



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
zPAR30x274012T3N
Order Number
10585963
Test Number
830264

Test Date

2014-12-11 - 2014-12-13

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: 1095 Lumens
 Efficacy: 88.4 lm/w
 CCT: 2705 K
 CRI (Ra): 82.2

Distribution

Total Luminaire Output: 1072 Lumens
 Luminaire Efficacy: 86.7 lm/w
 Maximum Candela: 2115 Candela

Electrical Data at 120 VAC

Test Temperature: 25.0 °C
 Voltage: 120.0 VAC
 Current: 0.1057 A
 Power: 12.38 W
 Power Factor: 0.976
 Frequency: 60 Hz
 Current THD: 16.8 %



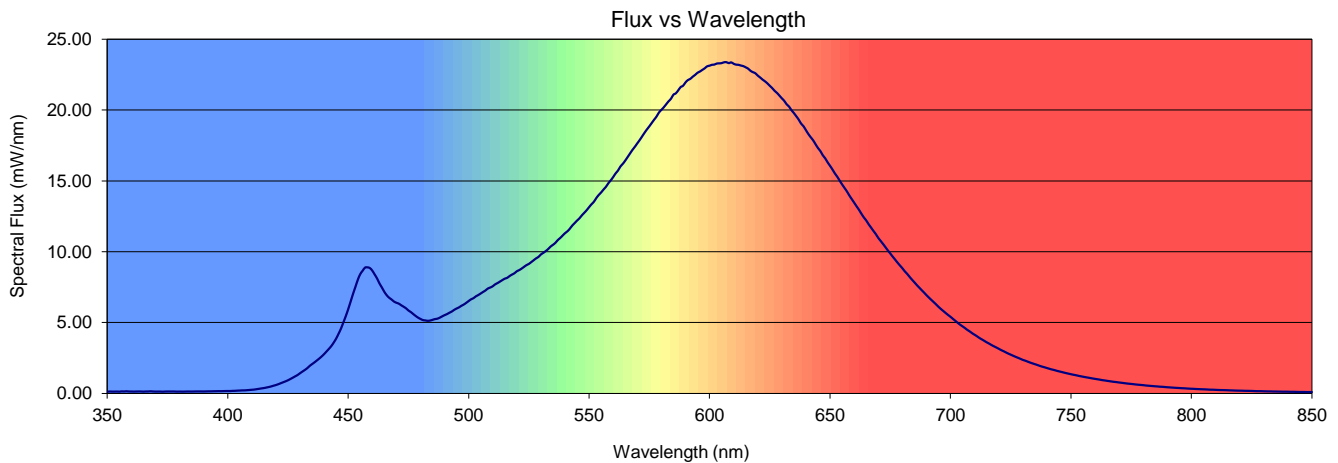
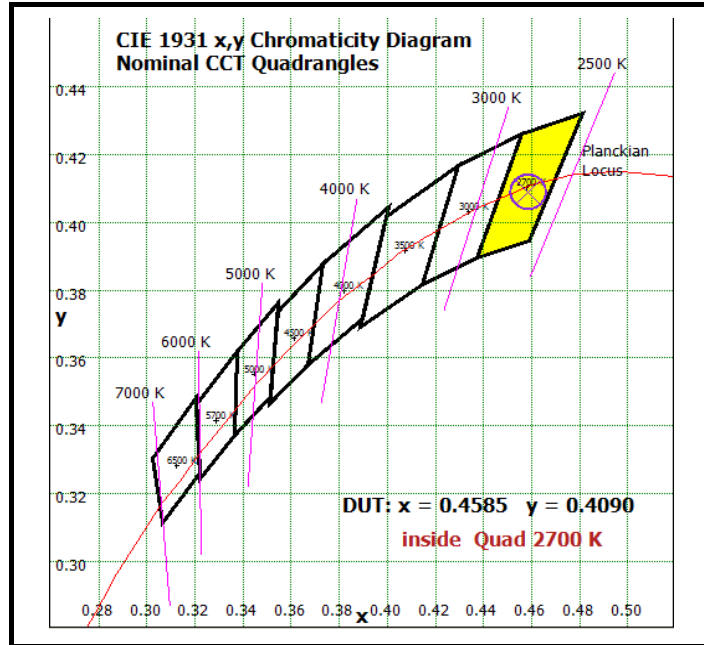
Color Quality - Integrating Sphere

Integrating Sphere Test Conditions

Temperature	Voltage	Current	Power	Power Factor	Frequency	Current THD
25.0 °C	120.0 VAC	0.1057 A	12.38 W	0.976	60 Hz	16.8 %

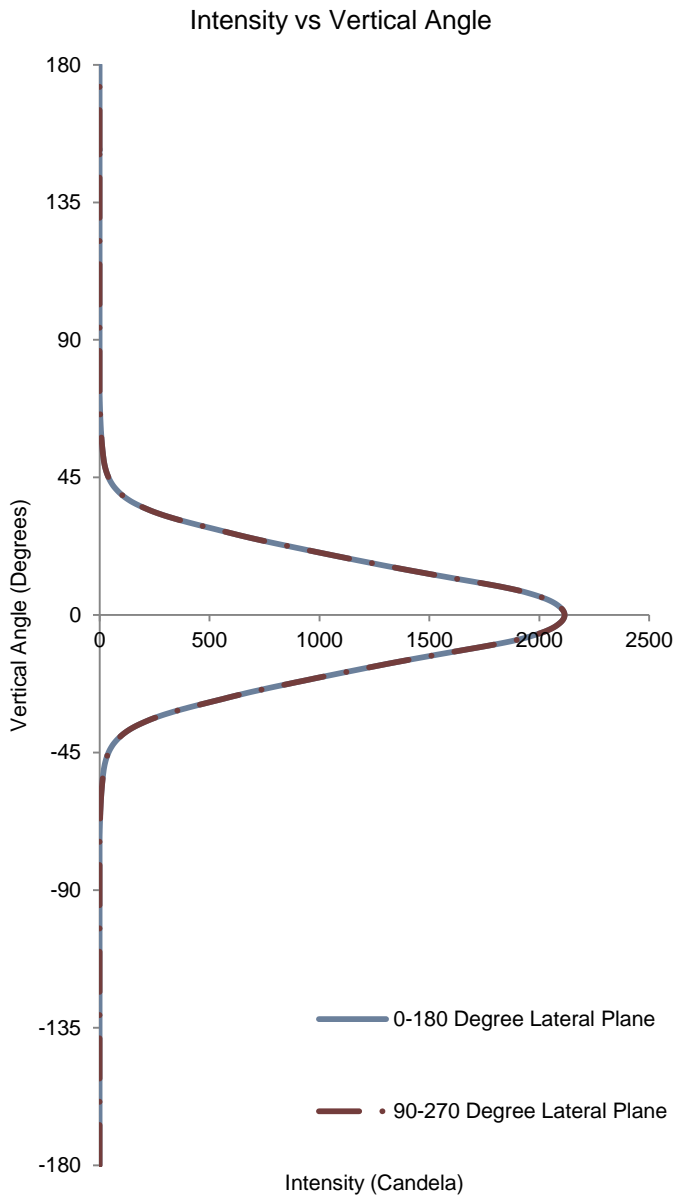
Summary of Results

Luminous Flux:	1095 Lumens
Efficacy:	88.4 lm/w
CCT:	2705 K
CRI (Ra):	82.2
CRI (R9):	13.6
Chromaticity (x):	0.4585
Chromaticity (y):	0.4090
Chromaticity (u):	0.2623
Chromaticity (v):	0.3510
Chromaticity (u')	0.2623
Chromaticity (v')	0.5265
Duv:	-0.0008





Distribution - Goniophotometer



Test Conditions	
Test Temperature:	24.2 °C
Voltage:	120.0 VAC
Current:	0.1055 A
Power:	12.36 W
Power Factor:	0.976
Frequency:	60 Hz
Current THD:	17.0 %
Total Lumen Output: 1072 Lumens	
Luminaire Efficacy: 86.7 Lumens/Watt	
CIE Type: Direct	
Spacing Criterion: 0.62 All Directions	
Center Beam Intensity: 2115 Candela	
Central Cone Intensity: 2088 Candela	
Beam Flux: 550.9 Lumens	
Beam Angle 0-180: 39.2 Degrees	
Beam Angle 90-270: 39.2 Degrees	
Field Angle 0-180: 69.6 Degrees	
Field Angle 90-270: 69.6 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	2115	2115	2115	2115	2115	2115	2115	2115	2115	2115	2115	2115	2115	2115	2115	2115
1	2112	2112	2112	2112	2112	2112	2112	2112	2112	2112	2112	2112	2112	2112	2112	2112
2	2103	2103	2103	2103	2103	2103	2103	2103	2103	2103	2103	2103	2103	2103	2103	2103
3	2087	2087	2087	2087	2087	2087	2087	2087	2087	2087	2087	2087	2087	2087	2087	2087
4	2067	2067	2067	2067	2067	2067	2067	2067	2067	2067	2067	2067	2067	2067	2067	2067
5	2039	2039	2039	2039	2039	2039	2039	2039	2039	2039	2039	2039	2039	2039	2039	2039
6	2002	2002	2002	2002	2002	2002	2002	2002	2002	2002	2002	2002	2002	2002	2002	2002
7	1959	1959	1959	1959	1959	1959	1959	1959	1959	1959	1959	1959	1959	1959	1959	1959
8	1907	1907	1907	1907	1907	1907	1907	1907	1907	1907	1907	1907	1907	1907	1907	1907
9	1844	1844	1844	1844	1844	1844	1844	1844	1844	1844	1844	1844	1844	1844	1844	1844
10	1770	1770	1770	1770	1770	1770	1770	1770	1770	1770	1770	1770	1770	1770	1770	1770
11	1692	1692	1692	1692	1692	1692	1692	1692	1692	1692	1692	1692	1692	1692	1692	1692
12	1612	1612	1612	1612	1612	1612	1612	1612	1612	1612	1612	1612	1612	1612	1612	1612
13	1533	1533	1533	1533	1533	1533	1533	1533	1533	1533	1533	1533	1533	1533	1533	1533
14	1457	1457	1457	1457	1457	1457	1457	1457	1457	1457	1457	1457	1457	1457	1457	1457
15	1381	1381	1381	1381	1381	1381	1381	1381	1381	1381	1381	1381	1381	1381	1381	1381
16	1307	1307	1307	1307	1307	1307	1307	1307	1307	1307	1307	1307	1307	1307	1307	1307
17	1237	1237	1237	1237	1237	1237	1237	1237	1237	1237	1237	1237	1237	1237	1237	1237
18	1166	1166	1166	1166	1166	1166	1166	1166	1166	1166	1166	1166	1166	1166	1166	1166
19	1097	1097	1097	1097	1097	1097	1097	1097	1097	1097	1097	1097	1097	1097	1097	1097
20	1029	1029	1029	1029	1029	1029	1029	1029	1029	1029	1029	1029	1029	1029	1029	1029
25	700	700	700	700	700	700	700	700	700	700	700	700	700	700	700	700
30	419	419	419	419	419	419	419	419	419	419	419	419	419	419	419	419
35	205	205	205	205	205	205	205	205	205	205	205	205	205	205	205	205
40	91	91	91	91	91	91	91	91	91	91	91	91	91	91	91	91
45	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41
50	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20
55	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
60	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
65	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
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	1307	1307	1307	1307	1276	1276	1276	1276	1246	1246	1246	1246
1	1250	1220	1193	1168	1223	1196	1171	1150	1197	1173	1151	1131
2	1194	1142	1099	1063	1170	1123	1084	1051	1147	1105	1069	1039
3	1141	1073	1021	980	1119	1057	1010	972	1099	1043	999	964
4	1090	1011	954	911	1071	999	946	906	1053	987	938	900
5	1043	956	896	853	1025	946	890	849	1009	936	884	845
6	998	906	845	802	982	897	840	800	967	889	836	797
7	955	860	800	758	941	853	796	756	928	846	792	754
8	916	819	759	718	903	813	756	717	891	807	753	716
9	879	781	722	683	867	776	720	682	857	771	717	681
10	844	746	689	651	834	742	687	650	824	738	685	649

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	1191	1191	1191	1191	1140	1140	1140	1094	1094	1094	1072
1	1148	1130	1112	1097	1090	1076	1064	1053	1043	1033	1015
2	1104	1071	1042	1017	1039	1016	995	1010	991	975	958
3	1061	1015	979	949	990	960	934	967	941	920	904
4	1019	965	923	890	944	908	880	924	895	870	855
5	979	917	872	838	900	861	831	884	851	824	809
6	940	874	827	792	859	818	786	846	810	781	767
7	904	833	785	750	821	778	746	810	772	743	729
8	869	796	747	713	786	742	710	776	736	707	694
9	837	761	713	679	752	708	676	744	704	674	662
10	806	729	681	647	722	677	646	714	674	644	632

Average Luminance Table (cd/m²)

		Horizontal Angle (Degrees)		
		0	45	90
Vertical Angle (Degree)	0	552000	552000	552000
	45	15010	15010	15010
	55	5430	5430	5430
	65	1986	1986	1986
	75	0	0	0
	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	49.7	45-50	11.7	90-95	0	135-140	0
5-10	136.7	50-55	6.8	95-100	0	140-145	0
10-15	185.3	55-60	4.2	100-105	0	145-150	0
15-20	196.9	60-65	2.3	105-110	0	150-155	0
20-25	179.6	65-70	1.0	110-115	0	155-160	0
25-30	140.2	70-75	0.1	115-120	0	160-165	0
30-35	88.2	75-80	0	120-125	0	165-170	0
35-40	46.3	80-85	0	125-130	0	170-175	0
40-45	22.8	85-90	0	130-135	0	175-180	0

Polar Plot (Candela)

