



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

Catalog Number
L-KVN22-WN-L30-UNV-30DM-W25-088-C40-AF
Project Number
10567046
Test Number
831503

Test Date

2014-11-26

Prepared By

Derek Smarr

Derek Smarr, Technician

Approved By

Jeff A. Smith Jr

Jeff Smith Jr., Project Handler

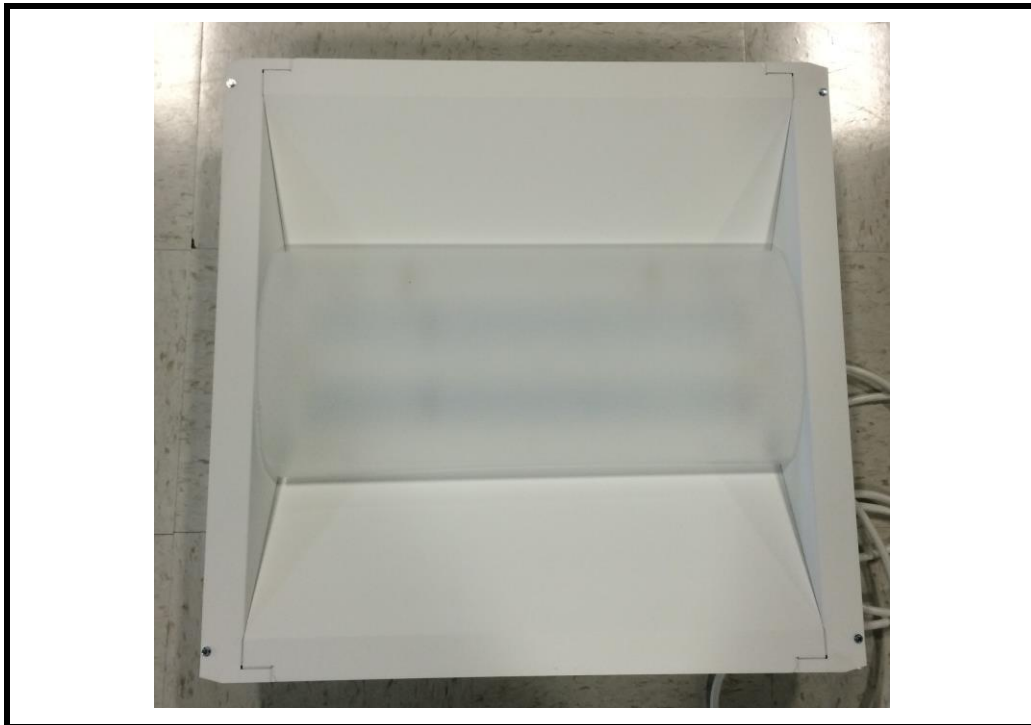
The results contained in this report pertain only to the tested sample.
This report shall not be reproduced, except in full, without written approval of Underwriters Laboratories.



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

Luminaire Description: Retrofit kit tested in Lithonia 2GT8 reference troffer. Formed white enamel steel housing, white enamel steel reflector, frosted plastic lens
Catalog Number: L-KVN22-WN-L30-UNV-30DM-W25-088-C40-AF
Lamp: 88 white LEDs
Mounting: Recessed
Ballast/Driver: One Osram Optotronic OT30W/PRG1050C/UNV/DIM/L

Luminaire

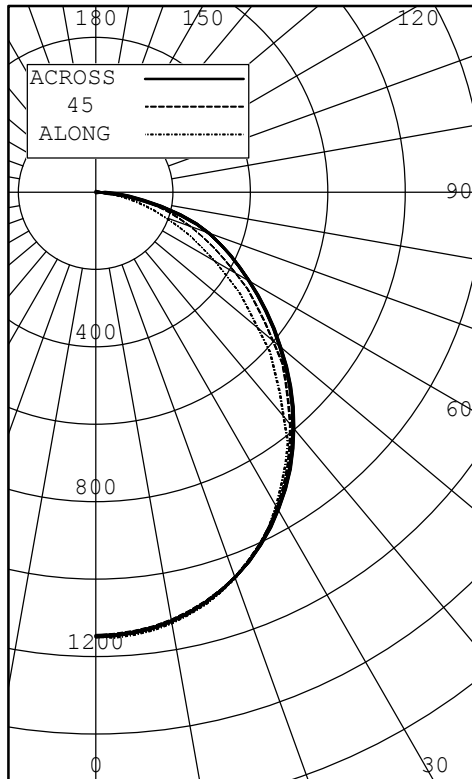


Test Conditions

Test Temperature:	25.2 °C
Voltage:	120.0 VAC
Current:	0.2112 A
Power:	25.25 W
Power Factor:	0.996
Frequency:	60 Hz
Current THD:	5.13 %



INTENSITY (CANDLEPOWER) SUMMARY OUTPUT LUMENS



ANGLE	ALONG	22.5	45	67.5	ACROSS	OUTPUT LUMENS
0	1148	1148	1148	1148	1148	
5	1148	1141	1139	1143	1143	110
10	1132	1125	1123	1126	1126	
15	1103	1096	1095	1098	1098	309
20	1060	1055	1055	1059	1058	
25	1004	1001	1002	1008	1007	461
30	934	933	938	945	945	
35	856	853	864	873	874	539
40	755	773	781	793	795	
45	653	666	694	707	710	530
50	549	575	597	618	623	
55	454	468	504	531	538	447
60	355	376	416	448	458	
65	271	291	335	373	383	329
70	194	218	261	300	313	
75	129	152	194	222	227	196
80	74	95	123	129	127	
85	29	40	52	55	54	54
90	0	0	0	0	0	

ZONAL LUMENS AND PERCENTAGES

ZONE	LUMENS	% LUMINAIRE
0-30	880	29.58
0-40	1419	47.70
0-60	2396	80.54
0-90	2975	100.00
40-90	1556	52.30
60-90	579	19.46
90-180	0	0.00
0-180	2975	100.00

EFFICACY (LUMENS PER WATT): 118.1

*** THIS IS AN ABSOLUTE TEST ***

LUMINOUS LENGTH: 20.750 INS
 WIDTH: 20.750 INS

LUMINANCE SUMMARY CD./SQ.M.

S/MH: 1.2
 SC: 1.2

ANGLE	ALONG	45	ACROSS
45	3324	3545	3629
55	2849	3178	3389
65	2310	2866	3276
75	1799	2697	3173
85	1185	2143	2247

TESTED IN ACCORDANCE WITH IES PROCEDURES.



INTENSITY (CANDLEPOWER) DATA
 IN 2.5 DEGREE STEPS

ANGLE	PLANE						OUTPUT LUMENS
	ALONG	22.5	45	67.5	ACROSS	AVERAGE	
0.0	1148	1148	1148	1148	1148	1148	
2.5	1152	1145	1143	1147	1147	1146	
5.0	1148	1141	1139	1143	1143	1142	110
7.5	1141	1134	1133	1136	1136	1135	
10.0	1132	1125	1123	1126	1126	1126	
12.5	1119	1112	1110	1114	1114	1113	
15.0	1103	1096	1095	1098	1098	1097	309
17.5	1083	1077	1076	1080	1079	1078	
20.0	1060	1055	1055	1059	1058	1057	
22.5	1035	1029	1030	1035	1034	1032	
25.0	1004	1001	1002	1008	1007	1004	461
27.5	971	969	972	978	977	973	
30.0	934	933	938	945	945	939	
32.5	894	894	902	910	910	902	
35.0	856	853	864	873	874	864	539
37.5	817	819	824	834	835	825	
40.0	755	773	781	793	795	781	
42.5	705	715	737	750	753	733	
45.0	653	666	694	707	710	687	530
47.5	611	616	655	663	667	643	
50.0	549	575	597	618	623	594	
52.5	497	517	550	574	580	545	
55.0	454	468	504	531	538	500	447
57.5	399	427	466	489	497	458	
60.0	355	376	416	448	458	412	
62.5	310	338	374	409	420	372	
65.0	271	291	335	373	383	332	329
67.5	231	253	297	335	348	294	
70.0	194	218	261	300	313	258	
72.5	162	184	227	263	274	223	
75.0	129	152	194	222	227	187	196
77.5	101	123	160	176	176	149	
80.0	74	95	123	129	127	112	
82.5	50	68	86	88	87	78	
85.0	29	40	52	55	54	47	54
87.5	11	15	21	25	26	20	
90.0	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	1.221	.221	.221	.22	1.191	.191	.191	.19	1.161	.161	.161	.16	1.111	.111	.111	.11	1.061	.061	.061	.06	1.021	.021	.021	.02	1.00
	1	1.121	.071	.031	.00	1.101	.051	.020	.98	1.071	.031	.000	.96	0.990	.960	.93	0.950	.930	.90	0.920	.900	.88	0.86			
	2	1.030	.960	.890	.83	1.010	.940	.880	.82	0.990	.920	.860	.81	0.880	.830	.79	0.850	.810	.78	0.820	.790	.76	0.74			
	3	0.950	.840	.770	.70	0.930	.830	.760	.70	0.900	.820	.750	.69	0.790	.730	.68	0.760	.710	.67	0.740	.690	.66	0.64			
	4	0.880	.760	.670	.61	0.860	.750	.670	.61	0.840	.740	.660	.60	0.710	.650	.59	0.690	.630	.59	0.670	.620	.58	0.56			
	5	0.810	.680	.590	.53	0.790	.670	.590	.52	0.770	.660	.580	.52	0.640	.570	.52	0.620	.560	.51	0.600	.550	.51	0.49			
	6	0.750	.610	.530	.46	0.730	.600	.520	.46	0.710	.590	.510	.46	0.580	.510	.45	0.560	.500	.45	0.550	.490	.44	0.43			
	7	0.690	.550	.460	.41	0.670	.540	.460	.40	0.660	.540	.460	.40	0.520	.450	.40	0.500	.440	.39	0.490	.430	.39	0.37			
	8	0.640	.500	.420	.36	0.630	.490	.410	.36	0.610	.490	.410	.35	0.470	.400	.35	0.460	.400	.35	0.450	.390	.35	0.33			
	9	0.590	.460	.370	.31	0.580	.450	.370	.31	0.570	.440	.370	.31	0.430	.360	.31	0.420	.360	.31	0.410	.350	.31	0.29			
	10	0.550	.420	.330	.28	0.540	.410	.330	.28	0.530	.410	.330	.28	0.400	.330	.28	0.390	.320	.28	0.380	.320	.27	0.26			

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

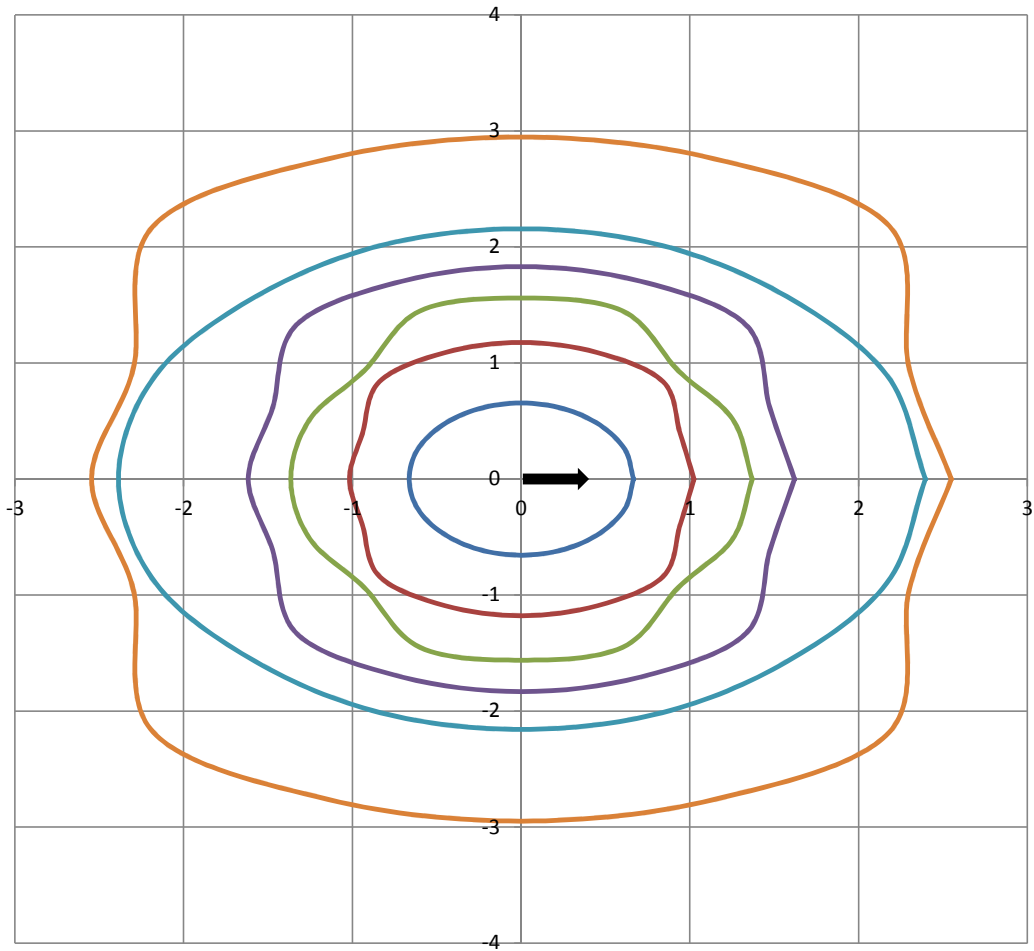
LABORATORY RESULTS MAY NOT BE REPRESENTATIVE OF FIELD PERFORMANCE.
 BALLAST AND FIELD FACTORS HAVE NOT BEEN APPLIED.

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



ISOFootcandle Plot

Mounting Height - 10 Feet



Grid Lines in Units of Mounting Height





Cone of Light

Cone of Light Tabulation

Mounting Height (Feet)	Footcandles at Nadir	Diameter (Feet)
4.00	71.7	4.87
6.00	31.9	7.30
8.00	17.9	9.74
10.0	11.5	12.2
12.0	7.97	14.6
14.0	5.85	17.0
16.0	4.48	19.5

Cone of Light Plot

