



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
Rig-A-Lite Partnership Ltd
8500 Hansen Rd
Houston TX 77075

Catalog Number
CROLU22F811CRO4DA

Order Number
14765226
Test Number
14765226.01

Test Date
2023-04-18 - 2023-04-24

Prepared By

Derek Smarr, Senior Technician

Approved By

Jesse Litchfield, Project Handler

The results contained in this report pertain only to the tested sample.
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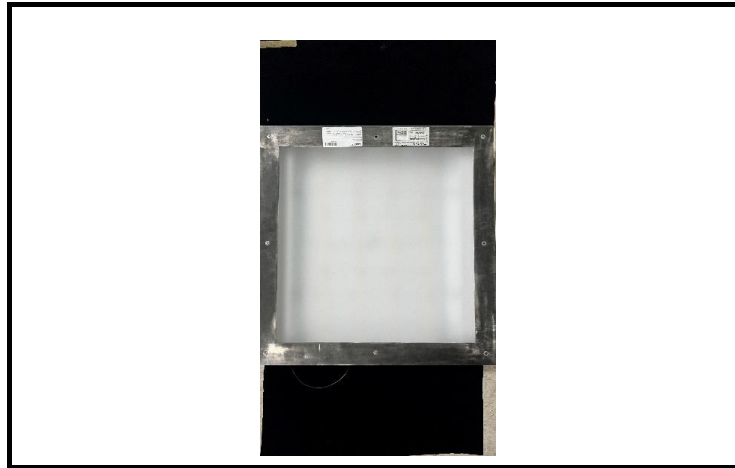
Laboratory results may not be representative of field performance
Ballast factors have not been applied

Testing was performed in a 3-meter integrating sphere using the 4π geometry method.

Absorption correction was employed for Sphere measurement

Luminaire Description: Grey aluminum housing, frosted lens enclosure
Lamp: 336 White LEDs
Mounting: Recessed
Ballast/Driver: Advance XI054C150V054BST1

Luminaire



Luminaire Characteristics

Luminous Length: 24.00 in.
 Luminous Width: 24.00 in.

Summary of Results

Integrating Sphere

Luminous Flux: 10710 Lumens
 Efficacy: 113.67 lm/w
 CCT: 4090 K
 CRI (Ra): 83.0

Distribution

Total Luminaire Output: 10910 Lumens
 Luminaire Efficacy: 115.8 lm/w
 Maximum Candela: 4457 Candela

Electrical Data at 120 VAC

Test Temperature: 25.0 °C
 Voltage: 120.0 VAC
 Current: 0.7876 A
 Power: 94.22 W
 Power Factor: 0.997
 Frequency: 60 Hz
 Current THD: 6.39 %

In-Situ

LED Temperature: 57.2 °C
 Driver Temperature: 58.8 °C
 Measured LED Current: 0.08687 A

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

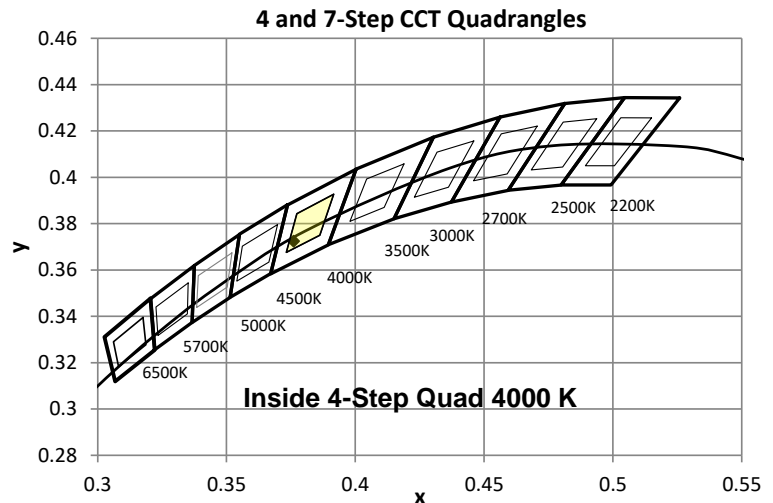
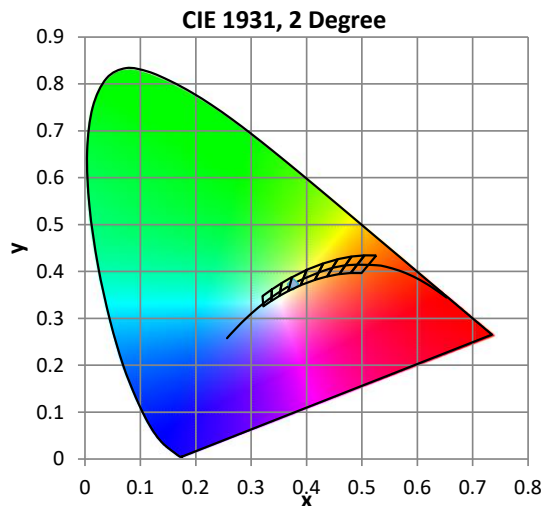
Color Quality - Integrating Sphere

Integrating Sphere Test Conditions

Temperature	Voltage	Current	Power	Power Factor	Frequency	Current THD
25.0 °C	120.0 VAC	0.7876 A	94.22 W	0.997	60 Hz	6.39 %

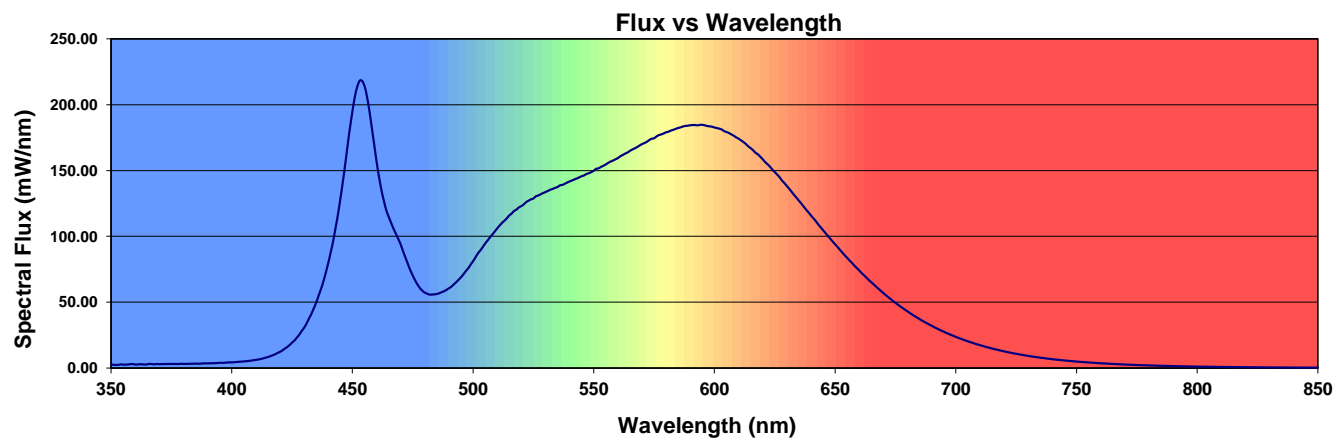
Summary of Results

Total Output:	10710 Lumens	Chromaticity (x):	0.3760
Efficacy:	113.7 lm/w	Chromaticity (y):	0.3725
CCT:	4090 K	Chromaticity (u'):	0.2239
CRI (Ra):	83.0	Chromaticity (v'):	0.4990
CRI (R9):	9.9	TM-30 Rf:	83
Peak Wavelength:	454 nm	TM-30 Rg:	95
Dominant Wavelength:	555 nm	TM-30 Rcs,h1:	-12%
S/P Ratio:	1.72	Duv:	-0.0007
M/P Ratio:	0.7	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
83.0	81.6	89.7	94.5	81.1	81.2	84.9	85.9	65.0	9.9	74.5	79.4	60.3	83.7	97.1	75.8



Distribution - Goniophotometer

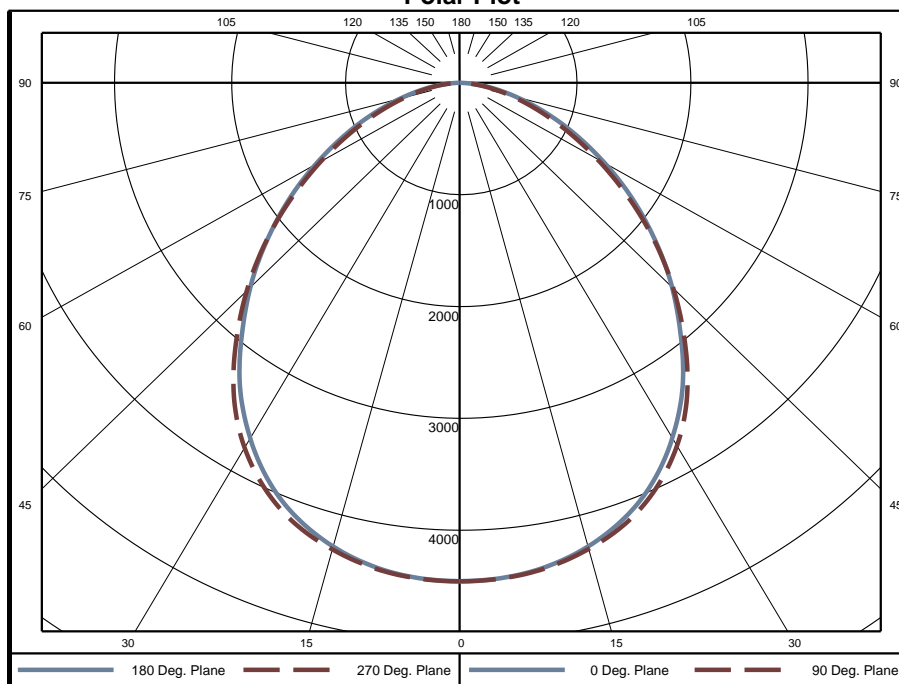
Distribution Test Conditions

Temperature	Voltage	Current	Power	Power Factor	Frequency	Current THD
24.7 °C	120.0 VAC	0.7912 A	94.20 W	0.997	60 Hz	6.35 %

Summary of Results

Spacing Criteria	Total Lumen Output:	10910 Lumens
0-180: 1.21	Luminaire Efficacy:	115.8 lm/w
90-270: 1.25	Maximum Candela:	4457 Candela
Corrected UGR (Room Dimension: X=4H, Y=8H, Reflectances: 70/50/20%, S/H: 1)		
Crosswise: 22.5	Endwise: 22.1	

Polar Plot



Zonal Lumen Summary

Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire
0-5	106	1.0%	60-65	602	5.5%	120-125	0	0.0%
5-10	316	2.9%	65-70	461	4.2%	125-130	0	0.0%
10-15	516	4.7%	70-75	327	3.0%	130-135	0	0.0%
15-20	698	6.4%	75-80	208	1.9%	135-140	0	0.0%
20-25	854	7.8%	80-85	106	1.0%	140-145	0	0.0%
25-30	972	8.9%	85-90	25	0.2%	145-150	0	0.0%
30-35	1044	9.6%	90-95	0	0.0%	150-155	0	0.0%
35-40	1064	9.8%	95-100	0	0.0%	155-160	0	0.0%
40-45	1035	9.5%	100-105	0	0.0%	160-165	0	0.0%
45-50	970	8.9%	105-110	0	0.0%	165-170	0	0.0%
50-55	869	8.0%	110-115	0	0.0%	170-175	0	0.0%
55-60	742	6.8%	115-120	0	0.0%	175-180	0	0.0%

Zone	Lumens	% of Luminaire
0-40	5570	51.1%
0-60	9186	84.2%
0-90	10915	100.0%
90-180	0	0.0%

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	4455	4455	4455	4455	4455	4455	4455	4455	4455	4455	4455	4455	4455	4455	4455
	5	4438	4442	4441	4442	4443	4442	4441	4442	4438	4442	4441	4442	4443	4442	4441
	10	4384	4388	4393	4398	4398	4398	4393	4388	4384	4388	4393	4398	4398	4398	4388
	15	4283	4289	4302	4313	4314	4313	4302	4289	4283	4289	4302	4313	4314	4313	4302
	20	4133	4144	4170	4190	4194	4190	4170	4144	4133	4144	4170	4190	4194	4190	4170
	25	3922	3938	3975	4003	4008	4003	3975	3938	3922	3938	3975	4003	4008	4003	3975
	30	3643	3664	3712	3748	3756	3748	3712	3664	3643	3664	3712	3748	3756	3748	3712
	35	3320	3337	3389	3423	3430	3423	3389	3337	3320	3337	3389	3423	3430	3423	3389
	40	2936	2960	3006	3032	3034	3032	3006	2960	2936	2960	3006	3032	3034	3032	3006
	45	2560	2576	2612	2624	2622	2624	2612	2576	2560	2576	2612	2624	2622	2624	2612
	50	2174	2192	2212	2209	2202	2209	2212	2192	2174	2192	2212	2209	2202	2209	2212
	55	1797	1807	1811	1792	1781	1792	1811	1807	1797	1807	1811	1792	1781	1792	1807
	60	1427	1435	1424	1399	1387	1399	1424	1435	1427	1435	1424	1399	1387	1399	1424
	65	1088	1092	1074	1047	1035	1047	1074	1092	1088	1092	1074	1047	1035	1047	1074
	70	783	784	763	740	730	740	763	784	783	784	763	740	730	740	763
	75	517	517	500	481	474	481	500	517	517	517	500	481	474	481	500
	80	300	298	287	274	269	274	287	298	300	298	287	274	269	274	287
	85	116	118	113	102	96	102	113	118	116	118	113	102	96	102	113
	90	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	95	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	105	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	110	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	115	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	120	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	125	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	130	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	135	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	140	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	145	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	150	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	155	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	160	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	165	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	170	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	175	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	180	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Average Luminance (cd/m²)
Horizontal Angle (Degrees)

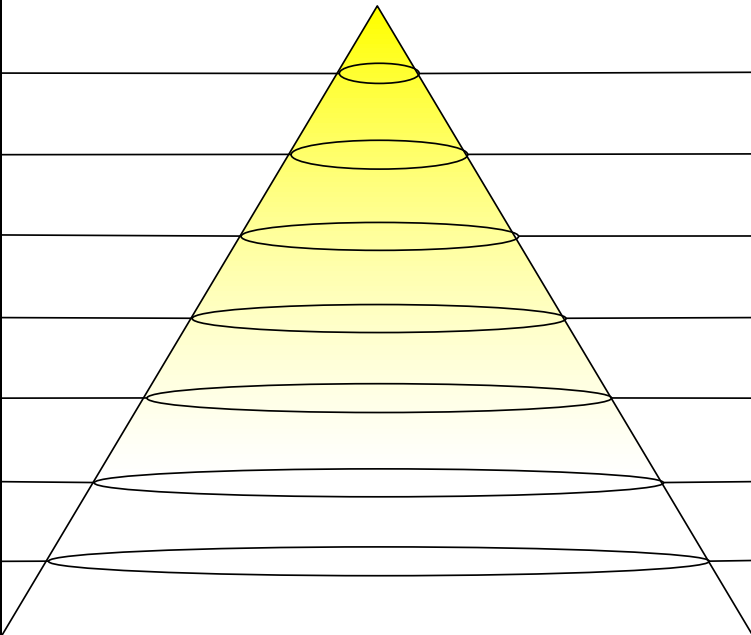
Vertical Angle (Degrees)	0	45	90
	0	11990	11990
	45	9743	9977
	55	8431	8357
	65	6929	6590
	75	5374	4928
	85	3586	2979



Coefficients of Utilization - Zonal Cavity Method

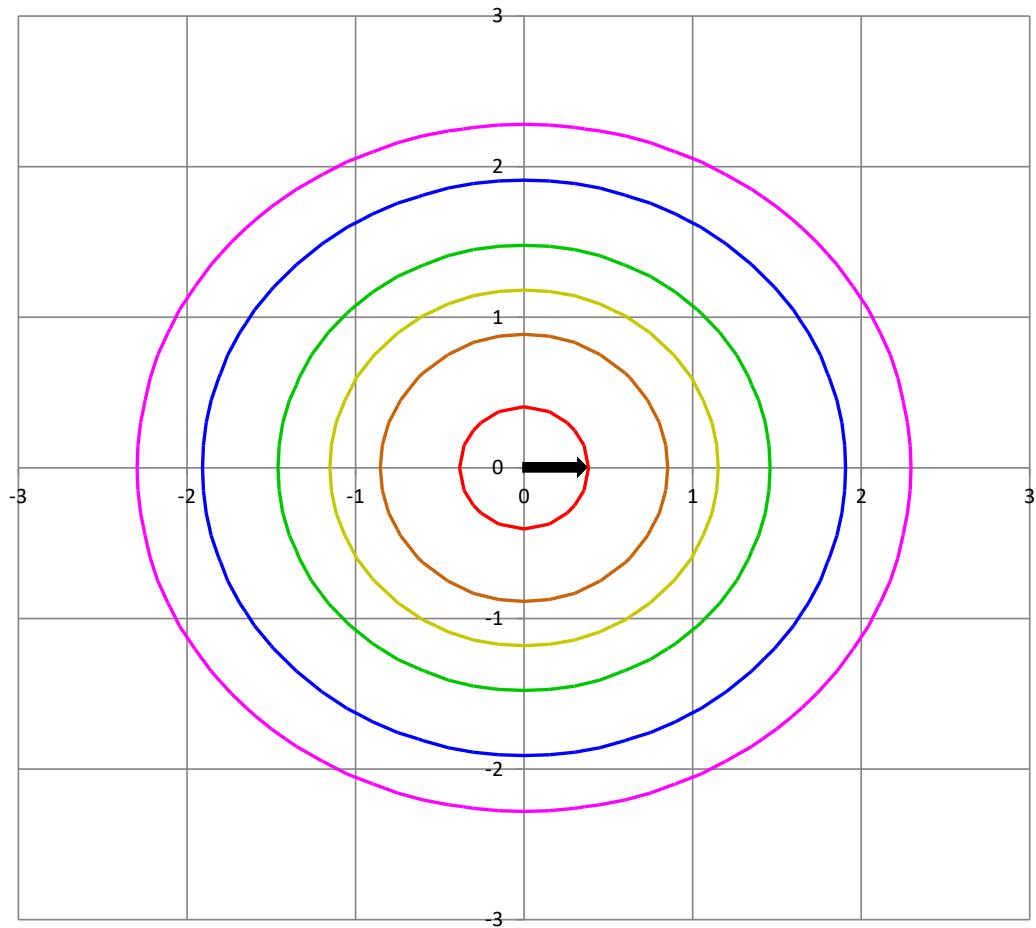
Effective Floor Cavity Reflectance 20%																		
Ceiling Cavity Reflectance	80				70				50			30			10			0
Wall Reflectance	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	0
Room Cavity Ratio (RCR)	** Values are expressed as percent of total lumen output delivered to the task surface **																	
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100
1	110	105	101	98	107	103	100	96	99	96	93	95	93	90	91	90	88	86
2	100	93	86	81	98	91	85	80	87	83	78	84	80	77	81	78	75	73
3	92	82	75	68	90	81	74	68	78	72	67	75	70	66	73	68	64	62
4	85	73	65	59	82	72	64	58	70	63	58	67	61	57	65	60	56	54
5	78	66	57	51	76	65	57	51	63	56	50	61	55	50	59	54	49	47
6	72	60	51	45	71	59	51	45	57	50	44	55	49	44	54	48	44	42
7	67	54	46	40	66	53	45	40	52	45	39	51	44	39	49	43	39	37
8	63	50	41	36	61	49	41	36	48	41	35	46	40	35	45	39	35	33
9	59	46	38	32	57	45	37	32	44	37	32	43	37	32	42	36	32	30
10	55	42	35	29	54	42	34	29	41	34	29	40	34	29	39	33	29	27

Beam and Field Information	
CIE Type:	Direct
Center Beam Intensity:	4455 Candela
Central Cone Intensity:	4451 Candela
Beam Flux:	7514.1 Lumens
Beam Angle (0-180):	98.6 Degrees
Beam Angle (90-270):	99.4 Degrees
Field Angle (0-180):	153.1 Degrees
Field Angle (90-270):	151.3 Degrees

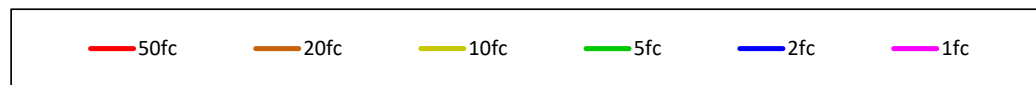
Cone of Light Tabulation			
Mounting Height (Feet)		Footcandles at Nadir	Diameter (Feet)
4.00		278	4.93
6.00		124	7.39
8.00		69.6	9.85
10.0		44.6	12.3
12.0		30.9	14.8
14.0		22.7	17.2
16.0		17.4	19.7

ISOFootcandle Plot

Mounting Height - 8 Feet



Grid Lines in Units of Mounting Height



In-Situ Test

In-Situ Test Conditions

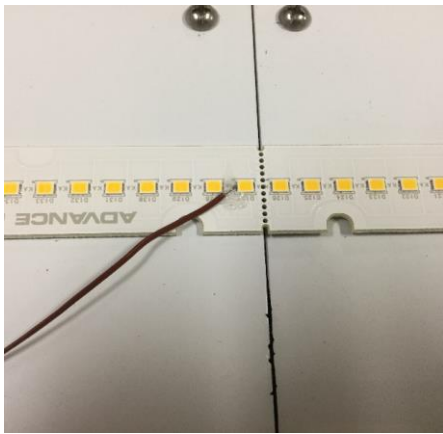
Temperature	Voltage	Current	Power	Power Factor	Frequency	Current THD
24.1 °C	120.0 VAC	N/A	N/A	N/A	60 Hz	N/A

Summary of Results

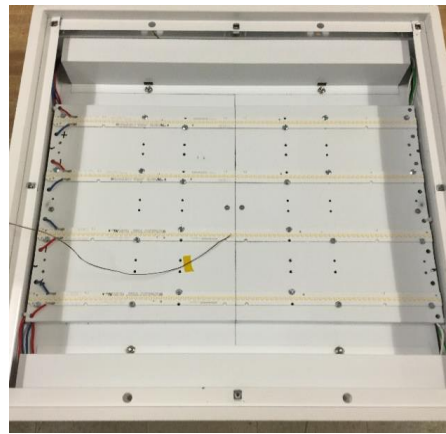
LED Temperature: 57.2 °C
 Driver Temperature: 58.8 °C
 Measured LED Current: 0.08687 A

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

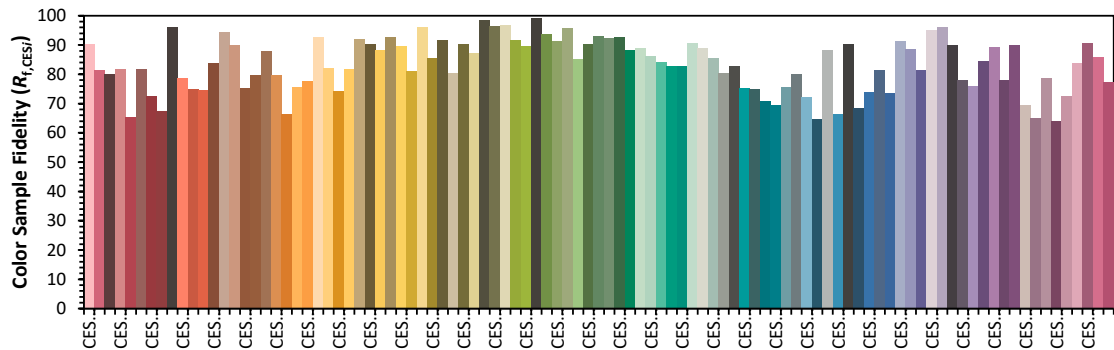
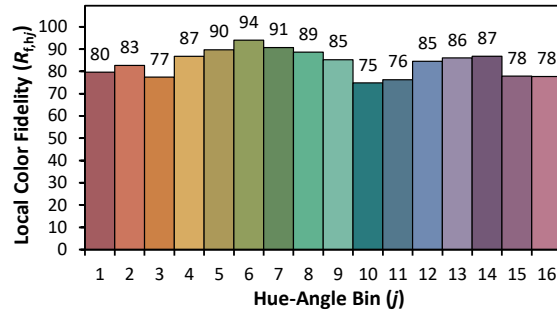
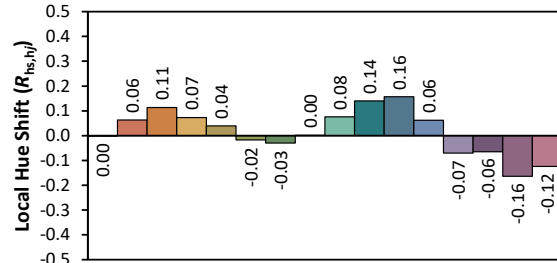
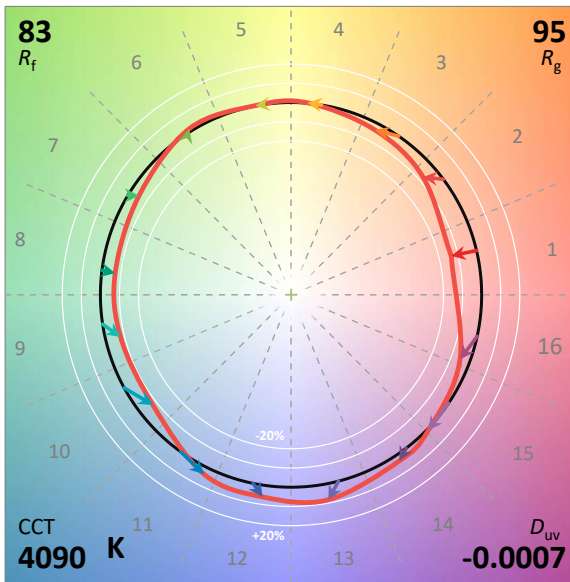
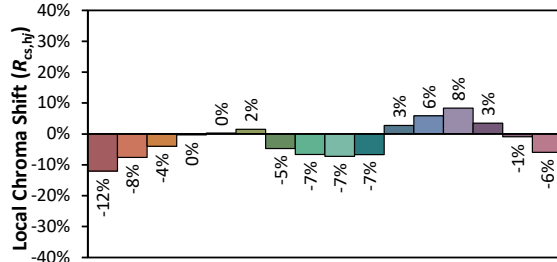
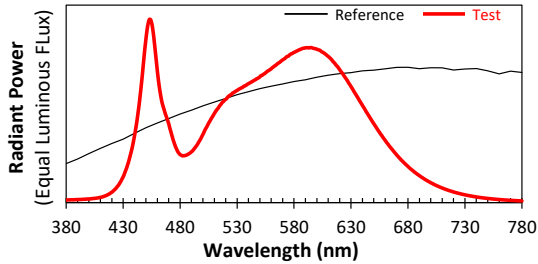
Date: 2023-04-19

Manufacturer:

Rig-A-Lite Partnership Ltd

Model:

CROLU22F811CRO4DA



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

x 0.3760
 y 0.3725
 u' 0.2239
 v' 0.4990

CIE 13.3-1995
(CRI)

R_a 83
 R_g 10

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