

Report Number: PL18125-001A
Model: OSQP-C-3L-40K7-5M-UL (Light Engine)
Issue Date: 01/30/2024

Cree Racine Engineering Services Testing Laboratory (RESTL) Photometric Testing and Evaluation Report

Prepared For:

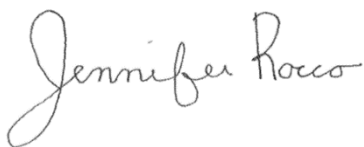
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Cree Lighting

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Product Information

Manufacturer	Cree Lighting
Model Number (SKU)	OSQP-C-3L-40K7-5M-UL (Light Engine)
Serial Number	18125
LED Type	SSC STW7C12C-E0

Product Description

OSQP-C Pathway Luminaire (Light Engine), 3L Lumen Package, 4000K 70CRI, Type 5M Rotatable Optics

Driver Information (Where Applicable)

Signify XI030C080V054BSJ1

Length	Width	Height
9.5"	9.5"	6.9"

Sample

The following sample was submitted for evaluation



Key Photometric Data	Sphere Output	Goniophotometer	
Luminous Flux	2909.8	2850.0	lm
Efficacy	146.89	143.50	lm/W
Correlated Color Temperature (CCT)	4129	K	
Color Rendering Index (CRI)	72		
R ₉	-40		
Duv	0.0000		
TM-30 R _f *	74		
TM-30 R _g *	93		
TM-30 R _{cs,h1} *	-18.3%		
S/P Ratio*	1.57		

	Sphere		Goniophotometer		
Electrical Measurements	120V	277V	120V	277V	
Input Wattage	19.81	19.84	19.86	19.93	W
Input Current	0.170	0.075	0.170	0.075	A
Input Voltage	120.24	277.11	120.22	277.20	V
Power Factor	0.968	0.955	0.971	0.957	
Off-State Power	0	0	0	0	W
Total Harmonic Distortion (Voltage)	0.09	0.09	0.09	0.19	%
Total Harmonic Distortion (Amperage)	12.47	10.44	12.57	10.06	%

Note: All photometric measurements taken at 120VAC.

Luminous Intensity Distribution	Goniophotometer	
Max Candela	980.47	Cd
Angle of Max Candela (Horizontal)	45	°
Angle of Max Candela (Vertical)	67	°

Key Test Parameters	Sphere Output	Goniophotometer	
Stabilization Time	50	40	min
Total Operating Time (Stabilization + Test)	60	60	min
Ambient Temperature	24.29	24.9	°C

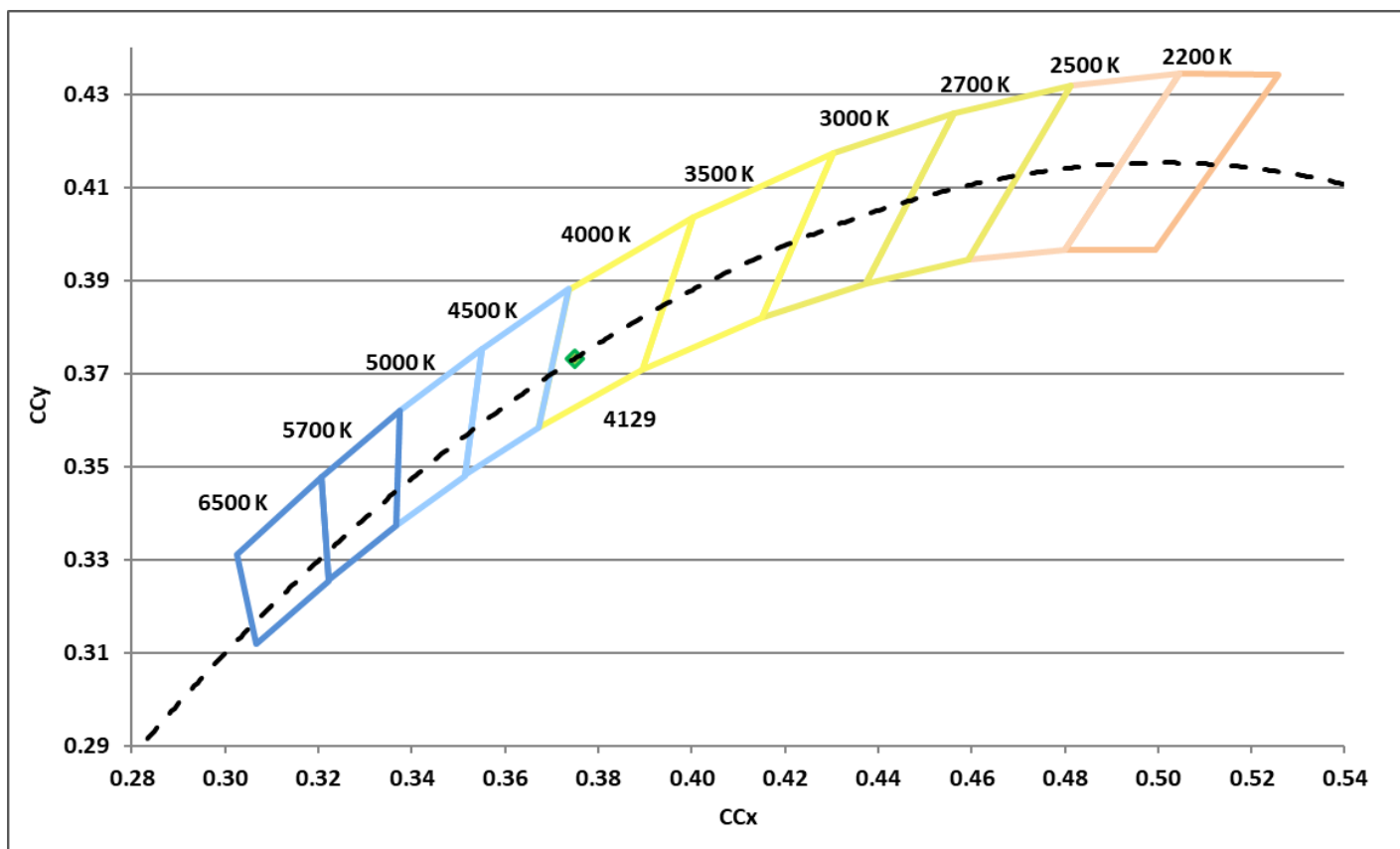
Chromaticity Coordinates

x	y	u	v	u'	v'	Duv
0.3749	0.3732	0.2229	0.3328	0.2229	0.4992	0.0000

Color Rendering Index Details

Ra	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14
72	68	79	88	70	68	70	80	49	-40	51	66	43	70	93

Chromaticity Diagram



NOTE: The Chromaticity Diagram shown above references table A1 specification for 7-step quadrangles referenced in ANSI C78.377-2017.

Spectral Distribution

λ (nm)	W/nm
360	0.000041
370	0.000019
380	0.000000
390	0.000027
400	0.000084
410	0.000542
420	0.002899
430	0.012175
440	0.035662
450	0.068225
460	0.027423
470	0.012901
480	0.007943
490	0.009430
500	0.016553
510	0.025046
520	0.031540

λ (nm)	W/nm
530	0.035638
540	0.038901
550	0.042669
560	0.047032
570	0.051207
580	0.053481
590	0.053145
600	0.049840
610	0.044243
620	0.037542
630	0.030657
640	0.024266
650	0.018724
660	0.014244
670	0.010568
680	0.007760
690	0.005679

λ (nm)	W/nm
700	0.004153
710	0.003027
720	0.002201
730	0.001588
740	0.001143
750	0.000837
760	0.000613
770	0.000437
780	0.000321
790	0.000224
800	0.000162
810	0.000122
820	0.000075
830	0.000059

Dominant Wavelength

578

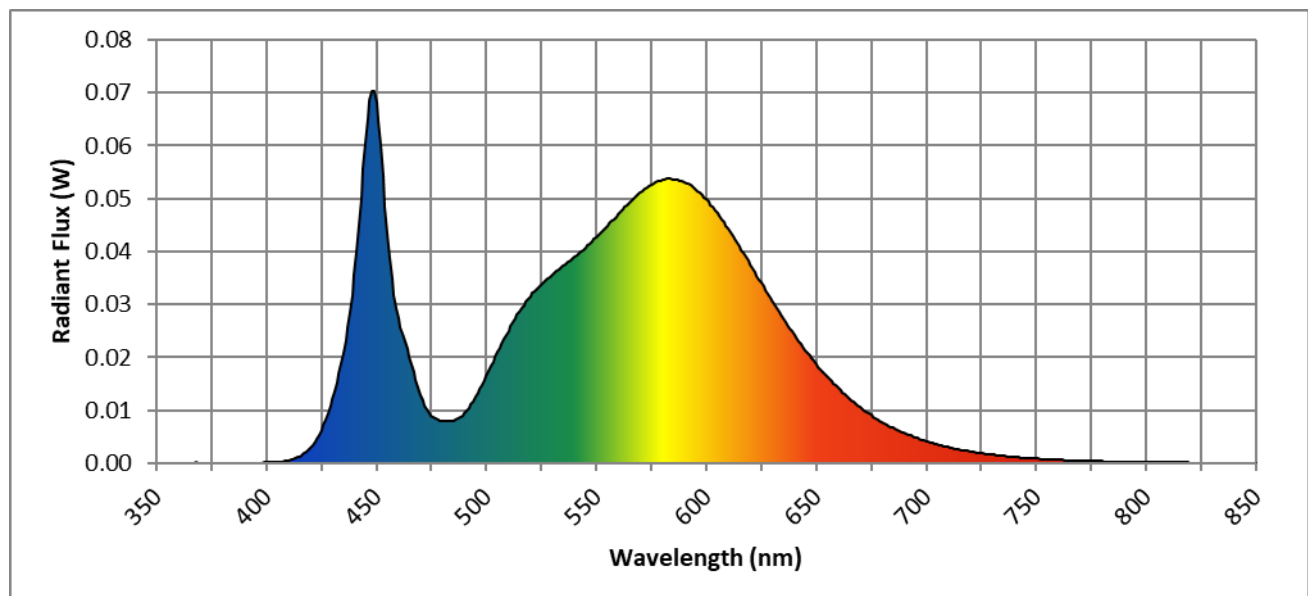
nm

Peak Wavelength

448

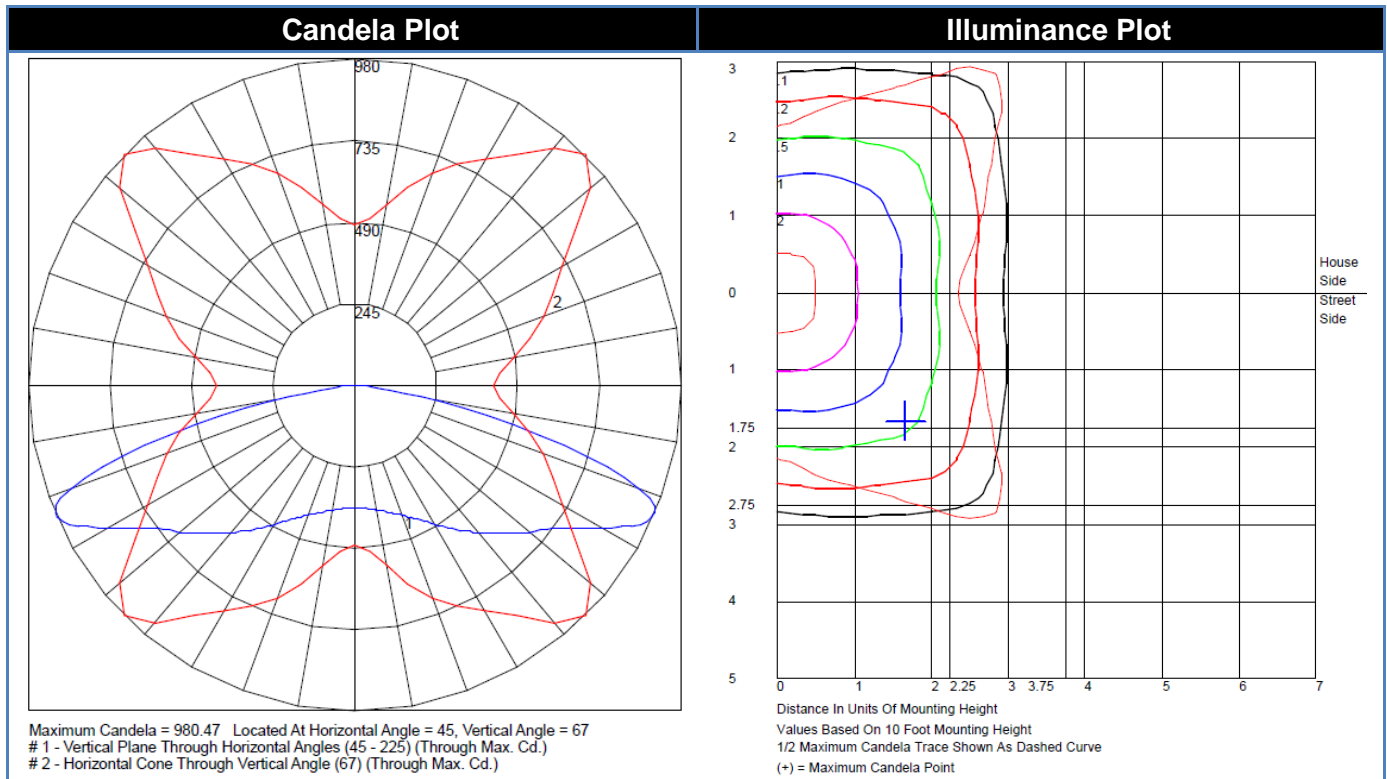
nm

Spectral Power Distribution (W/nm)



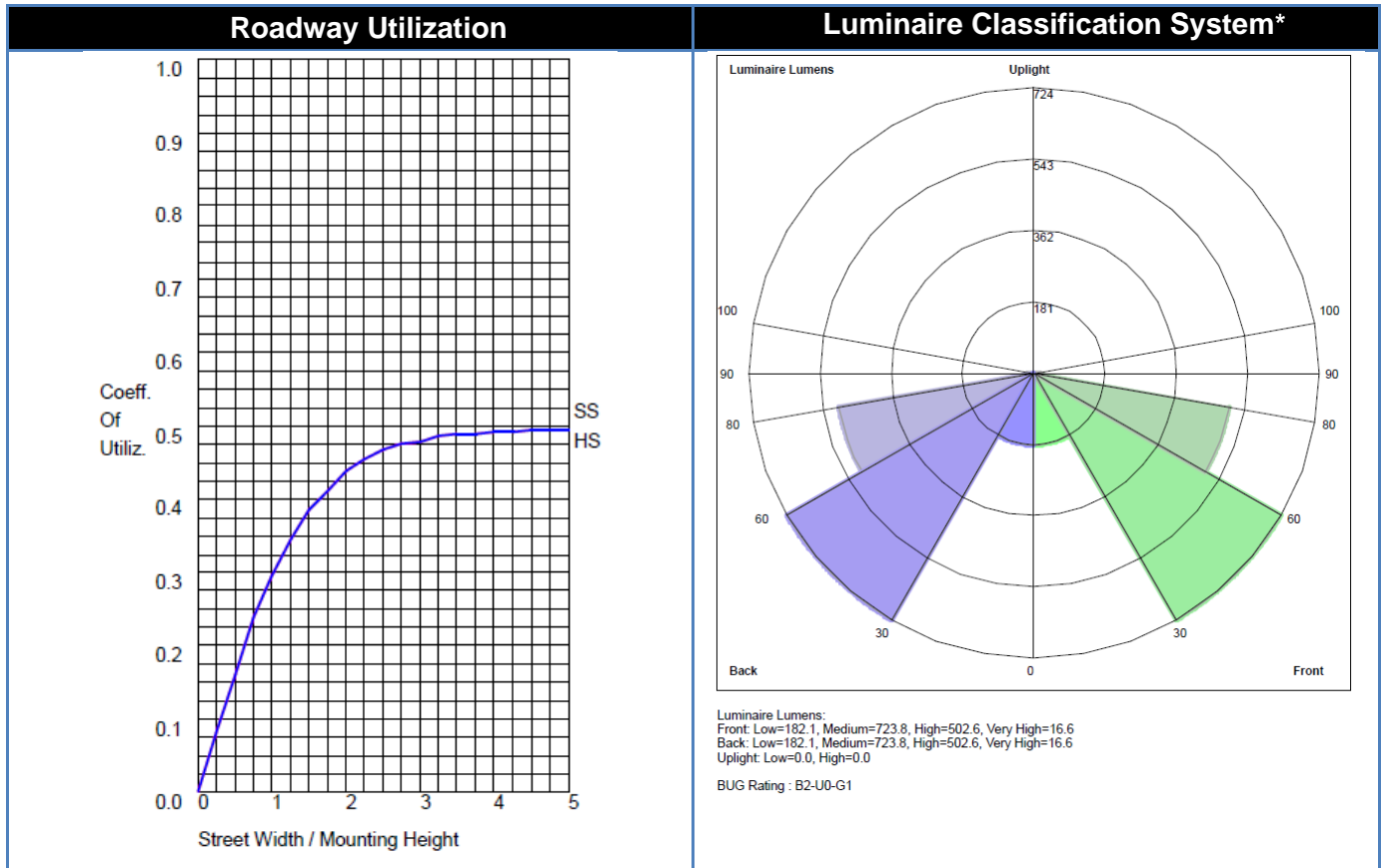
Zonal Lumen Summary

Zone	Lumens	% of Total	Zone	Lumens
0-20	149.8	5.3	0-10	35.9
0-30	364.1	12.8	10-20	113.9
0-40	708.9	24.9	20-30	214.3
0-60	1811.7	63.6	30-40	344.8
0-80	2816.9	98.8	40-50	478.8
0-90	2850.0	100.0	50-60	624.1
10-90	2814.1	98.7	60-70	698.1
20-40	559.1	19.6	70-80	307.1
20-50	1037.9	36.4	80-90	33.1
40-70	1800.9	63.2	90-100	0.0
60-80	1005.2	35.3	100-110	0.0
70-80	307.1	10.8	110-120	0.0
80-90	33.1	1.2	120-130	0.0
90-110	0.0	0.0	130-140	0.0
90-120	0.0	0.0	140-150	0.0
90-130	0.0	0.0	150-160	0.0
90-150	0.0	0.0	160-170	0.0
90-180	0.0	0.0	170-180	0.0
110-180	0.0	0.0		
Total	2850.0 LM	100%		



Roadway Summary	Lumens	% Lamp
Distribution	TYPE VS, SHORT	
Downward Street Side	1425.0	50.0
Downward House Side	1425.0	50.0
Downward Total	2850.0	100.0
Upward Street Side	0.0	0.0
Upward House Side	0.0	0.0
Upward Total	0.0	0.0
Total Lumens	2850.0	100.0

Luminaire Classification System (LCS)	Lumens	% Luminaire
FL - Front Low (0-30)	182.1	6.4
FM - Front Medium (30-60)	723.8	25.4
FH - Front High (60-80)	502.6	17.6
FVH - Front Very High (80-90)	16.6	0.6
BL - Back Low (0-30)	182.1	6.4
BM - Back Medium (30-60)	723.8	25.4
BH - Back High (60-80)	502.6	17.6
BVH - Back Very High (80-90)	16.6	0.6
UL - Uplight Low (90-100)	0.0	0.0
UH - Uplight High (100-180)	0.0	0.0
BUG Rating*	B2-U0-G1	



Candela Tabulations

	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
0	369.8	369.8	369.8	369.8	369.8	369.8	369.8	369.8	369.8	369.8	369.8	369.8	369.8	369.8	369.8	369.8	369.8	369.8	369.8
1	369.1	369.3	369.1	369.2	369.6	369.4	369.3	369.3	369.7	369.4	369.7	370.1	370.1	370.6	370.7	370.9	371.1	371.6	372.1
2	369.3	369.7	369.4	369.5	370.0	369.7	369.7	369.6	370.0	369.7	370.0	370.4	370.4	371.0	371.0	371.2	371.3	371.9	372.4
3	370.0	370.3	370.1	370.1	370.6	370.3	370.3	370.2	370.6	370.2	370.6	371.0	370.9	371.6	371.6	371.8	372.0	372.5	373.1
4	371.0	371.2	371.0	371.1	371.5	371.2	371.2	371.1	371.4	371.1	371.4	371.9	371.8	372.5	372.4	372.7	372.9	373.4	374.0
5	372.3	372.5	372.3	372.4	372.7	372.4	372.4	372.3	372.6	372.3	372.6	373.1	373.0	373.6	373.7	373.9	374.1	374.6	375.2
6	373.9	374.1	373.9	374.0	374.3	373.9	373.9	373.7	374.0	373.7	374.0	374.5	374.4	375.0	375.1	375.4	375.5	376.1	376.7
7	375.7	375.9	375.6	375.7	375.9	375.7	375.5	375.3	375.6	375.3	375.6	376.1	376.0	376.6	376.7	377.1	377.2	377.8	378.4
8	377.6	377.8	377.6	377.6	377.8	377.5	377.3	377.2	377.5	377.2	377.4	377.8	377.9	378.4	378.6	378.9	379.1	379.7	380.4
9	379.7	380.0	379.7	379.7	379.9	379.7	379.4	379.3	379.7	379.3	379.5	379.9	380.0	380.5	380.8	381.1	381.2	381.9	382.5
10	382.2	382.3	382.0	382.0	382.2	381.9	381.5	381.5	381.8	381.5	381.8	382.3	382.4	382.8	383.1	383.5	383.8	384.4	385.0
11	384.8	385.0	384.6	384.5	384.7	384.3	384.0	383.9	384.2	384.0	384.2	384.7	385.0	385.5	385.8	386.3	386.5	387.2	387.8
12	387.8	387.9	387.5	387.3	387.5	387.1	386.7	386.5	386.8	386.6	387.0	387.5	387.8	388.4	388.8	389.1	389.6	390.2	390.9
13	391.0	391.3	390.8	390.6	390.6	390.1	389.7	389.5	389.8	389.5	389.9	390.5	390.9	391.7	392.0	392.4	392.9	393.7	394.4
14	394.6	394.8	394.2	394.0	394.0	393.3	392.8	392.7	392.8	392.5	393.0	394.0	394.2	395.2	395.5	396.2	396.6	397.4	398.2
15	398.7	398.8	398.1	397.8	397.7	396.7	396.4	396.1	396.2	395.8	396.4	397.4	397.8	398.9	399.4	400.2	400.8	401.5	402.4
16	403.1	403.3	402.5	402.0	401.8	400.6	400.1	399.6	399.8	399.4	400.1	401.1	401.7	403.1	403.7	404.6	405.4	406.2	407.2
17	407.7	408.2	407.2	406.5	406.1	404.8	404.1	403.4	403.6	403.1	404.0	405.2	405.9	407.6	408.5	409.7	410.6	411.6	412.5
18	412.8	413.3	412.3	411.4	410.8	409.4	408.4	407.5	407.6	407.2	408.0	409.5	410.5	412.6	413.8	415.3	416.4	417.5	418.5
19	418.7	419.1	418.0	416.8	416.1	414.2	413.0	411.8	412.1	411.4	412.3	414.1	415.5	417.9	419.5	421.4	422.5	423.7	425.0
20	425.0	425.6	424.3	423.0	421.7	419.7	417.8	416.7	416.5	416.1	417.2	419.1	421.0	423.6	425.7	427.7	429.0	430.5	431.9
21	432.2	432.6	431.2	429.5	428.0	425.7	423.3	421.7	421.5	421.2	422.3	424.5	426.8	429.6	432.3	434.6	436.0	437.9	439.0
22	440.3	440.6	439.0	437.0	434.9	432.2	429.2	427.3	426.7	426.4	427.7	430.3	433.1	436.3	439.4	442.1	443.6	445.9	447.2
23	449.1	449.4	447.6	445.6	442.9	439.4	435.8	433.6	432.6	432.2	433.6	436.4	439.7	443.5	447.0	450.0	451.8	454.3	455.7
24	458.7	458.7	456.7	454.7	451.8	447.6	443.1	440.4	439.1	438.7	440.1	443.1	446.8	451.1	455.1	458.3	460.5	463.0	464.7
25	468.4	468.3	466.0	464.1	460.7	456.0	451.1	447.7	446.0	445.6	446.8	450.1	454.3	459.1	463.6	467.2	469.7	472.4	474.0
26	478.2	478.0	475.8	473.6	470.2	465.0	459.6	455.6	453.5	452.7	453.9	457.8	462.4	467.8	472.6	476.8	479.4	482.1	484.0
27	488.4	488.2	486.0	483.4	480.1	474.2	468.6	464.1	461.4	460.1	461.6	465.7	470.8	477.0	482.0	486.5	489.5	491.9	494.1
28	497.8	498.1	495.9	493.3	489.9	483.8	477.9	472.7	469.9	468.0	469.4	474.1	479.4	486.3	491.3	496.2	499.3	501.6	504.1
29	506.9	507.6	505.6	503.1	499.5	493.2	487.2	481.5	478.4	476.0	477.4	482.7	488.3	495.3	500.7	505.9	508.9	511.1	513.6
30	515.8	516.7	514.9	512.5	509.1	502.9	496.5	490.6	487.2	484.5	485.9	491.5	497.4	504.9	510.5	515.6	518.5	520.5	522.8
31	524.9	525.6	524.1	521.8	518.4	512.6	506.0	499.9	496.3	493.4	495.2	500.5	506.9	514.4	520.3	525.2	527.8	529.7	531.8
32	533.3	533.7	532.7	530.8	527.4	522.1	515.3	508.9	505.3	502.5	504.2	509.4	516.2	523.6	529.6	534.1	536.5	538.2	540.6
33	541.2	541.6	541.0	539.3	535.9	531.0	524.5	517.9	514.1	511.7	513.3	518.3	525.4	532.7	538.5	542.9	544.8	546.5	548.5
34	548.6	548.5	548.8	547.5	544.5	539.8	533.3	527.2	523.1	521.3	522.7	527.5	534.6	542.1	547.9	551.7	553.0	554.5	556.3
35	555.4	555.2	556.0	555.5	552.8	548.2	542.0	536.4	532.3	530.7	532.4	536.6	543.6	551.0	556.6	559.8	560.6	561.7	563.3
36	561.5	561.2	562.6	563.0	560.5	556.1	550.5	545.1	541.4	540.1	541.6	545.6	552.3	559.5	564.6	567.2	567.4	568.1	569.9

Candela Tabulations (Continued)

	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
37	566.7	566.5	568.8	569.8	567.7	563.5	558.9	553.7	550.4	549.5	551.0	554.8	560.9	567.9	572.4	574.7	574.0	574.0	575.8
38	571.2	571.3	574.1	576.2	575.0	571.0	567.1	563.0	560.0	559.4	561.0	564.6	569.8	576.2	580.3	581.7	580.2	579.7	581.5
39	574.9	575.6	578.8	582.0	581.6	578.7	575.7	572.2	570.0	569.2	570.7	574.2	578.5	583.8	587.1	587.9	585.7	584.2	585.9
40	578.1	579.2	582.7	586.9	587.9	586.1	583.9	581.1	579.4	578.6	580.1	583.7	586.7	590.7	593.1	593.6	590.0	587.8	589.4
41	581.1	582.2	585.8	591.1	594.2	593.4	592.1	590.1	589.1	588.1	589.5	593.1	595.2	598.1	599.5	599.1	594.5	591.5	592.8
42	583.7	584.7	588.7	595.6	600.5	601.0	600.6	599.6	598.6	597.8	599.1	602.6	603.7	605.6	605.7	604.2	598.5	594.6	595.9
43	585.5	586.6	591.1	599.5	606.5	608.5	608.9	608.9	608.5	607.5	608.7	611.6	612.0	612.5	611.3	608.8	601.7	597.2	598.1
44	585.9	587.7	593.3	603.4	612.4	615.8	616.8	618.2	618.4	617.8	618.4	620.8	620.1	619.4	617.1	613.0	604.7	599.3	600.3
45	585.8	588.2	595.3	607.2	617.8	623.1	625.4	628.5	629.2	628.7	629.3	630.7	629.4	627.7	623.5	617.9	607.8	601.7	601.8
46	584.8	588.5	597.5	610.8	623.0	630.8	634.5	639.4	640.8	640.2	640.8	641.0	639.2	636.0	630.2	622.5	610.8	603.6	603.5
47	583.7	588.5	599.5	614.5	627.9	638.1	643.3	649.8	652.0	651.9	651.7	650.8	648.4	644.0	636.4	627.1	613.5	605.2	604.7
48	582.8	588.2	601.4	617.8	632.7	645.4	652.2	660.0	663.4	663.4	662.8	661.2	658.0	652.9	643.3	632.2	616.6	607.1	606.3
49	582.0	587.7	603.3	621.6	637.7	652.9	661.5	670.6	675.8	675.6	674.6	672.0	668.3	662.2	651.3	638.0	620.3	609.2	607.9
50	581.3	587.2	604.8	625.6	643.3	660.2	670.4	680.4	687.1	687.3	685.4	682.3	678.0	671.1	658.7	643.7	624.5	611.7	609.8
51	581.0	587.3	606.5	629.7	649.1	667.1	678.5	689.4	697.6	698.3	695.7	692.1	687.2	679.8	666.0	650.0	629.1	614.9	612.6
52	581.3	588.5	608.5	635.0	655.5	674.1	687.1	698.7	708.7	709.6	706.8	703.0	697.9	690.2	674.9	657.4	635.3	619.4	616.9
53	582.7	590.6	611.1	641.6	663.1	681.5	695.6	707.9	720.0	721.8	719.1	714.9	709.5	701.7	685.3	665.9	642.8	625.4	622.6
54	584.4	594.0	615.0	648.0	671.4	688.9	703.7	717.0	731.7	734.8	731.9	726.8	720.9	713.1	696.2	675.7	651.2	632.3	629.1
55	587.1	598.2	620.1	654.8	679.8	696.2	712.8	727.9	745.6	749.6	746.5	739.8	733.4	725.8	708.6	686.8	660.5	640.0	635.9
56	591.1	602.7	626.3	662.4	689.2	704.7	723.7	742.2	763.0	767.1	764.1	755.7	747.8	740.0	723.0	699.3	671.9	648.8	643.7
57	595.5	606.6	633.0	669.4	697.9	714.6	735.4	757.6	781.0	787.2	783.1	772.3	762.6	753.9	737.0	711.4	682.3	656.8	650.6
58	598.4	609.4	638.6	675.6	706.1	724.6	746.9	772.8	799.9	808.3	803.2	789.1	776.3	767.1	750.0	723.3	691.6	663.6	656.2
59	599.0	609.7	642.3	680.9	713.6	735.0	758.7	788.9	821.1	833.5	827.0	808.0	792.2	781.6	763.8	735.3	699.9	669.2	660.0
60	596.0	606.7	641.6	684.2	719.2	743.9	769.1	805.3	844.3	861.3	852.0	826.3	807.6	794.4	776.1	744.3	705.1	670.7	660.0
61	588.0	600.0	636.5	683.0	720.9	749.4	776.3	818.5	863.4	885.1	873.9	841.9	818.8	803.6	783.7	748.0	704.6	667.4	655.8
62	574.7	587.8	627.5	677.8	718.2	749.7	781.2	828.4	883.4	909.5	894.5	855.7	827.3	809.2	786.7	746.5	698.2	658.2	644.5
63	554.4	569.2	612.4	666.6	709.9	745.8	782.1	835.4	902.2	933.8	914.6	867.6	832.6	810.5	782.8	737.2	684.4	641.0	624.6
64	527.4	544.3	590.3	647.1	695.3	735.7	777.5	837.4	916.5	954.5	929.0	873.5	832.6	804.5	770.8	720.4	662.4	617.3	599.4
65	494.6	513.2	561.3	620.7	673.6	717.8	765.9	835.0	925.4	969.1	937.6	873.1	826.4	791.4	750.6	695.8	633.9	586.8	567.9
66	457.7	477.4	526.6	587.2	643.5	691.2	747.3	826.0	929.7	978.1	940.4	865.1	811.0	768.2	719.8	660.8	595.2	546.8	527.3
67	418.0	437.1	486.1	546.3	603.9	656.0	720.4	808.2	924.3	980.5	934.3	848.2	785.7	734.1	680.3	618.9	550.7	503.7	483.7
68	377.7	395.5	443.4	500.3	558.8	615.6	686.3	781.4	907.6	972.4	918.3	822.8	752.6	693.7	637.0	571.3	504.2	459.9	441.1
69	338.4	354.0	396.8	450.6	508.6	567.1	644.4	744.1	877.1	948.9	890.1	786.4	709.8	644.6	582.8	514.0	451.9	409.3	392.4
70	297.3	311.6	348.5	396.0	453.5	515.3	595.1	698.3	836.4	908.0	849.5	741.1	657.8	585.1	520.7	454.0	395.5	357.8	343.7
71	256.5	269.5	300.1	340.7	395.7	460.5	544.2	648.5	788.9	857.6	798.5	688.5	596.9	522.7	458.5	396.5	343.4	311.6	300.6
72	219.6	230.0	254.2	288.1	338.9	401.2	486.9	593.2	733.6	797.6	737.2	625.8	530.9	455.7	395.3	336.4	291.9	264.3	256.4
73	183.1	191.3	211.6	239.2	282.3	340.5	421.7	527.5	666.3	727.6	666.5	553.0	456.9	382.4	326.2	278.0	240.5	218.3	212.7

Candela Tabulations (Continued)

	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
74	151.3	158.6	172.9	194.8	228.5	279.8	355.5	458.9	595.5	656.3	592.3	478.3	383.9	315.5	268.1	229.3	198.7	181.9	177.4
75	124.2	130.0	141.0	158.2	183.9	227.1	292.5	390.5	520.1	579.1	518.3	404.1	317.6	257.3	218.9	186.4	163.8	150.4	147.3
76	102.5	107.0	114.2	127.0	145.5	179.3	233.4	319.6	439.1	494.8	435.8	329.4	253.4	201.5	170.5	147.1	131.7	120.9	118.5
77	84.2	87.7	93.0	102.4	114.6	140.2	183.0	256.2	358.3	410.2	356.6	264.6	198.2	156.3	133.8	116.6	104.7	98.1	96.0
78	69.4	72.0	75.6	82.5	91.6	109.3	142.3	203.2	287.5	332.3	293.3	210.5	156.1	122.8	106.5	93.3	84.9	80.5	78.7
79	57.6	59.5	62.3	66.6	73.1	84.8	109.0	157.0	223.2	262.6	234.8	164.2	120.7	94.0	82.7	73.4	68.0	64.3	63.9
80	47.6	49.4	51.5	53.8	58.3	66.1	83.1	118.0	169.9	201.8	180.1	125.7	91.3	71.3	63.8	57.9	53.5	51.7	51.6
81	40.0	41.5	43.1	44.3	47.1	51.8	63.8	90.3	128.0	151.0	136.8	96.2	70.8	56.4	50.4	46.0	42.9	41.9	42.2
82	33.4	34.7	35.9	37.0	38.7	41.6	49.7	69.0	94.2	108.2	101.2	72.2	54.3	44.1	39.6	36.3	34.7	33.6	34.1
83	27.7	28.5	29.4	29.8	30.9	33.1	39.0	50.7	67.3	76.9	70.7	53.1	40.8	33.5	30.5	28.6	27.2	26.2	26.8
84	22.5	23.3	23.8	24.0	24.8	26.6	30.4	37.2	48.1	55.4	50.0	38.6	30.5	26.1	23.8	22.5	21.2	20.4	20.5
85	18.1	18.7	19.2	19.6	20.4	21.5	23.5	27.3	33.8	37.4	34.2	27.4	22.4	19.9	18.2	17.0	16.2	15.3	15.2
86	14.2	14.9	15.4	15.8	16.6	17.1	18.4	20.4	23.0	23.9	22.5	19.1	16.1	14.7	13.4	12.5	11.9	10.9	10.6
87	11.2	11.7	12.4	12.9	13.3	13.7	14.3	15.2	15.9	15.9	14.7	13.0	11.6	10.8	9.9	9.0	8.4	7.5	7.2
88	8.5	8.8	9.6	10.0	10.4	10.6	11.1	11.4	11.5	11.1	10.4	9.2	8.4	7.9	7.2	6.5	5.9	5.1	4.7
89	5.6	5.9	6.8	7.3	7.5	7.9	8.4	8.7	8.8	8.3	7.7	7.0	6.6	6.1	5.3	4.7	4.3	3.5	3.0
90	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

NOTE: The device under test emits no detectable uplight, as defined by ANSI/IES LM-75-19.

Test Date(s):

Equipment	Date
2M Sphere	01-30-2024
Type C Goniophotometer	01-30-2024

Integrating Sphere Equipment:

Description	Manufacturer	Model	Serial Number
2M Sphere	Labsphere	ILLUMIA PLUS 3020-195-4PI	1115184557
CCD Array Spectrometer	Labsphere	MC-9801:3683L	98010844
Lamp Power Supply	Labsphere	LPS-525-42	190615319
Programmable AC Source	Chroma	61602	616020003698
Power Analyzer	Xitron	XT2640	2641AD2006002

Goniophotometer Equipment:

Description	Manufacturer	Model	Serial Number
Type C Goniophotometer	LSI / UL	6440T	6440PN2028
Spectroradiometer	Gooch & Housego	770VIS/NIR	12415212
Spectrometer	Inphora, Inc	PDET 31	130627
Programmable AC Source	Chroma	61602	616020002300
Power Analyzer	Xitron	XT2640	2641AD2006004

Test Methods Used:

Title	Description
ANSI C82.77:2002	Harmonic Emission Limits- Related Power Quality Reqt's for Lighting Equipment
CIE Pub.13.3:1995	Method of Measuring and Specifying Color Rendering of Light Sources
CIE Pub.15:2018	Colorimetry
IES LM-58:1994	Spectroradiometric Measurements
ANSI/IES LM-79:2008	Electrical and Photometric Measurements of Solid-State Lighting Products

Reference Standard Used:

Equipment	Description
2M Sphere	Tungsten Halogen Omni-Directional 35W Calibration Lamp, Serial Number E4
Type C Goniophotometer and Spectrometer	Tungsten Halogen Omni-Directional 500W Calibration Lamp, Serial Numbers 16C293, 16C294, 16C295. For color calibration of spectrometer, 13C074.

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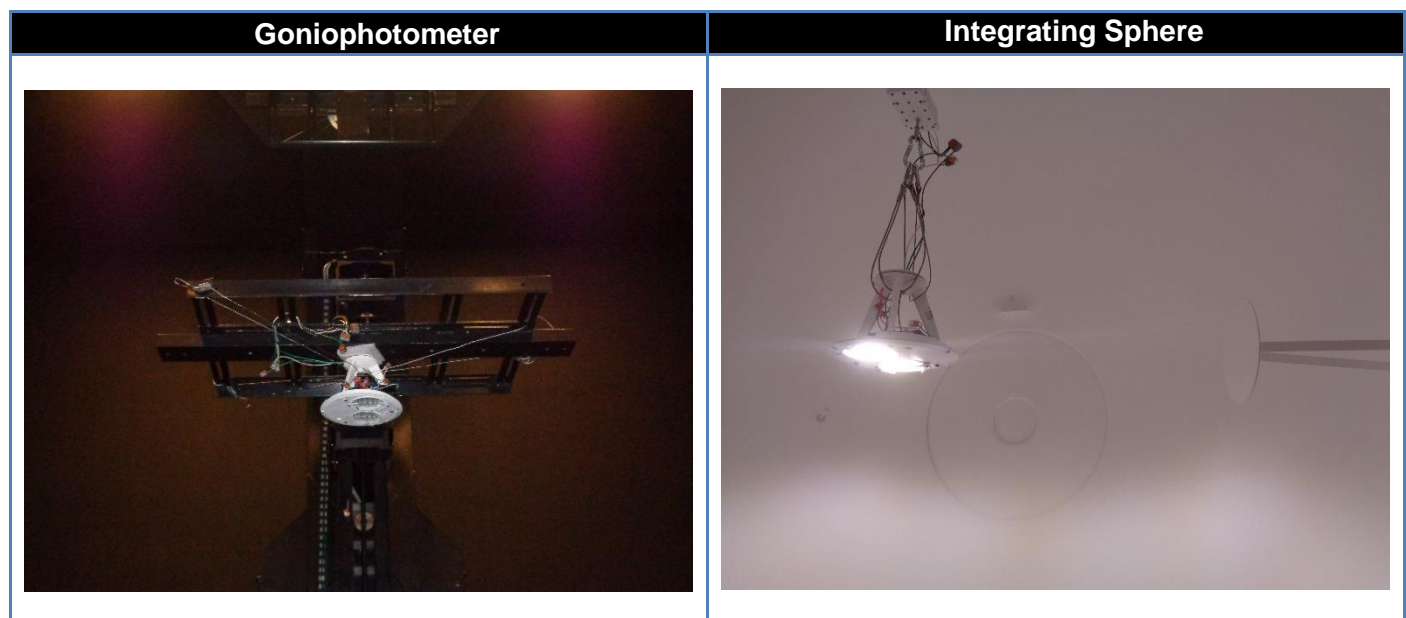
Data in this report tested under Non-Standard Conditions (i.e. temperature outside the allowed acceptance interval for the equipment/test) are identified with (~).

Data in this report not covered by the NVLAP accreditation, are identified with (*).

In the event testing is subcontracted, subcontracted equipment was used, or performed by the subcontracted laboratory identified in the equipment list of this report, test results in this report marked with the symbol (^).

Additional Comments:

The photos below are intended to show the orientation and fixturing/set-up of the units under test. These are critical to understanding the results of the test given the sensitivity of many products and measurement systems to orientation and set-up considerations, and also for reproducing the conditions of the test.



Document Revision History:

Each subsequent revision of this report replaces the preceding report.

Date	Rev	DCN #	Change at the time of this test	By	Approval
01/30/2024	A	DMS	Origination	J. Rocco	M. Hubbard

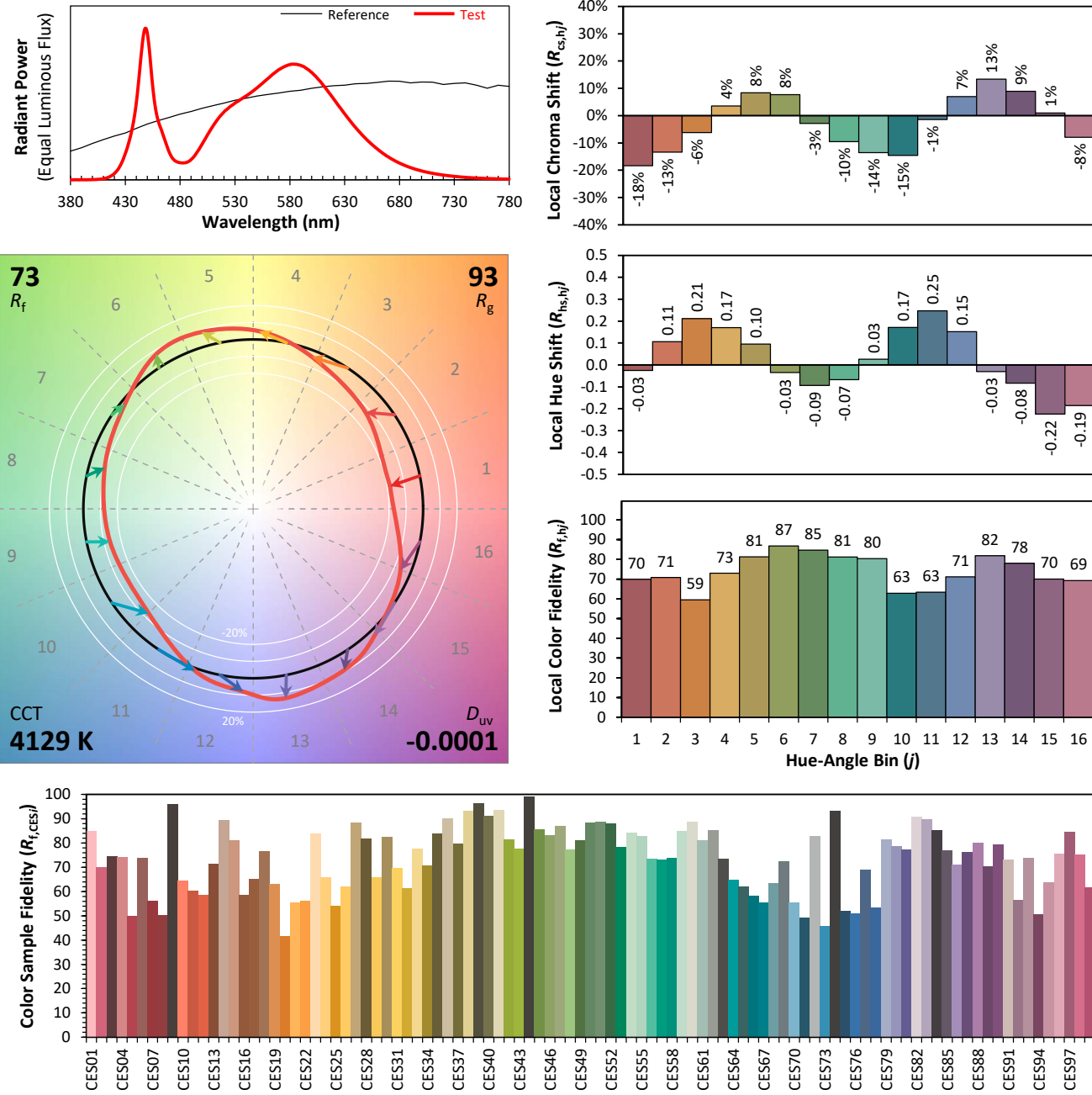
ANSI/IES TM-30-18 Color Rendition Report

Source: OSQP-C-3L-40K7-5M-UL (Light Engine)

Date: 1/30/2024

Manufacturer: Cree Lighting

Test: PL18125-001



Notes:

x 0.3749

y 0.3731

u' 0.2229

v' 0.4991

CIE 13.3-1995
(CRI)

R_a 71

R_g -40