



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

Photometric Indoor Test Report

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

Prepared For
Renova Lighting Systems Inc
Rick Edwards
20 Middlesex Road
Mansfield, MA 02048-1828
United States

Catalog Number
GLT4-MS-L83-UNV-2/48DM-W72-C50-CA-B6CLRBKT01
Project Number
10542601
Test Number
795084

Test Date

2014-10-23

Prepared By

Derek Smarr

Derek Smarr, Technician

Approved By

Jeff A. Smith Jr

Jeff Smith Jr., Project Handler

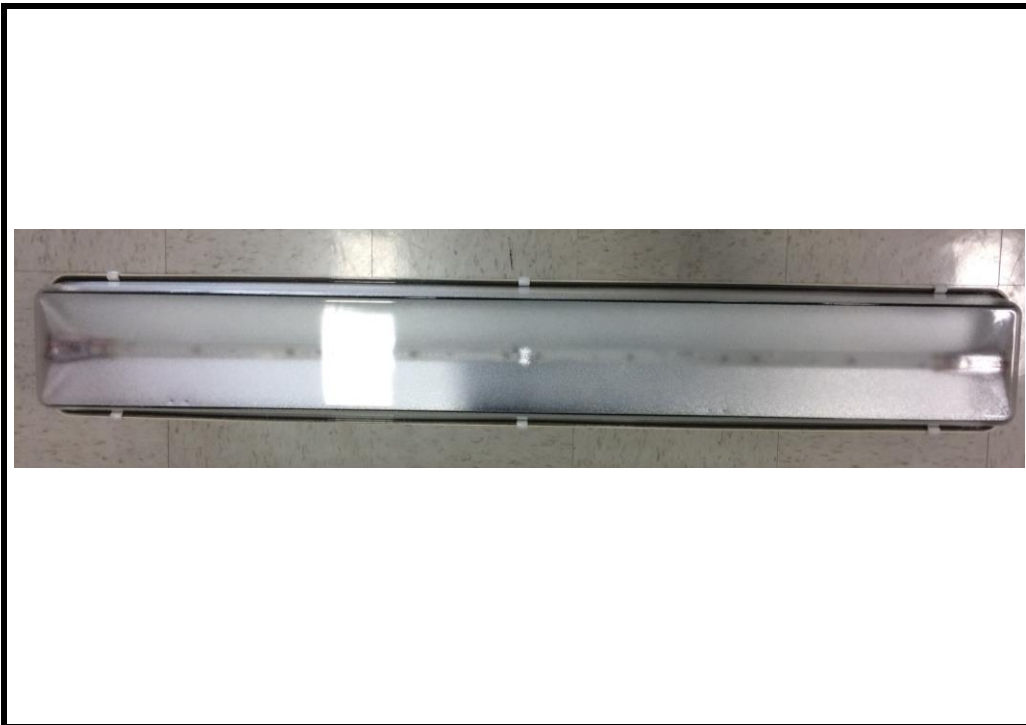
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Luminaire Description: White plastic housing, specular aluminum reflectors, patterned plastic enclosure
Catalog Number: GLT4-MS-L83-UNV-2/48DM-W72-C50-CA-B6CLRBKT01
Lamp: 360 white LEDs, three rows with 120 LEDs each
Mounting: Pendant
Ballast/Driver: Two Osram Optotronic OT48W/PRG2000C/UNV/DIM/L

Luminaire

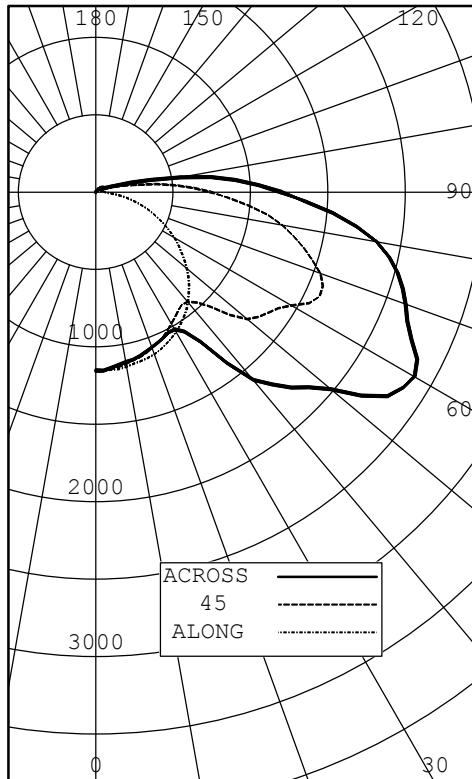


Test Conditions

Test Temperature:	25.4 °C
Voltage:	120.0 VAC
Current:	0.6044 A
Power:	72.16 W
Power Factor:	0.995
Frequency:	60 Hz
Current THD:	7.74 %



INTENSITY (CANDLEPOWER) SUMMARY OUTPUT LUMENS



ANGLE	ALONG	22.5	45	67.5	ACROSS	OUTPUT LUMENS
0	1154	1154	1154	1154	1154	
5	1155	1161	1151	1149	1141	111
15	1131	1123	1106	1106	1098	313
25	1081	1056	1032	1039	1039	482
35	990	943	931	1060	1182	645
45	852	797	1048	1618	1787	930
55	677	726	1360	2037	2300	1249
65	488	794	1596	2141	2252	1444
75	293	753	1391	1872	2019	1356
85	110	495	991	1406	1536	1008
90	58	352	743	1081	1197	
95	57	237	522	801	905	553
105	47	85	147	210	241	172
115	27	38	60	64	64	55
125	12	18	39	48	50	30
135	5	5	21	29	31	14
145	2	1	7	15	16	5
155	1	0	0	3	4	1
165	0	0	0	0	0	0
175	0	0	0	0	0	0
180	0	0	0	0	0	0

ZONAL LUMENS AND PERCENTAGES

ZONE	LUMENS	% LUMINAIRE
0-30	906	10.83
0-40	1551	18.54
0-60	3730	44.56
0-90	7538	90.07
40-90	5987	71.54
60-90	3809	45.51
90-180	831	9.93
0-180	8369	100.00

EFFICACY (LUMENS PER WATT): 115.9

*** THIS IS AN ABSOLUTE TEST ***

LUMINOUS LENGTH: 48.500 INS
 WIDTH: 6.250 INS

LUMINANCE SUMMARY CD./SQ.M.

S/MH: 2.2
 SC (ALONG): 1.3, SC (ACROSS): 2.2

ANGLE	ALONG	45	ACROSS
45	5829	5628	9010
55	5582	8104	12638
65	5261	11050	14073
75	4775	11900	15158
85	3899	11628	15008

TESTED IN ACCORDANCE WITH IES PROCEDURES.



INTENSITY (CANDLEPOWER) DATA

ANGLE	PLANE						OUTPUT LUMENS
	ALONG	22.5	45	67.5	ACROSS	AVERAGE	
0	1154	1154	1154	1154	1154	1154	
5	1155	1161	1151	1149	1141	1152	111
10	1148	1145	1130	1125	1117	1133	
15	1131	1123	1106	1106	1098	1112	313
20	1114	1096	1071	1073	1068	1083	
25	1081	1056	1032	1039	1039	1047	482
30	1042	1008	981	1004	1025	1007	
35	990	943	931	1060	1182	1005	645
40	927	868	928	1371	1585	1106	
45	852	797	1048	1618	1787	1196	930
50	768	744	1278	1766	1983	1291	
55	677	726	1360	2037	2300	1403	1249
60	585	747	1464	2179	2378	1468	
65	488	794	1596	2141	2252	1475	1444
70	390	771	1546	1995	2131	1393	
75	293	753	1391	1872	2019	1293	1356
80	199	647	1221	1699	1843	1147	
85	110	495	991	1406	1536	929	1008
90	58	352	743	1081	1197	701	
95	57	237	522	801	905	510	553
100	54	143	286	466	558	300	
105	47	85	147	210	241	146	172
110	37	54	84	100	107	78	
115	27	38	60	64	64	52	55
120	18	27	49	56	57	42	
125	12	18	39	48	50	34	30
130	8	10	29	38	40	25	
135	5	5	21	29	31	18	14
140	3	2	14	21	23	13	
145	2	1	7	15	16	8	5
150	1	1	2	8	10	4	
155	1	0	0	3	4	1	1
160	0	0	0	0	0	0	
165	0	0	0	0	0	0	0
170	0	0	0	0	0	0	
175	0	0	0	0	0	0	0
180	0	0	0	0	0	0	



COEFFICIENTS OF UTILIZATION

ZONAL CAVITY METHOD

EFFECTIVE FLOOR CAVITY REFLECTANCE = .20

CC WALL	90				80				70				50				30				10				0
	70	50	30	10	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0
RCR	0	1.211	.211	.211	.21	1.171	.171	.171	.17	1.131	.131	.131	.13	1.061	.061	.06	0.990	.990	.99	0.930	.930	.93	0.90		
	1	1.050	.970	.900	.84	1.010	.940	.870	.82	0.970	.900	.850	.79	0.840	.790	.75	0.780	.740	.71	0.730	.700	.67	0.64		
	2	0.930	.810	.710	.62	0.890	.780	.690	.61	0.850	.750	.660	.59	0.690	.620	.56	0.640	.590	.53	0.600	.550	.51	0.48		
	3	0.830	.680	.570	.48	0.790	.660	.550	.47	0.750	.630	.540	.46	0.590	.500	.44	0.540	.470	.42	0.500	.440	.39	0.36		
	4	0.750	.590	.470	.39	0.720	.570	.460	.38	0.680	.550	.450	.37	0.510	.420	.36	0.470	.400	.34	0.440	.380	.32	0.30		
	5	0.680	.510	.400	.32	0.650	.490	.390	.31	0.620	.480	.380	.30	0.440	.360	.29	0.410	.330	.28	0.380	.320	.26	0.24		
	6	0.620	.450	.340	.26	0.590	.430	.330	.26	0.560	.420	.320	.25	0.390	.300	.24	0.360	.290	.23	0.340	.270	.22	0.19		
	7	0.560	.400	.290	.22	0.540	.380	.280	.22	0.520	.370	.280	.21	0.340	.260	.20	0.320	.240	.19	0.300	.230	.18	0.16		
	8	0.520	.360	.260	.19	0.500	.340	.250	.18	0.480	.330	.240	.18	0.310	.230	.17	0.290	.220	.16	0.270	.200	.16	0.13		
	9	0.480	.320	.220	.16	0.460	.310	.220	.16	0.440	.300	.210	.15	0.280	.200	.15	0.260	.190	.14	0.250	.180	.13	0.11		
	10	0.440	.290	.200	.14	0.430	.280	.190	.14	0.410	.270	.190	.13	0.260	.180	.13	0.240	.170	.12	0.230	.160	.12	0.10		

THE ABOVE COEFFICIENTS HAVE BEEN CALCULATED BASED ON LUMINAIRE LUMENS
 BECAUSE IN AN ABSOLUTE TEST THE BARE LAMP LUMENS ARE UNKNOWN.
 LIGHTING DESIGN CALCULATIONS MADE USING THESE COEFFICIENTS SHOULD
 THEREFORE USE THE LUMINAIRE LUMENS IN THE CALCULATION FORMULA

LABORATORY RESULTS MAY NOT BE REPRESENTATIVE OF FIELD PERFORMANCE.
 BALLAST AND FIELD FACTORS HAVE NOT BEEN APPLIED.

TEST DISTANCE EXCEEDS FIVE TIMES THE GREATEST
 LUMINOUS OPENING OF LUMINAIRE.

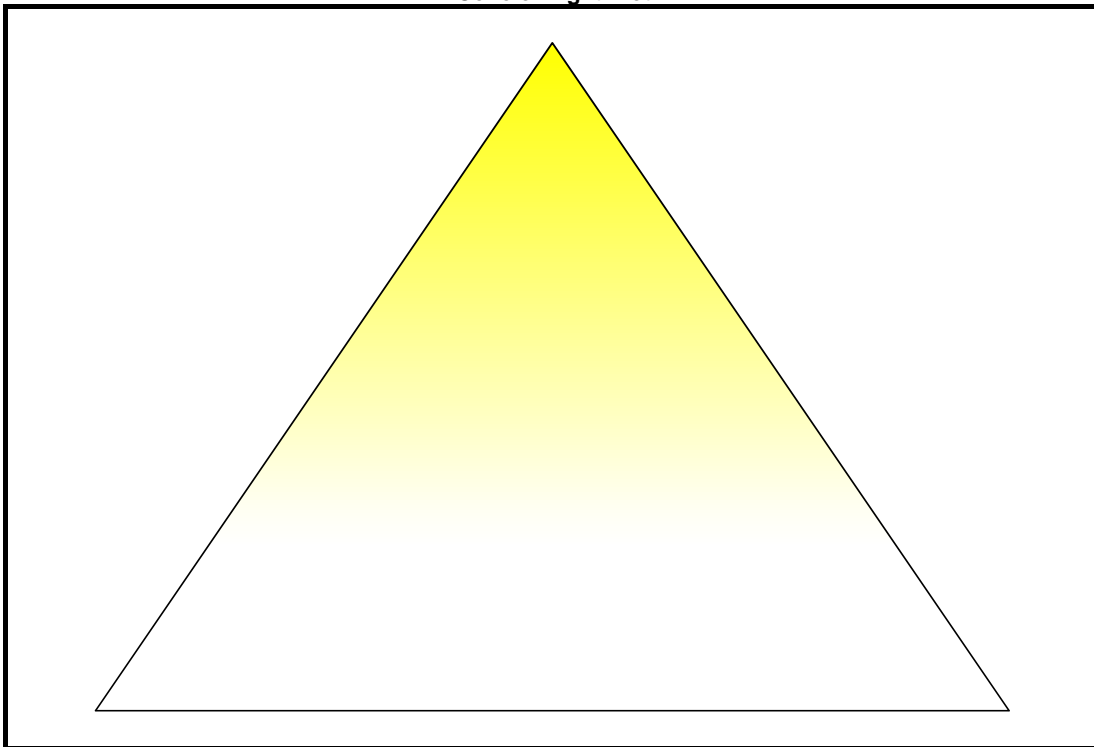


Cone of Light

Cone of Light Tabulation

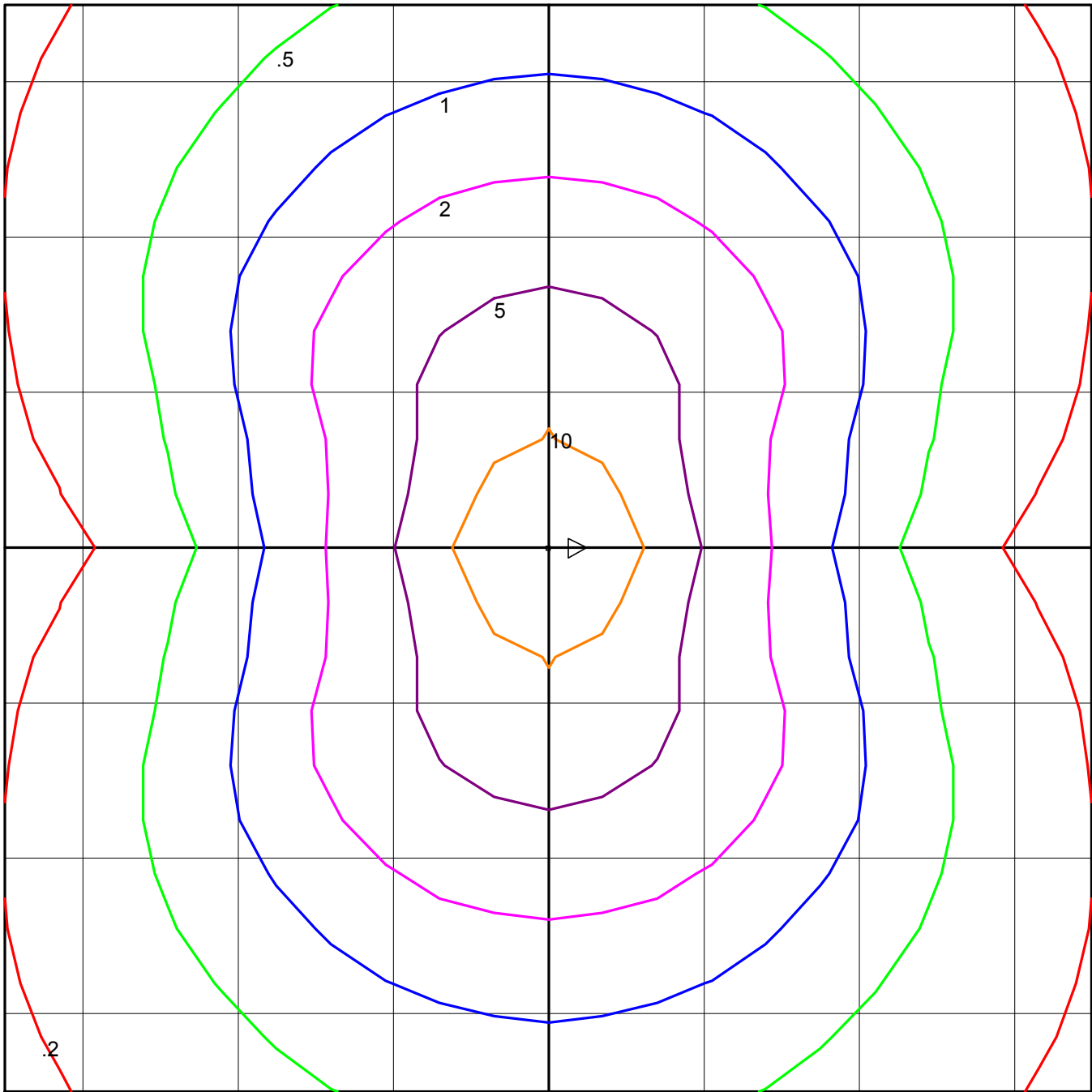
Mounting Height (Feet)	Footcandles at Nadir	Diameter (Feet)
4.00	72.1	5.37
6.00	32.0	8.05
8.00	18.0	10.7
10.0	11.5	13.4
12.0	8.01	16.1
14.0	5.88	18.8
16.0	4.50	21.5

Cone of Light Plot





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Horizontal Footcandles
Scale: 1 Inch = 8 Ft.
Mounting Height = 8.00 Ft.
Maximum Calculated Value = 18.03 Fc