

Test Report

Report No. CCTI-2023110616R

Date: Nov. 16, 2023

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Applicant : ILUMILEDS S.A. DE C.V.
Address : SAN ISIDRO 97 PISO 2 COL. SAN FRANCISCO TETECALA, DELEG. AZCAPOTZALCO MEXICO, D.F. ZIP CODE 02730

The submitted sample and sample information was/were submitted and identified by/on the behalf of the client

Sample name : LED Profile
Testing type /model : DXAP02KIT
Additional type /model : See APPENDIX I -- EUT SERIES MODEL LIST
Trademark : **iLumileds**
Manufacturer name : ILUMILEDS S.A. DE C.V.
Address : SAN ISIDRO 97 PISO 2 COL. SAN FRANCISCO TETECALA, DELEG. AZCAPOTZALCO MEXICO, D.F. ZIP CODE 02730
Sample received date : Nov. 07, 2023
Testing period : Nov. 07, 2023 to Nov. 16, 2023
Test requested : As specified by client, to test the Lead(Pb), Cadmium(Cd), Mercury(Hg), Hexavalent Chromium(Cr(VI)), Polybrominated Biphenyl(PBBs), Polybrominated Diphenyl Ethers (PBDEs), Diisobutyl phthalate (DIBP), Dibutyl phthalate(DBP), Benzyl butyl phthalate(BBP), Di-2-ethylhexyl phthalate(DEHP) in the submitted sample in accordance with the RoHS Directive 2011/65/EU and amendment Commission Delegated Directive (EU) 2015/863 with effective from 22 July 2019.
Test Method : Please refer to the following page(s)
Test Result(s) : Please refer to the following page(s)
Conclusion : The test results comply with the limits of RoHS 2.0 Directive (EU) 2015/863 and (EU)2017/2102 amending Annex II to Directive 2011/65/EU.

*****FOR FURTHER DETAILS, PLEASE REFER TO THE FOLLOWING PAGE(S)*****

Producer By : 
(Betty Liang / Engineer)

Date: Nov. 16, 2023

Authorized Signer : 
(Corei Mao / Manager)

Date: Nov. 16, 2023



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Test Method:

A. Screening test by XRF spectroscopy

XRF screening limits in mg/kg for regulated elements according to IEC 62321-3-1:2013.

Element	Limit of IEC 62321-3-1:2013. Unit (mg/kg)		MDL	
	Polymers and Metals	Composite Material	Polymers	Other material
Pb	$BL \leq (700-3\sigma) < X < (1300+3\sigma) \leq OL$	$BL \leq (500-3\sigma) < X < (1500+3\sigma) \leq OL$	10 mg/kg	50 mg/kg
Cd	$BL \leq (70-3\sigma) < X < (130+3\sigma) \leq OL$	$LOD \leq (50-3\sigma) < X < (150+3\sigma) \leq OL$	10 mg/kg	50 mg/kg
Hg	$BL \leq (700-3\sigma) < X < (1300+3\sigma) \leq OL$	$BL \leq (500-3\sigma) < X < (1500+3\sigma) \leq OL$	10 mg/kg	50 mg/kg
Cr	$BL \leq (700-3\sigma) < X$	$BL \leq (500-3\sigma) < X$	10 mg/kg	50 mg/kg
Br	$BL \leq (300-3\sigma) < X$	$BL \leq (250-3\sigma) < X$	10 mg/kg	50 mg/kg

Note:

-BL = Under the XRF screening limit

-OL = Further chemical test will be conducted while result is above the screening limit

-X= The symbol "X" marks the region where further investigation is necessary

-3σ= The reproducibility of analytical instruments

-LOD= Detection limit

B. Chemical Test

Test Item	Test Method	Test Equipment	MDL	Limit
Lead (Pb)	IEC 62321-5:2013	ICP-OES	2 mg/kg	1000 mg/kg
Cadmium (Cd)	IEC 62321-5:2013	ICP-OES	2 mg/kg	100 mg/kg
Mercury (Hg)	IEC 62321-4:2013+AMD1:2017	ICP-OES	2 mg/kg	1000 mg/kg
Hexavalent Chromium Cr (VI) (Metal)	IEC 62321-7-1:2015	UV-VIS	0.1 μg/cm ²	0.13 μg/cm ²
Hexavalent Chromium Cr (VI) (Nonmetal)	IEC 62321-7-2:2017	UV-VIS	8 mg/kg	1000 mg/kg
Polybrominated Biphenyls (PBBs)	IEC 62321-6:2015	GC-MS	5 mg/kg	1000 mg/kg
Polybrominated Diphenyl Ethers (PBDEs)	IEC 62321-6:2015	GC-MS	5 mg/kg	1000 mg/kg
Phthalates (DBP, BBP, DEHP, DIBP)	IEC 62321-8:2017	GC-MS	50mg/kg	1000 mg/kg

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Test Result(s):

Sample No.	Sample Description	Tested Items	XRF Screening Test Unit (mg/kg)	Chemical Test Unit (mg/kg)	Conclusion
1	Silver metal case	Pb	BL	/	PASS
		Cd	BL	/	
		Hg	BL	/	
		Cr(Cr(VI))	BL	/	
		Br(PBBs&PBDEs)	/	/	
2	White plastic case	Pb	BL	/	PASS
		Cd	BL	/	
		Hg	BL	/	
		Cr(Cr(VI))	BL	/	
		Br(PBBs&PBDEs)	BL	/	
3	Grey plastic	Pb	BL	/	PASS
		Cd	BL	/	
		Hg	BL	/	
		Cr(Cr(VI))	BL	/	
		Br(PBBs&PBDEs)	BL	/	
4	Black line	Pb	BL	/	PASS
		Cd	BL	/	
		Hg	BL	/	
		Cr(Cr(VI))	BL	/	
		Br(PBBs&PBDEs)	BL	/	
5	Red Line	Pb	BL	/	PASS
		Cd	BL	/	
		Hg	BL	/	
		Cr(Cr(VI))	BL	/	
		Br(PBBs&PBDEs)	BL	/	
6	Tin	Pb	BL	/	PASS
		Cd	BL	/	
		Hg	BL	/	
		Cr(Cr(VI))	BL	/	
		Br(PBBs&PBDEs)	/	/	
7	Light panels	Pb	BL	/	PASS
		Cd	BL	/	
		Hg	BL	/	
		Cr(Cr(VI))	BL	/	
		Br(PBBs&PBDEs)	BL	/	

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Sample No.	Sample Description	Tested Items	XRF Screening Test Unit (mg/kg)	Chemical Test Unit (mg/kg)	Conclusion
8	LED	Pb	BL	/	PASS
		Cd	BL	/	
		Hg	BL	/	
		Cr(Cr(VI))	BL	/	
		Br(PBBs&PBDEs)	BL	/	
9	Chip Resistors	Pb	BL	/	PASS
		Cd	BL	/	
		Hg	BL	/	
		Cr(Cr(VI))	BL	/	
		Br(PBBs&PBDEs)	BL	/	

Tested Item(s)	Result Unit (mg/kg)					Acceptable Limit Unit (mg/kg)
	1	2	3	4	5	
Di-isobutyl phthalate(DIBP) CAS #:84-69-5	/	N.D.	N.D.	N.D.	N.D.	1000
Dibutyl phthalate(DBP) CAS #:84-74-2	/	N.D.	N.D.	N.D.	N.D.	1000
Benzylbutyl phthalate(BBP) CAS #:85-68-7	/	N.D.	N.D.	N.D.	N.D.	1000
Di-2-ethylhexyl phthalate(DEHP) CAS #:117-81-7	/	N.D.	N.D.	N.D.	N.D.	1000

Tested Item(s)	Result Unit (mg/kg)				Acceptable Limit Unit (mg/kg)
	6	7	8	9	
Di-isobutyl phthalate(DIBP) CAS #:84-69-5	/	N.D.	N.D.	N.D.	1000
Dibutyl phthalate(DBP) CAS #:84-74-2	/	N.D.	N.D.	N.D.	1000
Benzylbutyl phthalate(BBP) CAS #:85-68-7	/	N.D.	N.D.	N.D.	1000
Di-2-ethylhexyl phthalate(DEHP) CAS #:117-81-7	/	N.D.	N.D.	N.D.	1000

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Note:

-MDL = Method Detection Limit

-N.D. = Not Detected (<MDL)

-mg/kg = ppm = parts per million

-Negative = Absence of Cr(VI), the detected Cr(VI) concentration in the boiling water extraction solution is less than 0.02 mg/kg with 50cm² sample surface area used.

-Positive = Presence of Cr(VI), the detected Cr(VI) concentration in the boiling water extraction solution is equal to or greater than 0.02 mg/kg with 50cm² sample surface area used.

-#=According to the directive (2011/65/ EU), Lead is exempted as copper alloy containing up to 4% lead by weight.

Remark:

- The screening results are only used for reference.

- When conducting the test for PBBs & PBDEs, XRF was introduced to screen Br Exclusively;

- When conducting the test for Hexavalent Chromium, XRF was introduced to screen Chromium exclusively.

中鉴检测
CCTI TESTING

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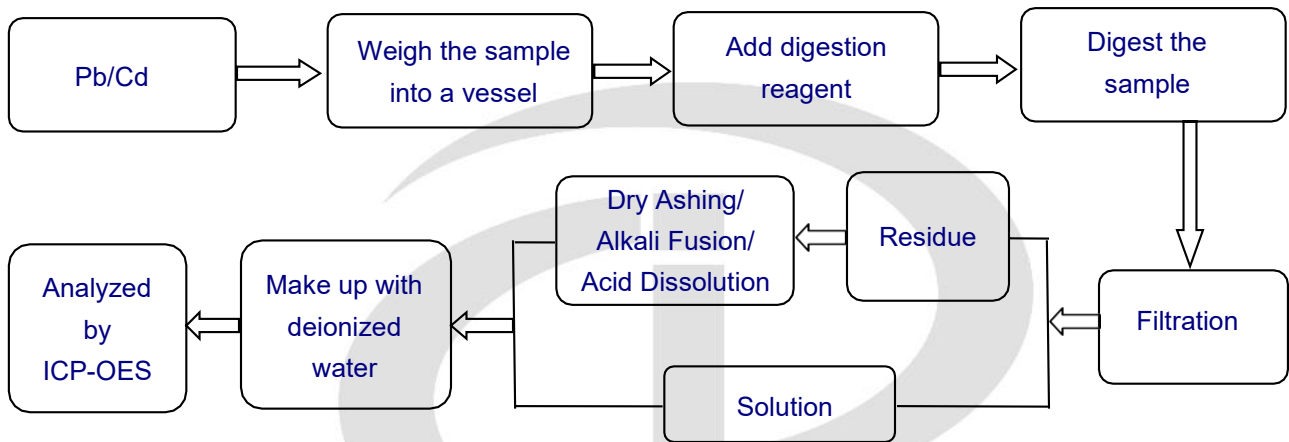
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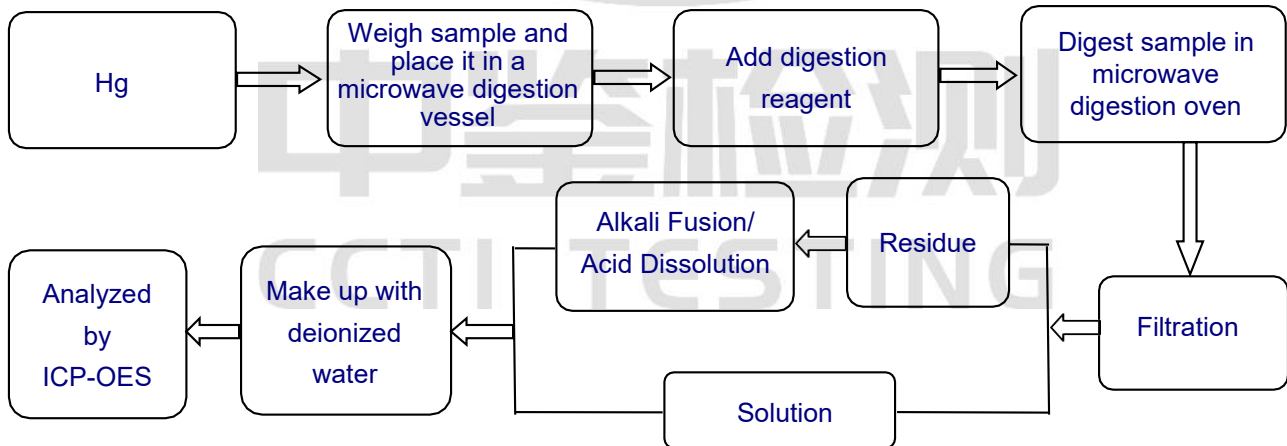
Test Process:

The sample(s) had been dissolved totally tested for Lead, Cadmium, Mercury.

◆ IEC 62321-5:2013 Ed.1.0



◆ IEC 62321-4:2013+AMD1:2017 Ed.1.0



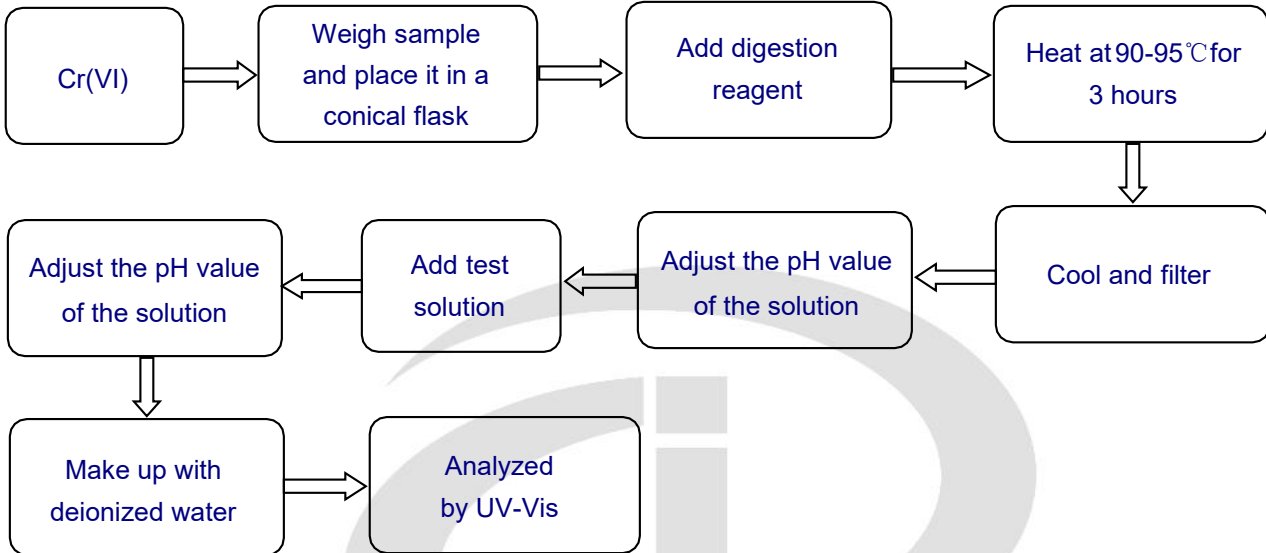
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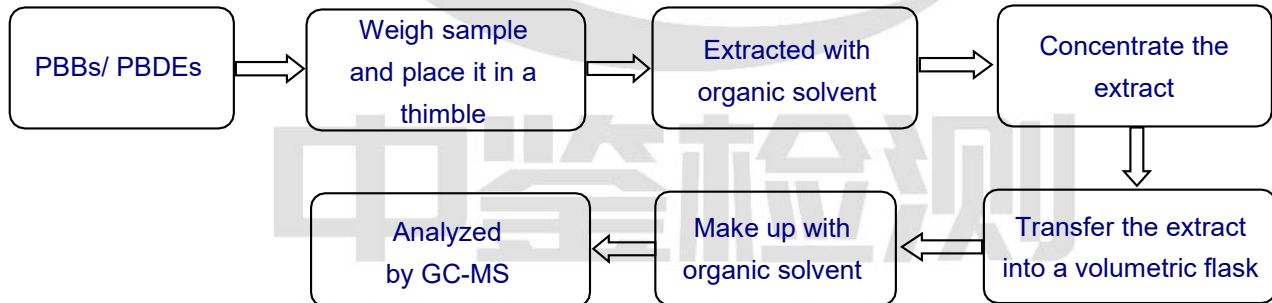
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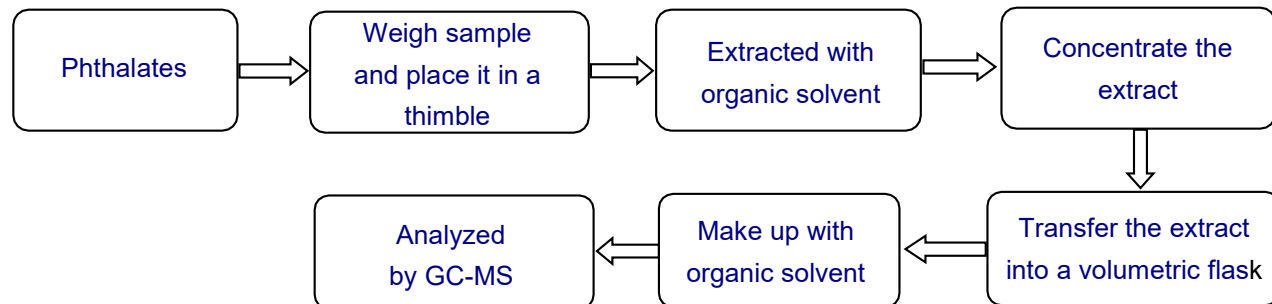
◆ IEC 62321-7-2:2017 Ed.1.0



◆ IEC 62321-6:2015 Ed.1.0



◆ IEC 62321-8:2017 Ed.1.0



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Photograph of Sample

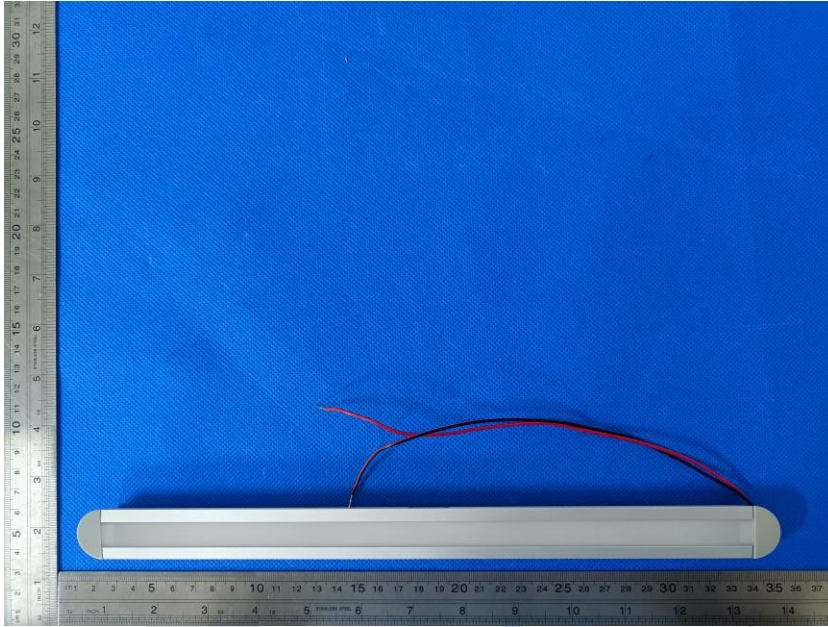


Figure 1



Figure 2

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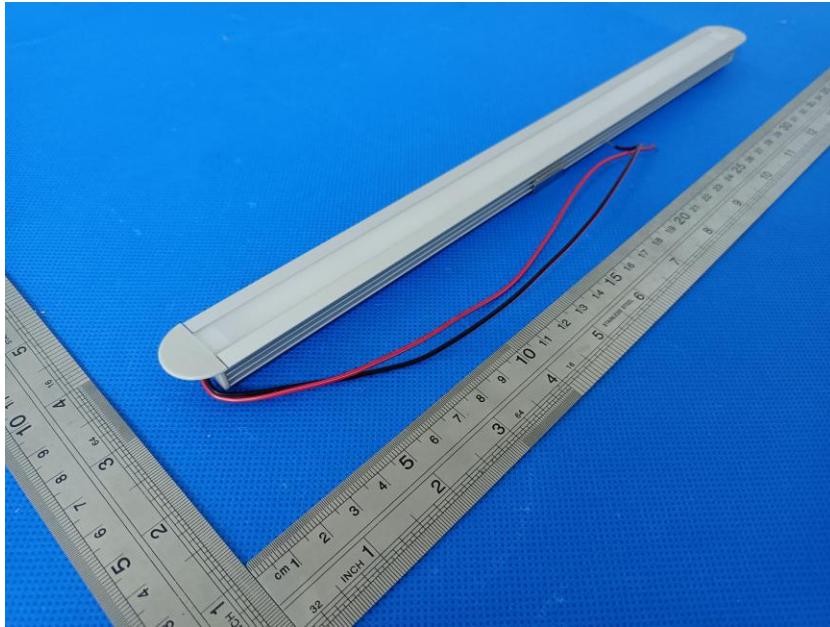


Figure 3

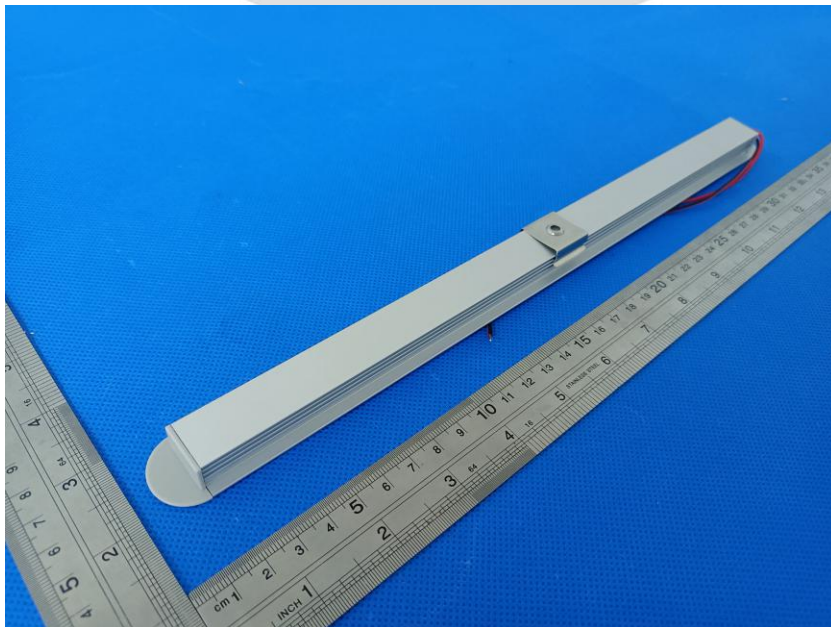


Figure 4

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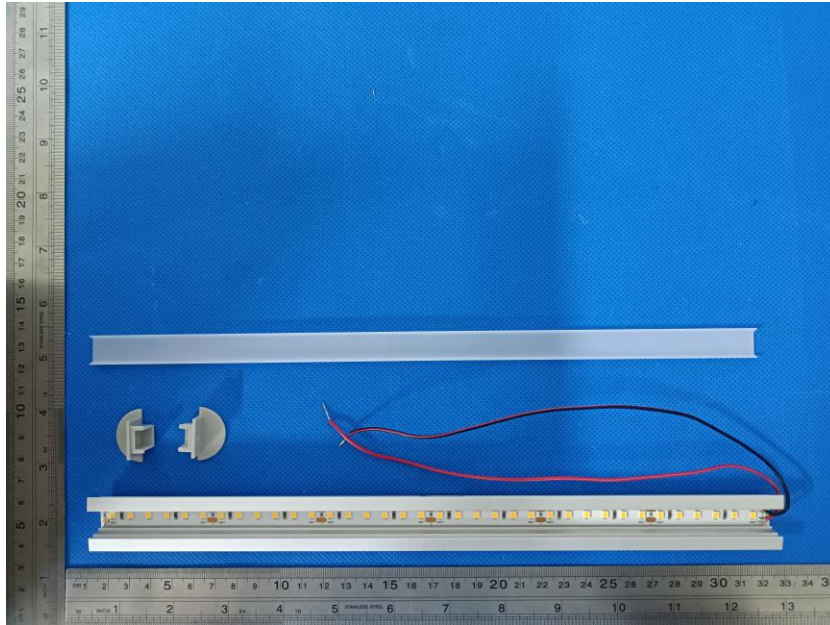


Figure 5

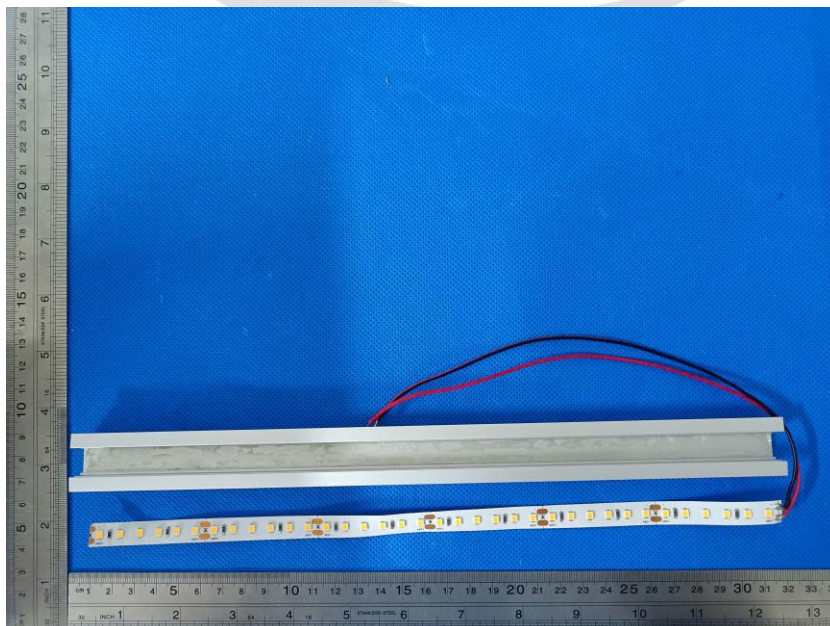


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Figure 7



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APPENDIX I -- EUT SERIES MODEL LIST

SERIES MODEL LIST			
DXAP01NKIT	DXAP02NKIT	ILUPA109NKIT	PA1616NKIT
ILUPA1806NFLEKIT	ILUPA1722NUGRKIT	ILUPA1722NUGRCKI	ILUPA3551NUGRKIT
ILUPA3551NUGRCKIT	ILUPA5175NKIT	PA1612NKIT	ILUPA191BKIT
DXAP01KIT	ILUPA1722	DXAP06KIT	PA1612KIT
ILUPA1806FLEKIT	PA2213KIT	ILUPA109KIT	PA2411KIT
ILUPA109KIT	PA2411KIT	ILUPA1005KIT	ILUPA07KIT
ILUPA1009KIT	ILUPA07AKIT	ILUPA525KIT	ILUPA1205KIT
ILUPA2310KIT	ILUPA646KIT	ILUPA647KIT	ILUPA191WKIT
ILUPA1401KIT	ILUPA1402KIT	ILUPAV04	PA3006KIT
PA1616KIT	PA1616BKIT	ILUPA1722UGRKIT	ILUPA1722UGRCKIT
ILUPA3551UGRKIT	ILUPA3551UGRCKIT	ILUDXA1812KIT	ILUDXA2512KIT
ILUPA2216KIT	ILUPA3030KIT	ILUPA2403COKIT	ILUPA2405COKIT
ILUPA3830KIT	ILUPA5032KIT	ILUPA3535KIT	ILUPA30KIT
ILUPA60KIT	PA1911PKIT	ILUPA1855NKIT	ILUPA2408NKIT
ILUPA1207NKIT	ILUPA1207KIT	ILUPA2210NKIT	ILUPA2210KIT
ILPA2018NKIT	ILUPA2018KIT		

***** End of Report *****

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