



UL Verification Services Inc.
7036 Snowdrift Road
Allentown, PA 18106
610-774-1300

Photometric Test Report

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

Prepared For
MSI, LLC
Jared Coello
622 Banyan Trail, Suite 200
Boca Raton, FL 33431

Catalog Number
zPAR38301512T3N
Order Number
10585963
Test Number
830248

Test Date

2014-11-29

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: 1150 Lumens
 Efficacy: 93.5 lm/w
 CCT: 3057 K
 CRI (Ra): 83.9

Distribution

Total Luminaire Output: 1102 Lumens
 Luminaire Efficacy: 89.3 lm/w
 Maximum Candela: 11780 Candela

Electrical Data at 120 VAC

Test Temperature: 25.0 °C
 Voltage: 120.0 VAC
 Current: 0.1051 A
 Power: 12.30 W
 Power Factor: 0.975
 Frequency: 60 Hz
 Current THD: 17.7 %



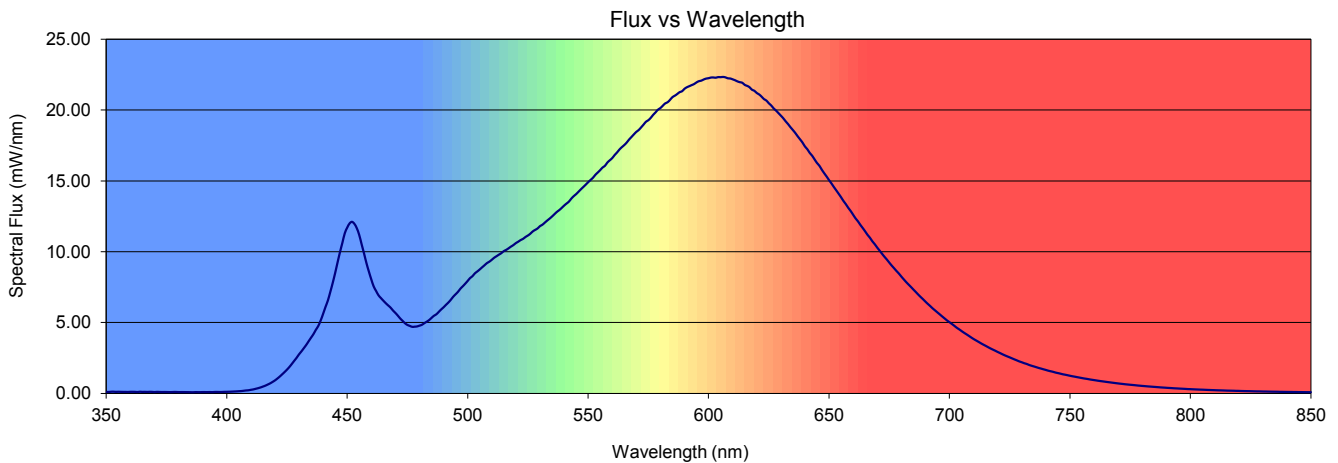
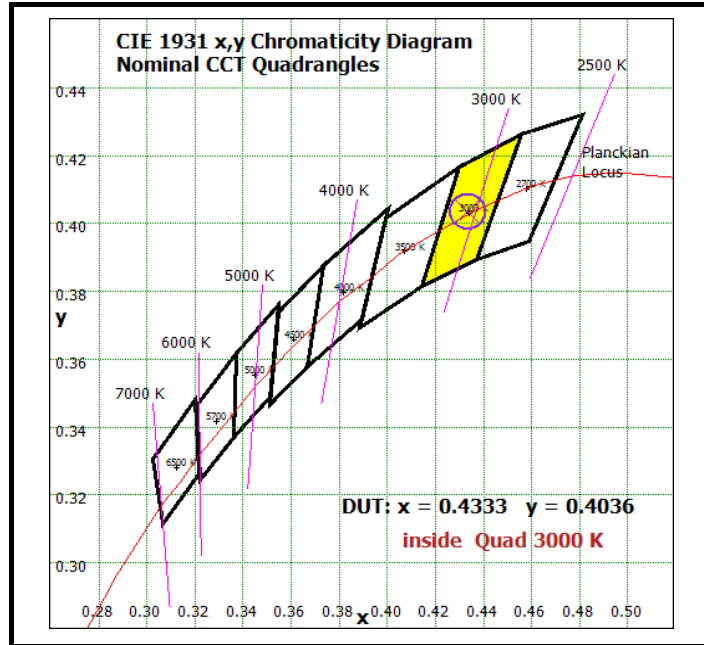
Color Quality - Integrating Sphere

Integrating Sphere Test Conditions

Temperature	Voltage	Current	Power	Power Factor	Frequency	Current THD
25.0 °C	120.0 VAC	0.1051 A	12.30 W	0.975	60 Hz	17.7 %

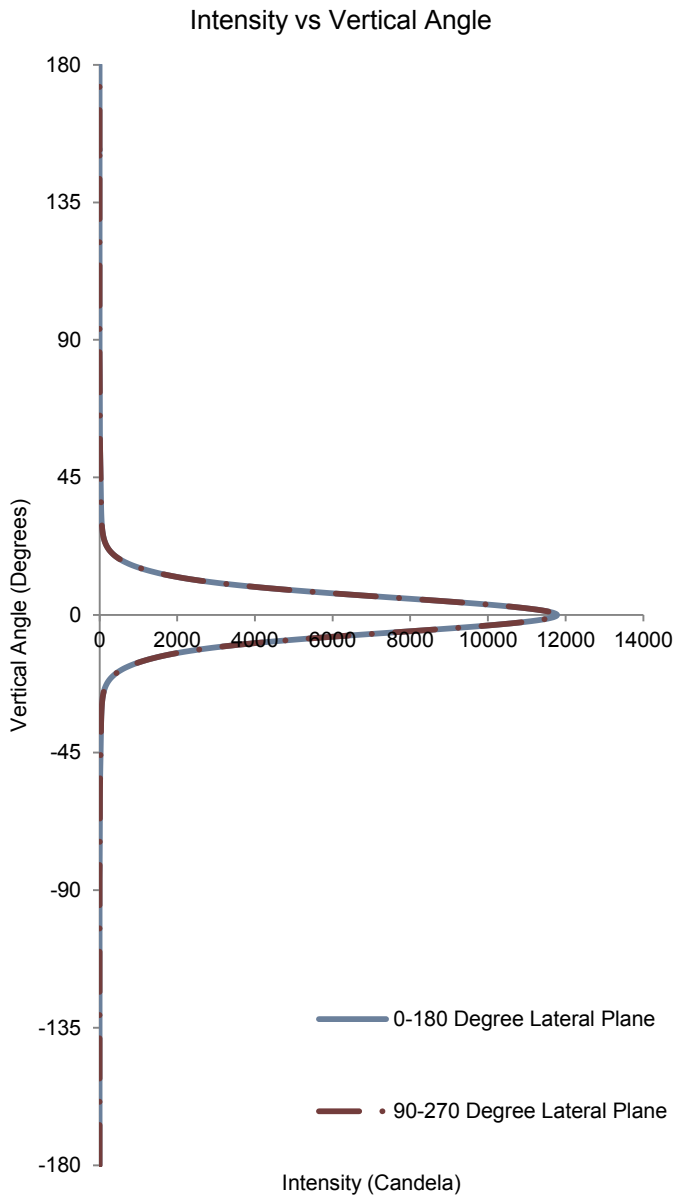
Summary of Results

Luminous Flux:	1150 Lumens
Efficacy:	93.5 lm/w
CCT:	3057 K
CRI (Ra):	83.9
CRI (R9):	18.6
Chromaticity (x):	0.4333
Chromaticity (y):	0.4036
Chromaticity (u):	0.2484
Chromaticity (v):	0.3471
Chromaticity (u')	0.2484
Chromaticity (v')	0.5207
Duv:	0.0003





Distribution - Goniophotometer



Test Conditions	
Test Temperature:	24.8 °C
Voltage:	120.0 VAC
Current:	0.1055 A
Power:	12.33 W
Power Factor:	0.975
Frequency:	60 Hz
Current THD:	17.8 %
Total Lumen Output: 1102 Lumens	
Luminaire Efficacy: 89.3 Lumens/Watt	
CIE Type: Direct	
Spacing Criterion: 0.25 All Directions	
Center Beam Intensity: 11780 Candela	
Central Cone Intensity: 10490 Candela	
Beam Flux: 422.1 Lumens	
Beam Angle 0-180: 14.4 Degrees	
Beam Angle 90-270: 14.4 Degrees	
Field Angle 0-180: 29.7 Degrees	
Field Angle 90-270: 29.7 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	11780	11780	11780	11780	11780	11780	11780	11780	11780	11780	11780	11780	11780	11780	11780	11780
1	11600	11600	11600	11600	11600	11600	11600	11600	11600	11600	11600	11600	11600	11600	11600	11600
2	11120	11120	11120	11120	11120	11120	11120	11120	11120	11120	11120	11120	11120	11120	11120	11120
3	10370	10370	10370	10370	10370	10370	10370	10370	10370	10370	10370	10370	10370	10370	10370	10370
4	9430	9430	9430	9430	9430	9430	9430	9430	9430	9430	9430	9430	9430	9430	9430	9430
5	8350	8350	8350	8350	8350	8350	8350	8350	8350	8350	8350	8350	8350	8350	8350	8350
6	7216	7216	7216	7216	7216	7216	7216	7216	7216	7216	7216	7216	7216	7216	7216	7216
7	6108	6108	6108	6108	6108	6108	6108	6108	6108	6108	6108	6108	6108	6108	6108	6108
8	5082	5082	5082	5082	5082	5082	5082	5082	5082	5082	5082	5082	5082	5082	5082	5082
9	4164	4164	4164	4164	4164	4164	4164	4164	4164	4164	4164	4164	4164	4164	4164	4164
10	3382	3382	3382	3382	3382	3382	3382	3382	3382	3382	3382	3382	3382	3382	3382	3382
11	2731	2731	2731	2731	2731	2731	2731	2731	2731	2731	2731	2731	2731	2731	2731	2731
12	2198	2198	2198	2198	2198	2198	2198	2198	2198	2198	2198	2198	2198	2198	2198	2198
13	1768	1768	1768	1768	1768	1768	1768	1768	1768	1768	1768	1768	1768	1768	1768	1768
14	1420	1420	1420	1420	1420	1420	1420	1420	1420	1420	1420	1420	1420	1420	1420	1420
15	1132	1132	1132	1132	1132	1132	1132	1132	1132	1132	1132	1132	1132	1132	1132	1132
16	897	897	897	897	897	897	897	897	897	897	897	897	897	897	897	897
17	708	708	708	708	708	708	708	708	708	708	708	708	708	708	708	708
18	554	554	554	554	554	554	554	554	554	554	554	554	554	554	554	554
19	433	433	433	433	433	433	433	433	433	433	433	433	433	433	433	433
20	339	339	339	339	339	339	339	339	339	339	339	339	339	339	339	339
25	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110
30	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56
35	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40
40	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33
45	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27
50	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20
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	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
75	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
80	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
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	1343	1343	1343	1343	1311	1311	1311	1311	1281	1281	1281	1281
1	1298	1273	1250	1230	1270	1248	1228	1210	1244	1225	1207	1191
2	1256	1215	1180	1152	1233	1196	1165	1139	1210	1178	1150	1127
3	1219	1167	1127	1095	1199	1152	1116	1087	1180	1138	1105	1078
4	1186	1127	1084	1052	1169	1115	1076	1046	1152	1104	1068	1040
5	1156	1093	1049	1018	1141	1083	1043	1013	1127	1074	1037	1009
6	1129	1063	1020	990	1116	1056	1015	987	1103	1048	1011	984
7	1104	1038	995	966	1093	1031	992	964	1082	1025	988	961
8	1082	1015	973	945	1071	1009	970	944	1062	1004	968	942
9	1061	994	954	927	1052	990	952	926	1043	985	949	925
10	1041	975	937	911	1033	972	935	910	1026	968	933	909

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	1224	1224	1224	1224	1172	1172	1172	1124	1124	1124	1102
1	1196	1181	1168	1155	1141	1131	1121	1104	1096	1089	1071
2	1169	1144	1122	1103	1112	1095	1080	1083	1070	1058	1042
3	1145	1111	1084	1062	1086	1064	1046	1063	1046	1030	1017
4	1122	1083	1052	1029	1063	1038	1017	1044	1024	1006	994
5	1101	1057	1025	1001	1041	1014	993	1026	1003	985	974
6	1081	1034	1002	977	1021	993	972	1009	985	966	955
7	1062	1014	981	957	1003	974	952	993	968	948	938
8	1044	995	962	939	986	957	935	977	951	932	923
9	1028	977	945	922	970	941	920	963	936	917	908
10	1012	961	929	907	955	926	905	949	922	903	895

Average Luminance Table (cd/m²)

		Horizontal Angle (Degrees)		
		0	45	90
Vertical Angle (Degree)	0	3075000	3075000	3075000
	45	9907	9907	9907
	55	5819	5819	5819
	65	5168	5168	5168
	75	5635	5635	5635
	85	2163	2163	2163

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	238.5	45-50	9.4	90-95	0	135-140	0
5-10	387.0	50-55	6.9	95-100	0	140-145	0
10-15	236.5	55-60	4.9	100-105	0	145-150	0
15-20	106.1	60-65	4.3	105-110	0	150-155	0
20-25	40.7	65-70	4.0	110-115	0	155-160	0
25-30	19.1	70-75	3.4	115-120	0	160-165	0
30-35	13.7	75-80	2.5	120-125	0	165-170	0
35-40	12.2	80-85	1.1	125-130	0	170-175	0
40-45	11.2	85-90	0.1	130-135	0	175-180	0

Polar Plot (Candela)

