



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
Sonneman
Nicolas Carmichael
106 Pierces Rd.
Newburgh, NY 12550-9369

Catalog Number
2431
Project Number
10517633
Test Number
781278

Test Date

2014-10-19

Prepared By

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

Bhavik Shah, Technician

Approved By

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

Jeff Smith Jr., Project Handler

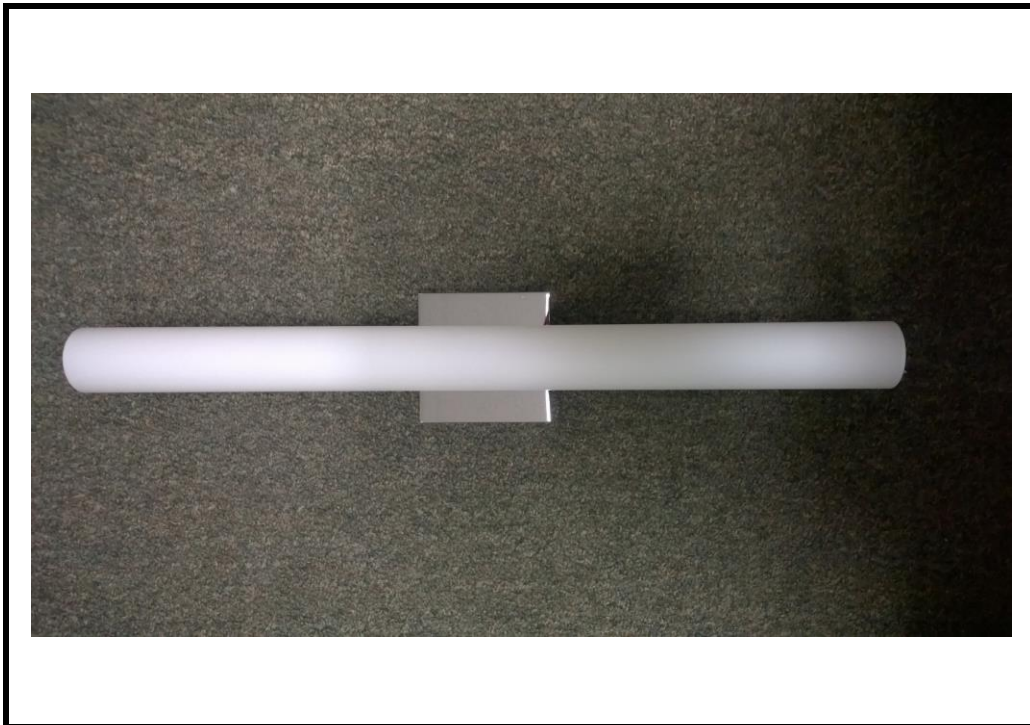
The results contained in this report pertain only to the tested sample.
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Luminaire Description: Formed steel housing, frosted glass tube enclosure
Catalog Number: 2431
Lamp: White LEDs
Mounting: Surface - Wall
Ballast/Driver: One Eaglerise EEP60SE

Luminaire

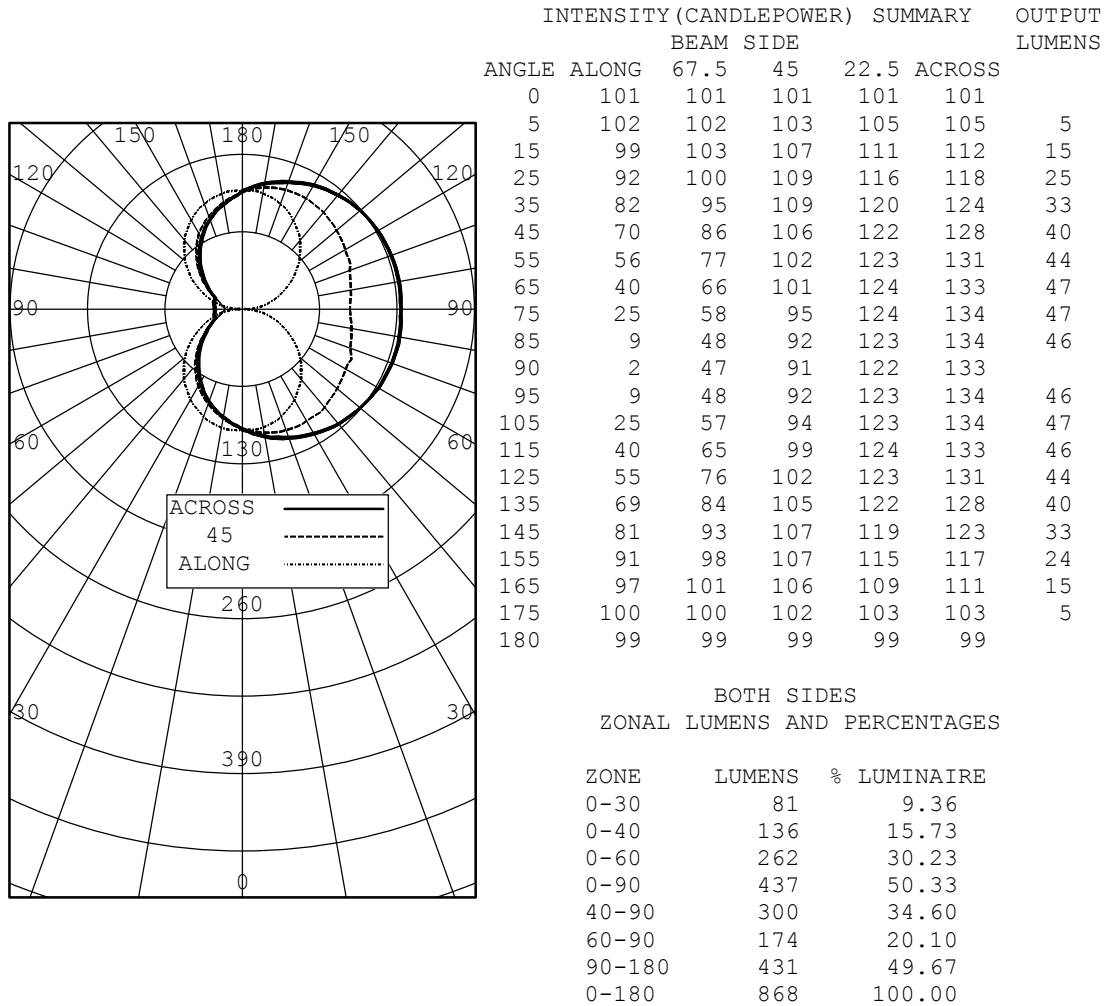


Test Conditions

Test Temperature:	25.3 °C
Voltage:	120.0 VAC
Current:	0.1675 A
Power:	19.20 W
Power Factor:	0.955
Frequency:	60 Hz
Current THD:	30.8 %



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EFFICACY (LUMENS PER WATT): 45.2

*** THIS IS AN ABSOLUTE TEST ***

LUMINOUS LENGTH: 2.000 INS
WIDTH: 23.750 INS

LUMINANCE SUMMARY - CD./SQ.M.

BEAM SIDE			
ANGLE	ALONG	45	ACROSS
45	3230	4621	5456
55	3185	5379	6678
65	3088	6953	8725
75	3151	9769	12903
85	3369	20442	25585

TESTED IN ACCORDANCE WITH IES PROCEDURES.



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BEAM SIDE
INTENSITY (CANDLEPOWER) DATA

ANGLE	ALONG	67.5	PLANE 45	22.5	ACROSS	AVERAGE	OUTPUT LUMENS
0	101	101	101	101	101	101	
5	102	102	103	105	105	103	5
10	101	103	106	108	109	105	
15	99	103	107	111	112	107	15
20	96	102	108	114	115	107	
25	92	100	109	116	118	107	25
30	88	97	109	118	121	107	
35	82	95	109	120	124	107	33
40	77	90	108	121	126	105	
45	70	86	106	122	128	103	40
50	63	81	104	123	129	101	
55	56	77	102	123	131	99	44
60	48	70	100	124	132	96	
65	40	66	101	124	133	94	47
70	33	60	97	124	134	91	
75	25	58	95	124	134	89	47
80	17	53	93	123	134	86	
85	9	48	92	123	134	83	46
90	2	47	91	122	133	82	
95	9	48	92	123	134	83	46
100	17	52	93	123	134	86	
105	25	57	94	123	134	88	47
110	33	59	96	123	133	90	
115	40	65	99	124	133	94	46
120	48	70	100	124	132	96	
125	55	76	102	123	131	98	44
130	63	80	104	123	129	100	
135	69	84	105	122	128	102	40
140	76	89	107	120	125	104	
145	81	93	107	119	123	105	33
150	86	96	108	117	120	106	
155	91	98	107	115	117	106	24
160	94	100	107	112	114	106	
165	97	101	106	109	111	105	15
170	99	101	104	106	107	103	
175	100	100	102	103	103	101	5
180	99	99	99	99	99	99	



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OPPOSITE SIDE TO BEAM
INTENSITY (CANDLEPOWER) DATA

ANGLE	PLANE						OUTPUT LUMENS
	ALONG	112.5	135	157.5	ACROSS	AVERAGE	
0	101	101	101	101	101	101	
5	102	99	98	97	97	98	5
10	101	96	94	93	92	95	
15	99	93	90	88	88	91	13
20	96	89	85	83	83	87	
25	92	84	80	78	77	82	19
30	88	79	75	72	71	76	
35	82	73	68	66	65	70	22
40	77	67	62	59	58	64	
45	70	60	55	53	52	57	22
50	63	53	49	47	46	51	
55	56	46	42	40	39	44	20
60	48	38	35	34	34	37	
65	40	32	29	29	29	31	15
70	33	24	24	25	25	25	
75	25	18	19	23	25	21	11
80	17	13	18	23	24	19	
85	9	10	16	22	24	16	9
90	2	9	15	21	23	14	
95	9	9	15	21	24	16	9
100	17	12	18	22	24	18	
105	25	17	19	24	25	21	11
110	33	24	22	24	25	25	
115	40	31	27	27	27	30	15
120	48	37	34	32	32	36	
125	55	45	40	38	37	42	19
130	63	52	47	44	43	49	
135	69	59	54	51	50	56	21
140	76	66	60	57	56	62	
145	81	72	67	64	62	69	21
150	86	78	73	70	69	75	
155	91	83	78	76	75	80	18
160	94	87	83	81	80	85	
165	97	91	88	86	85	89	12
170	99	94	92	90	90	93	
175	100	97	95	95	94	96	5
180	99	99	99	99	99	99	



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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	1.151	1.151	1.151	1.15	1.071	1.071	1.071	1.07	0.990	0.990	0.990	0.99	0.840	0.840	0.84	0.690	0.690	0.69	0.560	0.560	0.56	0.50			
1	1.030	0.970	0.920	0.87	0.950	0.900	0.850	0.81	0.880	0.830	0.790	0.74	0.700	0.660	0.64	0.570	0.550	0.53	0.460	0.440	0.43	0.37			
2	0.930	0.840	0.760	0.69	0.860	0.770	0.700	0.64	0.790	0.710	0.650	0.60	0.600	0.550	0.51	0.490	0.460	0.43	0.390	0.370	0.35	0.30			
3	0.850	0.730	0.640	0.56	0.780	0.670	0.590	0.53	0.710	0.620	0.550	0.49	0.520	0.470	0.42	0.430	0.390	0.35	0.340	0.310	0.28	0.24			
4	0.770	0.640	0.540	0.47	0.710	0.600	0.510	0.44	0.650	0.550	0.470	0.41	0.460	0.400	0.36	0.380	0.340	0.30	0.300	0.270	0.24	0.21			
5	0.710	0.560	0.470	0.40	0.650	0.520	0.440	0.37	0.600	0.490	0.410	0.35	0.410	0.350	0.30	0.340	0.290	0.25	0.270	0.240	0.21	0.17			
6	0.650	0.500	0.410	0.34	0.600	0.470	0.380	0.32	0.550	0.430	0.350	0.30	0.360	0.300	0.26	0.300	0.250	0.22	0.240	0.210	0.18	0.15			
7	0.590	0.450	0.360	0.30	0.550	0.420	0.330	0.28	0.500	0.390	0.310	0.26	0.330	0.260	0.22	0.270	0.220	0.19	0.220	0.180	0.15	0.13			
8	0.550	0.410	0.320	0.26	0.510	0.380	0.300	0.24	0.460	0.350	0.270	0.22	0.300	0.240	0.19	0.250	0.200	0.16	0.200	0.160	0.13	0.11			
9	0.510	0.370	0.280	0.22	0.470	0.340	0.260	0.21	0.430	0.320	0.250	0.20	0.270	0.210	0.17	0.220	0.180	0.14	0.180	0.140	0.12	0.10			
10	0.470	0.330	0.250	0.20	0.440	0.310	0.230	0.18	0.400	0.290	0.220	0.17	0.240	0.190	0.15	0.200	0.160	0.13	0.170	0.130	0.10	0.08			

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.