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Photometric Test Report

Relevant Standards
IES LM-79-2008, ANSI C82.77-2002, CIE 13.3-1995
CIE 15-2004, ANSI C78.377-2017, IES TM-30-2015

Prepared For
ELEMENTAL LED INC, DBA DIODE LED

Andrew Lassen
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Reno, NV 89521
United States

Catalog Number
SKY40-0848
Order Number
12559022
Test Number
12559022.02

Test Date

2018-10-25 - 2018-10-29

Prepared By

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Approved By

Eric Gaudreau, Engineering Leader

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: Rectangular metal housing and patterned plastic lens
Lamp: 133 White LEDs
Mounting: Pendant
Ballast/Driver Internal

Luminaire



Luminaire Characteristics

Luminous Length: 44.00 in.
Luminous Width: 8.500 in.
Luminous Height: 1.50 in.

Summary of Results

Integrating Sphere

Luminous Flux: 5135 Lumens
Efficacy: 125.1 lm/w
CCT: 4149 K
CRI (Ra): 82.5

Distribution

Total Luminaire Output: 5204 Lumens
Luminaire Efficacy: 126.6 lm/w
Maximum Candela: 740 Candela

Electrical Data at 120 VAC

Test Temperature: 25.5 °C
Voltage: 120.1 VAC
Current: 0.3447 A
Power: 41.04 W
Power Factor: 0.992
Frequency: 60 Hz
Current THD: 8.25 %



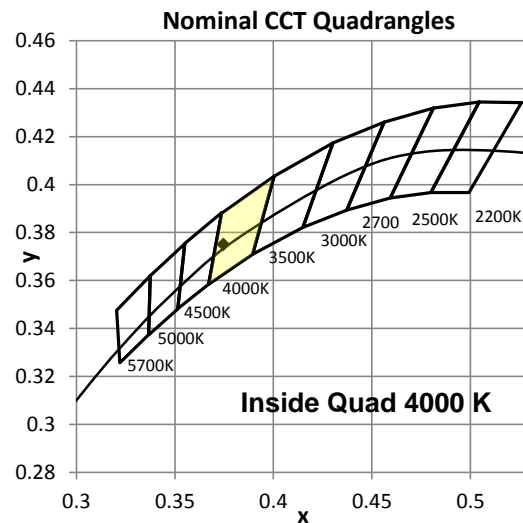
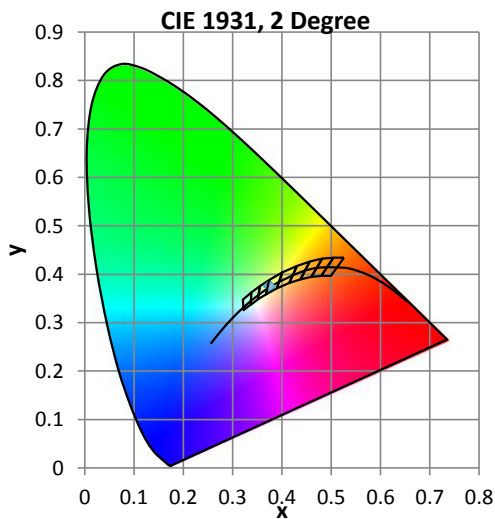
Color Quality - Integrating Sphere

Integrating Sphere Test Conditions

Temperature	Voltage	Current	Power	Power Factor	Frequency	Current THD
25.5 °C	120.1 VAC	0.3447 A	41.04 W	0.992	60 Hz	8.25 %

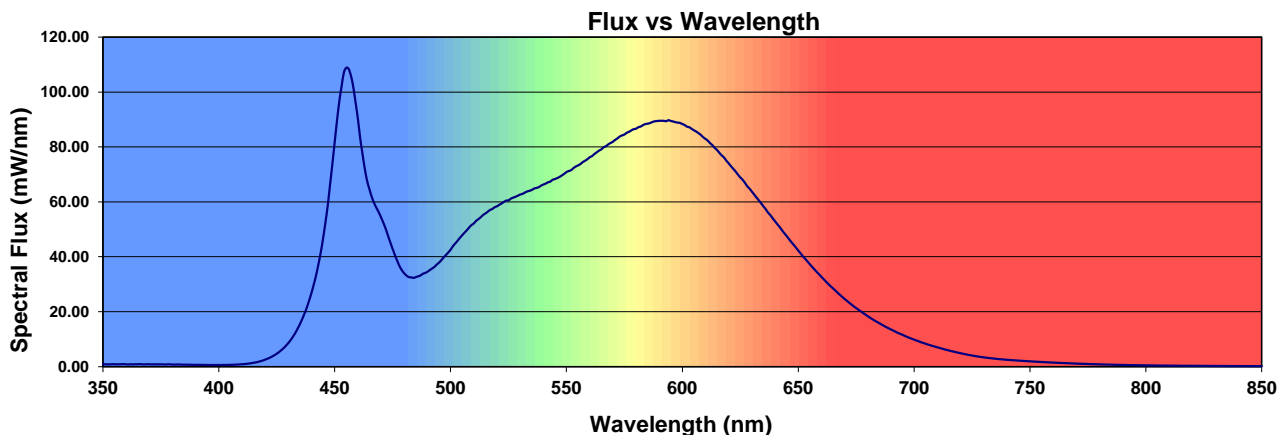
Summary of Results

Total Output:	5135 Lumens	Chromaticity (x):	0.3746
Efficacy:	125.1 lm/w	Chromaticity (y):	0.3751
CCT:	4149 K	Chromaticity (u'):	0.2219
CRI (Ra):	82.5	Chromaticity (v'):	0.5000
CRI (R9):	4.0	TM-30 Rf:	80.4
Peak Wavelength:	455 nm	TM-30 Rg:	92.1
Dominant Wavelength:	578 nm	Duv:	0.0006
S/P Ratio:	1.77		



Color Rendering Index Detail

Ra (CRI)	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15
82.5	81.1	91.6	95.3	78.7	80.7	87.3	83.9	61.8	4.0	79.3	77.4	59.8	84.3	98.1	74.4





Distribution - Goniophotometer

Distribution Test Conditions

Temperature	Voltage	Current	Power	Power Factor	Frequency	Current THD
25.0 °C	120.0 VAC	0.3453 A	41.11 W	0.992	60 Hz	8.32 %

Summary of Results

Spacing Criteria

0-180: 1.56
90-270: 1.90

Total Lumen Output:

5204 Lumens

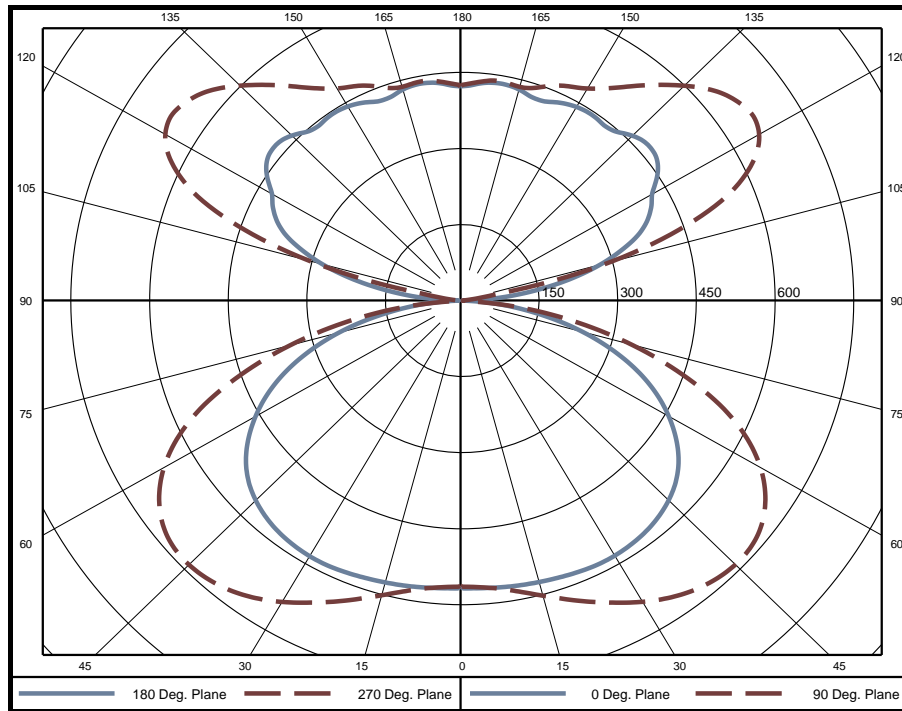
Luminaire Efficacy:

126.6 lm/w

Maximum Candela:

740 Candela

Polar Plot



Zonal Lumen Summary

Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire
0-5	13.5	0.3%	60-65	256.0	4.9%	120-125	250.5	4.8%
5-10	40.8	0.8%	65-70	227.1	4.4%	125-130	237.6	4.6%
10-15	68.8	1.3%	70-75	182.4	3.5%	130-135	215.5	4.1%
15-20	97.9	1.9%	75-80	126.7	2.4%	135-140	188.3	3.6%
20-25	127.9	2.5%	80-85	66.3	1.3%	140-145	162.2	3.1%
25-30	158.1	3.0%	85-90	11.1	0.2%	145-150	137.7	2.6%
30-35	187.9	3.6%	90-95	7.5	0.1%	150-155	114.3	2.2%
35-40	215.8	4.1%	95-100	39.3	0.8%	155-160	93.0	1.8%
40-45	240.1	4.6%	100-105	112.0	2.2%	160-165	72.0	1.4%
45-50	259.0	5.0%	105-110	183.4	3.5%	165-170	51.3	1.0%
50-55	269.7	5.2%	110-115	229.4	4.4%	170-175	30.9	0.6%
55-60	269.4	5.2%	115-120	250.1	4.8%	175-180	10.2	0.2%

Zone	Lumens	% of Luminaire
0-40	911	17.5%
0-60	1949	37.5%
0-90	2819	54.2%
90-180	2385	45.8%



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	563.4	563.4	563.4	563.4	563.4	563.4	563.4	563.4	563.4	563.4	563.4	563.4	563.4	563.4	563.4	563.4
5	569.0	562.7	565.8	567.3	568.4	567.3	565.8	562.7	569.0	562.7	565.8	567.3	568.4	567.3	565.8	562.7
10	571.9	566.7	573.7	579.5	580.9	579.5	573.7	566.7	571.9	566.7	573.7	579.5	580.9	579.5	573.7	566.7
15	574.6	572.6	586.1	598.1	602.5	598.1	586.1	572.6	574.6	572.6	586.1	598.1	602.5	598.1	586.1	572.6
20	577.6	579.9	601.7	621.2	628.9	621.2	601.7	579.9	577.6	579.9	601.7	621.2	628.9	621.2	601.7	579.9
25	580.8	586.7	617.0	645.4	657.1	645.4	617.0	586.7	580.8	586.7	617.0	645.4	657.1	645.4	617.0	586.7
30	581.1	591.4	631.5	669.8	686.5	669.8	631.5	591.4	581.1	591.4	631.5	669.8	686.5	669.8	631.5	591.4
35	577.3	592.9	643.0	691.7	712.5	691.7	643.0	592.9	577.3	592.9	643.0	691.7	712.5	691.7	643.0	592.9
40	569.3	589.8	648.9	705.8	730.8	705.8	648.9	589.8	569.3	589.8	648.9	705.8	730.8	705.8	648.9	589.8
45	555.4	580.0	647.0	711.2	739.5	711.2	647.0	580.0	555.4	580.0	647.0	711.2	739.5	711.2	647.0	580.0
50	533.5	561.5	633.1	704.1	734.9	704.1	633.1	561.5	533.5	561.5	633.1	704.1	734.9	704.1	633.1	561.5
55	499.0	530.5	604.7	678.5	710.3	678.5	604.7	530.5	499.0	530.5	604.7	678.5	710.3	678.5	604.7	530.5
60	452.2	485.9	558.6	631.1	662.7	631.1	558.6	485.9	452.2	485.9	558.6	631.1	662.7	631.1	558.6	485.9
65	394.0	425.5	491.8	558.8	586.4	558.8	491.8	425.5	394.0	425.5	491.8	558.8	586.4	558.8	491.8	425.5
70	321.8	349.0	404.5	456.3	474.8	456.3	404.5	349.0	321.8	349.0	404.5	456.3	474.8	456.3	404.5	349.0
75	238.3	259.1	298.6	330.0	341.5	330.0	298.6	259.1	238.3	259.1	298.6	330.0	341.5	330.0	298.6	259.1
80	147.5	165.4	179.8	198.3	202.8	198.3	179.8	165.4	147.5	165.4	179.8	198.3	202.8	198.3	179.8	165.4
85	61.9	65.6	63.0	61.0	58.3	61.0	63.0	65.6	61.9	65.6	63.0	61.0	58.3	61.0	63.0	65.6
90	3.8	5.1	5.2	5.3	3.1	5.3	5.2	5.1	3.8	5.1	5.2	5.3	3.1	5.3	5.2	5.1
95	85.1	49.2	17.1	12.5	11.2	12.5	17.1	49.2	85.1	49.2	17.1	12.5	11.2	12.5	17.1	49.2
100	179.8	174.6	134.1	76.8	63.0	76.8	134.1	174.6	179.8	174.6	134.1	76.8	63.0	76.8	134.1	174.6
105	271.2	280.2	286.2	297.5	301.2	297.5	286.2	280.2	271.2	280.2	286.2	297.5	301.2	297.5	286.2	280.2
110	345.1	363.2	395.9	458.7	490.7	458.7	395.9	363.2	345.1	363.2	395.9	458.7	490.7	458.7	395.9	363.2
115	391.4	425.5	480.5	557.2	606.2	557.2	480.5	425.5	391.4	425.5	480.5	557.2	606.2	557.2	480.5	425.5
120	416.5	462.3	522.9	607.1	658.6	607.1	522.9	462.3	416.5	462.3	522.9	607.1	658.6	607.1	522.9	462.3
125	454.3	475.7	535.7	618.8	664.4	618.8	535.7	475.7	454.3	475.7	535.7	618.8	664.4	618.8	535.7	475.7
130	468.2	483.1	531.1	601.1	641.2	601.1	531.1	483.1	468.2	483.1	531.1	601.1	641.2	601.1	531.1	483.1
135	459.4	468.8	517.3	569.3	599.8	569.3	517.3	468.8	459.4	468.8	517.3	569.3	599.8	569.3	517.3	468.8
140	440.7	458.7	493.3	533.3	554.9	533.3	493.3	458.7	440.7	458.7	493.3	533.3	554.9	533.3	493.3	458.7
145	441.9	451.7	474.9	502.6	512.5	502.6	474.9	451.7	441.9	451.7	474.9	502.6	512.5	502.6	474.9	451.7
150	440.4	439.1	459.0	473.9	483.2	473.9	459.0	439.1	440.4	439.1	459.0	473.9	483.2	473.9	459.0	439.1
155	431.4	436.6	443.3	455.2	467.6	455.2	443.3	436.6	431.4	436.6	443.3	455.2	467.6	455.2	443.3	436.6
160	422.6	434.8	441.5	449.3	448.3	449.3	441.5	434.8	422.6	434.8	441.5	449.3	448.3	449.3	441.5	434.8
165	430.4	428.1	431.2	440.5	436.6	440.5	431.2	428.1	430.4	428.1	431.2	440.5	436.6	440.5	431.2	428.1
170	434.7	428.5	429.0	435.9	439.1	435.9	429.0	428.5	434.7	428.5	429.0	435.9	439.1	435.9	429.0	428.5
175	430.1	427.4	429.6	431.1	433.3	431.1	429.6	427.4	430.1	427.4	429.6	431.1	433.3	431.1	429.6	427.4
180	422.5	422.5	422.5	422.5	422.5	422.5	422.5	422.5	422.5	422.5	422.5	422.5	422.5	422.5	422.5	422.5

Average Luminance (cd/m²)
Horizontal Angle (Degrees)

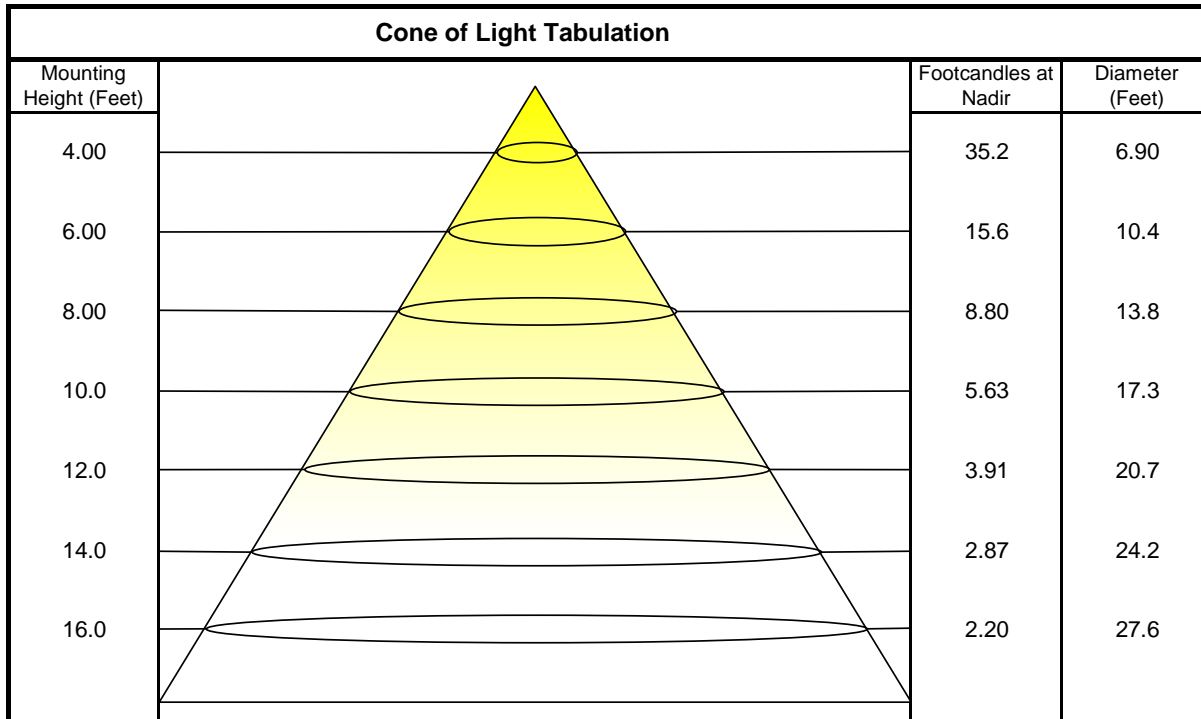
	0	45	90
0	2335	2335	2335
45	3148	3301	3684
55	3438	3603	4099
65	3601	3656	4172
75	3385	3073	3297
85	2119	1109	919



Coefficients of Utilization - 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 percent of total lumen output delivered to the task surface **																	
0	108	108	108	108	100	100	100	100	86	86	86	72	72	72	60	60	60	54
1	98	93	88	84	90	86	82	79	73	71	68	62	60	58	51	50	48	43
2	88	80	73	67	81	74	68	63	63	58	54	53	50	47	44	41	39	34
3	79	69	61	55	73	64	57	51	55	49	44	46	42	38	38	34	32	28
4	72	60	52	45	66	56	48	42	48	42	37	40	35	32	33	29	26	23
5	66	53	44	38	60	49	42	36	42	36	31	35	31	27	29	25	22	19
6	60	47	39	32	55	44	36	30	38	31	27	32	27	23	26	22	19	16
7	56	42	34	28	51	39	32	26	34	28	23	28	23	20	23	20	17	14
8	51	38	30	24	47	36	28	23	31	24	20	26	21	17	21	17	15	12
9	48	35	27	21	44	32	25	20	28	22	18	24	19	15	20	16	13	11
10	44	32	24	19	41	30	23	18	25	20	16	22	17	14	18	14	12	10

Beam and Field Information	
CIE Type:	Direct/Indirect
Center Beam Intensity:	563.4 Candela
Central Cone Intensity:	564 Candela
Beam Flux:	4856.1 Lumens
Beam Angle (0-180):	144.9 Degrees
Beam Angle (90-270):	154.3 Degrees
Field Angle (0-180):	170.7 Degrees
Field Angle (90-270):	170.1 Degrees





ISOFootcandle Plot

Mounting Height - 8 Feet

