SAFETY AND COMPLIANCE REPORT FOR RAZOR USA

Tested Sample(s)	**:** Electric Bike
Brand	**:** Razor
Model	**:** MX125
Color	**:** Black
Size	**:** Not Specified
Stock / Model Number	**:** 15118260, 15173858, 15118296
Country of Origin	**:** China
Age Grading	**:** 8+ years
Children's Product	**:** Yes

Prepared For:

RAZOR USA, LLC. SHANGHAI OFFICE
Suite 906 JH Plaza, No.2008, Huqingping Road
Qingpu District, Shanghai
China

Issue Date: 22 April 2021

<u>Final Report</u>: 248.03891.001.UL2272.R1

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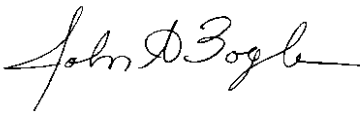
Contract File No.: 248.03891.001
T:\ACT Testing\Razor – 248.03891
Control Document Rev. 20 Dec. 2016

Technician: Fisher Yan

CONCLUSION

Razor, MX125 (Black) (15118260, 15173858, 15118296)		
Purpose of Test - Each test performed is intended to check compliance with the following:	**Result**	**Comment**
UL 2272 Personal e-Mobility Devices Compliance Testing	C	See results within.

President,



John A. Bogler

SAMPLE IDENTIFICATION

Brand:	Razor	**Job No.:**	248.03891.001
Model:	MX125	**Type:**	Electric Bike
Factory:	ZHEJIANG JINBANG SPORTS EQUIPOMENT CO.,LTD	**Size:**	Not Specified
Alternative Battery:	Kaiying(Longway) 6FM5 Xiongtao(Vision) CP1250(A) Xiangrui (OD) 6-DW-5	**Color(s):**	Black
Stock No.:	15118260, 15173858, 15118296	**Weight (kg):**	12.65
Serial No.:	Not Specified	**Country of Origin:**	China

248.03891.001 – MX125 (Black)

Test results apply to the following additional models:

Model	Color	Brand	Stock No.
MX125	Black	Razor	15118260 (15173858) (15118201)
MX125	Pink		15118261 (15118263)
MX125	Blue		15118240 (15118242) (15118244)
SX125	Green		15118235

DATE AND PLACE OF TEST

Sample(s) received : 28 November 2019
Testing was initiated on : 29 November 2019
Testing was completed on : 10 March 2020
Testing was performed at : Taicang ACT Sporting Goods Testing Company, LTD.
Taicang City, Jiangsu Province, China
Testing was performed at : STQ Testing Services Co., Ltd.
2-1-B, China-singapore science industrial zone I, 8# zhanye road, sip suzhou, china

TEST METHODS

Method for each test conducted is as follows:

- UL2272 testing was performed utilizing the test methods from the UL2272: Investigation for Electrical Systems for Self-Balancing Scooter.

TEST RESULTS

C: Compliant; Product meets specified standard **NC:** Non-Compliant; Product does not meet specified standard **NA:** Not Applicable to this design **NR:** Not Requested by the Applicant **NP:** Not Present	**ND:** None Detected **IC:** Inconclusive **NT:** Not Tested **FTR:** Further Testing Recommended **PPM:** Parts Per Million ***:** See Comments

UL 2272: Personal e-Mobility Devices Compliance Testing

UL 2272 Standard for Electrical Systems for Self-Balancing Scooters			
Ref. #	**Test Description**	**Result**	**Observations and Notes**
	CONSTRUCTION		
7	Non-Metallic Materials		
7.1	Enclosure Materials Comply with UL746C, Path III of Enclosure Requirements in Table 4.1 (or CAN/CSA-C22.2 No. 0.17)	C	
7.2	Polymeric Materials – Minimum Flame Rating of 94V-1 (UL 94 or CAN/CSA-C22.2 No. 017)	C	Pass per client provided Lelangtek report AL2004038102EN
7.3	Resistance to impact, crush resistance, abnormal operations, sever conditions, mold-stress relief distortion	C	
7.4	Polymeric Materials – Enclosure w/ Insulation shall have Relative Thermal Index ≥ 80°C (176°F) (UL 746B or CAN/CSA-C22.2 No. 017)	C	
7.5	Enclosure Materials Exposed to Sun/Rain Meet UV Resistance and Water Exposure/Immersion Tests (UL 746C or CAN/CSA-C22.2 No. 017)	NA	Not exposed to environment
7.6	Electrical Insulation shall be resistant to deterioration	C	
7.7	Gaskets and Seals Relied Upon for Safety Meet Environmental Requirements.	C	
8	Metallic Pasts Resistance to Corrosion		
8.1	Metal Enclosures – Corrosion Resistant (UL 50E or CAN/CSA-C22.2 No. 94.2)	C	
8.2	Insulation of Metal Enclosures – Non-Moisture Absorbent Materials w/ Suitable Temperature Rating.	C	
8.3	Conductive parts at terminals and connections shall not be subject to corrosion due to electrochemical action.	C	
9	Enclosures		
9.1	General		
9.1.1	Enclosure Strength and Rigidity	C	Checked by mechanical test of UL2272
9.1.2	Minimum Tool Requirement for Access to Enclosure (pliers, screwdriver, wrench…)	C	
9.1.3	Inadvertent Access to Hazardous Parts/Situations	C	
9.1.4	Openings in the enclosure shall be designed to prevent ingress of water (IPX4)	C	IPX4
9.2	Battery Components		
9.2.1	Cell vents shall not be obstructed	C	
9.2.2	Battery Compartments – Proper Venting and Security from Excessive Movement/Stress	C	
10	Wiring and Terminals		
10.1	Wiring shall be insulated properly	C	
10.2	Internal Wiring Strain Relief – no loosening of connections or damage of insulation	C	
10.3	External Terminals – designed to prevent inadvertent shorting, misalignment, or disconnection when scooter is in use	C	
10.4	Removable Battery Packs – Terminals not readily accessible	NA	
10.5	Removable Battery Packs – Endurance Test (UL 2251 or CAN/CSA C22.2 No. 282)	NA	
10.6	Holes for Wiring – smooth surface, free of burrs, fins, sharp edges, etc..	C	

UL 2272 Standard for Electrical Systems for Self-Balancing Scooters			
Ref. #	**Test Description**	**Result**	**Observations and Notes**
10.7	Hazardous Voltage Warning Label (ISO 7010, No. W012 – i.e. lightning bolt within triangle)	NA	
11	Charges		
11.1	Charger meets Standard for Class 2 Outputs (UL 1310) and is compatible w/ battery	C	
11.2	Charger Connector – shall be designed to prevent misalignment and reverse polarity.	C	
12	Fuses		
12.1	Fuses shall be acceptable for the current and voltage of the circuit they protect.	NA	
12.2	Replaceable Fuses – Replacement properly/obviously marked adjacent to holder	NA	
13	Lighting – correctly rated bulbs. Replacement care.	NA	
14	Electrical Spacings and Separation of Circuits		
14.1	Circuits w/ reverse polarity shall have enough spacing (or insulated properly) to prevent inadvertent shorting.	C	
14.2	Electrical Spacings – Minimum over surface and through air spacing from Table 13.1	C	
14.4	Conductors of Circuits operating at different voltages shall be reliably separated (space or insulation)	C	
15	Insulation Levels and Protective Grounding		
15.1	Hazardous Voltage Circuits – Insulated from accessible conduction parts and safety extra low voltage circuits (60 Vdc or 48 Vrms)	C	
15.4	Protective Ground System – Max Resistance of 0.1 Ω	NA	
15.5	Ground Terminal Identification	NA	
15.6	Conductor shall be properly sized – shall be green or green & yellow striped in color	NA	
16	Protective Circuits and Safety Analysis		
16.2	Analysis of potential electrical and energy hazards (FMEA)	C	Section 39, 40
16.4	Critical Safety Circuits – provided with redundant passive protection,	C	Section 39, 40
16.5	Electronic and Software Protection Scheme (UL 991, UL 60730-1, IEC 61508-1)	C	Section 39, 40
16.6	Scooter's Containing Hazardous Voltages – Manual Disconnect	C	
16.7	Manual Disconnect Requirements (no auto reset, disconnects both poles, capable of full load disconnects, and no hazardous conditions upon automatic actuation)	C	
16.8	Charger connect-interlock. Unit cannot be activated when charger is plugged in	C	
17	Cells		
17.2	Lithium based Cells – comply w/ UL 2580 (UL 2271, or CAN/ULC-S2271)	NA	
17.4	Nickel Based Cells – comply w/ UL 2580 (UL 2271, or CAN/ULC-S2271)	NA	
17.5	Valve regulated lead acid batteries shall comply with pressure release test from UL 1989	C	Section 24-32
17.6	Electrochemical capacitors shall comply with the capacitor requirements in UL 810A	C	Section 24-32
18	Motors		
18.1	Not Hazardous Under Locked Rotor and Overload Conditions	C	Section 39, 40
18.2	Motors shall be capable of carrying max normal anticipated load without exceeding temperatures on insulation and windings.	C	Section 39, 40
18.3	Motors in Hazardous voltage Circuits – comply w/ UL 1004-1 or CSA-C22.2 No. 100	NA	

UL 2272 Standard for Electrical Systems for Self-Balancing Scooters			
Ref. #	**Test Description**	**Result**	**Observations and Notes**
19	Manufacturing and Production Line Testing		
19.6	Continuity check of the grounding conductors	NA	
19.7	Documentation of production process	NA	
	PERFORMANCE		
22	Post Test Cycle	C	
	ELECTRICAL TESTS		
24	Overcharge Test	C	STQ Report SZ2019120087
25	Short Circuit Test	C	STQ Report SZ2019120087
26	Over-discharge Test	C	STQ Report SZ2019120087
27	Temperature Test	C	STQ Report SZ2019120087
28	Imbalanced Charging Test	NA	
29	Dielectric Voltage Withstand Test	C	STQ Report SZ2019120087
30	Isolation Resistance Test	C	STQ Report SZ2019120087
31	Leakage Current Test	C	STQ Report SZ2019120087
32	Grounding Continuity Test	NA	
	MECHANICAL TESTS		
33	Vibration Test	C	STQ Report SZ2019120087
34	Shock Test	C	STQ Report SZ2019120087
35	Crush Test	NA	
36	Drop Test	C	
37	Mold Stress Relief Test	C	
38	Handle Loading Test	C	
39	Motor Overload Test	C	STQ Report SZ2019120087
40	Motor Locked Rotor	C	The power will be off after 1-2minites when you lock the motor and start scooter
41	Strain Relief Test (Cord Anchorages)		
41.2	Strain Relief Pull Test	C	
41.3	Push-Back Test	C	
	ENVIRONMENTAL TESTS		
42	Water Exposure Tests		
42.1	IPX4 Code Rating	C	

UL 2272 Standard for Electrical Systems for Self-Balancing Scooters			
Ref. #	**Test Description**	**Result**	**Observations and Notes**
42.2	Partial Immersion	C	
43	Thermal Cycling Test	C	
44	Label Permanence Test	C	
	MARKINGS		
45.1	Legible and Permanent Markings (adhesive-backed labels must comply w/ UL 969)	C	
45.2	Mandatory Markings: Manufacturer's Name, Part #, Model #, Electric Ratings (Vdc and Ah or Wh), Max Weight (lbs), and Max Speed (mph)	C	
45.3	Date of Manufacture or Traceable Date Code	C	
45.4	Charging Instructions ("Use Only (__) Charger")	C	
45.5	External Terminal and Connections – Proper ID and Polarity Markings	C	
45.6	Separable Battery Pack Specs – "Use only (---) battery pack w/ this scooter…"	NA	
45.7	Ground Connection Markings	NA	
45.8	Warning for Hazardous Voltage Circuits	NA	
45.9	Warning about reading instruction manual.	C	
45.10	Marks for IPX4 rating not required. Scooters marked w/ higher IP ratings shall comply with those ratings.	NA	
45.11	Plastic enclosure not evaluated for exposure to UV light and rain per 7.5 shall be marked with the equivalent, "Store Indoors When Not in Use."	NA	
	INSTRUCTIONS		
46.1	Shall Include:		
	Charing Instructions	C	
	Operating Instructions	C	
	Storage and Disposal Instructions	C	
	Temperature Limits	C	
	Appropriate Charger Specs	C	
	Weight Limits (min and max)	C	
	Max Speed	C	
	Instructions for Water and Other Environmental Exposures	C	
	Instructions for Riding Surface/Terrain, Use on Gradients, etc.	C	
	Instructions for Replaceable Fuses and Light Bulbs	NA	
46.2	Removable Battery Pack Instructions	NA	
46.3	Warning about Risk of Fire and Electric Shock – No User Serviceable Parts	C	
46.4	Devices not intended for use in high altitude locations shall indicate not intended for use at elevations greater than 2000 m above sea level.	NA	
46.5	Devices intended to be stored indoors to protect against prolonged exposure to UV rays or the elements that may damage enclosure shall have warning in instructions.	NA	


VISION
CP1250H 12V 5AH
VALVE REGULATED
RECHARGEABLE BATTERY
CONSTANT VOLTAGE CHARGE
CYCLE USE: 14.4-14.7V
STANDBY USE: 13.38-13.8V
INITIAL CURRENT: LESS THAN 2.0A
WARNING:
AVOID SHORT CIRCUIT,RECHARGE AFTER USE
RISK OF FIRE, EXPLOSION, OR BURNS.
DO NOT CHARGE IN A SEALED CONTAINER
MUST BE RECYCLED OR DISPOSED OF PROPERLY
DO NOT DISASSEMBLE, HEAT ABOVE 50°C,
OR INCINERATE.
ION GROUP
CENTER POWER INDUSTRIAL PARK,TONGFU INDUSTRIAL PARK,
DAPENG TOWN, DAPENG NEW DISTRICT,SHENZHEN.
WWW.VISION-BATT.COM
GLOBAL HOTLINE:
86 755 84318595
5
Pb
Pb
MADE IN CHINA
NON-SPILLABLE


Razor ELECTRICAL CONTROLLER
Rating Voltage : 12V
Maximun Current : 15A
Under Voltage : 10V
Batch No : 0027
Version : V01
Manufacturer : SZ
Date : 2019.11.14
Model No : B-ZK1218D1
19111401100000
ROHS
P/F


08222
RAZOR USA LLC
SHENZHEN GUANGDONG CHINA


WARNING
Never modify the electrical
Alteration could cause a fire.
Use of the wrong type of
charger could cause an


HON-KWANG
Class 2 Battery Charger
MODEL: HK-AD-120U100-US
INPUT: 100-120V ~ 50/60Hz 0.4A
OUTPUT: 12V ⎓ 1.0A
LISTED
CAUTION : RISK OF ELECTRIC SHOCK
RISK OF INJURY
DRY LOCATION USE ONLY
ATTENTION : POUR UTILISATION À L'INTÉRIEUR SEULEMENT
CHARGE ONLY ONE MAXIMUM 12V
LEAD-ACID RECHARGEABLE BATTERY.
OTHER TYPE OF BATTERIES MAY BURST
CAUSING INJURY TO PERSONS DAMAGE.
DISPLAY: GREEN-CHARGED OK
RED-CHARGING
MADE IN CHINA 1019S
BFP


STOP
Do not use this product for the first time until you have inflated the tires to the correct PSI and charged the battery for at least 12 hours.
Failure to follow these instructions may damage your product and void your warranty.
CALL TOLL FREE OR GO ONLINE:
1-866-GO-RAZOR / WWW.RAZOR.COM


WARNING-KEEP AWAY FROM MOVING PARTS
WARNING
THIS PRODUCT MOVES WHEN USED. EXERCISE CAUTION & COMMON SENSE WHEN RIDING.
• This product is intended to be used on private property and on closed courses. Not for use on public streets or sidewalks.
• Product must be assembled properly before use.
• Recommended age: 8 and up. Not for use by children under 8.
• Read the owner's manual and additional warnings before using.
• Always wear a helmet and protective gear such as knee and elbow pads. Ride at your own risk.
• Always wear shoes.
• Do not ride in water, at night or in low visibility conditions.
• Adult supervision is required.
• Steep, uneven or loose surfaces increase risks of use.
• Make sure all bolts are fastened securely and guards are in place.
• The battery must be charged at least 12 hours. Do not over charge.
• 8 mph (13 km/h) max speed. Use only Razor MX125 charger.
• Tires must be inflated prior to use.
• 120 lb (54 kg) maximum rider weight limit. Heavier riders may cause damage not covered by warranty. Not designed for stunt riding.
• Check local laws and regulations to see where and how you may use this product legally. Keep away from motor vehicle traffic.


WARNING
TRAFFIC CAN BE FATAL
DO NOT RIDE ON STREETS OR AROUND CARS

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END OF REPORT

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