

TEST REPORT

Report No.: **SZ2230403-16702E**

Date: May 29, 2023

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Shenzhen Superlighting Electronic CO., LTD

Floor 13, Block C, Central Avenue, Baoyuan Road, Baoan District, 518101, Shenzhen, Guangdong, China

Report on the submitted samples said to be:

Sample Description: Low-voltage led linear lighting

Color: Single color/RGB/RGBW

Tested Style/Item No.: UN-GJ-DMX-DC24-5050RGBW-36D6T-24-940-2424-ZC-T601-IP65 UN-BJ-DMX-DC24-2835-120D10S-18-9xx-1018-C-IP65 , UN-DC24-2835-160-12-9740-W8-3M, UN-DMX-DC24-5050RGBW-36D6T-18-940-W16-T45-UD

Additional Style/ Item No.: UN-XX-XXX-XXXX-XXXXXXXX-XXXXXX-XX-XXXX-XXXX-XX-TXXXX-XXXX-XX

Remark: As claimed by the material declaration submitted by the client, the material of Additional Style/ Item No. are the same as the tested Style/ Item No. . But the results only for the tested sample. And the applicant will undertake all differences and risk

Sample Receiving Date: April 10,2023

Lately Re-submit Date: May 10,2023

Testing Period: April 10,2023 - May 29,2023

Result: **Please refer to next page(s).**

Signed for and on behalf of

BACL

Queenie Lee

Checked by: _____
Queenie Lee

Len Xie

Approved by: _____
Len Xie



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Summary of Test Result:

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CONCLUSION

A RoHS Directive 2011/65/EU and amendment directives (EU) 2015/863 on Lead,Cadmium, Mercury, Hexavalent Chromium, PBBs & PBDEs, Phthalates(DBP, BBP,DEHP, DIBP) content

A.1 XRF screening test

Pass

A.2 Wet Chemical Testing

A.2.1 Chromium VI (CrVI) content

Pass

A.2.2 PBBs & PBDEs content

Pass

A.3 Phthalates(DBP, BBP, DEHP, DIBP)content

Pass

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A RoHS Directive 2011/65/EU and amendment directives (EU) 2015/863 on Lead, Cadmium, Mercury, Hexavalent Chromium, PBBs & PBDEs, Phthalates(DBP, BBP, DEHP, DIBP) content

A.1 XRF screening test

Test method: IEC 62321-3-1:2013

Seq No.	Tested Part(s)	Result				
		Pb	Cd	Hg	Cr	Br
(1)	Yellow/white body(LED, Low-Voltage led linear lighting) [4]	BL	BL	BL	BL	BL
(2)	Black body(SMD resistor, FPC, Low-Voltage led linear lighting) [4]	BL	BL	BL	BL	BL
(3)	Black printed white FPC(FPC, Low-Voltage led linear lighting) [4]	BL	BL	BL	BL	BL
(4)	Silvery solder(FPC, Low-Voltage led linear lighting) [4]	BL	BL	BL	BL	---
(5)	Transparent soft plastic(wire sleeve, Low-Voltage led linear lighting) [4]	BL	BL	BL	BL	BL
(6)	White soft plastic(cable jacket, power line, Low-Voltage led linear lighting) [1][2][3]	BL	BL	BL	BL	BL
(7)	White paper(wire sleeve, power line, Low-Voltage led linear lighting) [1][2][3]	BL	BL	BL	BL	BL
(8)	Black soft plastic(wire jacket, power line, Low-Voltage led linear lighting) [1][2][3]	BL	BL	BL	BL	BL
(9)	White soft plastic(wire jacket, power line, Low-Voltage led linear lighting) [1][2][3]	BL	BL	BL	BL	BL
(10)	Green soft plastic(wire jacket, power line, Low-Voltage led linear lighting) [1][2][3]	BL	BL	BL	BL	BL
(11)	Red soft plastic(wire jacket, power line, Low-Voltage led linear lighting) [1][2][3]	BL	BL	BL	BL	BL
(12)	Blue soft plastic(wire jacket, power line, Low-Voltage led linear lighting) [1][2][3]	BL	BL	BL	BL	BL
(13)	Silvery metal(wire, power line, Low-Voltage led linear lighting) [1][2][3]	BL	BL	BL	BL	---
(14)	Silvery metal(ring, wire holder, Low-Voltage led linear lighting) [1][2][3]	BL	BL	BL	BL	---
(15)	White soft plastic(wire holder, Low-Voltage led linear lighting) [1][2][3]	BL	BL	BL	BL	BL
(16)	White soft plastic(shell, Low-Voltage led linear lighting) [1]	BL	BL	BL	BL	BL
(17)	Translucent soft plastic(shell, Low-Voltage led linear lighting) [1]	BL	BL	BL	BL	BL
(18)	Yellow/white body(LED, FPC, Low-Voltage led linear lighting) [1]	BL	BL	BL	BL	BL
(19)	Black body(IC, FPC, Low-Voltage led linear lighting) [1]	BL	BL	BL	BL	BL
(20)	Black body(SMD resistor, FPC, Low-Voltage led linear lighting) [1]	BL	BL	BL	BL	BL
(21)	Brown body(SMD capacitor, FPC, Low-Voltage led linear lighting) [1]	BL	BL	BL	BL	BL
(22)	Silvery solder(FPC, Low-Voltage led linear lighting, semi-product) [1]	BL	BL	BL	BL	---
(23)	Black printed white FPC(FPC, Low-Voltage led linear lighting) [1]	BL	BL	BL	BL	BL
(24)	White fabric with plastic(Velcro, Low-Voltage led linear lighting) [1]	BL	BL	BL	BL	BL
(25)	Black printed white paper with adhesive(label, Low-Voltage led linear lighting) [1]	BL	BL	BL	BL	BL
(26)	Transparent soft plastic(shell, Low-Voltage led linear lighting) [2]	BL	BL	BL	BL	BL

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Seq No.	Tested Part(s)	Result				
		Pb	Cd	Hg	Cr	Br
(27)	Grey soft plastic(shell, Low-Voltage led linear lighting) [2]	BL	BL	BL	BL	BL
(28)	White fabric(cord, Low-Voltage led linear lighting) [2]	BL	BL	BL	BL	BL
(29)	Red PVC(wire jacket, Low-Voltage led linear lighting) [4]	BL	BL	BL	BL	BL
(30)	Black PVC(wire jacket, Low-Voltage led linear lighting) [4]	BL	BL	BL	BL	BL
(31)	Silvery metal(wire, Low-Voltage led linear lighting) [4]	BL	BL	BL	BL	---
(32)	Silvery solder(wire end, Low-Voltage led linear lighting) [4]	BL	BL	BL	BL	---
(33)	Transparent plastic(LED cover, Low-Voltage led linear lighting) [2]	BL	BL	BL	BL	BL
(34)	Yellow/white body(LED, PCB, Low-Voltage led linear lighting) [2]	BL	BL	BL	BL	BL
(35)	Silvery solder(PCB, Low-Voltage led linear lighting) [2]	BL	BL	BL	BL	---
(36)	Black printed white coated beige plastic with coppery metal(PCB, Low-Voltage led linear lighting) [2]	BL	BL	BL	BL	BL
(37)	Black printed white FPC(PCB, Low-Voltage led linear lighting) [2]	BL	BL	BL	BL	BL
(38)	White dry glue(LED cover, Low-Voltage led linear lighting) [2]	BL	BL	BL	BL	BL
(39)*	Silvery metal(clip, Low-Voltage led linear lighting) [3]	BL	BL	BL	X	---
(40)	Translucent white soft plastic(end, Low-Voltage led linear lighting) [3]	BL	BL	BL	BL	BL
(41)	White soft plastic(shell, Low-Voltage led linear lighting) [3]	BL	BL	BL	BL	BL
(42)	Transparent dry glue(shell, Low-Voltage led linear lighting) [3]	BL	BL	BL	BL	BL
(43)	Black body(IC, FPC, Low-Voltage led linear lighting) [3]	BL	BL	BL	BL	BL
(44)	Black body(SMD resistor, FPC, Low-Voltage led linear lighting) [3]	BL	BL	BL	BL	BL
(45)	Brown body(SMD capacitor, FPC, Low-Voltage led linear lighting) [3]	BL	BL	BL	BL	BL
(46)*	Black printed white coated beige plastic with coppery metal(PCB, Low-Voltage led linear lighting) [3]	BL	BL	BL	BL	X
(47)	Black printed yellow paper with adhesive(label, Low-Voltage led linear lighting) [3]	BL	BL	BL	BL	BL

Note:
[1]UN-BJ-DMX-DC24-2835-120D10S-18-9xx-1018-C-IP65; [2]UN-GJ-DMX-DC24V-5050RGBW-36D6T-24-94-0-2424-ZC-T601-IP65; [3]UN-DMX-DC24-5050RGBW-36D6T-18-940-W16-T45-UD; [4]UN-DC24-2835-160-12-9740-W10-3M

Note:
--- = Not Applicable.
* = Screening by XRF and detected by chemical method. The test result of chemical method please refer to next pages.

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Remark:

i Result were obtained by XRF for primary screening, and further chemical testing by ICP (for Cd, Pb, Hg), UV-Vis (for Cr(VI)) and GC-MS (for PBBs, PBDEs) are recommended to be performed, if the concentration exceeds the below warning value according to IEC62321-3-1:2013.

Element	Unit	Polymers	Metal	Composite Material
Cd	mg/kg	BL≤70-3σ<X <130+3σ≤OL	BL≤70-3σ<X <130+3σ≤OL	BL≤50-3σ<X <150+3σ≤OL
Pb	mg/kg	BL≤700-3σ<X <1300+3σ≤OL	BL≤700-3σ<X <1300+3σ≤OL	BL≤500-3σ<X <1500+3σ≤OL
Hg	mg/kg	BL≤700-3σ<X <1300+3σ≤OL	BL≤700-3σ<X <1300+3σ≤OL	BL≤500-3σ<X <1500+3σ≤OL
Cr	mg/kg	BL≤700-3σ<X	BL≤700-3σ<X	BL≤500-3σ<X
Br	mg/kg	BL≤300-3σ<X	--	BL≤250-3σ<X

Note:

BL = Below Limit

OL = Over Limit

IN / X = Inconclusive (questionable, need further chemical analysis)

ii The XRF screening test for RoHS elements – The reading may be different to the actual content in the sample be of non-uniformity composition.

iii The maximum permissible limit is quoted from the RoHS directive 2011/65/EU:

RoHS Restricted Substances	Maximum Concentration Value (mg/kg) (by weight in homogenous materials)
Cadmium (Cd)	100
Lead (Pb)	1000
Mercury (Hg)	1000
Hexavalent Chromium (Cr(VI))	1000
Polybrominated biphenyls (PBBs)	1000
Polybrominated diphenylethers (PBDEs)	1000

Disclaimers:

This XRF Screening report is for reference purposes only. The applicant shall make its/his/her own judgment as to whether the information provided in this XRF screening report is sufficient for its/his/her purposes.

The result shown in this XRF screening report will differ based on various factors, including but not limited to, the sample size, thickness, area, surface flatness, equipment parameters and matrix effect (e.g. plastic, rubber, metal, glass, ceramic etc.). Further wet chemical pre-treatment with relevant chemical equipment analysis are required to obtain quantitative data.

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A.2 Wet Chemical Testing

A.2.1 Chromium VI (CrVI) content

Chromium VI (CrVI) content(In metal)

Test method: IEC 62321-7-1:2015

Item	Unit	MDL	Result	Limit
			(39)	
hexavalent chromium(Cr VI)	µg/cm ²	0.10	N.D.	See Remark
Conclusion	/	/	Pass	/

Limit Remark:

- The sample is positive for CrVI if the CrVI concentration is greater than 0.13µg/cm². The sample coating is considered to contain CrVI
 - The sample is negative for CrVI if CrVI is ND (concentration less than 0.10µg/cm²). The coating is considered a non-CrVI based coating
 - The result between 0.10µg/cm² and 0.13µg/cm² is considered to be inconclusive -unavoidable coating variations may influence the determination
- For corrosion protection coatings on metals: Information on storage conditions and production date of the tested sample is unavailable and thus results of Cr(VI) represent status of the sample at the time of testing.

A.2.2 PBBs & PBDEs content

Test method: IEC 62321-6:2015

Item	Unit	MDL	Result	Limit
			(46)	
Monobromobiphenyl (MonoBB)	mg/kg	50	N.D.	-
Dibromobiphenyl(DiBB)	mg/kg	50	N.D.	-
Tribromobiphenyl(TriBB)	mg/kg	50	N.D.	-
Tetrabromobiphenyl(TetraBB)	mg/kg	50	N.D.	-
Pentabromobiphenyl(PentaBB)	mg/kg	50	N.D.	-
Hexabromobiphenyl(HexaBB)	mg/kg	50	N.D.	-
Heptabromobiphenyl (HeptaBB)	mg/kg	50	N.D.	-
Octabromobiphenyl(OctaBB)	mg/kg	50	N.D.	-
Nonabromobiphenyl(NonaBB)	mg/kg	50	N.D.	-
Decabromobiphenyl(DecaBB)	mg/kg	50	N.D.	-
Monobromodiphenyl ether (MonoBDE)	mg/kg	50	N.D.	-
Dibromodiphenyl ether (DiBDE)	mg/kg	50	N.D.	-
Tribromodiphenyl ether (TriBDE)	mg/kg	50	N.D.	-

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Item	Unit	MDL	Result	Limit
			(46)	
Tetrabromodiphenyl ether (TetraBDE)	mg/kg	50	N.D.	-
Pentabromodiphenyl ether (PentaBDE)	mg/kg	50	N.D.	-
Hexabromodiphenyl ether (HexaBDE)	mg/kg	50	N.D.	-
Heptabromodiphenyl ether (HeptaBDE)	mg/kg	50	N.D.	-
Octabromodiphenyl ether (OctaBDE)	mg/kg	50	N.D.	-
Nonabromodiphenyl ether (NonaBDE)	mg/kg	50	N.D.	-
Decabromodiphenyl ether (DecaBDE)	mg/kg	50	N.D.	-
sum of MonoBDE, DiBDE, TriBDE, TetraBDE, PentaBDE, HexaBDE, HeptaBDE, OctaBDE, NonaBDE, DecaBDE	mg/kg	-	/	1000
sum of MonoBB, DiBB, TriBB, TetraBB, PentaBB, HexaBB, HeptaBB, OctaBB, NonaBB, DecaBB	mg/kg	-	/	1000
Conclusion	/	/	Pass	/

A.3 Phthalates(DBP, BBP, DEHP, DIBP)content

Test method: IEC 62321-8:2017

Item	Unit	MDL	Result						Limit
			(1)+(3)	(5)+(33)+(47)	(6)+(8)+(9)	(10)+(11)+(12)	(15)+(16)+(17)	(18)+(19)+(34)	
Dibutyl Phthalate(DBP)	mg/kg	30	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	1000
Benzyl Butyl Phthalate(BBP)	mg/kg	30	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	1000
Bis-(2-ethylhexyl) Phthalate (DEHP)	mg/kg	30	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	1000
Diisobutyl phthalate(DIBP)	mg/kg	30	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	1000
Conclusion	/	/	Pass	Pass	Pass	Pass	Pass	Pass	/

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Item	Unit	MDL	Result				Limit
			(23)+(36)	(24)+(25)+(26)	(27)	(29)	
Dibutyl Phthalate(DBP)	mg/kg	30	N.D.	N.D.	N.D.	N.D.	1000
Benzyl Butyl Phthalate(BBP)	mg/kg	30	N.D.	N.D.	N.D.	N.D.	1000
Bis-(2-ethylhexyl) Phthalate (DEHP)	mg/kg	30	N.D.	N.D.	N.D.	N.D.	1000
Diisobutyl phthalate(DIBP)	mg/kg	30	N.D.	N.D.	N.D.	N.D.	1000
Conclusion	/	/	Pass	Pass	Pass	Pass	/

Item	Unit	MDL	Result				Limit
			(30)	(37)+(43)+(46)	(38)+(40)+(41)	(42)	
Dibutyl Phthalate(DBP)	mg/kg	30	N.D.	N.D.	N.D.	N.D.	1000
Benzyl Butyl Phthalate(BBP)	mg/kg	30	N.D.	N.D.	N.D.	N.D.	1000
Bis-(2-ethylhexyl) Phthalate (DEHP)	mg/kg	30	N.D.	N.D.	N.D.	N.D.	1000
Diisobutyl phthalate(DIBP)	mg/kg	30	N.D.	N.D.	N.D.	N.D.	1000
Conclusion	/	/	Pass	Pass	Pass	Pass	/

Note:

- N.D.= Not Detected or less than MDL
- MDL = Method Detection Limit
- "+" = Composite testing.
- The Result less than MDL are not taken into account while calculating the sum contents.

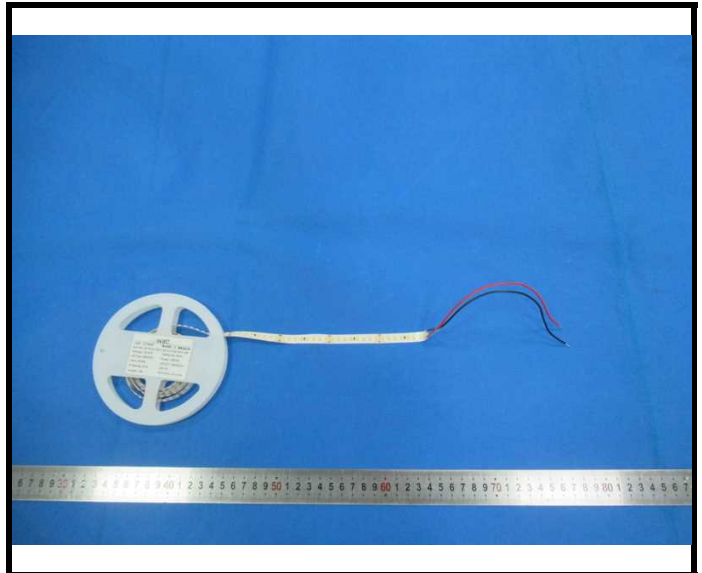
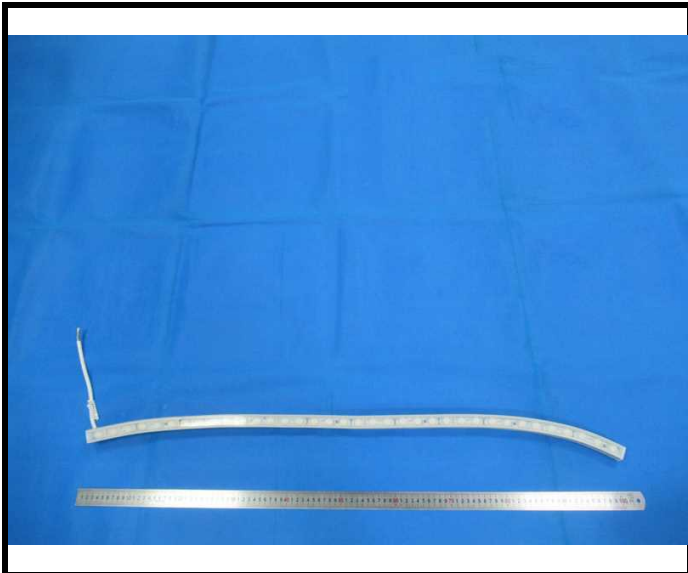
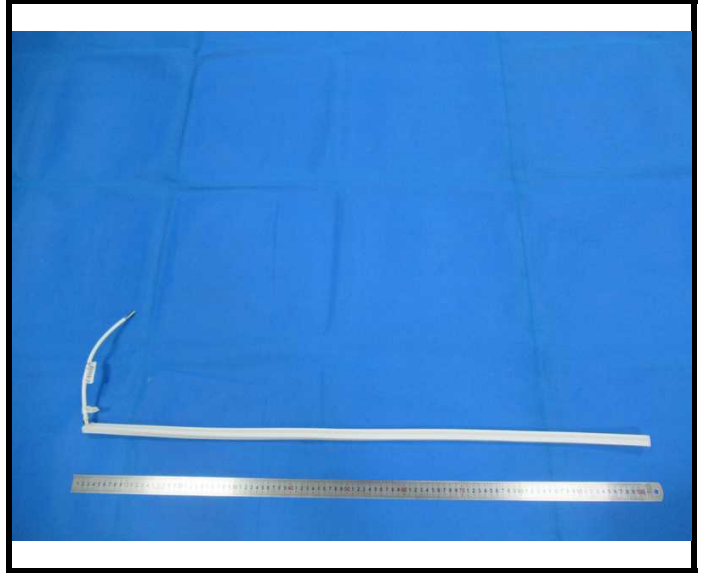
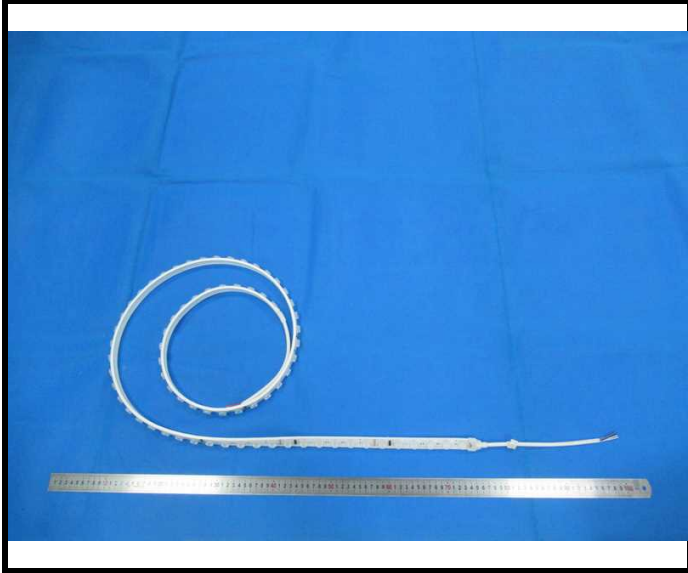
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Photograph of Sample



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Statement:

- 1.This report cannot be reproduced except in full, without prior written approval of the Company.
- 2.Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.
- 3.This report is valid only with a valid digital signature. The digital signature may be available only under the Adobe software above version 7.0.
- 4.Otherwise required by the applicant or Product Regulations, Decision Rule in this report did not consider the uncertainty.
- 5.The information which provided by the applicant, such as sample description, sample name, material component, style/item No. , P.O. No. , manufacturer, age phase, the laboratory is not responsible for its authenticity and this information can affect the validity of the result in the test report.
- 6.The test samples were in good condition before testing.

*** End of Report ***