



UL Solutions  
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## Photometric Test Report

Relevant Standards  
IES LM-79-2019, 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  
**RTGC2208LED150L35KDX with GC2208LED frame and TJL lens**

Order Number  
**15541389**  
Test Number  
**15541389.01**

Test Date  
2025-01-08 - 2025-01-13

Prepared By

Shivani Vyas, Engineering Project Handler

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

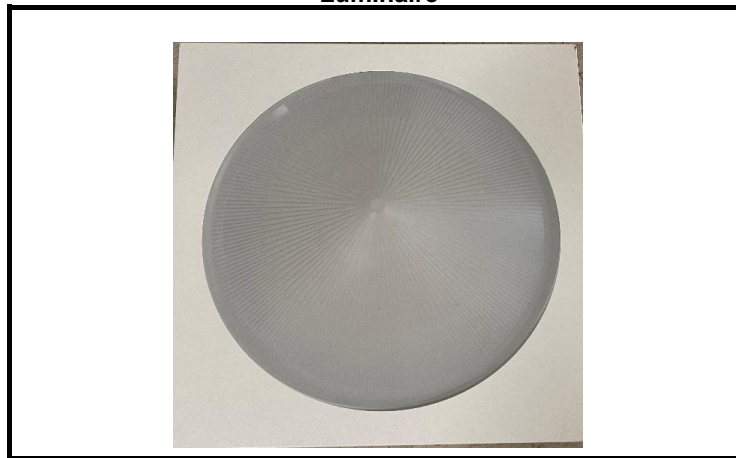
Testing was performed in a 3-meter integrating sphere using the  $4\pi$  geometry method.

Absorption correction was employed for Sphere measurement



**Luminaire Description:** White aluminum housing, white steel frame, patterned lens  
**Lamp:** 384 White LEDs  
**Mounting:** Recessed  
**Ballast/Driver:** Signify CI049C102V048CDX1

**Luminaire**



**Luminaire Characteristics**

Luminous Diameter: 20.00 in.  
Luminous Height: 8.00 in.

**Summary of Results**

**Integrating Sphere**

Luminous Flux: 12640 Lumens  
Efficacy: 137.36 lm/w  
CCT: 3504 K  
CRI (Ra): 82.9

**Distribution**

Total Luminaire Output: 12860 Lumens  
Luminaire Efficacy: 139.7 lm/w  
Maximum Candela: 3818 Candela

**Electrical Data at 277 VAC**

Test Temperature: 25.3 °C  
Voltage: 277.0 VAC  
Current: 0.3470 A  
Power: 94.58 W  
Power Factor: 0.984  
Frequency: 60 Hz  
Current THD: 9.68 %

**In-Situ**

LED Temperature: 52.8 °C  
Driver Temperature: 65.6 °C  
Measured LED Current: 0.07740 A

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

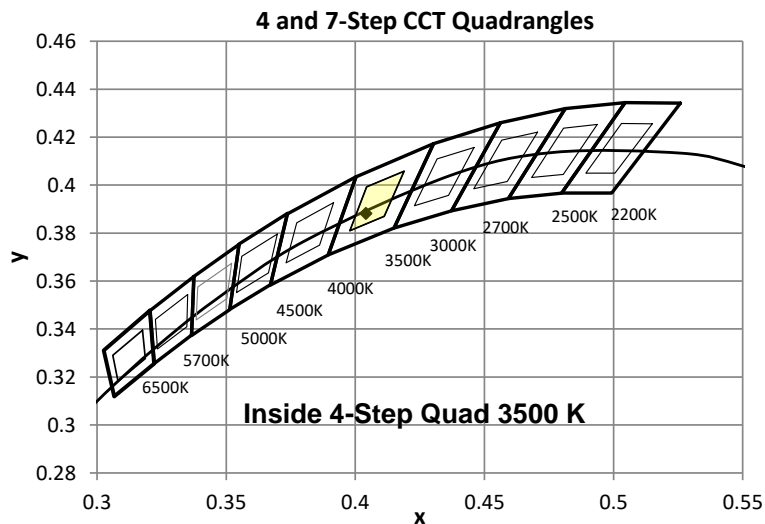
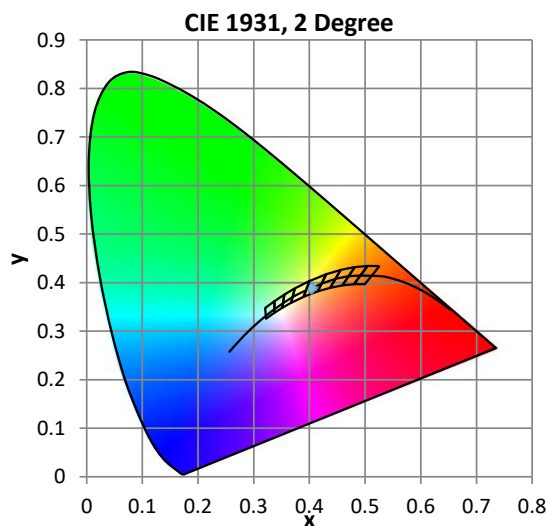
## Color Quality - Integrating Sphere

### Integrating Sphere Test Conditions

Temperature	Voltage	Current	Power	Power Factor	Frequency	Current THD
24.8 °C	120.0 VAC	0.7727 A	92.02 W	0.992	60 Hz	10.8 %

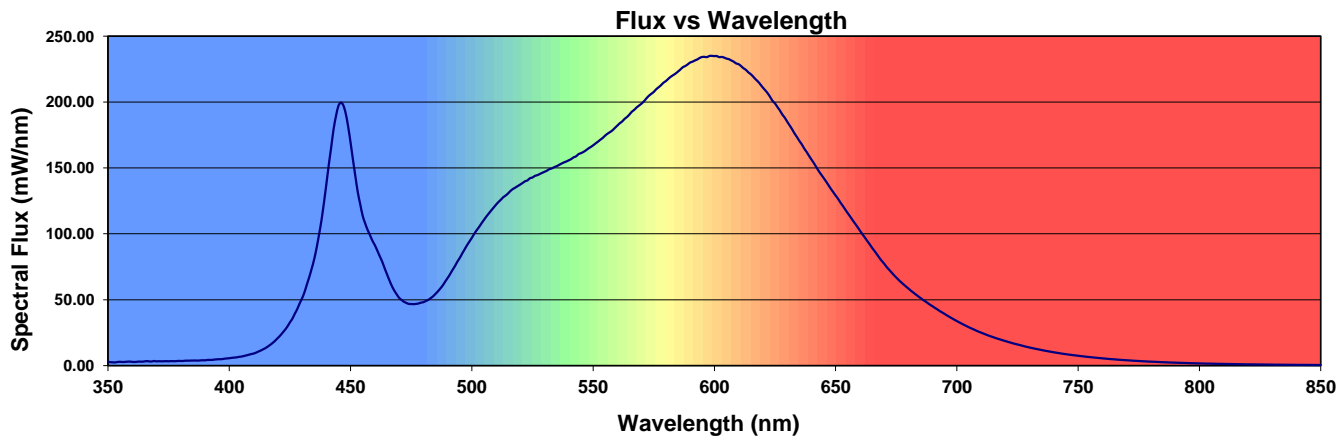
### Summary of Results

<b>Total Output:</b>	12640 Lumens	<b>Chromaticity (x):</b>	0.4041
<b>Efficacy:</b>	137.4 lm/w	<b>Chromaticity (y):</b>	0.3883
<b>CCT:</b>	3504 K	<b>Chromaticity (u'):</b>	0.2360
<b>CRI (Ra):</b>	82.9	<b>Chromaticity (v'):</b>	0.5101
<b>CRI (R9):</b>	8.6	<b>TM-30 Rf:</b>	84
<b>Peak Wavelength:</b>	600 nm	<b>TM-30 Rg:</b>	98
<b>Dominant Wavelength:</b>	555 nm	<b>TM-30 Rcs,h1:</b>	-11%
<b>S/P Ratio:</b>	1.51	<b>Duv:</b>	-0.0009
<b>M/P Ratio:</b>	0.59	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
82.9	81.4	88.6	94.9	83.0	81.8	85.6	84.8	63.1	8.6	73.9	83.1	70.1	82.9	97.2	74.3



## Distribution - Goniophotometer

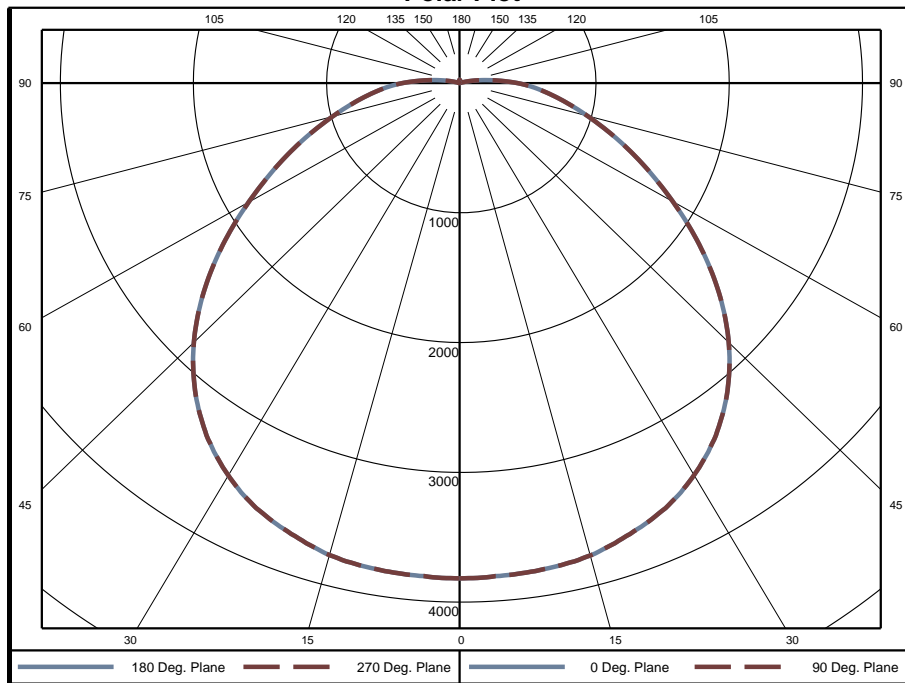
### Distribution Test Conditions

Temperature	Voltage	Current	Power	Power Factor	Frequency	Current THD
25.5 °C	120.1 VAC	0.7728 A	92.04 W	0.992	60 Hz	10.8 %

### Summary of Results

<b>Spacing Criteria</b>	<b>Total Lumen Output:</b>	12860 Lumens
0-180: 1.35	<b>Luminaire Efficacy:</b>	139.7 lm/w
90-270: 1.35	<b>Maximum Candela:</b>	3818 Candela
<b>Corrected UGR (Room Dimension: X=4H, Y=8H, Reflectances: 70/50/20%, S/H: 1)</b>		
<b>Crosswise:</b> 24.1	<b>Endwise:</b> 24.1	

### Polar Plot



### Zonal Lumen Summary

Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire
0-5	91	0.7%	60-65	810	6.3%	120-125	2	0.0%
5-10	272	2.1%	65-70	694	5.4%	125-130	2	0.0%
10-15	449	3.5%	70-75	578	4.5%	130-135	2	0.0%
15-20	615	4.8%	75-80	471	3.7%	135-140	3	0.0%
20-25	767	6.0%	80-85	375	2.9%	140-145	3	0.0%
25-30	899	7.0%	85-90	285	2.2%	145-150	3	0.0%
30-35	1001	7.8%	90-95	187	1.5%	150-155	3	0.0%
35-40	1069	8.3%	95-100	101	0.8%	155-160	3	0.0%
40-45	1096	8.5%	100-105	42	0.3%	160-165	3	0.0%
45-50	1078	8.4%	105-110	12	0.1%	165-170	2	0.0%
50-55	1017	7.9%	110-115	3	0.0%	170-175	2	0.0%
55-60	923	7.2%	115-120	2	0.0%	175-180	1	0.0%

Zone	Lumens	% of Luminaire
0-40	5163	40.1%
0-60	9277	72.1%
0-90	12490	97.1%
90-180	376	2.9%

**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	3818	3818	3818	3818	3818	3818	3818	3818	3818	3818	3818	3818	3818	3818	3818
	5	3809	3809	3809	3809	3809	3809	3809	3809	3809	3809	3809	3809	3809	3809	3809
	10	3797	3797	3797	3797	3797	3797	3797	3797	3797	3797	3797	3797	3797	3797	3797
	15	3767	3767	3767	3767	3767	3767	3767	3767	3767	3767	3767	3767	3767	3767	3767
	20	3698	3698	3698	3698	3698	3698	3698	3698	3698	3698	3698	3698	3698	3698	3698
	25	3615	3615	3615	3615	3615	3615	3615	3615	3615	3615	3615	3615	3615	3615	3615
	30	3484	3484	3484	3484	3484	3484	3484	3484	3484	3484	3484	3484	3484	3484	3484
	35	3315	3315	3315	3315	3315	3315	3315	3315	3315	3315	3315	3315	3315	3315	3315
	40	3092	3092	3092	3092	3092	3092	3092	3092	3092	3092	3092	3092	3092	3092	3092
	45	2823	2823	2823	2823	2823	2823	2823	2823	2823	2823	2823	2823	2823	2823	2823
	50	2510	2510	2510	2510	2510	2510	2510	2510	2510	2510	2510	2510	2510	2510	2510
	55	2171	2171	2171	2171	2171	2171	2171	2171	2171	2171	2171	2171	2171	2171	2171
	60	1827	1827	1827	1827	1827	1827	1827	1827	1827	1827	1827	1827	1827	1827	1827
	65	1515	1515	1515	1515	1515	1515	1515	1515	1515	1515	1515	1515	1515	1515	1515
	70	1234	1234	1234	1234	1234	1234	1234	1234	1234	1234	1234	1234	1234	1234	1234
	75	986	986	986	986	986	986	986	986	986	986	986	986	986	986	986
	80	780	780	780	780	780	780	780	780	780	780	780	780	780	780	780
	85	604	604	604	604	604	604	604	604	604	604	604	604	604	604	604
	90	434	434	434	434	434	434	434	434	434	434	434	434	434	434	434
	95	255	255	255	255	255	255	255	255	255	255	255	255	255	255	255
	100	124	124	124	124	124	124	124	124	124	124	124	124	124	124	124
	105	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43
	110	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
	115	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
	120	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
	125	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
	130	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
	135	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
	140	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8
	145	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9
	150	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
	155	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13
	160	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15
	165	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18
	170	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22
	175	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25
	180	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26

**Average Luminance (cd/m<sup>2</sup>)**  
Horizontal Angle (Degrees)

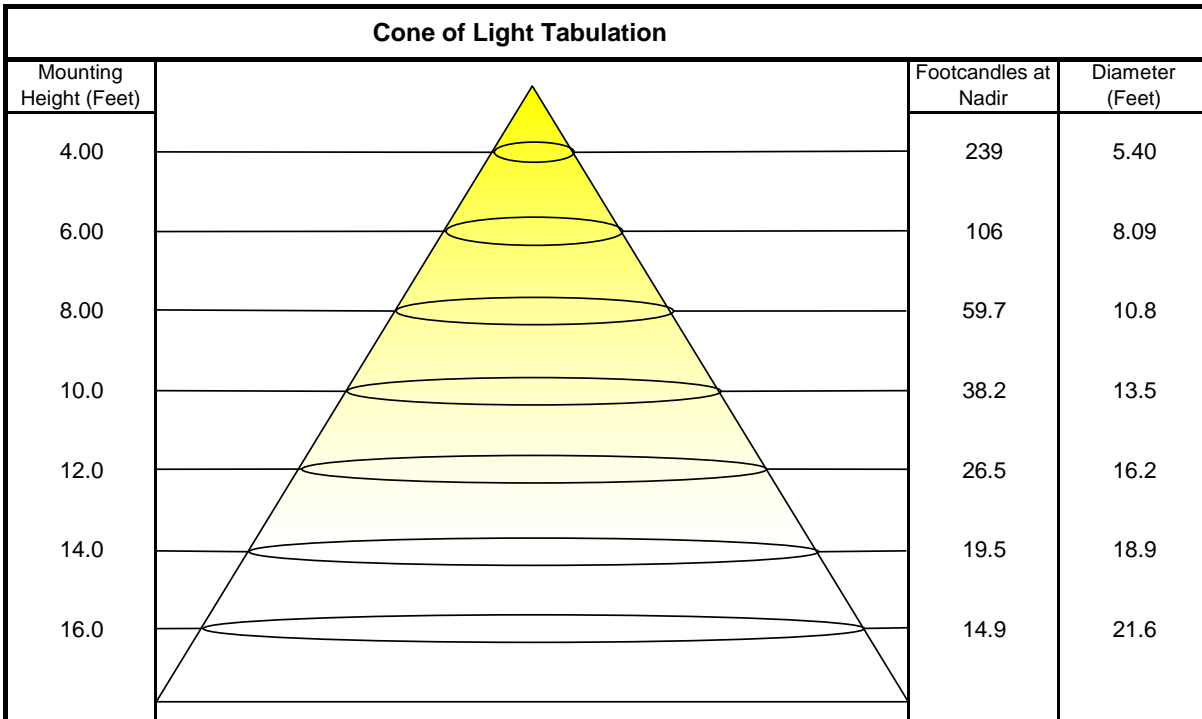
Vertical Angle (Degrees)	0	45	90
	0	18840	18840
	45	13050	13050
	55	10810	10810
	65	8452	8452
	75	6482	6482
	85	5008	5008



### Coefficients of Utilization - Zonal Cavity Method

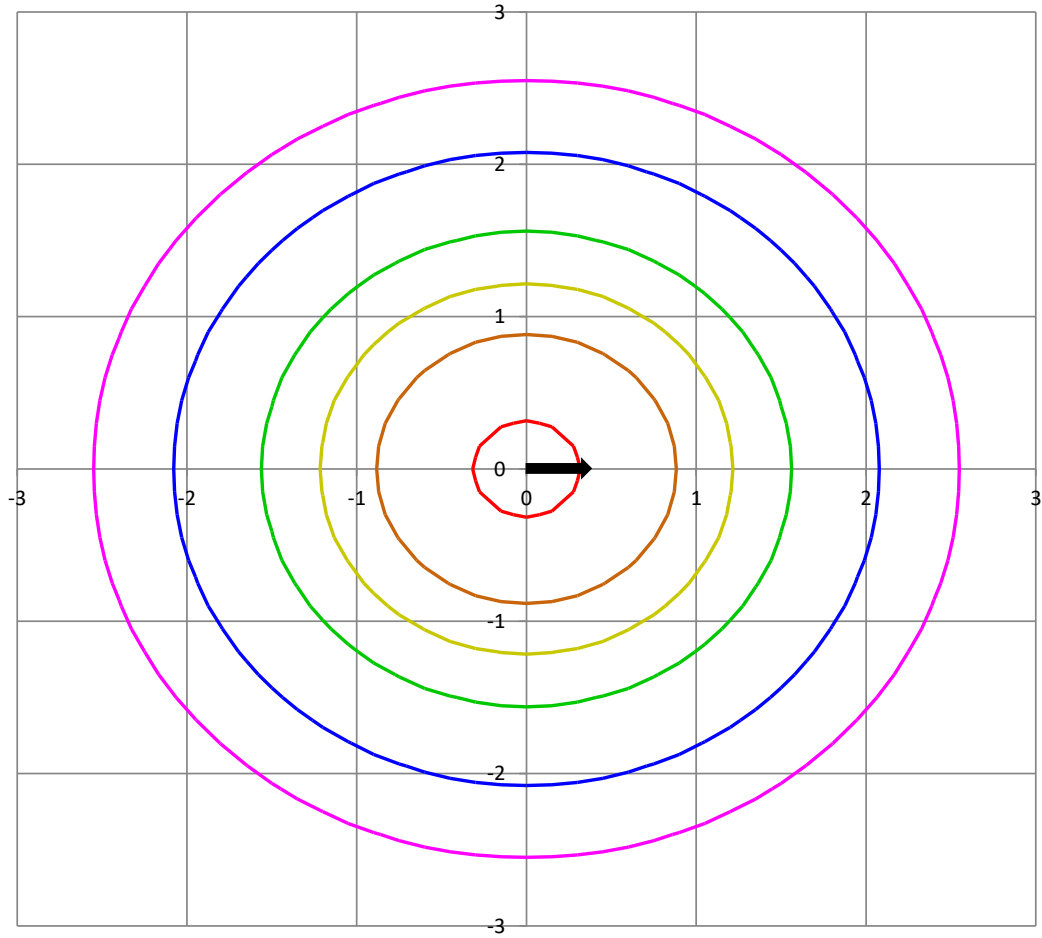
Effective Floor Cavity Reflectance 20%																		
Ceiling Cavity Reflectance	80				70				50			30			10			0
Wall Reflectance	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	0
Room Cavity Ratio (RCR)	** Values are expressed as percent of total lumen output delivered to the task surface **																	
0	118	118	118	118	115	115	115	115	109	109	109	104	104	104	99	99	99	97
1	107	101	96	92	103	99	94	90	94	90	87	89	86	83	85	83	80	78
2	96	87	80	74	93	85	79	73	81	76	71	77	73	69	74	70	67	64
3	88	76	68	61	85	75	67	60	71	64	59	68	62	57	65	60	56	54
4	80	68	58	51	77	66	57	51	63	56	50	60	54	49	58	52	48	45
5	74	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	39	33	44	38	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	34	28	23	22

Beam and Field Information	
CIE Type:	Direct
Center Beam Intensity:	3818 Candela
Central Cone Intensity:	3814 Candela
Beam Flux:	9057.0 Lumens
Beam Angle (0-180):	117.6 Degrees
Beam Angle (90-270):	117.6 Degrees
Field Angle (0-180):	182.8 Degrees
Field Angle (90-270):	182.8 Degrees

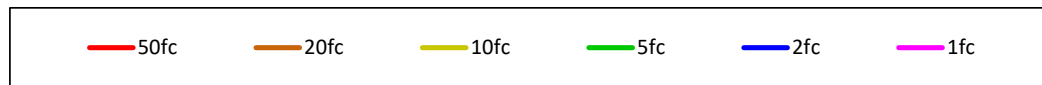


# ISOFootcandle Plot

Mounting Height - 8 Feet



Grid Lines in Units of Mounting Height





## In-Situ Test

### In-Situ Test Conditions

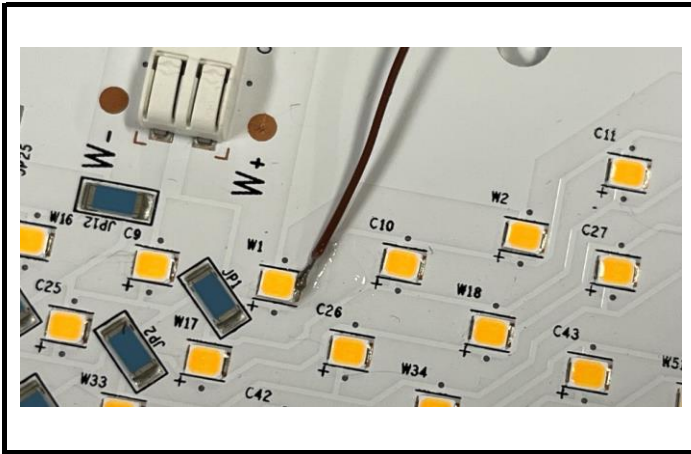
Temperature	Voltage	Current	Power	Power Factor	Frequency	Current THD
24.2 °C	120.0 VAC	N/A	N/A	N/A	60 Hz	N/A

### Summary of Results

LED Temperature: 52.8 °C  
 Driver Temperature: 65.6 °C  
 Measured LED Current: 0.07740 A

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

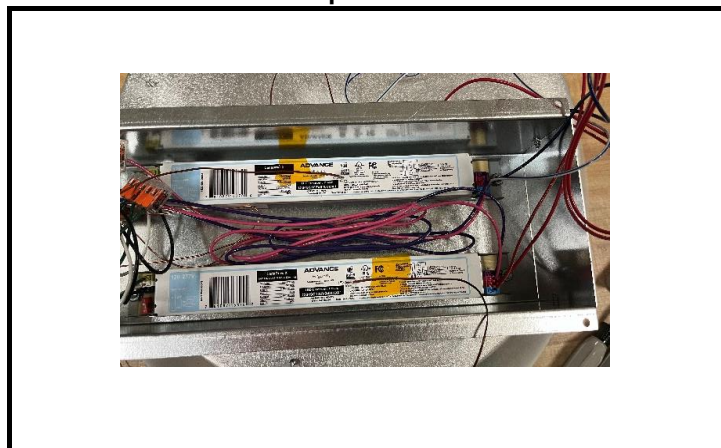
LED Temperature Location



Thermocouple Reference



Driver Temperature Location



# ANSI/IES TM-30-18 Color Rendition Report

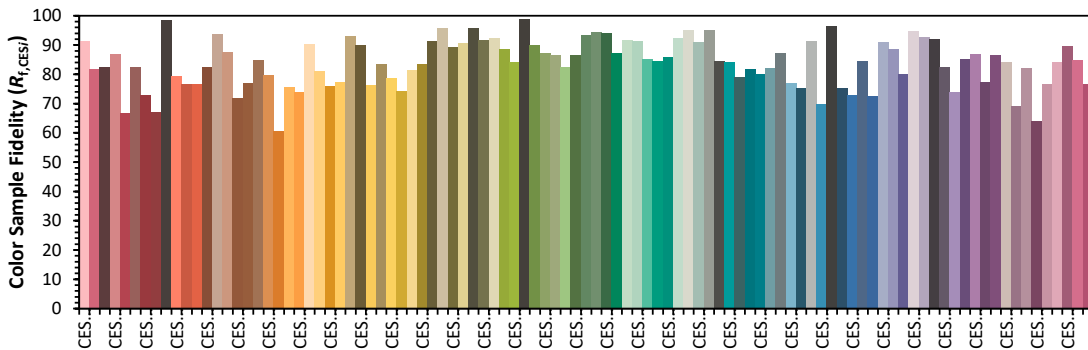
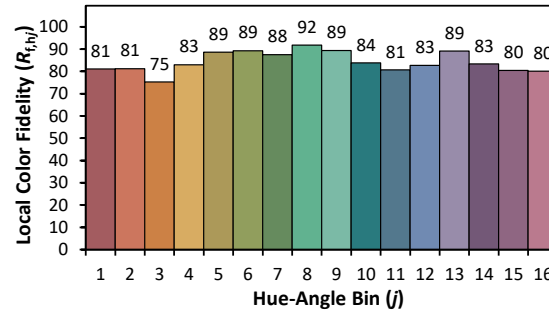
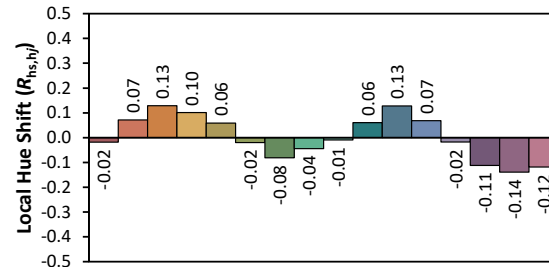
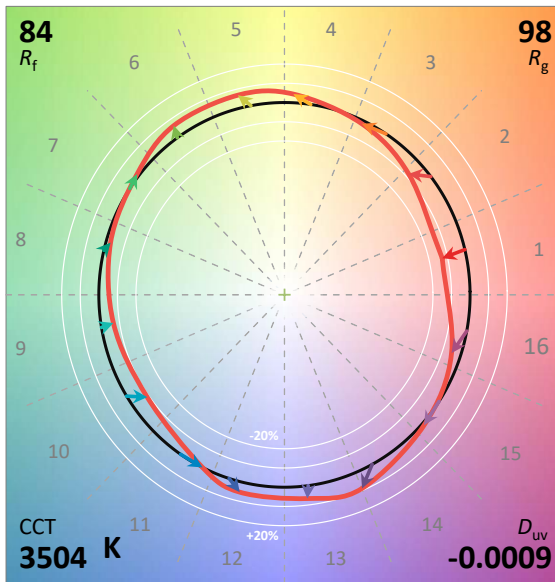
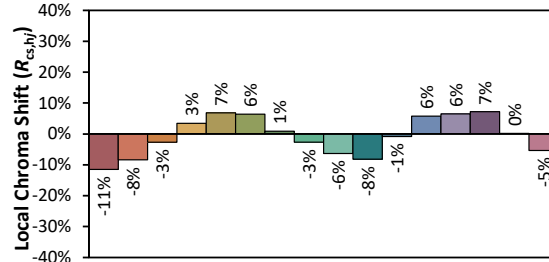
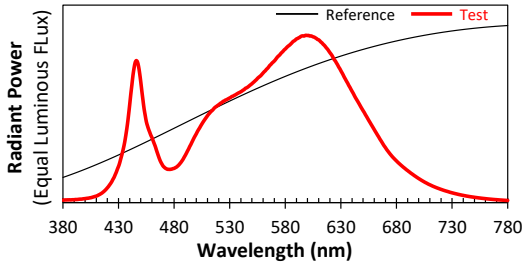
Date: 2025-01-08

Manufacturer:

SPECTRUM LIGHTING INC

Model:

RTGC2208LED150L35KDX with GC2208LED frame and TJL lens



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

$x$  0.4041

$y$  0.3883

$u'$  0.2360

$v'$  0.5101

CIE 13.3-1995  
(CRI)

$R_a$  83

$R_g$  9

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