



LUMINAIRE TESTING LABORATORY, INC.

SUSTAINING
MEMBER
of the
IESNA

905 Harrison Street · Allentown, PA 18103 · 610-770-1044 · Fax 610-770-8912 · www.LuminaireTesting.com

LTL NUMBER: 17145

DATE: 11-17-2009

PREPARED FOR: USA ILLUMINATION, INC.

CATALOG NUMBER: 1650-BL710-A

LUMINAIRE: FORMED STEEL HOUSING, FROSTED GLASS ENCLOSURE ABOVE CAST WHITE ENAMEL ALUMINUM REFLECTOR.

LAMP: ONE VBU M130 39 WATT MR16 CERAMIC METAL HALIDE REFLECTOR LAMP RATED AT 2100 LUMENS.

LAMP CATALOG NUMBER: GE CMH39MR16/930/FL

BALLAST: ONE HATCH TRANSFORMERS MC39-1-J-120X

MOUNTING: RECESSED

NOTE: THIS TEST WAS PRORATED TO A LUMEN RATING OF 1000 TO REPRESENT THE LUMEN RATING OF A GE 20 WATT CMH MR16 LAMP. THIS PRORATE WAS PERFORMED USING MEASURED PHOTOMETRIC DATA FROM LTL TEST NUMBER 13909.

Candela Distribution

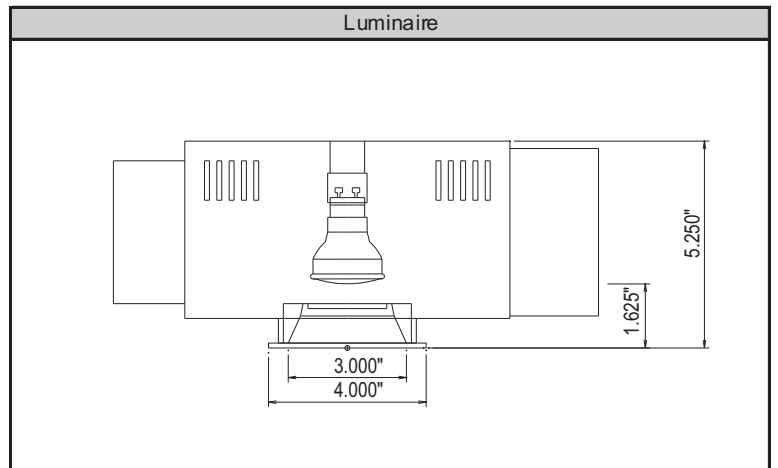
	0	22.5	45	67.5	90	112.5	135	157.5	180	202.5	225	247.5	270	292.5	315	337.5	Flux
0	1141	1141	1141	1141	1141	1141	1141	1141	1141	1141	1141	1141	1141	1141	1141	1141	
5	1065	1065	1065	1064	1065	1064	1065	1065	1065	1065	1065	1064	1065	1064	1065	1065	95.4
15	643	643	642	639	638	639	642	643	643	643	642	639	638	639	642	643	177.0
25	308	311	313	309	306	309	313	311	308	311	313	309	306	309	313	311	143.9
35	149	156	163	156	149	156	163	156	149	156	163	156	149	156	163	156	98.6
45	73	78	87	78	73	78	87	78	73	78	87	78	73	78	87	78	61.6
55	32	36	43	37	32	37	43	36	32	36	43	37	32	37	43	36	33.4
65	12	13	15	13	12	13	15	13	12	13	15	13	12	13	15	13	13.5
75	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4.2
85	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.4
90	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
95	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
105	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
115	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
125	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
135	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
145	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
155	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
165	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
175	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
180	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

Zonal Lumen Summary

Zone	Lumens	% of Lamp	% of Luminaire
0-30	416.2	41.6%	66.3%
0-40	514.8	51.5%	82.0%
0-60	609.8	61.0%	97.1%
0-90	627.9	62.8%	100.0%
90-180	0.0	0.0%	0.0%
0-180	627.9	62.8%	100.0%

Total luminaire efficiency: 62.8%

CIE Type: Direct
 Spacing Criterion: 0 deg: 0.54 90 deg: 0.54
 180 deg: 0.54 270 deg: 0.54



Approved By: MG

THIS REPORT BASED ON LM-46 AND OTHER PERTINENT IESNA PROCEDURES.



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Candela Tabulation (5 degree Vertical Increments)

	0	22.5	45	67.5	90	112.5	135	157.5	180	202.5	225	247.5	270	292.5	315	337.5
0	1141	1141	1141	1141	1141	1141	1141	1141	1141	1141	1141	1141	1141	1141	1141	1141
5	1065	1065	1065	1064	1065	1064	1065	1065	1065	1065	1065	1064	1065	1064	1065	1065
10	872	871	870	868	868	868	870	871	872	871	870	868	868	868	870	871
15	643	643	642	639	638	639	642	643	643	643	642	639	638	639	642	643
20	447	449	450	446	443	446	450	449	447	449	450	446	443	446	450	449
25	308	311	313	309	306	309	313	311	308	311	313	309	306	309	313	311
30	216	220	223	219	215	219	223	220	216	220	223	219	215	219	223	220
35	149	156	163	156	149	156	163	156	149	156	163	156	149	156	163	156
40	104	110	120	110	104	110	120	110	104	110	120	110	104	110	120	110
45	73	78	87	78	73	78	87	78	73	78	87	78	73	78	87	78
50	49	54	62	54	50	54	62	54	49	54	62	54	50	54	62	54
55	32	36	43	37	32	37	43	36	32	36	43	37	32	37	43	36
60	20	23	27	23	20	23	27	23	20	23	27	23	20	23	27	23
65	12	13	15	13	12	13	15	13	12	13	15	13	12	13	15	13
70	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
75	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
80	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
85	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
90	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
95	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
105	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
110	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
115	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
120	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
125	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
130	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
135	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
140	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
145	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
150	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
155	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
160	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
165	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
170	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
175	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
180	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Zonal Lumen Tabulation (5 degree zones)

Zone	Lumens	Zone	Lumens	Zone	Lumens	Zone	Lumens
0-5	26.4	45-50	26.7	90-95	0.0	135-140	0.0
5-10	69.0	50-55	19.8	95-100	0.0	140-145	0.0
10-15	88.7	55-60	13.7	100-105	0.0	145-150	0.0
15-20	88.3	60-65	8.6	105-110	0.0	150-155	0.0
20-25	78.0	65-70	4.8	110-115	0.0	155-160	0.0
25-30	65.9	70-75	2.8	115-120	0.0	160-165	0.0
30-35	54.5	75-80	1.5	120-125	0.0	165-170	0.0
35-40	44.0	80-85	0.4	125-130	0.0	170-175	0.0
40-45	34.8	85-90	0.0	130-135	0.0	175-180	0.0



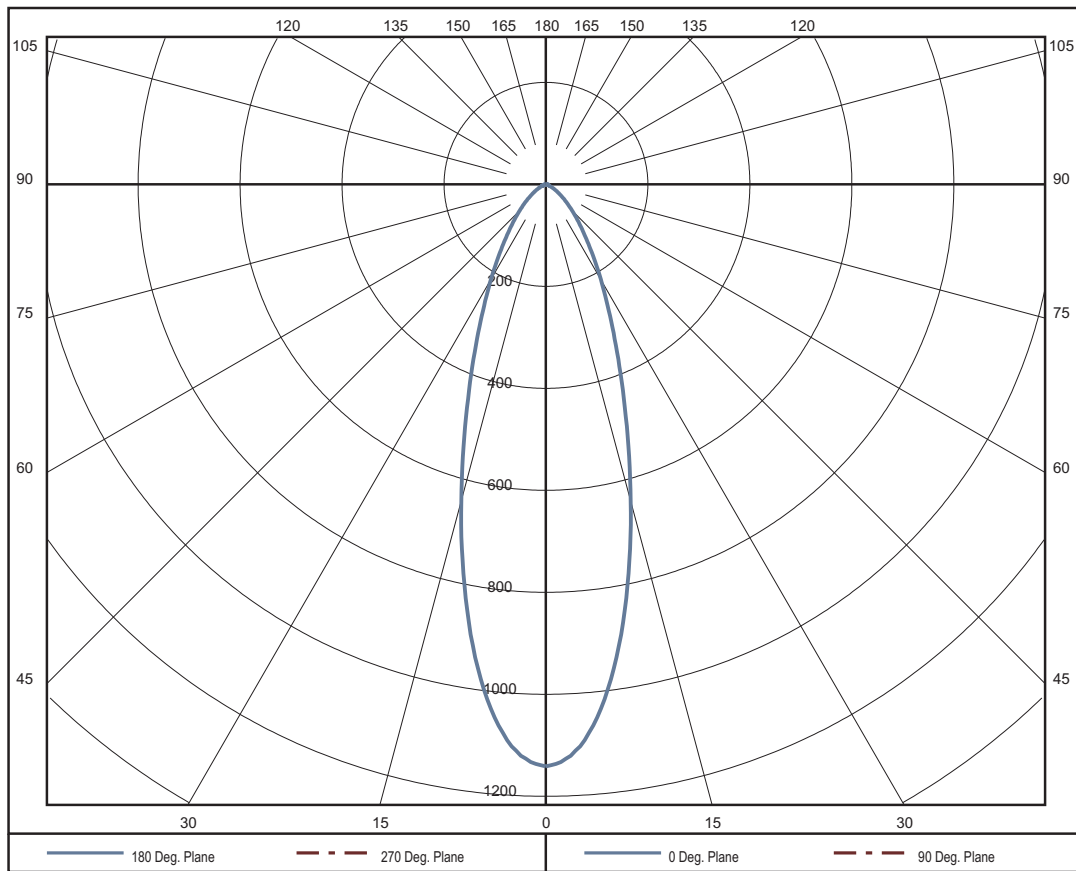
Coefficients of Utilization - Zonal Cavity Method												
Effective Floor Cavity Reflectance 20%												
Ceiling Cavity Reflectance	90				80				70			
Wall Reflectance	70	50	30	10	70	50	30	10	70	50	30	10
Room Cavity Ratio (RCR)												
0	0.766	0.766	0.766	0.766	0.747	0.747	0.747	0.747	0.73	0.73	0.73	0.73
1	0.727	0.706	0.688	0.671	0.71	0.692	0.675	0.66	0.695	0.678	0.663	0.65
2	0.687	0.651	0.622	0.597	0.672	0.64	0.613	0.59	0.658	0.629	0.605	0.584
3	0.65	0.603	0.567	0.539	0.637	0.594	0.561	0.535	0.624	0.585	0.555	0.53
4	0.615	0.561	0.522	0.492	0.603	0.553	0.517	0.489	0.591	0.546	0.512	0.486
5	0.583	0.524	0.483	0.453	0.572	0.517	0.479	0.451	0.562	0.511	0.476	0.449
6	0.553	0.491	0.45	0.421	0.543	0.486	0.447	0.419	0.534	0.481	0.444	0.418
7	0.526	0.462	0.421	0.393	0.517	0.457	0.419	0.392	0.509	0.453	0.417	0.391
8	0.501	0.436	0.396	0.369	0.493	0.432	0.394	0.368	0.485	0.429	0.392	0.367
9	0.478	0.413	0.374	0.347	0.471	0.41	0.372	0.347	0.464	0.406	0.371	0.346
10	0.457	0.392	0.354	0.329	0.45	0.389	0.353	0.328	0.444	0.386	0.351	0.328

Ceiling Cavity Reflectance	50				30			10			0
Wall Reflectance	70	50	30	10	50	30	10	50	30	10	0
Room Cavity Ratio (RCR)											
0	0.698	0.698	0.698	0.698	0.668	0.668	0.668	0.641	0.641	0.641	0.628
1	0.666	0.653	0.641	0.63	0.629	0.62	0.611	0.608	0.6	0.593	0.582
2	0.632	0.609	0.588	0.571	0.59	0.573	0.559	0.572	0.559	0.547	0.536
3	0.6	0.568	0.543	0.522	0.553	0.532	0.514	0.539	0.521	0.506	0.495
4	0.57	0.532	0.503	0.48	0.52	0.495	0.475	0.508	0.487	0.469	0.459
5	0.542	0.5	0.469	0.445	0.489	0.462	0.441	0.48	0.456	0.437	0.428
6	0.517	0.471	0.439	0.415	0.462	0.434	0.412	0.454	0.429	0.409	0.4
7	0.493	0.445	0.412	0.388	0.437	0.408	0.386	0.43	0.404	0.384	0.375
8	0.471	0.422	0.389	0.365	0.415	0.385	0.364	0.409	0.382	0.362	0.353
9	0.451	0.4	0.368	0.345	0.395	0.365	0.344	0.39	0.362	0.343	0.334
10	0.432	0.381	0.349	0.327	0.376	0.347	0.326	0.372	0.345	0.325	0.317

Average Luminance Table (cd/m²)

	0	45	90
0	196532	196532	196532
45	17666	21159	17742
55	9650	12792	9745
65	4747	5953	4766
75	2538	2593	2559
85	67	53	137

THIS TEST WAS CONDUCTED USING RELATIVE PHOTOMETRY TECHNIQUES ACCORDING TO STANDARD IESNA PROCEDURES. THE USER MUST THEREFORE USE CAUTION IN THE FOLLOWING SITUATIONS: 1) ACCORDING TO IESNA PROCEDURES, THE BALLAST(S) AND LAMP(S) ARE PRESUMED TO PRODUCE 100% OF RATED OUTPUT. AN APPROPRIATE BALLAST FACTOR MUST BE APPLIED TO THE LUMEN OUTPUT RATINGS AND LUMINOUS INTENSITY VALUES GIVEN. 2) THIS TEST WAS CONDUCTED IN A CONTROLLED LABORATORY ENVIRONMENT, FIELD PERFORMANCE MAY DIFFER.





LTL TEST #17145

CIRCLE-OF-LIGHT

Ft below	FC nadir	Dia @ 50%
6.0	31.7	3.2
8.0	17.8	4.3
10.0	11.4	5.4
12.0	7.9	6.5
14.0	5.8	7.6
16.0	4.5	8.7

NOTE: 'Dia' spans the edge-points that are half of nadir FC