SUMMARY

Test Condition: 15V 60Hz for SL01
Setting: 1 (Max light output)

Criteria	Result
Total Lumen Output (lm)	757.281
Total Power(W)	11.333
Lamp Luminaire Efficacy (lm/W)	66.82
Power Factor	0.7659
Field Angle (°)	55.5
Correlated Color Temperature (CCT)	3015
Color Rendering Index (CRI)	98
Color Rendering Index (R_9)	89
Fidelity Index (Rf)	94
Gamut Index (Rg)	99
Chromaticity Coordinate (x)	0.4360
Chromaticity Coordinate (y)	0.4039
Chromaticity Coordinate (u')	0.2500
Chromaticity Coordinate (v')	0.5212
In-situ Case Temperature of LED/COB (°C)	75.8
Drive Current of LED/COB (mA)	253.2
Projection Life Time, Reported L70 (hours)	>48000

Test Condition: 15V 60Hz for SL01
Setting: 2 (Medium light output)

Criteria	Result
Total Lumen Output (lm)	656.452
Total Power(W)	8.8518
Lamp Luminaire Efficacy (lm/W)	74.16
Power Factor	0.7393
Correlated Color Temperature (CCT)	3018
Color Rendering Index (CRI)	98
Color Rendering Index (R_9)	90
Fidelity Index (Rf)	94
Gamut Index (Rg)	99
Chromaticity Coordinate (x)	0.4365
Chromaticity Coordinate (y)	0.4053
Chromaticity Coordinate (u')	0.2498
Chromaticity Coordinate (v')	0.5218

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

SUMMARY (Cont'd)

Test Condition: 15V 60Hz for SL01
Setting: 3 (Medium light output)

Criteria	Result
Total Lumen Output (lm)	543.156
Total Power(W)	7.0146
Lamp Luminaire Efficacy (lm/W)	77.43
Power Factor	0.7213
Correlated Color Temperature (CCT)	3019
Color Rendering Index (CRI)	98
Color Rendering Index (R_9)	91
Fidelity Index (Rf)	94
Gamut Index (Rg)	99
Chromaticity Coordinate (x)	0.4366
Chromaticity Coordinate (y)	0.4057
Chromaticity Coordinate (u')	0.2496
Chromaticity Coordinate (v')	0.5220

Test Condition: 15V 60Hz for SL01
Setting: 4 (Medium light output)

Criteria	Result
Total Lumen Output (lm)	454.918
Total Power(W)	5.6299
Lamp Luminaire Efficacy (lm/W)	80.80
Power Factor	0.7122
Correlated Color Temperature (CCT)	3011
Color Rendering Index (CRI)	98
Color Rendering Index (R_9)	92
Fidelity Index (Rf)	93
Gamut Index (Rg)	99
Chromaticity Coordinate (x)	0.4371
Chromaticity Coordinate (y)	0.4058
Chromaticity Coordinate (u')	0.2499
Chromaticity Coordinate (v')	0.5221

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

SUMMARY (Cont'd)

Test Condition: 15V 60Hz for SL01
Setting: 5 (Medium light output)

Criteria	Result
Total Lumen Output (lm)	350.162
Total Power(W)	4.1733
Lamp Luminaire Efficacy (lm/W)	83.91
Power Factor	0.7119
Correlated Color Temperature (CCT)	3008
Color Rendering Index (CRI)	98
Color Rendering Index (R_9)	93
Fidelity Index (Rf)	93
Gamut Index (Rg)	99
Chromaticity Coordinate (x)	0.4377
Chromaticity Coordinate (y)	0.4066
Chromaticity Coordinate (u')	0.2500
Chromaticity Coordinate (v')	0.5225

Test Condition: 15V 60Hz for SL01
Setting: 6 (Minimum light output)

Criteria	Result
Total Lumen Output (lm)	245.682
Total Power(W)	2.8719
Lamp Luminaire Efficacy (lm/W)	85.55
Power Factor	0.7086
Correlated Color Temperature (CCT)	3004
Color Rendering Index (CRI)	98
Color Rendering Index (R_9)	94
Fidelity Index (Rf)	93
Gamut Index (Rg)	99
Chromaticity Coordinate (x)	0.4378
Chromaticity Coordinate (y)	0.4065
Chromaticity Coordinate (u')	0.2501
Chromaticity Coordinate (v')	0.5225

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

EQUIPMENT LIST

Equipment Used	Model Number	Control Number
Fluke Temperature Meter	52	EC2357
Everfine- DC Power Supply	WY12010	EC4753-7
Everfine- AC power source for Integrating Sphere System	VPS1010 PWM	EC4760-12
Everfine - AC power source for Goniophotometer System	VPS1060 PWM	EC4753-8
Two meter integrating sphere unit	Everfine – 2M	EC4760
Everfine - Digital Power Meter	PF2010A	EC4760-10
YOKOGAWA - Digital Power Meter	WT210	EC4553
Everfine – Goniophotometer	Go-R5000	EC4753
Draught-proof enclosure	N/A	EC2201
Agilent - Data Acquisition Unit	34970A	EC2043
QINGZHI - Power Meter	8770A	EC2652
YOKOGAWA - Digital Power Meter	WT-210	EC4553

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

RESULTS OF TESTS

Test Condition: 15V 60Hz for SL01
Setting: 1 (Max light output)

Total operation burning time: 70 min
Stabilization time: 60 min

Photometric Measurements at 25°C

Intertek Sample No.	Base Orientation	Correlated Color Temperature (K)	CRI	CIE 31' Chromaticity Coordinate (x)	CIE 31' Chromaticity Coordinate (y)	CIE 76' Chromaticity Coordinate (u')	CIE 76' Chromaticity Coordinate (v')
SL01							
0231201-15-001	N/A	3015	98	0.4360	0.4039	0.2500	0.5212

Photometric and Electrical Measurements at 25°C

Intertek Sample No.	Base Orientation	Input Voltage (Vac)	Input Current (A)	Lamp Input Power (Watts)	Input Power Factor	Absolute Luminous Flux (Lumens)	Lumen Efficacy (Lumens Per Watt)
SL01							
0231201-15-001	N/A	15.0	0.9916	11.333	0.7659	757.281	66.82

Zonal Lumen Summary and Percentages at 25°C

Zone	Lumens (lm)	% Luminaire (%)
SL01		
0-30	691.348	91.29
0-40	729.817	96.37
0-60	751.56	99.24
0-90	756.98	99.96
0-180	757.281	100.0

Beam Angle

	Horizontal Spread (°)	Vertical Spread (°)
SL01		
Beam (50%)	30.7	30.8
Beam Angle	30.7	

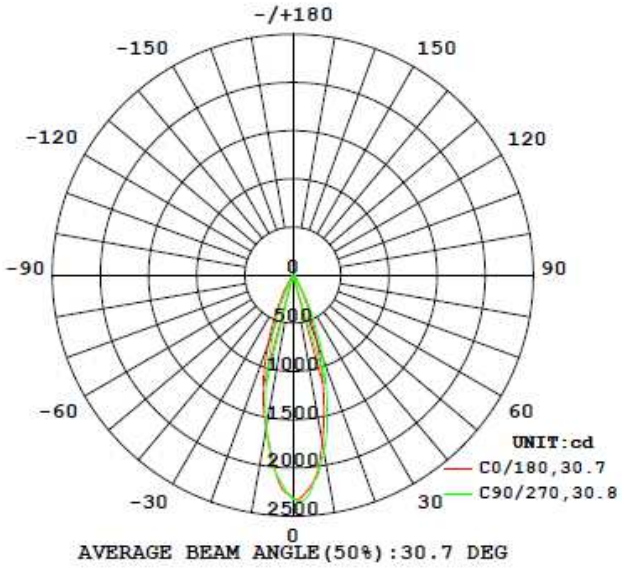
********** End of Page **********

RESULTS OF TESTS (cont'd)

Intensity (Candlepower) Summary at 25°C – Candelas

Test Condition: 15V 60Hz for SL01
Setting: 1 (Max light output)

G \ C(°)	0	22.5	45	67.5	90
0	2317.7	2317.7	2317.7	2317.7	2317.7
5	2190.9	2179.7	2157.8	2223.4	2225.0
10	1763.0	1750.1	1762.3	1882.6	1861.7
15	1221.5	1224.4	1230.5	1352.0	1375.2
20	731.8	742.9	756.1	876.6	910.9
25	384.9	394.3	401.8	480.8	509.2
30	165.5	179.5	188.0	237.5	252.6
35	48.3	62.9	75.2	99.2	106.7
40	27.4	39.0	49.7	58.5	61.1
45	12.8	23.5	34.2	43.6	45.8
50	7.9	12.7	17.5	30.8	35.5
55	5.8	8.1	11.4	17.4	20.9
60	3.5	6.2	8.3	11.2	14.0
65	1.5	3.9	5.8	8.3	10.4
70	0.7	2.0	3.8	5.6	6.8
75	0.3	1.0	2.5	4.1	5.1
80	0.1	0.5	2.1	3.1	3.9
85	0.0	0.2	0.7	2.8	3.9
90	0.0	0.0	0.3	1.6	4.0



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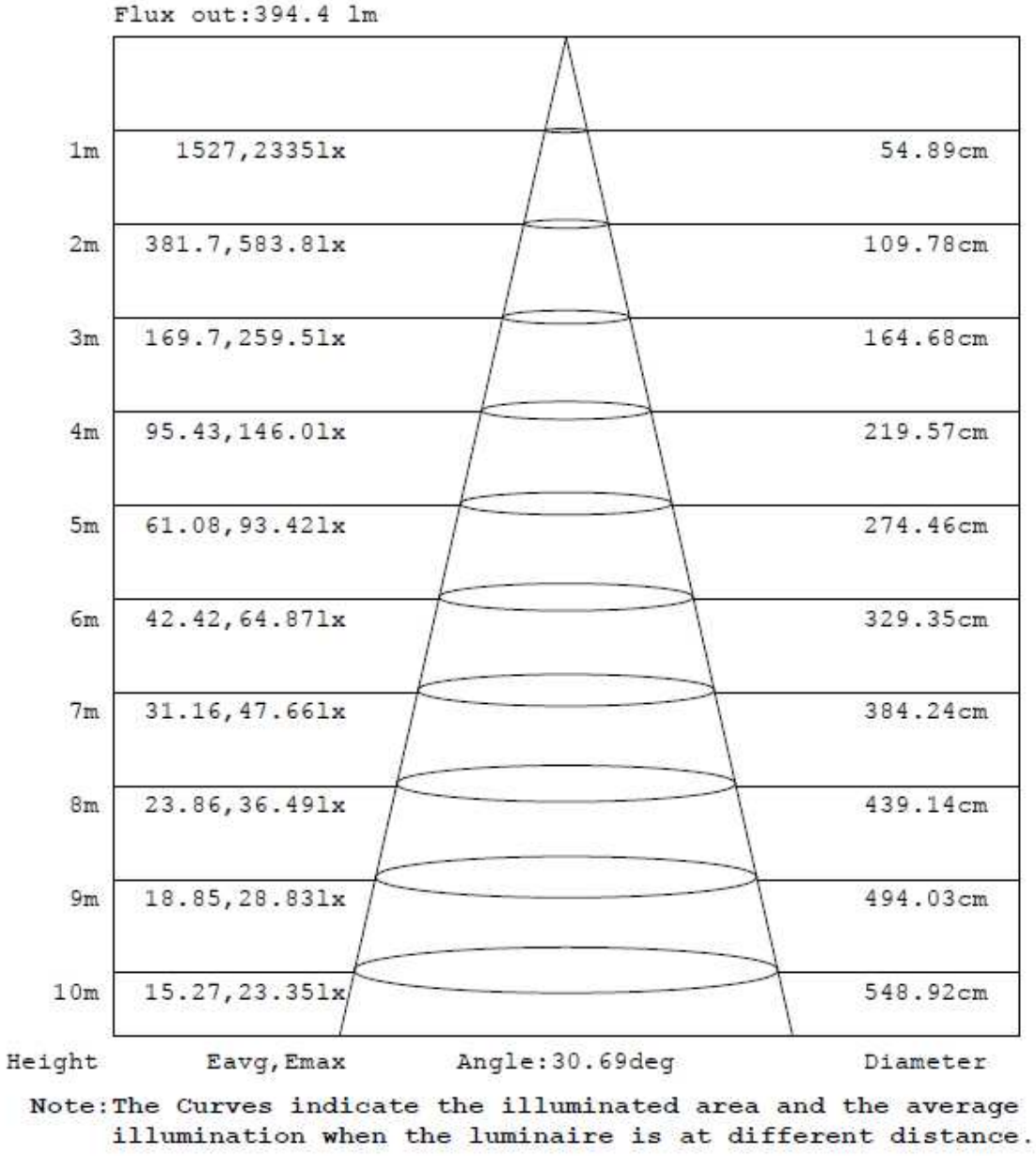
RESULTS OF TESTS (cont'd)

Test Condition: 15V 60Hz for SL01
Setting: 1 (Max light output)

Illumination Plots

Model No.: SL01
Mount Height: 10 m

Illuminance - Cone of Light



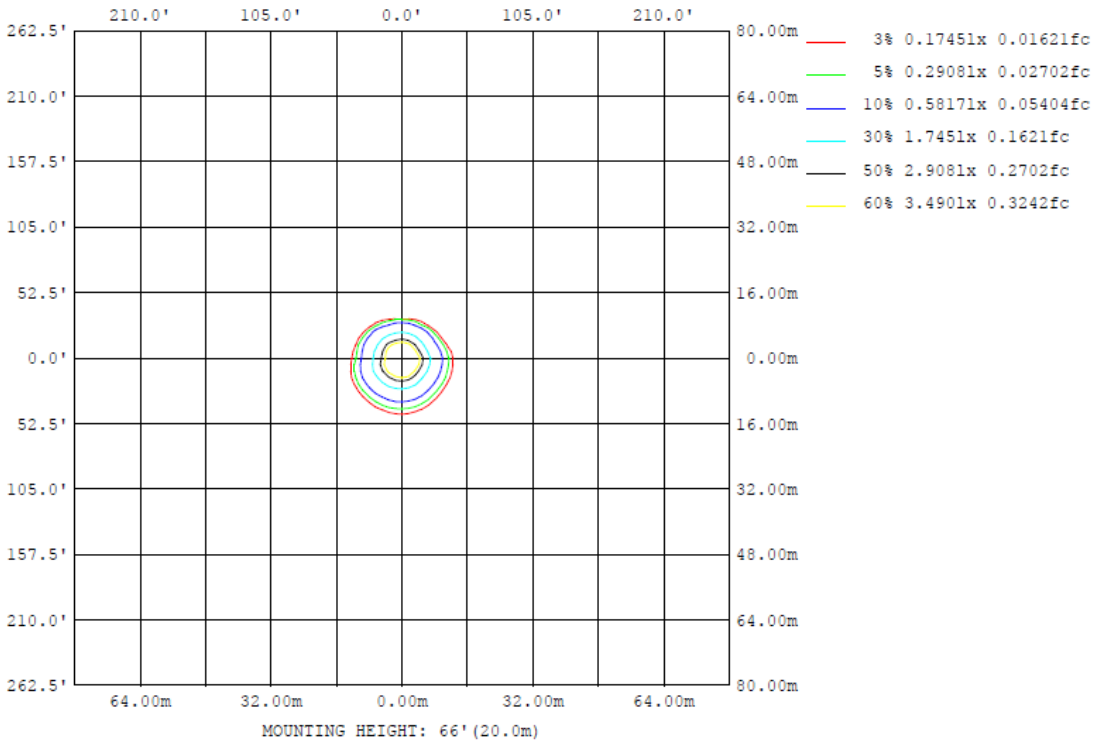
Note: The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

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

RESULTS OF TESTS (cont'd)

Test Condition: 15V 60Hz for SL01
Setting: 1 (Max light output)

Model No.: SL01
Mount Height: 20 m
Isoillumination Plot



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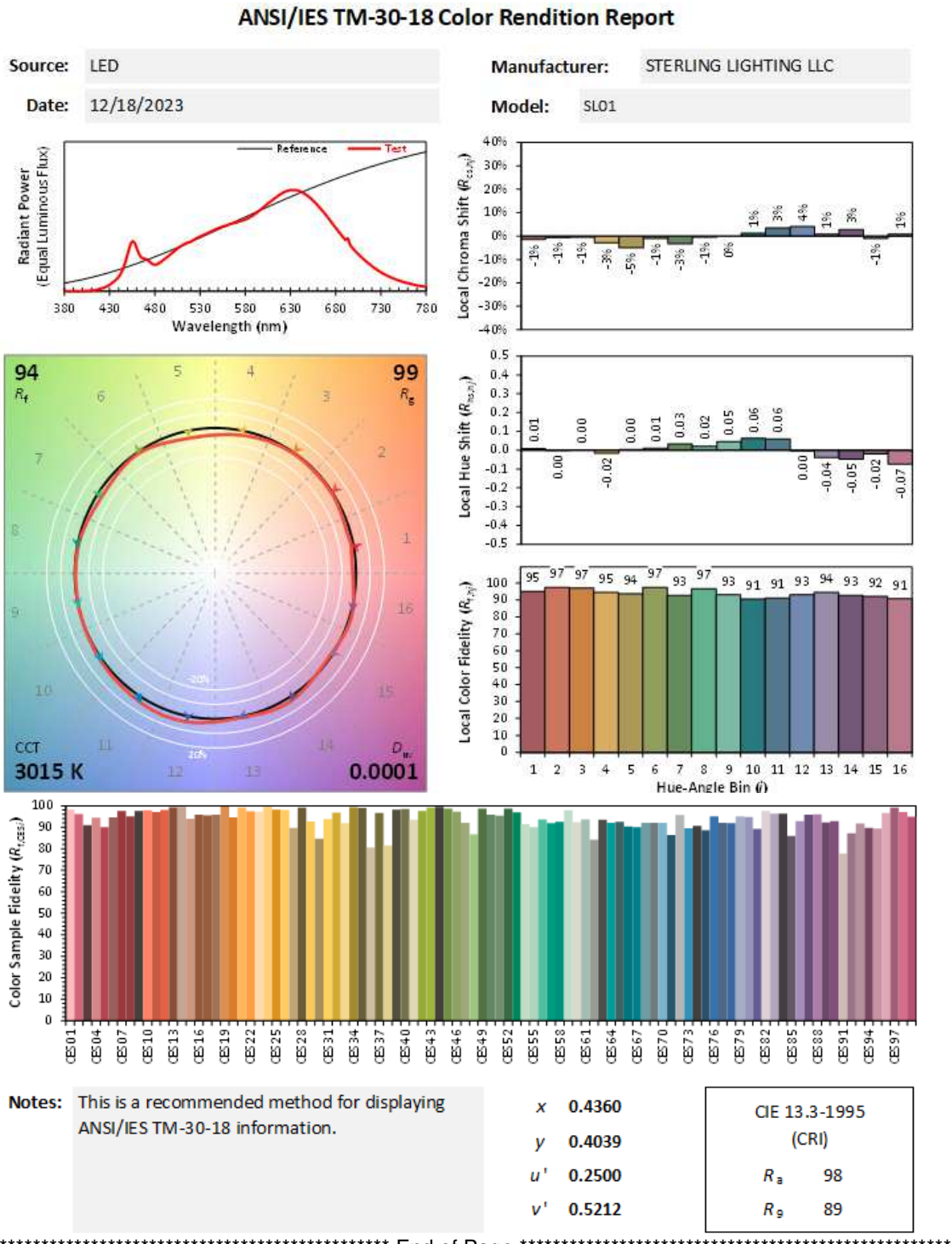
RESULTS OF TESTS (cont'd)

Test Condition: 15V 60Hz for SL01
Setting: 1 (Max light output)



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

x	0.4360
y	0.4039
u'	0.2500
v'	0.5212

CIE 13.3-1995 (CRI)

R_a	98
R_9	89

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

RESULTS OF TESTS (cont'd)

Test Condition: 15V 60Hz for SL01
Setting: 2 (Medium light output)

Total operation burning time: 70 min
Stabilization time: 60 min

Photometric Measurements at 25°C

Intertek Sample No.	Base Orientation	Correlated Color Temperature (K)	CRI	CIE 31' Chromaticity Coordinate (x)	CIE 31' Chromaticity Coordinate (y)	CIE 76' Chromaticity Coordinate (u')	CIE 76' Chromaticity Coordinate (v')
SL01							
0231201-15-001	N/A	3018	98	0.4365	0.4053	0.2498	0.5218

Photometric and Electrical Measurements at 25°C

Intertek Sample No.	Base Orientation	Input Voltage (Vac)	Input Current (A)	Lamp Input Power (Watts)	Input Power Factor	Absolute Luminous Flux (Lumens)	Lumen Efficacy (Lumens Per Watt)
SL01							
0231201-15-001	N/A	15.0	0.8036	8.8518	0.7393	656.452	74.16

Zonal Lumen Summary and Percentages at 25°C

Zone	Lumens (lm)	% Luminaire (%)
SL01		
0-30	597.096	90.96
0-40	633.591	96.52
0-60	651.937	99.31
0-90	656.285	99.97
0-180	656.452	100.0

Beam Angle

	Horizontal Spread (°)	Vertical Spread (°)
SL01		
Beam (50%)	31.3	30.8
Beam Angle	31.1	

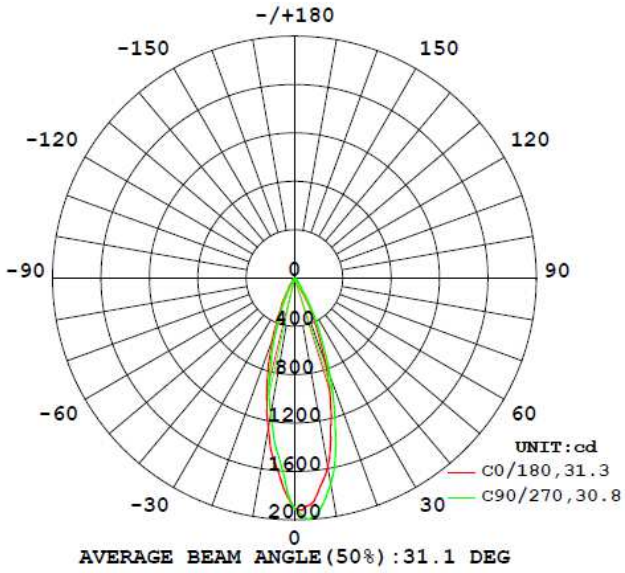
********** End of Page **********

RESULTS OF TESTS (cont'd)

Intensity (Candlepower) Summary at 25°C – Candelas

Test Condition: 15V 60Hz for SL01
Setting: 2 (Medium light output)

G \ C(°)	0	22.5	45	67.5	90
0	1901.0	1901.0	1901.0	1901.0	1901.0
5	1851.2	1919.6	1972.9	1990.5	1971.2
10	1583.8	1685.4	1760.3	1773.9	1729.6
15	1175.4	1280.0	1346.7	1355.0	1308.4
20	749.9	828.8	874.9	880.7	861.6
25	393.3	446.9	497.5	504.9	489.1
30	132.0	219.6	249.4	263.7	243.5
35	25.5	38.8	93.0	96.5	91.7
40	10.2	20.6	29.3	41.5	45.1
45	6.2	8.1	16.5	25.4	32.7
50	4.0	5.6	7.8	13.6	17.4
55	1.9	3.7	5.8	7.4	10.5
60	0.5	1.8	4.1	5.7	7.2
65	0.0	0.7	2.2	4.0	5.2
70	0.0	0.2	0.9	2.1	3.5
75	0.0	0.0	0.4	1.0	1.9
80	0.0	0.0	0.1	0.5	1.3
85	0.0	0.0	0.0	0.2	0.5
90	0.0	0.0	0.0	0.0	0.2



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

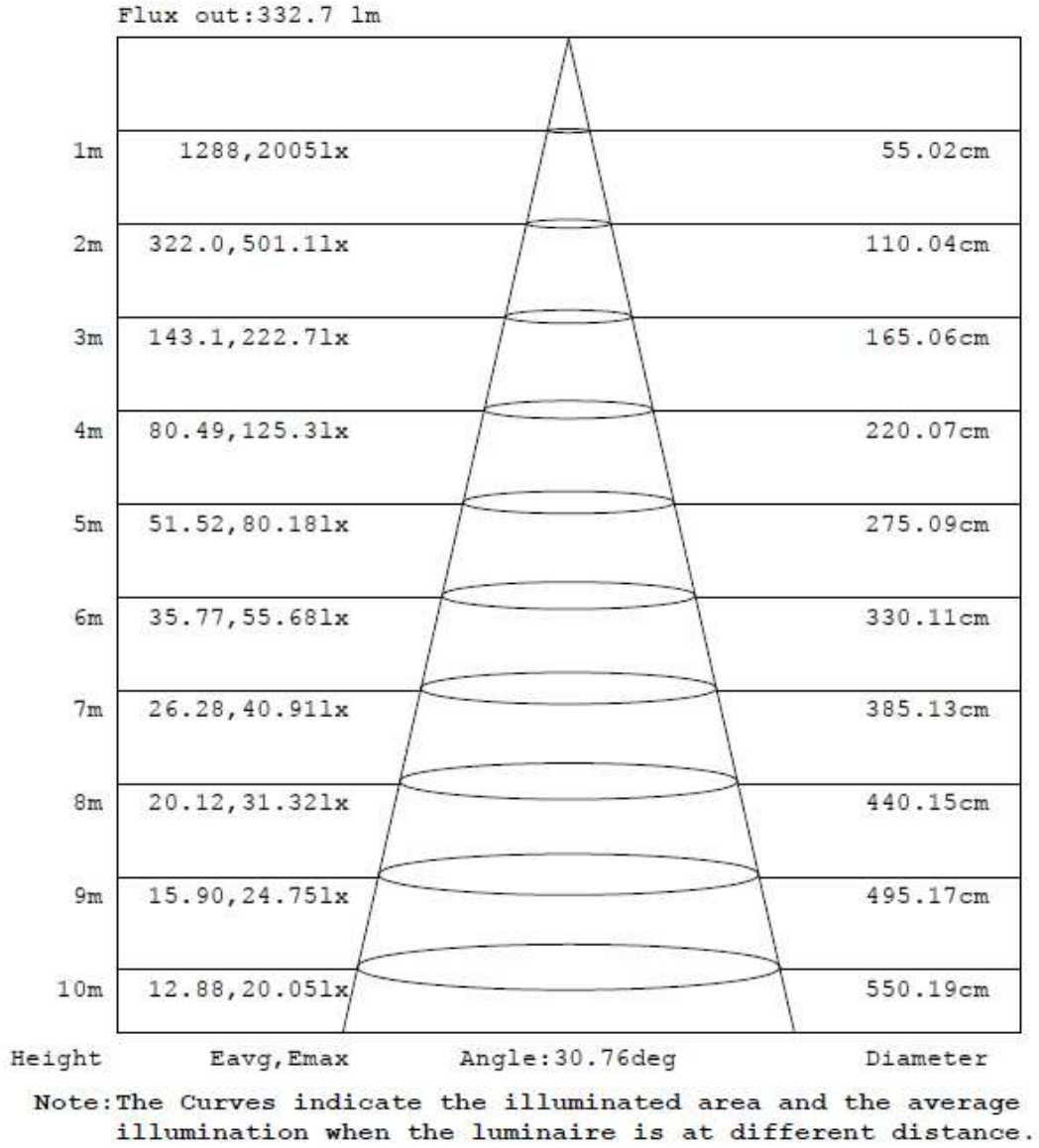
RESULTS OF TESTS (cont'd)

Test Condition: 15V 60Hz for SL01
Setting: 2 (Medium light output)

Illumination Plots

Model No.: SL01
Mount Height: 10 m

Illuminance - Cone of Light



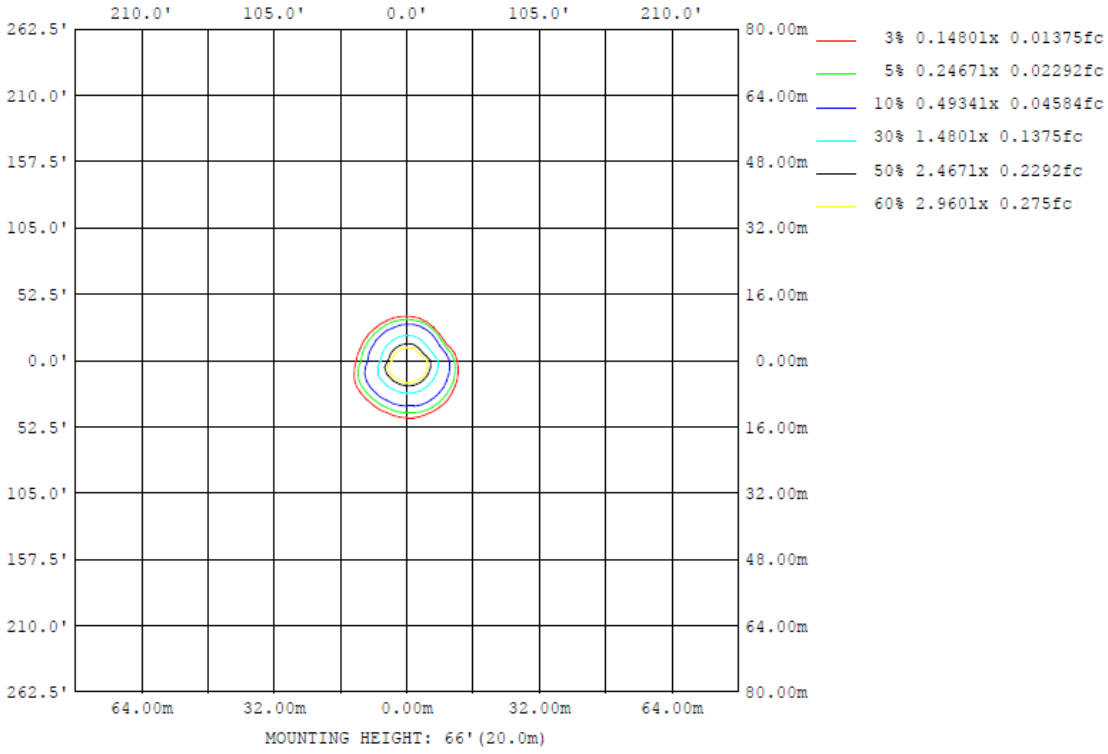
Note: The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

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

RESULTS OF TESTS (cont'd)

Test Condition: 15V 60Hz for SL01
Setting: 2 (Medium light output)

Model No.: SL01
Mount Height: 20 m
Isoillumination Plot



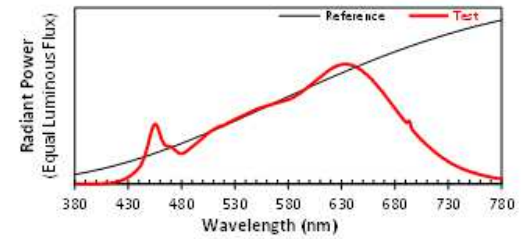
********** End of Page **********

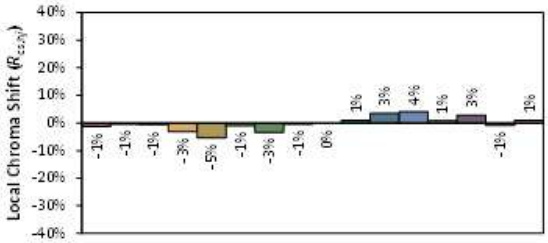
RESULTS OF TESTS (cont'd)

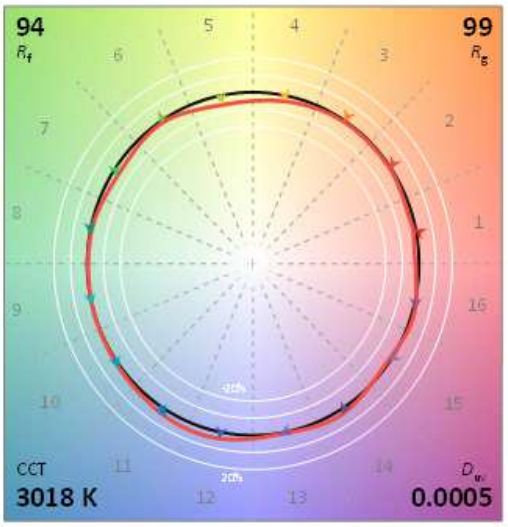
Test Condition: 15V 60Hz for SL01
Setting: 2 (Medium light output)

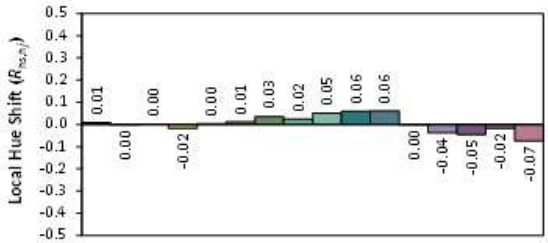
ANSI/IES TM-30-18 Color Rendition Report

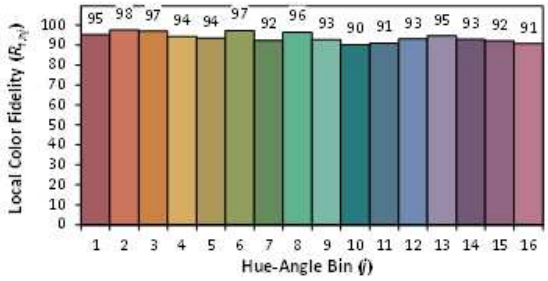
Source:	LED	**Manufacturer:**	STERLING LIGHTING LLC
Date:	12/18/2023	**Model:**	SL01

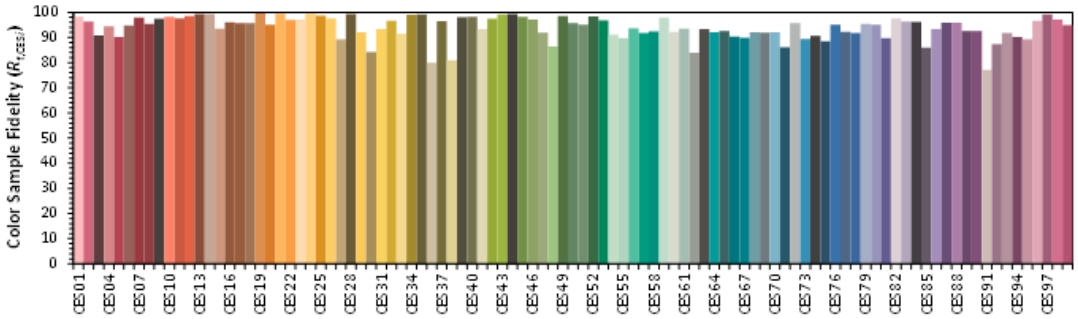












Notes: This is a recommended method for displaying ANSI/IES TM-30-18 information.

x	0.4365
y	0.4053
u'	0.2498
v'	0.5218

CIE 13.3-1995 (CRI)

R_a	98
R_9	90

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

RESULTS OF TESTS (cont'd)

Test Condition: 15V 60Hz for SL01
Setting: 3 (Medium light output)

Total operation burning time: 70 min
Stabilization time: 60 min

Photometric Measurements at 25°C

Intertek Sample No.	Base Orientation	Correlated Color Temperature (K)	CRI	CIE 31' Chromaticity Coordinate (x)	CIE 31' Chromaticity Coordinate (y)	CIE 76' Chromaticity Coordinate (u')	CIE 76' Chromaticity Coordinate (v')
SL01							
0231201-15-001	N/A	3019	98	0.4366	0.4057	0.2496	0.5220

Photometric and Electrical Measurements at 25°C

Intertek Sample No.	Base Orientation	Input Voltage (Vac)	Input Current (A)	Lamp Input Power (Watts)	Input Power Factor	Absolute Luminous Flux (Lumens)	Lumen Efficacy (Lumens Per Watt)
SL01							
0231201-15-001	N/A	15.0	0.6519	7.0146	0.7213	543.156	77.43

Zonal Lumen Summary and Percentages at 25°C

Zone	Lumens (lm)	% Luminaire (%)
SL01		
0-30	499.759	92.01
0-40	525.542	96.76
0-60	539.737	99.37
0-90	543.057	99.98
0-180	543.156	100.00

Beam Angle

	Horizontal Spread (°)	Vertical Spread (°)
SL01		
Beam (50%)	31.0	31.5
Beam Angle	31.3	

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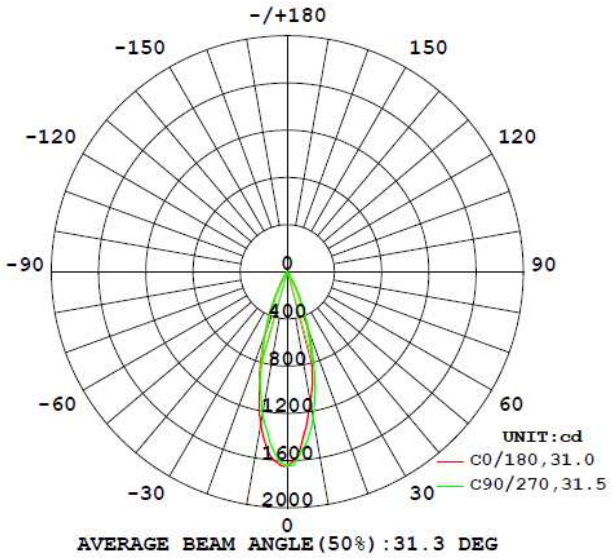
RESULTS OF TESTS (cont'd)

Intensity (Candlepower) Summary at 25°C – Candelas

Test Condition: 15V 60Hz for SL01
Setting: 3 (Medium light output)

G \ C(°)	0	22.5	45	67.5	90
0	1643.0	1643.0	1643.0	1643.0	1643.0
5	1448.8	1437.8	1428.5	1461.7	1506.1
10	1117.5	1122.5	1152.4	1199.3	1255.2
15	807.8	793.7	808.2	841.7	891.6
20	495.3	469.3	480.2	517.4	537.0
25	248.5	233.3	237.9	252.8	270.3
30	32.2	29.9	37.4	76.9	113.3
35	15.0	15.3	17.2	21.0	28.8
40	6.4	6.6	6.8	7.7	15.3
45	3.9	3.9	4.1	5.0	6.3
50	1.6	1.3	1.8	3.0	4.4
55	0.3	0.2	0.4	1.2	2.8
60	0.0	0.0	0.0	0.3	1.3
65	0.0	0.0	0.0	0.0	0.4
70	0.0	0.0	0.0	0.0	0.1
75	0.0	0.0	0.0	0.0	0.0
80	0.0	0.0	0.0	0.0	0.0
85	0.0	0.0	0.0	0.0	0.0
90	0.0	0.0	0.0	0.0	0.0



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

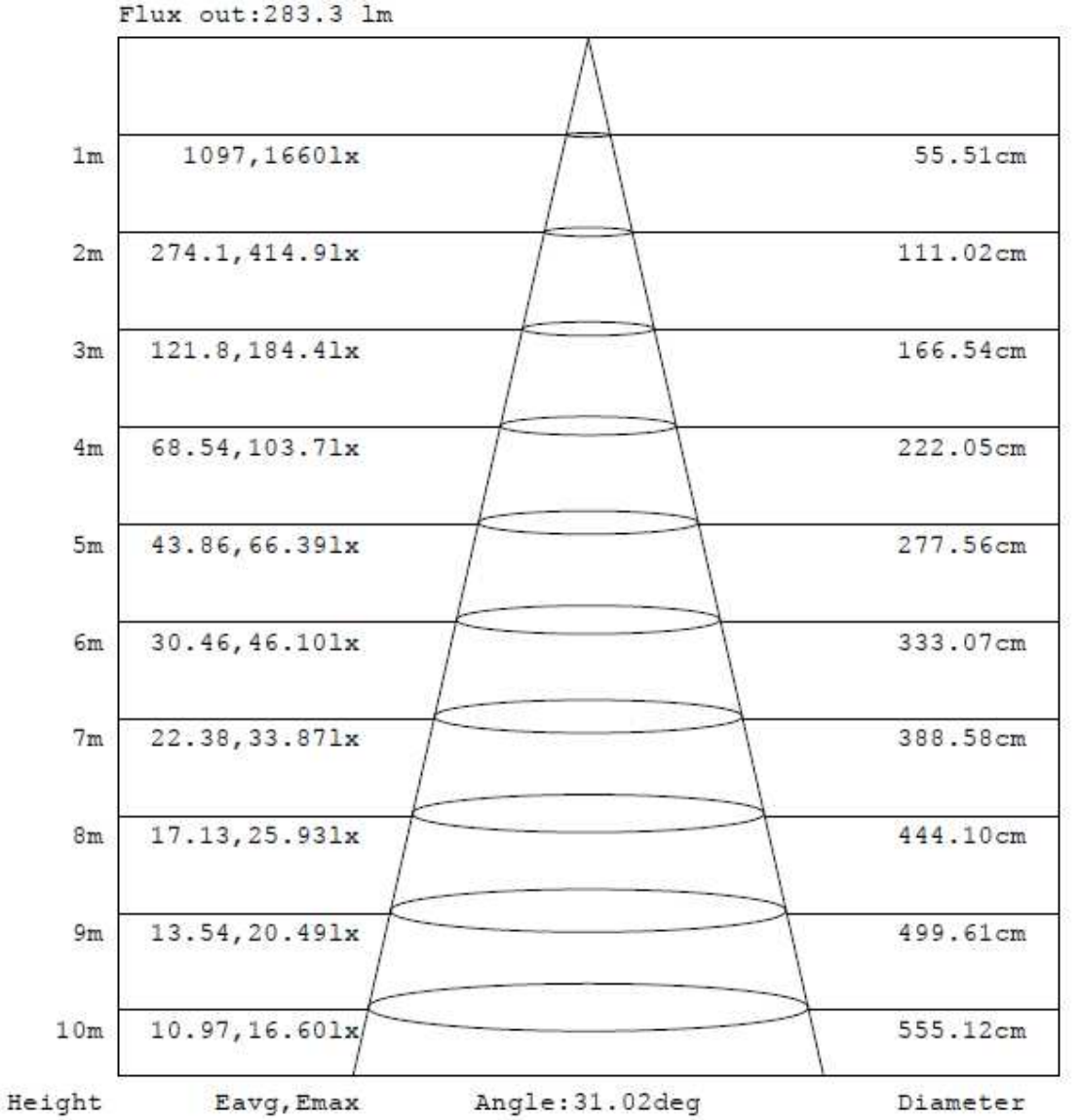
RESULTS OF TESTS (cont'd)

Test Condition: 15V 60Hz for SL01
Setting: 3 (Medium light output)

Illumination Plots

Model No.: SL01
Mount Height: 10 m

Illuminance - Cone of Light



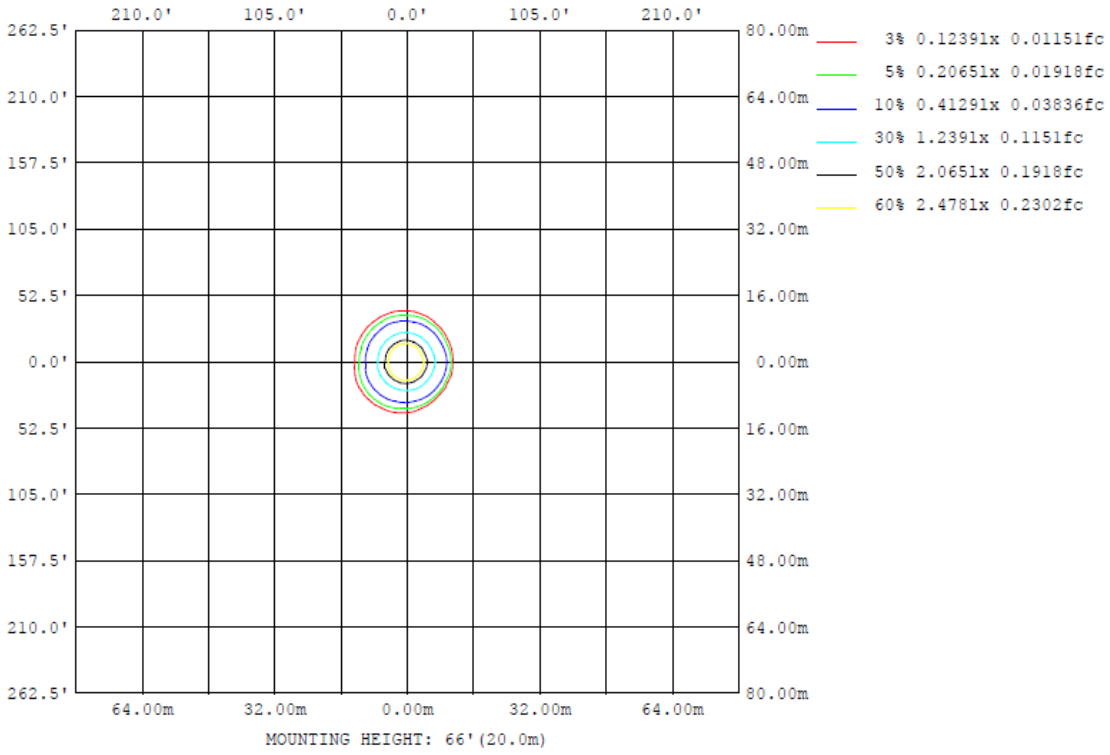
Note: The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

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

RESULTS OF TESTS (cont'd)

Test Condition: 15V 60Hz for SL01
Setting: 3 (Medium light output)

Model No.: SL01
Mount Height: 20 m
Isoillumination Plot



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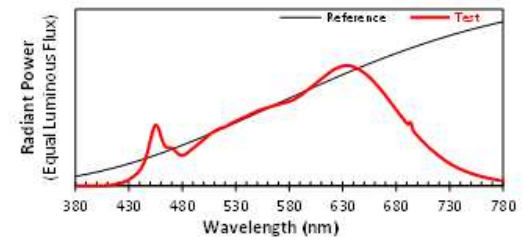
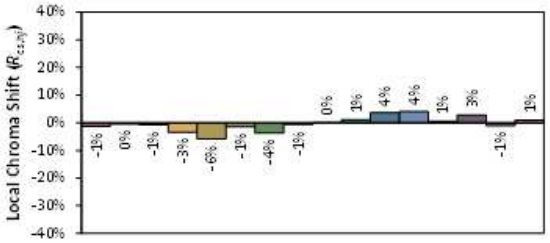
RESULTS OF TESTS (cont'd)

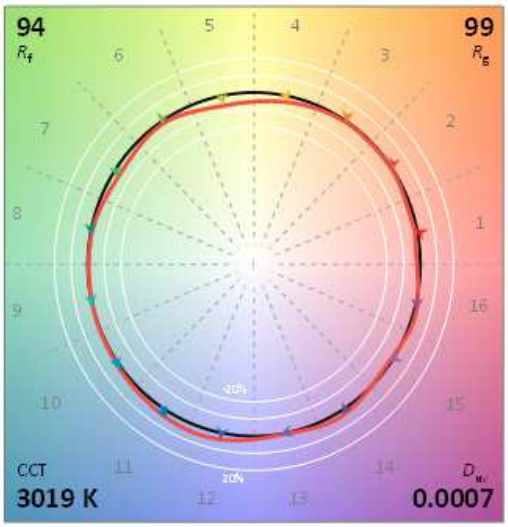
Test Condition: 15V 60Hz for SL01
Setting: 3 (Medium light output)

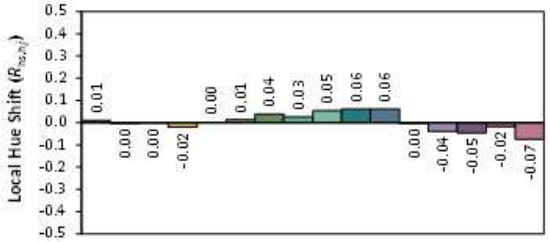
ANSI/IES TM-30-18 Color Rendition Report

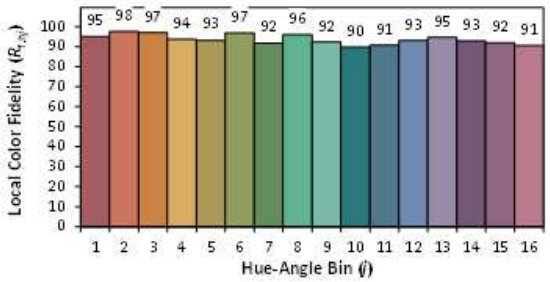
Source:	LED	**Manufacturer:**	STERLING LIGHTING LLC
Date:	12/18/2023	**Model:**	SL01

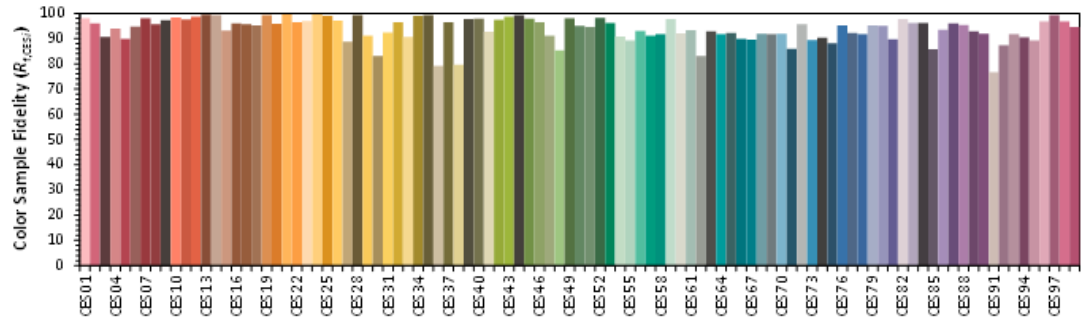












Notes: This is a recommended method for displaying ANSI/IES TM-30-18 information.

x	0.4366
y	0.4057
u'	0.2496
v'	0.5220

CIE 13.3-1995 (CRI)

R_a	98
R_9	91

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

RESULTS OF TESTS (cont'd)

Test Condition: 15V 60Hz for SL01
Setting: 4 (Medium light output)

Total operation burning time: 70 min
Stabilization time: 60 min

Photometric Measurements at 25°C

Intertek Sample No.	Base Orientation	Correlated Color Temperature (K)	CRI	CIE 31' Chromaticity Coordinate (x)	CIE 31' Chromaticity Coordinate (y)	CIE 76' Chromaticity Coordinate (u')	CIE 76' Chromaticity Coordinate (v')
SL01							
0231201-15-001	N/A	3011	98	0.4371	0.4058	0.2499	0.5221

Photometric and Electrical Measurements at 25°C

Intertek Sample No.	Base Orientation	Input Voltage (Vac)	Input Current (A)	Lamp Input Power (Watts)	Input Power Factor	Absolute Luminous Flux (Lumens)	Lumen Efficacy (Lumens Per Watt)
SL01							
0231201-15-001	N/A	15.0	0.5256	5.6299	0.7122	454.918	80.80

Zonal Lumen Summary and Percentages at 25°C

Zone	Lumens (lm)	% Luminaire (%)
SL01		
0-30	418.918	92.09
0-40	440.354	96.80
0-60	452.071	99.37
0-90	454.842	99.98
0-180	454.918	100.00

Beam Angle

	Horizontal Spread (°)	Vertical Spread (°)
SL01		
Beam (50%)	31.1	31.4
Beam Angle	31.3	

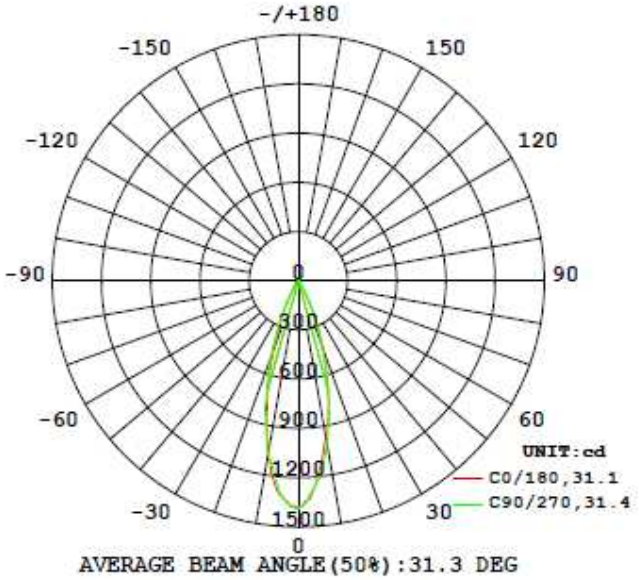
********** End of Page **********

RESULTS OF TESTS (cont'd)

Intensity (Candlepower) Summary at 25°C – Candelas

Test Condition: 15V 60Hz for SL01
Setting: 4 (Medium light output)

G \ C(°)	0	22.5	45	67.5	90
0	1383.5	1383.5	1383.5	1383.5	1383.5
5	1239.2	1218.5	1194.8	1213.8	1244.6
10	965.7	951.1	953.5	977.8	1005.1
15	710.1	679.8	666.8	679.3	703.0
20	442.2	408.4	391.2	408.6	420.1
25	230.6	210.9	197.3	198.5	207.9
30	34.3	25.6	28.8	48.6	81.9
35	13.7	13.0	14.0	16.5	21.6
40	5.5	5.5	5.6	6.0	10.7
45	3.3	3.2	3.3	3.9	4.8
50	1.6	1.1	1.4	2.3	3.4
55	0.3	0.1	0.3	0.8	2.1
60	0.0	0.0	0.0	0.1	0.7
65	0.0	0.0	0.0	0.0	0.2
70	0.0	0.0	0.0	0.0	0.0
75	0.0	0.0	0.0	0.0	0.0
80	0.0	0.0	0.0	0.0	0.0
85	0.0	0.0	0.0	0.0	0.0
90	0.0	0.0	0.0	0.0	0.0



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

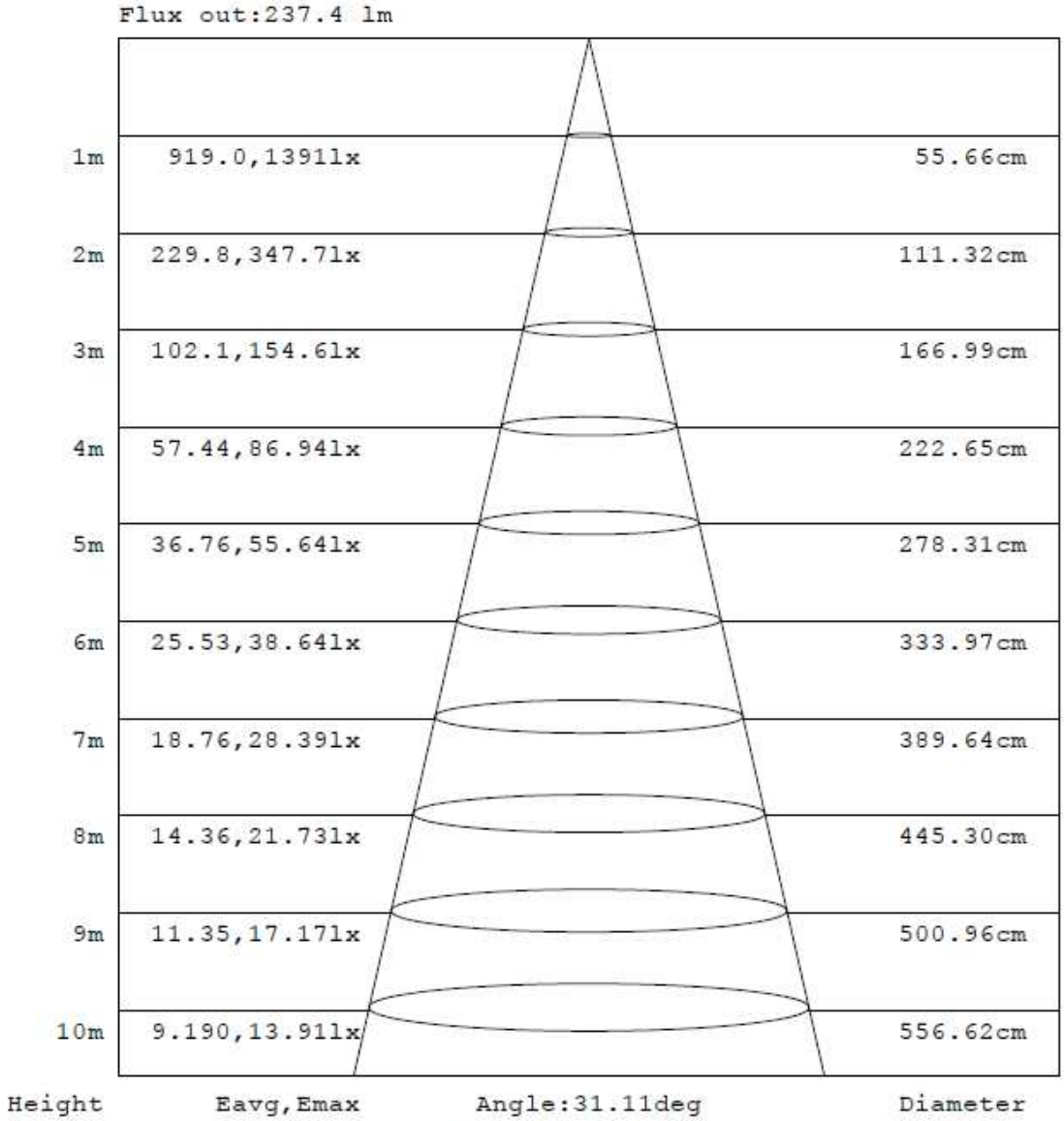
RESULTS OF TESTS (cont'd)

Test Condition: 15V 60Hz for SL01
Setting: 4 (Medium light output)

Illumination Plots

Model No.: SL01
Mount Height: 10 m

Illuminance - Cone of Light



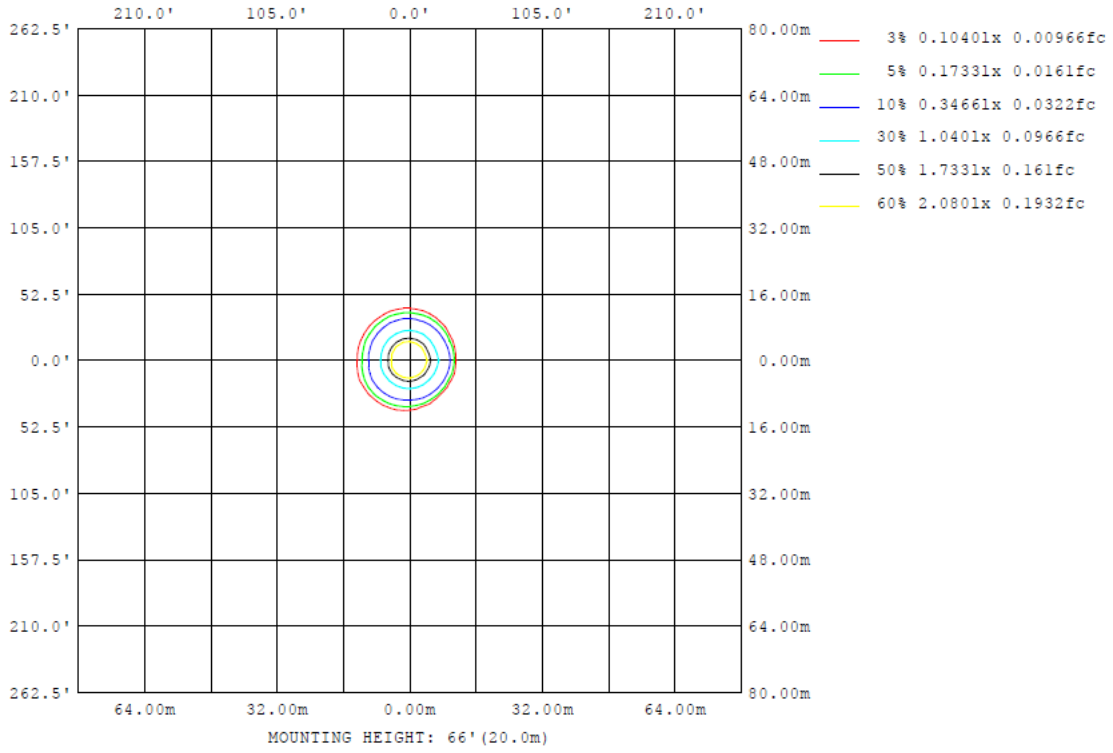
Note: The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

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

RESULTS OF TESTS (cont'd)

Test Condition: 15V 60Hz for SL01
Setting: 4 (Medium light output)

Model No.: SL01
Mount Height: 20 m
Isoillumination Plot



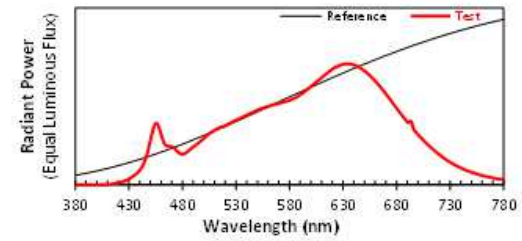
********** End of Page **********

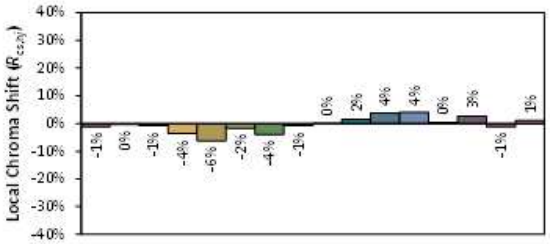
RESULTS OF TESTS (cont'd)

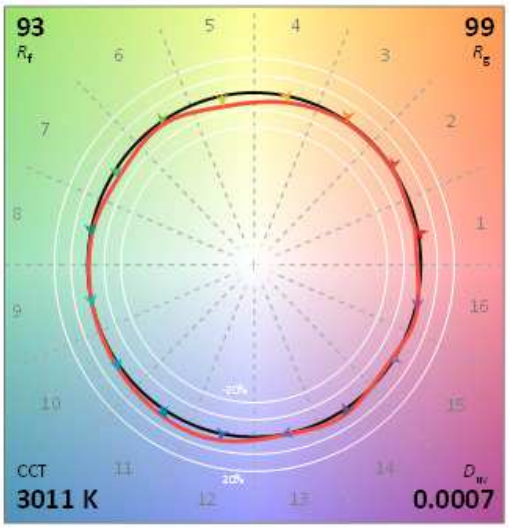
Test Condition: 15V 60Hz for SL01
Setting: 4 (Medium light output)

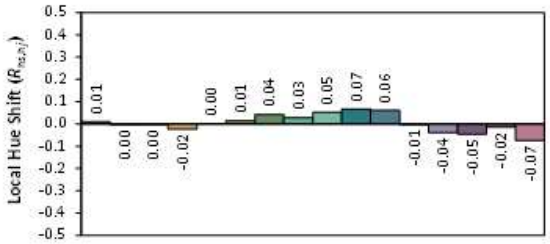
ANSI/IES TM-30-18 Color Rendition Report

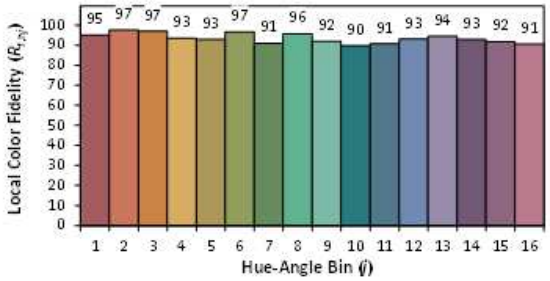
Source:	LED	**Manufacturer:**	STERLING LIGHTING LLC
Date:	12/18/2023	**Model:**	SL01

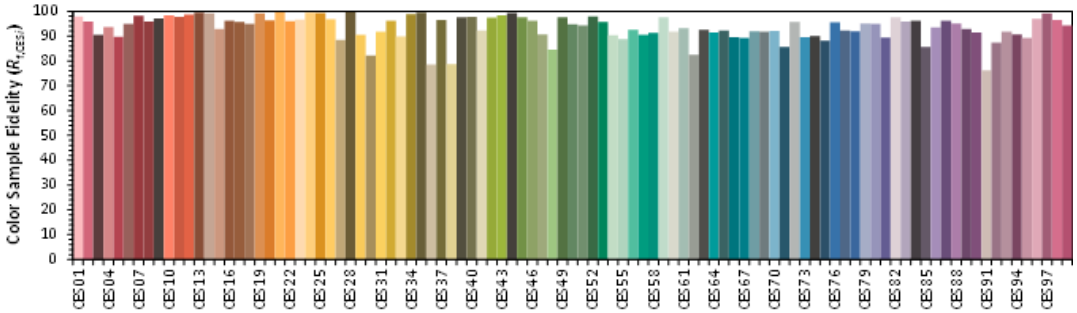












Notes: This is a recommended method for displaying ANSI/IES TM-30-18 information.

x	0.4371
y	0.4058
u'	0.2499
v'	0.5221

CIE 13.3-1995 (CRI)

R_a	98
R_9	92

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

RESULTS OF TESTS (cont'd)

Test Condition: 15V 60Hz for SL01
Setting: 5 (Medium light output)

Total operation burning time: 70 min
Stabilization time: 60 min

Photometric Measurements at 25°C

Intertek Sample No.	Base Orientation	Correlated Color Temperature (K)	CRI	CIE 31' Chromaticity Coordinate (x)	CIE 31' Chromaticity Coordinate (y)	CIE 76' Chromaticity Coordinate (u')	CIE 76' Chromaticity Coordinate (v')
SL01							
0231201-15-001	N/A	3008	98	0.4377	0.4066	0.2500	0.5225

Photometric and Electrical Measurements at 25°C

Intertek Sample No.	Base Orientation	Input Voltage (Vac)	Input Current (A)	Lamp Input Power (Watts)	Input Power Factor	Absolute Luminous Flux (Lumens)	Lumen Efficacy (Lumens Per Watt)
SL01							
0231201-15-001	N/A	15.0	0.3892	4.1733	0.7119	350.162	83.91

Zonal Lumen Summary and Percentages at 25°C

Zone	Lumens (lm)	% Luminaire (%)
SL01		
0-30	322.145	92.00
0-40	338.433	96.65
0-60	347.630	99.28
0-90	350.119	99.99
0-180	350.162	100.00

Beam Angle

	Horizontal Spread (°)	Vertical Spread (°)
SL01		
Beam (50%)	30.9	30.9
Beam Angle	30.9	

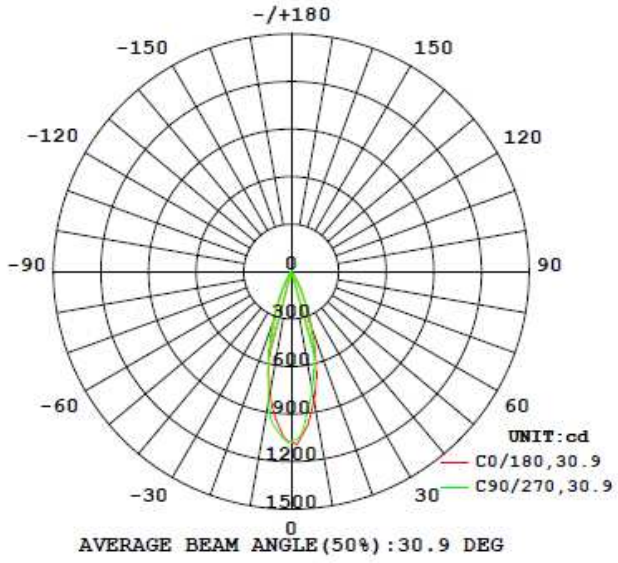
********** End of Page **********

RESULTS OF TESTS (cont'd)

Intensity (Candlepower) Summary at 25°C – Candelas

Test Condition: 15V 60Hz for SL01
Setting: 5 (Medium light output)

G \ C(°)	0	22.5	45	67.5	90
0	1072.4	1072.4	1072.4	1072.4	1072.4
5	1001.9	982.1	974.1	969.4	967.5
10	827.6	805.9	777.4	764.7	759.3
15	598.9	586.2	579.0	563.2	555.7
20	381.2	371.7	364.6	356.6	345.6
25	205.9	193.4	186.5	173.1	176.7
30	102.5	100.2	74.7	66.8	51.1
35	39.8	31.1	26.0	18.6	11.5
40	23.8	18.8	13.9	10.7	6.0
45	17.0	13.9	9.5	4.9	3.2
50	11.1	7.5	4.8	3.0	2.1
55	5.8	4.5	3.1	2.3	1.0
60	4.3	3.1	2.4	1.2	0.2
65	3.2	2.4	1.4	0.4	0.0
70	2.7	1.9	0.8	0.1	0.0
75	2.3	1.7	0.2	0.0	0.0
80	2.1	0.5	0.1	0.0	0.0
85	1.2	0.1	0.0	0.0	0.0
90	0.2	0.0	0.0	0.0	0.0



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

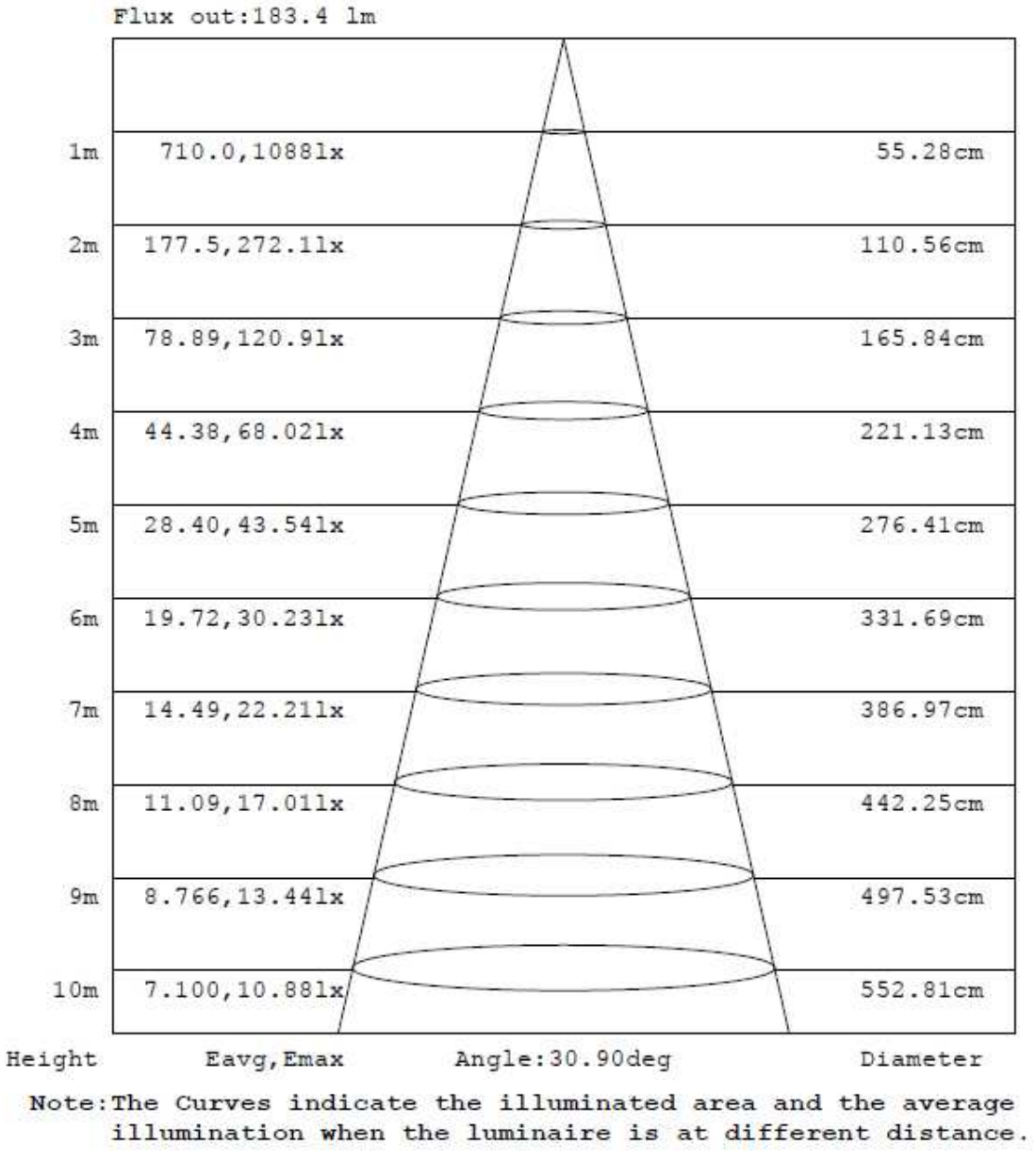
RESULTS OF TESTS (cont'd)

Test Condition: 15V 60Hz for SL01
Setting: 5 (Medium light output)

Illumination Plots

Model No.: SL01
Mount Height: 10 m

Illuminance - Cone of Light



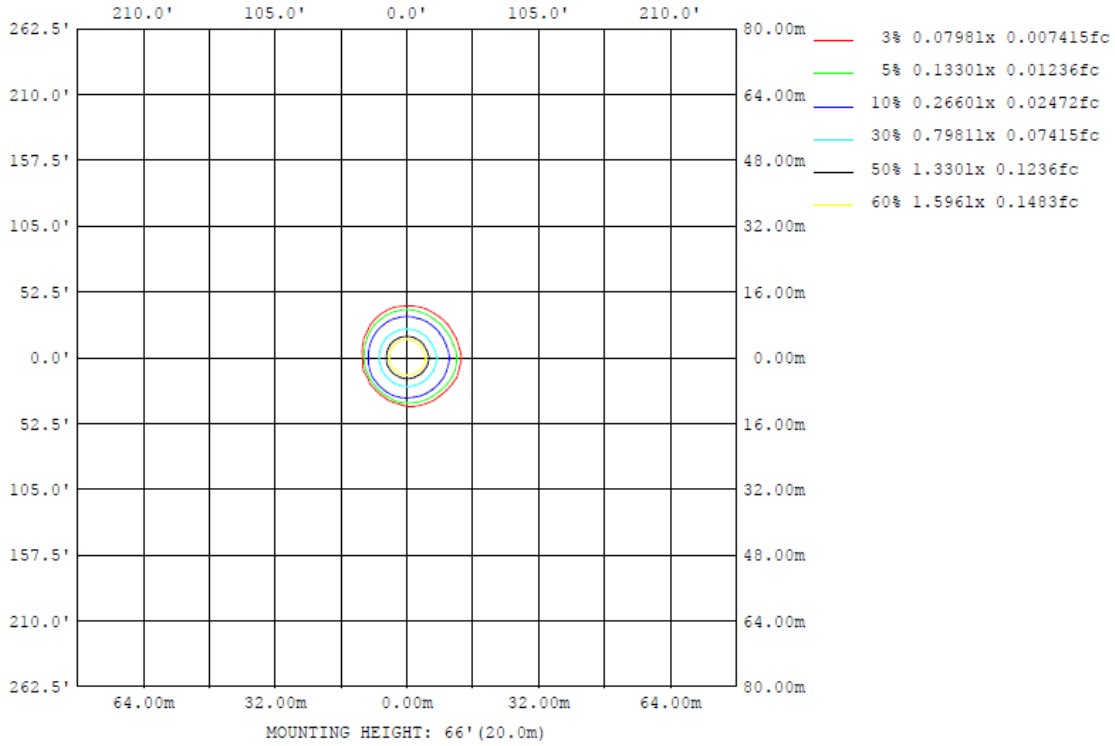
Note: The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

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

RESULTS OF TESTS (cont'd)

Test Condition: 15V 60Hz for SL01
Setting: 5 (Medium light output)

Model No.: SL01
Mount Height: 20 m
Isoillumination Plot



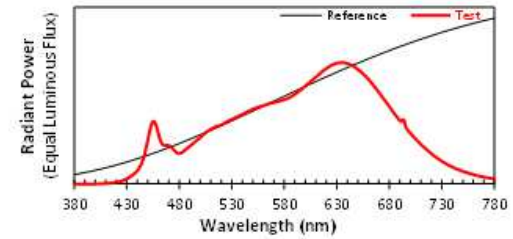
********** End of Page **********

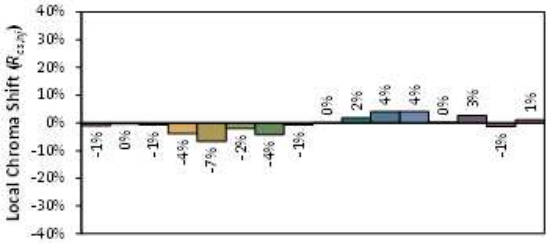
RESULTS OF TESTS (cont'd)

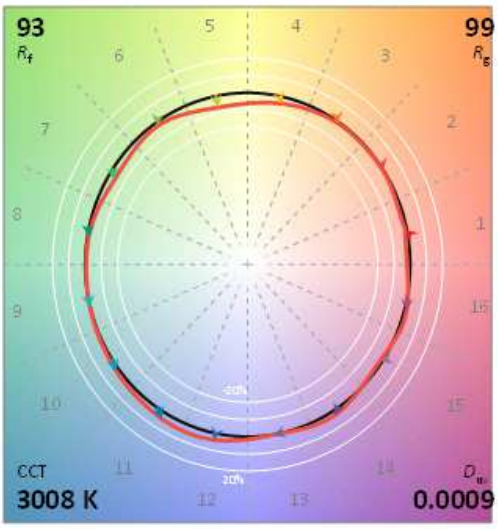
Test Condition: 15V 60Hz for SL01
Setting: 5 (Medium light output)

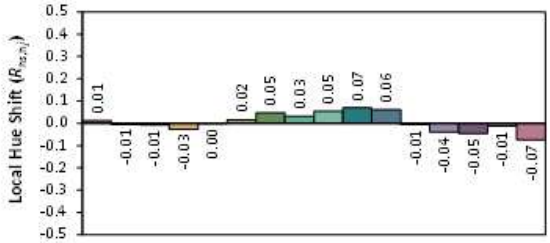
ANSI/IES TM-30-18 Color Rendition Report

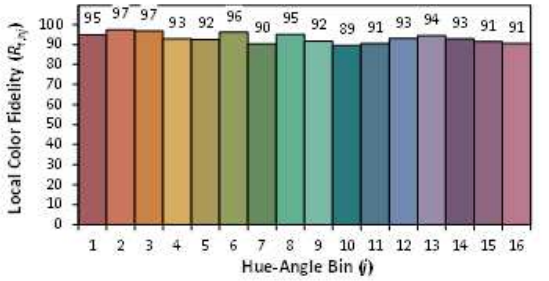
Source:	LED	**Manufacturer:**	STERLING LIGHTING LLC
Date:	12/18/2023	**Model:**	SL01

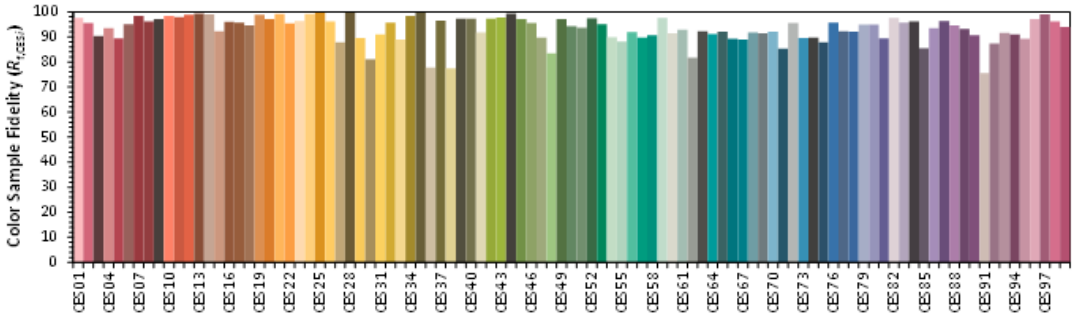












Notes: This is a recommended method for displaying ANSI/IES TM-30-18 information.

x	0.4377
y	0.4066
u'	0.2500
v'	0.5225

CIE 13.3-1995 (CRI)

R_a	98
R_9	93

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

RESULTS OF TESTS (cont'd)

Test Condition: 15V 60Hz for SL01
Setting: 6 (Minimum light output)

Total operation burning time: 70 min
Stabilization time: 60 min

Photometric Measurements at 25°C

Intertek Sample No.	Base Orientation	Correlated Color Temperature (K)	CRI	CIE 31' Chromaticity Coordinate (x)	CIE 31' Chromaticity Coordinate (y)	CIE 76' Chromaticity Coordinate (u')	CIE 76' Chromaticity Coordinate (v')
SL01							
0231201-15-001	N/A	3004	98	0.4378	0.4065	0.2501	0.5225

Photometric and Electrical Measurements at 25°C

Intertek Sample No.	Base Orientation	Input Voltage (Vac)	Input Current (A)	Lamp Input Power (Watts)	Input Power Factor	Absolute Luminous Flux (Lumens)	Lumen Efficacy (Lumens Per Watt)
SL01							
0231201-15-001	N/A	15.0	0.2688	2.8719	0.7086	245.682	85.55

Zonal Lumen Summary and Percentages at 25°C

Zone	Lumens (lm)	% Luminaire (%)
SL01		
0-30	225.519	91.79
0-40	237.267	96.57
0-60	243.815	99.24
0-90	245.623	99.98
0-180	245.682	100.00

Beam Angle

	Horizontal Spread (°)	Vertical Spread (°)
SL01		
Beam (50%)	31.2	30.9
Beam Angle	31.0	

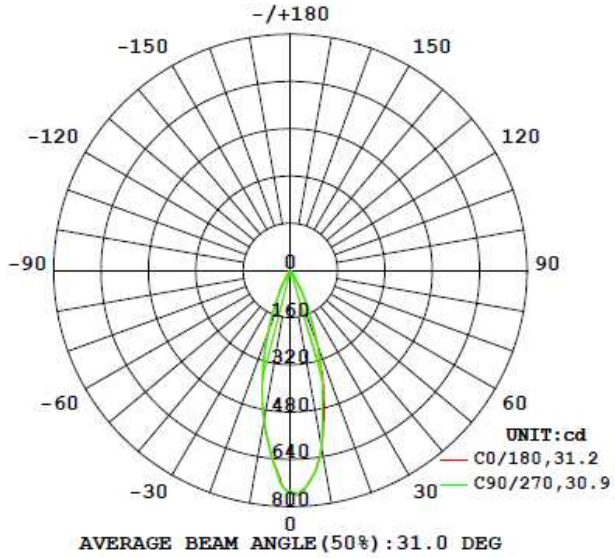
********** End of Page **********

RESULTS OF TESTS (cont'd)

Intensity (Candlepower) Summary at 25°C – Candelas

Test Condition: 15V 60Hz for SL01
Setting: 6 (Minimum light output)

G \ C(°)	0	22.5	45	67.5	90
0	747.54	747.54	747.54	747.54	747.54
5	718.35	727.21	732.26	727.11	724.15
10	605.90	613.93	614.84	607.42	608.77
15	438.98	441.68	438.24	430.06	419.52
20	263.94	270.46	267.00	261.72	260.85
25	137.17	136.12	141.42	141.93	139.59
30	28.61	51.19	64.37	66.00	63.55
35	7.87	10.79	20.02	23.75	25.34
40	2.91	4.75	9.09	12.71	15.43
45	1.87	2.48	4.04	7.38	10.83
50	1.03	1.69	2.49	3.74	5.37
55	0.29	0.90	1.83	2.45	3.44
60	0.01	0.28	1.12	1.88	2.52
65	0.00	0.07	0.41	1.14	1.83
70	0.00	0.00	0.16	0.59	1.35
75	0.00	0.00	0.03	0.23	0.95
80	0.00	0.00	0.00	0.09	0.62
85	0.00	0.00	0.00	0.01	0.12
90	0.00	0.00	0.00	0.00	0.03



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

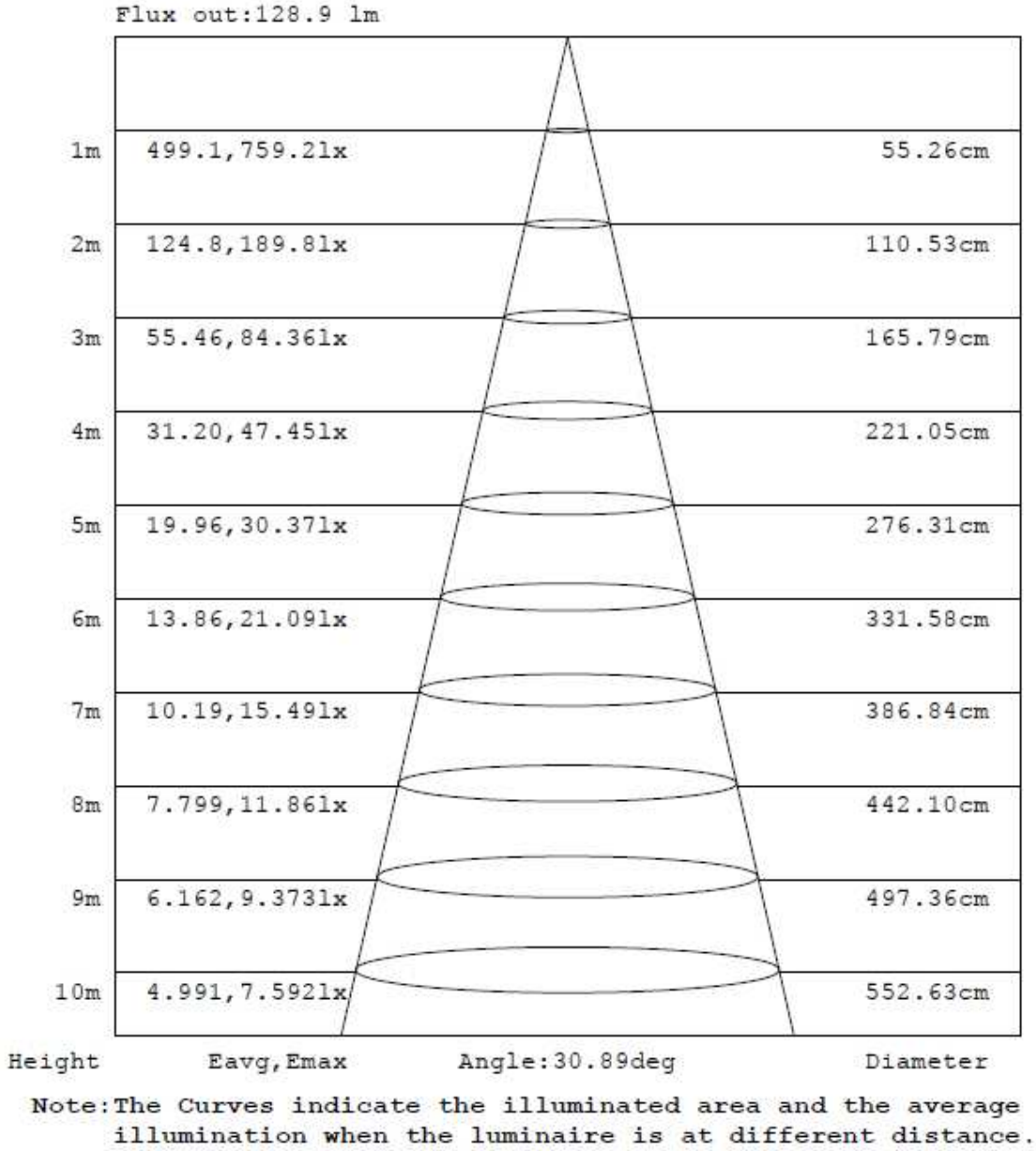
RESULTS OF TESTS (cont'd)

Test Condition: 15V 60Hz for SL01
Setting: 6 (Minimum light output)

Illumination Plots

Model No.: SL01
Mount Height: 10 m

Illuminance - Cone of Light



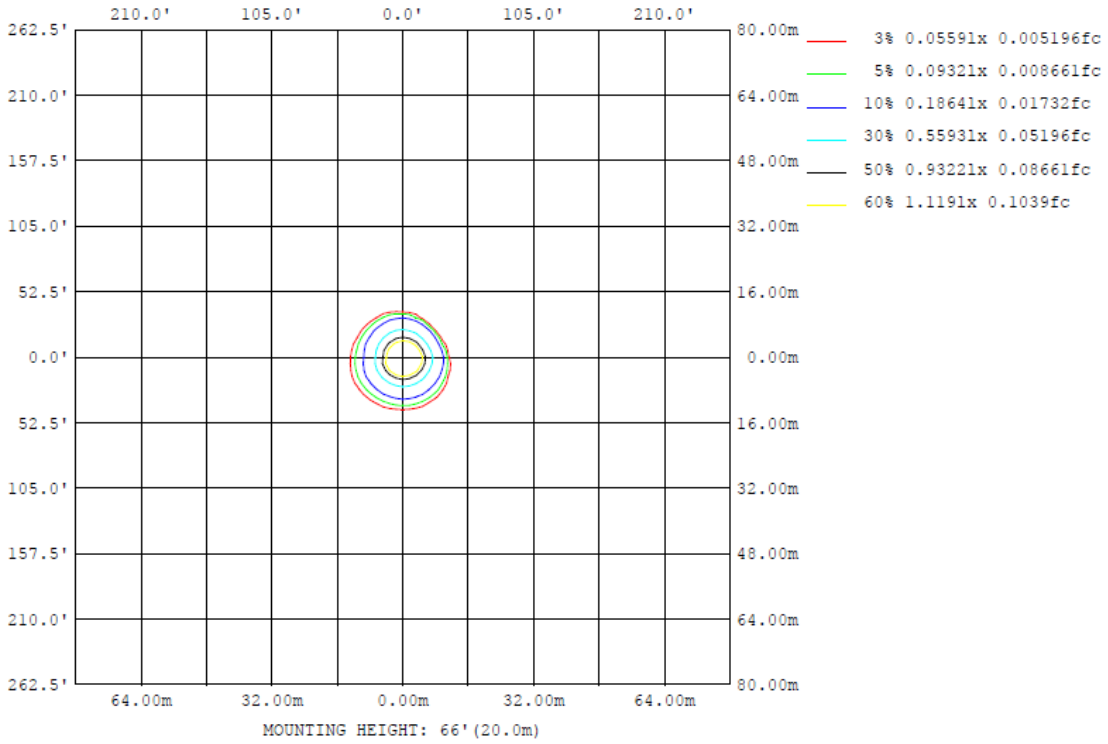
Note: The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

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

RESULTS OF TESTS (cont'd)

Test Condition: 15V 60Hz for SL01
Setting: 6 (Minimum light output)

Model No.: SL01
Mount Height: 20 m
Isoillumination Plot



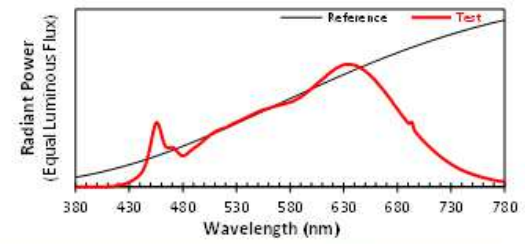
********** End of Page **********

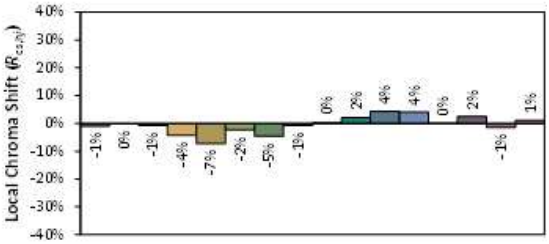
RESULTS OF TESTS (cont'd)

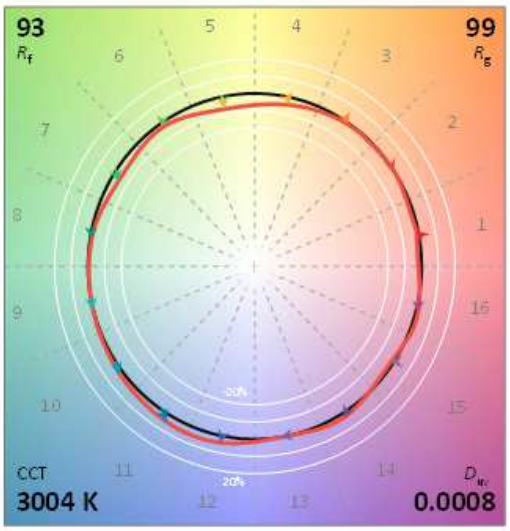
Test Condition: 15V 60Hz for SL01
Setting: 6 (Minimum light output)

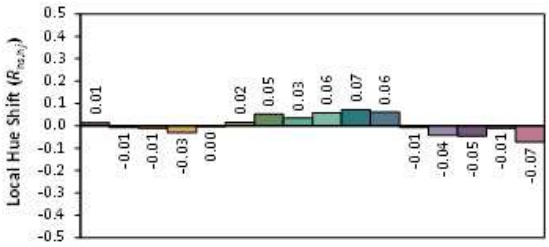
ANSI/IES TM-30-18 Color Rendition Report

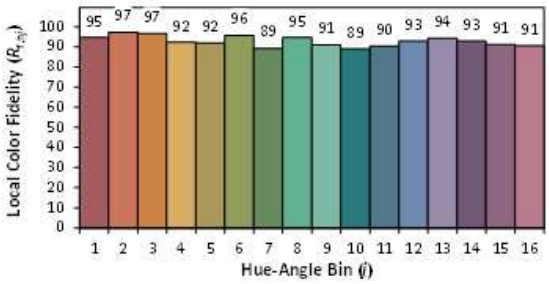
Source:	LED	**Manufacturer:**	STERLING LIGHTING LLC
Date:	12/18/2023	**Model:**	SL01

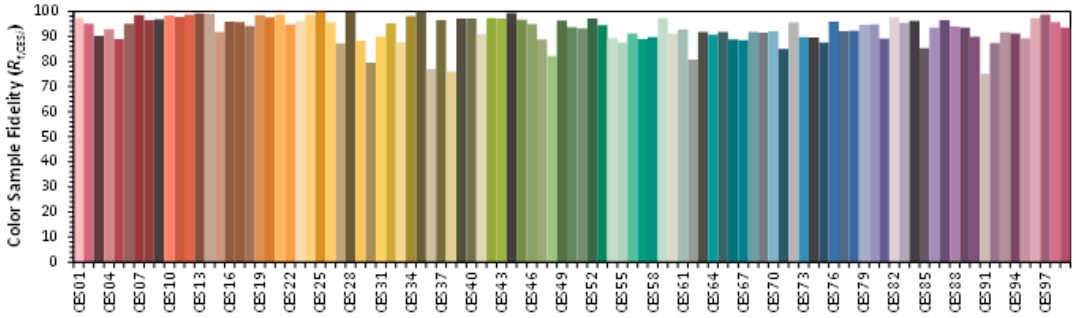












Notes: This is a recommended method for displaying ANSI/IES TM-30-18 information.

x	0.4378
y	0.4065
u'	0.2501
v'	0.5225

CIE 13.3-1995 (CRI)

R_a	98
R_9	94

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

RESULTS OF TESTS (cont'd)

IN SITU TEMPERATURE MEASUREMENT TEST

Test Results of LED chip temperature and current

TMP led: CXA1512-xxxx-xxxNxxxxxxx	
In-situ case temperature of LED source (°C)	Limit single led chip temperature(℃)
75.8	105
Measured Drive current for each LED package/array/module (mA)	Limit single led chip current (mA)
253.2	346

Note: In-situ case temperature was corrected to ambient temperature at 25°C in above table.

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

RESULTS OF TESTS (cont'd)

IN SITU TEMPERATURE MEASUREMENT TEST

Lumen Maintenance Life Projection (Cont'd) - led chip point 1

The Calculation is based on the Illumination Engineering Society's TM-21-11: Projecting Long Term Lumen Maintenance of LED Light Sources.

Table 1: Report at each LM-80 Test Condition					
Description of LED Light Source Tested (manufacturer, model, catalog number)	Manufacturer: CREE LED Model: CXA1512-xxxx-xxxNxxxxxxx Report Number:CLD-AP144 REV5 Issued: Jun. 11, 2011				
Test Condition 1 - 105ºC Case Temp					
Sample size	25	Sample size	-	Sample size	-
Number of failures	0	Number of failures	-	Number of failures	-
DUT drive current used in the test (mA)	346	DUT drive current used in the test (mA)	-	DUT drive current used in the test (mA)	-
Test duration (hours)	8,064	Test duration (hours)	-	Test duration (hours)	-
Test duration used for projection (hour to hour)	3,024 - 8,064	Test duration used for projection (hour to hour)	-	Test duration used for projection (hour to hour)	-
Tested case temperature (ºC)	105	Tested case temperature (ºC)	-	Tested case temperature (ºC)	-
α	3.596E-06	α	-	α	-
B	0.992	B	-	B	-
Reported L70(8k) (hours)	>48000	Reported L70(8k) (hours)	-	Reported L70(8k) (hours)	-

Table 2: Interpolation Report (projection based on *in-situ* temperature entered)	
$T_{s,1}$ (ºC)	105.00
$T_{s,1}$ (K)	378.15
α_1	3.596E-06
B_1	0.992
$T_{s,2}$ (ºC)	-
$T_{s,2}$ (K)	-
α_2	-
B_2	-
E_a/k_b	-
A	-
B_0	0.992
$T_{s,i}$ (ºC)	75.80
$T_{s,i}$ (K)	348.95
α_i	3.596E-06
Reported L70(8k) at 75.8ºC (hours)	>48000

***In-Situ* Inputs**	
Drive current for each LED package/array/module (mA):	253.2
In-situ case temperature (T_c, ºC):	75.8
Percentage of initial lumens to project to (e.g. for L_{70}, enter 70):	70

Results

Time (t) at which to estimate lumen maintenance (hours):	50,000
Lumen maintenance at time (t) (%):	82.87%
Reported L70 (hours):	>48000

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