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## Photometric Test Report

Relevant Standards  
IES LM-79-2019, ANSI C82.77-10-2014, IES LM-35-2002 (Withdrawn)  
CIE 13.3-1995, CIE 15-2004, ANSI C78.377-2017  
IES TM-30-2018

Prepared For  
**B-K LIGHTING INC**  
40429 Brickyard Dr  
Madera, CA 93636-9515  
United States

Catalog Number  
**NS-LED-e220-NSP-WHP-9-C**

Order Number  
15885950  
Test Number  
15885950.01

Test Date

2025-07-03

Prepared By

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Approved By

Shivani Vyas, 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 2-meter integrating sphere using the  $4\pi$  geometry method.

Absorption correction was employed for Sphere measurement

**Luminaire Description:** White metal cylindrical housing with a clear lens cap  
**Lamp:** One LED Array  
**Mounting:** Pendant  
**Ballast/Driver:** PowerSelect PS20B60M

**Luminaire**



**Luminaire Characteristics**  
 Luminous Diameter: 1.75 in.

### Summary of Results

#### Integrating Sphere

Luminous Flux: 435.9 Lumens  
 Efficacy: 53.7 lm/w  
 CCT: 2811 K  
 CRI (Ra): 82.2

#### Distribution

Total Luminaire Output: 436.1 Lumens  
 Luminaire Efficacy: 53.9 lm/w  
 Maximum Candela: 7655 Candela

#### Electrical Data at 120 VAC

Test Temperature: 25.1 °C  
 Voltage: 120.0 VAC  
 Current: 0.1797 A  
 Power: 8.117 W  
 Power Factor: 0.376  
 Frequency: 60 Hz  
 Current THD: 80.5 %

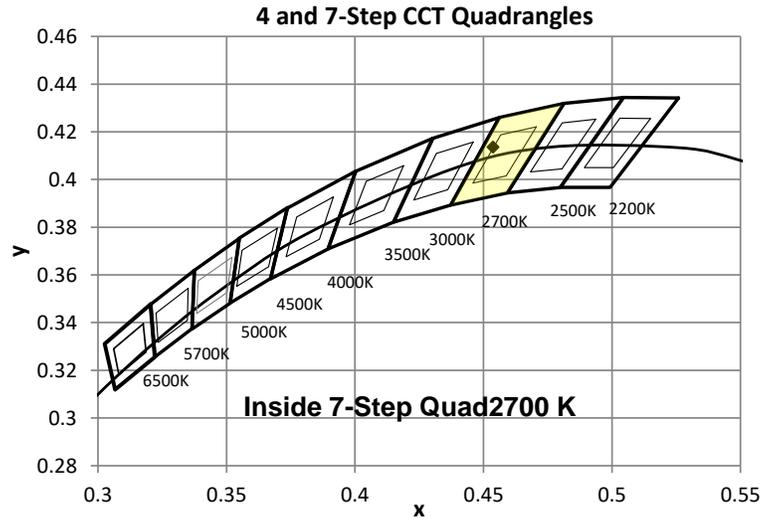
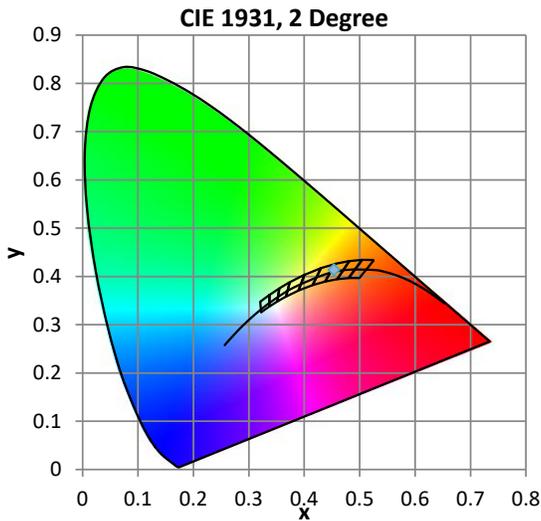
## Color Quality - Integrating Sphere

### Integrating Sphere Test Conditions

Temperature	Voltage	Current	Power	Power Factor	Frequency	Current THD
25.1 °C	120.0 VAC	0.1797 A	8.117 W	0.376	60 Hz	80.5 %

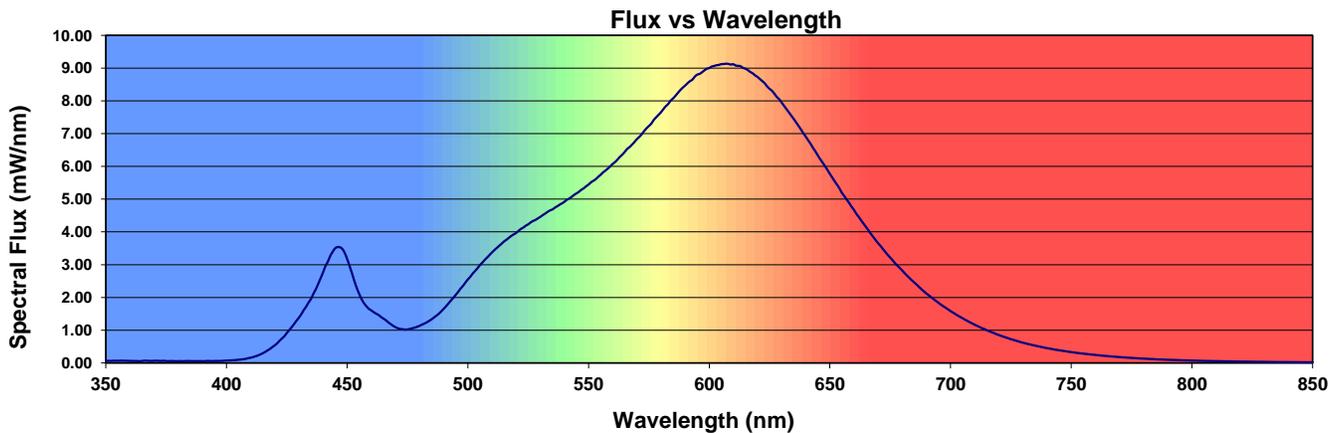
### Summary of Results

<b>Total Output:</b>	436 Lumens	<b>Chromaticity (x):</b>	0.4537
<b>Efficacy:</b>	53.7 lm/w	<b>Chromaticity (y):</b>	0.4137
<b>CCT:</b>	2811 K	<b>Chromaticity (u'):</b>	0.2571
<b>CRI (Ra):</b>	82.2	<b>Chromaticity (v'):</b>	0.5276
<b>CRI (R9):</b>	8.9	<b>TM-30 Rf:</b>	84
<b>Peak Wavelength:</b>	607 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>	1.22	<b>Duv:</b>	0.0017
<b>M/P Ratio:</b>	0.44	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
82.2	80.3	88.5	96.5	81.7	80.0	86.1	84.3	60.2	8.9	73.9	81.2	70.7	81.8	97.7	72.8



## Distribution - Goniophotometer

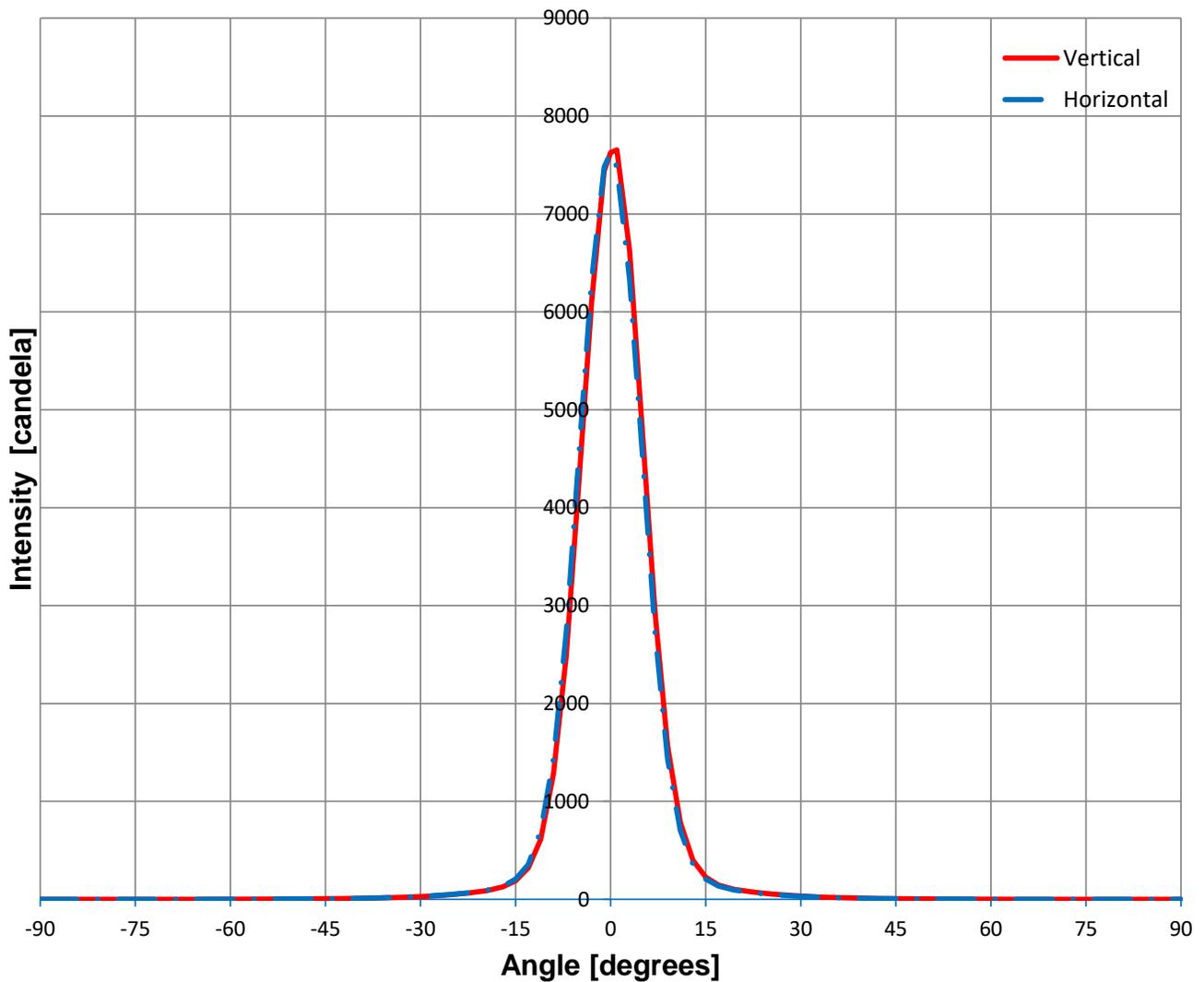
### Distribution Test Conditions

Temperature	Voltage	Current	Power	Power Factor	Frequency	Current THD
24.9 °C	120.0 VAC	0.1787 A	8.089 W	0.377	60 Hz	80.2 %

### Summary of Results

<b>Total Lumen Output:</b>	436.1 Lumens	<b>Maximum Candela:</b>	7654.8 Candela
<b>Luminaire Efficacy:</b>	53.9 Lumens/Watt	<b>Maximum Angle:</b>	0 H      1 V
<b>Field Lumens:</b>	324.7 Lumens	<b>Field Angle :</b>	21.7 H   X   21.7 V
<b>Beam Lumens:</b>	178.8 Lumens	<b>Beam Angle :</b>	11.5 H   X   11.5 V
<b>Spill Light Lumens:</b>	111.4 Lumens	<b>IESNA Type:</b>	2 H   X   2 V

### Maximum Candlepower Plot



**Candela Tabulation**  
Lateral Angle (Degrees)

	0	1	3	5	7	9	11	13	15	17	19.5
85.0	0	0	0	0	0	0	0	0	0	0	0
75.0	1	1	1	1	1	1	1	1	1	1	1
65.0	1	1	1	1	1	1	1	1	1	1	1
55.0	2	2	2	2	2	2	2	2	2	2	2
47.5	5	5	5	5	5	5	5	5	5	4	4
42.5	8	8	9	9	8	8	8	8	7	7	6
37.5	14	14	15	15	14	14	13	12	12	11	10
33.0	23	24	25	24	24	23	22	20	19	17	15
29.0	37	38	39	38	38	37	36	34	31	28	23
25.5	54	55	56	55	54	52	50	47	44	39	34
22.5	74	76	77	75	72	69	65	60	55	50	43
19.5	101	105	106	101	96	89	83	75	68	61	52
17.0	146	158	157	144	129	115	101	90	80	70	59
15.0	228	251	244	213	181	150	124	105	90	78	64
13.0	397	458	425	348	275	209	160	126	102	86	70
11.0	787	929	812	619	439	313	219	154	118	94	75
9.0	1568	1820	1538	1141	762	478	298	196	138	104	80
7.0	2925	3285	2732	1942	1240	718	402	246	161	115	85
5.0	4781	5137	4235	2997	1845	1019	536	296	183	126	90
3.0	6622	6732	5640	3976	2408	1296	651	343	201	133	92
1.0	7655	7465	6340	4524	2708	1433	707	360	207	135	93
0.0	7628	7479	6330	4543	2726	1435	703	357	206	135	93
-1.0	7440	7111	6086	4349	2612	1396	698	354	205	134	93
-3.0	6106	5646	4858	3523	2131	1166	606	322	190	127	90
-5.0	4263	3771	3275	2401	1533	859	458	267	170	119	86
-7.0	2484	2141	1931	1438	938	575	340	214	145	107	80
-9.0	1281	1081	990	768	542	363	240	167	122	95	74
-11.0	613	526	492	412	313	232	171	128	103	84	67
-13.0	320	285	267	236	197	159	126	104	87	74	61
-15.0	189	174	164	151	135	116	100	86	75	65	54
-17.0	127	120	114	108	101	91	82	73	65	57	48
-19.5	89	86	83	80	76	72	66	60	54	48	41
-22.5	64	62	60	58	56	54	50	46	42	38	32
-25.5	46	45	44	43	42	40	38	35	32	29	25
-29.0	32	31	30	29	29	27	26	24	23	21	19
-33.0	20	20	19	19	19	18	17	17	16	15	13
-37.5	13	13	12	12	12	12	11	11	10	10	9
-42.5	8	8	8	8	8	7	7	7	7	7	6
-47.5	5	5	5	5	5	5	5	5	4	4	4
-55.0	2	2	2	2	2	2	2	2	2	2	2
-65.0	1	1	1	1	1	1	1	1	1	1	1
-75.0	1	1	1	1	1	1	1	1	1	1	1
-85.0	0	0	0	0	0	0	0	0	0	0	0

Vertical Angle (Degrees)

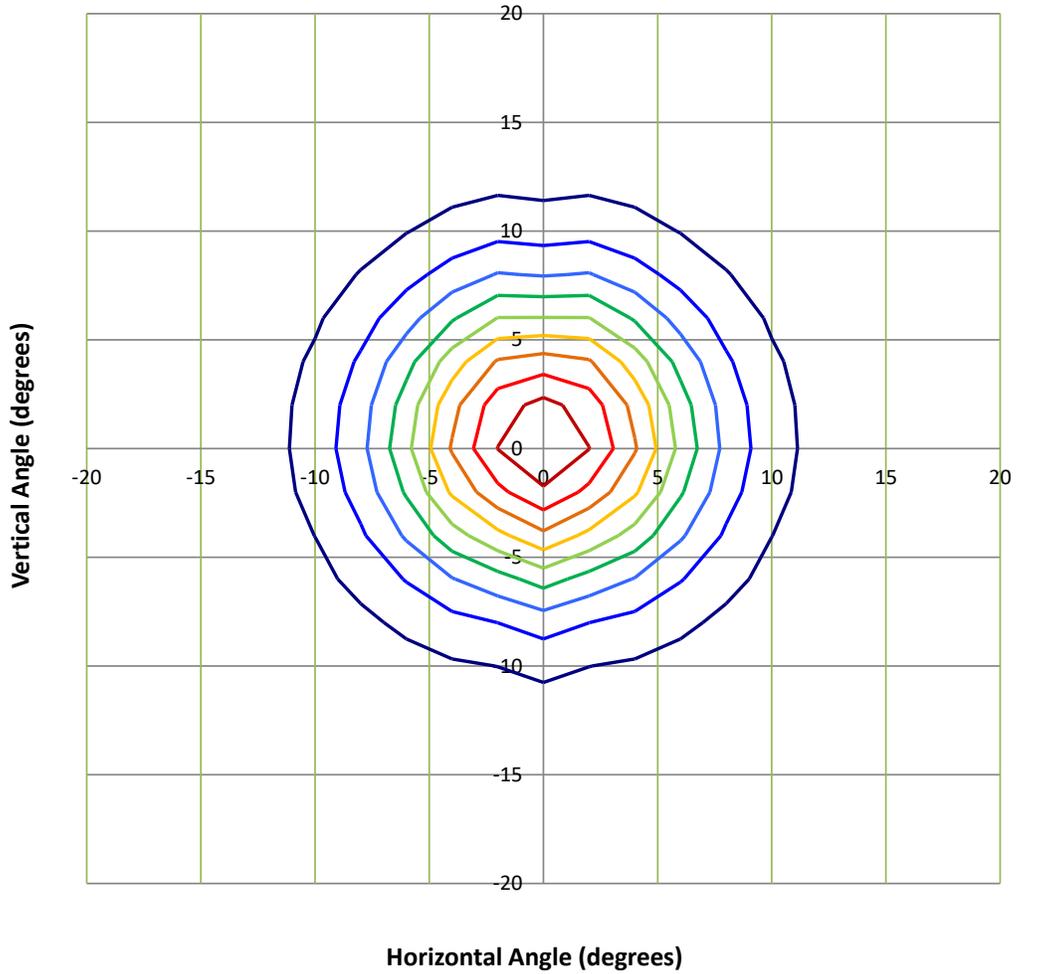


**Candela Tabulation**  
Lateral Angle (Degrees)

	22.5	25.5	29	33	37.5	42.5	47.5	55	65	75	85
85.0	0	0	0	0	0	0	0	0	0	0	0
75.0	1	1	1	1	1	1	0	0	0	0	0
65.0	1	1	1	1	1	1	1	1	0	0	0
55.0	2	2	1	1	1	1	1	1	1	0	0
47.5	4	3	3	2	2	1	1	1	1	1	0
42.5	6	5	4	4	3	2	1	1	1	0	0
37.5	9	8	6	5	4	3	2	1	1	1	0
33.0	13	11	9	7	5	3	2	1	1	1	0
29.0	18	15	11	9	6	4	3	1	1	1	0
25.5	26	20	15	10	7	5	3	1	1	1	0
22.5	34	25	18	12	8	6	3	2	1	1	0
19.5	41	31	21	14	9	6	4	2	1	1	0
17.0	47	35	24	16	10	7	4	2	1	1	0
15.0	50	38	26	17	11	7	4	2	1	1	0
13.0	53	40	28	18	12	7	5	2	1	1	0
11.0	57	43	30	20	12	7	5	2	1	1	0
9.0	60	45	31	20	13	8	5	2	1	1	0
7.0	63	47	32	21	13	8	5	2	1	1	0
5.0	65	48	33	21	13	8	5	2	1	1	0
3.0	67	49	34	22	14	8	5	2	1	1	0
1.0	67	49	34	22	14	8	5	2	1	1	0
0.0	67	49	34	22	14	8	5	2	1	1	0
-1.0	67	49	34	22	14	8	5	2	1	1	0
-3.0	65	48	33	21	14	8	5	2	1	1	0
-5.0	63	46	32	21	13	8	5	2	1	1	0
-7.0	60	44	31	20	13	8	5	2	1	1	0
-9.0	55	42	29	19	12	8	5	2	1	1	0
-11.0	51	39	27	19	12	7	5	2	1	1	0
-13.0	47	36	25	17	11	7	4	2	1	1	0
-15.0	43	33	23	16	11	7	4	2	1	1	0
-17.0	38	29	21	15	10	6	4	2	1	1	0
-19.5	33	25	19	14	9	6	4	2	1	1	0
-22.5	26	21	16	12	8	5	3	2	1	1	0
-25.5	21	17	13	10	7	5	3	2	1	1	0
-29.0	16	13	10	8	6	4	3	1	1	1	0
-33.0	11	10	8	6	5	3	2	1	1	1	0
-37.5	8	7	6	5	4	3	2	1	1	1	0
42.5	5	5	4	3	3	2	2	1	1	1	0
-47.5	4	3	3	2	2	2	1	1	1	1	0
-55.0	2	2	2	1	1	1	1	1	1	0	0
-65.0	1	1	1	1	1	1	1	1	1	0	0
-75.0	1	1	1	1	1	1	1	0	0	0	0
-85.0	0	0	0	0	0	0	0	0	0	0	0

Vertical Angle (Degrees)

### Isocandela Diagram (Percent of Maximum Intensity)



- 6889 cd (90%)    — 6123 cd (80%)    — 5358 cd (70%)    — 4592 cd (60%)    — 3827 cd (50%)
- 3061 cd (40%)    — 2296 cd (30%)    — 1530 cd (20%)    — 765 cd (10%)

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

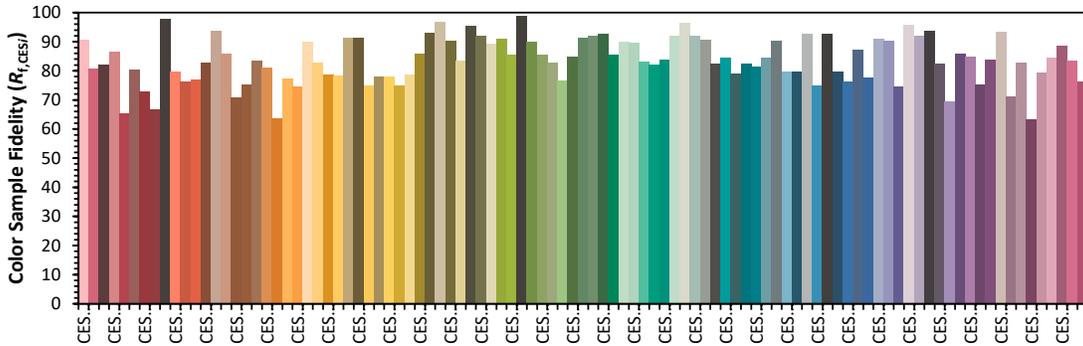
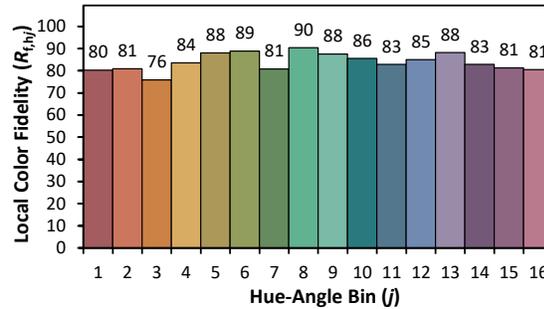
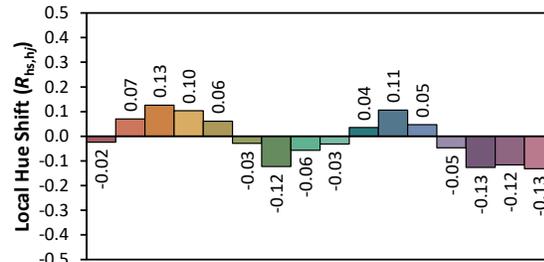
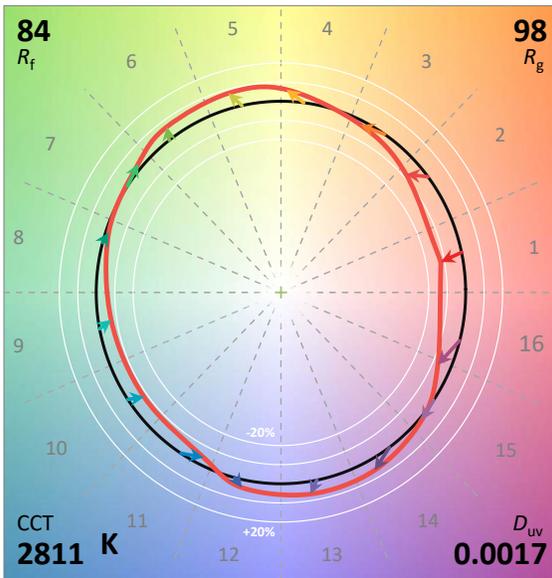
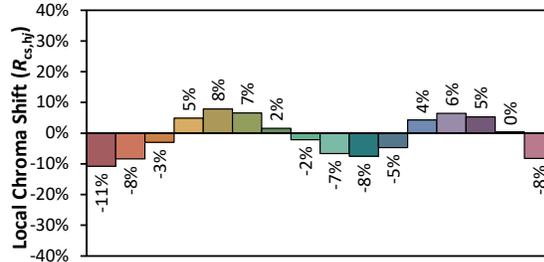
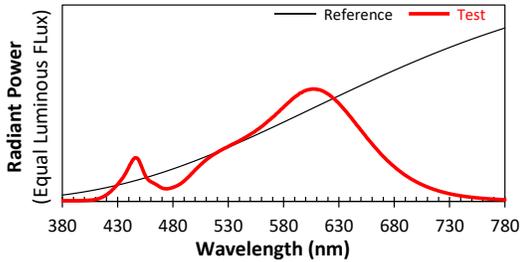
Date: 2025-07-03

Manufacturer:

B-K LIGHTING INC

Model:

NS-LED-e220-NSP-WHP-9-C



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

$x$  0.4537  
 $y$  0.4137  
 $u'$  0.2571  
 $v'$  0.5276

CIE 13.3-1995 (CRI)	
$R_a$	82
$R_g$	9

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