



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: 21363 DATE: 11/04/2010
 PREPARED FOR: RENOVA LIGHTING
 CATALOG NUMBER: ECS-MVT4-WN-332-UNV-13L-CAL
 LUMINAIRE: MOLDED PLASTIC AND FORMED STEEL HOUSING, FORMED WHITE
 PAINTED ALUMINUM REFLECTOR, CLEAR LINEAR PRISMATIC
 ACRYLIC ENCLOSURE.
 LAMP: THREE 32 WATT T8 LINEAR FLUORESCENT LAMPS RATED AT 2850 LUMENS
 EACH.
 LAMP CATALOG NUMBER: PHILIPS F32T8/TL841/ALTO
 BALLAST: ONE SYLVANIA "QUICKTRONIC" QHE3X32T8/UNV-ISL-SC
 MOUNTING: PENDANT
 ELECTRICAL VALUES: 120.0VAC, 0.5692A, 68.26W

Candela Distribution

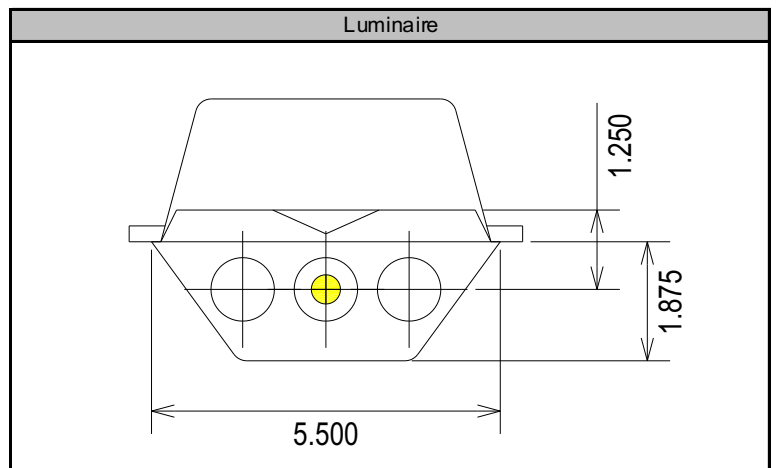
	0	22.5	45	67.5	90	112.5	135	157.5	180	202.5	225	247.5	270	292.5	315	337.5	Flux
0	1630	1630	1630	1630	1630	1630	1630	1630	1630	1630	1630	1630	1630	1630	1630	1630	
5	1615	1623	1634	1631	1638	1631	1634	1623	1615	1623	1634	1631	1638	1631	1634	1623	155.2
15	1554	1572	1621	1652	1669	1652	1621	1572	1554	1572	1621	1652	1669	1652	1621	1572	456.5
25	1425	1482	1577	1607	1625	1607	1577	1482	1425	1482	1577	1607	1625	1607	1577	1482	713.9
35	1245	1347	1440	1547	1587	1547	1440	1347	1245	1347	1440	1547	1587	1547	1440	1347	899.7
45	1030	1140	1319	1402	1410	1402	1319	1140	1030	1140	1319	1402	1410	1402	1319	1140	975.7
55	780	910	1048	1072	1080	1072	1048	910	780	910	1048	1072	1080	1072	1048	910	887.0
65	501	657	739	792	823	792	739	657	501	657	739	792	823	792	739	657	708.4
75	231	357	504	614	653	614	504	357	231	357	504	614	653	614	504	357	510.9
85	47	187	357	482	529	482	357	187	47	187	357	482	529	482	357	187	360.0
90	14	131	291	432	482	432	291	131	14	131	291	432	482	432	291	131	
95	15	94	270	400	443	400	270	94	15	94	270	400	443	400	270	94	267.9
105	10	36	160	261	300	261	160	36	10	36	160	261	300	261	160	36	163.3
115	4	3	62	129	156	129	62	3	4	3	62	129	156	129	62	3	69.8
125	1	1	8	41	54	41	8	1	1	1	8	41	54	41	8	1	19.4
135	0	0	0	2	7	2	0	0	0	0	0	2	7	2	0	0	1.9
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	1325.6	15.5%	21.4%
0-40	2225.3	26.0%	36.0%
0-60	4088.1	47.8%	66.0%
0-90	5667.4	66.3%	91.6%
90-180	522.3	6.1%	8.4%
0-180	6189.6	72.4%	100.0%

Total luminaire efficiency: 72.4%

CIE Type: Direct
 Spacing Criterion: 0 deg: 1.22 90 deg: 1.48
 180 deg: 1.22 270 deg: 1.48



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	1630	1630	1630	1630	1630	1630	1630	1630	1630	1630	1630	1630	1630	1630	1630	1630
5	1615	1623	1634	1631	1638	1631	1634	1623	1615	1623	1634	1631	1638	1631	1634	1623
10	1594	1605	1625	1637	1650	1637	1625	1605	1594	1605	1625	1637	1650	1637	1625	1605
15	1554	1572	1621	1652	1669	1652	1621	1572	1554	1572	1621	1652	1669	1652	1621	1572
20	1498	1532	1610	1645	1662	1645	1610	1532	1498	1532	1610	1645	1662	1645	1610	1532
25	1425	1482	1577	1607	1625	1607	1577	1482	1425	1482	1577	1607	1625	1607	1577	1482
30	1340	1424	1515	1561	1600	1561	1515	1424	1340	1424	1515	1561	1600	1561	1515	1424
35	1245	1347	1440	1547	1587	1547	1440	1347	1245	1347	1440	1547	1587	1547	1440	1347
40	1143	1253	1381	1495	1531	1495	1381	1253	1143	1253	1381	1495	1531	1495	1381	1253
45	1030	1140	1319	1402	1410	1402	1319	1140	1030	1140	1319	1402	1410	1402	1319	1140
50	912	1020	1223	1227	1239	1227	1223	1020	912	1020	1223	1227	1239	1227	1223	1020
55	780	910	1048	1072	1080	1072	1048	910	780	910	1048	1072	1080	1072	1048	910
60	642	806	889	922	936	922	889	806	642	806	889	922	936	922	889	806
65	501	657	739	792	823	792	739	657	501	657	739	792	823	792	739	657
70	363	497	603	701	738	701	603	497	363	497	603	701	738	701	603	497
75	231	357	504	614	653	614	504	357	231	357	504	614	653	614	504	357
80	122	257	426	545	590	545	426	257	122	257	426	545	590	545	426	257
85	47	187	357	482	529	482	357	187	47	187	357	482	529	482	357	187
90	14	131	291	432	482	432	291	131	14	131	291	432	482	432	291	131
95	15	94	270	400	443	400	270	94	15	94	270	400	443	400	270	94
100	13	60	222	340	382	340	222	60	13	60	222	340	382	340	222	60
105	10	36	160	261	300	261	160	36	10	36	160	261	300	261	160	36
110	7	14	106	188	219	188	106	14	7	14	106	188	219	188	106	14
115	4	3	62	129	156	129	62	3	4	3	62	129	156	129	62	3
120	3	2	29	80	100	80	29	2	3	2	29	80	100	80	29	2
125	1	1	8	41	54	41	8	1	1	1	8	41	54	41	8	1
130	0	0	1	17	27	17	1	0	0	0	1	17	27	17	1	0
135	0	0	0	2	7	2	0	0	0	0	0	2	7	2	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	39.0	45-50	486.2	90-95	143.7	135-140	0.1
5-10	116.2	50-55	462.4	95-100	124.2	140-145	0.0
10-15	192.0	55-60	424.7	100-105	96.1	145-150	0.0
15-20	264.5	60-65	379.9	105-110	67.2	150-155	0.0
20-25	329.4	65-70	328.5	110-115	43.7	155-160	0.0
25-30	384.5	70-75	277.9	115-120	26.1	160-165	0.0
30-35	431.7	75-80	233.0	120-125	13.7	165-170	0.0
35-40	468.0	80-85	196.8	125-130	5.7	170-175	0.0
40-45	489.5	85-90	163.2	130-135	1.7	175-180	0.0



Coefficients of Utilization - Zonal Cavity Method												
Effective Floor Cavity Reflectance 20%												
Ceiling Cavity Reflectance	90				80				70			
	70	50	30	10	70	50	30	10	70	50	30	10
Room Cavity Ratio (RCR)												
0	0.875	0.875	0.875	0.875	0.847	0.847	0.847	0.847	0.82	0.82	0.82	0.82
1	0.787	0.743	0.703	0.667	0.759	0.719	0.683	0.65	0.732	0.696	0.663	0.634
2	0.713	0.64	0.58	0.531	0.686	0.62	0.565	0.52	0.66	0.601	0.551	0.509
3	0.647	0.557	0.489	0.435	0.622	0.54	0.477	0.427	0.598	0.524	0.466	0.419
4	0.591	0.491	0.419	0.364	0.568	0.476	0.409	0.358	0.546	0.462	0.4	0.352
5	0.542	0.436	0.363	0.31	0.521	0.424	0.356	0.306	0.501	0.412	0.349	0.301
6	0.499	0.391	0.319	0.269	0.48	0.38	0.313	0.265	0.462	0.37	0.307	0.261
7	0.462	0.353	0.283	0.235	0.444	0.343	0.278	0.232	0.428	0.335	0.273	0.229
8	0.429	0.32	0.254	0.209	0.413	0.312	0.249	0.206	0.398	0.305	0.245	0.203
9	0.399	0.293	0.229	0.186	0.385	0.286	0.225	0.184	0.371	0.279	0.222	0.182
10	0.374	0.269	0.208	0.168	0.36	0.263	0.205	0.166	0.348	0.257	0.202	0.164

Ceiling Cavity Reflectance	50				30			10			0
	70	50	30	10	50	30	10	50	30	10	0
Room Cavity Ratio (RCR)											
0	0.77	0.77	0.77	0.77	0.725	0.725	0.725	0.683	0.683	0.683	0.663
1	0.683	0.654	0.627	0.602	0.614	0.593	0.573	0.578	0.561	0.545	0.525
2	0.613	0.564	0.523	0.487	0.531	0.497	0.467	0.5	0.473	0.448	0.428
3	0.555	0.493	0.444	0.404	0.465	0.424	0.389	0.439	0.404	0.374	0.355
4	0.506	0.436	0.383	0.341	0.412	0.366	0.329	0.389	0.35	0.318	0.3
5	0.464	0.389	0.334	0.292	0.368	0.321	0.283	0.349	0.308	0.275	0.257
6	0.428	0.35	0.295	0.254	0.332	0.284	0.247	0.315	0.273	0.24	0.223
7	0.397	0.318	0.263	0.224	0.302	0.254	0.218	0.287	0.244	0.212	0.196
8	0.37	0.29	0.237	0.199	0.276	0.228	0.194	0.263	0.221	0.189	0.174
9	0.346	0.266	0.214	0.178	0.254	0.207	0.174	0.243	0.201	0.17	0.156
10	0.325	0.246	0.195	0.161	0.235	0.189	0.157	0.225	0.183	0.154	0.14

Average Luminance Table (cd/m²)

	0	45	90
0	9098	9098	9098
45	7905	8586	8606
55	7268	7685	7306
65	6177	6435	6460
75	4424	5611	6337
85	2129	5741	7010

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.

