



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-L30-UNV-30DM-W23-208-C40-AF  
Project Number  
10551935  
Test Number  
803985

Test Date

2014-11-03

Prepared By

A handwritten signature in black ink, appearing to read 'Todd'.

Todd Heiland, Technician

Approved By

A handwritten signature in black ink, appearing to read 'Jeff A. Smith Jr.'.

Jeff Smith Jr., Project Handler

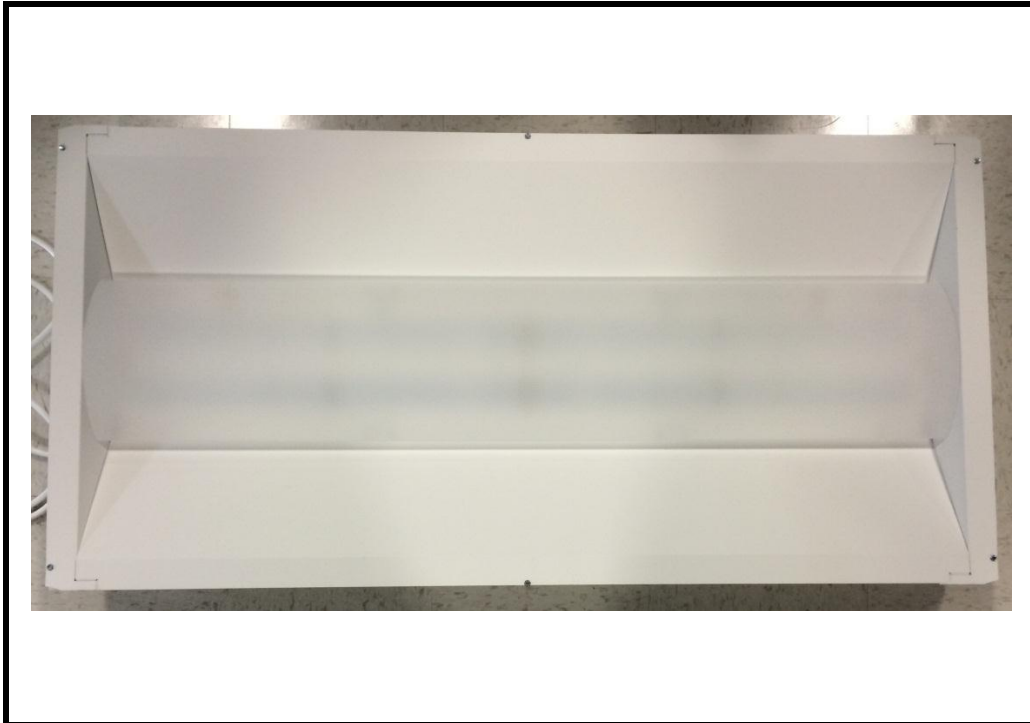
The results contained in this report pertain only to the tested sample.  
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Luminaire Description: Retrofit kit tested in Lithonia 2GT8 reference troffer. Formed white enamel steel housing, white enamel steel reflector, frosted plastic lens  
Catalog Number: L-KVN24-WN-L30-UNV-30DM-W23-208-C40-AF  
Lamp: 208 white LEDs  
Mounting: Recessed  
Ballast/Driver: One Osram Optotronic OT30W/PRG1050C/UNV/DIM/L

Luminaire



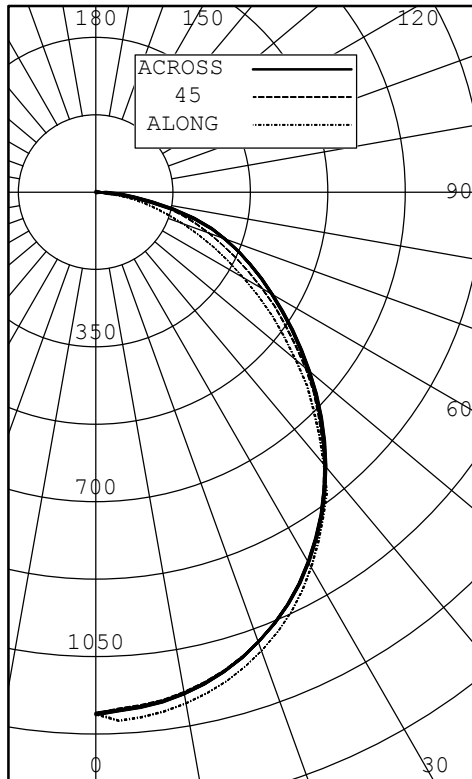
Test Conditions

Test Temperature:	24.5 °C
Voltage:	120.0 VAC
Current:	0.1981 A
Power:	23.68 W
Power Factor:	0.996
Frequency:	60 Hz
Current THD:	5.23 %



INTENSITY (CANDLEPOWER) SUMMARY OUTPUT LUMENS

ANGLE	ALONG	22.5	45	67.5	ACROSS	OUTPUT LUMENS
0	1180	1180	1180	1180	1180	
5	1192	1176	1166	1167	1169	113
10	1174	1159	1149	1150	1151	
15	1145	1130	1120	1120	1122	317
20	1102	1088	1080	1080	1081	
25	1046	1035	1027	1027	1028	474
30	976	968	963	963	964	
35	895	890	888	889	890	555
40	803	807	804	807	808	
45	697	700	713	718	720	547
50	591	603	620	627	630	
55	488	498	523	537	542	464
60	385	401	432	452	460	
65	296	312	349	374	385	341
70	212	235	273	302	314	
75	141	165	205	227	231	205
80	82	106	132	133	130	
85	34	49	57	55	55	59
90	0	0	0	0	0	



ZONAL LUMENS AND PERCENTAGES

ZONE	LUMENS	% LUMINAIRE
0-30	904	29.39
0-40	1459	47.45
0-60	2469	80.32
0-90	3075	100.00
40-90	1616	52.55
60-90	605	19.68
90-180	0	0.00
0-180	3075	100.00

EFFICACY (LUMENS PER WATT): 129.7

\*\*\* 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	1645	1689	1705
55	1420	1526	1583
65	1167	1383	1524
75	910	1320	1495
85	644	1092	1057

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	1180	1180	1180	1180	1180	1180	
2.5	1196	1180	1170	1171	1173	1176	
5.0	1192	1176	1166	1167	1169	1172	113
7.5	1185	1169	1159	1159	1162	1165	
10.0	1174	1159	1149	1150	1151	1155	
12.5	1161	1146	1136	1137	1138	1142	
15.0	1145	1130	1120	1120	1122	1126	317
17.5	1124	1110	1101	1101	1103	1107	
20.0	1102	1088	1080	1080	1081	1085	
22.5	1076	1063	1055	1055	1056	1060	
25.0	1046	1035	1027	1027	1028	1031	474
27.5	1014	1003	996	997	997	1000	
30.0	976	968	963	963	964	966	
32.5	937	930	927	927	928	929	
35.0	895	890	888	889	890	890	555
37.5	857	848	847	849	849	849	
40.0	803	807	804	807	808	806	
42.5	749	752	759	763	764	758	
45.0	697	700	713	718	720	710	547
47.5	648	651	669	672	675	663	
50.0	591	603	620	627	630	615	
52.5	537	549	570	582	586	565	
55.0	488	498	523	537	542	518	464
57.5	434	452	479	494	500	473	
60.0	385	401	432	452	460	427	
62.5	338	359	389	412	422	385	
65.0	296	312	349	374	385	344	341
67.5	251	274	310	338	349	305	
70.0	212	235	273	302	314	268	
72.5	176	199	238	267	276	232	
75.0	141	165	205	227	231	196	205
77.5	110	134	170	181	180	158	
80.0	82	106	132	133	130	119	
82.5	56	78	94	91	90	84	
85.0	34	49	57	55	55	51	59
87.5	14	21	23	23	23	21	
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	.06	1.021	.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	.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	.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	.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			

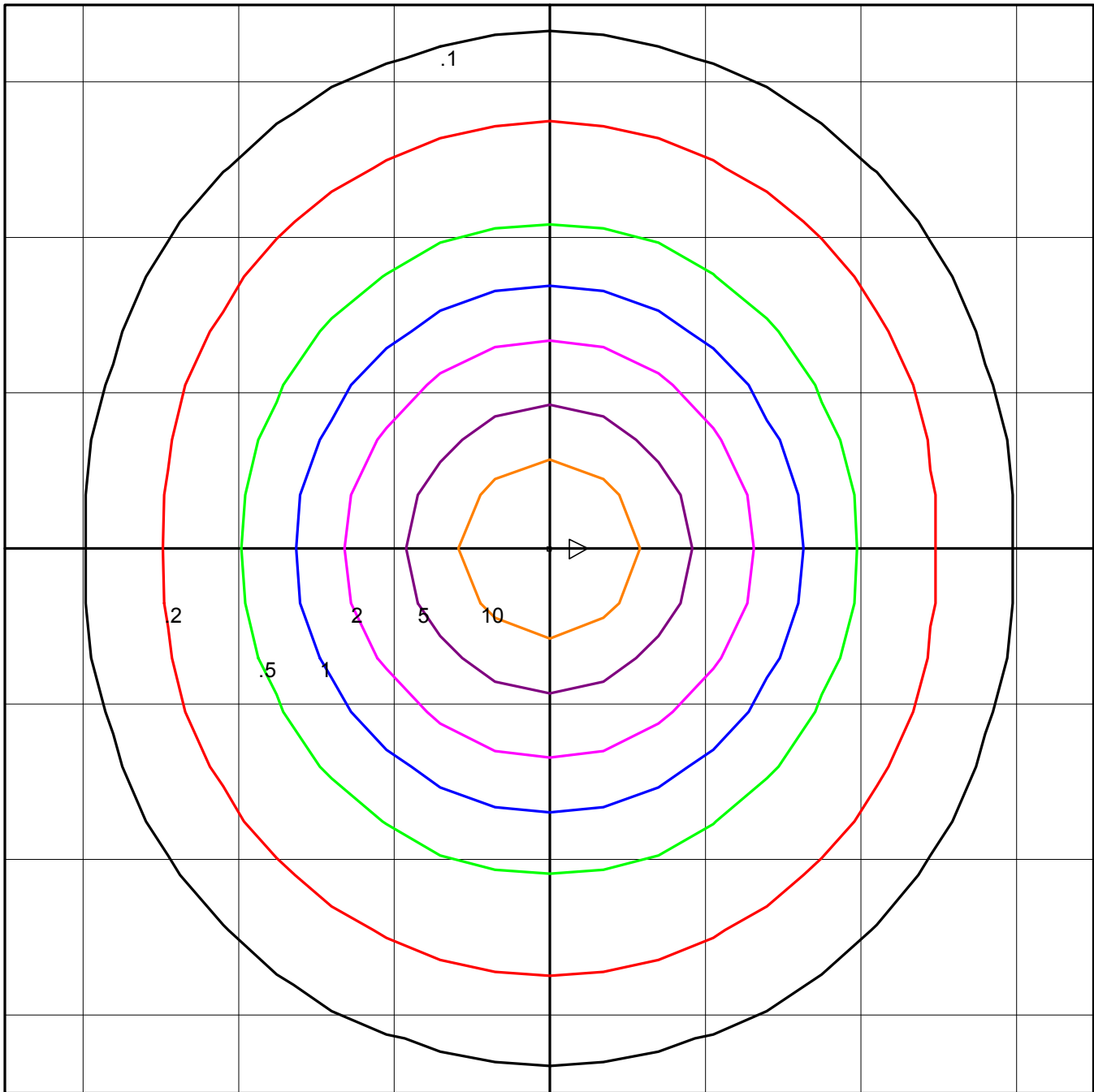
THE ABOVE COEFFICIENTS HAVE BEEN CALCULATED BASED ON LUMINAIRE LUMENS  
 BECAUSE IN AN ABSOLUTE TEST THE BARE LAMP LUMENS ARE UNKNOWN.  
 LIGHTING DESIGN CALCULATIONS MADE USING THESE COEFFICIENTS SHOULD  
 THEREFORE USE THE LUMINAIRE LUMENS IN THE CALCULATION FORMULA

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.



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Horizontal Footcandles  
Scale: 1 Inch = 8 Ft.  
Mounting Height = 8.00 Ft.  
Maximum Calculated Value = 18.43 Fc



### Cone of Light

**Cone of Light Tabulation**

Mounting Height (Feet)	Footcandles at Nadir	Diameter (Feet)
4.00	73.7	4.88
6.00	32.8	7.32
8.00	18.4	9.75
10.0	11.8	12.2
12.0	8.19	14.6
14.0	6.02	17.1
16.0	4.61	19.5

**Cone of Light Plot**

