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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
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Emeryville, CA 94608
United States

Catalog Number
DI-12V-1VA30-9016

Order Number
10648765
Test Number
872632

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2015-04-03
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2015-01-21

Prepared By

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Approved By

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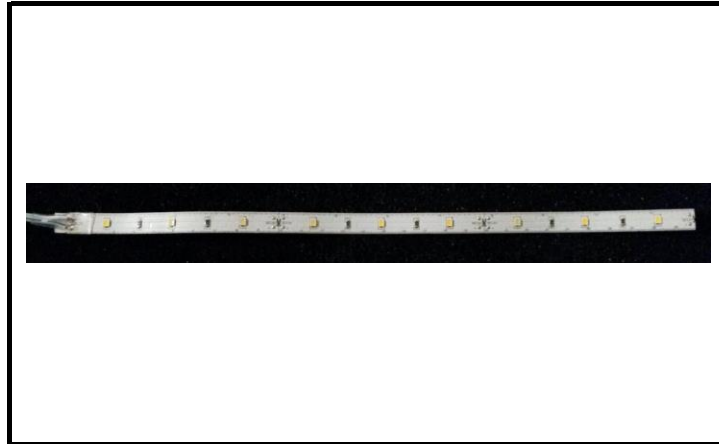
Laboratory results may not be representative of field performance
Ballast factors have not been applied

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



Luminaire Description: LED strip
Lamp: Nine white LEDs
Mounting: Surface

Luminaire



Luminaire Characteristics

Luminous Length: 11.88 in.
Luminous Width: 0.3800 in.

Summary of Results

Integrating Sphere

Total Output: 154 Lumens
Efficacy: 72.3 lm/w
CCT: 2950 K
CRI (Ra): 91.8

Distribution

Total Luminaire Output: 157.2 Lumens
Luminaire Efficacy: 72.4 lm/w
Maximum Candela: 54 Candela

Electrical Data at 12 VDC

Test Temperature: 25.0 °C
Voltage: 12.00 VDC
Current: 0.1779 A
Power: 2.135 W



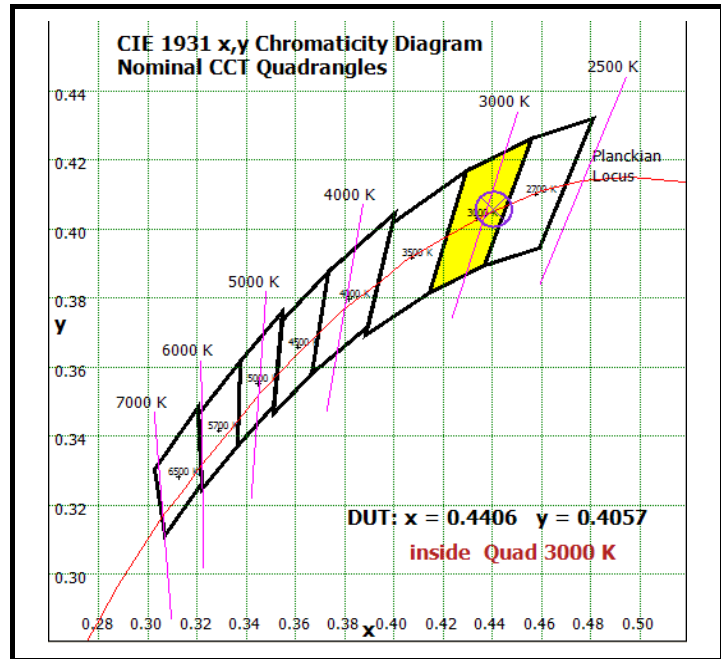
Color Quality - Integrating Sphere

Integrating Sphere Test Conditions

Temperature	Voltage	Current	Power	Power Factor	Frequency	Current THD
25.0 °C	12.00 VDC	0.1779 A	2.135 W	N / A	N / A	N / A

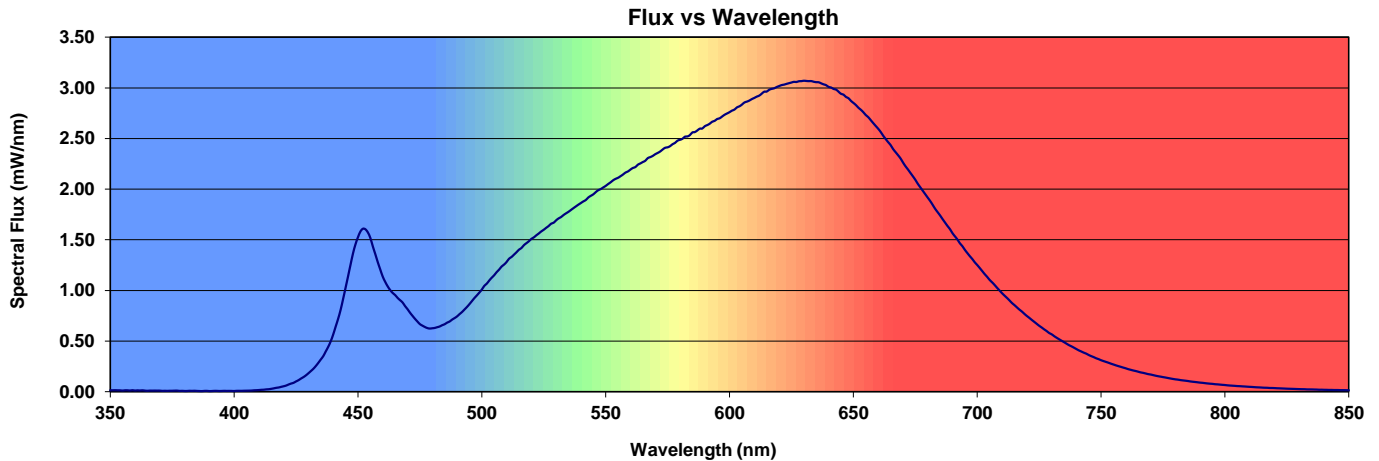
Summary of Results

Luminous Flux:	154 Lumens
Efficacy:	72.3 lm/w
CCT:	2950 K
CRI (Ra):	91.8
CRI (R9):	65.6
Chromaticity (x):	0.4406
Chromaticity (y):	0.4057
Chromaticity (u):	0.2522
Chromaticity (v):	0.3484
Chromaticity (u')	0.2522
Chromaticity (v')	0.5226
Duv:	0.0001



Color Rendering Index Detail

Ra (CRI)	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14
91.8	91.7	94.5	95.4	91.4	90.6	92.0	94.0	85.1	65.6	85.9	90.5	75.5	92.2	96.7





Distribution - Goniophotometer

Distribution Test Conditions

Temperature	Voltage	Current	Power	Power Factor	Frequency	Current THD
25.0 °C	12.00 VDC	0.1807 A	2.170 W	N / A	N / A	N / A

Summary of Results

Spacing Criteria

0-180: 1.22
90-270: 1.28

Total Lumen Output:

157 Lumens

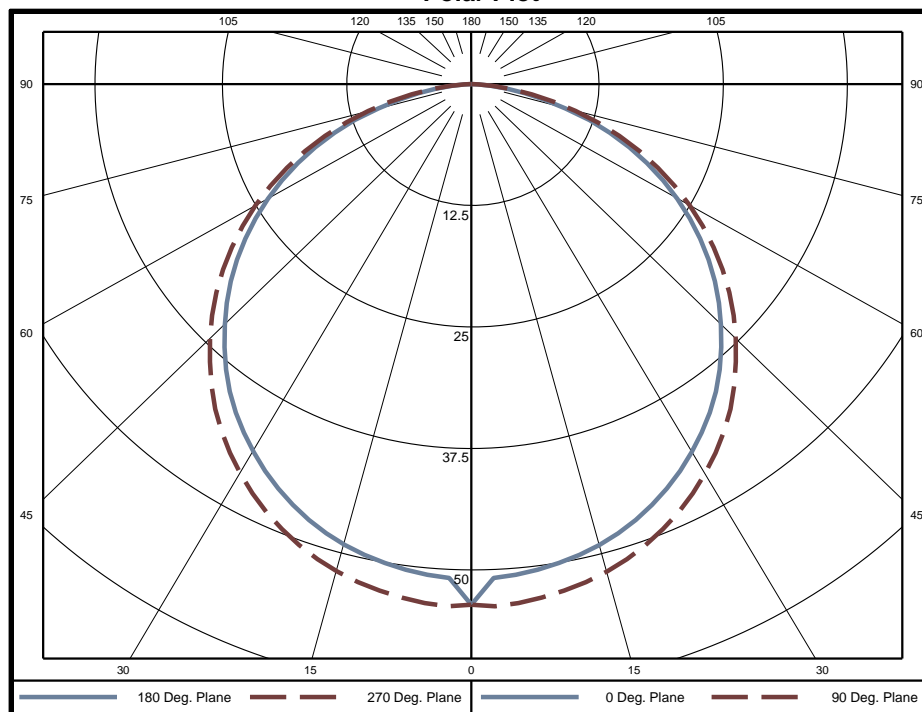
Luminaire Efficacy:

72.4 lm/w

Maximum Candela:

54 Candela

Polar Plot



Zonal Lumen Summary

Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire
0-5	1.4	0.9%	60-65	10.9	7.0%	120-125	0.0	0.0%
5-10	3.8	2.4%	65-70	9.0	5.7%	125-130	0.0	0.0%
10-15	6.2	3.9%	70-75	6.8	4.3%	130-135	0.0	0.0%
15-20	8.4	5.3%	75-80	4.4	2.8%	135-140	0.0	0.0%
20-25	10.3	6.6%	80-85	2.2	1.4%	140-145	0.0	0.0%
25-30	11.9	7.6%	85-90	0.5	0.3%	145-150	0.0	0.0%
30-35	13.2	8.4%	90-95	0.0	0.0%	150-155	0.0	0.0%
35-40	13.9	8.9%	95-100	0.0	0.0%	155-160	0.0	0.0%
40-45	14.3	9.1%	100-105	0.0	0.0%	160-165	0.0	0.0%
45-50	14.1	9.0%	105-110	0.0	0.0%	165-170	0.0	0.0%
50-55	13.5	8.6%	110-115	0.0	0.0%	170-175	0.0	0.0%
55-60	12.4	7.9%	115-120	0.0	0.0%	175-180	0.0	0.0%

Zone	Lumens	% of Luminaire
0-40	69.1	43.9%
0-60	123.4	78.5%
0-90	157.2	100.0%
90-180	0.0	0.0%



Candela Tabulation
Horizontal 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	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54
5	51	54	54	54	54	54	54	54	51	54	54	54	54	54	54	54
10	50	53	53	53	53	53	53	53	50	53	53	53	53	53	53	53
15	49	52	52	52	52	52	52	52	49	52	52	52	52	52	52	52
20	48	51	51	50	50	50	51	51	48	51	51	50	50	50	51	51
25	46	49	49	49	49	49	49	49	46	49	49	49	49	49	49	49
30	44	46	46	46	46	46	46	46	44	46	46	46	46	46	46	46
35	41	44	44	44	44	44	44	44	41	44	44	44	44	44	44	44
40	38	41	41	40	40	40	41	41	38	41	41	40	40	40	41	41
45	35	37	37	37	37	37	37	37	35	37	37	37	37	37	37	37
50	32	33	33	33	33	33	33	33	32	33	33	33	33	33	33	33
55	28	29	29	29	29	29	29	29	28	29	29	29	29	29	29	29
60	24	25	25	25	25	25	25	25	24	25	25	25	25	25	25	25
65	19	20	20	20	20	20	20	20	19	20	20	20	20	20	20	20
70	15	15	16	16	16	16	16	15	15	15	16	16	16	16	16	15
75	10	11	11	11	11	11	11	11	10	11	11	11	11	11	11	11
80	5	6	6	6	6	6	6	6	5	6	6	6	6	6	6	6
85	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
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/m²)
Horizontal Angle (Degrees)

	0	45	90
0	18400	18400	18400
45	17010	18060	17980
55	16600	17610	17530
65	15640	16590	16550
75	12820	14120	14190
85	7436	8819	8721



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	187	187	187	187	183	183	183	183	175	175	175	167	167	167	160	160	160	157
1	171	163	157	151	167	160	154	148	153	148	143	147	143	139	141	138	135	132
2	155	142	131	122	151	139	129	121	134	125	118	128	121	115	124	118	113	109
3	141	125	112	101	137	122	110	100	117	107	98	113	104	97	109	101	95	92
4	129	110	96	85	126	108	95	85	104	93	84	100	90	82	97	88	81	78
5	119	98	84	73	115	96	83	73	93	81	72	90	80	71	87	78	71	67
6	110	88	74	64	106	87	73	64	84	72	63	81	71	62	79	69	62	59
7	101	80	66	56	99	79	65	56	76	64	56	74	63	55	72	62	55	52
8	94	73	59	50	92	72	59	50	70	58	50	68	57	49	66	56	49	46
9	88	67	54	45	86	66	53	45	64	53	45	62	52	44	61	51	44	41
10	83	62	49	41	81	61	49	41	59	48	40	58	48	40	56	47	40	37

Cone of Light Tabulation

Mounting Height	Footcandles at Nadir	Diameter (Feet)
4.00	3.35	5.10
6.00	1.49	7.66
8.00	0.837	10.2
10.0	0.536	12.8
12.0	0.372	15.3
14.0	0.273	17.9
16.0	0.209	20.4

Cone of Light Plot

