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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
zPAR30x301512T3N
Order Number
10585963
Test Number
830256

Test Date

11/30/2014 - 12/1/2014

Prepared By

Handwritten signature of Jeffrey Lockner in black ink.

Jeffrey Lockner, Project Engineer

Approved By

Handwritten signature of Jeff A. Smith Jr. in black ink.

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: 1115 Lumens
Efficacy: 92.0 lm/w
CCT: 3072 K
CRI (Ra): 83.9

Distribution

Total Luminaire Output: 1089 Lumens
Luminaire Efficacy: 89.6 lm/w
Maximum Candela: 12430 Candela

Electrical Data at 120 VAC

Test Temperature: 25.0 °C
Voltage: 120.0 VAC
Current: 0.1036 A
Power: 12.12 W
Power Factor: 0.975
Frequency: 60 Hz
Current THD: 17.3 %



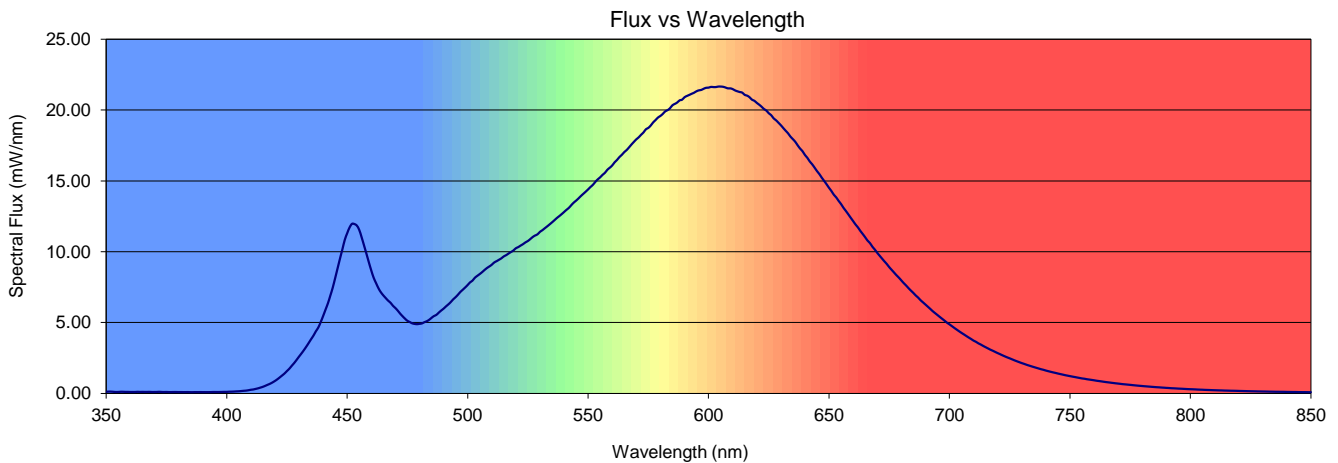
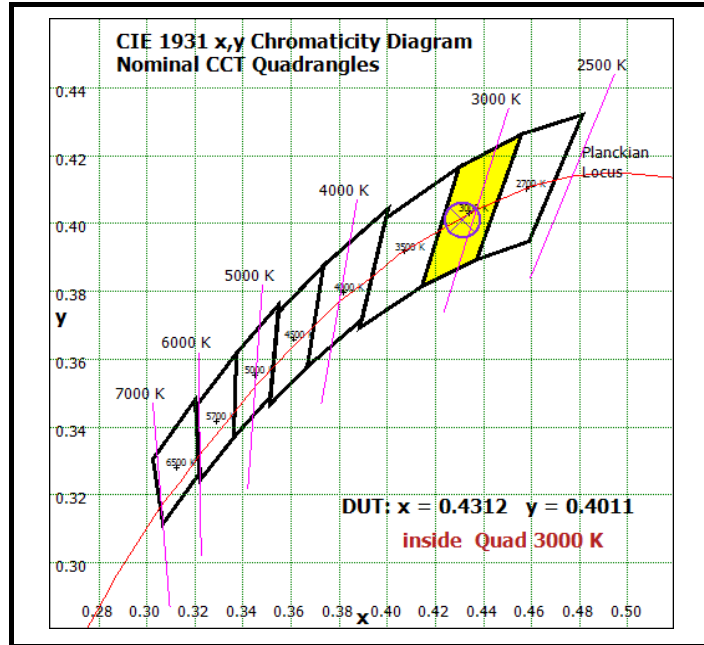
Color Quality - Integrating Sphere

Integrating Sphere Test Conditions

Temperature	Voltage	Current	Power	Power Factor	Frequency	Current THD
25.0 °C	120.0 VAC	0.1036 A	12.12 W	0.975	60 Hz	17.3 %

Summary of Results

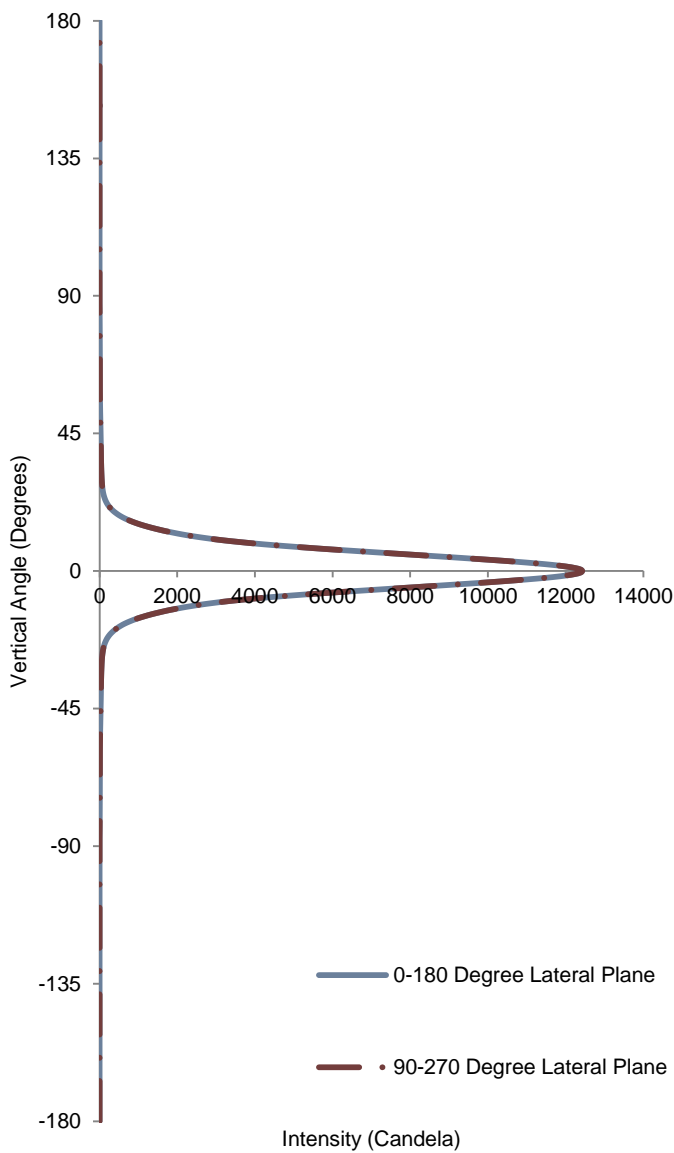
Luminous Flux:	1115 Lumens
Efficacy:	92.0 lm/w
CCT:	3072 K
CRI (Ra):	83.9
CRI (R9):	18.7
Chromaticity (x):	0.4312
Chromaticity (y):	0.4011
Chromaticity (u):	0.2482
Chromaticity (v):	0.3462
Chromaticity (u')	0.2482
Chromaticity (v')	0.5193
Duv:	-0.0004





Distribution - Goniophotometer

Intensity vs Vertical Angle



Test Conditions

Test Temperature: 24.9 °C
Voltage: 120.0 VAC
Current: 0.1039 A
Power: 12.16 W
Power Factor: 0.975
Frequency: 60 Hz
Current THD: 17.4 %

Total Lumen Output: 1089 Lumens
Luminaire Efficacy: 89.6 Lumens/Watt
CIE Type: Direct
Spacing Criterion: 0.24 All Directions

Center Beam Intensity: 12430 Candela
Central Cone Intensity: 10920 Candela
Beam Flux: 398.2 Lumens
Beam Angle 0-180: 13.7 Degrees
Beam Angle 90-270: 13.7 Degrees
Field Angle 0-180: 29.0 Degrees
Field Angle 90-270: 29.0 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	12430	12430	12430	12430	12430	12430	12430	12430	12430	12430	12430	12430	12430	12430	12430	12430
1	12240	12240	12240	12240	12240	12240	12240	12240	12240	12240	12240	12240	12240	12240	12240	12240
2	11660	11660	11660	11660	11660	11660	11660	11660	11660	11660	11660	11660	11660	11660	11660	11660
3	10760	10760	10760	10760	10760	10760	10760	10760	10760	10760	10760	10760	10760	10760	10760	10760
4	9653	9653	9653	9653	9653	9653	9653	9653	9653	9653	9653	9653	9653	9653	9653	9653
5	8466	8466	8466	8466	8466	8466	8466	8466	8466	8466	8466	8466	8466	8466	8466	8466
6	7249	7249	7249	7249	7249	7249	7249	7249	7249	7249	7249	7249	7249	7249	7249	7249
7	6049	6049	6049	6049	6049	6049	6049	6049	6049	6049	6049	6049	6049	6049	6049	6049
8	4953	4953	4953	4953	4953	4953	4953	4953	4953	4953	4953	4953	4953	4953	4953	4953
9	3993	3993	3993	3993	3993	3993	3993	3993	3993	3993	3993	3993	3993	3993	3993	3993
10	3217	3217	3217	3217	3217	3217	3217	3217	3217	3217	3217	3217	3217	3217	3217	3217
11	2607	2607	2607	2607	2607	2607	2607	2607	2607	2607	2607	2607	2607	2607	2607	2607
12	2117	2117	2117	2117	2117	2117	2117	2117	2117	2117	2117	2117	2117	2117	2117	2117
13	1718	1718	1718	1718	1718	1718	1718	1718	1718	1718	1718	1718	1718	1718	1718	1718
14	1386	1386	1386	1386	1386	1386	1386	1386	1386	1386	1386	1386	1386	1386	1386	1386
15	1105	1105	1105	1105	1105	1105	1105	1105	1105	1105	1105	1105	1105	1105	1105	1105
16	871	871	871	871	871	871	871	871	871	871	871	871	871	871	871	871
17	683	683	683	683	683	683	683	683	683	683	683	683	683	683	683	683
18	534	534	534	534	534	534	534	534	534	534	534	534	534	534	534	534
19	417	417	417	417	417	417	417	417	417	417	417	417	417	417	417	417
20	324	324	324	324	324	324	324	324	324	324	324	324	324	324	324	324
25	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102
30	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54
35	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41
40	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34
45	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27
50	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19
55	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
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	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
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	1328	1328	1328	1328	1296	1296	1296	1296	1266	1266	1266	1266
1	1282	1258	1235	1215	1255	1233	1214	1196	1230	1210	1193	1177
2	1242	1200	1167	1138	1218	1182	1151	1126	1196	1164	1137	1113
3	1205	1153	1114	1083	1185	1139	1103	1074	1166	1125	1092	1066
4	1173	1114	1072	1040	1155	1103	1064	1035	1139	1092	1056	1029
5	1143	1081	1038	1007	1128	1072	1032	1003	1114	1063	1026	998
6	1117	1052	1009	979	1104	1045	1005	976	1091	1037	1000	973
7	1093	1027	985	956	1081	1021	982	954	1070	1015	978	952
8	1070	1004	964	936	1060	999	961	935	1051	994	958	933
9	1050	984	945	919	1041	980	943	917	1033	976	940	916
10	1031	966	928	903	1023	962	926	902	1016	959	924	901

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	1210	1210	1210	1210	1158	1158	1158	1111	1111	1111	1089
1	1182	1167	1154	1141	1127	1117	1108	1091	1083	1076	1058
2	1156	1130	1108	1090	1099	1082	1067	1071	1057	1045	1030
3	1132	1098	1072	1050	1074	1052	1034	1051	1034	1019	1005
4	1109	1070	1041	1017	1051	1026	1006	1033	1012	995	983
5	1088	1046	1014	990	1030	1003	982	1015	993	975	963
6	1069	1024	991	967	1011	983	962	999	975	956	945
7	1051	1003	971	947	993	964	943	983	958	939	929
8	1033	985	953	930	976	947	926	968	942	923	914
9	1017	968	936	914	960	932	911	953	928	909	900
10	1002	952	921	899	946	917	897	940	914	895	887

Average Luminance Table (cd/m²)

		Horizontal Angle (Degrees)		
		0	45	90
Vertical Angle (Degree)	0	3243000	3243000	3243000
	45	9880	9880	9880
	55	5550	5550	5550
	65	5006	5006	5006
	75	6293	6293	6293
	85	5178	5178	5178

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	246.5	45-50	9.3	90-95	0	135-140	0
5-10	380.7	50-55	6.7	95-100	0	140-145	0
10-15	228.2	55-60	4.6	100-105	0	145-150	0
15-20	102.5	60-65	4.1	105-110	0	150-155	0
20-25	38.4	65-70	4.0	110-115	0	155-160	0
25-30	18.2	70-75	3.6	115-120	0	160-165	0
30-35	13.7	75-80	2.9	120-125	0	165-170	0
35-40	12.3	80-85	1.7	125-130	0	170-175	0
40-45	11.3	85-90	0.2	130-135	0	175-180	0

Polar Plot (Candela)

