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Photometric Test Report

Relevant Standards
IES LM-79-2008, IES LM-20-2013
ANSI C82.77-2002

Prepared For
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Catalog Number
zPAR38271512T3N
Order Number
10585963
Test Number
830244

Test Date

11/29/2014 - 11/30/2014

Prepared By

A handwritten signature in black ink, appearing to read 'Jeffrey M. Lockner'.

Jeffrey Lockner, Project Engineer

Approved By

A handwritten signature in black ink, appearing to read 'Jeff A. Smith Jr.'.

Jeff Smith Jr., Project Handler

The results contained in this report pertain only to the tested sample.
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Luminaire Description: Molded plastic housing, formed aluminum heatsink patterned plastic optic / enclosure
Lamp: Three white LEDs
Mounting: VBU

Luminaire



Luminaire Characteristics

Luminous Diameter: 2.75 in.

Summary of Results

Integrating Sphere

Luminous Flux: 1067 Lumens
 Efficacy: 88.2 lm/w
 CCT: 2694 K
 CRI (Ra): 82.8

Distribution

Total Luminaire Output: 1040 Lumens
 Luminaire Efficacy: 85.9 lm/w
 Maximum Candela: 10740 Candela

Electrical Data at 120 VAC

Test Temperature: 25.0 °C
 Voltage: 120.0 VAC
 Current: 0.1035 A
 Power: 12.10 W
 Power Factor: 0.976
 Frequency: 60 Hz
 Current THD: 18.0 %



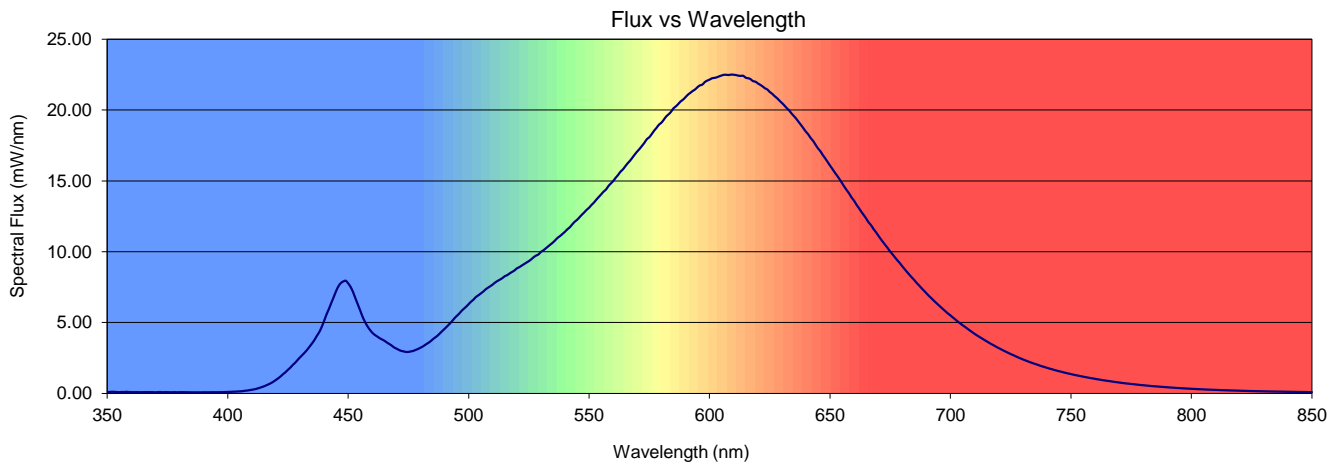
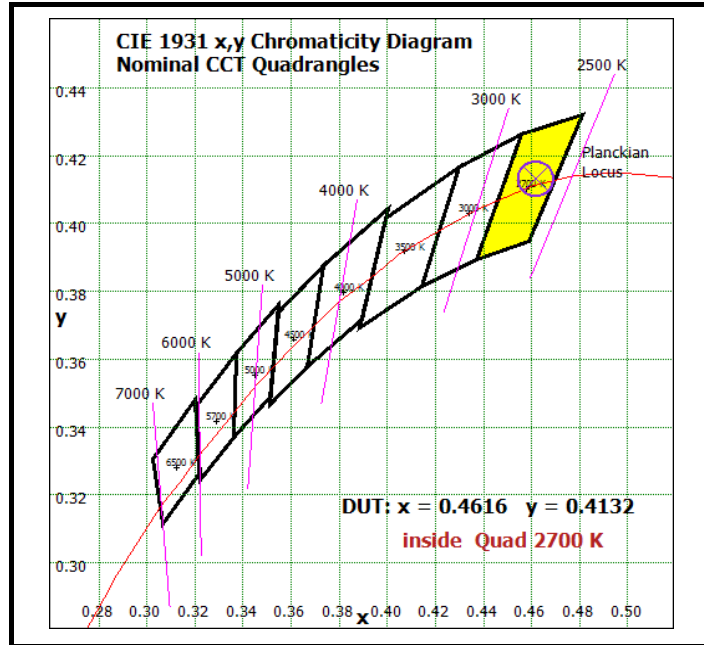
Color Quality - Integrating Sphere

Integrating Sphere Test Conditions

Temperature	Voltage	Current	Power	Power Factor	Frequency	Current THD
25.0 °C	120.0 VAC	0.1035 A	12.10 W	0.976	60 Hz	18.0 %

Summary of Results

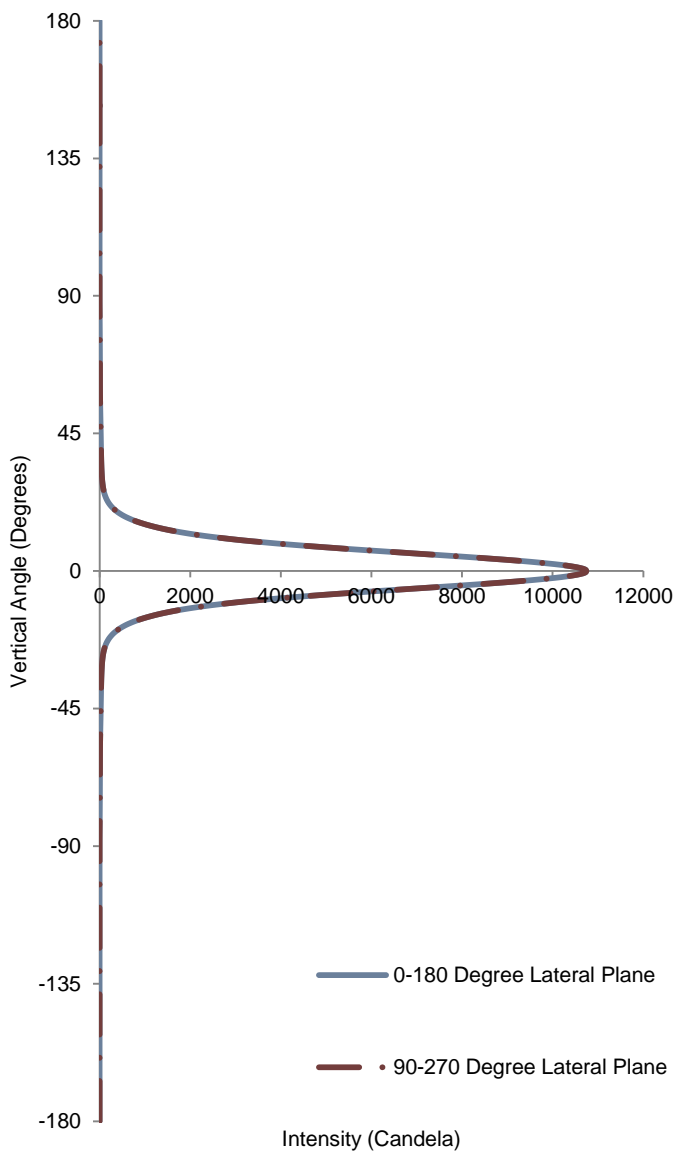
Luminous Flux:	1067 Lumens
Efficacy:	88.2 lm/w
CCT:	2694 K
CRI (Ra):	82.8
CRI (R9):	15.9
Chromaticity (x):	0.4616
Chromaticity (y):	0.4132
Chromaticity (u):	0.2625
Chromaticity (v):	0.3524
Chromaticity (u')	0.2625
Chromaticity (v')	0.5286
Duv:	0.0004





Distribution - Goniophotometer

Intensity vs Vertical Angle



Test Conditions

Test Temperature: 24.9 °C
Voltage: 120.0 VAC
Current: 0.1036 A
Power: 12.11 W
Power Factor: 0.974
Frequency: 60 Hz
Current THD: 18.1 %

Total Lumen Output: 1040 Lumens
Luminaire Efficacy: 85.9 Lumens/Watt
CIE Type: Direct
Spacing Criterion: 0.25 All Directions

Center Beam Intensity: 10740 Candela
Central Cone Intensity: 9618 Candela
Beam Flux: 397.2 Lumens
Beam Angle 0-180: 14.7 Degrees
Beam Angle 90-270: 14.7 Degrees
Field Angle 0-180: 30.0 Degrees
Field Angle 90-270: 30.0 Degrees

Data was acquired using the calibrated photodetector method of absolute photometry.



Candela Tabulation
 Lateral Angle (Degrees)

Vertical 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	10740	10740	10740	10740	10740	10740	10740	10740	10740	10740	10740	10740	10740	10740	10740	10740
1	10610	10610	10610	10610	10610	10610	10610	10610	10610	10610	10610	10610	10610	10610	10610	10610
2	10190	10190	10190	10190	10190	10190	10190	10190	10190	10190	10190	10190	10190	10190	10190	10190
3	9526	9526	9526	9526	9526	9526	9526	9526	9526	9526	9526	9526	9526	9526	9526	9526
4	8676	8676	8676	8676	8676	8676	8676	8676	8676	8676	8676	8676	8676	8676	8676	8676
5	7713	7713	7713	7713	7713	7713	7713	7713	7713	7713	7713	7713	7713	7713	7713	7713
6	6694	6694	6694	6694	6694	6694	6694	6694	6694	6694	6694	6694	6694	6694	6694	6694
7	5697	5697	5697	5697	5697	5697	5697	5697	5697	5697	5697	5697	5697	5697	5697	5697
8	4762	4762	4762	4762	4762	4762	4762	4762	4762	4762	4762	4762	4762	4762	4762	4762
9	3918	3918	3918	3918	3918	3918	3918	3918	3918	3918	3918	3918	3918	3918	3918	3918
10	3181	3181	3181	3181	3181	3181	3181	3181	3181	3181	3181	3181	3181	3181	3181	3181
11	2575	2575	2575	2575	2575	2575	2575	2575	2575	2575	2575	2575	2575	2575	2575	2575
12	2077	2077	2077	2077	2077	2077	2077	2077	2077	2077	2077	2077	2077	2077	2077	2077
13	1670	1670	1670	1670	1670	1670	1670	1670	1670	1670	1670	1670	1670	1670	1670	1670
14	1341	1341	1341	1341	1341	1341	1341	1341	1341	1341	1341	1341	1341	1341	1341	1341
15	1075	1075	1075	1075	1075	1075	1075	1075	1075	1075	1075	1075	1075	1075	1075	1075
16	856	856	856	856	856	856	856	856	856	856	856	856	856	856	856	856
17	680	680	680	680	680	680	680	680	680	680	680	680	680	680	680	680
18	538	538	538	538	538	538	538	538	538	538	538	538	538	538	538	538
19	426	426	426	426	426	426	426	426	426	426	426	426	426	426	426	426
20	337	337	337	337	337	337	337	337	337	337	337	337	337	337	337	337
25	114	114	114	114	114	114	114	114	114	114	114	114	114	114	114	114
30	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56
35	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39
40	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31
45	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26
50	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19
55	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13
60	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9
65	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8
70	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8
75	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
80	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
85	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
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



Utilization of Lumens - Zonal Cavity Method

Effective Floor Cavity Reflectance 20%												
Ceiling Cavity Reflectance	90				80				70			
Wall Reflectance	70	50	30	10	70	50	30	10	70	50	30	10
Room Cavity Ratio (RCR)	** Values are expressed as Lumens delivered to the task surface **											
0	1268	1268	1268	1268	1238	1238	1238	1238	1209	1209	1209	1209
1	1224	1200	1179	1160	1198	1177	1158	1141	1174	1155	1138	1123
2	1185	1145	1112	1085	1162	1127	1098	1073	1141	1110	1083	1061
3	1149	1099	1061	1031	1130	1085	1050	1023	1112	1072	1040	1015
4	1118	1061	1020	989	1101	1050	1012	984	1085	1039	1005	978
5	1089	1028	987	956	1075	1019	981	952	1061	1011	975	948
6	1063	1000	959	929	1050	993	954	927	1039	986	950	924
7	1039	975	935	907	1028	969	931	905	1018	964	928	902
8	1017	953	914	887	1008	948	911	885	999	944	908	884
9	997	933	895	870	989	929	893	868	981	925	891	867
10	979	916	878	854	971	912	877	853	964	909	875	852

Ceiling Cavity Reflectance	50				30			10			0
Wall Reflectance	70	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	1156	1156	1156	1156	1106	1106	1106	1061	1061	1061	1040
1	1128	1114	1101	1089	1076	1066	1057	1041	1034	1027	1009
2	1102	1078	1057	1038	1048	1031	1017	1021	1008	996	981
3	1079	1046	1020	999	1023	1002	984	1001	984	970	957
4	1057	1019	990	967	1000	976	957	983	963	946	935
5	1036	995	964	941	980	954	933	965	943	926	915
6	1017	973	941	918	960	933	912	949	925	907	897
7	999	953	921	898	943	915	894	933	909	890	881
8	982	935	903	881	926	898	877	918	893	874	866
9	966	918	887	865	911	882	862	904	878	860	852
10	951	902	871	850	896	868	848	890	865	847	839

Average Luminance Table (cd/m²)

		Horizontal Angle (Degrees)		
		0	45	90
Vertical Angle (Degree)	0	2804000	2804000	2804000
	45	9437	9437	9437
	55	5816	5816	5816
	65	5193	5193	5193
	75	6031	6031	6031
	85	3614	3614	3614

This test was conducted using photometry techniques according to standard IES procedures. The user must therefore use caution in the following situations: 1) This test was performed using a specific ballast/lamp combination. Extrapolation of this data for other ballast/lamp combinations may produce erroneous results. 2) This test was conducted in a controlled laboratory environment where the ambient temperature was held at 25°C ±1°C. Field performance may differ particularly in regards to change in luminous output as a result of difference in ambient temperature and method of mounting the luminaire.



Zonal Lumen Tabulation (5 degree zones)

Zone (Degrees)	Lumens	Zone (Degrees)	Lumens	Zone (Degrees)	Lumens	Zone (Degrees)	Lumens
0-5	219.1	45-50	9.0	90-95	0	135-140	0
5-10	361.5	50-55	6.9	95-100	0	140-145	0
10-15	223.4	55-60	5.0	100-105	0	145-150	0
15-20	102.3	60-65	4.3	105-110	0	150-155	0
20-25	41.5	65-70	4.1	110-115	0	155-160	0
25-30	19.6	70-75	3.6	115-120	0	160-165	0
30-35	13.5	75-80	2.7	120-125	0	165-170	0
35-40	11.6	80-85	1.4	125-130	0	170-175	0
40-45	10.5	85-90	0.2	130-135	0	175-180	0

Polar Plot (Candela)

