



# 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: 17149

DATE: 11-17-2009

PREPARED FOR: USA ILLUMINATION, INC.

CATALOG NUMBER: 1646-BL922-A

LUMINAIRE: FORMED STEEL HOUSING, CAST WHITE ENAMEL ALUMINUM AND STEEL TRIM WITH FROSTED GLASS ENCLOSURE.

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

LAMP CATALOG NUMBER: GE CMH39MR16/930/FL

BALLAST: TWO METROLIGHT SUPER HID 39

MOUNTING: RECESSED

NOTE: THIS TEST WAS PRORATED TO A LUMEN RATING OF 1000 TO REPRESENT THE LUMEN RATING OF A GE 20 WATT CMHMR16 LAMP. THIS PRORATE WAS PERFORMED USING MEASURED PHOTOMETRIC DATA FROM LTL TEST REPORT NUMBER 13906.

Candela Distribution

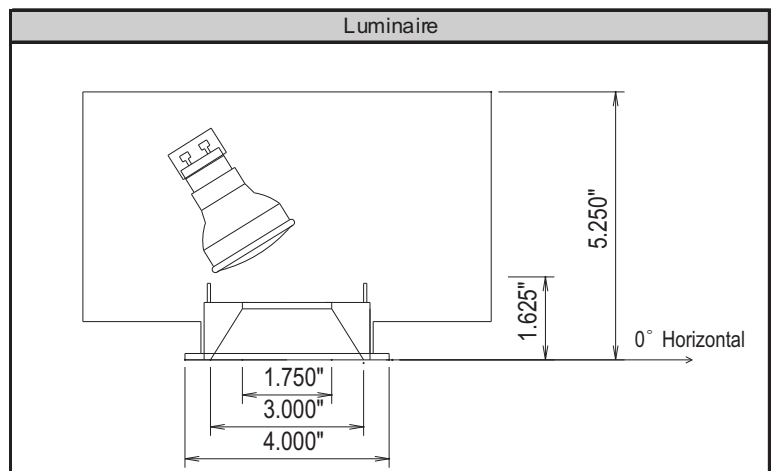
	0	22.5	45	67.5	90	112.5	135	157.5	180	202.5	225	247.5	270	292.5	315	337.5	Flux
0	729	729	729	729	729	729	729	729	729	729	729	729	729	729	729	729	
5	1060	1026	933	819	703	606	541	503	493	503	541	606	703	819	933	1026	71.0
15	1798	1599	1162	773	517	370	296	259	248	259	296	370	517	773	1162	1599	209.7
25	1830	1511	921	529	330	229	180	155	147	155	180	229	330	529	921	1511	274.8
35	1042	862	526	312	204	147	115	94	87	94	115	147	204	312	526	862	221.1
45	375	341	257	174	125	95	76	65	63	65	76	95	125	174	257	341	132.9
55	113	117	114	100	82	68	55	50	48	50	55	68	82	100	114	117	75.6
65	24	30	42	53	50	42	32	30	28	30	32	42	50	53	42	30	38.2
75	5	6	6	16	17	15	12	12	12	12	12	15	17	16	6	6	12.8
85	0	0	0	0	1	1	2	2	2	2	2	1	1	0	0	0	1.6
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	555.6	27.8%	53.5%
0-40	776.7	38.8%	74.8%
0-60	985.2	49.3%	94.9%
0-90	1037.9	51.9%	100.0%
90-180	0.0	0.0%	0.0%
0-180	1037.9	51.9%	100.0%

Total luminaire efficiency: 51.9%

CIE Type: Direct  
 Spacing Criterion: 0 deg: 1.59 90 deg: 0.69  
 180 deg: 0.30 270 deg: 0.69



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	729	729	729	729	729	729	729	729	729	729	729	729	729	729	729	729
5	1060	1026	933	819	703	606	541	503	493	503	541	606	703	819	933	1026
10	1458	1352	1101	834	623	478	395	353	339	353	395	478	623	834	1101	1352
15	1798	1599	1162	773	517	370	296	259	248	259	296	370	517	773	1162	1599
20	1947	1662	1093	658	416	288	228	198	189	198	228	288	416	658	1093	1662
25	1830	1511	921	529	330	229	180	155	147	155	180	229	330	529	921	1511
30	1490	1209	715	411	261	184	143	122	115	122	143	184	261	411	715	1209
35	1042	862	526	312	204	147	115	94	87	94	115	147	204	312	526	862
40	645	558	375	233	159	117	94	76	72	76	94	117	159	233	375	558
45	375	341	257	174	125	95	76	65	63	65	76	95	125	174	257	341
50	210	202	173	132	101	80	65	58	56	58	65	80	101	132	173	202
55	113	117	114	100	82	68	55	50	48	50	55	68	82	100	114	117
60	57	64	73	74	65	55	44	40	39	40	44	55	65	74	73	64
65	24	30	42	53	50	42	32	30	28	30	32	42	50	53	42	30
70	9	10	19	35	35	29	21	18	18	18	21	29	35	35	19	10
75	5	6	6	16	17	15	12	12	12	12	12	15	17	16	6	6
80	3	3	3	4	5	6	6	6	6	6	6	6	5	4	3	3
85	0	0	0	0	1	1	2	2	2	2	2	1	1	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	17.6	45-50	57.1	90-95	0.0	135-140	0.0
5-10	53.5	50-55	43.2	95-100	0.0	140-145	0.0
10-15	89.6	55-60	32.4	100-105	0.0	145-150	0.0
15-20	120.2	60-65	23.2	105-110	0.0	150-155	0.0
20-25	137.5	65-70	15.1	110-115	0.0	155-160	0.0
25-30	137.4	70-75	8.8	115-120	0.0	160-165	0.0
30-35	122.2	75-80	4.0	120-125	0.0	165-170	0.0
35-40	98.9	80-85	1.5	125-130	0.0	170-175	0.0
40-45	75.7	85-90	0.1	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	0.633	0.633	0.633	0.633	0.618	0.618	0.618	0.618	0.603	0.603	0.603	0.603
1	0.596	0.577	0.56	0.544	0.582	0.565	0.549	0.535	0.569	0.553	0.539	0.527
2	0.558	0.524	0.497	0.473	0.545	0.515	0.489	0.468	0.533	0.506	0.482	0.463
3	0.523	0.478	0.444	0.418	0.511	0.47	0.439	0.414	0.499	0.463	0.434	0.411
4	0.489	0.438	0.401	0.373	0.478	0.431	0.397	0.37	0.468	0.425	0.393	0.368
5	0.459	0.402	0.364	0.336	0.449	0.397	0.361	0.334	0.439	0.392	0.358	0.333
6	0.431	0.371	0.333	0.305	0.422	0.367	0.33	0.304	0.413	0.362	0.328	0.303
7	0.405	0.344	0.306	0.279	0.397	0.34	0.304	0.278	0.389	0.336	0.302	0.277
8	0.381	0.32	0.282	0.256	0.374	0.317	0.281	0.256	0.367	0.313	0.279	0.255
9	0.36	0.299	0.262	0.237	0.353	0.296	0.26	0.236	0.347	0.293	0.259	0.236
10	0.341	0.279	0.243	0.22	0.334	0.277	0.242	0.22	0.329	0.274	0.241	0.219

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	0.577	0.577	0.577	0.577	0.552	0.552	0.552	0.53	0.53	0.53	0.519
1	0.545	0.532	0.521	0.51	0.513	0.504	0.495	0.495	0.487	0.481	0.471
2	0.511	0.488	0.469	0.452	0.472	0.456	0.442	0.458	0.445	0.433	0.424
3	0.479	0.448	0.424	0.404	0.435	0.415	0.397	0.423	0.406	0.391	0.382
4	0.449	0.413	0.385	0.363	0.402	0.378	0.359	0.392	0.372	0.355	0.346
5	0.422	0.382	0.352	0.329	0.373	0.347	0.326	0.364	0.341	0.323	0.314
6	0.397	0.354	0.323	0.3	0.346	0.319	0.298	0.339	0.315	0.296	0.287
7	0.375	0.329	0.298	0.275	0.323	0.295	0.274	0.316	0.291	0.272	0.264
8	0.354	0.307	0.276	0.254	0.301	0.273	0.253	0.296	0.271	0.251	0.243
9	0.335	0.288	0.257	0.235	0.283	0.254	0.234	0.278	0.252	0.233	0.225
10	0.318	0.27	0.239	0.218	0.265	0.237	0.218	0.261	0.236	0.217	0.209

Average Luminance Table (cd/m<sup>2</sup>)

	0	45	90
0	71780	71780	71780
45	52246	35764	17421
55	19402	19645	14061
65	5548	9781	11700
75	2088	2430	6442
85	169	264	956

Note: The zonal cavity calculation technique is accurate when luminaires with symmetric candela distributions are employed and when the luminaires are located symmetrically throughout the room. This unit has special characteristics and therefore these values should be used with caution.

