SUBTLE)
	248 - 255	SOUND ACTIVE LASER ON

Fusion Scan 250 EX™ Protective Mirror Cover

A metal cover is provided to protect the scanner mirror during transportation and storage. The protective cover is held in place by two thumb screws.



Fusion Scan 250 EX™ Lamp Replacement



This fixture is fitted with a halogen lamp which is highly susceptible to damage if improperly handled. Never touch the lamp with your bare fingers as the oil from your hands will shorten lamp life. Also, never move the fixture until the lamps have had ample time to cool. Remember, lamps are not covered under warranty conditions.

Caution: Always replace with the exact same type lamp and fuse, unless otherwise specified by an authorized American DJ® service technician. Replacing with anything other than the specified part can damage your unit and will void your manufactures warranty.

Warning: If you continue to blow lamps or fuses, STOP using the unit. Contact customer support for further instructions, you may have to return the unit for servicing. Continuing to use the unit may cause serious damage.

Caution! Never open the unit when in use. Always disconnect the main power before attempting to replace the lamp.

1. Be sure to follow the proper procedures when handling halogen bulbs.
2. Lamp replacement has been made simple by incorporating the use of two phillips screws.
3. Loosen and remove the phillips screws on the front bottom cover.
4. Remove the lamp cover and replace the bulb.
5. Reassemble.

Remember to always replace with the exact same type lamp and fuse, unless otherwise specified by an authorized American DJ service technician.

Fusion Scan 250 EX™ Fuse Replacement

Locate and remove the unit's power cord. Once the cord has been removed located the fuse holder located inside the power socket. Insert a flat-head screw driver into the power socket and gently pry out the fuse holder. Remove the bad fuse and replace with a new one. The fuse holder has a built-in socket for a spare fuse be sure not to confuse the spare fuse with active fuse.

Fixture Cleaning: Due to fog residue, smoke, and dust cleaning the internal and external optical lenses and mirror should be carried out periodically to optimize light output. Cleaning frequency depends on the environment in which the fixture operates (i.e. smoke, fog residue, dust, dew). In heavy club use we recommend cleaning on a monthly basis. Periodic cleaning will ensure longevity, and crisp output.

1. Use normal glass cleaner and a soft cloth to wipe down the outside casing.
2. Use a brush to wipe down the cooling vents and fan grill. ***This will allow the unit to stay cooler and will extend the life of your fixture.***
3. Clean the external optics and mirror with glass cleaner and a soft cloth every 20 days.
4. Clean the internal optics with glass cleaner and a soft cloth every 30-60 days.
5. Always be sure to dry all parts completely before plugging the unit back in.

No light output from the unit;

1. Be sure you have connected your unit into a standard 120v wall outlet.
2. Be sure the external fuse has not blown. The fuse is located on the bottom panel of the unit.
3. Remove the lamp holder and be sure the lamp is seated in its socket properly. Occasionally lamps become loose during shipping be sure the lamp is push in to its socket all the way.

Unit does not respond to sound;

1. Low frequencies (bass) should cause the unit to react to sound. Tapping on the microphone, quiet or high pitched sounds may not activate the unit.

MANUFACTURER'S LIMITED WARRANTY

A. American DJ, Inc. hereby warrants, to the original purchaser, American DJ and American Audio products to be free of manufacturing defects in material and workmanship for a prescribed period from the date of purchase (see specific warranty period on reverse). This warranty shall be valid only if the product is purchased within the United States of America, including possessions and territories. It is the owner's responsibility to establish the date and place of purchase by acceptable evidence, at the time service is sought.

B. For warranty service you must obtain a Return Authorization number (RA#) before sending back the product. Contact American DJ, Inc. Service Department at 800-322-6337. Send the product only to the American DJ, Inc. factory. All shipping charges must be pre-paid. If the requested repairs or service (including parts replacement) are within the terms of this warranty, American DJ, Inc. will pay return shipping charges only to a designated point within the United States. If the entire instrument is sent, it must be shipped in it's original package. No accessories should be shipped with the product. If any accessories are shipped with the product, American DJ, Inc. shall have no liability whatsoever for loss of or damage to any such accessories, nor for the safe return thereof.

C. This warranty is void if the serial number has been altered or removed; if the product is modified in any manner which American DJ, Inc. concludes, after inspection, affects the reliability of the product; if the product has been repaired or serviced by anyone other than the American DJ, Inc. factory unless prior written authorization was issued to purchaser by American DJ, Inc.; if the product is damaged because not properly maintained as set forth in the instruction manual.

D. This is not a service contract, and this warranty does not include maintenance, cleaning or periodic check-up. During the period specified above, American DJ, Inc. will replace defective parts at its expense with new or refurbished parts, and will absorb all expenses for warranty service and repair labor by reason of defects in material or workmanship. The sole responsibility of American DJ, Inc. under this warranty shall be limited to the repair of the product, or replacement thereof, including parts, at the sole discretion of American DJ. All products covered by this warranty were manufactured after January 1, 1990, and bear identifying marks to that effect.

E. American DJ, Inc. reserves the right to make changes in design and/or improvements upon its products without any obligation to include these changes in any products theretofore manufactured. No warranty, whether expressed or implied, is given or made with respect to any accessory supplied with products described above. Except to the extent prohibited by applicable law, all implied warranties made by American DJ, Inc. in connection with this product, including warranties of merchantability or fitness, are limited in duration to the warranty period set forth above. And no warranties, whether expressed or implied, including warranties of merchantability or fitness, shall apply to this product after said period has expired. The consumer's and/or Dealer's sole remedy shall be such repair or replacement as is expressly provided above; and under no circumstances shall American DJ, Inc. be liable for any loss or damage, direct or consequential, arising out of the use of, or inability to use, this product.

This warranty is the only written warranty applicable to American DJ and American Audio Products and supersedes all prior warranties and written descriptions of warranty terms and conditions heretofore published.

MANUFACTURER'S LIMITED WARRANTY PERIODS:

- All American Audio Products = 1-year (365 day) Limited Warranty (except V-Plus Series Amplifiers)
- All American Audio V-Plus Series Amplifiers = 3-year (1095 day) Limited Warranty
- American DJ Lighting and American DJ Branded Products = 1-year (365 day) Limited Warranty (Such as: Special Effect Lighting, Intelligent Lighting, UV lighting, Strobos, Fog Machines, Bubble Machines, Mirror Balls, Par Cans, Trussing, Lighting Stands etc. excluding Laser Products, lamps, and Star Tec Series)
- American DJ Laser Products and Star Tec Products = 90-Day Limited Warranty
- American DJ L.E.D. Products = 3-year (1095 day) Limited Warranty (excluding motors which have a 1-year (365 day) Limited Warranty)

Model:	Fusion Scan 250 EX™
Voltage*:	120v/60Hz or 230v/50Hz
Lamp:	LL ELC 24V 250W
Dimensions:	17.25"(L) x 7.5"(W) x 6"(H) 437mm x 191mm x 150mm
Colors:	11 + White
Gobos:	10 + Spot
Weight:	12 Lbs. / 5.2 kgs.
Fuse:	7Amp (120v & 230v)
Beam Angle:	15 Degree
Duty Cycle:	None
DMX:	6 Channels
Sound Active:	Yes
Working Position:	Any Safe, Secure Position
Warranty:	1 Year (365 days)

*Voltage is preset at the factory and is not user selectable

Please Note: Specifications and improvements in the design of this unit and this manual are subject to change without any prior written notice.

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