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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
SPECTRUM LIGHTING INC
994 JEFFERSON ST
FALL RIVER, MA 02721-4823
United States

Catalog Number
G2208LED150L35KDS10X/TJL/GW

Order Number
14671091
Test Number
14671091.01

Test Date

2023-03-02 - 2023-03-14

Prepared By

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Approved By

Yilmaz Yucelidag, Engineering Project Handler

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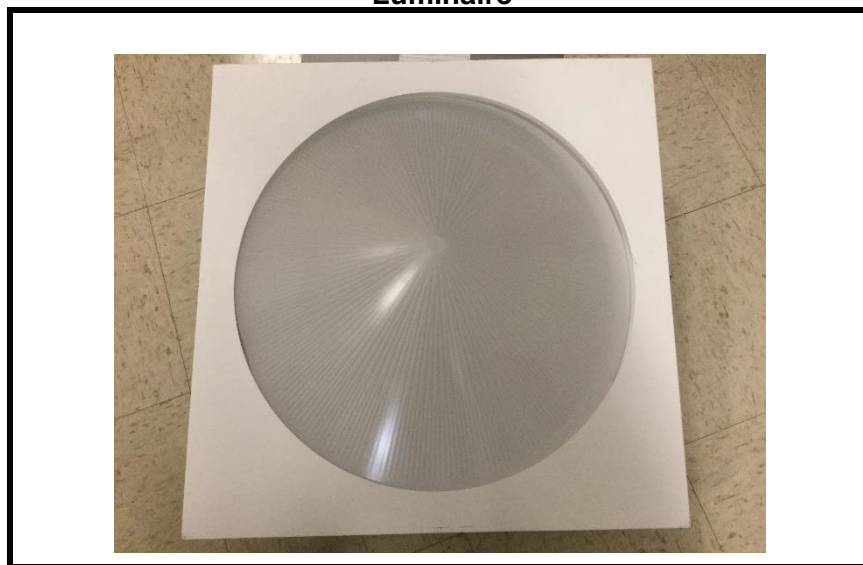
Laboratory results may not be representative of field performance
Ballast factors have not been applied

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

Absorption correction was employed for Sphere measurement

Luminaire Description: White aluminum housing, frosted lens enclosure
Lamp: 384 LEDS
Mounting: Recessed
Ballast/Driver: ADVANCE CI049C102V048CDX1, 2 drivers

Luminaire



Luminaire Characteristics

Luminous Diameter: 20.00 in.
 Luminous Height: 6.00 in.

Summary of Results

Integrating Sphere

Luminous Flux: 13120 Lumens
 Efficacy: 141.87 lm/w
 CCT: 3457 K
 CRI (Ra): 83.4

Distribution

Total Luminaire Output: 12740 Lumens
 Luminaire Efficacy: 137.9 lm/w
 Maximum Candela: 3785 Candela

Electrical Data at 277 VAC

Test Temperature: 24.1 °C
 Voltage: 277.0 VAC
 Current: 0.3502 A
 Power: 91.55 W
 Power Factor: 0.944
 Frequency: 60 Hz
 Current THD: 11.1 %

In-Situ

LED #1 Temperature: 53.2 °C
 LED #2 Temperature: 53.2 °C
 Driver Temperature: 58.9 °C
 Measured LED Current: 0.07914 A

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

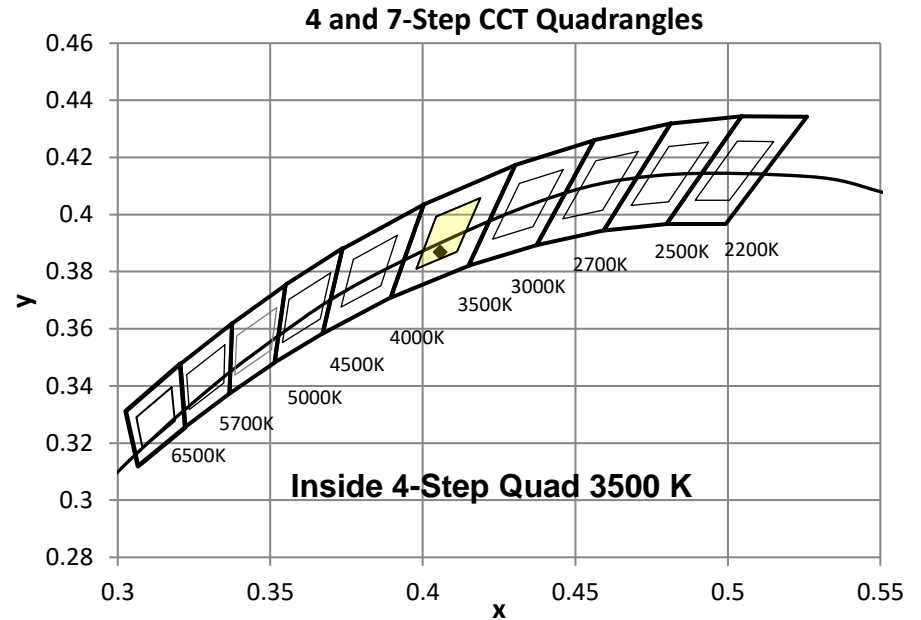
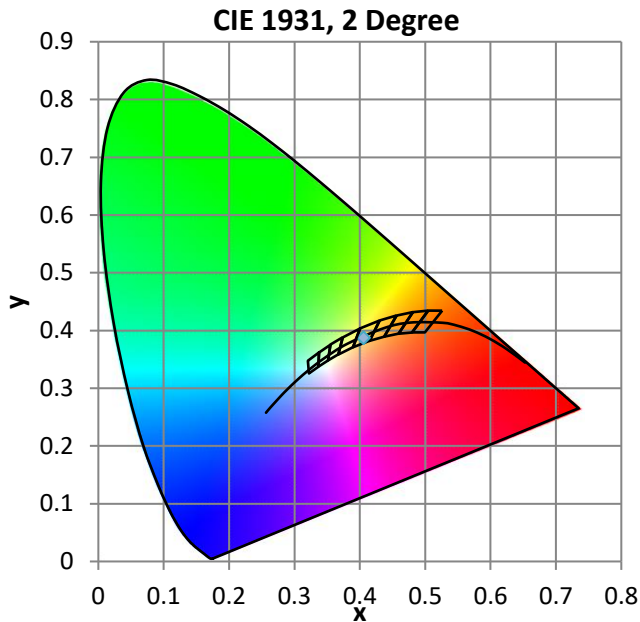
Color Quality - Integrating Sphere

Integrating Sphere Test Conditions

Temperature	Voltage	Current	Power	Power Factor	Frequency	Current THD
25.3 °C	120.0 VAC	0.7773 A	92.48 W	0.992	60 Hz	10.8 %

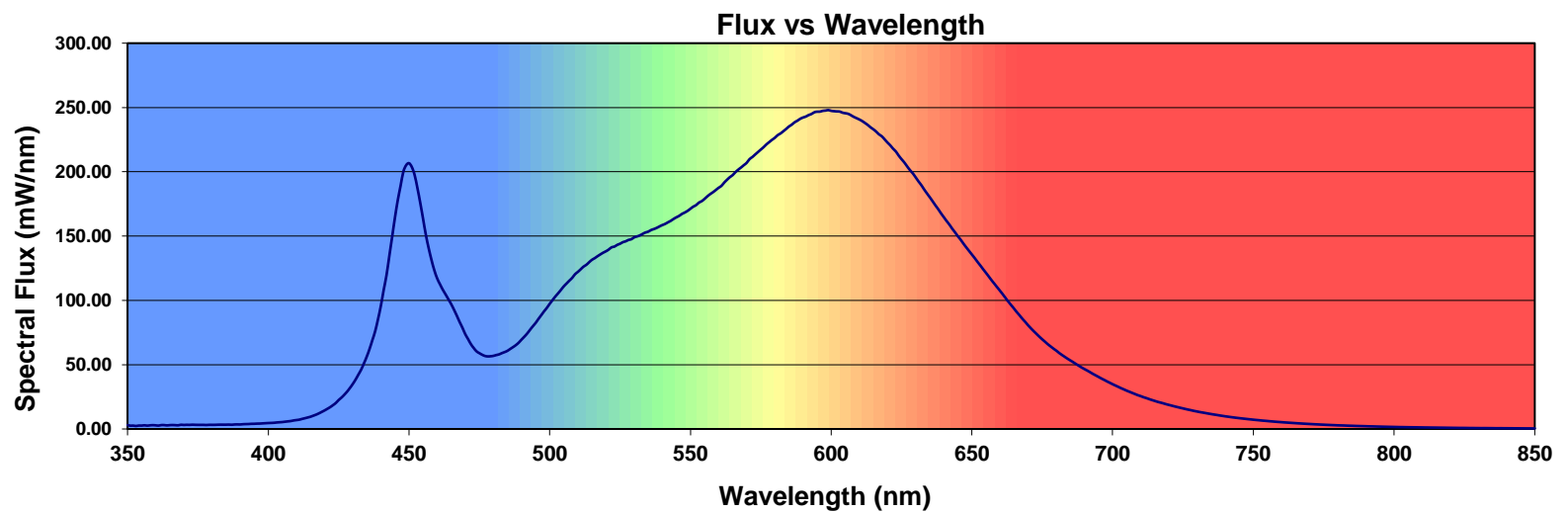
Summary of Results

Total Output:	13120 Lumens	Chromaticity (x):	0.4057
Efficacy:	141.9 lm/w	Chromaticity (y):	0.3868
CCT:	3457 K	Chromaticity (u'):	0.2376
CRI (Ra):	83.4	Chromaticity (v'):	0.5097
CRI (R9):	9.5	TM-30 Rf:	85
Peak Wavelength:	599 nm	TM-30 Rg:	97
Dominant Wavelength:	555 nm	TM-30 Rcs,h1:	-12%
S/P Ratio:	1.52	Duv:	-0.0018
M/P Ratio:	0.6 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
83.4	82.0	90.5	96.0	82.1	82.3	87.5	84.2	62.3	9.5	77.8	81.7	69.4	84.1	98.2	75.2





Distribution - Goniophotometer

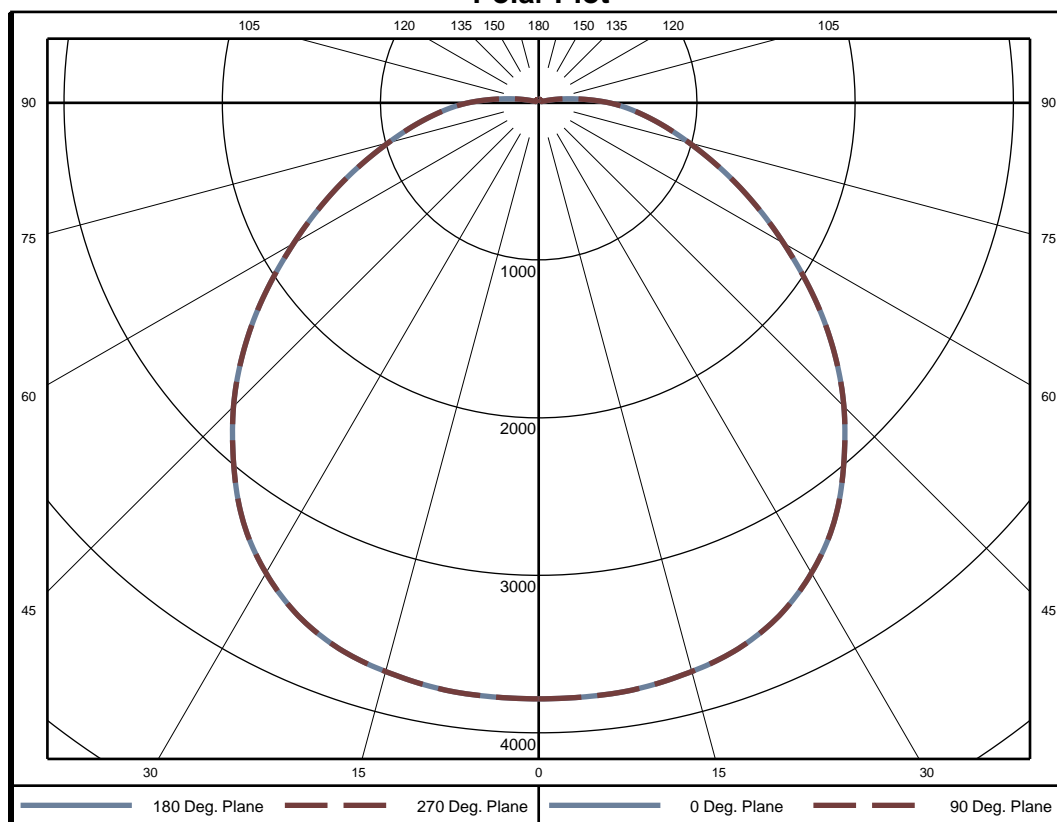
Distribution Test Conditions

Temperature	Voltage	Current	Power	Power Factor	Frequency	Current THD
24.9 °C	120.0 VAC	0.7763 A	92.38 W	0.992	60 Hz	10.9 %

Summary of Results

Spacing Criteria	Total Lumen Output:	12740 Lumens
0-180: 1.34	Luminaire Efficacy:	137.9 lm/w
90-270: 1.34	Maximum Candela:	3785 Candela
Corrected UGR (Room Dimension: X=4H, Y=8H, Reflectances: 70/50/20%, S/H: 1)		
Crosswise: 24.6	Endwise: 24.6	

Polar Plot



Zonal Lumen Summary

Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire
0-5	90	0.7%	60-65	797	6.3%	120-125	9	0.1%
5-10	270	2.1%	65-70	688	5.4%	125-130	9	0.1%
10-15	445	3.5%	70-75	575	4.5%	130-135	8	0.1%
15-20	612	4.8%	75-80	471	3.7%	135-140	7	0.1%
20-25	764	6.0%	80-85	377	3.0%	140-145	7	0.1%
25-30	892	7.0%	85-90	289	2.3%	145-150	6	0.0%
30-35	987	7.7%	90-95	192	1.5%	150-155	5	0.0%
35-40	1043	8.2%	95-100	105	0.8%	155-160	4	0.0%
40-45	1060	8.3%	100-105	48	0.4%	160-165	3	0.0%
45-50	1042	8.2%	105-110	18	0.1%	165-170	2	0.0%
50-55	987	7.7%	110-115	10	0.1%	170-175	2	0.0%
55-60	900	7.1%	115-120	9	0.1%	175-180	1	0.0%

Zone	Lumens	% of Luminaire
0-40	5103	40.1%
0-60	9092	71.4%
0-90	12289	96.5%
90-180	445	3.5%

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	3784	3784	3784	3784	3784	3784	3784	3784	3784	3784	3784	3784	3784	3784	3784
	5	3782	3782	3782	3782	3782	3782	3782	3782	3782	3782	3782	3782	3782	3782	3782
	10	3770	3770	3770	3770	3770	3770	3770	3770	3770	3770	3770	3770	3770	3770	3770
	15	3738	3738	3738	3738	3738	3738	3738	3738	3738	3738	3738	3738	3738	3738	3738
	20	3688	3688	3688	3688	3688	3688	3688	3688	3688	3688	3688	3688	3688	3688	3688
	25	3594	3594	3594	3594	3594	3594	3594	3594	3594	3594	3594	3594	3594	3594	3594
	30	3446	3446	3446	3446	3446	3446	3446	3446	3446	3446	3446	3446	3446	3446	3446
	35	3252	3252	3252	3252	3252	3252	3252	3252	3252	3252	3252	3252	3252	3252	3252
	40	2998	2998	2998	2998	2998	2998	2998	2998	2998	2998	2998	2998	2998	2998	2998
	45	2727	2727	2727	2727	2727	2727	2727	2727	2727	2727	2727	2727	2727	2727	2727
	50	2429	2429	2429	2429	2429	2429	2429	2429	2429	2429	2429	2429	2429	2429	2429
	55	2109	2109	2109	2109	2109	2109	2109	2109	2109	2109	2109	2109	2109	2109	2109
	60	1789	1789	1789	1789	1789	1789	1789	1789	1789	1789	1789	1789	1789	1789	1789
	65	1496	1496	1496	1496	1496	1496	1496	1496	1496	1496	1496	1496	1496	1496	1496
	70	1225	1225	1225	1225	1225	1225	1225	1225	1225	1225	1225	1225	1225	1225	1225
	75	984	984	984	984	984	984	984	984	984	984	984	984	984	984	984
	80	784	784	784	784	784	784	784	784	784	784	784	784	784	784	784
	85	609	609	609	609	609	609	609	609	609	609	609	609	609	609	609
	90	442	442	442	442	442	442	442	442	442	442	442	442	442	442	442
	95	263	263	263	263	263	263	263	263	263	263	263	263	263	263	263
	100	133	133	133	133	133	133	133	133	133	133	133	133	133	133	133
	105	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54
	110	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23
	115	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19
	120	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20
	125	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20
	130	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20
	135	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20
	140	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20
	145	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20
	150	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21
	155	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21
	160	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21
	165	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21
	170	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21
	175	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22
	180	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22

Average Luminance (cd/m²)

Horizontal Angle (Degrees)

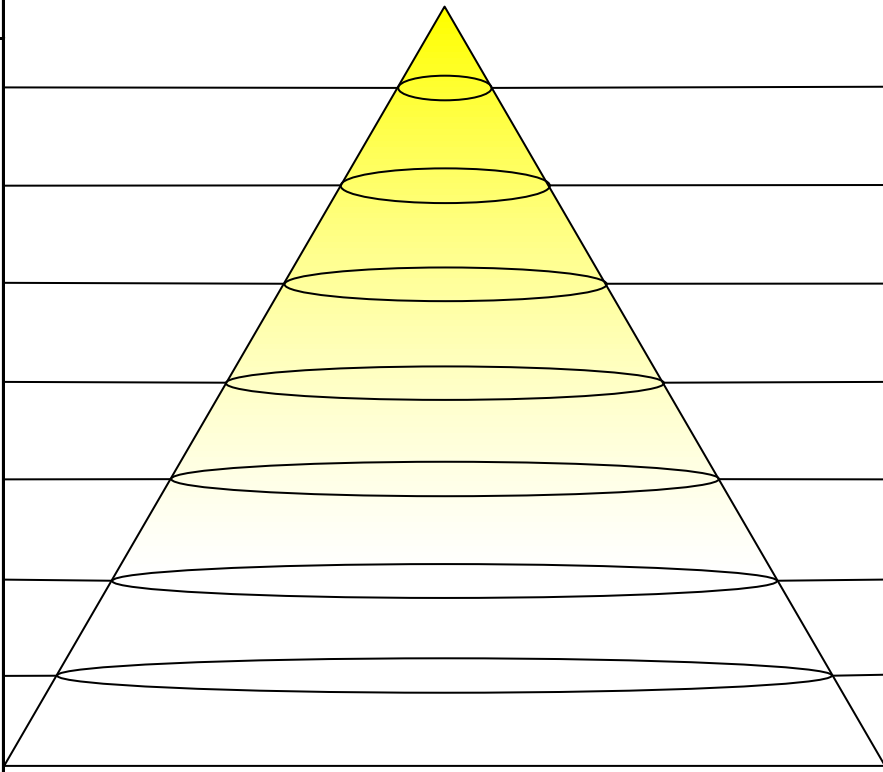
Vertical Angle (Degrees)	0	45	90
	0	18670	18670
	45	13770	13770
	55	11740	11740
	65	9598	9598
	75	7736	7736
	85	6426	6426



Coefficients of Utilization - Zonal Cavity Method

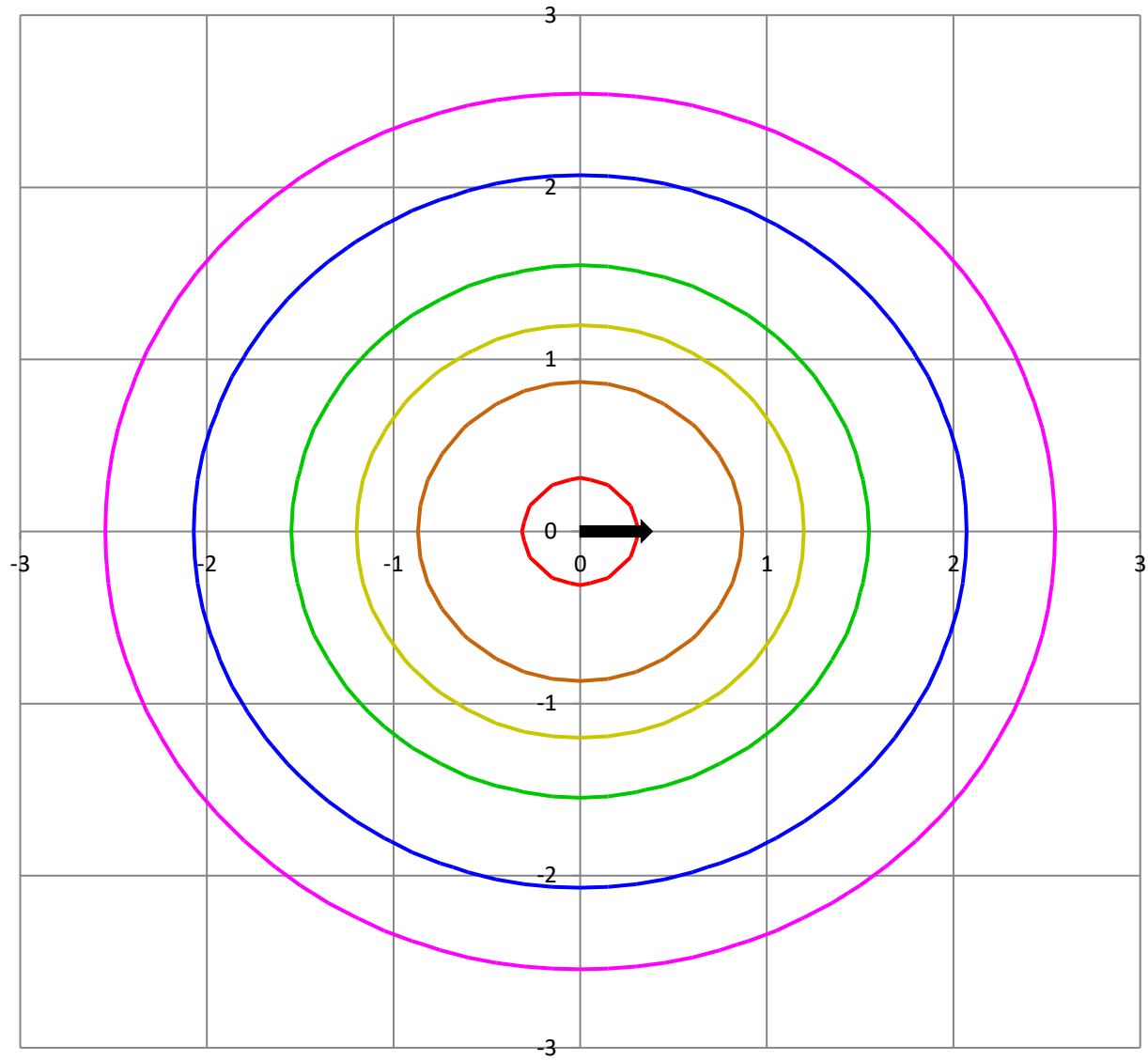
Effective Floor Cavity Reflectance 20%																		
Ceiling Cavity Reflectance	80				70				50			30			10			0
Wall Reflectance	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	0
Room Cavity Ratio (RCR)	** Values are expressed as percent of total lumen output delivered to the task surface **																	
0	118	118	118	118	115	115	115	115	109	109	109	104	104	104	99	99	99	96
1	106	101	96	92	103	98	94	90	93	90	86	89	86	83	85	82	80	77
2	96	87	80	74	93	85	78	73	81	75	70	77	72	68	73	70	66	64
3	88	76	68	61	85	74	66	60	71	64	58	68	62	57	65	60	56	53
4	80	67	58	51	77	66	57	51	63	55	50	60	54	49	57	52	47	45
5	73	60	51	44	71	59	50	44	56	49	43	54	47	42	52	46	41	39
6	68	54	45	38	66	53	44	38	51	43	37	49	42	37	47	41	36	34
7	63	49	40	34	61	48	39	33	46	38	33	44	37	32	43	37	32	30
8	58	45	36	30	57	44	35	30	42	35	29	41	34	29	39	33	29	27
9	55	41	32	27	53	40	32	27	39	31	26	37	31	26	36	30	26	24
10	51	38	30	24	50	37	29	24	36	29	24	35	28	24	33	28	23	21

Beam and Field Information	
CIE Type:	Direct
Center Beam Intensity:	3784 Candela
Central Cone Intensity:	3784 Candela
Beam Flux:	8806.4 Lumens
Beam Angle (0-180):	116.7 Degrees
Beam Angle (90-270):	116.7 Degrees
Field Angle (0-180):	183.4 Degrees
Field Angle (90-270):	183.4 Degrees

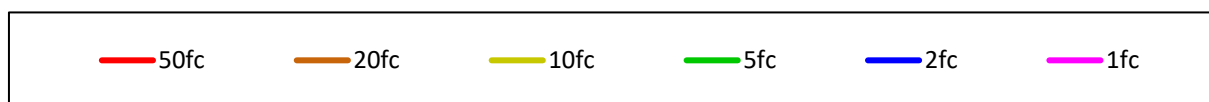
Cone of Light Tabulation			
Mounting Height (Feet)		Footcandles at Nadir	Diameter (Feet)
4.00		237	5.36
6.00		105	8.05
8.00		59.1	10.7
10.0		37.8	13.4
12.0		26.3	16.1
14.0		19.3	18.8
16.0		14.8	21.5

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
23.4 °C	120.0 VAC	N/A	N/A	N/A	60 Hz	N/A

Summary of Results

LED #1 Temperature:53.2 °C

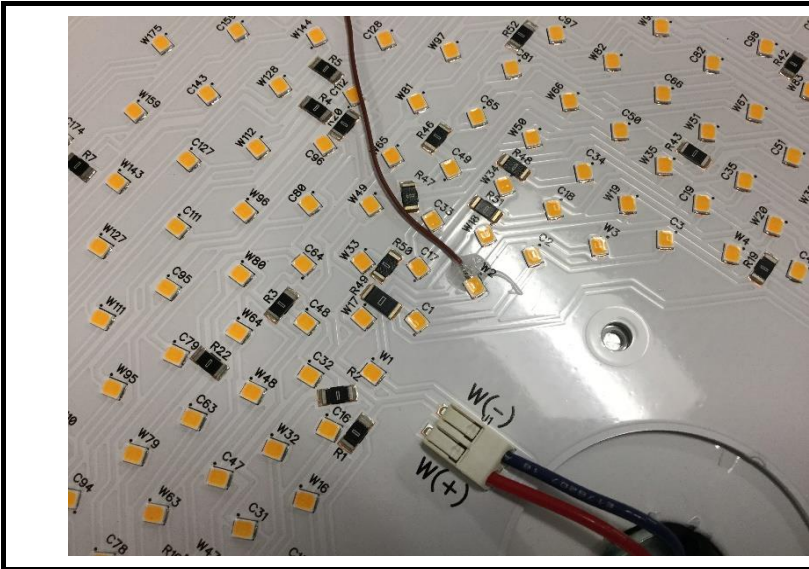
LED #2 Temperature:53.2 °C

Driver Temperature:58.9 °C

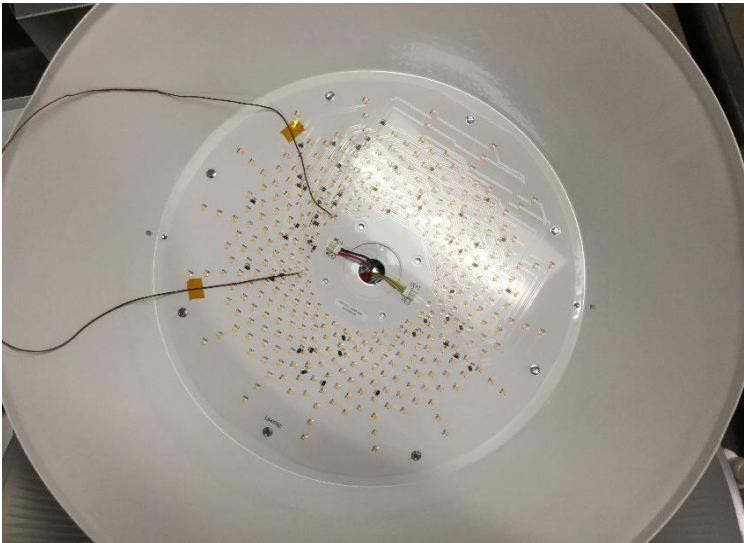
Measured LED Current:0.07914 A

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

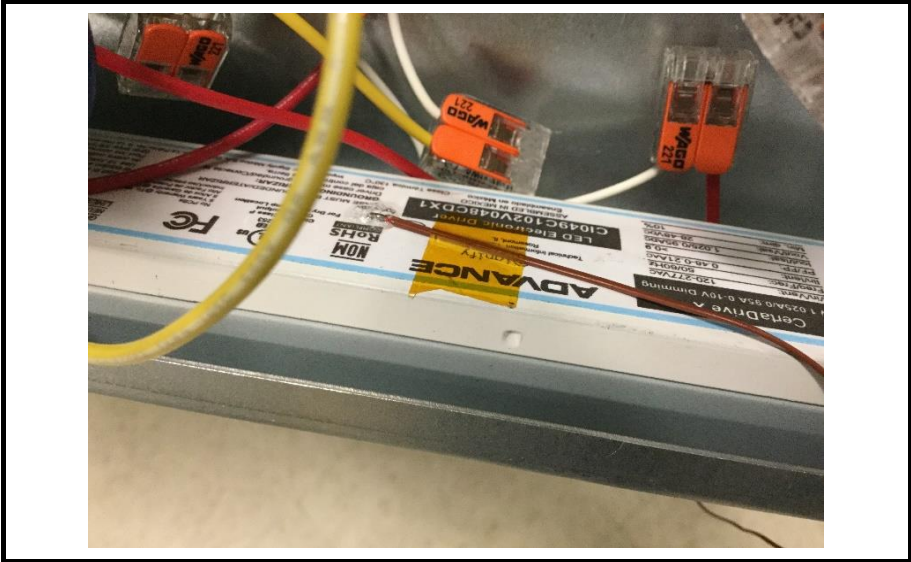
LED Temperature Location



Thermocouple Reference



Driver Temperature Location



ANSI/IES TM-30-18 Color Rendition Report

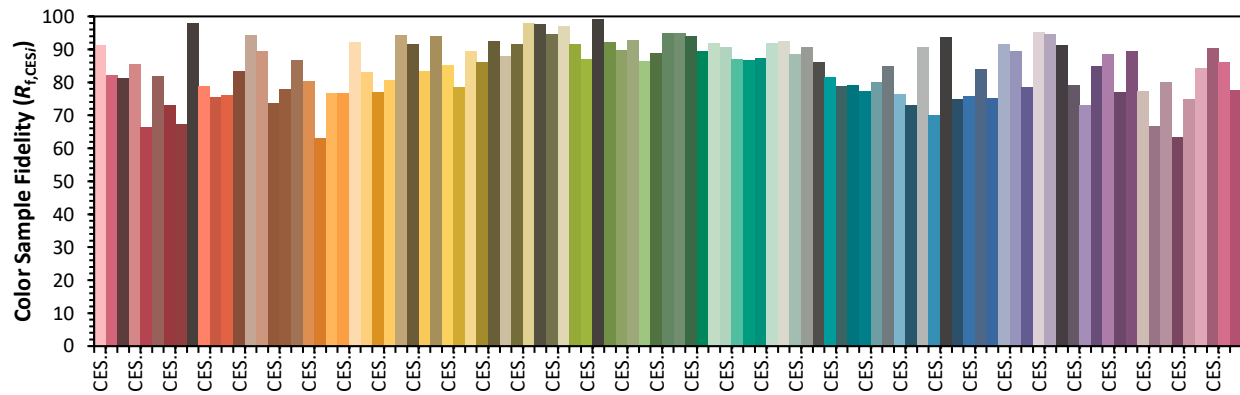
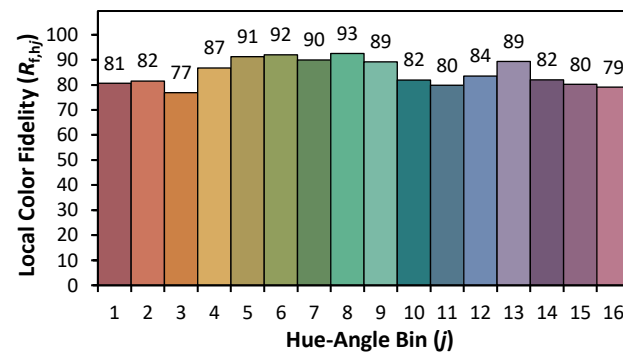
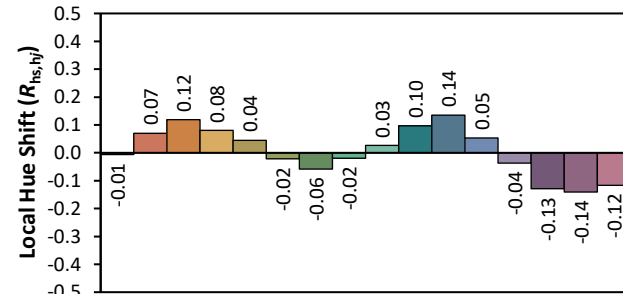
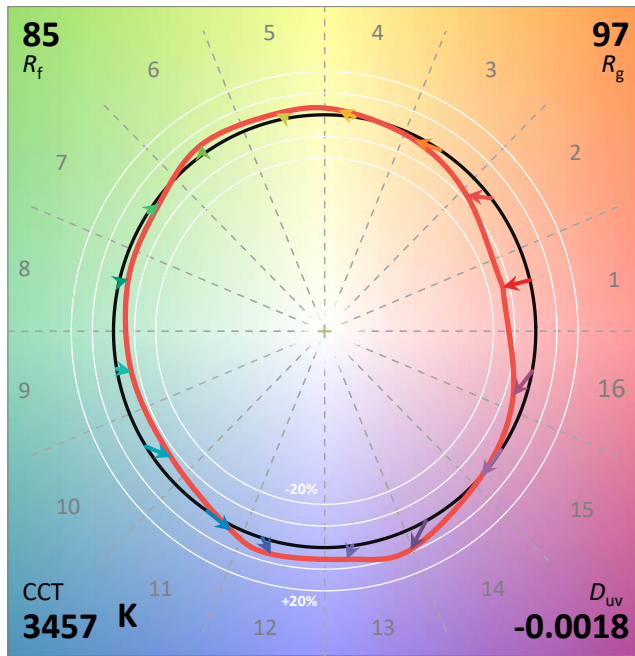
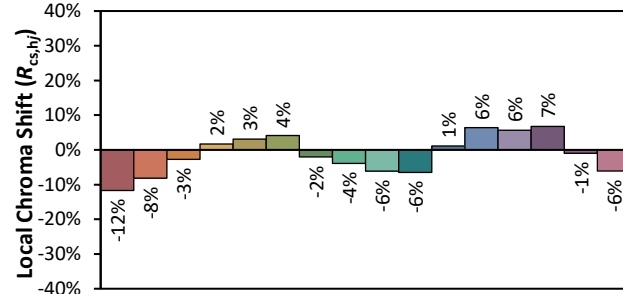
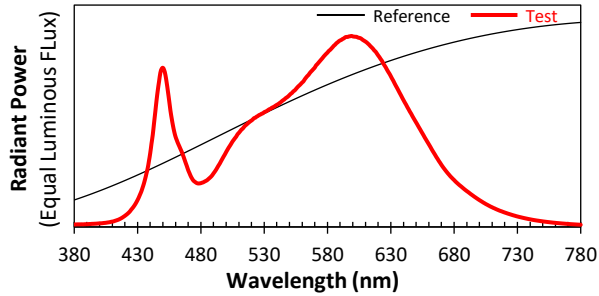
Date: 2023-03-03

Manufacturer:

SPECTRUM LIGHTING INC

Model:

G2208LED150L35KDS10X/TJL/GW



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

x 0.4057

y 0.3868

u' 0.2376

v' 0.5097

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.