



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-L20-UNV-30DM-W16-088-C40-AF
Project Number
10551935
Test Number
803984

Test Date

2014-11-03

Prepared By

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

Todd Heiland, Technician

Approved By

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

Jeff Smith Jr., Project Handler

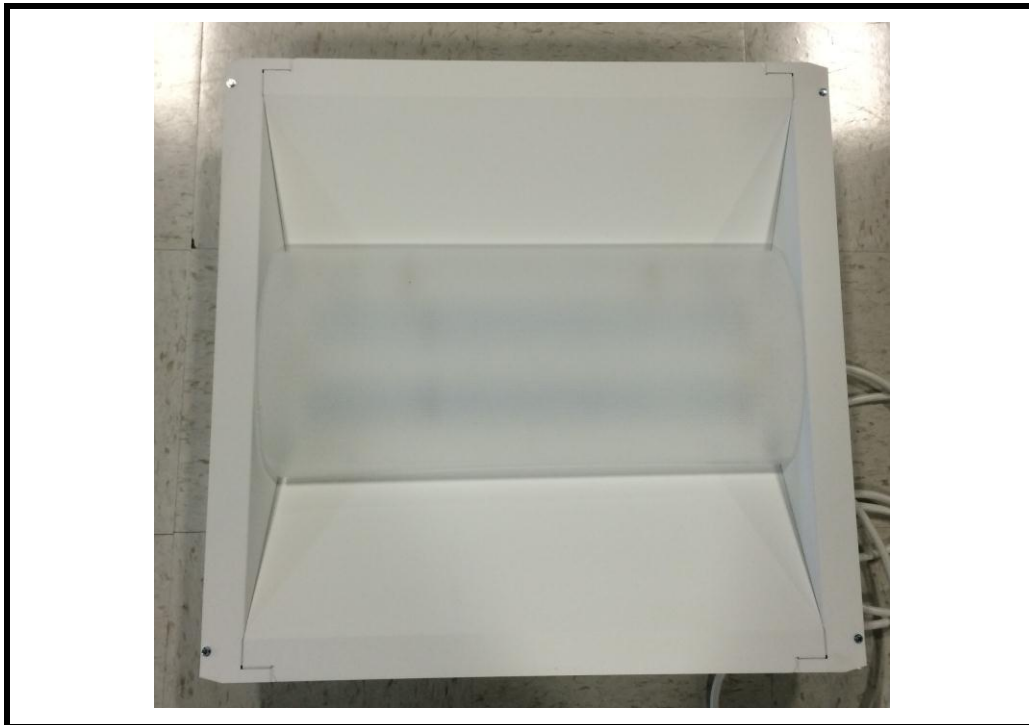
The results contained in this report pertain only to the tested sample.
This report shall not be reproduced, except in full, without written approval of Underwriters Laboratories.



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-L20-UNV-30DM-W16-088-C40-AF
Lamp: 88 white LEDs
Mounting: Recessed
Ballast/Driver: One Osram Optotronic OT30W/PRG1050C/UNV/DIM/L

Luminaire



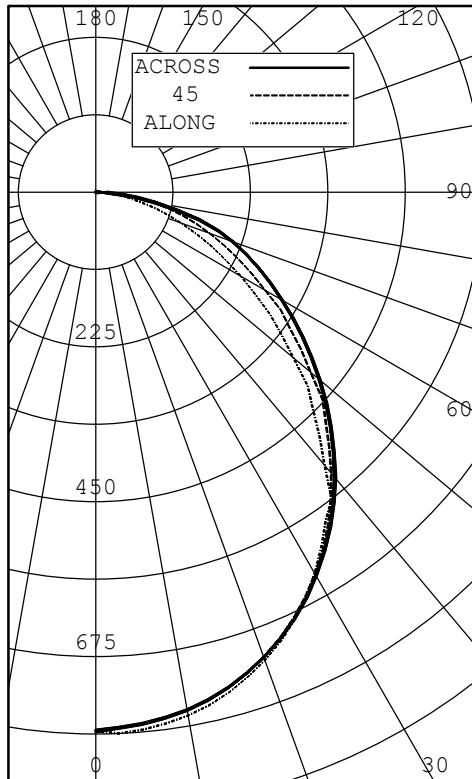
Test Conditions

Test Temperature:	24.2 °C
Voltage:	120.0 VAC
Current:	0.1408 A
Power:	16.73 W
Power Factor:	0.991
Frequency:	60 Hz
Current THD:	5.13 %



INTENSITY (CANDLEPOWER) SUMMARY

OUTPUT
LUMENS



ANGLE	ALONG	22.5	45	67.5	ACROSS	OUTPUT LUMENS
0	783	783	783	783	783	
5	785	781	776	776	776	75
10	773	770	765	765	764	
15	752	749	745	745	745	210
20	723	720	718	718	718	
25	685	684	682	683	684	314
30	638	638	639	641	642	
35	582	584	589	593	594	367
40	517	532	533	538	541	
45	446	455	472	480	483	361
50	376	396	407	421	425	
55	309	320	345	362	367	306
60	243	257	284	306	313	
65	186	199	229	253	262	224
70	133	149	177	203	213	
75	89	104	132	152	157	134
80	51	65	84	89	88	
85	20	28	36	37	38	38
90	0	0	0	0	0	

ZONAL LUMENS AND PERCENTAGES

ZONE	LUMENS	% LUMINAIRE
0-30	599	29.52
0-40	966	47.63
0-60	1633	80.49
0-90	2029	100.00
40-90	1063	52.37
60-90	396	19.51
90-180	0	0.00
0-180	2029	100.00

EFFICACY (LUMENS PER WATT): 121.5

*** 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	2272	2413	2469
55	1941	2171	2312
65	1584	1954	2237
75	1242	1834	2187
85	828	1480	1567

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	783	783	783	783	783	783	
2.5	788	784	779	779	779	781	
5.0	785	781	776	776	776	778	75
7.5	780	776	772	771	771	774	
10.0	773	770	765	765	764	767	
12.5	764	760	756	756	756	758	
15.0	752	749	745	745	745	747	210
17.5	738	735	732	733	732	734	
20.0	723	720	718	718	718	719	
22.5	705	703	701	702	702	702	
25.0	685	684	682	683	684	683	314
27.5	663	662	661	663	664	662	
30.0	638	638	639	641	642	640	
32.5	611	612	615	618	619	615	
35.0	582	584	589	593	594	588	367
37.5	563	557	561	566	568	562	
40.0	517	532	533	538	541	533	
42.5	482	489	502	510	512	499	
45.0	446	455	472	480	483	468	361
47.5	418	421	448	451	454	439	
50.0	376	396	407	421	425	406	
52.5	341	353	376	391	396	372	
55.0	309	320	345	362	367	341	306
57.5	274	294	319	333	340	313	
60.0	243	257	284	306	313	281	
62.5	213	232	256	279	287	254	
65.0	186	199	229	253	262	226	224
67.5	158	173	202	228	237	200	
70.0	133	149	177	203	213	176	
72.5	111	126	154	179	187	152	
75.0	89	104	132	152	157	128	134
77.5	69	84	109	121	122	102	
80.0	51	65	84	89	88	77	
82.5	35	47	60	60	61	54	
85.0	20	28	36	37	38	32	38
87.5	7	11	15	17	18	14	
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	.010	.98	1.071	.031	.000	.96	0.990	.960	.93	0.950	.930	.90	0.910	.900	.88	0.86			
	2	1.030	.960	.890	.83	1.010	.940	.870	.82	0.990	.920	.860	.81	0.880	.830	.79	0.850	.810	.78	0.820	.790	.76	0.74			
	3	0.950	.840	.760	.70	0.930	.830	.760	.70	0.900	.810	.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	.730	.660	.60	0.710	.640	.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	.530	.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	.400	.330	.28	0.390	.330	.28	0.390	.320	.28	0.380	.320	.27	0.26			

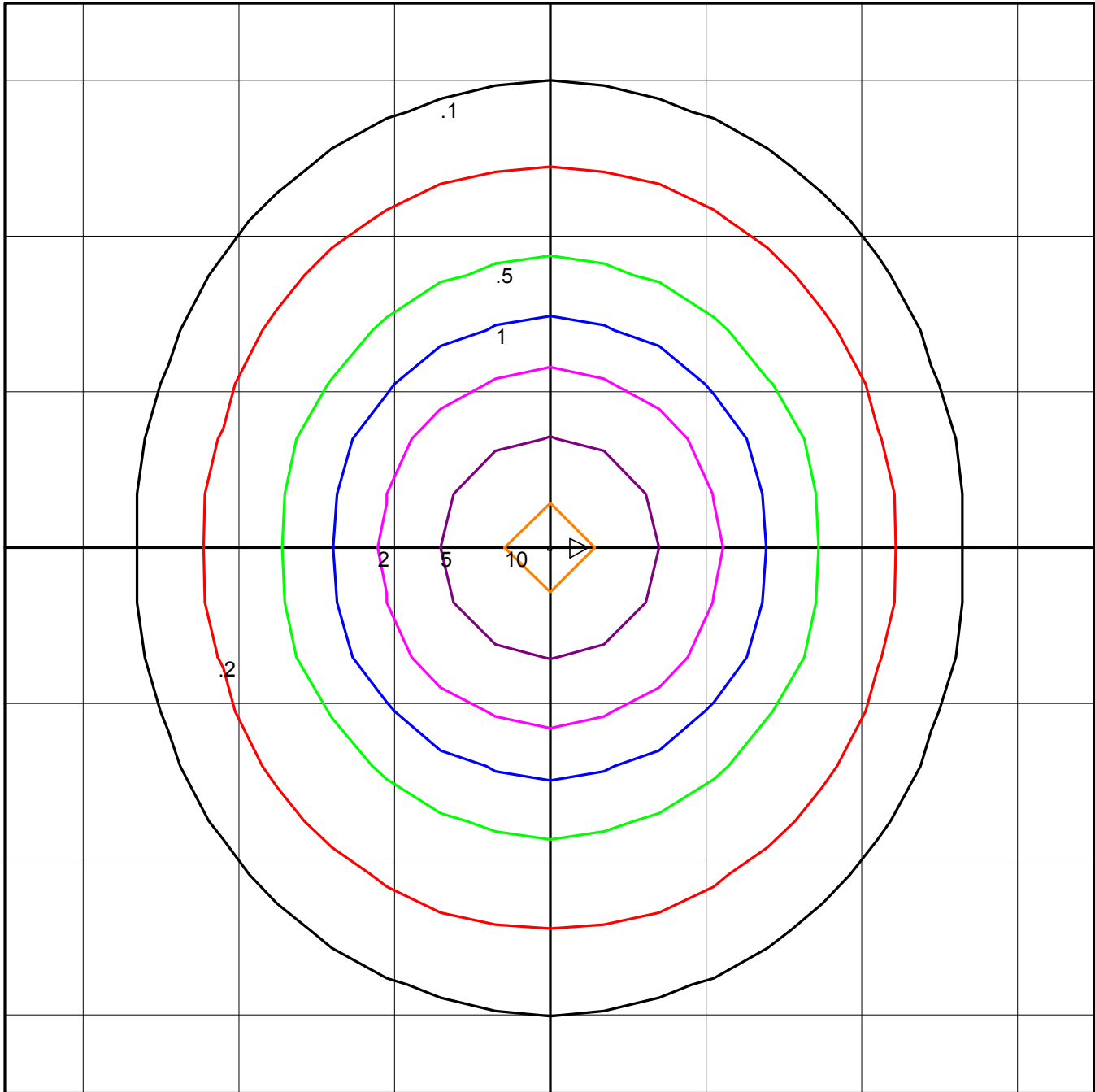
THE ABOVE COEFFICIENTS HAVE BEEN CALCULATED BASED ON LUMINAIRE LUMENS
 BECAUSE IN AN ABSOLUTE TEST THE BARE LAMP LUMENS ARE UNKNOWN.
 LIGHTING DESIGN CALCULATIONS MADE USING THESE COEFFICIENTS SHOULD
 THEREFORE USE THE LUMINAIRE LUMENS IN THE CALCULATION FORMULA

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.



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



Horizontal Footcandles
Scale: 1 Inch = 8 Ft.
Mounting Height = 8.00 Ft.
Maximum Calculated Value = 12.23 Fc



Cone of Light

Cone of Light Tabulation

Mounting Height (Feet)	Footcandles at Nadir	Diameter (Feet)
4.00	48.9	4.86
6.00	21.7	7.30
8.00	12.2	9.73
10.0	7.83	12.2
12.0	5.43	14.6
14.0	3.99	17.0
16.0	3.06	19.5

Cone of Light Plot

