



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-KVN24-WN-L40-UNV-30DM-W31-208-C35-AF
Project Number
10567046
Test Number
831511

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.
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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-KVN24-WN-L40-UNV-30DM-W31-208-C35-AF
Lamp: 208 white LEDs
Mounting: Recessed
Ballast/Driver: One Osram Optotronic OT30W/PRG1050C/UNV/DIM/L

Luminaire



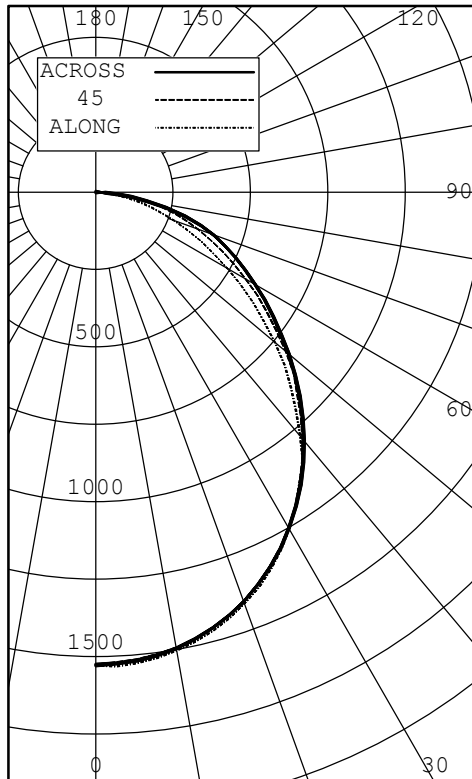
Test Conditions

Test Temperature:	24.9 °C
Voltage:	120.0 VAC
Current:	0.2649 A
Power:	31.69 W
Power Factor:	0.997
Frequency:	60 Hz
Current THD:	5.85 %



INTENSITY (CANDLEPOWER) SUMMARY OUTPUT LUMENS

ANGLE	ALONG	22.5	45	67.5	ACROSS	OUTPUT LUMENS
0	1527	1527	1527	1527	1527	
5	1528	1519	1516	1520	1519	147
10	1505	1497	1494	1498	1496	
15	1468	1460	1457	1460	1458	411
20	1413	1406	1404	1406	1404	
25	1342	1335	1333	1336	1335	614
30	1252	1248	1249	1252	1250	
35	1146	1144	1149	1155	1154	717
40	1027	1042	1040	1047	1046	
45	891	900	920	931	932	706
50	755	777	802	813	815	
55	620	638	676	695	700	597
60	490	515	559	586	594	
65	376	401	451	485	497	440
70	272	302	353	392	406	
75	183	213	265	294	300	265
80	105	136	171	173	170	
85	43	64	75	72	72	77
90	0	0	0	0	0	



ZONAL LUMENS AND PERCENTAGES

ZONE	LUMENS	% LUMINAIRE
0-30	1171	29.47
0-40	1888	47.52
0-60	3192	80.32
0-90	3974	100.00
40-90	2086	52.48
60-90	782	19.68
90-180	0	0.00
0-180	3974	100.00

EFFICACY (LUMENS PER WATT): 125.4

*** THIS IS AN ABSOLUTE TEST ***

LUMINOUS LENGTH: 44.750 INS
 WIDTH: 20.750 INS

LUMINANCE SUMMARY CD./SQ.M.

S/MH: 1.2
 SC: 1.2

ANGLE	ALONG	45	ACROSS
45	2104	2181	2207
55	1804	1973	2043
65	1486	1787	1968
75	1178	1710	1943
85	832	1430	1388

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	1527	1527	1527	1527	1527	1527	
2.5	1533	1524	1521	1526	1524	1525	
5.0	1528	1519	1516	1520	1519	1520	147
7.5	1518	1510	1507	1511	1509	1510	
10.0	1505	1497	1494	1498	1496	1497	
12.5	1488	1480	1478	1481	1479	1481	
15.0	1468	1460	1457	1460	1458	1460	411
17.5	1442	1436	1432	1435	1434	1435	
20.0	1413	1406	1404	1406	1404	1406	
22.5	1380	1373	1371	1374	1371	1373	
25.0	1342	1335	1333	1336	1335	1336	614
27.5	1300	1293	1292	1295	1295	1295	
30.0	1252	1248	1249	1252	1250	1250	
32.5	1202	1198	1201	1205	1203	1201	
35.0	1146	1144	1149	1155	1154	1149	717
37.5	1100	1087	1096	1102	1102	1096	
40.0	1027	1042	1040	1047	1046	1041	
42.5	958	967	981	989	989	978	
45.0	891	900	920	931	932	916	706
47.5	828	835	868	872	873	856	
50.0	755	777	802	813	815	794	
52.5	684	704	736	753	756	728	
55.0	620	638	676	695	700	667	597
57.5	553	582	618	639	646	610	
60.0	490	515	559	586	594	550	
62.5	430	460	502	534	544	496	
65.0	376	401	451	485	497	443	440
67.5	321	352	400	438	451	394	
70.0	272	302	353	392	406	346	
72.5	225	255	308	346	358	300	
75.0	183	213	265	294	300	253	265
77.5	142	173	220	234	234	204	
80.0	105	136	171	173	170	154	
82.5	72	101	121	118	117	109	
85.0	43	64	75	72	72	67	77
87.5	19	28	32	32	33	30	
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	.030	.99	1.101	.051	.010	.98	1.071	.031	.000	.96	0.990	.960	.93	0.950	.930	.90	0.910	.890	.88	0.86			
	2	1.030	.950	.890	.83	1.010	.940	.870	.82	0.990	.920	.860	.81	0.880	.830	.79	0.850	.810	.77	0.820	.790	.76	0.74			
	3	0.950	.840	.760	.70	0.930	.830	.750	.70	0.900	.810	.750	.69	0.790	.730	.68	0.760	.710	.67	0.730	.690	.65	0.63			
	4	0.880	.760	.670	.61	0.860	.750	.670	.60	0.840	.730	.660	.60	0.710	.640	.59	0.690	.630	.58	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	.50	0.48			
	6	0.750	.610	.520	.46	0.730	.600	.520	.46	0.710	.590	.510	.46	0.580	.510	.45	0.560	.500	.45	0.540	.490	.44	0.42			
	7	0.690	.550	.460	.41	0.670	.540	.460	.40	0.660	.530	.450	.40	0.520	.450	.40	0.500	.440	.39	0.490	.430	.39	0.37			
	8	0.640	.500	.420	.36	0.620	.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	.400	.330	.28	0.390	.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

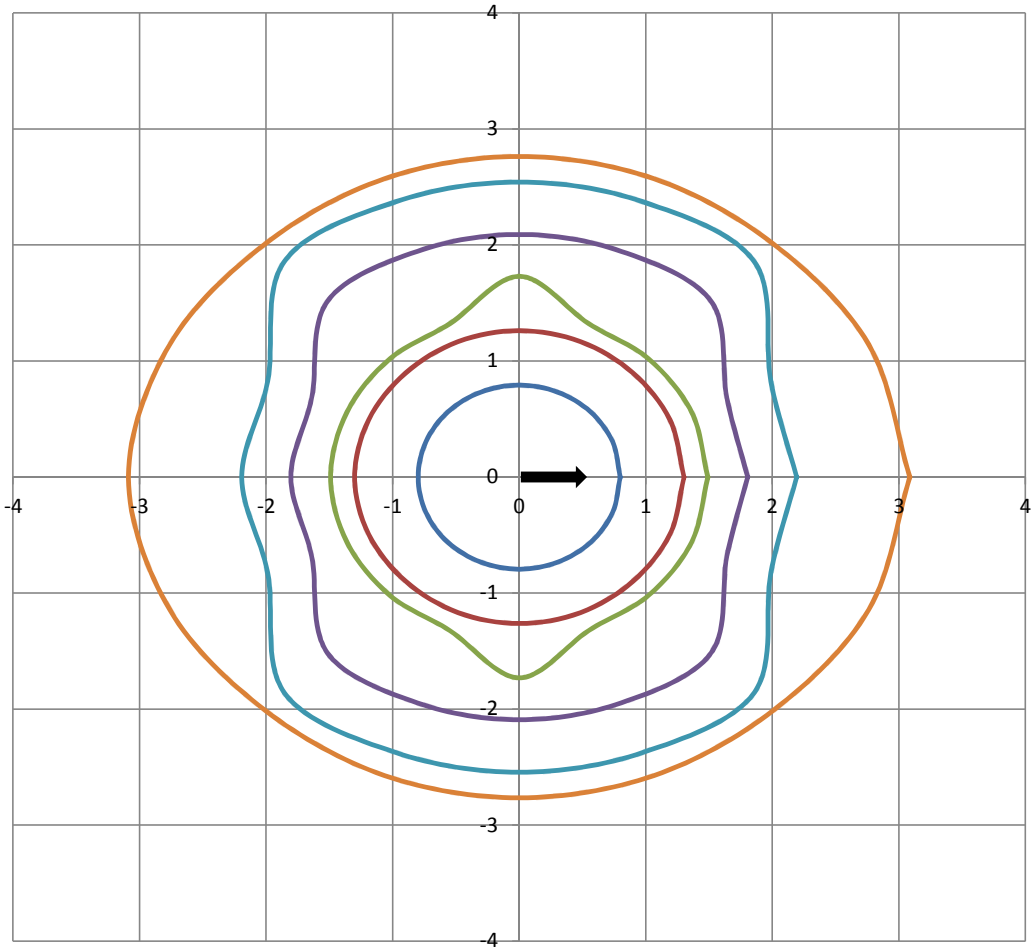
LABORATORY RESULTS MAY NOT BE REPRESENTATIVE OF FIELD PERFORMANCE.
 BALLAST AND FIELD FACTORS HAVE NOT BEEN APPLIED.

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	95.3	4.87
6.00	42.4	7.31
8.00	23.8	9.74
10.0	15.3	12.2
12.0	10.6	14.6
14.0	7.78	17.0
16.0	5.96	19.5

Cone of Light Plot

