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## Photometric Test Report

Relevant Standards  
IES LM-79-2008  
ANSI C82.77-2002

**Prepared For**  
**Elemental LED Inc, DBA Diode LED**

Wes Buck  
Suite 211, 1195 Park Ave.  
Emeryville, CA 94608  
United States

**Catalog Number**  
**DI-12V-FV63-W8016**

Order Number  
10665784  
Test Number  
895403

Test Date

2015-02-11

Prepared By

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Approved By

Eric Gaudreau, Engineering Project Handler

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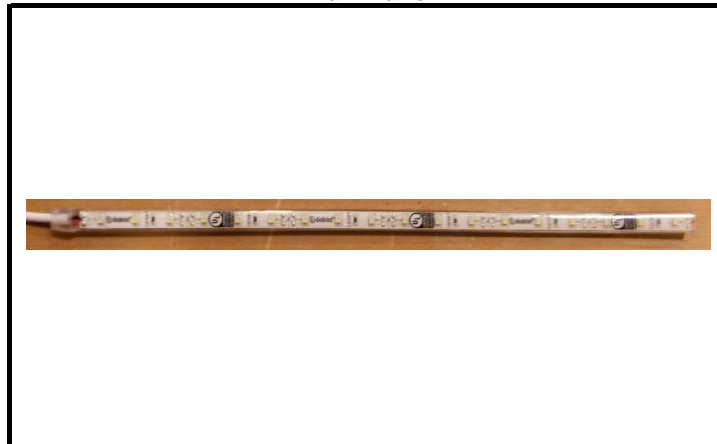
Laboratory results may not be representative of field performance  
Ballast factors have not been applied

Testing was performed in a 2-meter integrating sphere using the  $4\pi$  geometry method.  
Absorption correction was employed for Sphere measurement



**Luminaire Description:** LED strip  
**Lamp:** 18 white LEDs  
**Mounting:** Surface

#### Luminaire



#### Luminaire Characteristics

Luminous Length: 12.00 in.  
Luminous Width: 0.3800 in.

#### Summary of Results

##### Integrating Sphere

Total Output: 104 Lumens  
Efficacy: 76.4 lm/w  
CCT: 6047 K  
CRI (Ra): 85.1

##### Distribution

Total Output: 104.2 Lumens  
Efficacy: 74.6 lm/w  
Maximum Candela: 31.49 Candela

##### Electrical Data at 12VDC

Test Temperature: 24.9 °C  
Voltage: 12.00 VDC  
Current: 0.1138 A  
Power: 1.366 W



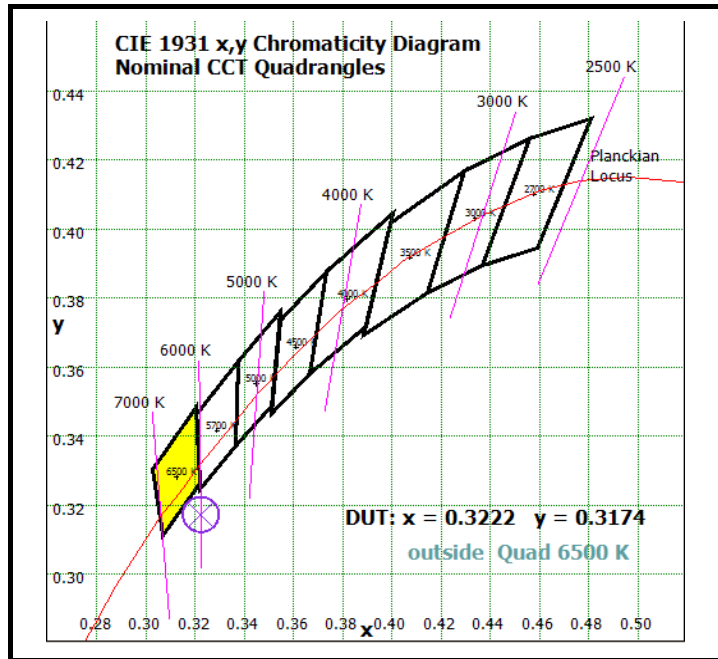
## Color Quality - Integrating Sphere

### Integrating Sphere Test Conditions

Temperature	Voltage	Current	Power	Power Factor	Frequency	Current THD
24.9 °C	12.00 VDC	0.1138 A	1.366 W	N / A	N / A	N / A

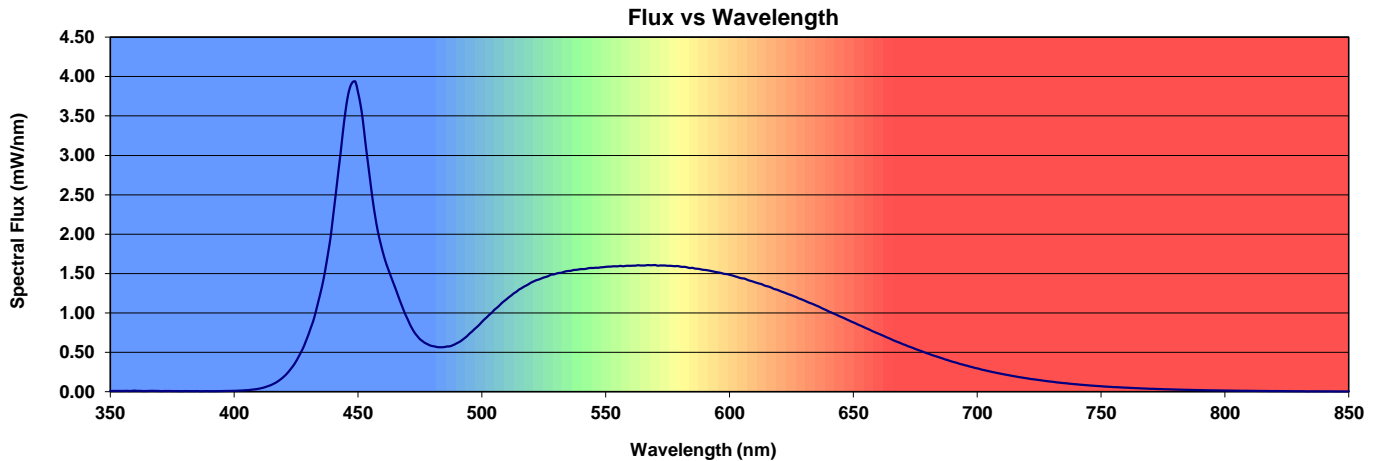
**Summary of Results**

**Luminous Flux:** 104 Lumens  
**Efficacy:** 76.4 lm/w  
**CCT:** 6047 K  
**CRI (Ra):** 85.1  
**CRI (R9):** 46.0  
 Chromaticity (x): 0.3222  
 Chromaticity (y): 0.3174  
 Chromaticity (u): 0.2091  
 Chromaticity (v): 0.3089  
 Chromaticity (u'): 0.2091  
 Chromaticity (v'): 0.4634  
 Duv: -0.0081



### Color Rendering Index Detail

Ra (CRI)	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14
85.1	88.1	86.9	82.3	87.2	87.7	79.5	87.3	82.2	46.0	66.1	87.6	60.3	87.2	89.7





## Distribution - Goniophotometer

### Distribution Test Conditions

Temperature	Voltage	Current	Power	Power Factor	Frequency	Current THD
25.3 °C	12.00 VDC	0.1163 A	1.396 W	N / A	N / A	N / A

### Summary of Results

#### Spacing Criteria

0-180: 1.23

90-270: 1.35

Total Lumen Output:

104 Lumens

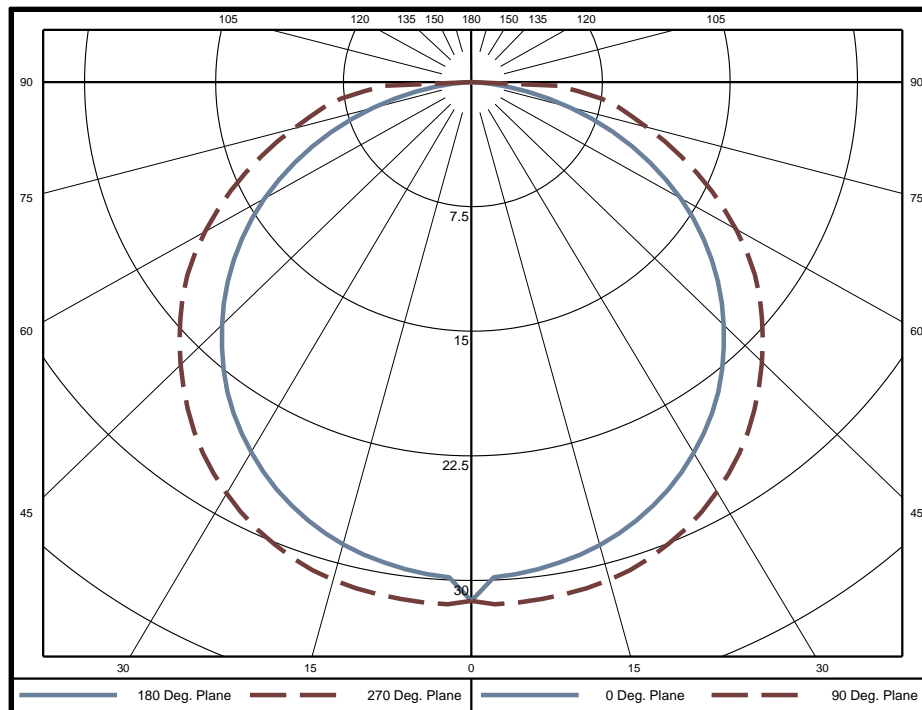
Luminaire Efficacy:

74.6 lm/w

Maximum Candela:

31 Candela

### Polar Plot



### Zonal Lumen Summary

Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire
0-5	0.8	0.8%	60-65	7.5	7.2%	120-125	0.0	0.0%
5-10	2.2	2.1%	65-70	6.5	6.2%	125-130	0.0	0.0%
10-15	3.6	3.5%	70-75	5.3	5.1%	130-135	0.0	0.0%
15-20	5.0	4.8%	75-80	4.1	4.0%	135-140	0.0	0.0%
20-25	6.2	5.9%	80-85	3.0	2.8%	140-145	0.0	0.0%
25-30	7.2	6.9%	85-90	1.4	1.4%	145-150	0.0	0.0%
30-35	8.0	7.7%	90-95	0.0	0.0%	150-155	0.0	0.0%
35-40	8.6	8.2%	95-100	0.0	0.0%	155-160	0.0	0.0%
40-45	8.9	8.5%	100-105	0.0	0.0%	160-165	0.0	0.0%
45-50	8.9	8.6%	105-110	0.0	0.0%	165-170	0.0	0.0%
50-55	8.7	8.4%	110-115	0.0	0.0%	170-175	0.0	0.0%
55-60	8.3	7.9%	115-120	0.0	0.0%	175-180	0.0	0.0%

Zone	Lumens	% of Luminaire
0-40	41.6	39.9%
0-60	76.4	73.3%
0-90	104.2	100.0%
90-180	0.0	0.0%



**Candela Tabulation**  
Horizontal Angle (Degrees)

Vertical Angle (Degrees)		0	22.5	45	67.5	90	113	135	157.5	180	202.5	225	247.5	270	292.5	315	337.5
	0	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31
	5	30	31	31	31	31	31	31	31	30	31	31	31	31	31	31	31
	10	29	31	31	31	31	31	31	31	29	31	31	31	31	31	31	31
	15	29	30	31	31	31	31	31	30	29	30	31	31	31	31	31	30
	20	28	30	30	30	30	30	30	30	28	30	30	30	30	30	30	30
	25	27	29	29	29	30	29	29	29	27	29	29	29	30	29	29	29
	30	26	28	28	28	29	28	28	28	26	28	28	28	29	28	28	28
	35	24	26	27	27	27	27	27	26	24	26	27	27	27	27	27	26
	40	23	24	25	26	26	26	25	24	23	24	25	26	26	26	25	24
	45	21	23	24	24	24	24	24	23	21	23	24	24	24	24	24	23
	50	19	21	22	22	22	22	22	21	19	21	22	22	22	22	22	21
	55	16	18	20	20	20	20	20	18	16	18	20	20	20	20	20	18
	60	14	16	17	18	18	18	17	16	14	16	17	18	18	18	17	16
	65	11	13	15	15	15	15	15	13	11	13	15	15	15	15	15	13
	70	9	11	12	13	13	13	12	11	9	11	12	13	13	13	12	11
	75	6	8	9	10	11	10	9	8	6	8	9	10	11	10	9	8
	80	3	5	7	8	9	8	7	5	3	5	7	8	9	8	7	5
	85	1	3	5	6	6	6	5	3	1	3	5	6	6	6	5	3
	90	0	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	0
	100	0	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	0
	110	0	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	0
	120	0	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	0
	130	0	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	0
	140	0	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	0
	150	0	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	0
	160	0	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	0
	170	0	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	0
	180	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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

Vertical Angle (Degrees)		0	45	90
	0	10610	10610	10610
	45	9953	11340	11530
	55	9744	11630	11980
	65	9186	11770	12460
	75	7821	12080	14010
	85	4388	17780	24410



### Utilization of Lumens - 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 Lumens delivered to the task surface **																	
0	124	124	124	124	122	122	122	122	116	116	116	111	111	111	107	107	107	105
1	112	106	101	97	109	104	99	95	99	96	92	95	92	89	91	89	86	84
2	101	92	84	77	98	90	82	76	86	80	74	82	77	73	79	75	71	69
3	92	80	71	63	89	78	70	63	75	68	62	72	66	60	69	64	59	57
4	84	70	61	53	81	69	60	53	66	58	52	64	57	51	61	55	50	48
5	77	63	53	45	74	61	52	45	59	51	45	57	50	44	55	49	44	41
6	71	56	46	39	69	55	46	39	53	45	39	51	44	38	50	43	38	36
7	66	51	41	35	64	50	41	34	48	40	34	47	39	34	45	39	34	31
8	61	46	37	31	59	45	37	31	44	36	30	43	35	30	41	35	30	28
9	57	42	33	27	55	42	33	27	40	33	27	39	32	27	38	32	27	25
10	53	39	30	25	52	38	30	25	37	30	25	36	29	24	35	29	24	22

### Cone of Light Tabulation

Mounting Height	Footcandles at Nadir	Diameter (Feet)
1.00	31.2	1.32
2.00	7.81	2.65
3.00	3.47	3.97
4.00	1.95	5.30
6.00	0.867	7.94
8.00	0.488	10.6
10.0	0.312	13.2

### Cone of Light Plot

