



LUMINAIRE TESTING LABORATORY, INC.

SUSTAINING
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of the
IESNA

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

LTL NUMBER: 16914

DATE: 10-13-2009

PREPARED FOR: MERCURY LIGHTING PRODUCTS

CATALOG NUMBER: M450-232-OCT-ADR-ELB-UNI-2B

LUMINAIRE: FORMED STEEL HOUSING AND REFLECTORS, CLEAR LINEAR PRISMATIC PLASTIC ENCLOSURES.

LAMP: TWO 32 WATT T8 LINEAR FLUORESCENT LAMPS RATED AT 2850 LUMENS EACH.

LAMP CATALOG NUMBER: PHILIPS F32T8/TL841/ALTO II

BALLAST: TWO ADVANCE ICN-1P32-N

MOUNTING: SURFACE

ELECTRICAL VALUES: 120.0VAC, 0.4869A, 58.20W

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	1072	1072	1072	1072	1072	1072	1072	1072	1072	1072	1072	1072	1072	1072	1072	1072	
5	1066	1067	1064	1064	1065	1064	1064	1067	1066	1067	1064	1064	1065	1064	1064	1067	101.1
15	1028	1023	1018	1021	1023	1021	1018	1023	1028	1023	1018	1021	1023	1021	1018	1023	288.7
25	951	942	949	966	974	966	949	942	951	942	949	966	974	966	949	942	440.4
35	831	826	853	905	924	905	853	826	831	826	853	905	924	905	853	826	541.4
45	671	677	746	821	849	821	746	677	671	677	746	821	849	821	746	677	579.5
55	480	502	628	720	748	720	628	502	480	502	628	720	748	720	628	502	551.9
65	257	337	514	611	640	611	514	337	257	337	514	611	640	611	514	337	471.5
75	81	188	354	461	503	461	354	188	81	188	354	461	503	461	354	188	344.9
85	10	100	251	340	372	340	251	100	10	100	251	340	372	340	251	100	238.2
90	0	71	194	271	304	271	194	71	0	71	194	271	304	271	194	71	
95	0	59	175	256	286	256	175	59	0	59	175	256	286	256	175	59	171.5
105	0	28	127	198	223	198	127	28	0	28	127	198	223	198	127	28	123.3
115	0	7	75	131	152	131	75	7	0	7	75	131	152	131	75	7	72.4
125	0	0	31	73	90	73	31	0	0	0	31	73	90	73	31	0	34.2
135	0	0	5	27	37	27	5	0	0	0	5	27	37	27	5	0	10.4
145	0	0	0	2	6	2	0	0	0	0	0	2	6	2	0	0	1.2
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	

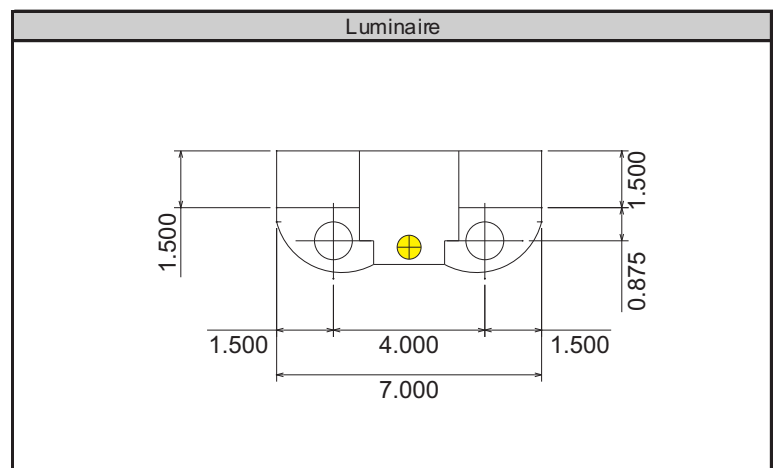
Zonal Lumen Summary

Zone	Lumens	% of Lamp	% of Luminaire
0-30	830.1	14.6%	20.9%
0-40	1371.6	24.1%	34.5%
0-60	2503.0	43.9%	63.0%
0-90	3557.5	62.4%	89.6%
90-180	413.0	7.2%	10.4%
0-180	3970.5	69.7%	100.0%

Total luminaire efficiency: 69.7%

CIE Type: Semi-Direct

Spacing Criterion: 0 deg: 1.24 90 deg: 1.34
180 deg: 1.24 270 deg: 1.34



Approved By: MG

THIS REPORT BASED ON LM-41 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	1072	1072	1072	1072	1072	1072	1072	1072	1072	1072	1072	1072	1072	1072	1072	1072
5	1066	1067	1064	1064	1065	1064	1064	1067	1066	1067	1064	1064	1065	1064	1064	1067
10	1052	1050	1045	1044	1045	1044	1045	1050	1052	1050	1045	1044	1045	1044	1045	1050
15	1028	1023	1018	1021	1023	1021	1018	1023	1028	1023	1018	1021	1023	1021	1018	1023
20	995	987	985	998	1002	998	985	987	995	987	985	998	1002	998	985	987
25	951	942	949	966	974	966	949	942	951	942	949	966	974	966	949	942
30	897	888	904	933	949	933	904	888	897	888	904	933	949	933	904	888
35	831	826	853	905	924	905	853	826	831	826	853	905	924	905	853	826
40	756	754	802	864	887	864	802	754	756	754	802	864	887	864	802	754
45	671	677	746	821	849	821	746	677	671	677	746	821	849	821	746	677
50	580	593	686	774	799	774	686	593	580	593	686	774	799	774	686	593
55	480	502	628	720	748	720	628	502	480	502	628	720	748	720	628	502
60	371	418	574	669	695	669	574	418	371	418	574	669	695	669	574	418
65	257	337	514	611	640	611	514	337	257	337	514	611	640	611	514	337
70	149	253	437	540	575	540	437	253	149	253	437	540	575	540	437	253
75	81	188	354	461	503	461	354	188	81	188	354	461	503	461	354	188
80	40	138	295	393	430	393	295	138	40	138	295	393	430	393	295	138
85	10	100	251	340	372	340	251	100	10	100	251	340	372	340	251	100
90	0	71	194	271	304	271	194	71	0	71	194	271	304	271	194	71
95	0	59	175	256	286	256	175	59	0	59	175	256	286	256	175	59
100	0	42	154	232	260	232	154	42	0	42	154	232	260	232	154	42
105	0	28	127	198	223	198	127	28	0	28	127	198	223	198	127	28
110	0	16	100	164	188	164	100	16	0	16	100	164	188	164	100	16
115	0	7	75	131	152	131	75	7	0	7	75	131	152	131	75	7
120	0	0	52	102	120	102	52	0	0	0	52	102	120	102	52	0
125	0	0	31	73	90	73	31	0	0	0	31	73	90	73	31	0
130	0	0	16	47	61	47	16	0	0	0	16	47	61	47	16	0
135	0	0	5	27	37	27	5	0	0	0	5	27	37	27	5	0
140	0	0	0	12	18	12	0	0	0	0	0	12	18	12	0	0
145	0	0	0	2	6	2	0	0	0	0	0	2	6	2	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	25.6	45-50	290.4	90-95	90.3	135-140	3.2
5-10	75.5	50-55	282.8	95-100	81.2	140-145	1.0
10-15	122.7	55-60	269.1	100-105	68.5	145-150	0.1
15-20	166.0	60-65	249.5	105-110	54.8	150-155	0.0
20-25	204.2	65-70	222.0	110-115	41.9	155-160	0.0
25-30	236.2	70-75	187.9	115-120	30.5	160-165	0.0
30-35	261.8	75-80	156.9	120-125	21.0	165-170	0.0
35-40	279.7	80-85	131.3	125-130	13.2	170-175	0.0
40-45	289.2	85-90	106.9	130-135	7.2	175-180	0.0



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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	0.841	0.841	0.841	0.841	0.812	0.812	0.812	0.812	0.785	0.785	0.785	0.785
1	0.754	0.711	0.672	0.637	0.726	0.686	0.651	0.619	0.699	0.663	0.631	0.602
2	0.682	0.611	0.553	0.505	0.655	0.591	0.538	0.493	0.629	0.571	0.523	0.482
3	0.619	0.532	0.465	0.413	0.594	0.514	0.453	0.404	0.569	0.498	0.441	0.396
4	0.565	0.468	0.398	0.345	0.542	0.453	0.388	0.339	0.519	0.439	0.379	0.332
5	0.518	0.416	0.345	0.294	0.497	0.403	0.337	0.289	0.476	0.391	0.33	0.284
6	0.477	0.372	0.303	0.255	0.458	0.361	0.297	0.25	0.439	0.351	0.29	0.246
7	0.441	0.336	0.269	0.223	0.424	0.327	0.264	0.22	0.407	0.318	0.258	0.216
8	0.41	0.306	0.241	0.198	0.394	0.297	0.237	0.195	0.379	0.289	0.232	0.192
9	0.382	0.28	0.218	0.177	0.368	0.272	0.214	0.174	0.354	0.265	0.21	0.172
10	0.358	0.257	0.198	0.159	0.344	0.251	0.195	0.157	0.332	0.244	0.191	0.155

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	0.734	0.734	0.734	0.734	0.687	0.687	0.687	0.644	0.644	0.644	0.624
1	0.648	0.62	0.594	0.57	0.58	0.559	0.539	0.543	0.526	0.511	0.491
2	0.581	0.534	0.494	0.459	0.5	0.467	0.438	0.468	0.442	0.418	0.398
3	0.525	0.466	0.419	0.379	0.437	0.397	0.364	0.41	0.377	0.348	0.329
4	0.478	0.412	0.36	0.32	0.387	0.343	0.308	0.363	0.326	0.296	0.278
5	0.439	0.367	0.315	0.274	0.346	0.3	0.265	0.326	0.287	0.255	0.238
6	0.405	0.331	0.278	0.238	0.312	0.266	0.231	0.294	0.254	0.223	0.207
7	0.376	0.3	0.248	0.21	0.284	0.238	0.203	0.268	0.228	0.197	0.182
8	0.351	0.274	0.223	0.187	0.26	0.214	0.181	0.246	0.206	0.176	0.161
9	0.328	0.252	0.202	0.167	0.239	0.195	0.163	0.227	0.187	0.158	0.144
10	0.308	0.233	0.184	0.151	0.221	0.178	0.147	0.211	0.172	0.143	0.13

Average Luminance Table (cd/m²)

	0	45	90
0	5051	5051	5051
45	4474	4821	5195
55	3942	4733	5236
65	2860	4813	5428
75	1483	4567	5635
85	520	5474	6410

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.



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