



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-C40-AF
Project Number
10567046
Test Number
831515

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-C40-AF
Lamp: 208 white LEDs
Mounting: Recessed
Ballast/Driver: One Osram Optotronic OT30W/PRG1050C/UNV/DIM/L

Luminaire



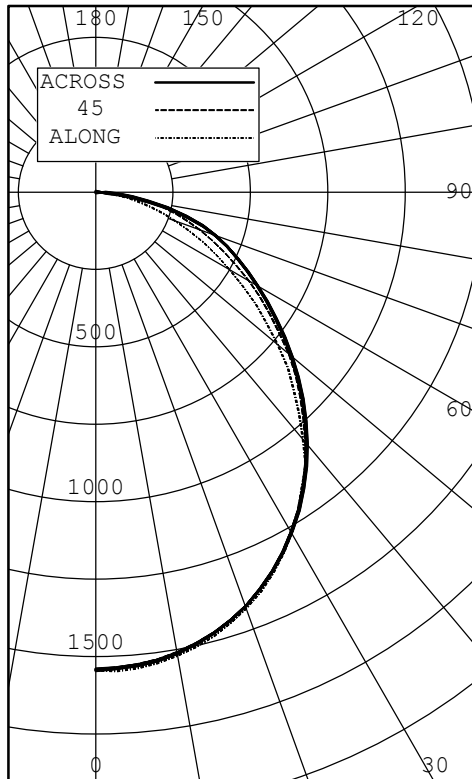
Test Conditions

Test Temperature:	24.8 °C
Voltage:	120.0 VAC
Current:	0.2629 A
Power:	31.44 W
Power Factor:	0.997
Frequency:	60 Hz
Current THD:	5.80 %



INTENSITY (CANDLEPOWER) SUMMARY OUTPUT LUMENS

ANGLE	ALONG	22.5	45	67.5	ACROSS	OUTPUT LUMENS
0	1543	1543	1543	1543	1543	
5	1544	1535	1532	1536	1535	148
10	1521	1513	1510	1514	1513	
15	1484	1476	1473	1476	1475	415
20	1429	1422	1420	1422	1421	
25	1358	1351	1349	1353	1351	621
30	1268	1263	1263	1268	1266	
35	1161	1159	1165	1170	1169	727
40	1042	1053	1053	1062	1061	
45	904	914	934	945	945	716
50	767	786	816	824	826	
55	632	650	686	706	711	607
60	499	524	570	595	603	
65	383	409	458	493	505	448
70	276	307	359	399	414	
75	184	216	269	300	306	270
80	107	139	175	177	174	
85	44	65	76	75	74	79
90	0	0	0	0	0	



ZONAL LUMENS AND PERCENTAGES

ZONE	LUMENS	% LUMINAIRE
0-30	1184	29.38
0-40	1911	47.41
0-60	3235	80.24
0-90	4031	100.00
40-90	2120	52.59
60-90	797	19.76
90-180	0	0.00
0-180	4031	100.00

EFFICACY (LUMENS PER WATT): 128.4

*** 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	2133	2213	2239
55	1838	2002	2076
65	1514	1816	2002
75	1185	1739	1978
85	846	1462	1421

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	1543	1543	1543	1543	1543	1543	
2.5	1549	1540	1538	1541	1540	1541	
5.0	1544	1535	1532	1536	1535	1536	148
7.5	1534	1526	1523	1527	1526	1527	
10.0	1521	1513	1510	1514	1513	1514	
12.5	1505	1497	1493	1497	1496	1497	
15.0	1484	1476	1473	1476	1475	1476	415
17.5	1459	1451	1448	1451	1449	1451	
20.0	1429	1422	1420	1422	1421	1422	
22.5	1396	1388	1387	1389	1388	1389	
25.0	1358	1351	1349	1353	1351	1352	621
27.5	1315	1310	1308	1312	1310	1310	
30.0	1268	1263	1263	1268	1266	1265	
32.5	1217	1213	1216	1220	1219	1217	
35.0	1161	1159	1165	1170	1169	1165	727
37.5	1115	1103	1111	1118	1116	1112	
40.0	1042	1053	1053	1062	1061	1055	
42.5	972	983	994	1004	1003	992	
45.0	904	914	934	945	945	929	716
47.5	841	848	877	884	885	868	
50.0	767	786	816	824	826	806	
52.5	695	718	748	764	768	740	
55.0	632	650	686	706	711	678	607
57.5	562	590	628	649	656	619	
60.0	499	524	570	595	603	560	
62.5	439	468	511	543	553	504	
65.0	383	409	458	493	505	451	448
67.5	327	356	407	446	459	400	
70.0	276	307	359	399	414	353	
72.5	230	259	313	353	365	306	
75.0	184	216	269	300	306	258	270
77.5	144	177	224	240	239	208	
80.0	107	139	175	177	174	158	
82.5	73	102	124	122	120	111	
85.0	44	65	76	75	74	69	79
87.5	19	29	33	34	34	31	
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	.930	.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	.69	0.900	.810	.740	.69	0.790	.730	.68	0.760	.710	.66	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	0.660	.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	.45	0.570	.500	.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	.440	.39	0.500	.440	.39	0.490	.430	.39	0.37			
8	0.640	.500	.420	.36	0.620	.490	.410	.35	0.610	.480	.410	.35	0.470	.400	.35	0.460	.390	.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	.350	.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	.320	.28	0.380	.320	.27	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

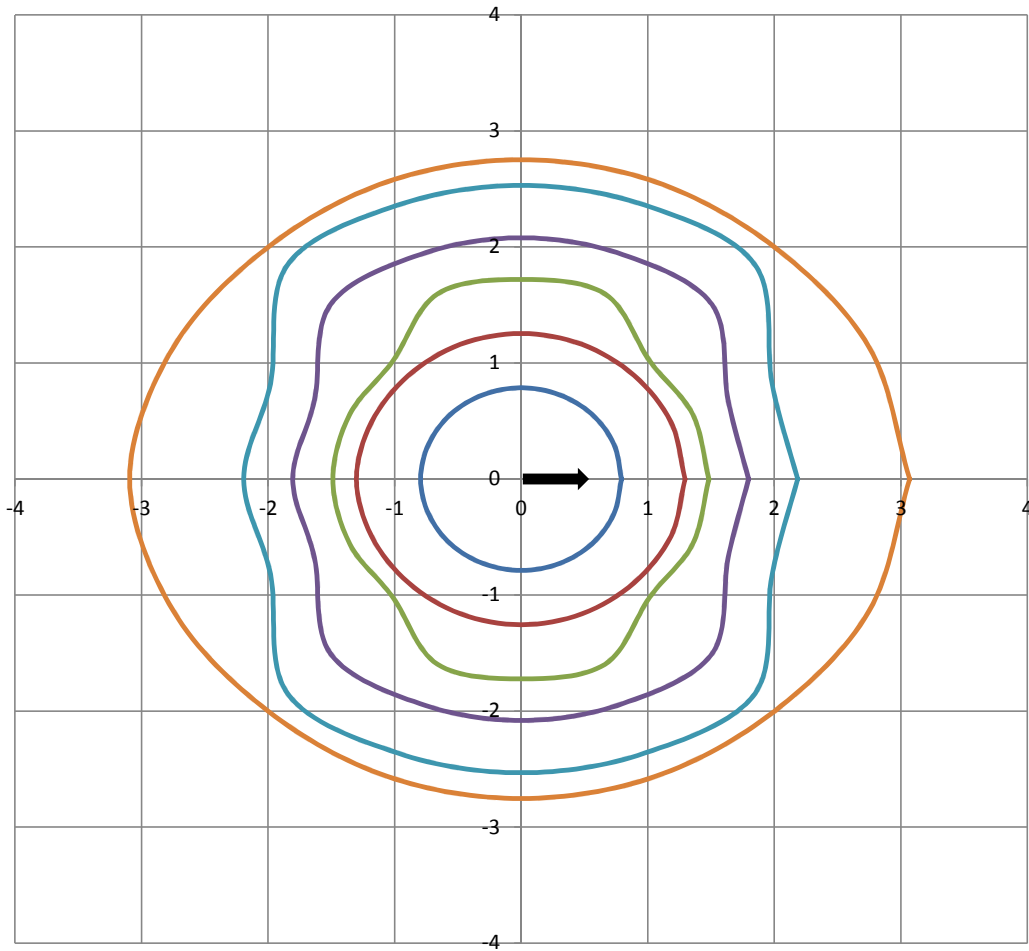
LABORATORY RESULTS MAY NOT BE REPRESENTATIVE OF FIELD PERFORMANCE.
 BALLAST AND FIELD FACTORS HAVE NOT BEEN APPLIED.

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	96.3	4.88
6.00	42.8	7.32
8.00	24.1	9.76
10.0	15.4	12.2
12.0	10.7	14.6
14.0	7.86	17.1
16.0	6.02	19.5

Cone of Light Plot

