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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-UB63-8016

Order Number
10665784
Test Number
895399

Test Date

2015-02-03 - 2015-02-04

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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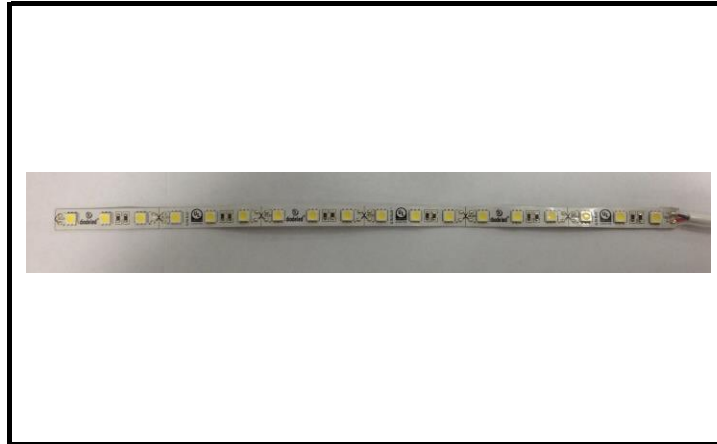
Laboratory results may not be representative of field performance
Ballast factors have not been applied

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: 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: 408 Lumens
Efficacy: 97.4 lm/w
CCT: 6362 K
CRI (Ra): 84.0

Distribution

Total Output: 405.6 Lumens
Efficacy: 95.1 lm/w
Maximum Candela: 136.7 Candela

Electrical Data at 12VDC

Test Temperature: 24.9 °C
Voltage: 12.00 VDC
Current: 0.3487 A
Power: 4.185 W



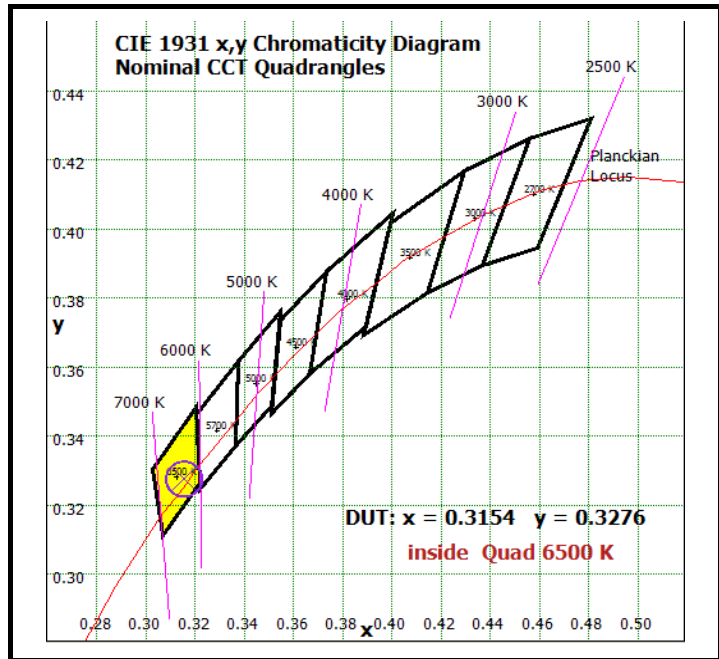
Color Quality - Integrating Sphere

Integrating Sphere Test Conditions

Temperature	Voltage	Current	Power	Power Factor	Frequency	Current THD
24.9 °C	12.00 VDC	0.3487 A	4.185 W	N / A	N / A	N / A

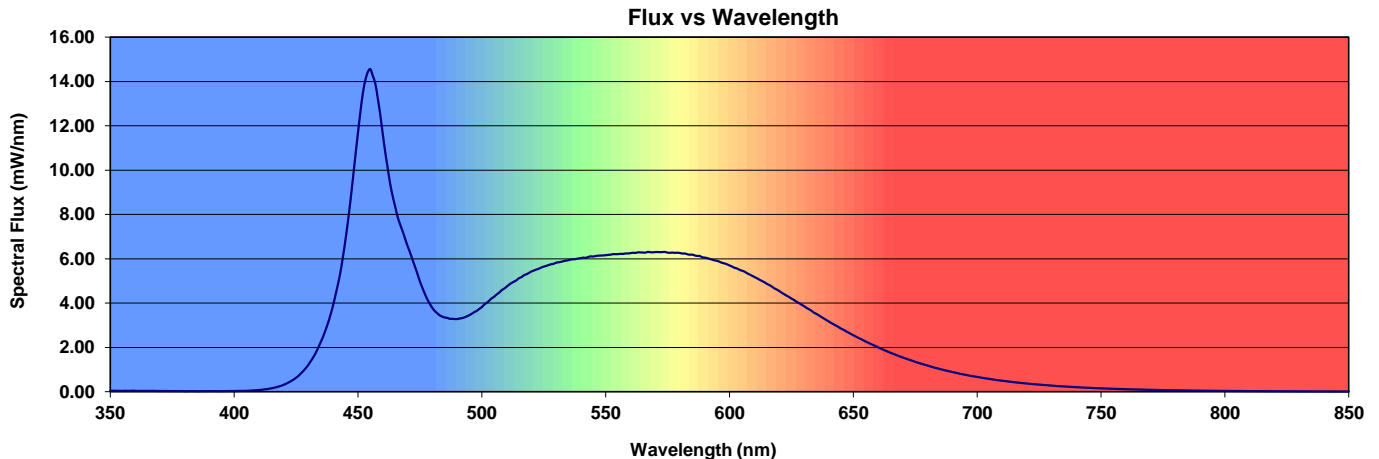
Summary of Results

Luminous Flux:	408 Lumens
Efficacy:	97.4 lm/w
CCT:	6362 K
CRI (Ra):	84.0
CRI (R9):	14.6
Chromaticity (x):	0.3154
Chromaticity (y):	0.3276
Chromaticity (u):	0.2003
Chromaticity (v):	0.3120
Chromaticity (u')	0.2003
Chromaticity (v')	0.4680
Duv:	0.0009



Color Rendering Index Detail

Ra (CRI)	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14
84.0	83.3	91.3	92.8	80.7	82.2	84.2	87.3	70.3	14.6	76.5	79.3	55.5	86.4	96.5





Distribution - Goniophotometer

Distribution Test Conditions

Temperature	Voltage	Current	Power	Power Factor	Frequency	Current THD
25.3 °C	12.00 VDC	0.3552 A	4.265 W	N / A	N / A	N / A

Summary of Results

Spacing Criteria

0-180: 1.25
90-270: 1.29

Total Lumen Output:

406 Lumens

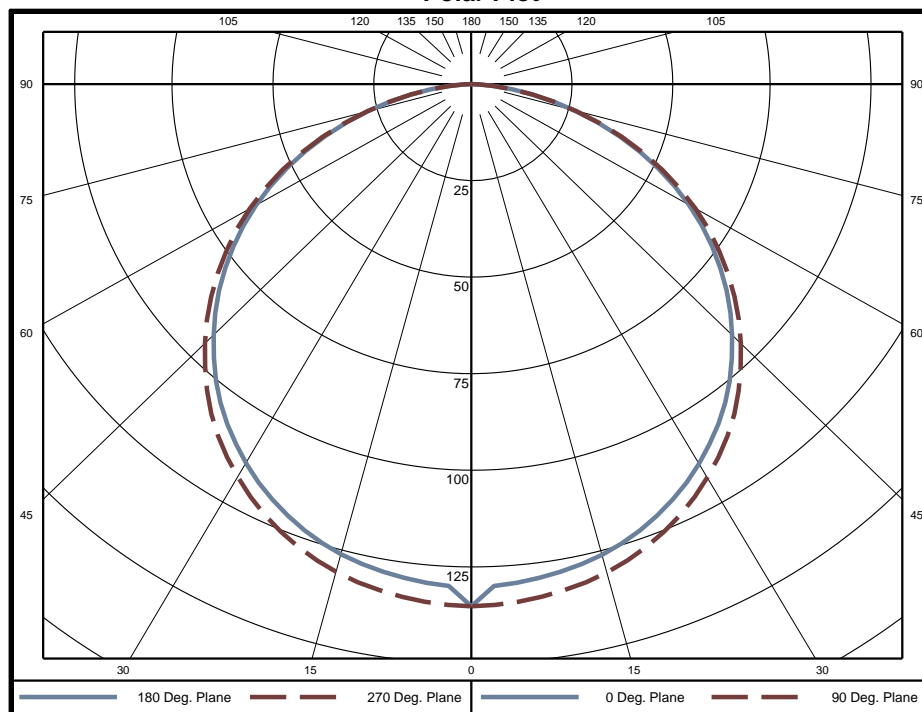
Luminaire Efficacy:

95.1 lm/w

Maximum Candela:

137 Candela

Polar Plot



Zonal Lumen Summary

Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire
0-5	3.4	0.8%	60-65	28.5	7.0%	120-125	0.0	0.0%
5-10	9.6	2.4%	65-70	23.5	5.8%	125-130	0.0	0.0%
10-15	15.7	3.9%	70-75	17.7	4.4%	130-135	0.0	0.0%
15-20	21.3	5.3%	75-80	11.5	2.8%	135-140	0.0	0.0%
20-25	26.3	6.5%	80-85	5.7	1.4%	140-145	0.0	0.0%
25-30	30.5	7.5%	85-90	1.4	0.3%	145-150	0.0	0.0%
30-35	33.7	8.3%	90-95	0.0	0.0%	150-155	0.0	0.0%
35-40	35.9	8.9%	95-100	0.0	0.0%	155-160	0.0	0.0%
40-45	36.8	9.1%	100-105	0.0	0.0%	160-165	0.0	0.0%
45-50	36.6	9.0%	105-110	0.0	0.0%	165-170	0.0	0.0%
50-55	35.1	8.6%	110-115	0.0	0.0%	170-175	0.0	0.0%
55-60	32.4	8.0%	115-120	0.0	0.0%	175-180	0.0	0.0%

Zone	Lumens	% of Luminaire
0-40	176.4	43.5%
0-60	317.3	78.2%
0-90	405.6	100.0%
90-180	0.0	0.0%



Candela Tabulation
Horizontal 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	135	135	135	135	135	135	135	135	135	135	135	135	135	135	135	135
5	130	135	136	135	135	135	136	135	130	135	136	135	135	135	136	135
10	128	133	135	134	133	134	135	133	128	133	135	134	133	134	135	133
15	126	131	132	132	131	132	132	131	126	131	132	132	131	132	132	131
20	123	128	129	128	128	128	129	128	123	128	129	128	128	128	129	128
25	119	124	125	124	123	124	125	124	119	124	125	124	123	124	125	124
30	114	118	119	118	118	118	119	118	114	118	119	118	118	118	119	118
35	107	112	113	112	111	112	113	112	107	112	113	112	111	112	113	112
40	100	104	105	104	104	104	105	104	100	104	105	104	104	104	105	104
45	92	96	96	95	95	95	96	96	92	96	96	95	95	95	96	96
50	83	86	87	86	86	86	87	86	83	86	87	86	86	86	87	86
55	73	76	76	76	75	76	76	76	73	76	76	76	75	76	76	76
60	63	65	65	65	64	65	65	65	63	65	65	65	64	65	65	65
65	51	53	53	53	52	53	53	53	51	53	53	53	52	53	53	53
70	39	40	41	40	40	40	41	40	39	40	41	40	40	40	41	40
75	27	28	28	27	27	27	28	28	27	28	28	27	27	27	28	28
80	16	16	16	16	15	16	16	16	16	16	16	16	15	16	16	16
85	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
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	45960	45960	45960
45	44220	46270	45640
55	43470	45230	44660
65	41260	42940	42210
75	35460	36500	35560
85	22620	23160	21470



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	483	483	483	483	472	472	472	472	451	451	451	432	432	432	414	414	414	406
1	441	421	404	388	430	412	396	382	395	382	369	379	368	358	364	356	347	339
2	400	366	338	314	389	358	333	311	344	322	303	331	312	296	318	303	290	281
3	364	321	287	260	354	314	283	258	302	275	253	291	268	249	280	261	244	235
4	333	283	247	219	323	278	244	218	268	238	215	258	233	212	249	227	209	200
5	306	253	216	188	297	248	213	187	239	209	185	231	204	183	224	200	181	172
6	282	227	190	164	274	223	188	163	216	185	161	209	181	160	202	178	159	150
7	261	205	169	144	254	202	168	144	196	165	142	190	162	141	184	159	140	132
8	243	187	152	128	236	184	151	128	179	149	127	174	146	126	169	144	125	118
9	227	172	138	115	221	169	137	115	164	135	114	160	133	114	156	131	113	105
10	212	158	126	104	207	156	125	104	152	123	103	148	122	103	145	120	102	95

Cone of Light Tabulation

Mounting Height	Footcandles at Nadir	Diameter (Feet)
1.00	135	1.29
2.00	33.8	2.59
3.00	15.0	3.88
4.00	8.45	5.18
6.00	3.76	7.76
8.00	2.11	10.4
10.0	1.35	12.9

Cone of Light Plot

