Performance
Scan250™
Intelligent Scanner
American DJ®

User Instructions

American DJ®
4295 Charter Street
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7/05

Unpacking: Thank you for purchasing the Performance Scan 250™ by American DJ®. Every Performance Scan 250™ 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 first contacting customer support.

Introduction: The Performance Scan 250™ is a six channel DMX intelligent scanner that uses 11 colors, 7 rotating gobo patterns, (seperate wheels) and a 250w lamp to create a bright and colorful light show. This unit can also run as a stand alone, sound-active unit, or in a Master/Slave configuration. The Performance Scan 250™ comes with several built in programs and is best used in multiples of four. *For best results use fog or special effects smoke to enhance the beams 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) 582-2610
E-mail: support@americandj.com

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

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

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.

The Performance Scan 250™ carries a one year limited warranty. Please fill out the enclosed warranty card to validate your purchase. All returned service items whether under warranty or not, must be freight pre-paid and accompany a return authorization (R.A.) number. The R.A. number must be clearly written on the outside of the return package. A brief description of the problem as well as the R.A. number must also be written down on a piece of paper included in the shipping carton. If the unit is under warranty, you must provide a copy of your proof of purchase invoice. You may obtain a R.A. number by contacting our customer support team on our toll free customer support number. All packages returned to the service department not displaying a R.A. number on the outside of the package will be returned to the shipper.
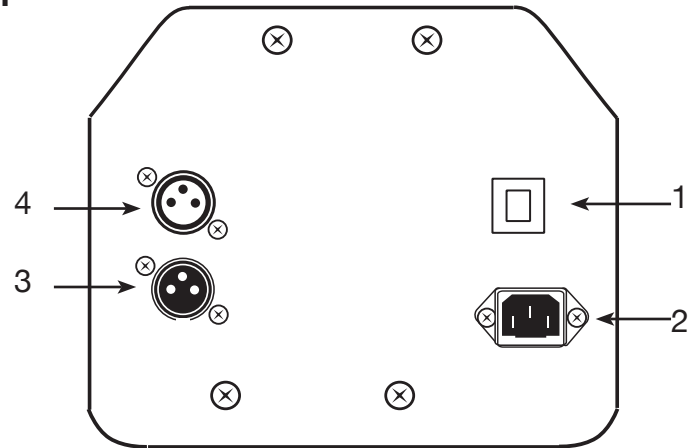
- Micro-Stepping Motors for Smooth Color and Gobo Transitions
- DMX-512 Protocol Compatible (Uses four DMX Channels)
- Selectable 110v/60Hz or 230v/50Hz
- 6 Rotating Gobo Patterns Plus Spot
- 9 Colors Plus White
- Master/Slave Operation
- Internal Microphone
- Variable Speed Strobe Function
- Gobo Shake
- LED Display Menu
- ZB-EHJ5 24v/250w Long Life Lamp
- 1 Year Warranty

- To reduce the risk of electrical shock or fire, do not expose this unit rain or moisture
- 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 voltage for your unit.
- Do not attempt to operate this unit if the power cord has been frayed or broken.
- 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 cover under any conditions. There are no user serviceable parts inside.
- Never operate this unit when it's cover is removed.
- 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.
- This unit is intended for indoor use only, use of this product outdoors 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-supply cords should be routed so that 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 appliance.
- Cleaning -The fixture should be cleaned only as recommended by the manufacturer. See page 16 for cleaning details.
- Heat -The appliance should be situated away from heat sources such as radiators, heat registers, stoves, or other appliances (including amplifiers) that produce heat.
- The fixture should be serviced by qualified service personnel when:
  A. The power-supply cord or the plug has been damaged.
  B. Objects have fallen, or liquid has been spilled into the appliance.
  C. The appliance has been exposed to rain or water.
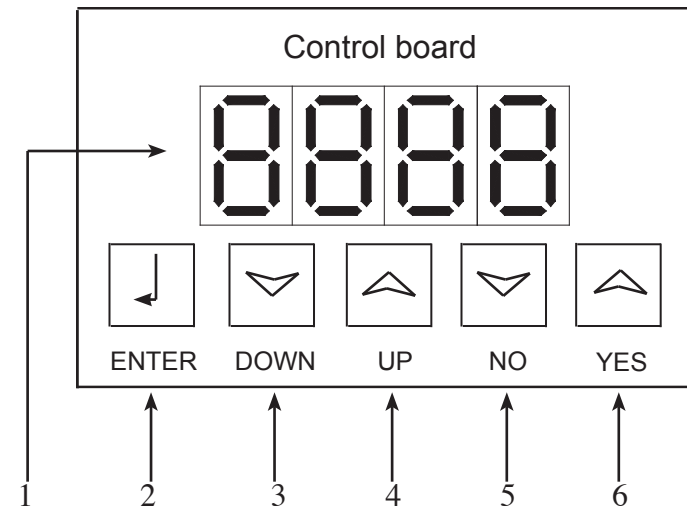 D. The appliance does not appear to operate normally or exhibits a marked change in performance.

TOP

1. Breaker - A 5A built-in safety breaker to reduce the risk of electrical shock or fire and protect the circuitry. In the case of a internal short or power surge.

2. Power Cord Inlet - This unit is equipped with a removable I.E.C. power cord. Be sure to only use the power cord included with the unit, this cord is designed to match the electrical requirements of the unit. Other cords may cause the unit to overheat or malfunction. Voltage may vary from venue to venue, when connecting this unit to a power supply be sure to connect to a matching power outlet. Never use this fixture if the ground prong has been removed or broken off. The ground prong is designed to reduce the risk of fire or electrical shock in the event the unit suffers from an internal short.

3. XLR Input Jack - This jack is used to accept an incoming DMX signal or Master/Slave signal.

4. XLR Output Jack - This jack is used to transmit the incoming DMX signal to another DMX fixture, or transmit a Master/Slave signal to the next Performance Scan 250™ in the chain. For best results in DMX or Master/Slave mode terminate this jack if it is the last unit in the chain. See "Terminator" on page 8.

LED

1. Digital Display - This display shows the menu and operating functions.

2. Enter Button - This button is used confirm a function when working in the system menu.

3. Down Button - This button is used to scroll backwards when navigating through the system menu.

4. Up Button - This button is used to scroll forward when navigating through the system menu.

5. No Button - This button is used to deselect a function.

6. Yes Button - This button is used to select a function.

Power Supply: Before plugging your unit in, be sure the source voltage in your area matches the selected voltage of your American DJ® Performance Scan 250.™ The American DJ® Performance Scan 250™ has a user selectable voltage of 110v or 230v. See page 16 for voltage selection. 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.

DMX-512: *DMX is short for Digital Multiplex. This is a universal protocol used 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. 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 Performance Scan 250™ can be controlled via DMX-512 protocol. The Performance Scan 250™ is a six channel DMX unit. The DMX address is set on the bottom panel of the Performance Scan 250.™ Your unit and your DMX controller require a standard 3-pin XLR connector for data input and data output (Figure 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 pro sound and lighting stores). Your cables should be made with a male and female XLR connector on either end of the cable. Also

Figure 1

remember that DMX cable must be daisy chained and can not 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.
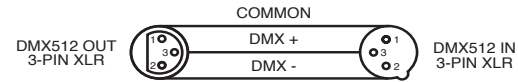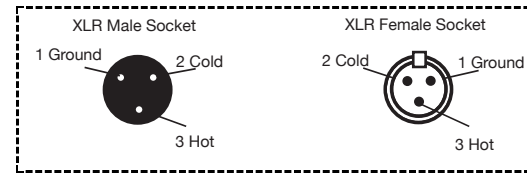
COMMON
DMX512 OUT 3-PIN XLR   DMX +   DMX512 IN 3-PIN XLR
DMX -

Figure 2

XLR Male Socket
1 Ground   2 Cold
3 Hot

XLR Female Socket
2 Cold   1 Ground
3 Hot

Figure 3

XLR Pin Configuration
Pin 1 = Ground
Pin 2 = Data Compliment (negative)
Pin 3 = Data True (positive)

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

Below is a list of the LED readouts and their funtions that you will see when you scroll through the function menu. To scroll through the function menu, press either "Up" or "Down" till you find the function that you want to use. To select a function press "Yes" then press "Enter". To deselect a function press "No" and then press "Enter". ***Notice: When a function has been selected and activated, make sure the previous selection is deactivated. If the previous selection has not been deactivated, your new selection will not work.***

F1 - Reverse Pan
Note: This function will only work, when units are connected Master/Slave mode.

F2 - Reverse Tilt
Note: This function will only work, when units are connected Master/Slave mode.

F3 - Reset

F4 - This function allows the unit to react to low frequency sounds. This function can also be used with master/slave mode, by activating both F4 and following master/slave operation on page 11.

F5 - Activates a preset, internal program. This function can also be used with master/slave mode, by activating both F5 and following master/slave operation on page 11.

F6 - Selecting this function activates Master/Slave mode, and selects that particular unit to be the Master unit. (See Master/Slave mode page 11.)

F7 - No Function

F8 - Selecting the function will cause the Digital Readout on LED to "flip" upside down.

Operating Modes:
• ***Stand alone mode -*** The unit will react to sound, chasing through the built-in programs.
• ***Master/Slave mode -*** You can daisy chain up to 16 units together to get a synchronized light show that will react to sound chasing through 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 American DJ Show Designer.™

Universal DMX Control: This function allows you to use a universal DMX-512 controller such as the ©Elation® DMX Operator™ or Show Designer™ to control mirror movement, the color wheel, the gobo wheel, and the shutter (strobe). A DMX controller allows you to create unique programs tailored to your individual needs.
1. The Performance Scan 250™ uses six DMX channels. Channel 1 controls pan, channel 2 controls tilt, channel 3 controls color, channel 4 controls the gobo wheel, channel 5 controls strobing, and channel 6 controls gobo rotation.
2. To control your fixture in DMX mode, follow the set-up procedures on pages 7 - 8 as well as the set-up specifications that are included with your DMX controller.
3. Using the "Up" or "Down" buttons, Scroll through the function LED until "A001" appears in the display, and press "Enter". ***Note: All other menu functions must be turned "OFF" when using a DMX controller.***
4. Use the controller's faders to control the various DMX fixture traits. DMX traits are listed on pages 12-13.
5. This will allow you to create your own programs.
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): This mode allows a single unit to run to the beat of the music. Only use this mode when running a single unit, or when running several units as individuals.
1. To activate this unit in stand-alone, sound active mode, use the

"Up" or "Down" buttons to scroll through the function LED until F4 appears in the display.

2. Press "Yes" then press "Enter". The unit will react to the low frequencies of music via the internal microphone.

3. To deactivate sound active mode, scroll through the function LED until F4 appears in the display, and press "No" then press "Enter".

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.
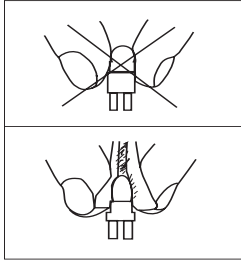
1. Using standard XLR microphone cables, daisy chain your units together via the XLR connector on the rear of the units. Remember the Male XLR connector is the input and the Female XLR connector is the output. For longer cable runs we suggest a terminator at the last fixture.

2. Select one light to be the Master. On that unit, use the "Up" or "Down" buttons to scroll through the function menu until F6 is read on the LED display. Press "Yes" then press "Enter". Now, scroll through the function menu until F4 is read on the LED display. Press "Yes" then press "Enter".

3. Then, simply daisy chain the units together using XLR cables. The slave units do not need to be set. Be sure that the slave units are set to "A001", and press "Enter" on each unit, they will fall into place once they receive the signal.

Channel	Value	Function
1	0 - 255	PAN
2	0 - 255	TILT
3	0 - 128	COLOR
	0 - 5	BLACKOUT
	5 - 0	LAMP OFF WITHIN 40-60 SECONDS
	0 - 9	WHITE
	10 - 20	RED
	21 - 31	BLUE
	32 - 41	GREEN
	42 - 52	YELLOW
	53 - 63	MAGENTA
	64 - 73	TURQUOISE
	74 - 84	ORANGE
	85 - 95	PURPLE (UV)
	96 - 105	LIME GREEN
	106 - 116	4 COLOR SPLIT (YELLOW, RED, GREEN, AND BLUE)
	117 - 128	2 COLOR SPLIT (MAGENTA AND TURQUOISE)
	129 - 189	COLOR MIX
	190	WHITE
	191 - 220	CLOCKWISE RAINBOW EFFECT FAST ⟶ SLOW
	221 - 222	STOP
	223 - 252	COUNTER-CLOCKWISE RAINBOW SLOW ⟶ FAST
	253 - 255	SOUND ACTIVE
4		GOBO WHEEL
	0 - 15	OPEN
	16 - 31	ROTATING GOBO 1 (GLASS)
	32 - 47	ROTATING GOBO 2 (METAL)
	48 - 63	ROTATING GOBO 3 (METAL)
	64 - 79	ROTATING GOBO 4 (METAL)

Channel	Value	Function
4 ↓	80 - 95	ROTATING GOBO 5 (METAL)
	96 - 111	ROTATING GOBO 6 (METAL)
	112 - 127	ROTATING GOBO 7 (METAL)
	128 - 132	STOP
	133 - 144	GOBO 1 SHAKE
	145 - 156	GOBO 2 SHAKE
	157 - 168	GOBO 3 SHAKE
	169 - 180	GOBO 4 SHAKE
	181 - 192	GOBO 5 SHAKE
	193 - 204	GOBO 6 SHAKE
	205 - 217	GOBO 7 SHAKE
	218 - 219	OPEN
	220 - 249	CONTINUOUS WHEEL ROTATION SLOW ⟶ FAST
	250 - 255	SOUND ACTIVE
5 ↓		GOBO ROTATION
	0 - 127	GOBO INDEX
	128 - 189	FORWARD ROTATION FAST ⟶ SLOW
	190 - 193	NO ROTATION
	194 - 255	BACKWARD ROTATION SLOW ⟶ FAST
6 ↓		SHUTTER, STROBE
	0 - 5	LAMP OFF
	6 - 60	STROBE EFFECT (8 FLASHES MAX PER SECOND) SLOW ⟶ FAST
	61 - 63	NO FUNCTION (SHUTTER OPEN)
	64 - 95	RESET
	96 - 100	NO FUNCTION (SHUTTER OPEN)
	101 - 127	SOUND ACTIVE STROBE

Channel	Value	Function
6 ↓	128 - 191	PULSE STROBE IN SEQUENCE SLOW ⟶ FAST
	192 - 223	NO FUNCTION (SHUTTER OPEN)
	224 - 255	INTENSITY ADJUSTMENT 0% → 100%

Performance Scan 250™   **Gobos**

SPOT   GOBO 1   GOBO 2   GOBO 3

GOBO 4   GOBO 5   GOBO 6   GOBO 7

This fixture is fitted with halogen lamps which are highly susceptible to damage if improperly handled. Never touch the lamps 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, 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 the fuse, 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.*

Lamp Replacement: Caution! Never attempt to change the lamp while the fixture is plugged in. Always disconnect the main power and allow the unit ample time to cool before attempting to replace the lamp. Lamp replacement has been made simple by incorporating the use of a slide out lamp socket assembly that is retained by thumb screws.

1. Be sure to follow the proper handling procedures that deal with discharge lamps.
2. Unscrew and remove the two thumb screws at the rear of the unit.
3. After removing the thumb screws, slide the lamp socket assembly out.
4. Carefully remove the old lamp.
5. Replace the lamp with an exact match and reassemble in reverse order.

Optimizing Lamp Alignment: This procedure centers the lamp in the reflector. Proper optimization will increase lamp life and ensure a bright crisp output. Improper optimization may add a yellow tint to the lamp output and reduce intensity.

1. Be sure main power is disconnected and allow the unit to cool. If the you have just installed a new unit you can obviously skip this step.
2. Make a preliminary adjustment: Turn the three lamp adjustment thumb screws completely in (clockwise). Then back them each out (counter-clockwise) about three complete turns.
3. Turn the unit on and allow it to reset.
4. Using either a DMX controller or the control panel on the unit, strike the lamp and focus the light on a flat surface.
6. Center the hot-spot (the brightest part of the beam) using the 3 adjustment screws (A,B,and C). Turn one screw at a time to drag the hot-spot diagonally across the projected image. If you cannot detect a hot-spot, adjust the lamp until the light is even.
7. To reduce a hot-spot, pull the lamp in by turning all three screws clockwise 1/4-turn at a time until the light is evenly distributed.
8. If the light is brighter around the edge than it is in the center, or if light output is low, the lamp is too far back in the reflector. "Push" the lamp out by turning the screws.

This unit is equipped with a built-in safety breaker. This breaker is designed to close the power circuit in the event of an internal short or power surge. This will reduce the risk of electrical shock or fire and protect the circuitry. To reset the breaker, push the breaker button in until you hear it "pop" back in to place. If the breaker continues to pop, stop using the unit and contact our customer support team, the unit may need to be returned for service.

Voltage Selection: Caution! Never attempt to change the voltage while the fixture is plugged in. Always disconnect the main power before attempting to change the voltage. You can see the photo below for more help.

1. Be sure to check the wall voltage, first before changing the voltage on the unit.
2. Unscrew and remove the four phillips screws located on each side of the digital display.
3. After removing the screws, remove the digital display cover.
4. Select the voltage that matches the wall voltage. The selection switch is located on the right side of the digital display.
5. Reassemble in reverse order.

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.
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.

Listed below are a few common problems that you may encounter, with solutions.

No light output from the unit;
1. Be sure the unit is plugged into a standard 120v wall outlet.
2. Be sure the fuse has not blown. The fuse is located at the front of the unit, inside the power cord socket.
3. Remove the lamp socket assembly 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.

1-YEAR LIMITED WARRANTY

A. American DJs® hereby warrants, to the original purchaser, American DJs® products to be free of manufacturing defects in material and workmanship for a period of one year (365 days) from the date of purchase. 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, send the product only to the American DJs® 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 DJs® 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 its original package. No accessories should be shipped with the product. If any accessories are shipped with the product, American DJs® 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 DJs® concludes, after inspection, affects the reliability of the product; if the product has been repaired or serviced by anyone other than the American DJs® factory unless prior written authorization was issued to purchaser by American DJs®; 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 DJs® will replace defective parts at its expense, and will absorb all expenses for warranty service and repair labor by reason of defects in material or workmanship. The sole responsibility of American DJs® under this warranty shall be limited to the repair of the product, or replacement thereof, including parts, at the sole discretion of American DJs®. All products covered by this warranty were manufactured after January 1, 1990, and bear identifying marks to that effect.

E. American DJs® 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.

F. 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 DJs® 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 DJs® be liable for any loss or damage, direct or consequential, arising out of the use of, or inability to use, this product.

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

Model:	**Performance Scan 250™**
Voltage*:	Selectable 110v/60Hz or 230v/50Hz
Lamp:	ZB-EHJ5 24v/250w
Dimensions:	10.25"(L) x 11.75"(W) x 25.5"(H) 260mm x 299mm x 650mm
Colors:	9 Plus White
Gobos:	6 Plus Spot
Weight:	24 Lbs./ 11 Kgs.
Breaker:	5A
Duty Cycle:	None
DMX:	6 Channels
Sound Active:	Yes
Working Position:	Any Safe, Secure Position
Warranty:	1 Year (365 days)
Gobo Size:	28mm
Gobo Viewable:	23mm

*Voltage is 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.*