



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: 18033 DATE: 03-29-2010
 PREPARED FOR: SPECIALTY LIGHTING
 CATALOG NUMBER: 802
 LUMINAIRE: FORMED BLACK ENAMEL ALUMINUM HOUSING, CLEAR RIBBED GLASS ENCLOSURE.
 LAMP: FOUR VBU 20 WATT MR16 HALOGEN LAMPS RATED AT 310 LUMENS EACH.
 LAMP CATALOG NUMBER: SYLVANIA 20W MR16 12V ESX
 MOUNTING: RECESSED

Candela Distribution

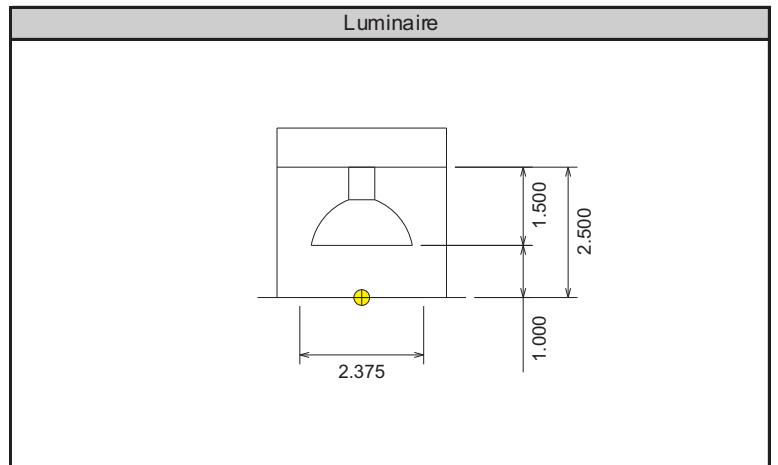
	0	22.5	45	67.5	90	112.5	135	157.5	180	202.5	225	247.5	270	292.5	315	337.5	Flux
0	4841	4841	4841	4841	4841	4841	4841	4841	4841	4841	4841	4841	4841	4841	4841	4841	
5	4290	4093	3660	3284	3138	3284	3660	4093	4290	4093	3660	3284	3138	3284	3660	4093	293.0
15	2733	1673	654	356	303	356	654	1673	2733	1673	654	356	303	356	654	1673	301.3
25	1428	493	168	145	145	145	168	493	1428	493	168	145	145	145	168	493	185.0
35	456	149	111	99	95	99	111	149	456	149	111	99	95	99	111	149	99.8
45	127	68	57	16	12	16	57	68	127	68	57	16	12	16	57	68	42.8
55	41	28	14	5	3	5	14	28	41	28	14	5	3	5	14	28	16.6
65	49	14	2	1	0	1	2	14	49	14	2	1	0	1	2	14	10.2
75	39	8	1	0	0	0	1	8	39	8	1	0	0	0	1	8	7.0
85	7	0	0	0	0	0	0	0	7	0	0	0	0	0	0	0	1.2
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	0

Zonal Lumen Summary

Zone	Lumens	% of Lamp	% of Luminaire
0-30	779.3	62.8%	81.4%
0-40	879.1	70.9%	91.9%
0-60	938.6	75.7%	98.1%
0-90	957.0	77.2%	100.0%
90-180	0.0	0.0%	0.0%
0-180	957.0	77.2%	100.0%

Total luminaire efficiency: 77.2%

CIE Type: Direct
 Spacing Criterion: 0 deg: 0.55 90 deg: 0.22
 180 deg: 0.55 270 deg: 0.22



Approved By: _____

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



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

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	4841	4841	4841	4841	4841	4841	4841	4841	4841	4841	4841	4841	4841	4841	4841	4841
5	4290	4093	3660	3284	3138	3284	3660	4093	4290	4093	3660	3284	3138	3284	3660	4093
10	3435	2735	1724	1168	1024	1168	1724	2735	3435	2735	1724	1168	1024	1168	1724	2735
15	2733	1673	654	356	303	356	654	1673	2733	1673	654	356	303	356	654	1673
20	2073	937	269	188	179	188	269	937	2073	937	269	188	179	188	269	937
25	1428	493	168	145	145	145	168	493	1428	493	168	145	145	145	168	493
30	849	260	134	121	115	121	134	260	849	260	134	121	115	121	134	260
35	456	149	111	99	95	99	111	149	456	149	111	99	95	99	111	149
40	239	98	86	54	30	54	86	98	239	98	86	54	30	54	86	98
45	127	68	57	16	12	16	57	68	127	68	57	16	12	16	57	68
50	79	46	31	8	6	8	31	46	79	46	31	8	6	8	31	46
55	41	28	14	5	3	5	14	28	41	28	14	5	3	5	14	28
60	45	17	5	3	1	3	5	17	45	17	5	3	1	3	5	17
65	49	14	2	1	0	1	2	14	49	14	2	1	0	1	2	14
70	44	11	1	1	0	1	1	11	44	11	1	1	0	1	1	11
75	39	8	1	0	0	0	1	8	39	8	1	0	0	0	1	8
80	22	2	0	0	0	0	0	2	22	2	0	0	0	0	0	2
85	7	0	0	0	0	0	0	0	7	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	101.5	45-50	16.7	90-95	0.0	135-140	0.0
5-10	191.5	50-55	10.2	95-100	0.0	140-145	0.0
10-15	168.3	55-60	6.4	100-105	0.0	145-150	0.0
15-20	133.0	60-65	5.4	105-110	0.0	150-155	0.0
20-25	105.2	65-70	4.8	110-115	0.0	155-160	0.0
25-30	79.8	70-75	4.2	115-120	0.0	160-165	0.0
30-35	58.7	75-80	2.7	120-125	0.0	165-170	0.0
35-40	41.1	80-85	1.1	125-130	0.0	170-175	0.0
40-45	26.2	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	0.941	0.941	0.941	0.941	0.919	0.919	0.919	0.919	0.897	0.897	0.897	0.897
1	0.901	0.879	0.86	0.842	0.881	0.862	0.844	0.829	0.862	0.845	0.83	0.816
2	0.862	0.825	0.795	0.769	0.844	0.811	0.784	0.761	0.828	0.798	0.773	0.752
3	0.826	0.778	0.742	0.713	0.81	0.767	0.734	0.707	0.796	0.757	0.726	0.702
4	0.792	0.737	0.698	0.668	0.778	0.729	0.692	0.664	0.765	0.72	0.686	0.66
5	0.761	0.702	0.661	0.631	0.749	0.694	0.656	0.628	0.737	0.688	0.652	0.626
6	0.732	0.67	0.629	0.6	0.721	0.664	0.625	0.598	0.711	0.658	0.622	0.596
7	0.706	0.641	0.601	0.573	0.696	0.636	0.598	0.571	0.687	0.632	0.595	0.57
8	0.681	0.616	0.576	0.549	0.672	0.612	0.574	0.548	0.664	0.608	0.572	0.547
9	0.658	0.593	0.554	0.528	0.65	0.589	0.552	0.527	0.643	0.586	0.55	0.526
10	0.637	0.572	0.534	0.509	0.63	0.569	0.532	0.508	0.623	0.566	0.531	0.507

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	0.857	0.857	0.857	0.857	0.821	0.821	0.821	0.787	0.787	0.787	0.772
1	0.828	0.814	0.802	0.791	0.786	0.776	0.767	0.759	0.752	0.745	0.732
2	0.797	0.774	0.753	0.736	0.751	0.735	0.72	0.73	0.717	0.705	0.693
3	0.769	0.737	0.712	0.691	0.719	0.698	0.68	0.702	0.685	0.67	0.659
4	0.742	0.704	0.676	0.653	0.689	0.665	0.645	0.676	0.655	0.638	0.628
5	0.716	0.674	0.644	0.62	0.662	0.636	0.615	0.651	0.628	0.61	0.6
6	0.692	0.647	0.616	0.592	0.637	0.609	0.588	0.628	0.603	0.584	0.575
7	0.67	0.623	0.59	0.567	0.614	0.585	0.564	0.606	0.581	0.561	0.552
8	0.649	0.6	0.568	0.544	0.593	0.564	0.542	0.586	0.56	0.54	0.531
9	0.629	0.579	0.547	0.524	0.573	0.544	0.523	0.567	0.541	0.521	0.513
10	0.611	0.56	0.528	0.506	0.555	0.526	0.505	0.55	0.523	0.504	0.495

Average Luminance Table (cd/m²)

	0	45	90
0	136635	136635	136635
45	5052	2282	467
55	1999	676	131
65	3289	106	1
75	4296	76	0
85	2375	0	0

THIS TEST WAS CONDUCTED USING RELATIVE PHOTOMETRY TECHNIQUES ACCORDING TO STANDARD IESNA PROCEDURES. THE USER MUST THEREFORE USE CAUTION IN THE FOLLOWING SITUATIONS: 1) THIS TEST WAS PERFORMED USING A SPECIFIC BALLAST/LAMP COMBINATION. EXTRAPOLATION OF THESE DATA FOR OTHER BALLAST/LAMP COMBINATIONS MAY PRODUCE ERRONEOUS RESULTS. 2) 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. 3) THIS TEST WAS CONDUCTED IN A CONTROLLED LABORATORY ENVIRONMENT WHERE THE AMBIENT TEMPERATURE WAS HELD AT 25 °C ±1°C. FIELD PERFORMANCE MAY DIFFER PARTICULARLY IN REGARDS TO CHANGE IN LUMINOUS OUTPUT AS A RESULT OF DIFFERENCE IN AMBIENT TEMPERATURE AND METHOD OF MOUNTING THE LUMINAIRE.

