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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-24V-UB63-8020

Order Number
10665784
Test Number
895401

Test Date

2015-02-04 - 2015-02-05

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: 412 Lumens
Efficacy: 97.9 lm/w
CCT: 6375 K
CRI (Ra): 84.2

Distribution

Total Output: 414.8 Lumens
Efficacy: 97.5 lm/w
Maximum Candela: 138.9 Candela

Electrical Data at 12VDC

Test Temperature: 24.0 °C
Voltage: 24.00 VDC
Current: 0.1753 A
Power: 4.207 W



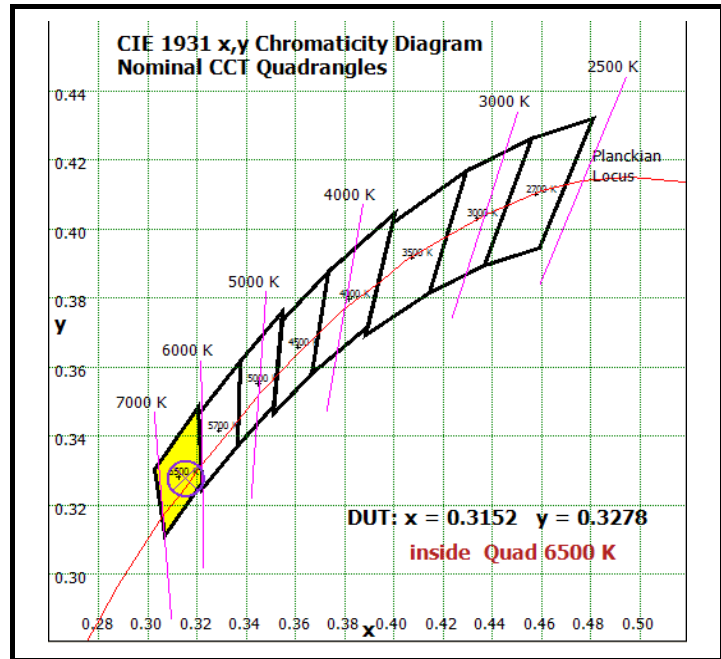
Color Quality - Integrating Sphere

Integrating Sphere Test Conditions

Temperature	Voltage	Current	Power	Power Factor	Frequency	Current THD
24.0 °C	24.00 VDC	0.1753 A	4.207 W	N / A	N / A	N / A

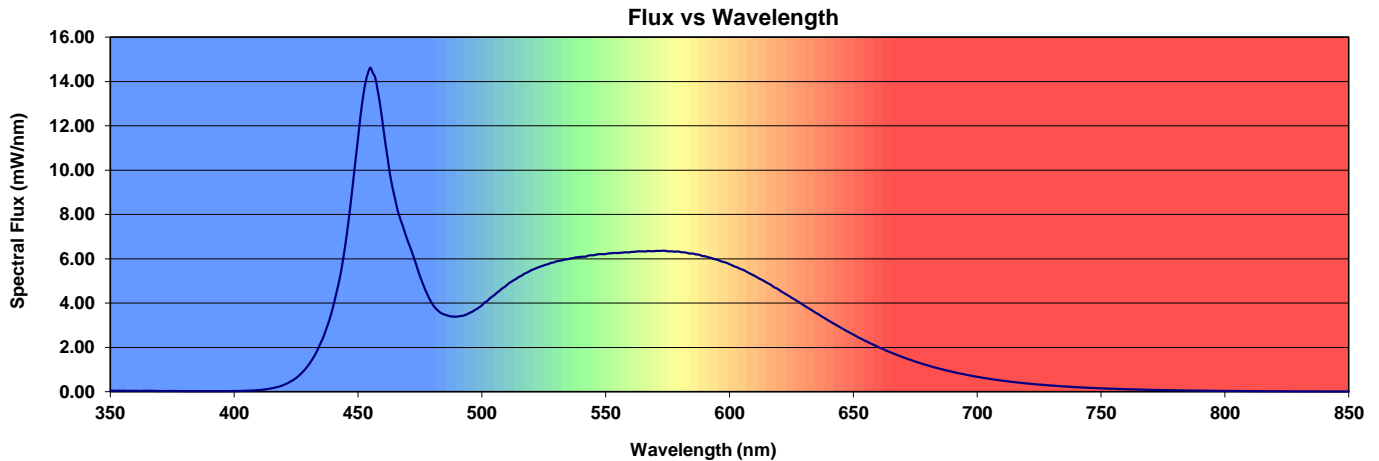
Summary of Results

Luminous Flux:	412 Lumens
Efficacy:	97.9 lm/w
CCT:	6375 K
CRI (Ra):	84.2
CRI (R9):	15.1
Chromaticity (x):	0.3152
Chromaticity (y):	0.3278
Chromaticity (u):	0.2000
Chromaticity (v):	0.3120
Chromaticity (u')	0.2000
Chromaticity (v')	0.4681
Duv:	0.0012



Color Rendering Index Detail

Ra (CRI)	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14
84.2	83.5	91.8	93.2	80.5	82.3	84.8	87.1	70.3	15.1	77.6	79.2	55.8	86.8	96.8





Distribution - Goniophotometer

Distribution Test Conditions

Temperature	Voltage	Current	Power	Power Factor	Frequency	Current THD
24.9 °C	24.00 VDC	0.1773 A	4.255 W	N / A	N / A	N / A

Summary of Results

Spacing Criteria

0-180: 1.25
90-270: 1.30

Total Lumen Output:

415 Lumens

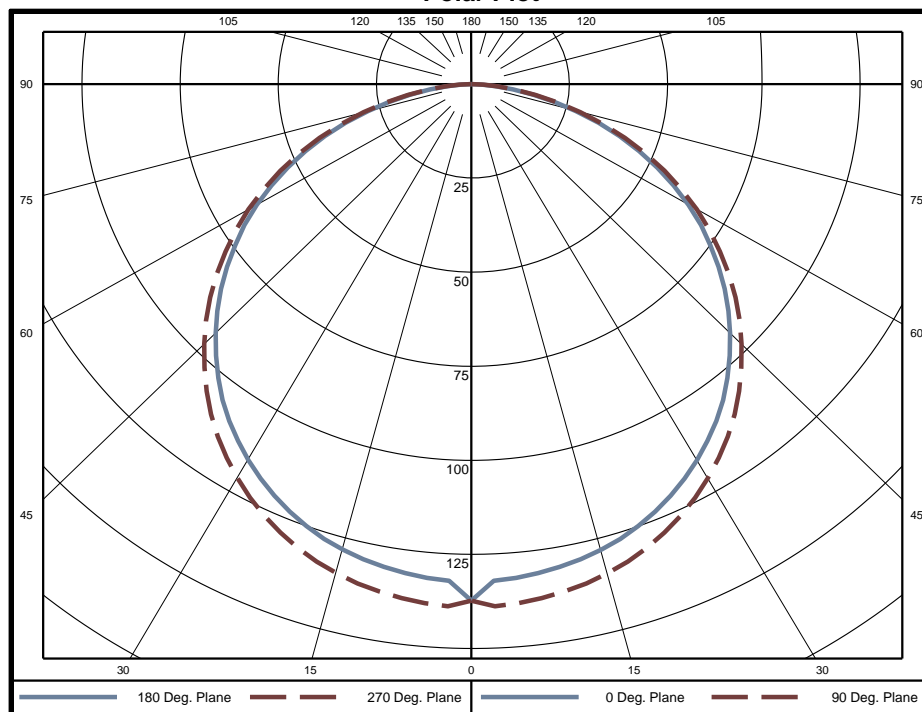
Luminaire Efficacy:

97.5 lm/w

Maximum Candela:

139 Candela

Polar Plot



Zonal Lumen Summary

Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire
0-5	3.5	0.8%	60-65	29.2	7.0%	120-125	0.0	0.0%
5-10	9.7	2.3%	65-70	24.2	5.8%	125-130	0.0	0.0%
10-15	15.9	3.8%	70-75	18.3	4.4%	130-135	0.0	0.0%
15-20	21.6	5.2%	75-80	12.1	2.9%	135-140	0.0	0.0%
20-25	26.7	6.4%	80-85	6.3	1.5%	140-145	0.0	0.0%
25-30	31.0	7.5%	85-90	1.8	0.4%	145-150	0.0	0.0%
30-35	34.3	8.3%	90-95	0.0	0.0%	150-155	0.0	0.0%
35-40	36.5	8.8%	95-100	0.0	0.0%	155-160	0.0	0.0%
40-45	37.5	9.0%	100-105	0.0	0.0%	160-165	0.0	0.0%
45-50	37.3	9.0%	105-110	0.0	0.0%	165-170	0.0	0.0%
50-55	35.8	8.6%	110-115	0.0	0.0%	170-175	0.0	0.0%
55-60	33.1	8.0%	115-120	0.0	0.0%	175-180	0.0	0.0%

Zone	Lumens	% of Luminaire
0-40	179.3	43.2%
0-60	323.0	77.9%
0-90	414.8	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	113	135	157.5	180	202.5	225	247.5	270	292.5	315	337.5
0	137	137	137	137	137	137	137	137	137	137	137	137	137	137	137	137
5	132	136	138	137	138	137	138	136	132	136	138	137	138	137	138	136
10	130	135	137	136	137	136	137	135	130	135	137	136	137	136	137	135
15	128	133	134	133	135	133	134	133	128	133	134	133	135	133	134	133
20	125	130	131	130	131	130	131	130	125	130	131	130	131	130	131	130
25	121	125	127	126	127	126	127	125	121	125	127	126	127	126	127	125
30	115	120	121	120	121	120	121	120	115	120	121	120	121	120	121	120
35	109	113	114	114	114	114	114	113	109	113	114	114	114	114	114	113
40	102	106	107	106	107	106	107	106	102	106	107	106	107	106	107	106
45	94	97	98	97	98	97	98	97	94	97	98	97	98	97	98	97
50	85	88	88	88	88	88	88	88	85	88	88	88	88	88	88	88
55	75	77	78	77	78	77	78	77	75	77	78	77	78	77	78	77
60	64	66	67	66	67	66	67	66	64	66	67	66	67	66	67	66
65	53	54	54	54	55	54	54	54	53	54	54	54	55	54	54	54
70	40	42	42	41	42	41	42	42	40	42	42	42	41	42	41	42
75	28	29	29	29	29	29	29	29	28	29	29	29	29	29	29	29
80	16	17	17	17	17	17	17	17	16	17	17	17	17	17	17	17
85	6	7	7	7	7	7	7	7	6	7	7	7	7	7	7	7
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	46670	46670	46670
45	45030	47040	46970
55	44250	46090	45990
65	42230	43810	43850
75	36350	37990	37920
85	23640	26820	26100



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	494	494	494	494	483	483	483	483	461	461	461	442	442	442	424	424	424	415
1	451	430	412	396	439	421	404	389	403	390	377	387	376	365	372	363	355	346
2	409	374	345	320	398	366	339	317	351	329	309	337	319	302	325	309	295	286
3	372	327	293	265	361	321	288	263	308	281	258	297	273	253	286	266	249	240
4	340	289	252	223	330	283	249	222	273	243	219	263	237	216	254	231	213	204
5	312	258	220	192	303	253	217	191	244	213	188	236	208	186	228	204	184	175
6	288	232	194	167	280	228	192	166	220	188	164	213	185	163	206	181	161	153
7	267	210	173	147	259	206	171	146	200	168	145	194	165	144	188	162	143	134
8	248	191	155	130	241	188	154	130	182	151	129	177	149	128	172	147	128	120
9	231	175	140	117	226	173	139	117	168	137	116	163	135	115	159	134	115	107
10	217	161	128	106	212	159	127	106	155	126	105	151	124	105	147	122	104	97

Cone of Light Tabulation

Mounting Height	Footcandles at Nadir	Diameter (Feet)
1.00	137	1.30
2.00	34.3	2.59
3.00	15.3	3.89
4.00	8.58	5.18
6.00	3.81	7.77
8.00	2.15	10.4
10.0	1.37	13.0

Cone of Light Plot

