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Photometric Test Report

Relevant Standards
IES LM-79-2008, ANSI C82.77-2002, UL 1598-2008
CIE 13.3-1995, CIE 15-2004, ANSI C78.377-2015
IES TM-30-2015

Prepared For
LDPI Inc
4404 Anderson Dr
Eau Claire, WI 54703
United States

Catalog Number
LE155-H-5-V1-4-2-AS-D-CP2
Order Number
12326622
Test Number
12326622.03

Test Date

2018-06-26 - 2018-06-29

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 3-meter integrating sphere using the 4π geometry method.
Absorption correction was employed for Sphere measurement



Luminaire Description: Black formed steel housing, frosted plastic lens enclosure
Lamp: 160 white LEDs
Mounting: Surface – Ceiling
Ballast/Driver: T1M1UNV240P-96L

Luminaire



Luminaire Characteristics

Luminous Length: 48.00 in.
Luminous Width: 9.000 in.

Summary of Results

Integrating Sphere

Luminous Flux: 16280 Lumens
Efficacy: 116.1 lm/w
CCT: 5270 K
CRI (Ra): 87.9

Distribution

Total Luminaire Output: 15560 Lumens
Luminaire Efficacy: 110.9 lm/w
Maximum Candela: 5811 Candela

Electrical Data at 277 VAC

Test Temperature: 24.7 °C
Voltage: 277.0 VAC
Current: 0.5330 A
Power: 138.3 W
Power Factor: 0.937
Frequency: 60 Hz
Current THD: 15.4 %

In-Situ

LED Temperature: 51.4 °C
Driver Temperature: 42.7 °C
Measured LED Current: 0.06860 A

Temperature is offset to an ambient temperature of 25°C as described in UL1598-2008.



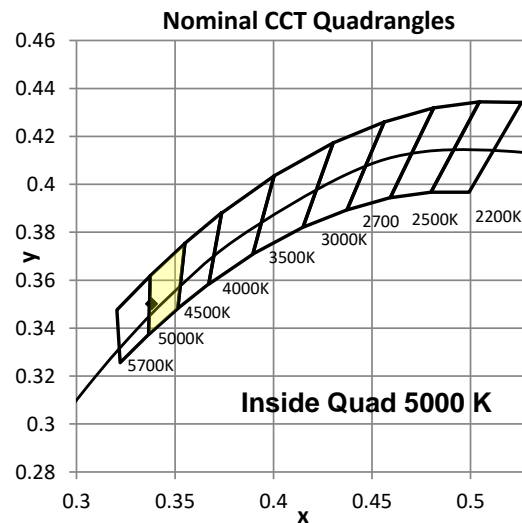
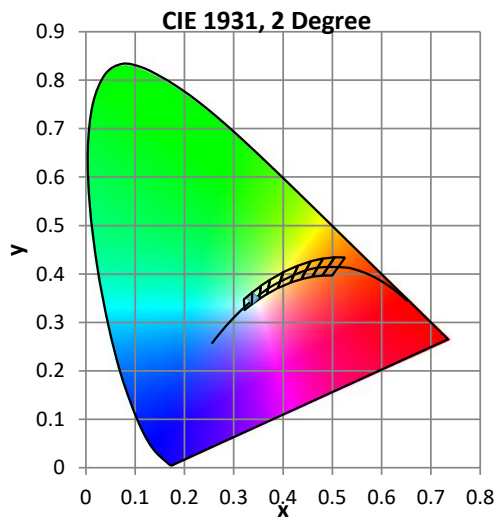
Color Quality - Integrating Sphere

Integrating Sphere Test Conditions

Temperature	Voltage	Current	Power	Power Factor	Frequency	Current THD
25.7 °C	120.0 VAC	1.174 A	140.2 W	0.996	60 Hz	5.81 %

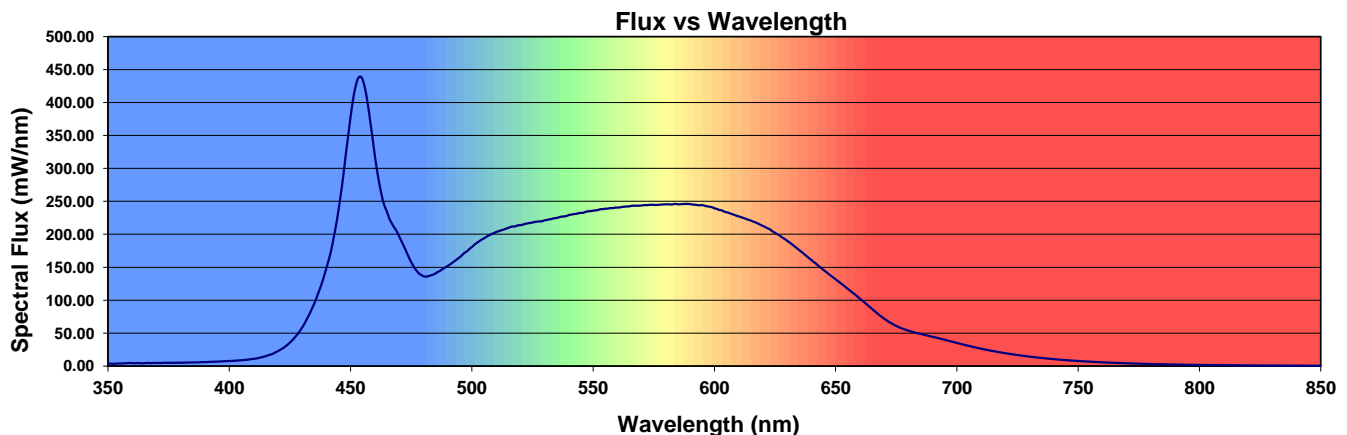
Summary of Results

Total Output:	16280 Lumens	Chromaticity (x):	0.3380
Efficacy:	116.1 lm/w	Chromaticity (y):	0.3502
CCT:	5270 K	Chromaticity (u'):	0.2072
CRI (Ra):	87.9	Chromaticity (v'):	0.4829
CRI (R9):	30.7	TM-30 Rf:	85.3
Peak Wavelength:	454 nm	TM-30 Rg:	95.4
Dominant Wavelength:	565 nm	Duv:	0.0018
S/P Ratio:	2.1		



Color Rendering Index Detail

Ra (CRI)	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15
87.9	87.2	93.5	95.9	86.7	87.2	89.4	89.3	74.5	30.7	83.6	86.8	68.3	89.3	98.2	82.7





Distribution - Goniophotometer

Distribution Test Conditions

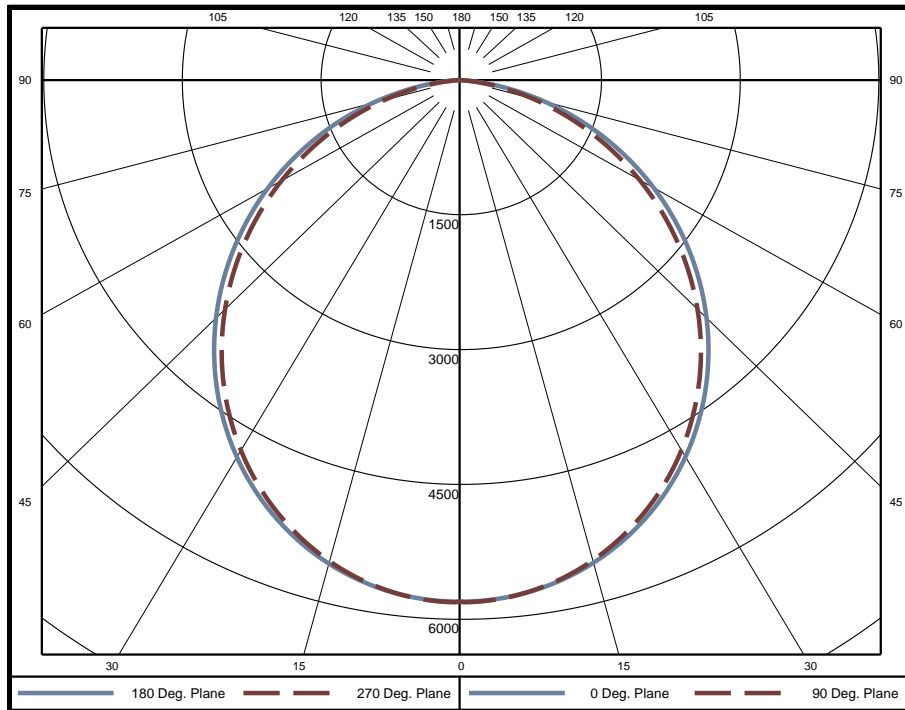
Temperature	Voltage	Current	Power	Power Factor	Frequency	Current THD
24.4 °C	120.0 VAC	1.174 A	140.3 W	0.996	60 Hz	5.83 %

Summary of Results

Spacing Criteria
 0-180: 1.24
 90-270: 1.22

Total Lumen Output: 15560 Lumens
Luminaire Efficacy: 110.9 lm/w
Maximum Candela: 5811 Candela

Polar Plot



Zonal Lumen Summary

Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire
0-5	138	0.9%	60-65	1016	6.5%	120-125	0	0.0%
5-10	410	2.6%	65-70	818	5.3%	125-130	0	0.0%
10-15	666	4.3%	70-75	597	3.8%	130-135	0	0.0%
15-20	897	5.8%	75-80	370	2.4%	135-140	0	0.0%
20-25	1095	7.0%	80-85	159	1.0%	140-145	0	0.0%
25-30	1252	8.0%	85-90	20	0.1%	145-150	0	0.0%
30-35	1364	8.8%	90-95	0	0.0%	150-155	0	0.0%
35-40	1426	9.2%	95-100	0	0.0%	155-160	0	0.0%
40-45	1438	9.2%	100-105	0	0.0%	160-165	0	0.0%
45-50	1399	9.0%	105-110	0	0.0%	165-170	0	0.0%
50-55	1313	8.4%	110-115	0	0.0%	170-175	0	0.0%
55-60	1184	7.6%	115-120	0	0.0%	175-180	0	0.0%

Zone	Lumens	% of Luminaire
0-40	7248	46.6%
0-60	12582	80.9%
0-90	15562	100.0%
90-180	0	0.0%



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	5804	5804	5804	5804	5804	5804	5804	5804	5804	5804	5804	5804	5804	5804	5804	5804
5	5778	5774	5772	5779	5780	5779	5772	5774	5778	5774	5772	5779	5780	5779	5772	5774
10	5696	5691	5685	5687	5686	5687	5685	5691	5696	5691	5685	5687	5686	5687	5685	5691
15	5560	5552	5540	5535	5533	5535	5540	5552	5560	5552	5540	5535	5533	5535	5540	5552
20	5372	5360	5342	5330	5325	5330	5342	5360	5372	5360	5342	5330	5325	5330	5342	5360
25	5134	5118	5091	5074	5068	5074	5091	5118	5134	5118	5091	5074	5068	5074	5091	5118
30	4848	4828	4795	4770	4765	4770	4795	4828	4848	4828	4795	4770	4765	4770	4795	4828
35	4519	4495	4456	4428	4420	4428	4456	4495	4519	4495	4456	4428	4420	4428	4456	4495
40	4152	4125	4081	4048	4036	4048	4081	4125	4152	4125	4081	4048	4036	4048	4081	4125
45	3754	3723	3673	3636	3620	3636	3673	3723	3754	3723	3673	3636	3620	3636	3673	3723
50	3328	3295	3242	3199	3178	3199	3242	3295	3328	3295	3242	3199	3178	3199	3242	3295
55	2879	2846	2793	2743	2717	2743	2793	2846	2879	2846	2793	2743	2717	2743	2793	2846
60	2416	2382	2328	2275	2247	2275	2328	2382	2416	2382	2328	2275	2247	2275	2328	2382
65	1939	1910	1858	1799	1767	1799	1858	1910	1939	1910	1858	1799	1767	1799	1858	1910
70	1457	1431	1383	1323	1293	1323	1383	1431	1457	1431	1383	1323	1293	1323	1383	1431
75	975	959	918	866	838	866	918	959	975	959	918	866	838	866	918	959
80	519	512	485	446	427	446	485	512	519	512	485	446	427	446	485	512
85	142	144	133	114	106	114	133	144	142	144	133	114	106	114	133	144
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	20820	20820	20820
45	19050	18640	18370
55	18010	17470	17000
65	16460	15770	15000
75	13510	12730	11620
85	5833	5484	4353

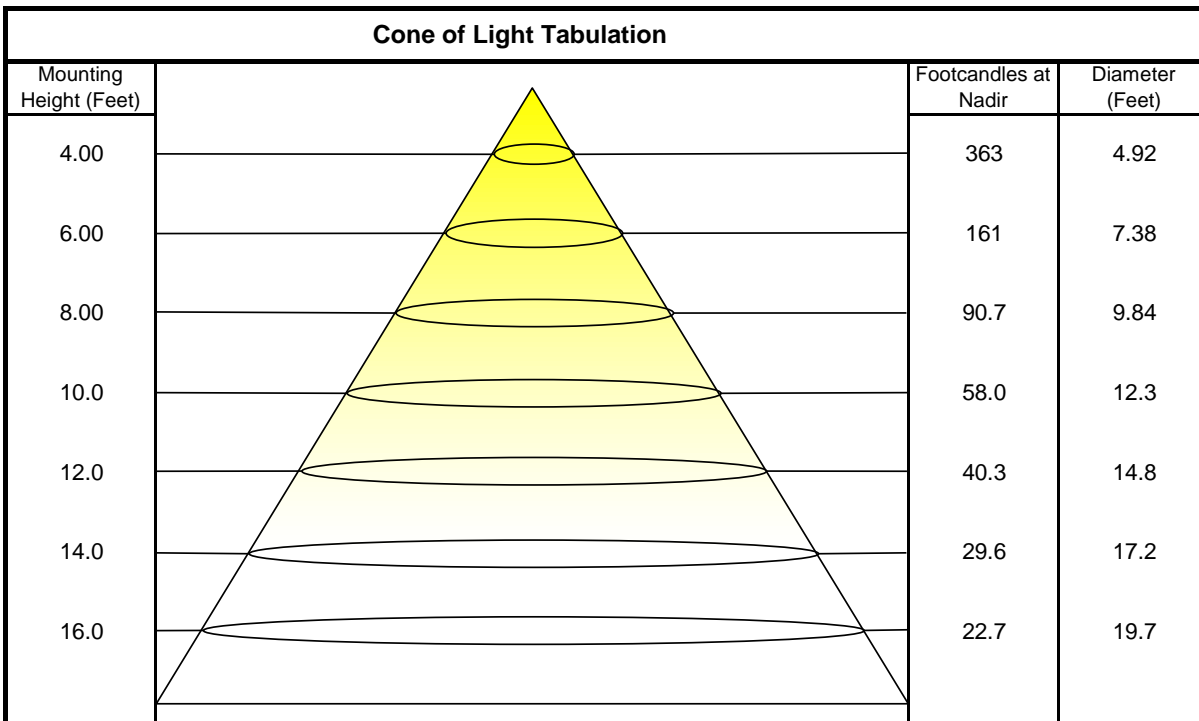


Coefficients of Utilization - Zonal Cavity Method

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	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100
1	109	105	100	97	106	102	99	95	98	95	92	94	92	89	91	89	87	85
2	99	91	85	79	97	90	83	78	86	81	76	83	78	75	80	76	73	71
3	91	80	72	66	88	79	71	65	76	70	64	73	68	63	71	66	62	60
4	83	71	63	56	81	70	62	56	68	61	55	65	59	54	63	58	53	51
5	77	64	55	48	74	63	54	48	61	53	48	59	52	47	57	51	47	44
6	71	58	49	42	69	57	48	42	55	47	42	53	46	41	52	46	41	39
7	66	52	44	37	64	51	43	37	50	42	37	48	42	37	47	41	36	34
8	61	48	39	33	60	47	39	33	46	38	33	44	38	33	43	37	33	31
9	57	44	36	30	56	43	35	30	42	35	30	41	34	30	40	34	30	28
10	54	40	33	27	52	40	32	27	39	32	27	38	32	27	37	31	27	25

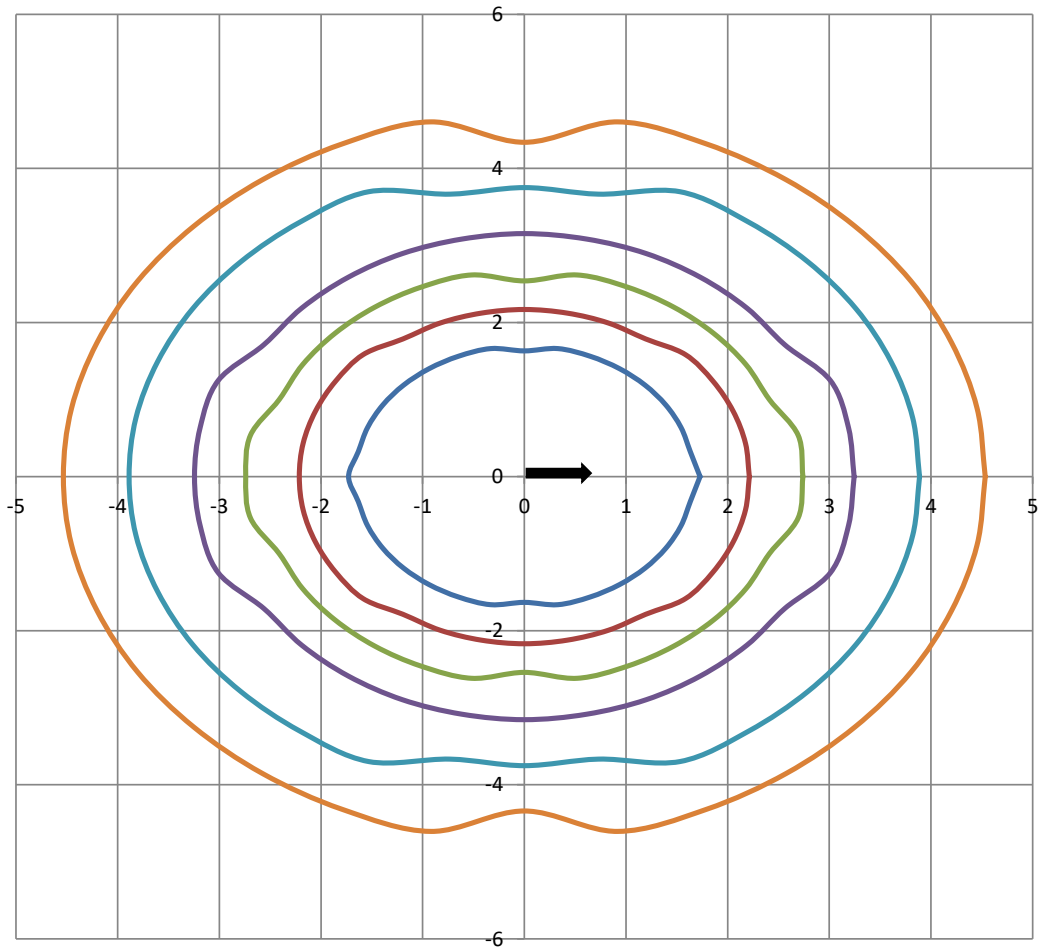
Beam and Field Information	
CIE Type:	Direct
Center Beam Intensity:	5804 Candela
Central Cone Intensity:	5794 Candela
Beam Flux:	11099.5 Lumens
Beam Angle (0-180):	109.5 Degrees
Beam Angle (90-270):	106.0 Degrees
Field Angle (0-180):	158.6 Degrees
Field Angle (90-270):	156.1 Degrees





ISOFootcandle Plot

Mounting Height - 8 Feet



Grid Lines in Units of Mounting Height





In-Situ Test

In-Situ Test Conditions

Temperature	Voltage	Current	Power	Power Factor	Frequency	Current THD
20.9 °C	120.8 VAC	N/A	N/A	N/A	60 Hz	N/A

Summary of Results

LED Temperature: 51.4 °C
Driver Temperature: 42.7 °C
Measured LED Current: 0.06860 A

Temperatures are offset to an ambient temperature of 25°C as described in UL1598-2008

LED Temperature Location



Thermocouple Reference



Driver Temperature Location

