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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
zPAR30x272512T3N
Order Number
10585963
Test Number
830254

Test Date

11/29/2014 - 12/1/2014

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: 1086 Lumens
 Efficacy: 89.9 lm/w
 CCT: 2694 K
 CRI (Ra): 82.6

Distribution

Total Luminaire Output: 1059 Lumens
 Luminaire Efficacy: 87.7 lm/w
 Maximum Candela: 4895 Candela

Electrical Data at 120 VAC

Test Temperature: 25.0 °C
 Voltage: 120.0 VAC
 Current: 0.1033 A
 Power: 12.08 W
 Power Factor: 0.975
 Frequency: 60 Hz
 Current THD: 16.9 %



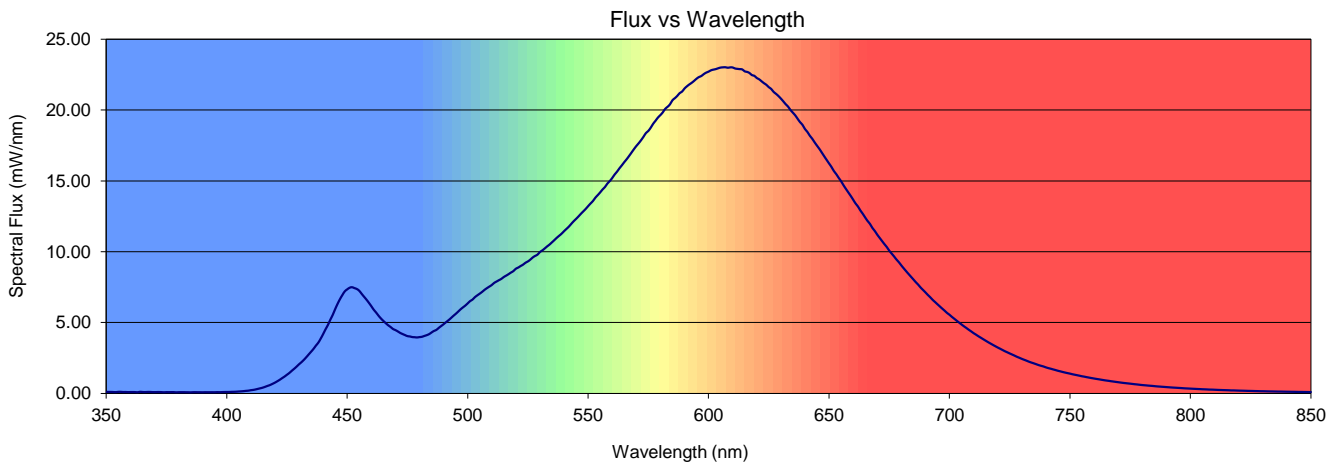
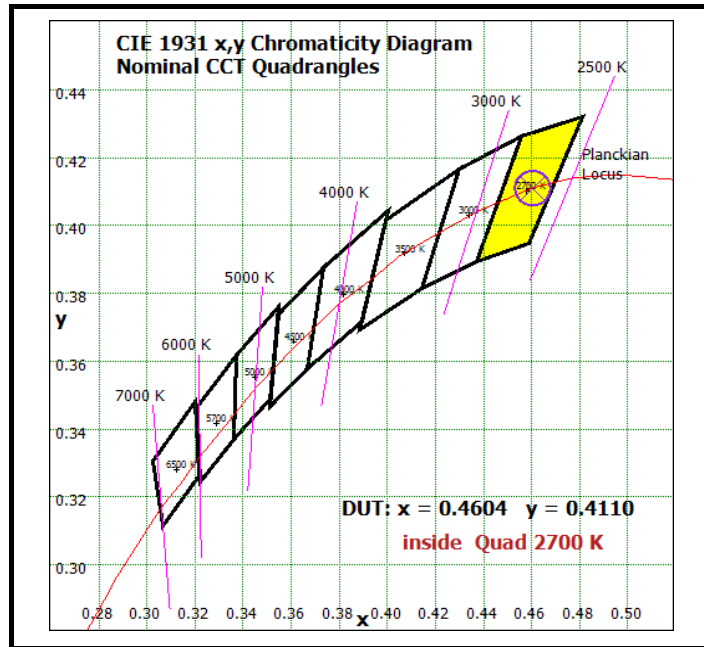
Color Quality - Integrating Sphere

Integrating Sphere Test Conditions

Temperature	Voltage	Current	Power	Power Factor	Frequency	Current THD
25.0 °C	120.0 VAC	0.1033 A	12.08 W	0.975	60 Hz	16.9 %

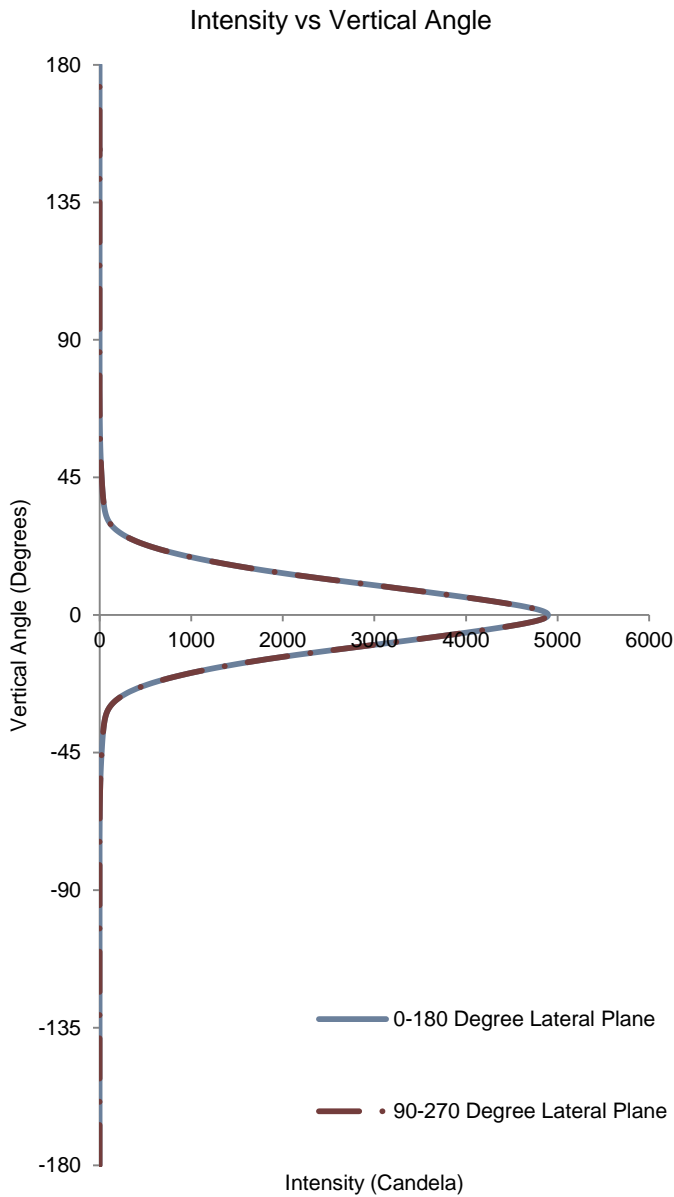
Summary of Results

Luminous Flux:	1086 Lumens
Efficacy:	89.9 lm/w
CCT:	2694 K
CRI (Ra):	82.6
CRI (R9):	14.8
Chromaticity (x):	0.4604
Chromaticity (y):	0.4110
Chromaticity (u):	0.2627
Chromaticity (v):	0.3517
Chromaticity (u')	0.2627
Chromaticity (v')	0.5276
Duv:	0.0003





Distribution - Goniophotometer



Test Conditions	
Test Temperature:	24.7 °C
Voltage:	120.0 VAC
Current:	0.1032 A
Power:	12.07 W
Power Factor:	0.976
Frequency:	60 Hz
Current THD:	17.0 %
Total Lumen Output: 1059 Lumens	
Luminaire Efficacy: 87.7 Lumens/Watt	
CIE Type: Direct	
Spacing Criterion: 0.40 All Directions	

Center Beam Intensity:	4895 Candela
Central Cone Intensity:	4625 Candela
Beam Flux:	461.5 Lumens
Beam Angle 0-180:	23.7 Degrees
Beam Angle 90-270:	23.7 Degrees
Field Angle 0-180:	46.2 Degrees
Field Angle 90-270:	46.2 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	4895	4895	4895	4895	4895	4895	4895	4895	4895	4895	4895	4895	4895	4895	4895	4895
1	4860	4860	4860	4860	4860	4860	4860	4860	4860	4860	4860	4860	4860	4860	4860	4860
2	4757	4757	4757	4757	4757	4757	4757	4757	4757	4757	4757	4757	4757	4757	4757	4757
3	4598	4598	4598	4598	4598	4598	4598	4598	4598	4598	4598	4598	4598	4598	4598	4598
4	4399	4399	4399	4399	4399	4399	4399	4399	4399	4399	4399	4399	4399	4399	4399	4399
5	4180	4180	4180	4180	4180	4180	4180	4180	4180	4180	4180	4180	4180	4180	4180	4180
6	3948	3948	3948	3948	3948	3948	3948	3948	3948	3948	3948	3948	3948	3948	3948	3948
7	3703	3703	3703	3703	3703	3703	3703	3703	3703	3703	3703	3703	3703	3703	3703	3703
8	3451	3451	3451	3451	3451	3451	3451	3451	3451	3451	3451	3451	3451	3451	3451	3451
9	3194	3194	3194	3194	3194	3194	3194	3194	3194	3194	3194	3194	3194	3194	3194	3194
10	2933	2933	2933	2933	2933	2933	2933	2933	2933	2933	2933	2933	2933	2933	2933	2933
11	2672	2672	2672	2672	2672	2672	2672	2672	2672	2672	2672	2672	2672	2672	2672	2672
12	2412	2412	2412	2412	2412	2412	2412	2412	2412	2412	2412	2412	2412	2412	2412	2412
13	2162	2162	2162	2162	2162	2162	2162	2162	2162	2162	2162	2162	2162	2162	2162	2162
14	1929	1929	1929	1929	1929	1929	1929	1929	1929	1929	1929	1929	1929	1929	1929	1929
15	1710	1710	1710	1710	1710	1710	1710	1710	1710	1710	1710	1710	1710	1710	1710	1710
16	1507	1507	1507	1507	1507	1507	1507	1507	1507	1507	1507	1507	1507	1507	1507	1507
17	1320	1320	1320	1320	1320	1320	1320	1320	1320	1320	1320	1320	1320	1320	1320	1320
18	1149	1149	1149	1149	1149	1149	1149	1149	1149	1149	1149	1149	1149	1149	1149	1149
19	990	990	990	990	990	990	990	990	990	990	990	990	990	990	990	990
20	847	847	847	847	847	847	847	847	847	847	847	847	847	847	847	847
25	334	334	334	334	334	334	334	334	334	334	334	334	334	334	334	334
30	113	113	113	113	113	113	113	113	113	113	113	113	113	113	113	113
35	52	52	52	52	52	52	52	52	52	52	52	52	52	52	52	52
40	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33
45	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23
50	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14
55	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8
60	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
65	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
70	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
75	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
80	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
85	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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	1292	1292	1292	1292	1261	1261	1261	1261	1232	1232	1232	1232
1	1244	1218	1195	1174	1217	1195	1174	1156	1192	1172	1154	1137
2	1199	1155	1120	1090	1176	1137	1105	1078	1154	1120	1090	1066
3	1158	1102	1059	1025	1137	1087	1048	1017	1118	1073	1038	1009
4	1119	1054	1008	973	1101	1043	1000	968	1085	1032	993	962
5	1083	1013	965	930	1067	1003	959	926	1053	994	953	922
6	1049	976	927	893	1035	968	923	890	1022	960	918	887
7	1017	942	894	861	1005	936	890	859	994	929	887	857
8	988	911	864	832	977	906	861	830	967	901	858	829
9	960	883	837	806	950	879	834	805	941	874	832	804
10	934	857	812	782	925	853	810	781	917	849	808	780

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	1177	1177	1177	1177	1127	1127	1127	1081	1081	1081	1059
1	1145	1130	1116	1103	1091	1080	1070	1055	1047	1039	1021
2	1114	1087	1063	1043	1056	1037	1021	1028	1013	1000	985
3	1083	1047	1018	993	1023	999	978	1000	981	964	950
4	1054	1011	978	951	991	963	941	973	950	931	918
5	1026	977	942	915	961	931	907	947	921	900	888
6	999	946	909	882	933	901	876	921	893	871	860
7	973	918	880	852	907	873	848	896	867	844	834
8	948	891	853	826	882	848	823	873	842	820	809
9	924	866	828	801	858	823	799	850	819	797	786
10	902	842	805	779	835	801	777	829	798	775	765

Average Luminance Table (cd/m²)

		Horizontal Angle (Degrees)		
		0	45	90
Vertical Angle (Degree)	0	1278000	1278000	1278000
	45	8336	8336	8336
	55	3606	3606	3606
	65	1316	1316	1316
	75	1	1	1
	85	0	0	0

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	108.0	45-50	7.3	90-95	0	135-140	0
5-10	250.7	50-55	4.6	95-100	0	140-145	0
10-15	268.0	55-60	2.7	100-105	0	145-150	0
15-20	202.4	60-65	1.5	105-110	0	150-155	0
20-25	116.0	65-70	0.7	110-115	0	155-160	0
25-30	51.1	70-75	0.2	115-120	0	160-165	0
30-35	21.9	75-80	0.0	120-125	0	165-170	0
35-40	13.9	80-85	0	125-130	0	170-175	0
40-45	10.2	85-90	0	130-135	0	175-180	0

Polar Plot (Candela)

