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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  
**zPAR30x271512T3N**  
Order Number  
10585963  
Test Number  
830252

Test Date

11/26/2014 - 11/29/2014

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: 1048 Lumens  
Efficacy: 86.3 lm/w  
CCT: 2700 K  
CRI (Ra): 82.6

#### Distribution

Total Luminaire Output: 1021 Lumens  
Luminaire Efficacy: 84.0 lm/w  
Maximum Candela: 11320 Candela

#### Electrical Data at 120 VAC

Test Temperature: 25.0 °C  
Voltage: 120.0 VAC  
Current: 0.1039 A  
Power: 12.15 W  
Power Factor: 0.975  
Frequency: 60 Hz  
Current THD: 17.2 %



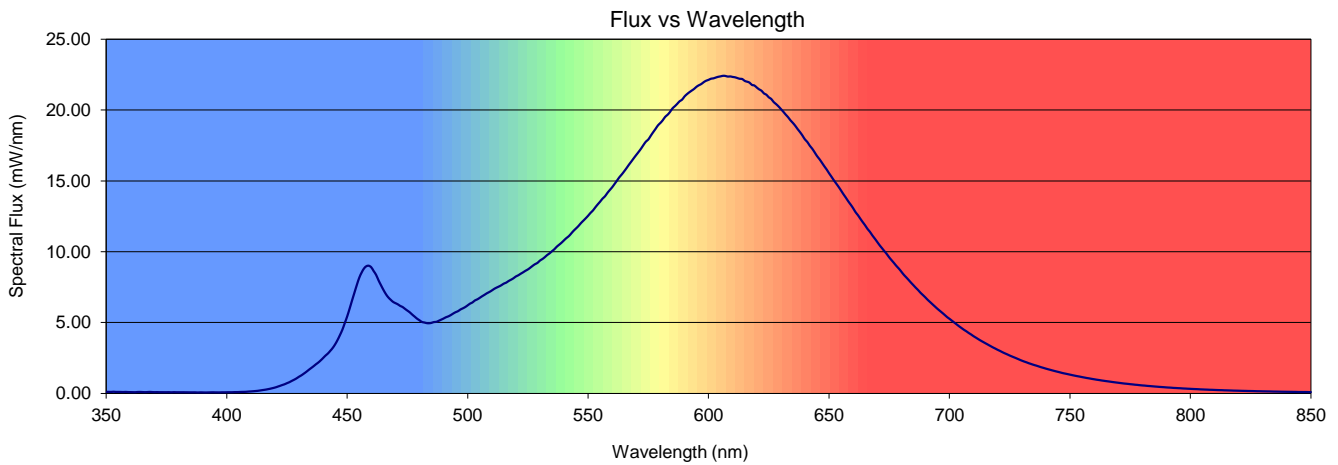
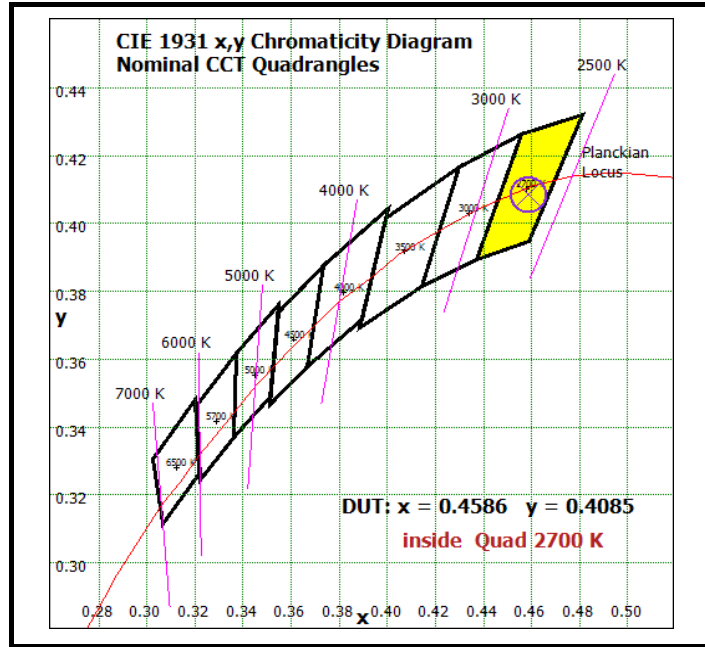
### Color Quality - Integrating Sphere

Integrating Sphere Test Conditions

Temperature	Voltage	Current	Power	Power Factor	Frequency	Current THD
25.0 °C	120.0 VAC	0.1039 A	12.15 W	0.975	60 Hz	17.2 %

#### Summary of Results

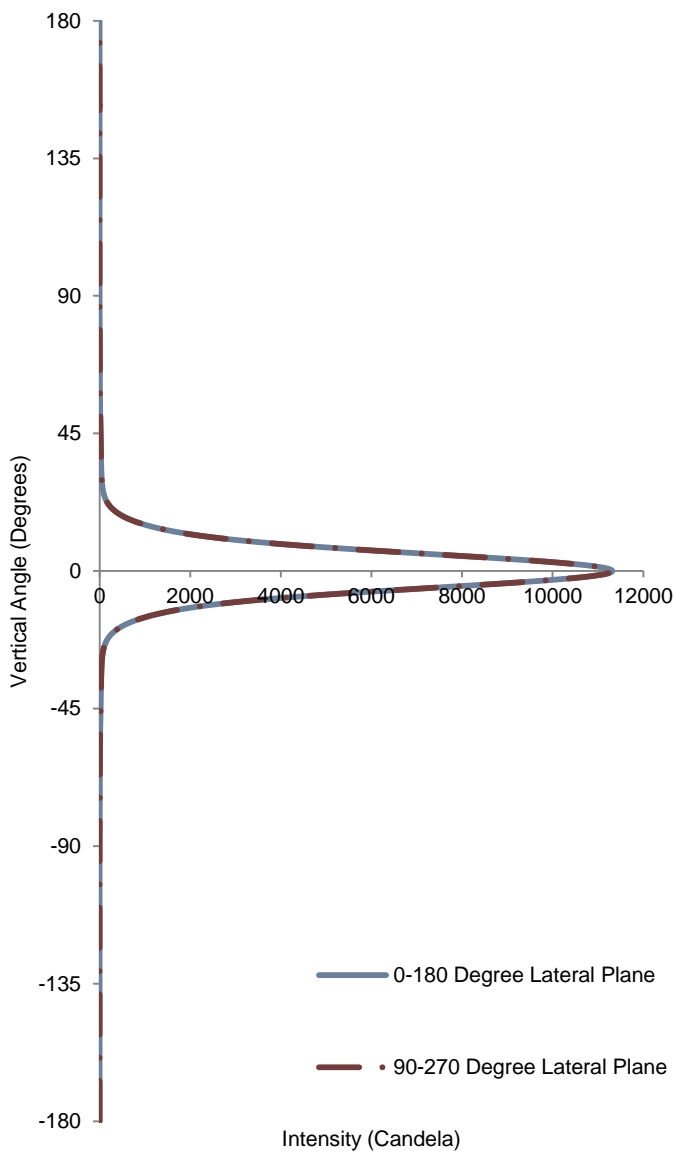
Luminous Flux: 1048 Lumens  
Efficacy: 86.3 lm/w  
CCT: 2700 K  
CRI (Ra): 82.6  
CRI (R9): 15.4  
Chromaticity (x): 0.4586  
Chromaticity (y): 0.4085  
Chromaticity (u): 0.2626  
Chromaticity (v): 0.3509  
Chromaticity (u'): 0.2626  
Chromaticity (v'): 0.5264  
Duv: -0.0010





### Distribution - Goniophotometer

Intensity vs Vertical Angle



#### Test Conditions

Test Temperature: 24.5 °C  
Voltage: 120.0 VAC  
Current: 0.1038 A  
Power: 12.15 W  
Power Factor: 0.975  
Frequency: 60 Hz  
Current THD: 17.3 %

Total Lumen Output: 1021 Lumens  
Luminaire Efficacy: 84.0 Lumens/Watt  
CIE Type: Direct  
Spacing Criterion: 0.24 All Directions

Center Beam Intensity: 11320 Candela  
Central Cone Intensity: 10032 Candela  
Beam Flux: 385.2 Lumens  
Beam Angle 0-180: 14.1 Degrees  
Beam Angle 90-270: 14.1 Degrees  
Field Angle 0-180: 29.2 Degrees  
Field Angle 90-270: 29.2 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	11320	11320	11320	11320	11320	11320	11320	11320	11320	11320	11320	11320	11320	11320	11320	11320
1	11150	11150	11150	11150	11150	11150	11150	11150	11150	11150	11150	11150	11150	11150	11150	11150
2	10670	10670	10670	10670	10670	10670	10670	10670	10670	10670	10670	10670	10670	10670	10670	10670
3	9910	9910	9910	9910	9910	9910	9910	9910	9910	9910	9910	9910	9910	9910	9910	9910
4	8967	8967	8967	8967	8967	8967	8967	8967	8967	8967	8967	8967	8967	8967	8967	8967
5	7897	7897	7897	7897	7897	7897	7897	7897	7897	7897	7897	7897	7897	7897	7897	7897
6	6799	6799	6799	6799	6799	6799	6799	6799	6799	6799	6799	6799	6799	6799	6799	6799
7	5723	5723	5723	5723	5723	5723	5723	5723	5723	5723	5723	5723	5723	5723	5723	5723
8	4735	4735	4735	4735	4735	4735	4735	4735	4735	4735	4735	4735	4735	4735	4735	4735
9	3854	3854	3854	3854	3854	3854	3854	3854	3854	3854	3854	3854	3854	3854	3854	3854
10	3117	3117	3117	3117	3117	3117	3117	3117	3117	3117	3117	3117	3117	3117	3117	3117
11	2508	2508	2508	2508	2508	2508	2508	2508	2508	2508	2508	2508	2508	2508	2508	2508
12	2011	2011	2011	2011	2011	2011	2011	2011	2011	2011	2011	2011	2011	2011	2011	2011
13	1613	1613	1613	1613	1613	1613	1613	1613	1613	1613	1613	1613	1613	1613	1613	1613
14	1296	1296	1296	1296	1296	1296	1296	1296	1296	1296	1296	1296	1296	1296	1296	1296
15	1033	1033	1033	1033	1033	1033	1033	1033	1033	1033	1033	1033	1033	1033	1033	1033
16	818	818	818	818	818	818	818	818	818	818	818	818	818	818	818	818
17	646	646	646	646	646	646	646	646	646	646	646	646	646	646	646	646
18	506	506	506	506	506	506	506	506	506	506	506	506	506	506	506	506
19	395	395	395	395	395	395	395	395	395	395	395	395	395	395	395	395
20	308	308	308	308	308	308	308	308	308	308	308	308	308	308	308	308
25	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96
30	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48
35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35
40	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29
45	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23
50	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17
55	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11
60	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8
65	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
70	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
75	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
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	1245	1245	1245	1245	1215	1215	1215	1215	1187	1187	1187	1187
1	1202	1179	1159	1140	1177	1157	1138	1122	1153	1135	1119	1104
2	1165	1126	1095	1069	1143	1109	1080	1057	1122	1092	1067	1045
3	1131	1083	1046	1017	1112	1069	1036	1009	1094	1056	1025	1001
4	1101	1046	1007	978	1084	1035	999	972	1069	1025	992	967
5	1073	1015	975	946	1059	1006	970	942	1046	998	964	938
6	1049	988	949	921	1036	981	944	918	1025	975	940	915
7	1026	965	926	899	1015	959	923	897	1005	954	919	895
8	1005	944	906	881	996	939	903	879	987	935	901	877
9	986	925	889	864	978	921	886	863	970	917	884	862
10	969	908	873	849	961	905	871	849	954	902	869	848

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	1134	1134	1134	1134	1086	1086	1086	1041	1041	1041	1021
1	1108	1095	1082	1071	1057	1048	1039	1023	1016	1009	992
2	1084	1060	1040	1023	1032	1016	1001	1005	992	981	967
3	1062	1031	1006	986	1008	988	971	987	971	957	944
4	1041	1005	978	956	987	964	945	970	951	935	924
5	1022	982	953	931	968	943	923	954	933	916	906
6	1004	962	932	909	950	924	904	938	916	899	889
7	987	943	913	891	933	906	887	924	900	883	874
8	971	926	896	874	917	891	871	910	886	868	860
9	956	910	880	859	903	876	857	896	872	855	847
10	942	895	866	846	889	863	844	884	860	842	834

Average Luminance Table (cd/m<sup>2</sup>)

		Horizontal Angle (Degrees)		
		0	45	90
Vertical Angle (Degree)	0	2953000	2953000	2953000
	45	8605	8605	8605
	55	4953	4953	4953
	65	4380	4380	4380
	75	5393	5393	5393
	85	3826	3826	3826

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	227.5	45-50	8.1	90-95	0	135-140	0
5-10	361.8	50-55	6.0	95-100	0	140-145	0
10-15	216.6	55-60	4.1	100-105	0	145-150	0
15-20	96.8	60-65	3.6	105-110	0	150-155	0
20-25	36.6	65-70	3.5	110-115	0	155-160	0
25-30	16.5	70-75	3.1	115-120	0	160-165	0
30-35	11.9	75-80	2.4	120-125	0	165-170	0
35-40	10.7	80-85	1.4	125-130	0	170-175	0
40-45	9.7	85-90	0.2	130-135	0	175-180	0

Polar Plot (Candela)

