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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

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United States

Catalog Number
DI-12V-1VA27-9016

Order Number
10648765
Test Number
872630

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2015-04-03
Test Date

2015-01-16 - 2015-01-21

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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: 148 Lumens
Efficacy: 68.1 lm/w
CCT: 2721 K
CRI (Ra): 92.4

Distribution

Total Luminaire Output: 150.4 Lumens
Luminaire Efficacy: 67.9 lm/w
Maximum Candela: 52 Candela

Electrical Data at 12 VDC

Test Temperature: 24.6 °C
Voltage: 12.00 VDC
Current: 0.1810 A
Power: 2.172 W



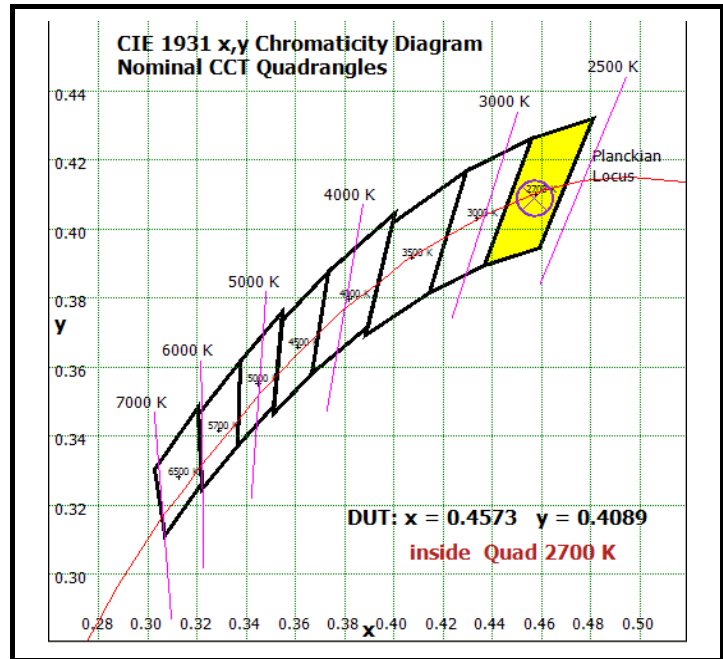
Color Quality - Integrating Sphere

Integrating Sphere Test Conditions

Temperature	Voltage	Current	Power	Power Factor	Frequency	Current THD
24.6 °C	12.00 VDC	0.1810 A	2.172 W	N / A	N / A	N / A

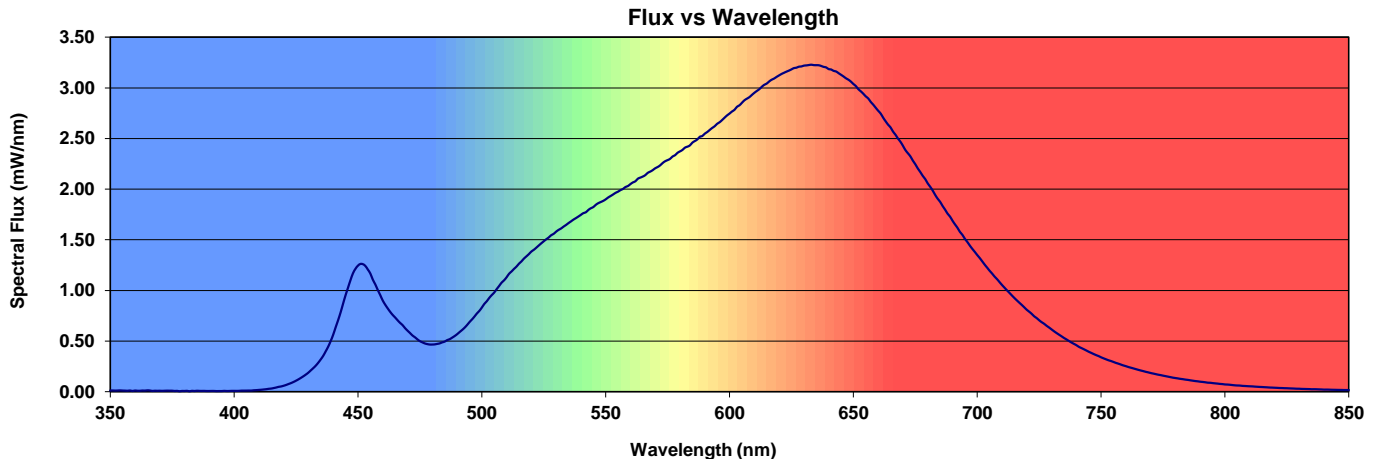
Summary of Results

Luminous Flux:	148 Lumens
Efficacy:	68.1 lm/w
CCT:	2721 K
CRI (Ra):	92.4
CRI (R9):	68.9
Chromaticity (x):	0.4573
Chromaticity (y):	0.4089
Chromaticity (u):	0.2616
Chromaticity (v):	0.3509
Chromaticity (u')	0.2616
Chromaticity (v')	0.5263
Duv:	-0.0007



Color Rendering Index Detail

Ra (CRI)	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14
92.4	92.9	94.6	94.0	92.6	91.7	92.3	94.2	86.5	68.9	85.7	92.3	78.0	93.2	95.6





Distribution - Goniophotometer

Distribution Test Conditions

Temperature	Voltage	Current	Power	Power Factor	Frequency	Current THD
25.2 °C	12.00 VDC	0.1846 A	2.215 W	N / A	N / A	N / A

Summary of Results

Spacing Criteria

0-180: 1.22
90-270: 1.28

Total Lumen Output:

150 Lumens

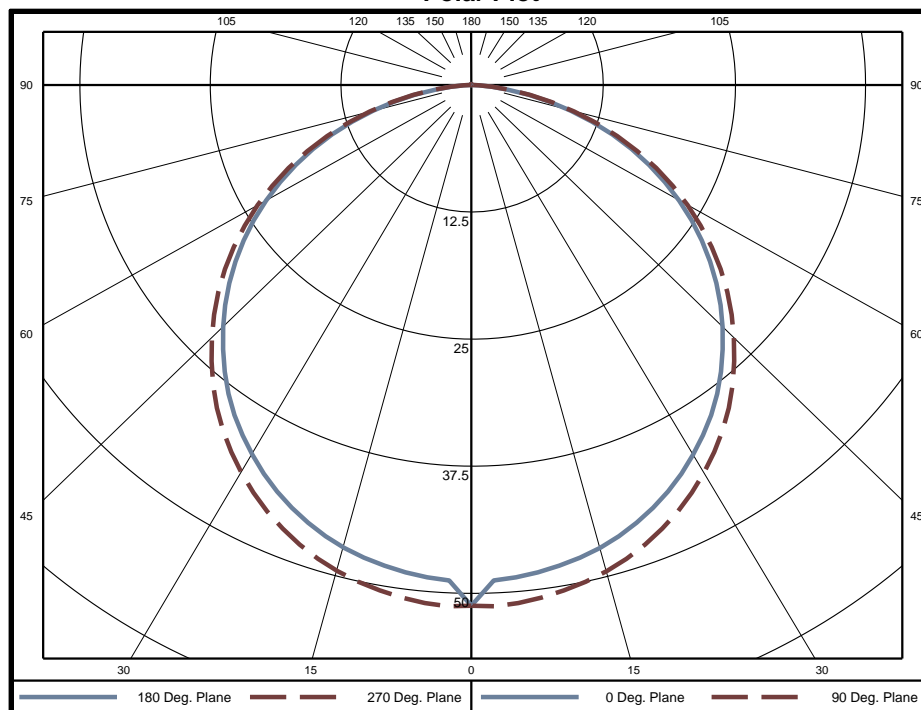
Luminaire Efficacy:

67.9 lm/w

Maximum Candela:

52 Candela

Polar Plot



Zonal Lumen Summary

Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire
0-5	1.3	0.9%	60-65	10.4	6.9%	120-125	0.0	0.0%
5-10	3.6	2.4%	65-70	8.6	5.7%	125-130	0.0	0.0%
10-15	5.9	3.9%	70-75	6.5	4.3%	130-135	0.0	0.0%
15-20	8.0	5.3%	75-80	4.2	2.8%	135-140	0.0	0.0%
20-25	9.9	6.6%	80-85	2.1	1.4%	140-145	0.0	0.0%
25-30	11.4	7.6%	85-90	0.5	0.3%	145-150	0.0	0.0%
30-35	12.6	8.3%	90-95	0.0	0.0%	150-155	0.0	0.0%
35-40	13.3	8.8%	95-100	0.0	0.0%	155-160	0.0	0.0%
40-45	13.6	9.0%	100-105	0.0	0.0%	160-165	0.0	0.0%
45-50	13.5	8.9%	105-110	0.0	0.0%	165-170	0.0	0.0%
50-55	12.9	8.6%	110-115	0.0	0.0%	170-175	0.0	0.0%
55-60	11.9	7.9%	115-120	0.0	0.0%	175-180	0.0	0.0%

Zone	Lumens	% of Luminaire
0-40	66.0	43.9%
0-60	117.8	78.3%
0-90	150.1	99.8%
90-180	0.3	0.2%



Candela Tabulation
Horizontal Angle (Degrees)

Vertical Angle (Degrees)	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	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51
5	49	51	51	52	51	52	51	51	49	51	51	52	51	52	51	51
10	48	50	51	51	50	51	51	50	48	50	51	51	50	51	51	50
15	47	49	50	50	50	50	50	49	47	49	50	50	50	50	50	49
20	46	48	48	49	48	49	48	48	46	48	48	49	48	49	48	48
25	44	46	46	47	46	47	46	46	44	46	46	47	46	47	46	46
30	42	44	44	45	44	45	44	44	42	44	44	45	44	45	44	44
35	40	42	42	42	41	42	42	42	40	42	42	42	41	42	42	42
40	37	39	39	39	39	39	39	39	37	39	39	39	39	39	39	39
45	34	35	35	36	35	36	35	35	34	35	35	36	35	36	35	35
50	30	32	32	32	32	32	32	32	30	32	32	32	32	32	32	32
55	27	28	28	28	28	28	28	28	27	28	28	28	28	28	28	28
60	23	24	24	24	24	24	24	24	23	24	24	24	24	24	24	24
65	19	19	19	20	19	20	19	19	19	19	19	20	19	20	19	19
70	14	15	15	15	15	15	15	15	14	15	15	15	15	15	15	15
75	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
80	6	6	6	6	6	6	6	6	6	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)

Vertical Angle (Degrees)	Horizontal Angle (Degrees)		
	0	45	90
0	17590	17590	17590
45	16360	17100	17070
55	15970	16660	16630
65	15100	15720	15700
75	12930	13500	13370
85	7524	8302	7967



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	179	179	179	179	175	175	175	175	167	167	167	160	160	160	153	153	153	150
1	164	156	150	144	159	153	147	142	146	142	137	140	136	133	135	132	129	126
2	148	136	126	117	144	133	124	115	128	120	113	123	116	110	118	112	108	104
3	135	119	107	97	131	117	105	96	112	102	94	108	99	92	104	97	91	87
4	124	105	92	82	120	103	91	81	99	89	80	96	86	79	93	84	78	74
5	114	94	80	70	110	92	79	70	89	78	69	86	76	68	83	74	67	64
6	105	84	71	61	102	83	70	61	80	69	60	78	67	60	75	66	59	56
7	97	77	63	54	94	75	63	54	73	61	53	71	60	53	69	59	52	49
8	90	70	57	48	88	69	56	48	67	55	47	65	55	47	63	54	47	44
9	84	64	51	43	82	63	51	43	61	50	43	60	50	42	58	49	42	39
10	79	59	47	39	77	58	47	39	57	46	39	55	45	38	54	45	38	36

Cone of Light Tabulation

Mounting Height	Footcandles at Nadir	Diameter (Feet)
4.00	3.20	5.10
6.00	1.42	7.65
8.00	0.800	10.2
10.0	0.512	12.7
12.0	0.356	15.3
14.0	0.261	17.8
16.0	0.200	20.4

Cone of Light Plot

