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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-1VA63-9016

Order Number
10648765
Test Number
872636

Revised
2015-04-03
Test Date

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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: 175 Lumens
Efficacy: 82.5 lm/w
CCT: 6499 K
CRI (Ra): 93.0

Distribution

Total Luminaire Output: 177.0 Lumens
Luminaire Efficacy: 82.9 lm/w
Maximum Candela: 59 Candela

Electrical Data at 12 VDC

Test Temperature: 24.9 °C
Voltage: 12.00 VDC
Current: 0.1766 A
Power: 2.120 W



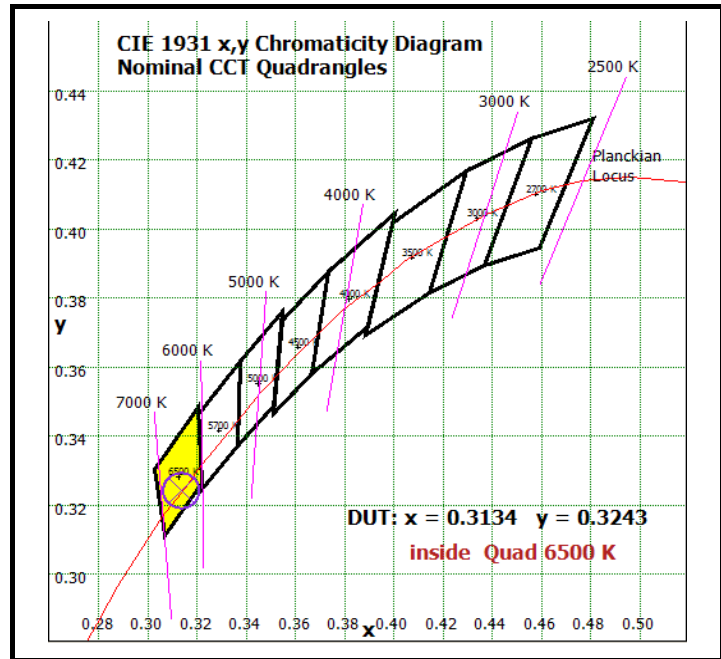
Color Quality - Integrating Sphere

Integrating Sphere Test Conditions

Temperature	Voltage	Current	Power	Power Factor	Frequency	Current THD
24.9 °C	12.00 VDC	0.1766 A	2.120 W	N / A	N / A	N / A

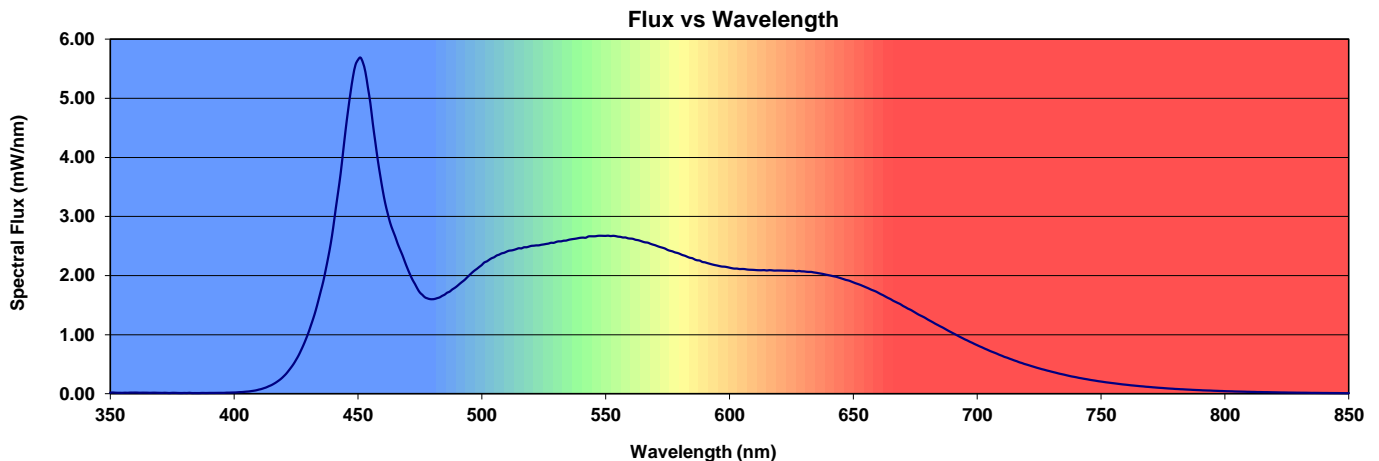
Summary of Results

Luminous Flux:	175 Lumens
Efficacy:	82.5 lm/w
CCT:	6499 K
CRI (Ra):	93.0
CRI (R9):	83.9
Chromaticity (x):	0.3134
Chromaticity (y):	0.3243
Chromaticity (u):	0.2001
Chromaticity (v):	0.3106
Chromaticity (u'):	0.2001
Chromaticity (v'):	0.4659
Duv:	0.0004



Color Rendering Index Detail

Ra (CRI)	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14
93.0	94.0	93.7	90.5	93.9	93.1	88.4	95.5	94.7	83.9	83.4	93.0	69.3	94.1	94.8





Distribution - Goniophotometer

Distribution Test Conditions

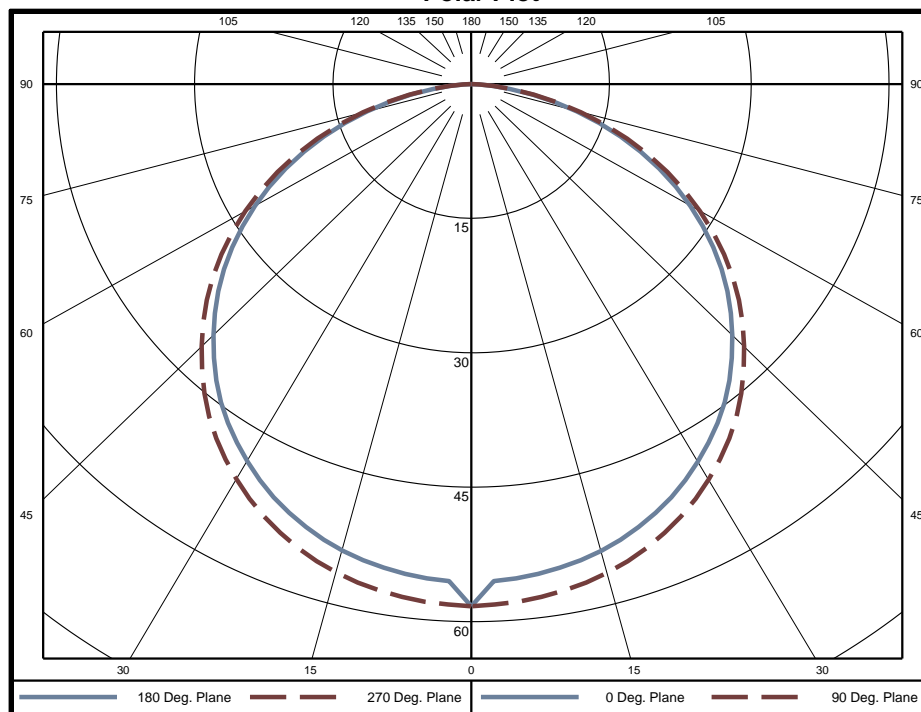
Temperature	Voltage	Current	Power	Power Factor	Frequency	Current THD
24.8 °C	12.00 VDC	0.1779 A	2.135 W	N / A	N / A	N / A

Summary of Results

Spacing Criteria
 0-180: 1.25
 90-270: 1.30

Total Lumen Output: 177 Lumens
Luminaire Efficacy: 82.9 lm/w
Maximum Candela: 59 Candela

Polar Plot



Zonal Lumen Summary

Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire
0-5	1.5	0.8%	60-65	12.5	7.1%	120-125	0.0	0.0%
5-10	4.1	2.3%	65-70	10.4	5.9%	125-130	0.0	0.0%
10-15	6.8	3.8%	70-75	7.8	4.4%	130-135	0.0	0.0%
15-20	9.2	5.2%	75-80	5.1	2.9%	135-140	0.0	0.0%
20-25	11.4	6.4%	80-85	2.5	1.4%	140-145	0.0	0.0%
25-30	13.2	7.5%	85-90	0.6	0.4%	145-150	0.0	0.0%
30-35	14.6	8.3%	90-95	0.0	0.0%	150-155	0.0	0.0%
35-40	15.6	8.8%	95-100	0.0	0.0%	155-160	0.0	0.0%
40-45	16.0	9.1%	100-105	0.0	0.0%	160-165	0.0	0.0%
45-50	16.0	9.0%	105-110	0.0	0.0%	165-170	0.0	0.0%
50-55	15.4	8.7%	110-115	0.0	0.0%	170-175	0.0	0.0%
55-60	14.2	8.0%	115-120	0.0	0.0%	175-180	0.0	0.0%

Zone	Lumens	% of Luminaire
0-40	76.4	43.1%
0-60	138.0	77.9%
0-90	177.0	100.0%
90-180	0.0	0.0%



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	58	58	58	58	58	58	58	58	58	58	58	58	58	58	58	58
5	55	59	59	58	58	58	59	59	55	59	59	58	58	58	59	59
10	55	58	58	58	57	58	58	58	55	58	58	58	57	58	58	58
15	54	57	57	57	56	57	57	57	54	57	57	57	56	57	57	57
20	53	56	56	55	55	55	56	56	53	56	56	55	55	55	56	56
25	51	54	54	53	53	53	54	54	51	54	54	53	53	53	54	54
30	49	52	52	51	51	51	52	52	49	52	52	51	51	51	52	52
35	46	49	49	48	48	48	49	49	46	49	49	48	48	48	49	49
40	43	46	46	45	45	45	46	46	43	46	46	45	45	45	46	46
45	40	42	42	42	41	42	42	42	40	42	42	42	41	42	42	42
50	36	38	38	38	38	38	38	38	36	38	38	38	38	38	38	38
55	32	33	34	33	33	33	34	33	32	33	34	33	33	33	34	33
60	27	29	29	28	28	28	29	29	27	29	29	28	28	28	29	29
65	22	23	24	23	23	23	24	23	22	23	24	23	23	23	24	23
70	17	18	18	18	18	18	18	18	17	18	18	18	18	18	18	18
75	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
80	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
85	2	3	3	2	2	2	3	3	2	3	3	2	2	2	3	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/m²)
Horizontal Angle (Degrees)

Vertical Angle (Degrees)	Horizontal Angle (Degrees)		
	0	45	90
0	20010	20010	20010
45	19270	20420	20110
55	19020	20120	19830
65	18110	19090	18870
75	15570	16460	16190
85	9370	10150	9508



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	211	211	211	211	206	206	206	206	197	197	197	188	188	188	181	181	181	177
1	192	184	176	169	187	180	173	166	172	166	161	165	160	156	159	155	151	148
2	174	160	147	137	170	156	145	135	150	140	132	144	136	129	139	132	126	122
3	159	140	125	113	154	137	123	112	131	120	110	127	117	108	122	114	106	102
4	145	123	107	95	141	121	106	95	116	104	93	112	101	92	108	99	91	87
5	133	110	94	82	129	108	93	81	104	91	80	101	89	79	97	87	79	75
6	123	99	83	71	119	97	82	71	94	80	70	91	79	69	88	77	69	65
7	114	89	74	63	111	88	73	62	85	72	62	83	70	61	80	69	61	57
8	106	81	66	56	103	80	66	55	78	65	55	76	64	55	73	63	54	51
9	99	75	60	50	96	74	59	50	71	59	49	70	58	49	68	57	49	46
10	92	69	55	45	90	68	54	45	66	53	45	64	53	45	63	52	44	41

Cone of Light Tabulation

Mounting Height	Footcandles at Nadir	Diameter (Feet)
4.00	3.64	5.20
6.00	1.62	7.80
8.00	0.911	10.4
10.0	0.583	13.0
12.0	0.405	15.6
14.0	0.297	18.2
16.0	0.228	20.8

Cone of Light Plot

