



UL Verification Services Inc.
7036 Snowdrift Road
Allentown, PA 18106
610-774-1300



Photometric Test Report

Relevant Standards

IES LM-79-2008, ANSI C82.77-10-2014, UL 1598-2008
CIE 13.3-1995, CIE 15-2004, ANSI C78.377-2017
IES TM-30-2018

Prepared For

RBW Studio LLC

Reland Boyle
67 34th St, Mailbox 5, Unit 6A
Brooklyn, NY 11232
United States

Catalog Number

Print Sconce Small Frosted 2700K (180mA)

Order Number

13802732

Test Number

13802732.01

Test Date

2021-07-23 - 2021-07-29

Prepared By

Javier Caban, Technician

Approved By

Kevin Rodriguez, Project Handler

The results contained in this report pertain only to the tested sample.

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Laboratory results may not be representative of field performance
Ballast factors have not been applied

Testing was performed in a 2-meter integrating sphere using the 4π geometry method.

Absorption correction was employed for Sphere measurement



Luminaire Description: Cast aluminum housing, rubber inner lens, frosted plastic outer lens enclosure
Lamp: 36 white LEDs
Mounting: Pendant
Ballast/Driver: One ERP ESS010W-0200-42

Luminaire



Luminaire Characteristics

Luminous Diameter: 8.00 in.
Luminous Height: 3.380 in.

Summary of Results

Integrating Sphere

Luminous Flux: 576 Lumens
Efficacy: 72.38 lm/w
CCT: 2569 K
CRI (Ra): 91.7

Distribution

Total Luminaire Output: 585.2 Lumens
Luminaire Efficacy: 73.5 lm/w
Maximum Candela: 111 Candela

Electrical Data at 120 VAC

Test Temperature: 25.0 °C
Voltage: 120.1 VAC
Current: 0.06722 A
Power: 7.958 W
Power Factor: 0.986
Frequency: 60 Hz
Current THD: 12.6 %

In-Situ

LED Temperature: 48.8 °C
Driver Temperature: 41.0 °C
Measured LED Current: 0.01133 A

Temperature is offset to an ambient temperature of 25°C as described in UL1598-2008.



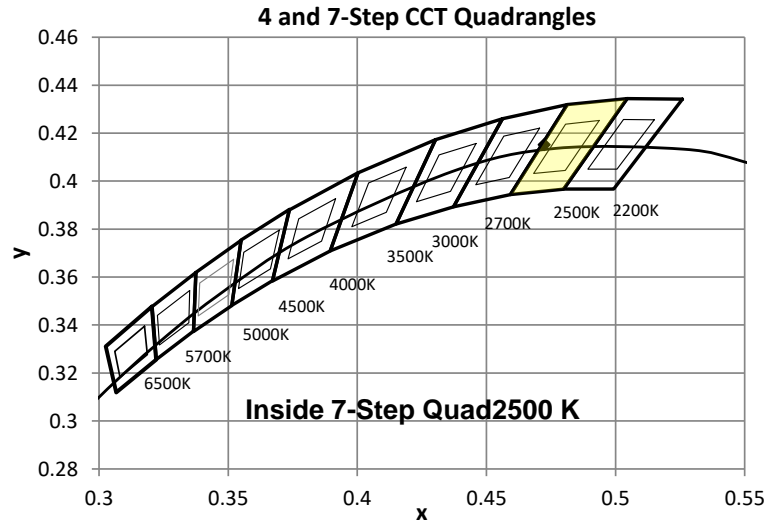
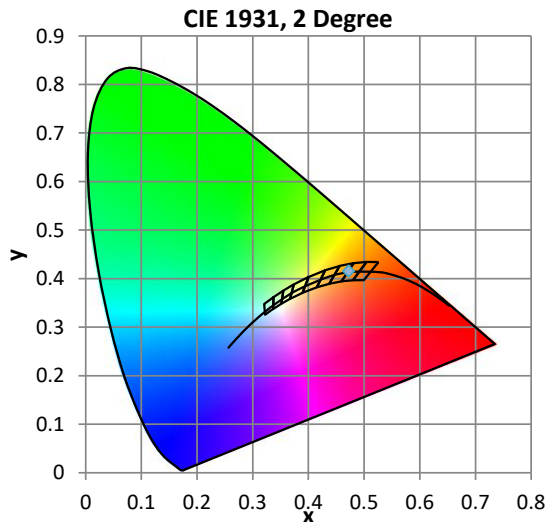
Color Quality - Integrating Sphere

Integrating Sphere Test Conditions

Temperature	Voltage	Current	Power	Power Factor	Frequency	Current THD
25.0 °C	120.1 VAC	0.06722 A	7.958 W	0.986	60 Hz	12.6 %

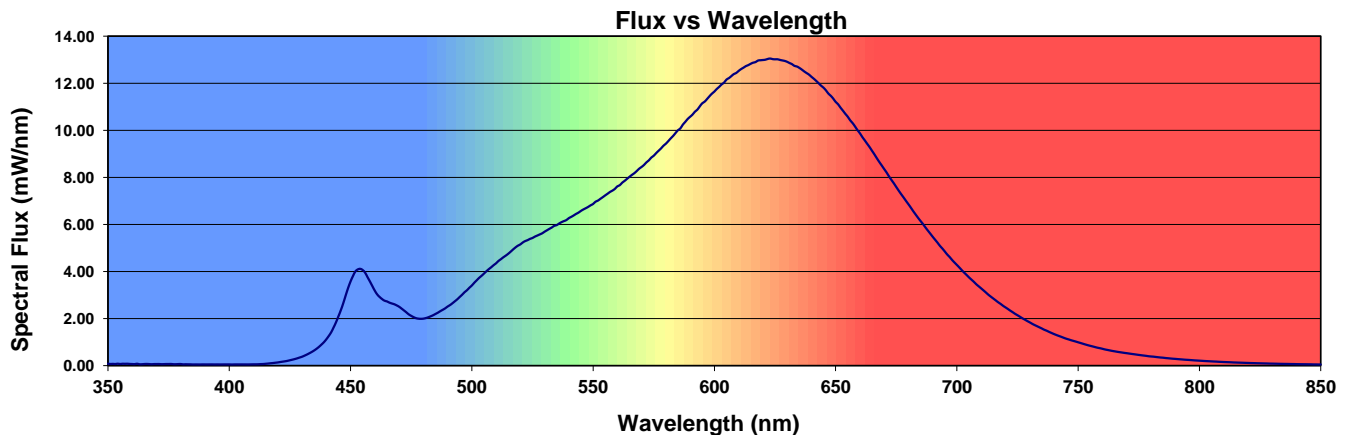
Summary of Results

Total Output:	576 Lumens	Chromaticity (x):	0.4723
Efficacy:	72.4 lm/w	Chromaticity (y):	0.4152
CCT:	2569 K	Chromaticity (u'):	0.2684
CRI (Ra):	91.7	Chromaticity (v'):	0.5310
CRI (R9):	52.8	TM-30 Rf:	91
Peak Wavelength:	623 nm	TM-30 Rg:	98
Dominant Wavelength:	585 nm	TM-30 Rcs,h1:	-6%
S/P Ratio:	1.2	Duv:	0.0008
M/P Ratio:	0.44	WELL Building Standard v2	



Color Rendering Index Detail

Ra (CRI)	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15
91.7	91.4	96.0	99.1	91.3	91.2	96.2	90.3	77.9	52.8	90.1	92.6	82.9	92.7	98.9	86.4





Distribution - Goniophotometer

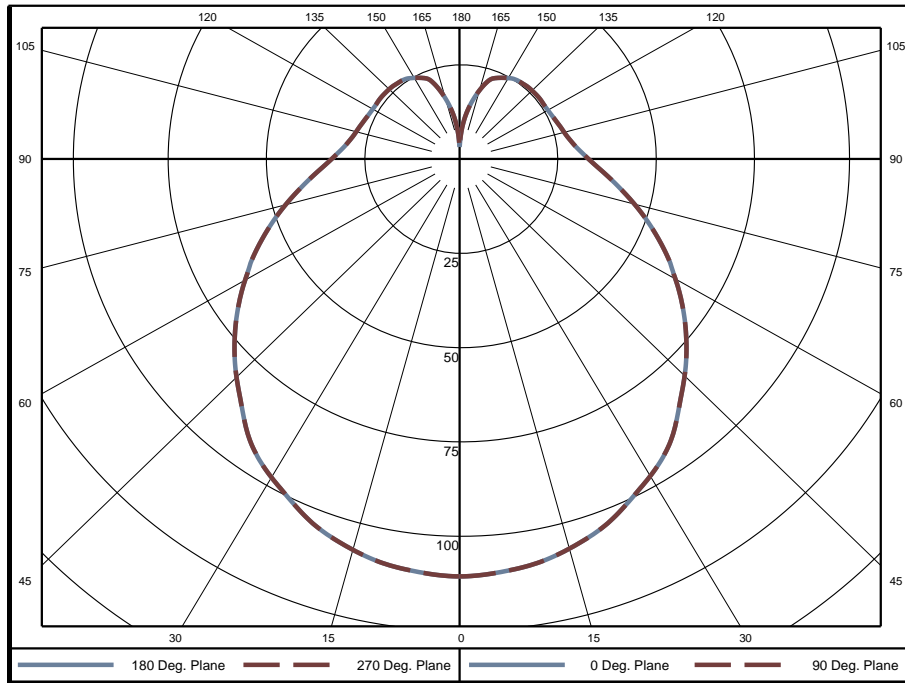
Distribution Test Conditions

Temperature	Voltage	Current	Power	Power Factor	Frequency	Current THD
25.3 °C	120.0 VAC	0.06725 A	7.961 W	0.986	60 Hz	12.7 %

Summary of Results

Spacing Criteria	Total Lumen Output:	585.2 Lumens
0-180: 1.32	Luminaire Efficacy:	73.5 lm/w
90-270: 1.32	Maximum Candela:	111 Candela
Corrected UGR (Room Dimension: X=4H, Y=8H, Reflectances: 70/50/20%, S/H: 1)		
Crosswise: 18.5	Endwise: 18.5	

Polar Plot



Zonal Lumen Summary

Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire
0-5	2.64	0.5%	60-65	29.75	5.1%	120-125	12.04	2.1%
5-10	7.84	1.3%	65-70	27.99	4.8%	125-130	11.34	1.9%
10-15	12.83	2.2%	70-75	25.84	4.4%	130-135	10.53	1.8%
15-20	17.46	3.0%	75-80	23.49	4.0%	135-140	9.61	1.6%
20-25	21.60	3.7%	80-85	21.18	3.6%	140-145	8.59	1.5%
25-30	25.10	4.3%	85-90	19.09	3.3%	145-150	7.45	1.3%
30-35	28.10	4.8%	90-95	17.42	3.0%	150-155	6.16	1.1%
35-40	30.16	5.2%	95-100	16.12	2.8%	155-160	4.87	0.8%
40-45	31.24	5.3%	100-105	15.12	2.6%	160-165	3.39	0.6%
45-50	31.86	5.4%	105-110	14.32	2.4%	165-170	1.94	0.3%
50-55	31.77	5.4%	110-115	13.54	2.3%	170-175	0.85	0.1%
55-60	31.02	5.3%	115-120	12.77	2.2%	175-180	0.17	0.0%

Zone	Lumens	% of Luminaire
0-40	146	24.9%
0-60	272	46.4%
0-90	419	71.6%
90-180	166	28.4%



Candela Tabulation

Horizontal Angle (Degrees)

Vertical Angle (Degrees)	0	22.5	45	67.5	90	112.5	135	157.5	180	202.5	225	247.5	270	292.5	315	337.5
	0	110.6	110.6	110.6	110.6	110.6	110.6	110.6	110.6	110.6	110.6	110.6	110.6	110.6	110.6	110.6
	5	110.1	110.1	110.1	110.1	110.1	110.1	110.1	110.1	110.1	110.1	110.1	110.1	110.1	110.1	110.1
	10	109.1	109.1	109.1	109.1	109.1	109.1	109.1	109.1	109.1	109.1	109.1	109.1	109.1	109.1	109.1
	15	107.2	107.2	107.2	107.2	107.2	107.2	107.2	107.2	107.2	107.2	107.2	107.2	107.2	107.2	107.2
	20	104.7	104.7	104.7	104.7	104.7	104.7	104.7	104.7	104.7	104.7	104.7	104.7	104.7	104.7	104.7
	25	101.1	101.1	101.1	101.1	101.1	101.1	101.1	101.1	101.1	101.1	101.1	101.1	101.1	101.1	101.1
	30	97.4	97.4	97.4	97.4	97.4	97.4	97.4	97.4	97.4	97.4	97.4	97.4	97.4	97.4	97.4
	35	93.3	93.3	93.3	93.3	93.3	93.3	93.3	93.3	93.3	93.3	93.3	93.3	93.3	93.3	93.3
	40	87.3	87.3	87.3	87.3	87.3	87.3	87.3	87.3	87.3	87.3	87.3	87.3	87.3	87.3	87.3
	45	81.6	81.6	81.6	81.6	81.6	81.6	81.6	81.6	81.6	81.6	81.6	81.6	81.6	81.6	81.6
	50	76.0	76.0	76.0	76.0	76.0	76.0	76.0	76.0	76.0	76.0	76.0	76.0	76.0	76.0	76.0
	55	70.1	70.1	70.1	70.1	70.1	70.1	70.1	70.1	70.1	70.1	70.1	70.1	70.1	70.1	70.1
	60	64.1	64.1	64.1	64.1	64.1	64.1	64.1	64.1	64.1	64.1	64.1	64.1	64.1	64.1	64.1
	65	58.3	58.3	58.3	58.3	58.3	58.3	58.3	58.3	58.3	58.3	58.3	58.3	58.3	58.3	58.3
	70	52.3	52.3	52.3	52.3	52.3	52.3	52.3	52.3	52.3	52.3	52.3	52.3	52.3	52.3	52.3
	75	46.6	46.6	46.6	46.6	46.6	46.6	46.6	46.6	46.6	46.6	46.6	46.6	46.6	46.6	46.6
	80	41.3	41.3	41.3	41.3	41.3	41.3	41.3	41.3	41.3	41.3	41.3	41.3	41.3	41.3	41.3
	85	36.8	36.8	36.8	36.8	36.8	36.8	36.8	36.8	36.8	36.8	36.8	36.8	36.8	36.8	36.8
	90	33.2	33.2	33.2	33.2	33.2	33.2	33.2	33.2	33.2	33.2	33.2	33.2	33.2	33.2	33.2
	95	30.6	30.6	30.6	30.6	30.6	30.6	30.6	30.6	30.6	30.6	30.6	30.6	30.6	30.6	30.6
	100	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9	28.9
	105	27.8	27.8	27.8	27.8	27.8	27.8	27.8	27.8	27.8	27.8	27.8	27.8	27.8	27.8	27.8
	110	27.0	27.0	27.0	27.0	27.0	27.0	27.0	27.0	27.0	27.0	27.0	27.0	27.0	27.0	27.0
	115	26.5	26.5	26.5	26.5	26.5	26.5	26.5	26.5	26.5	26.5	26.5	26.5	26.5	26.5	26.5
	120	26.1	26.1	26.1	26.1	26.1	26.1	26.1	26.1	26.1	26.1	26.1	26.1	26.1	26.1	26.1
	125	26.0	26.0	26.0	26.0	26.0	26.0	26.0	26.0	26.0	26.0	26.0	26.0	26.0	26.0	26.0
	130	26.1	26.1	26.1	26.1	26.1	26.1	26.1	26.1	26.1	26.1	26.1	26.1	26.1	26.1	26.1
	135	26.0	26.0	26.0	26.0	26.0	26.0	26.0	26.0	26.0	26.0	26.0	26.0	26.0	26.0	26.0
	140	25.8	25.8	25.8	25.8	25.8	25.8	25.8	25.8	25.8	25.8	25.8	25.8	25.8	25.8	25.8
	145	25.6	25.6	25.6	25.6	25.6	25.6	25.6	25.6	25.6	25.6	25.6	25.6	25.6	25.6	25.6
	150	24.8	24.8	24.8	24.8	24.8	24.8	24.8	24.8	24.8	24.8	24.8	24.8	24.8	24.8	24.8
	155	23.8	23.8	23.8	23.8	23.8	23.8	23.8	23.8	23.8	23.8	23.8	23.8	23.8	23.8	23.8
	160	22.3	22.3	22.3	22.3	22.3	22.3	22.3	22.3	22.3	22.3	22.3	22.3	22.3	22.3	22.3
	165	18.4	18.4	18.4	18.4	18.4	18.4	18.4	18.4	18.4	18.4	18.4	18.4	18.4	18.4	18.4
	170	14.0	14.0	14.0	14.0	14.0	14.0	14.0	14.0	14.0	14.0	14.0	14.0	14.0	14.0	14.0
	175	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0
	180	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3

Average Luminance (cd/m²)

Horizontal Angle (Degrees)

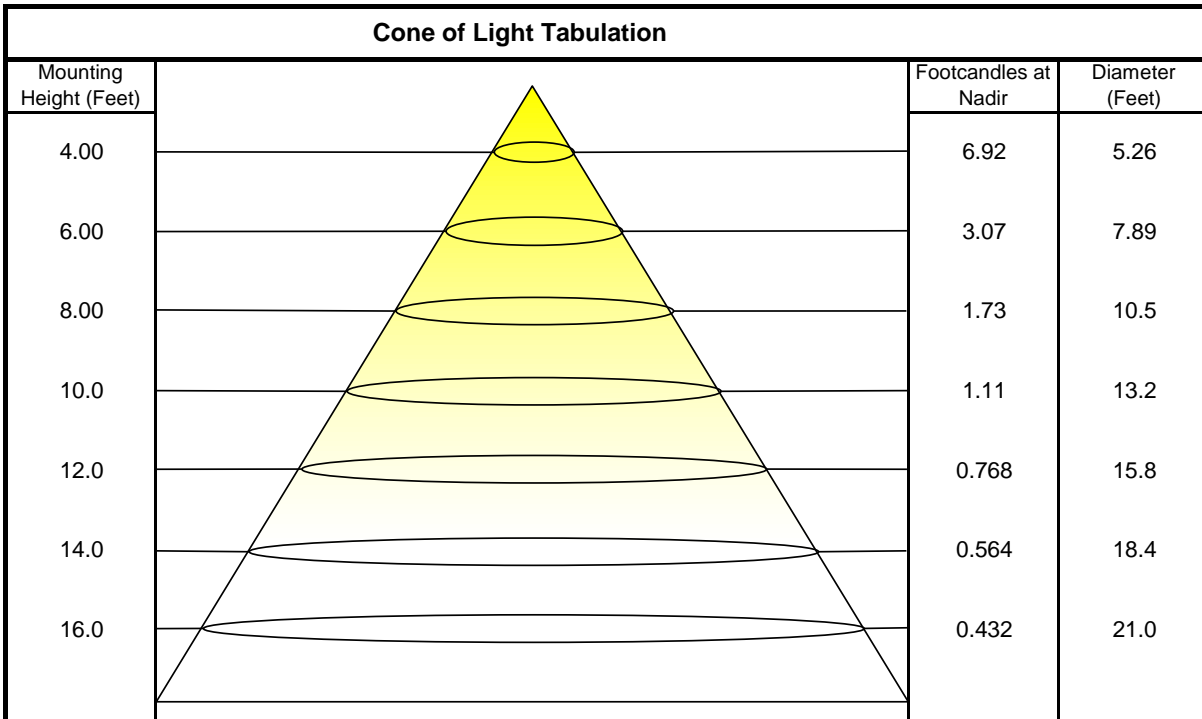
Vertical Angle (Degrees)	0	45	90
	0	3412	3412
	45	2315	2315
	55	2132	2132
	65	1975	1975
	75	1846	1846
	85	1820	1820



Coefficients of Utilization - Zonal Cavity Method

Effective Floor Cavity Reflectance 20%																		
Ceiling Cavity Reflectance	80				70				50			30			10			0
Wall Reflectance	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	0
Room Cavity Ratio (RCR)	** Values are expressed as percent of total lumen output delivered to the task surface **																	
0	112	112	112	112	106	106	106	106	95	95	95	85	85	85	76	76	76	72
1	100	94	89	84	94	89	84	80	79	75	72	70	68	65	62	60	58	54
2	90	80	73	66	84	76	69	63	68	62	58	60	56	52	53	50	47	43
3	81	70	61	54	76	66	58	52	59	52	47	52	47	43	46	42	39	35
4	74	61	52	45	69	58	50	43	52	45	40	46	41	36	41	36	33	29
5	68	54	45	38	63	51	43	37	46	39	34	41	35	31	37	32	28	25
6	62	49	39	33	58	46	38	32	41	34	29	37	31	27	33	28	24	22
7	57	44	35	29	54	42	33	28	38	31	26	34	28	23	30	25	21	19
8	53	40	31	25	50	38	30	24	34	27	23	31	25	21	28	23	19	17
9	50	36	28	23	47	35	27	22	31	25	20	28	23	19	25	21	17	15
10	46	33	25	20	44	32	24	20	29	23	18	26	21	17	24	19	15	14

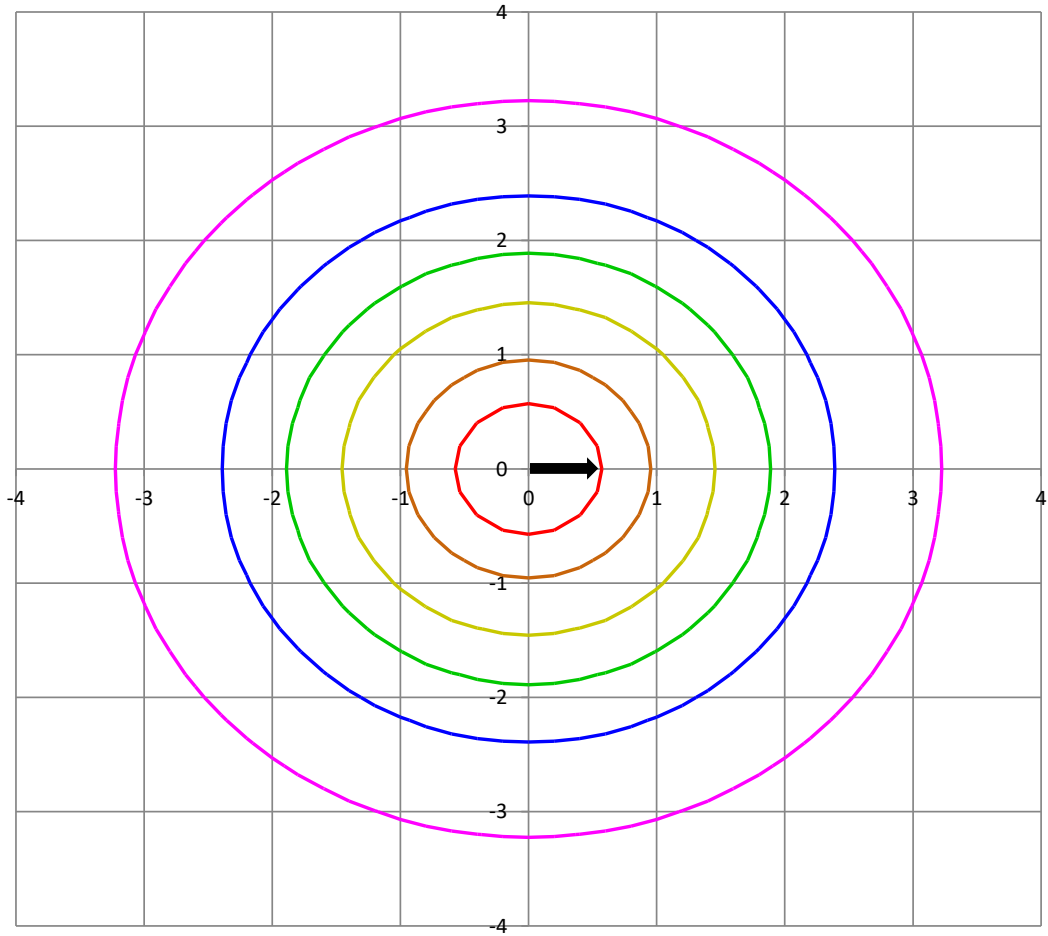
Beam and Field Information	
CIE Type:	Semi-Direct
Center Beam Intensity:	110.6 Candela
Central Cone Intensity:	110 Candela
Beam Flux:	315.3 Lumens
Beam Angle (0-180):	134.9 Degrees
Beam Angle (90-270):	134.9 Degrees
Field Angle (0-180):	346.1 Degrees
Field Angle (90-270):	346.1 Degrees



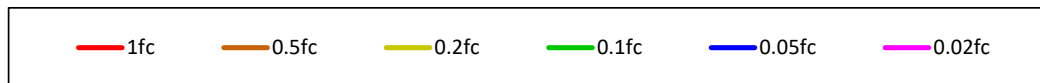


ISOFootcandle Plot

Mounting Height - 8 Feet



Grid Lines in Units of Mounting Height





In-Situ Test

In-Situ Test Conditions

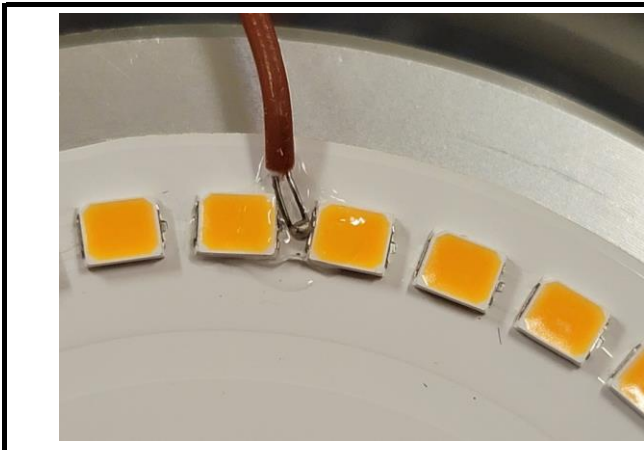
Temperature	Voltage	Current	Power	Power Factor	Frequency	Current THD
22.6 °C	120.2 VAC	N/A	N/A	N/A	60 Hz	N/A

Summary of Results

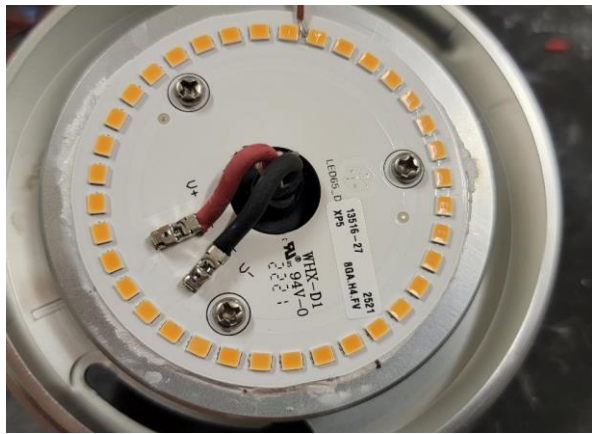
LED Temperature: 48.8 °C
Driver Temperature: 41.0 °C
Measured LED Current: 0.01133 A

Temperatures are offset to an ambient temperature of 25°C as described in UL1598-2008

LED Temperature Location



Thermocouple Reference



Driver Temperature Location



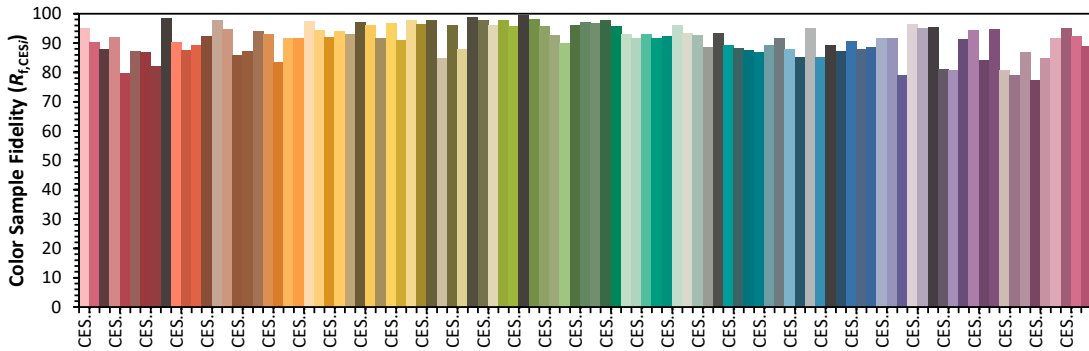
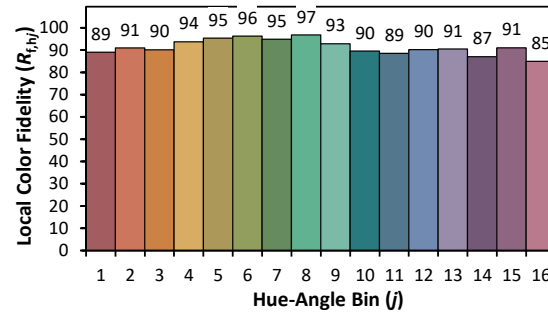
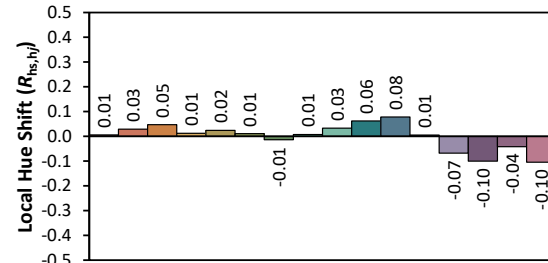
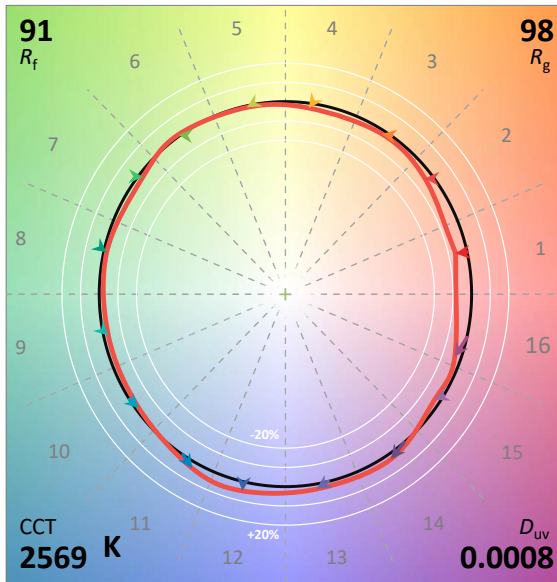
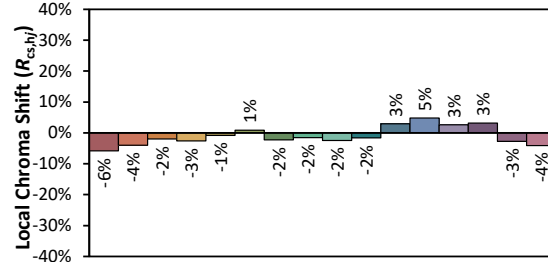
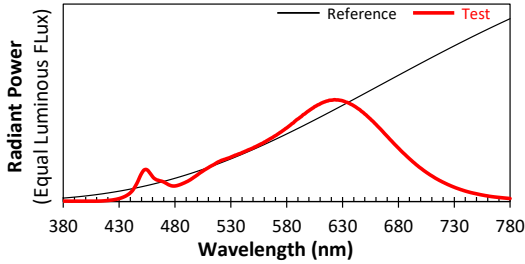
ANSI/IES TM-30-18 Color Rendition Report

Date: 2021-07-26

Manufacturer: RBW Studio LLC

Model:

Print Sconce Small Frosted 2700K (180mA)



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

x 0.4723
 y 0.4152
 u' 0.2684
 v' 0.5310

CIE 13.3-1995
(CRI)

R_a 92
 R_g 53

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