



UL Verification Services Inc.
7036 Snowdrift Road
Allentown, PA 18106
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Photometric Test Report

Relevant Standards

IES LM-79-2008, ANSI C82.77-10-2014, 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 Square 10"

Order Number

14026619

Test Number

14026619.05

Test Date

2021-10-08 - 2021-10-15

Prepared By

Cordaryl Cousar, 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

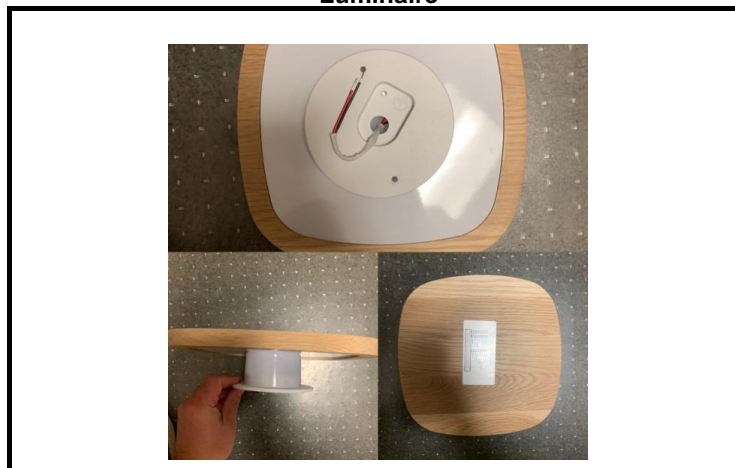
Testing was performed in a 2-meter integrating sphere using the 4π geometry method.

Absorption correction was employed for Sphere measurement



Luminaire Description: 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: 8.500 in.
Luminous Height: 8.50 in.

Summary of Results

Integrating Sphere

Luminous Flux: 447.7 Lumens
Efficacy: 56.09 lm/w
CCT: 2681 K
CRI (Ra): 94.9

Distribution

Total Luminaire Output: 455.9 Lumens
Luminaire Efficacy: 57.1 lm/w
Maximum Candela: 81 Candela

Electrical Data at 120 VAC

Test Temperature: 25.8 °C
Voltage: 120.1 VAC
Current: 0.06761 A
Power: 7.982 W
Power Factor: 0.983
Frequency: 60 Hz
Current THD: 12.1 %



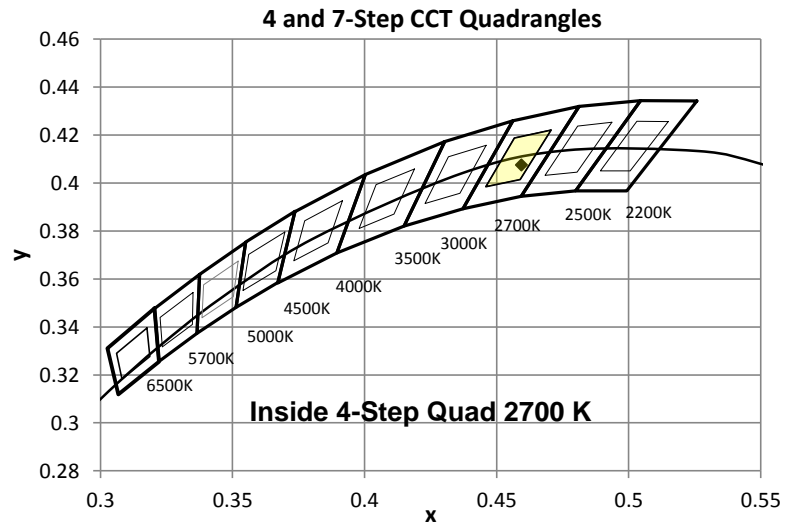
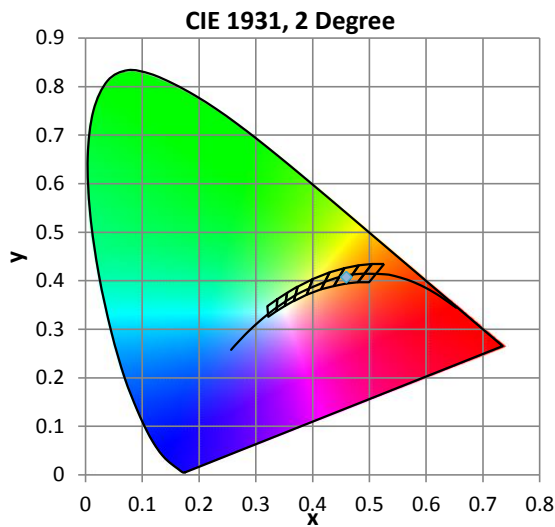
Color Quality - Integrating Sphere

Integrating Sphere Test Conditions

Temperature	Voltage	Current	Power	Power Factor	Frequency	Current THD
25.8 °C	120.1 VAC	0.06761 A	7.982 W	0.983	60 Hz	12.1 %

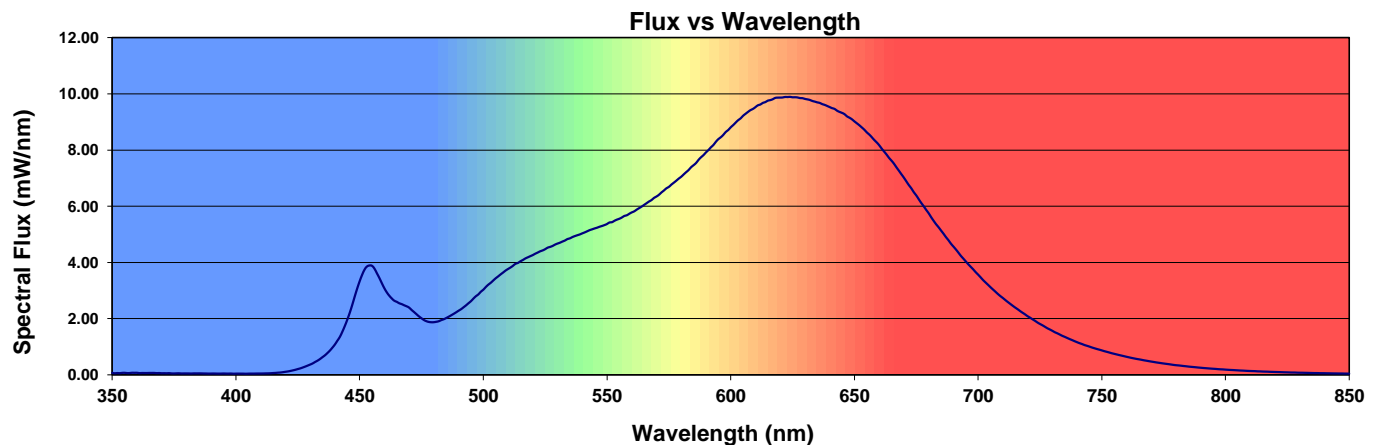
Summary of Results

Total Output:	448 Lumens	Chromaticity (x):	0.4594
Efficacy:	56.1 lm/w	Chromaticity (y):	0.4075
CCT:	2681 K	Chromaticity (u'):	0.2636
CRI (Ra):	94.9	Chromaticity (v'):	0.5261
CRI (R9):	67.5	TM-30 Rf:	93
Peak Wavelength:	622 nm	TM-30 Rg:	100
Dominant Wavelength:	585 nm	TM-30 Rcs,h1:	-4%
S/P Ratio:	1.31	Duv:	-0.0011
M/P Ratio:	0.5	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	96.2	99.0	98.8	95.9	96.3	97.0	92.1	84.4	67.5	96.8	97.8	86.8	97.4	99.3	92.0





Distribution - Goniophotometer

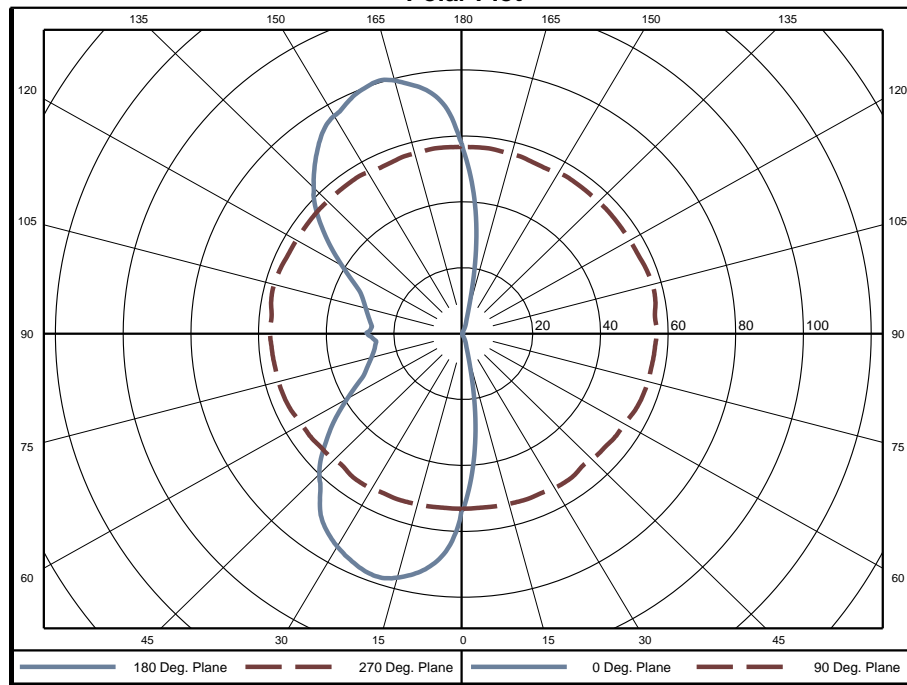
Distribution Test Conditions

Temperature	Voltage	Current	Power	Power Factor	Frequency	Current THD
25.7 °C	119.9 VAC	0.06765 A	7.987 W	0.984	60 Hz	11.9 %

Summary of Results

Spacing Criteria	Total Lumen Output:	455.9 Lumens
0-180: 0.28	Luminaire Efficacy:	57.1 lm/w
90-270: 1.54	Maximum Candela:	81 Candela
Corrected UGR (Room Dimension: X=4H, Y=8H, Reflectances: 70/50/20%, S/H: 1)		
Crosswise: 0	Endwise: 18.9	

Polar Plot



Zonal Lumen Summary

Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire
0-5	1.28	0.3%	60-65	16.31	3.6%	120-125	16.60	3.6%
5-10	3.70	0.8%	65-70	16.53	3.6%	125-130	16.31	3.6%
10-15	5.73	1.3%	70-75	16.61	3.6%	130-135	15.74	3.5%
15-20	7.54	1.7%	75-80	16.61	3.6%	135-140	14.88	3.3%
20-25	9.28	2.0%	80-85	16.63	3.6%	140-145	13.86	3.0%
25-30	10.85	2.4%	85-90	16.71	3.7%	145-150	12.66	2.8%
30-35	12.28	2.7%	90-95	16.79	3.7%	150-155	11.17	2.5%
35-40	13.41	2.9%	95-100	16.82	3.7%	155-160	9.60	2.1%
40-45	14.25	3.1%	100-105	16.99	3.7%	160-165	7.91	1.7%
45-50	15.13	3.3%	105-110	16.97	3.7%	165-170	6.09	1.3%
50-55	15.72	3.4%	110-115	16.83	3.7%	170-175	3.97	0.9%
55-60	16.09	3.5%	115-120	16.72	3.7%	175-180	1.38	0.3%

Zone	Lumens	% of Luminaire
0-40	64	14.1%
0-60	125	27.5%
0-90	225	49.3%
90-180	231	50.7%



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	53.58	53.58	53.58	53.58	53.58	53.58	53.58	53.58	53.58	53.58	53.58	53.58	53.58	53.58	53.58	53.58
5	38.77	38.53	42.40	47.50	53.08	59.86	64.40	66.60	67.94	66.60	64.40	59.86	53.08	47.50	42.40	38.53
10	20.49	21.67	30.06	41.38	53.27	65.02	70.53	72.81	73.63	72.81	70.53	65.02	53.27	41.38	30.06	21.67
15	7.37	8.44	16.88	34.66	53.46	68.66	74.24	76.30	76.76	76.30	74.24	68.66	53.46	34.66	16.88	8.44
20	3.68	4.09	7.77	27.39	53.69	71.49	76.80	77.94	77.71	77.94	76.80	71.49	53.69	27.39	7.77	4.09
25	2.28	2.65	4.18	19.76	53.66	73.47	77.88	77.20	76.31	77.20	77.88	73.47	53.66	19.76	4.18	2.65
30	0.86	1.33	2.92	13.03	54.09	75.75	78.40	75.80	74.01	75.80	78.40	75.75	54.09	13.03	2.92	1.33
35	0.54	0.63	1.89	8.30	54.23	77.19	77.38	73.24	70.72	73.24	77.38	77.19	54.23	8.30	1.89	0.63
40	0.46	0.54	0.80	5.57	53.59	77.01	74.70	68.97	64.87	68.97	74.70	77.01	53.59	5.57	0.80	0.54
45	0.40	0.50	0.50	4.29	53.71	77.36	72.84	64.76	59.22	64.76	72.84	77.36	53.71	4.29	0.50	0.50
50	0.35	0.45	0.45	3.60	54.09	77.61	71.27	60.38	52.53	60.38	71.27	77.61	54.09	3.60	0.45	0.45
55	0.32	0.42	0.43	3.24	54.56	77.69	69.73	55.20	45.56	55.20	69.73	77.69	54.56	3.24	0.43	0.42
60	0.30	0.40	0.42	2.97	54.83	77.35	67.87	49.53	38.50	49.53	67.87	77.35	54.83	2.97	0.42	0.40
65	0.28	0.39	0.42	2.83	55.59	77.80	66.66	44.57	32.59	44.57	66.66	77.80	55.59	2.83	0.42	0.39
70	0.28	0.39	0.42	2.76	56.01	77.81	65.22	40.03	29.51	40.03	65.22	77.81	56.01	2.76	0.42	0.39
75	0.27	0.40	0.43	2.73	56.21	77.48	63.78	36.20	27.41	36.20	63.78	77.48	56.21	2.73	0.43	0.40
80	0.27	0.41	0.44	2.72	56.23	77.07	62.50	33.52	25.98	33.52	62.50	77.07	56.23	2.72	0.44	0.41
85	0.28	0.43	0.45	2.74	56.44	77.09	61.90	31.98	25.31	31.98	61.90	77.09	56.44	2.74	0.45	0.43
90	0.31	0.45	0.47	2.77	56.78	77.32	61.81	30.98	27.59	30.98	61.81	77.32	56.78	2.77	0.47	0.45
95	0.38	0.54	0.54	2.77	56.55	77.48	61.67	31.84	26.54	31.84	61.67	77.48	56.55	2.77	0.54	0.54
100	0.35	0.52	0.56	2.82	57.29	78.68	63.25	33.70	27.74	33.70	63.25	78.68	57.29	2.82	0.56	0.52
105	0.34	0.51	0.58	2.87	57.51	79.25	64.82	36.48	29.16	36.48	64.82	79.25	57.51	2.87	0.58	0.51
110	0.36	0.52	0.60	2.92	57.22	79.31	66.24	40.13	30.95	40.13	66.24	79.31	57.22	2.92	0.60	0.52
115	0.37	0.53	0.60	3.01	56.73	79.22	67.72	44.76	34.28	44.76	67.72	79.22	56.73	3.01	0.60	0.53
120	0.38	0.54	0.61	3.20	56.59	79.64	69.68	50.35	40.29	50.35	69.68	79.64	56.59	3.20	0.61	0.54
125	0.40	0.55	0.61	3.46	56.52	80.35	71.82	56.51	47.61	56.51	71.82	80.35	56.52	3.46	0.61	0.55
130	0.42	0.56	0.61	3.84	56.56	80.81	73.80	62.01	55.12	62.01	73.80	80.81	56.56	3.84	0.61	0.56
135	0.44	0.58	0.62	4.43	56.49	80.76	75.60	66.96	61.51	66.96	75.60	80.76	56.49	4.43	0.62	0.58
140	0.46	0.61	1.05	5.96	56.49	80.34	77.34	71.21	67.21	71.21	77.34	80.34	56.49	5.96	1.05	0.61
145	0.52	0.67	2.15	8.97	56.57	79.48	79.11	74.73	72.39	74.73	79.11	79.48	56.57	8.97	2.15	0.67
150	0.84	1.63	3.14	14.64	56.33	77.76	79.95	76.98	75.90	76.98	79.95	77.76	56.33	14.64	3.14	1.63
155	2.26	2.91	4.60	22.07	55.82	75.30	79.49	78.51	78.18	78.51	79.49	75.30	55.82	22.07	4.60	2.91
160	3.69	4.59	9.11	30.24	56.15	73.64	78.81	79.91	80.08	79.91	78.81	73.64	56.15	30.24	9.11	4.59
165	7.40	10.74	20.03	37.85	56.42	71.36	76.82	79.01	79.69	79.01	76.82	71.36	56.42	37.85	20.03	10.74
170	21.70	26.55	33.96	44.87	56.65	68.44	73.81	76.37	76.29	76.37	73.81	68.44	56.65	44.87	33.96	26.55
175	41.04	43.87	46.66	51.18	56.71	63.59	68.54	71.18	70.90	71.18	68.54	63.59	56.71	51.18	46.66	43.87
180	57.80	57.80	57.80	57.80	57.80	57.80	57.80	57.80	57.80	57.80	57.80	57.80	57.80	57.80	57.80	57.80

Average Luminance (cd/m²)

Horizontal Angle (Degrees)

Vertical Angle (Degrees)	Horizontal Angle (Degrees)		
	0	45	90
0	5211	5211	5211
45	10	14	3694
55	7	11	3810
65	6	10	4068
75	6	10	4463
85	6	11	5066



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	55	55	55	49
1	94	88	83	79	86	81	77	73	68	64	61	55	53	50	44	42	40	34
2	85	76	68	62	77	69	63	57	58	52	48	47	43	40	37	34	31	27
3	76	65	57	50	70	60	52	46	50	44	39	40	36	32	32	28	26	21
4	70	57	48	42	63	53	45	39	44	38	33	35	31	27	28	24	21	17
5	64	51	42	35	58	47	39	33	39	33	28	32	27	23	25	21	18	15
6	58	45	36	30	53	42	34	28	35	28	24	28	23	20	22	19	16	13
7	54	41	32	26	49	37	30	24	31	25	21	26	21	17	20	17	14	11
8	50	37	29	23	46	34	26	21	29	23	18	23	19	15	19	15	12	10
9	46	34	26	20	42	31	24	19	26	20	16	21	17	14	17	14	11	9
10	43	31	23	18	40	28	21	17	24	18	14	20	15	12	16	12	10	8

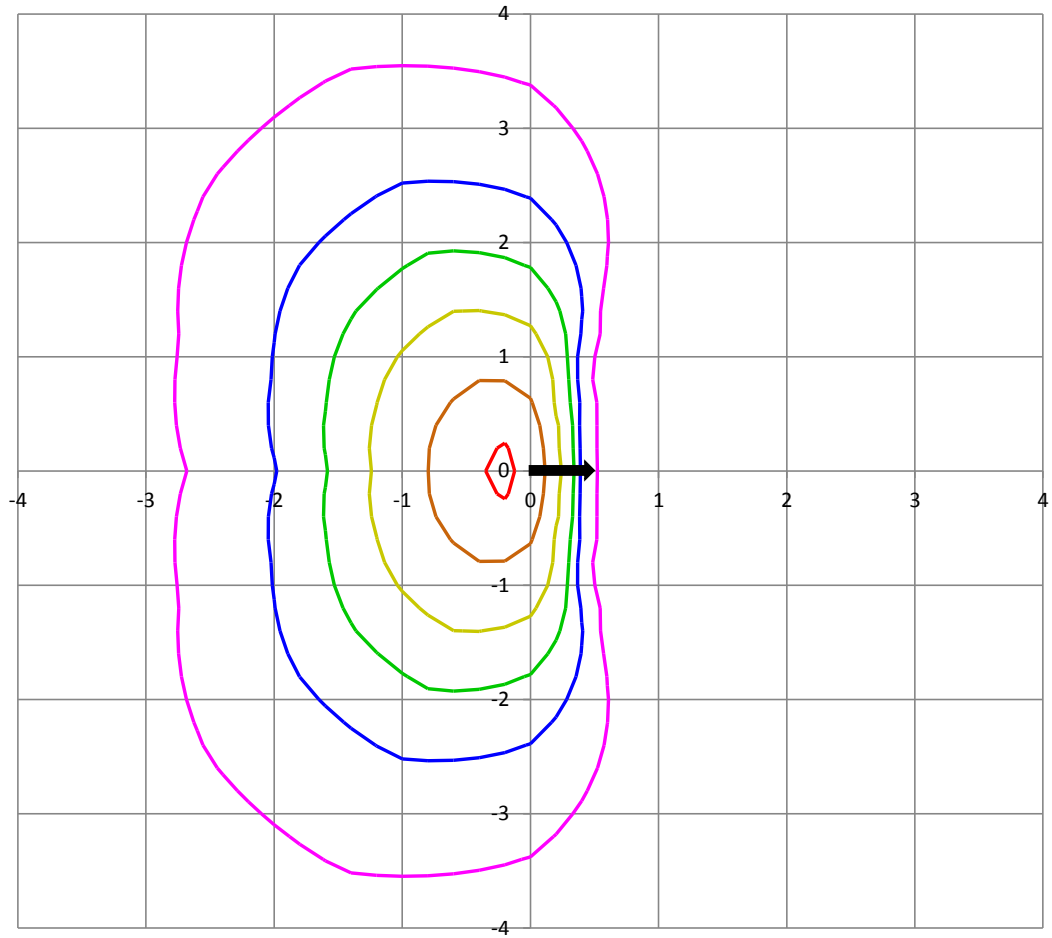
Beam and Field Information	
CIE Type:	Direct/Indirect
Center Beam Intensity:	53.58 Candela
Central Cone Intensity:	N/A Candela
Beam Flux:	441.1 Lumens
Beam Angle (0-180):	N/A Degrees
Beam Angle (90-270):	N/A Degrees
Field Angle (0-180):	N/A Degrees
Field Angle (90-270):	N/A Degrees

Cone of Light Tabulation			
Mounting Height (Feet)		Footcandles at Nadir	Diameter (Feet)
4.00		3.35	4.75
6.00		1.49	7.13
8.00		0.837	9.51
10.0		0.536	11.9
12.0		0.372	14.3
14.0		0.273	16.6
16.0		0.209	19.0

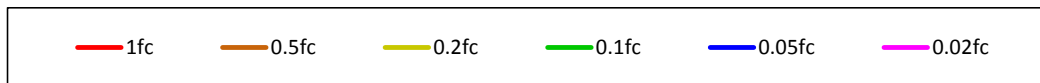


ISOFootcandle Plot

Mounting Height - 8 Feet



Grid Lines in Units of Mounting Height



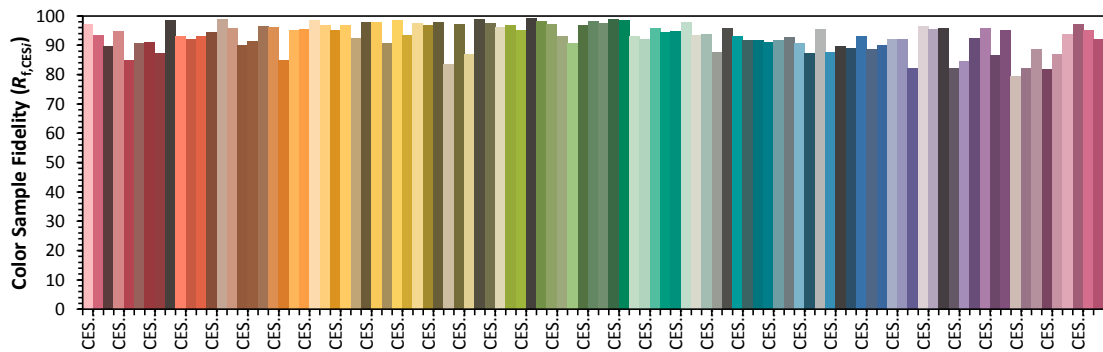
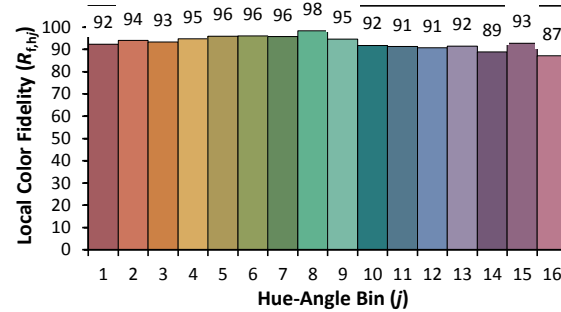
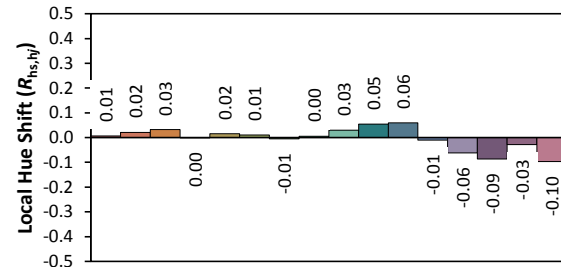
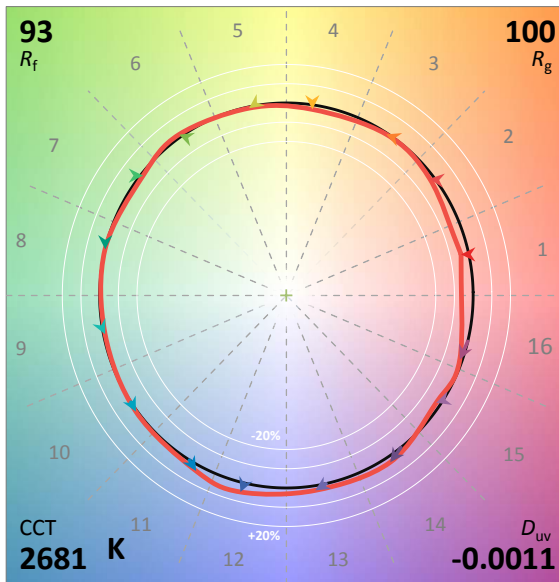
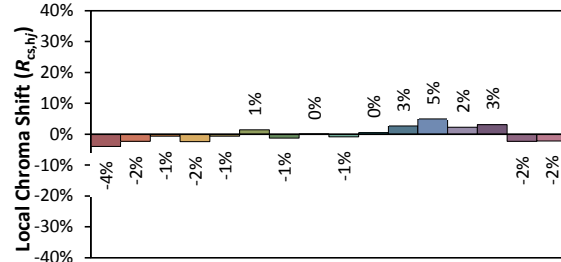
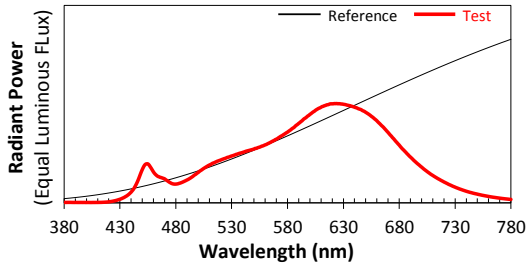
ANSI/IES TM-30-18 Color Rendition Report

Date: 2021-10-15

Manufacturer: RBW Studio LLC

Model:

Radiant Square 10"



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

x 0.4594
 y 0.4075
 u' 0.2636
 v' 0.5261

CIE 13.3-1995
(CRI)

R_a 95
 R_g 68

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