



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
LF Illumination LLC
Scott Hershman
9200 Deering Avenue
Chatsworth, CA 91311
United States

Catalog Number
8431-16L-9030-W-MW
Project Number
10581561
Test Number
835674

Test Date

2014-12-03

Prepared By

Handwritten signature of Dane Hernandez-Adams in black ink.

Dane Hernandez-Adams, Technician

Approved By

Handwritten signature of Eric M. Gaudreau in black ink.

Eric Gaudreau, Engineering Project Handler

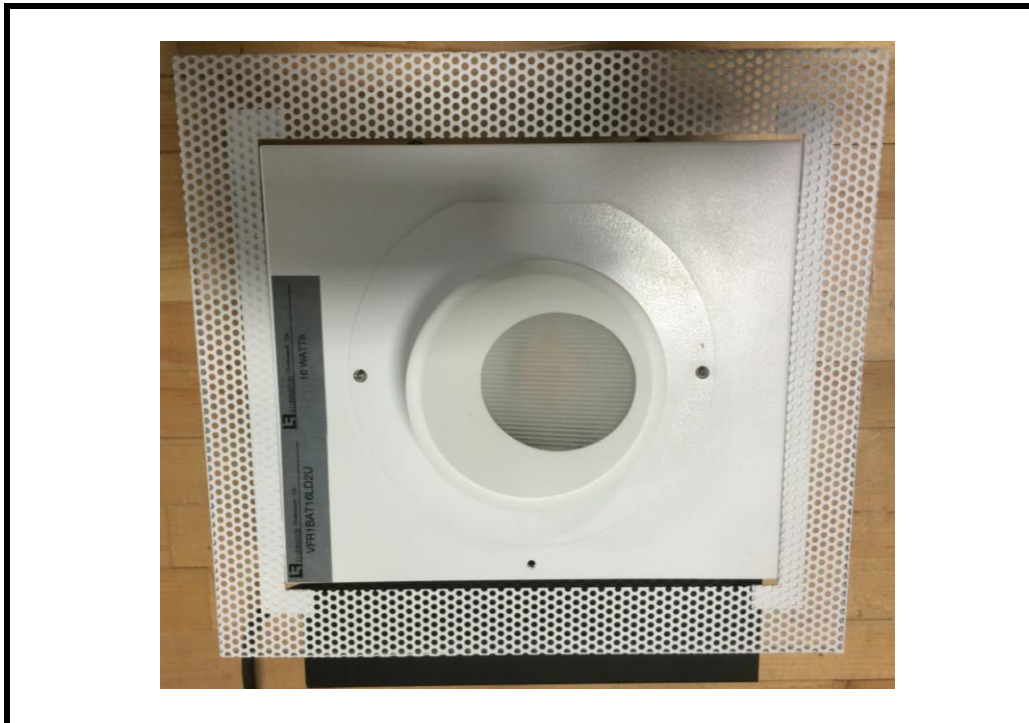
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Luminaire Description: Black steel housing, black aluminum heatsink, patterned specular reflector above frosted glass enclosure, white aluminum trim
Catalog Number: 8431-16L-9030-W-MW
Lamp: One white LED
Mounting: Recessed
Ballast/Driver: One ERP ESS030W-0500-42

Luminaire

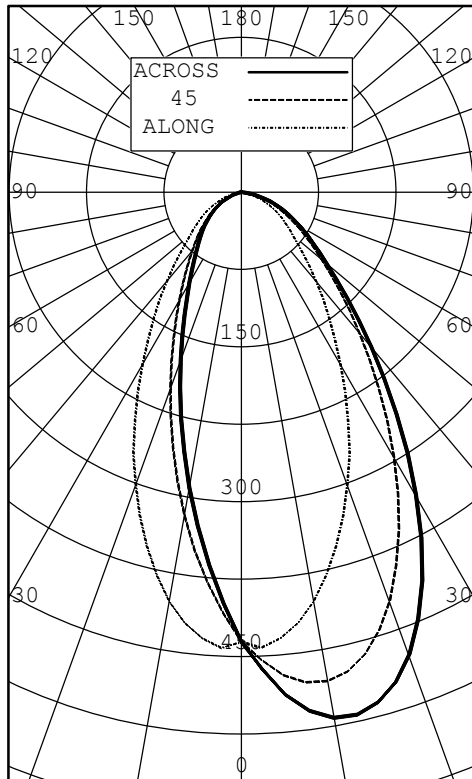


Test Conditions

Test Temperature:	25.2 °C
Voltage:	119.9 VAC
Current:	0.1324 A
Power:	15.63 W
Power Factor:	0.984
Frequency:	60 Hz
Current THD:	14.6 %



INTENSITY (CANDLEPOWER) SUMMARY OUTPUT
 BEAM SIDE LUMENS



ANGLE	ALONG	67.5	45	22.5	ACROSS	OUTPUT LUMENS
0	436	436	436	436	436	
5	434	452	470	483	489	23
10	403	444	481	508	517	
15	355	411	464	499	512	63
20	300	363	421	461	476	
25	245	306	361	401	415	79
30	192	247	295	328	339	
35	148	194	232	256	262	69
40	113	147	178	193	196	
45	85	111	134	144	145	49
50	65	83	101	108	109	
55	52	64	77	84	85	33
60	41	49	59	65	66	
65	30	37	43	49	51	21
70	20	26	30	35	37	
75	11	15	18	22	23	10
80	3	6	8	10	11	
85	0	0	1	2	2	1
90	0	0	0	0	0	

BOTH SIDES
 ZONAL LUMENS AND PERCENTAGES

ZONE	LUMENS	% LUMINAIRE
0-30	258	48.77
0-40	359	67.84
0-60	484	91.40
0-90	530	100.00
40-90	170	32.16
60-90	46	8.60
90-180	0	0.00
0-180	530	100.00

EFFICACY (LUMENS PER WATT): 34.0

*** THIS IS AN ABSOLUTE TEST ***

LUMINOUS DIAMETER: 4.000 INS

LUMINANCE SUMMARY - CD./SQ.M.

ANGLE	BEAM SIDE		
	ALONG	45	ACROSS
45	14827	23533	25407
55	11182	16643	18262
65	8755	12623	14824
75	5242	8731	11003
85	0	1560	3267

TESTED IN ACCORDANCE WITH IES PROCEDURES.



BEAM SIDE
 INTENSITY (CANDLEPOWER) DATA
 IN 2.5 DEGREE STEPS

ANGLE	PLANE					AVERAGE	OUTPUT LUMENS
	ALONG	67.5	45	22.5	ACROSS		
0.0	436	436	436	436	436	436	
2.5	442	446	454	460	463	453	
5.0	434	452	470	483	489	466	23
7.5	421	451	479	499	507	473	
10.0	403	444	481	508	517	473	
12.5	380	430	476	508	519	466	
15.0	355	411	464	499	512	452	63
17.5	328	388	445	483	498	432	
20.0	300	363	421	461	476	408	
22.5	274	335	392	433	448	380	
25.0	245	306	361	401	415	350	79
27.5	218	276	329	365	378	317	
30.0	192	247	295	328	339	284	
32.5	168	219	263	291	300	252	
35.0	148	194	232	256	262	222	69
37.5	130	169	204	223	227	194	
40.0	113	147	178	193	196	168	
42.5	98	128	155	167	169	146	
45.0	85	111	134	144	145	126	49
47.5	74	96	117	125	125	109	
50.0	65	83	101	108	109	95	
52.5	59	73	88	95	96	83	
55.0	52	64	77	84	85	73	33
57.5	47	57	67	74	75	65	
60.0	41	49	59	65	66	57	
62.5	36	43	51	57	58	49	
65.0	30	37	43	49	51	42	21
67.5	25	31	37	42	44	36	
70.0	20	26	30	35	37	30	
72.5	16	20	24	28	30	24	
75.0	11	15	18	22	23	18	10
77.5	6	10	13	15	17	12	
80.0	3	6	8	10	11	7	
82.5	1	2	4	5	6	4	
85.0	0	0	1	2	2	1	1
87.5	0	0	0	0	0	0	
90.0	0	0	0	0	0	0	



OPPOSITE SIDE TO BEAM
INTENSITY (CANDLEPOWER) DATA
IN 2.5 DEGREE STEPS

ANGLE	PLANE					AVERAGE	OUTPUT LUMENS
	ALONG	112.5	135	157.5	ACROSS		
0.0	436	436	436	436	436	436	
2.5	442	421	409	401	399	413	
5.0	434	401	380	367	363	386	18
7.5	421	377	350	332	326	358	
10.0	403	351	318	298	291	328	
12.5	380	323	287	265	258	298	
15.0	355	295	257	234	227	269	37
17.5	328	267	228	205	198	241	
20.0	300	239	202	180	173	214	
22.5	274	213	178	157	151	190	
25.0	245	189	156	138	131	168	38
27.5	218	166	137	121	115	148	
30.0	192	146	121	106	101	130	
32.5	168	129	107	94	90	115	
35.0	148	113	94	84	80	101	32
37.5	130	99	84	75	72	90	
40.0	113	87	75	68	65	80	
42.5	98	77	67	62	60	71	
45.0	85	68	60	56	54	63	25
47.5	74	61	54	51	49	57	
50.0	65	54	48	45	44	51	
52.5	59	49	43	41	40	45	
55.0	52	43	38	36	35	40	18
57.5	47	39	34	31	30	36	
60.0	41	34	30	27	26	31	
62.5	36	29	25	22	22	26	
65.0	30	25	21	18	17	22	11
67.5	25	20	16	14	13	17	
70.0	20	15	12	10	9	13	
72.5	16	11	8	6	5	9	
75.0	11	6	4	2	2	5	3
77.5	6	3	1	1	1	2	
80.0	3	1	0	0	0	1	
82.5	1	0	0	0	0	0	
85.0	0	0	0	0	0	0	0
87.5	0	0	0	0	0	0	
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	1.151	.111	.081	.05	1.121	.091	.061	.03	1.101	.071	.041	.02	1.031	.010	.99	0.990	.970	.96	0.950	.940	.93	0.91			
2	1.081	.020	.970	.92	1.061	.000	.950	.91	1.030	.980	.940	.90	0.950	.910	.88	0.920	.890	.86	0.890	.870	.85	0.83			
3	1.010	.930	.870	.82	0.990	.920	.860	.81	0.970	.900	.850	.81	0.880	.830	.80	0.850	.820	.78	0.830	.800	.77	0.75			
4	0.950	.860	.790	.74	0.940	.850	.790	.74	0.920	.840	.780	.73	0.810	.760	.72	0.790	.750	.72	0.770	.740	.71	0.69			
5	0.900	.800	.720	.67	0.880	.780	.720	.67	0.860	.770	.710	.66	0.750	.700	.66	0.740	.690	.65	0.720	.680	.64	0.63			
6	0.840	.730	.660	.61	0.830	.730	.660	.61	0.810	.720	.650	.61	0.700	.640	.60	0.690	.640	.60	0.670	.630	.59	0.58			
7	0.790	.680	.610	.56	0.780	.670	.600	.56	0.760	.660	.600	.55	0.650	.590	.55	0.640	.580	.54	0.620	.580	.54	0.53			
8	0.750	.630	.560	.51	0.730	.620	.560	.51	0.720	.620	.550	.51	0.610	.550	.51	0.590	.540	.50	0.580	.540	.50	0.48			
9	0.700	.590	.520	.47	0.690	.580	.510	.47	0.680	.570	.510	.47	0.560	.510	.46	0.560	.500	.46	0.550	.500	.46	0.45			
10	0.660	.550	.480	.43	0.650	.540	.480	.43	0.640	.540	.480	.43	0.530	.470	.43	0.520	.470	.43	0.510	.460	.43	0.41			

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.