



UL Verification Services Inc.
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Allentown, PA 18106
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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
67 34th St, Mailbox 5, Unit 6A
Brooklyn, NY 11232
United States

Catalog Number
Radiant Disc 8"

Order Number
14026619
Test Number
14026619.01

Test Date

2021-10-06 - 2021-10-18

Prepared By

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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: Decorative white oak wall sconce with aluminum heat sink and frosted plastic diffuser
Lamp: 36 white LEDs
Mounting: Surface – Wall
Ballast/Driver: One ERP ESS010W-0200-42 LED driver

Luminaire



Luminaire Characteristics

Luminous Length: 1.88 in.
Luminous Width: 7.250 in.
Luminous Height: 7.25 in.

Summary of Results

Integrating Sphere

Luminous Flux: 460.2 Lumens
Efficacy: 57.46 lm/w
CCT: 2676 K
CRI (Ra): 94.9

Distribution

Total Luminaire Output: 460.4 Lumens
Luminaire Efficacy: 57.5 lm/w
Maximum Candela: 76 Candela

Electrical Data at 120 VAC

Test Temperature: 24.6 °C
Voltage: 120.1 VAC
Current: 0.06772 A
Power: 8.009 W
Power Factor: 0.985
Frequency: 60 Hz
Current THD: 11.0 %

In-Situ

LED Temperature: 48.8 °C
Driver Temperature: 40.6 °C
Measured LED Current: 0.01141 A

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



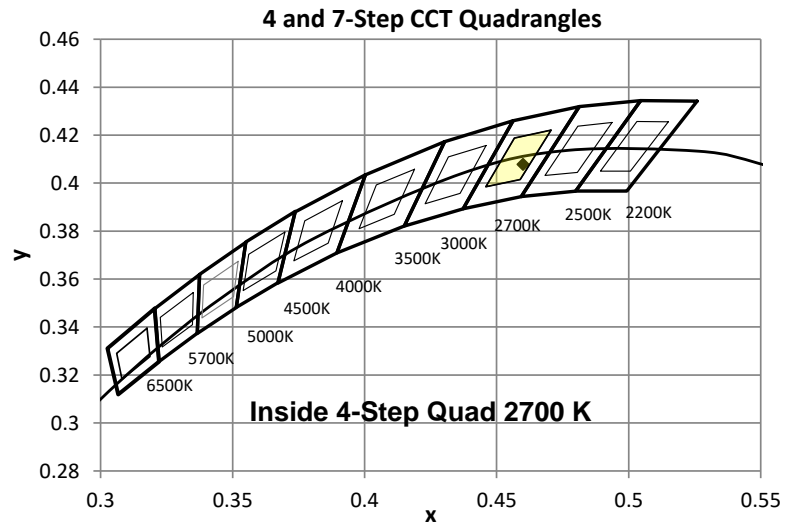
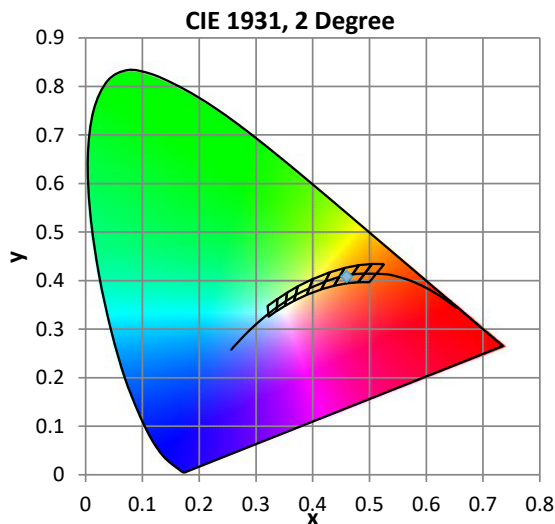
Color Quality - Integrating Sphere

Integrating Sphere Test Conditions

Temperature	Voltage	Current	Power	Power Factor	Frequency	Current THD
24.6 °C	120.1 VAC	0.06772 A	8.009 W	0.985	60 Hz	11.0 %

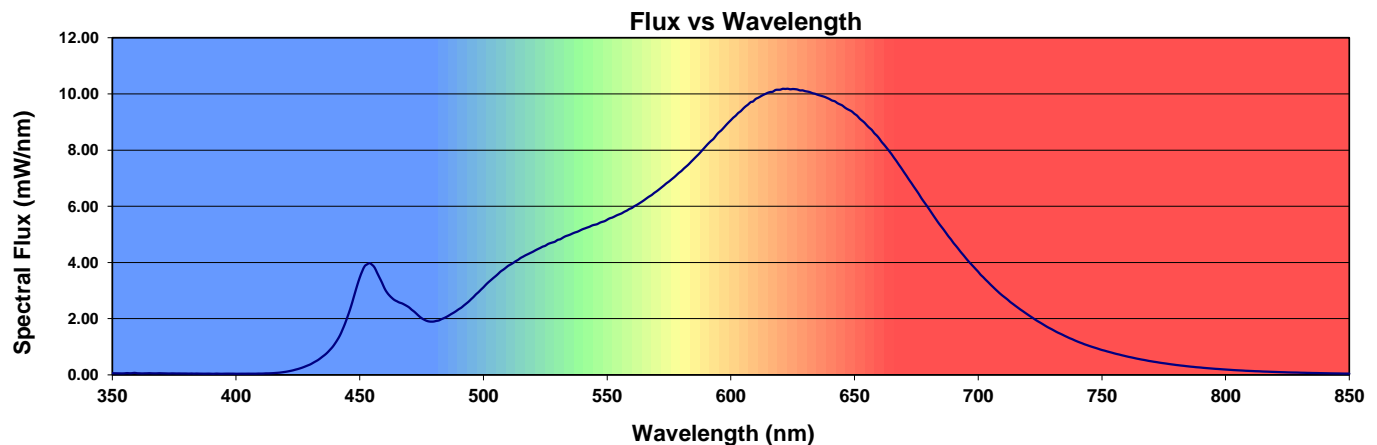
Summary of Results

Total Output:	460 Lumens	Chromaticity (x):	0.4599
Efficacy:	57.5 lm/w	Chromaticity (y):	0.4079
CCT:	2676 K	Chromaticity (u'):	0.2638
CRI (Ra):	94.9	Chromaticity (v'):	0.5263
CRI (R9):	67.2	TM-30 Rf:	93
Peak Wavelength:	629 nm	TM-30 Rg:	100
Dominant Wavelength:	585 nm	TM-30 Rcs,h1:	-4%
S/P Ratio:	1.3	Duv:	-0.0010
M/P Ratio:	0.49	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
94.9	96.1	98.9	98.8	95.8	96.2	97.0	92.1	84.3	67.2	96.6	97.8	86.9	97.2	99.3	91.7





Distribution - Goniophotometer

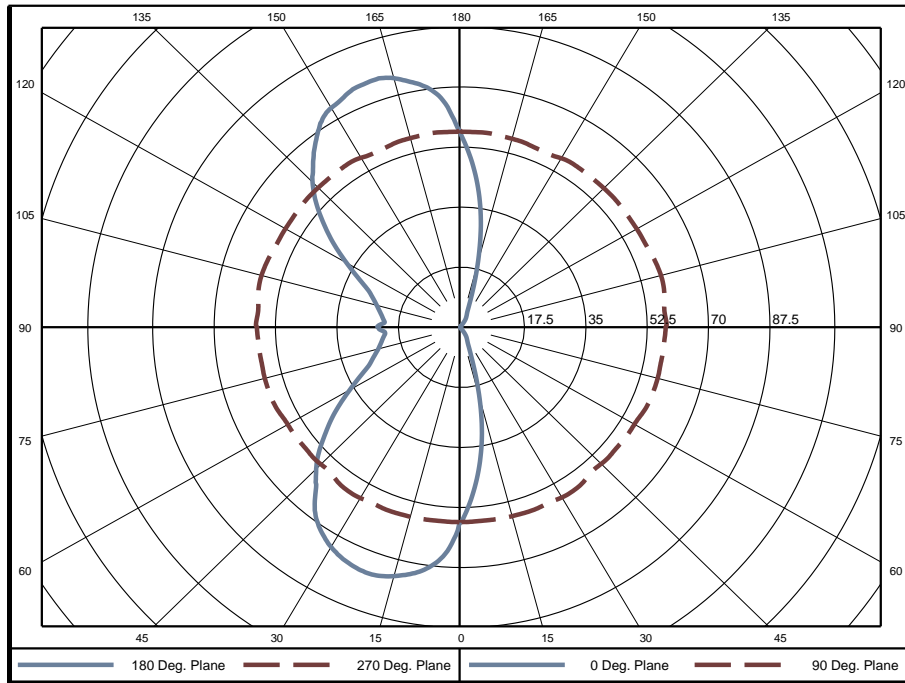
Distribution Test Conditions

Temperature	Voltage	Current	Power	Power Factor	Frequency	Current THD
25.0 °C	120.1 VAC	0.06774 A	8.012 W	0.985	60 Hz	11.0 %

Summary of Results

Spacing Criteria	Total Lumen Output:	460.4 Lumens
0-180: 0.41	Luminaire Efficacy:	57.5 lm/w
90-270: 1.53	Maximum Candela:	76 Candela
Corrected UGR (Room Dimension: X=4H, Y=8H, Reflectances: 70/50/20%, S/H: 1)		
Crosswise: 0	Endwise: 19.9	

Polar Plot



Zonal Lumen Summary

Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire
0-5	1.37	0.3%	60-65	16.30	3.5%	120-125	16.36	3.6%
5-10	4.02	0.9%	65-70	16.40	3.6%	125-130	16.21	3.5%
10-15	6.38	1.4%	70-75	16.36	3.6%	130-135	15.82	3.4%
15-20	8.35	1.8%	75-80	16.28	3.5%	135-140	15.16	3.3%
20-25	10.06	2.2%	80-85	16.22	3.5%	140-145	14.26	3.1%
25-30	11.66	2.5%	85-90	16.26	3.5%	145-150	13.09	2.8%
30-35	13.16	2.9%	90-95	16.18	3.5%	150-155	11.53	2.5%
35-40	14.24	3.1%	95-100	16.22	3.5%	155-160	9.97	2.2%
40-45	14.92	3.2%	100-105	16.41	3.6%	160-165	8.34	1.8%
45-50	15.61	3.4%	105-110	16.43	3.6%	165-170	6.38	1.4%
50-55	16.03	3.5%	110-115	16.37	3.6%	170-175	4.05	0.9%
55-60	16.23	3.5%	115-120	16.37	3.6%	175-180	1.38	0.3%

Zone	Lumens	% of Luminaire
0-40	69	15.0%
0-60	132	28.7%
0-90	230	49.9%
90-180	231	50.1%



Candela Tabulation

Horizontal Angle (Degrees)

Vertical Angle (Degrees)	Horizontal 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	56.87	56.87	56.87	56.87	56.87	56.87	56.87	56.87	56.87	56.87	56.87	56.87	56.87	56.87	56.87	56.87
5	46.84	46.19	48.94	52.39	56.72	61.54	65.37	67.07	68.30	67.07	65.37	61.54	56.72	52.39	48.94	46.19
10	34.31	34.64	40.54	48.19	56.83	65.97	70.28	72.12	72.72	72.12	70.28	65.97	56.83	48.19	40.54	34.64
15	20.28	21.91	31.34	43.85	56.96	68.85	73.07	74.74	75.11	74.74	73.07	68.85	56.96	43.85	31.34	21.91
20	9.50	11.24	21.73	39.35	57.07	70.88	74.86	76.06	76.20	76.06	74.86	70.88	57.07	39.35	21.73	11.24
25	5.37	6.19	13.31	34.60	56.91	72.04	75.61	75.92	75.38	75.92	75.61	72.04	56.91	34.60	13.31	6.19
30	3.95	4.42	8.11	30.08	57.23	73.52	76.38	75.11	73.38	75.11	76.38	73.52	57.23	30.08	8.11	4.42
35	2.85	3.40	5.55	25.49	57.15	74.24	75.96	72.54	69.76	72.54	75.96	74.24	57.15	25.49	5.55	3.40
40	1.36	2.28	4.33	20.92	56.20	73.47	73.66	67.87	63.37	67.87	73.66	73.47	56.20	20.92	4.33	2.28
45	0.47	1.06	3.63	17.18	56.11	73.69	71.87	63.18	57.20	63.18	71.87	73.69	56.11	17.18	3.63	1.06
50	0.40	0.50	3.05	14.14	56.16	73.98	70.12	58.55	50.12	58.55	70.12	73.98	56.16	14.14	3.05	0.50
55	0.36	0.46	2.46	11.73	56.34	74.44	68.28	52.91	42.85	52.91	68.28	74.44	56.34	11.73	2.46	0.46
60	0.33	0.44	1.84	9.93	56.38	74.47	66.11	46.81	35.39	46.81	66.11	74.47	56.38	9.93	1.84	0.44
65	0.33	0.43	1.29	8.70	56.98	75.25	64.63	41.47	29.36	41.47	64.63	75.25	56.98	8.70	1.29	0.43
70	0.32	0.44	0.85	7.83	57.22	75.51	62.86	36.71	25.99	36.71	62.86	75.51	57.22	7.83	0.85	0.44
75	0.32	0.44	0.58	7.22	57.25	75.31	61.16	32.64	23.70	32.64	61.16	75.31	57.25	7.22	0.58	0.44
80	0.33	0.44	0.46	6.83	57.12	75.05	59.80	29.64	22.27	29.64	59.80	75.05	57.12	6.83	0.46	0.44
85	0.35	0.45	0.43	6.64	57.22	75.03	58.95	27.98	21.11	27.98	58.95	75.03	57.22	6.64	0.43	0.45
90	0.36	0.46	0.44	6.64	57.47	75.16	58.65	27.33	22.81	27.33	58.65	75.16	57.47	6.64	0.44	0.46
95	0.34	0.44	0.45	6.52	57.33	74.15	58.53	27.61	21.39	27.61	58.53	74.15	57.33	6.52	0.45	0.44
100	0.34	0.45	0.50	6.80	58.00	75.17	60.18	29.56	22.57	29.56	60.18	75.17	58.00	6.80	0.50	0.45
105	0.34	0.46	0.66	7.23	58.18	75.54	61.40	32.52	24.15	32.52	61.40	75.54	58.18	7.23	0.66	0.46
110	0.35	0.48	0.97	7.80	57.80	75.22	62.87	36.31	26.34	36.31	62.87	75.22	57.80	7.80	0.97	0.48
115	0.36	0.49	1.44	8.64	57.25	74.68	64.42	41.05	30.16	41.05	64.42	74.68	57.25	8.64	1.44	0.49
120	0.39	0.51	2.02	9.96	57.14	74.63	66.54	46.86	36.40	46.86	66.54	74.63	57.14	9.96	2.02	0.51
125	0.41	0.53	2.63	11.81	57.08	74.61	68.80	53.07	44.03	53.07	68.80	74.61	57.08	11.81	2.63	0.53
130	0.43	0.58	3.20	14.32	57.17	74.61	71.00	59.06	51.67	59.06	71.00	74.61	57.17	14.32	3.20	0.58
135	0.48	1.32	3.75	17.51	57.10	74.39	72.85	63.97	58.66	63.97	72.85	74.39	57.10	17.51	3.75	1.32
140	1.32	2.50	4.40	21.32	57.06	74.04	74.34	68.43	64.24	68.43	74.34	74.04	57.06	21.32	4.40	2.50
145	2.71	3.49	5.64	25.71	57.13	73.54	75.40	72.13	69.73	72.13	75.40	73.54	57.13	25.71	5.64	3.49
150	3.72	4.44	8.28	30.16	56.82	72.44	75.51	74.37	73.42	74.37	75.51	72.44	56.82	30.16	8.28	4.44
155	4.94	6.51	13.62	34.50	56.26	70.72	74.43	75.01	75.09	75.01	74.43	70.72	56.26	34.50	13.62	6.51
160	8.85	12.27	22.09	39.37	56.54	69.72	73.94	75.41	75.94	75.41	73.94	69.72	56.54	39.37	22.09	12.27
165	18.74	23.31	31.76	44.11	56.80	68.24	72.55	74.58	75.27	74.58	72.55	68.24	56.80	44.11	31.76	23.31
170	32.89	36.18	41.08	48.68	57.01	65.84	70.26	72.42	72.26	72.42	70.26	65.84	57.01	48.68	41.08	36.18
175	45.80	47.71	49.54	52.95	57.01	61.84	65.75	68.16	67.80	68.16	65.75	61.84	57.01	52.95	49.54	47.71
180	57.35	57.35	57.35	57.35	57.35	57.35	57.35	57.35	57.35	57.35	57.35	57.35	57.35	57.35	57.35	57.35

Average Luminance (cd/m²)

Horizontal Angle (Degrees)

Vertical Angle (Degrees)	Horizontal Angle (Degrees)		
	0	45	90
0	6485	6485	6485
45	15	132	4524
55	11	83	4613
65	10	41	4889
75	9	18	5330
85	10	14	6023



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	107	107	107	107	99	99	99	99	83	83	83	69	69	69	56	56	56	50
1	95	89	84	79	87	82	77	73	68	65	62	56	53	51	44	43	41	35
2	85	76	69	62	78	70	63	58	58	53	49	47	44	40	37	35	32	27
3	77	66	57	51	70	61	53	47	50	45	40	41	37	33	32	29	26	22
4	70	58	49	42	64	53	45	39	44	38	33	36	31	28	29	25	22	18
5	64	51	42	36	58	47	39	33	39	33	28	32	27	24	25	22	19	15
6	59	46	37	31	54	42	34	29	35	29	24	29	24	20	23	19	16	13
7	54	41	33	27	50	38	30	25	32	26	21	26	21	18	21	17	14	12
8	50	37	29	23	46	34	27	22	29	23	19	24	19	16	19	16	13	10
9	47	34	26	21	43	31	24	19	27	21	17	22	17	14	18	14	11	9
10	44	31	23	18	40	29	22	17	24	19	15	20	16	13	16	13	10	8

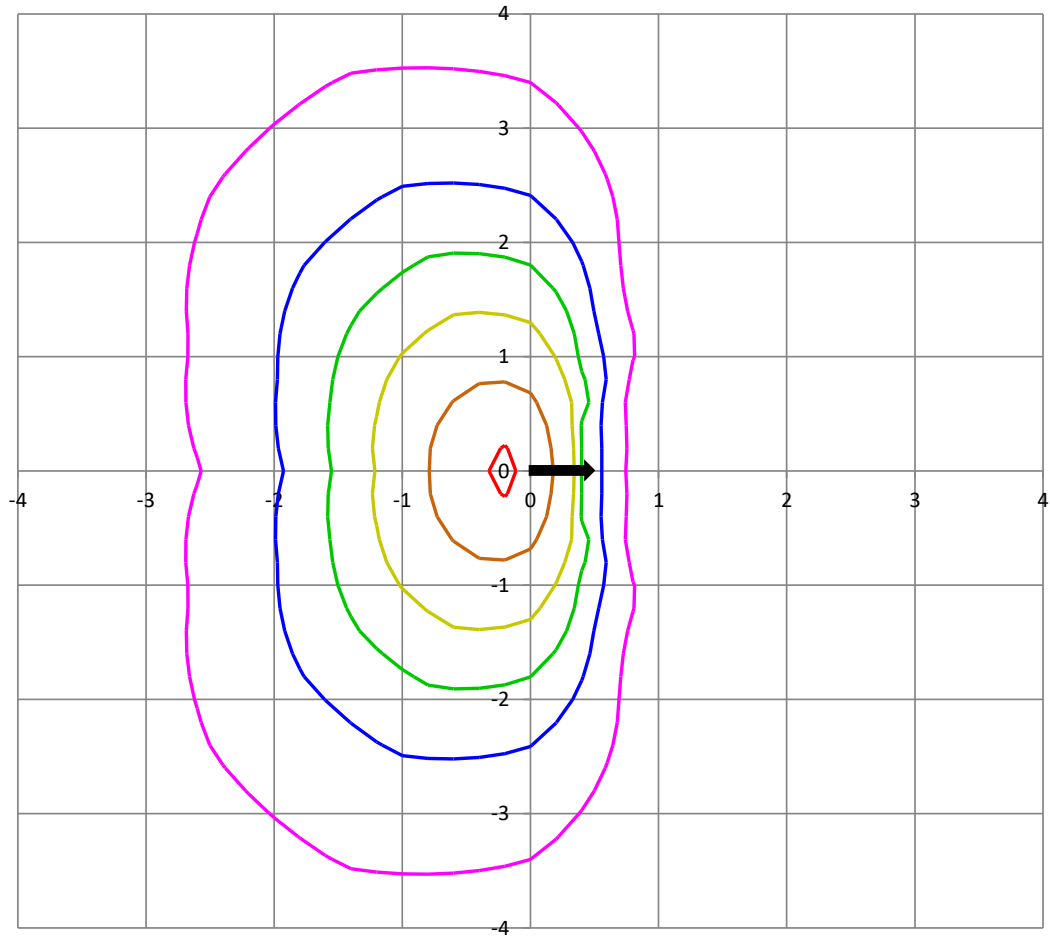
Beam and Field Information	
CIE Type:	Direct/Indirect
Center Beam Intensity:	56.87 Candela
Central Cone Intensity:	N/A Candela
Beam Flux:	422.9 Lumens
Beam Angle (0-180):	78.1 Degrees
Beam Angle (90-270):	N/A Degrees
Field Angle (0-180):	N/A Degrees
Field Angle (90-270):	N/A Degrees

Cone of Light Tabulation			
Mounting Height (Feet)		Footcandles at Nadir	Diameter (Feet)
4.00		3.55	4.81
6.00		1.58	7.21
8.00		0.889	9.62
10.0		0.569	12.0
12.0		0.395	14.4
14.0		0.290	16.8
16.0		0.222	19.2



ISOFootcandle Plot

Mounting Height - 8 Feet



Grid Lines in Units of Mounting Height





In-Situ Test

In-Situ Test Conditions

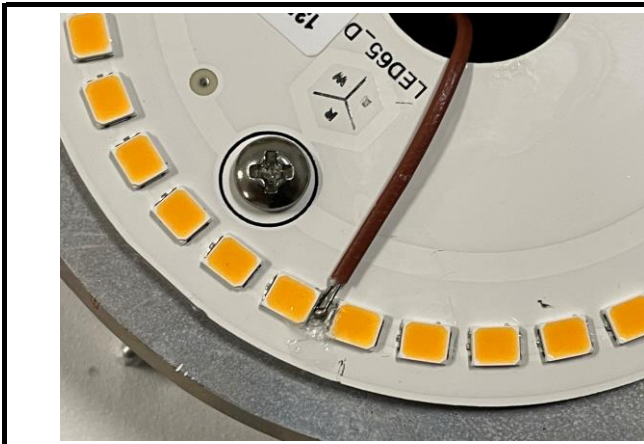
Temperature	Voltage	Current	Power	Power Factor	Frequency	Current THD
24.0 °C	120.0 VAC	N/A	N/A	N/A	60 Hz	N/A

Summary of Results

LED Temperature: 48.8 °C
Driver Temperature: 40.6 °C
Measured LED Current: 0.01141 A

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

LED Temperature Location



Thermocouple Reference



Driver Temperature Location



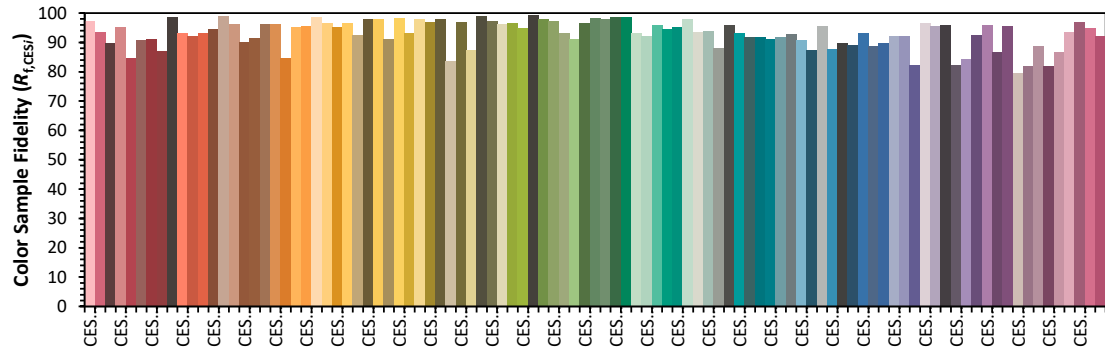
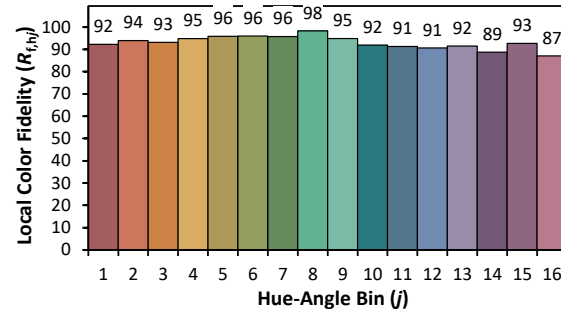
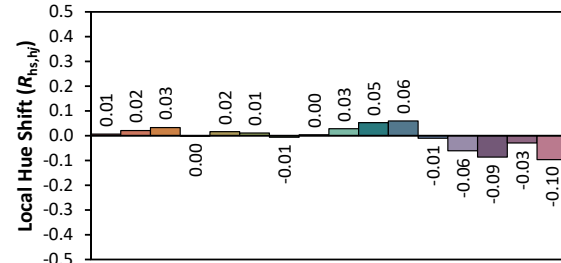
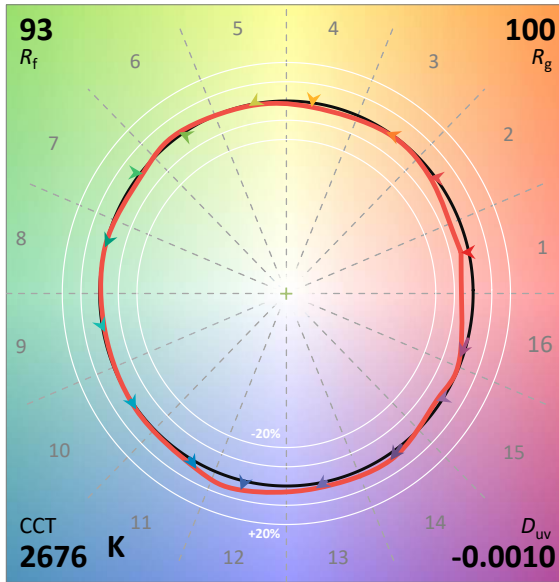
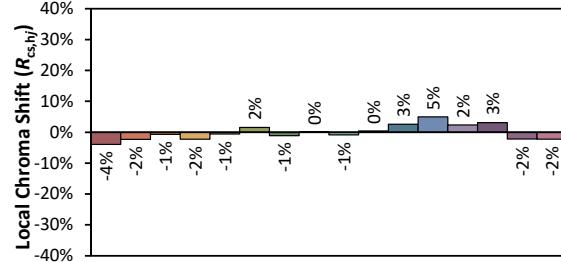
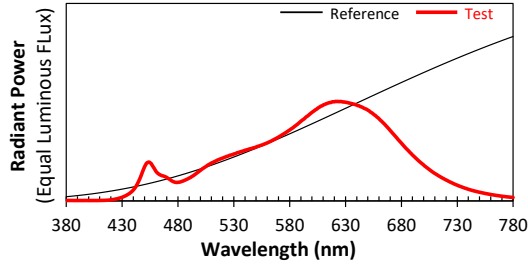
ANSI/IES TM-30-18 Color Rendition Report

Date: 2021-10-11

Manufacturer: RBW Studio LLC

Model:

Radiant Disc 8"



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

x 0.4599
y 0.4079
u' 0.2638
v' 0.5263

CIE 13.3-1995
(CRI)

R_a 95
R_g 67

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