

Visual Comfort and Company

TEST REPORT

SCOPE OF WORK

LM-79 testing report

REPORT NUMBER

230217065GZU-002

ISSUE DATE

27-February-2023

REVISION DATE

None

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Report No.: 230217065GZU-002

TEST REPORT

TEST OF ONE LED LUMINAIRE

MODEL NO. SLTS14630X

(Remark: "X" denote other appearance colors for the characters that change)

RENDERED TO

Visual Comfort and Company

Contact Name: Tess Gallagher

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<u>TEST:</u>	Electrical and Photometric as required to the IES LM-79 test standard.
<u>STATEMENT OF LIMITATION:</u>	The report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the U.S. Government.
<u>AUTHORIZATION:</u>	The testing performed was authorized by signed quote number: QGZ230216031.
<u>STANDARDS USED:</u>	The following American National Standards or Illuminating Engineering Society of North America Test Guides were used in part or totally to test each specimen:
IES LM-79: 2008	Approved Method for the Electrical and Photometric Measurements of Solid-State Lighting Products
ANSI C78.377:2017	Specifications of the Chromaticity of Solid State Lighting Products
<u>DESCRIPTION OF SAMPLE:</u>	The client submitted one sample of model SLTS14630X. The sample was received, in undamaged condition. The sample designation was S230217065-002.
<u>DATES OF TESTS:</u>	22 February 2023
<u>ISSUED BY:</u>	Intertek Testing Services Shenzhen Ltd. Guangzhou Branch
<u>TEST LOCATION:</u>	Room 02, & 101/E201/E301/E401/E501/E601/E701/E801 of Room 01 1-8/F., No. 7-2. Caipin Road, Science City, GETDD, Guangzhou, Guangdong, China

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TEST REPORT

SUMMARY

Model Number:	SLTS14630X
Description:	LED Luminaries
Brand Name:	--

Test Condition: 120V, 60Hz For SLTS14630X

Criteria	Result
Total Lumen Output	370.1 lm
Total Power	8.4 W
Luminaire Efficacy	44.0 lm/W
S/MH(C0/180)	0.61
S/MH(C90/270)	0.60
Correlated Color Temperature (CCT)	2946 K
Color Rendering Index (CRI)	93
R9	79
Chromaticity Coordinate (x)	0.4404
Chromaticity Coordinate (y)	0.4045
Chromaticity Coordinate (u')	0.2526
Chromaticity Coordinate (v')	0.5221

Remark:

Measurement uncertainty for applicable tests has been established.

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TEST REPORT

EQUIPMENT LIST

Equipment Used	Model Number	Control Number
Goniophotometer System	Go-R5000	SA063-16
KONICA MINOLTA - Illuminance meter	CX-2B_WL	SA063-16-01
Standard Lamp	D215S	SA063-16-06
Digital Power Meter	PLM3000	SA063-16-09
AC power source for Goniophotometer	PCR-1000WH	SA063-16-10
Temperature Meter	RC-HT601A	SA047-62

GENERAL REMARK

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When determining for test conclusion, measurement uncertainty of tests has been considered.

Throughout this report a ☐ comma ☒ point is used as the decimal separator.

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TEST REPORT

TEST METHOD

Seasoning in Sample Orientation – LED Products

No seasoning was performed in accordance with IES LM-79

Light Distribution and Output Measurements

Light Distribution and total light output (luminous flux) were measured using a Go-R5000 Type-C Rotating Mirror Goniophotometer. Temperature 25°C and relative humidity of 60% was measured at a position in the testing laboratory.

The lamp rotates only around the fixed vertical axle in the prescribed burning position. The lamp and mirror permit the measurement of luminous intensity at the direction of any horizontal or vertical angle without tilting the lamp. The lamp was allowed to stabilize before measurements were made.

Chromaticity Measurements

Chromaticity was measured using a 2 meters integrating sphere spectral lamp measurement system, 4 π geometry, with an interior coating reflectance no less than 95 %. Temperature was measured at a position inside the sphere shielded from direct light. Relative humidity of 65% was measured at a position in the testing laboratory.

Spectral radiant flux measurements were made using spectroradiometer attached to the detector port of the integrating sphere. Each lamp was allowed to stabilise before measurements were made. The calibration of the integrating sphere spectroradiometer system is by the reference/standard lamps which are traceable to National Institute of Metrology P.R. CHINA. Lamp efficacy (lumens per watt) for each lamp model was then computed based on the luminous flux result. Electrical measurements including voltage, power and power factor were measured using EVERFINE - Digital Power Meter., model PLM3000.

Correction factor (self-absorption) has been considered when doing measurement.

Standard lamp used for Goniophotometer method:

Model: D215S

Current: 4.809A DC

Standard lamp used for integrating sphere:

Model: 110V/100W

Current: 0.8851A

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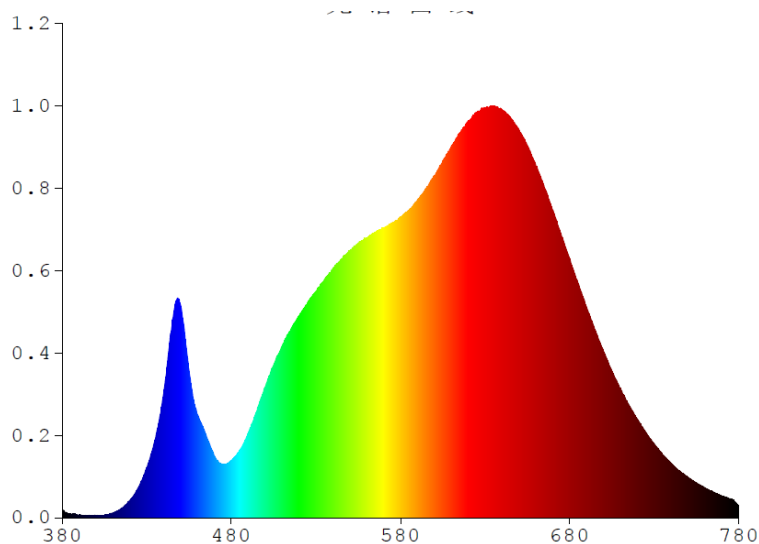
TEST REPORT

RESULTS OF TESTS

Test Condition: 120V, 60Hz For SLTS14630X

Spectral Distribution over Visible Wavelengths

nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm
380	0.0779	480	0.6336	580	3.3245	680	2.8541	780	0.1292
385	0.0415	485	0.7432	585	3.4025	685	2.5788		
390	0.0300	490	0.9369	590	3.5066	690	2.3165		
395	0.0238	495	1.1776	595	3.6377	695	2.0655		
400	0.0251	500	1.4432	600	3.7735	700	1.8302		
405	0.0301	505	1.6849	605	3.9387	705	1.6107		
410	0.0526	510	1.8976	610	4.1041	710	1.4194		
415	0.1018	515	2.0719	615	4.2514	715	1.2417		
420	0.1897	520	2.2285	620	4.3812	720	1.0850		
425	0.3328	525	2.3715	625	4.4717	725	0.9377		
430	0.5523	530	2.5007	630	4.5219	730	0.8104		
435	0.8649	535	2.6269	635	4.5469	735	0.6968		
440	1.3856	540	2.7505	640	4.4979	740	0.5966		
445	2.1530	545	2.8537	645	4.4149	745	0.5122		
450	2.3409	550	2.9477	650	4.2813	750	0.4418		
455	1.6006	555	3.0361	655	4.1042	755	0.3816		
460	1.1332	560	3.0899	660	3.8819	760	0.3279		
465	0.9129	565	3.1467	665	3.6443	765	0.2823		
470	0.6776	570	3.2063	670	3.3925	770	0.2405		
475	0.5908	575	3.2551	675	3.0663	775	0.2072		



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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For SLTS14630X

Total operation burning time: 60 minutes

Stabilization time: 45 minutes

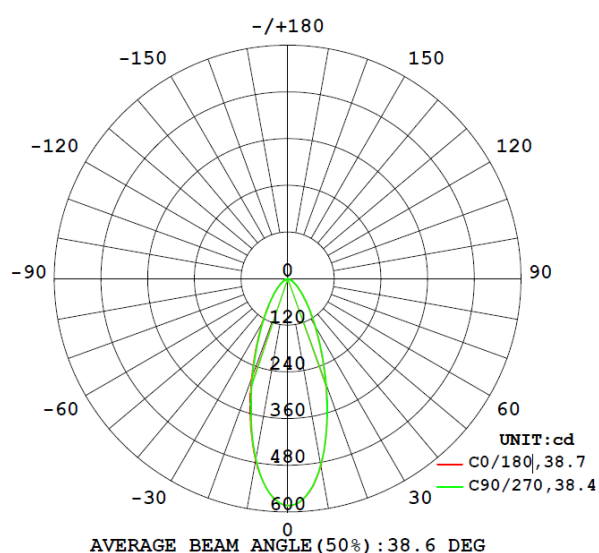
Photometric Measurements at 25°C – Integrating Sphere Method

Intertek Sample No.	Base Orientation	Correlated Color Temperatur e (K)	CRI	R9	CIE 31'	CIE 31'	CIE 76'	CIE 76'
					Chromaticit	Chromaticit	Chromaticit	Chromaticit
					y	y	y	y
					Coordinate	Coordinate	Coordinate	Coordinate
					(x)	(y)	(u')	(v')
SLTS14630X								
S2302170 65-002	--	2946	93	79	0.4404	0.4045	0.2526	0.5221

Photometric and Electrical Measurements at 25°C – Distribution Method

Intertek Sample No.	Base Orientation	Input Voltage (Vac)	Input Current (mA)	Input Power (Watts)	Input Power Factor	Absolute	Lumen
						Luminous Flux (Lumens)	Efficacy (Lumens Per Watt)
SLTS14630X							
S2302170 65-002	--	120.2	70.6	8.4	0.991	370.1	44.0

Intensity (Candlepower) Summary at 25°C – Candelas



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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For SLTS14630X

Intensity (Candlepower) Summary at 25°C - Candelas

V \ H(°)	0	22.5	45	67.5	90
0	583.3	583.3	583.3	583.3	583.3
5	559.8	556.2	563.2	560.5	558.6
10	488.7	482.3	494.4	489.9	486.9
15	389.1	382.5	397.6	392.8	389.2
20	287.0	281.6	295.9	291.8	288.9
25	202.6	199.3	210.4	207.5	205.3
30	140.9	138.9	147.1	145.5	143.5
35	97.7	96.4	102.5	100.9	99.0
40	67.9	67.2	71.0	69.9	68.6
45	48.0	47.5	49.9	49.1	48.3
50	33.7	33.3	35.0	34.4	33.9
55	23.0	22.7	24.0	23.6	23.3
60	14.8	14.8	16.2	15.7	15.6
65	8.1	8.2	9.4	9.3	9.0
70	3.4	3.5	4.2	4.2	4.0
75	1.1	1.1	1.2	1.2	1.2
80	0.2	0.2	0.3	0.3	0.3
85	0.1	0.1	0.1	0.1	0.1
90	0.0	0.0	0.0	0.0	0.0
95	0.0	0.0	0.0	0.0	0.0
100	0.0	0.0	0.0	0.0	0.0
105	0.0	0.0	0.0	0.0	0.0
110	0.0	0.0	0.0	0.0	0.0
115	0.0	0.0	0.0	0.0	0.0
120	0.0	0.0	0.0	0.0	0.0
125	0.1	0.1	0.1	0.1	0.1
130	0.1	0.1	0.1	0.1	0.1
135	0.2	0.2	0.2	0.2	0.2
140	0.2	0.2	0.2	0.2	0.2
145	0.3	0.3	0.3	0.3	0.3
150	0.4	0.4	0.4	0.4	0.4
155	0.4	0.5	0.5	0.5	0.5
160	0.5	0.5	0.5	0.5	0.5
165	0.5	0.5	0.5	0.5	0.5
170	0.4	0.4	0.5	0.5	0.4
175	0.4	0.4	0.4	0.4	0.4
180	0.3	0.3	0.3	0.3	0.3

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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For SLTS14630X

Zonal Lumen Summary and Percentages at 25°C

Zone	Lumens (lm)	% Luminaire (%)
SLTS14630X		
0-30	245.6	66.4
0-40	305.2	82.5
0-60	360.6	97.5
0-90	369.5	99.8
60-90	8.9	2.3
0-180	370.1	100.0

Beam Angle

Total Beam Angle (°)

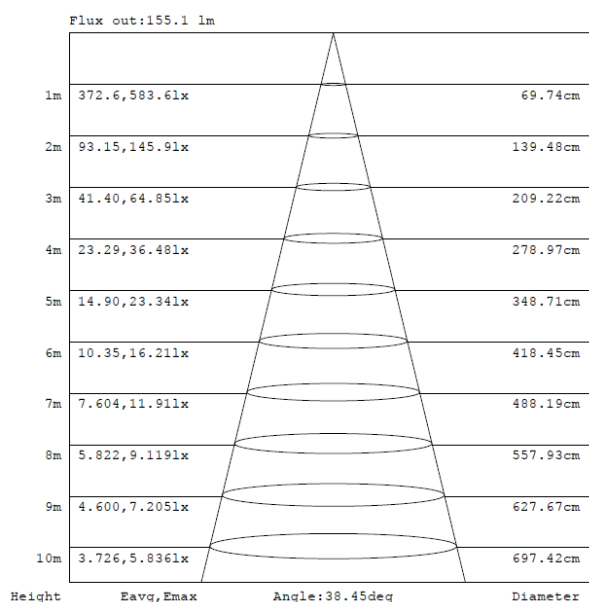
38.6

Illumination Plots

Model No.: SLTS14630X

Mount Height: 2.5 m

Illuminance - Cone of Light



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TEST REPORT

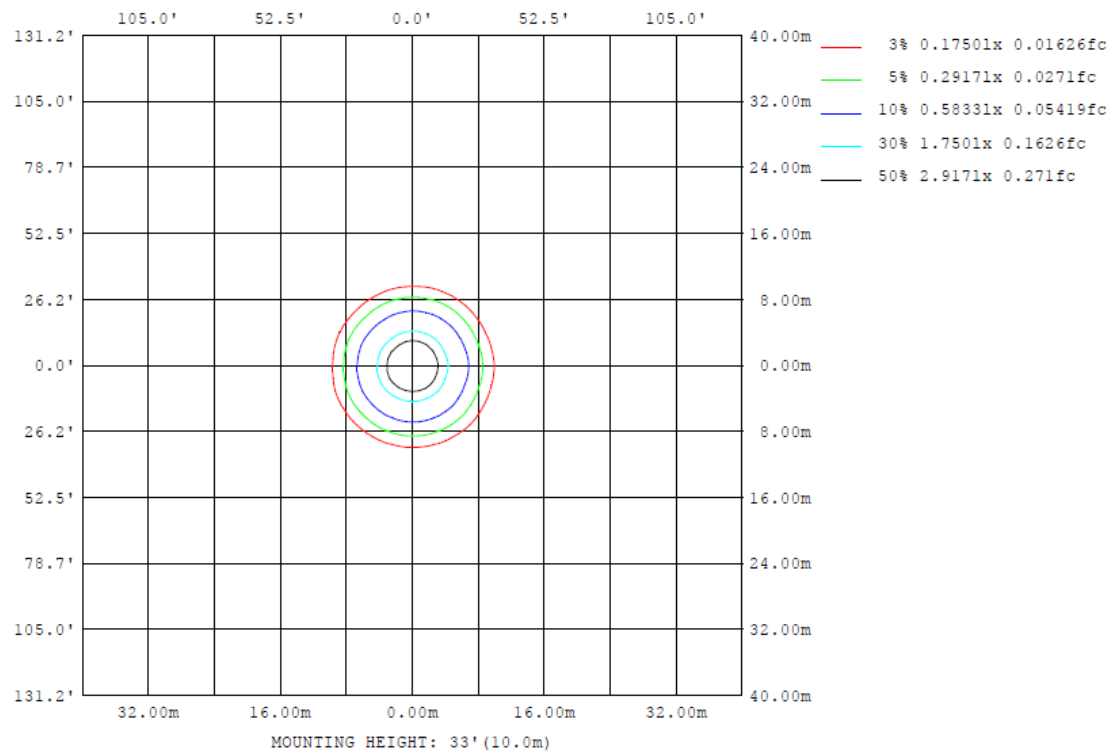
RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For SLTS14630X

Model No.: SLTS14630X

Mount Height: 2.5 m

Isoillumination Plot



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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For SLTS14630X

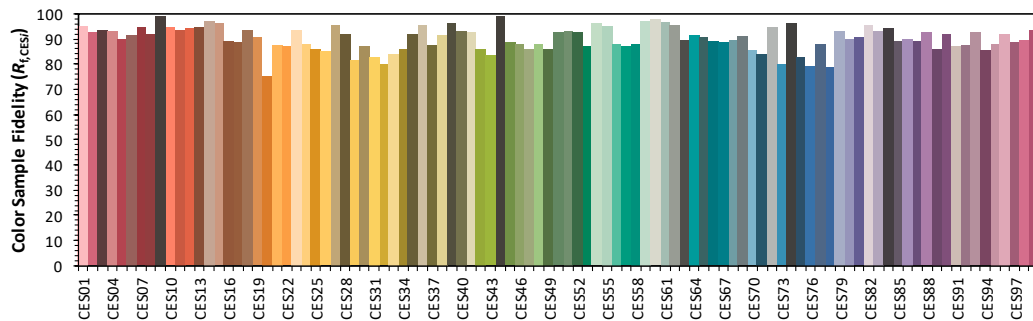
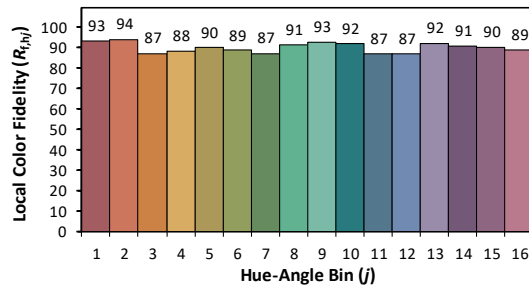
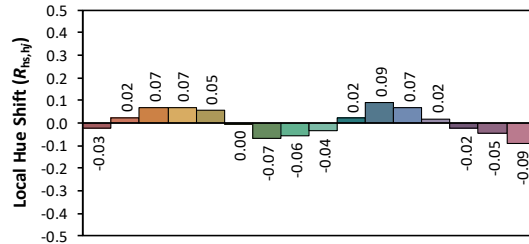
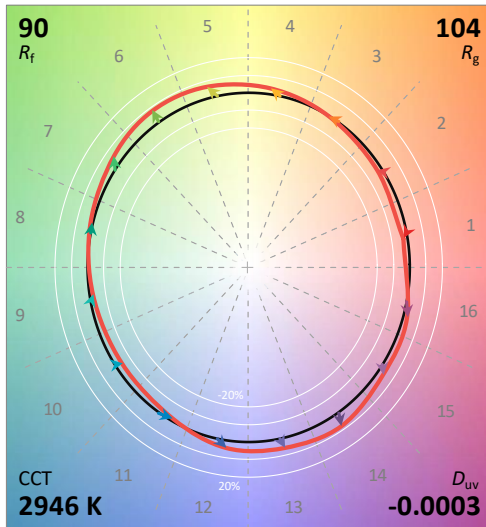
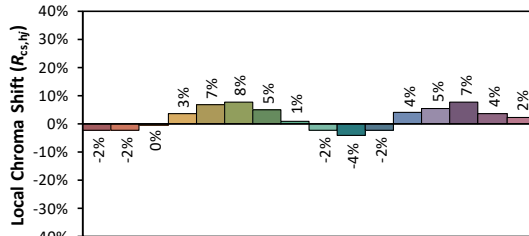
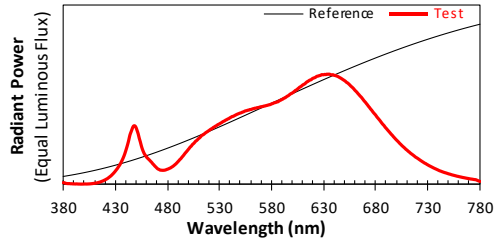
ANSI/IES TM-30-18 Color Rendition Report

Source: User SPD

Manufacturer: Visual Comfort and Company

Date: 2023/2/22

Model: SLTS14630X



Notes: This is a recommended method for displaying ANSI/IES TM-30-18 information.

x 0.4404
 y 0.4045
 u' 0.2526
 v' 0.5221

CIE 13.3-1995
(CRI)

R_a 93

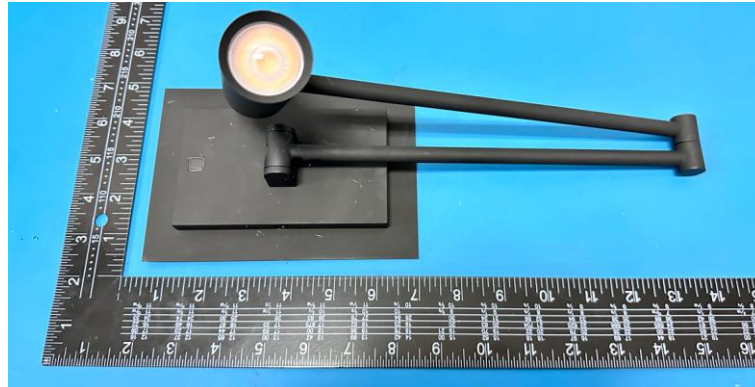
R_g 79

Colors are for visual orientation purposes only. Created with the ANSI/IES TM-30-18 Calculator Version 2.00.

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TEST REPORT

PRODUCT PICTURE (not to scale)



External view of SLTS14630X



View of LED Driver DS8W24VVMB1UD-0000

***** End of Page *****

TEST REPORT

PRODUCT PICTURE (not to scale)



View of LED

In Charge Of Tests:

Done Ye

Done Ye
Engineer

Report Reviewed By

Shelley Ying

Shelley Ying
Reviewer

Attachment: None

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