LTL 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: 18434 DATE: 03-30-2010
PREPARED FOR: PRECISION ARCHITECTURAL LIGHTING
CATALOG NUMBER: MLR-1-4-X-PB-120-T5
LUMINAIRE: EXTRUDED ALUMINUM HOUSING WITH STEEL END CAPS, FORMED WHITE ENAMEL ALUMINUM REFLECTOR, FORMED 31 CELL, 3/4" DEEP SEMI-SPECULAR ALUMINUM LOUVER.
LAMP: ONE 28 WATT T5 LINEAR FLUORESCENT LAMP RATED AT 2610 LUMENS.
LAMP CATALOG NUMBER: PHILIPS F28T5/841
BALLAST: ONE UNIVERSAL LIGHTING TECHNOLOGIES "ACCU START" B228PUNV-C
MOUNTING: RECESSED
ELECTRICAL VALUES: 120.0VAC, 0.2578A, 30.85W

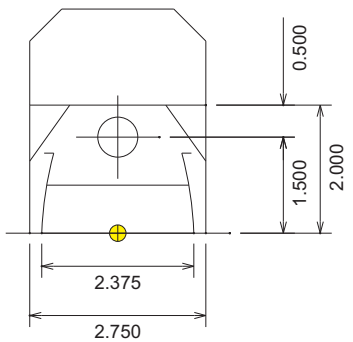
Candela Distribution

	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	683	683	683	683	683	683	683	683	683	683	683	683	683	683	683	683	
5	679	682	683	686	688	686	683	682	679	682	683	686	688	686	683	682	65.2
15	642	655	678	708	718	708	678	655	642	655	678	708	718	708	678	655	192.7
25	581	608	668	729	754	729	668	608	581	608	668	729	754	729	668	608	308.0
35	501	550	624	650	656	650	624	550	501	550	624	650	656	650	624	550	373.1
45	394	454	460	405	392	405	460	454	394	454	460	405	392	405	460	454	329.7
55	252	281	218	203	210	203	218	281	252	281	218	203	210	203	218	281	206.6
65	51	53	60	51	50	51	60	53	51	53	60	51	50	51	60	53	60.4
75	10	10	9	10	12	10	9	10	10	10	9	10	12	10	9	10	11.4
85	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.8
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	565.9	21.7%	36.6%
0-40	939.0	36.0%	60.7%
0-60	1475.3	56.5%	95.3%
0-90	1548.0	59.3%	100.0%
90-180	0.0	0.0%	0.0%
0-180	1548.0	59.3%	100.0%

Luminaire



Total luminaire efficiency: 59.3%

CIE Type: Direct
Spacing Criterion: 0 deg: 1.19 90 deg: 1.44
180 deg: 1.19 270 deg: 1.44
Shielding angle: 0 deg: 32 90 deg: 42

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	683	683	683	683	683	683	683	683	683	683	683	683	683	683	683	683
5	679	682	683	686	688	686	683	682	679	682	683	686	688	686	683	682
10	665	673	683	693	697	693	683	673	665	673	683	693	697	693	683	673
15	642	655	678	708	718	708	678	655	642	655	678	708	718	708	678	655
20	614	633	675	722	739	722	675	633	614	633	675	722	739	722	675	633
25	581	608	668	729	754	729	668	608	581	608	668	729	754	729	668	608
30	544	581	653	715	736	715	653	581	544	581	653	715	736	715	653	581
35	501	550	624	650	656	650	624	550	501	550	624	650	656	650	624	550
40	451	509	562	542	536	542	562	509	451	509	562	542	536	542	562	509
45	394	454	460	405	392	405	460	454	394	454	460	405	392	405	460	454
50	330	380	338	291	294	291	338	380	330	380	338	291	294	291	338	380
55	252	281	218	203	210	203	218	281	252	281	218	203	210	203	218	281
60	146	159	128	115	107	115	128	159	146	159	128	115	107	115	128	159
65	51	53	60	51	50	51	60	53	51	53	60	51	50	51	60	53
70	23	21	20	25	25	25	20	21	23	21	20	25	25	25	20	21
75	10	10	9	10	12	10	9	10	10	10	9	10	12	10	9	10
80	4	3	3	4	5	4	3	3	4	3	3	4	5	4	3	3
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	16.3		45-50	152.8		90-95	0.0		135-140	0.0
5-10	48.9		50-55	122.3		95-100	0.0		140-145	0.0
10-15	80.8		55-60	84.4		100-105	0.0		145-150	0.0
15-20	111.9		60-65	42.6		105-110	0.0		150-155	0.0
20-25	141.1		65-70	17.8		110-115	0.0		155-160	0.0
25-30	166.9		70-75	8.0		115-120	0.0		160-165	0.0
30-35	184.4		75-80	3.5		120-125	0.0		165-170	0.0
35-40	188.6		80-85	0.8		125-130	0.0		170-175	0.0
40-45	176.9		85-90	0.0		130-135	0.0		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	0.723	0.723	0.723	0.723	0.706	0.706	0.706	0.706	0.69	0.69	0.69	0.69
1	0.677	0.654	0.632	0.613	0.661	0.64	0.621	0.603	0.646	0.627	0.609	0.594
2	0.629	0.586	0.551	0.522	0.614	0.575	0.543	0.516	0.599	0.564	0.535	0.51
3	0.582	0.526	0.483	0.449	0.568	0.517	0.477	0.445	0.555	0.508	0.471	0.441
4	0.539	0.473	0.426	0.39	0.526	0.466	0.422	0.388	0.513	0.458	0.417	0.385
5	0.5	0.428	0.379	0.343	0.487	0.421	0.375	0.341	0.476	0.415	0.372	0.339
6	0.464	0.388	0.339	0.303	0.453	0.383	0.336	0.302	0.442	0.377	0.333	0.301
7	0.431	0.354	0.305	0.271	0.421	0.349	0.303	0.27	0.412	0.345	0.3	0.269
8	0.402	0.324	0.276	0.243	0.393	0.32	0.274	0.243	0.384	0.316	0.272	0.242
9	0.376	0.298	0.251	0.22	0.368	0.295	0.25	0.22	0.36	0.291	0.248	0.219
10	0.353	0.275	0.23	0.2	0.345	0.272	0.229	0.2	0.338	0.269	0.228	0.199

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	0.659	0.659	0.659	0.659	0.631	0.631	0.631	0.605	0.605	0.605	0.593
1	0.618	0.602	0.588	0.575	0.58	0.568	0.558	0.559	0.55	0.542	0.53
2	0.573	0.544	0.52	0.498	0.526	0.505	0.487	0.508	0.492	0.477	0.466
3	0.53	0.491	0.46	0.434	0.476	0.449	0.427	0.461	0.439	0.42	0.409
4	0.491	0.444	0.409	0.38	0.431	0.4	0.376	0.419	0.393	0.371	0.36
5	0.455	0.403	0.365	0.336	0.392	0.359	0.332	0.382	0.353	0.329	0.318
6	0.423	0.367	0.328	0.298	0.358	0.323	0.296	0.349	0.318	0.294	0.283
7	0.394	0.336	0.296	0.267	0.328	0.292	0.265	0.32	0.288	0.264	0.253
8	0.368	0.309	0.269	0.241	0.302	0.266	0.239	0.295	0.262	0.238	0.228
9	0.345	0.285	0.246	0.218	0.279	0.243	0.217	0.273	0.24	0.216	0.206
10	0.325	0.264	0.225	0.199	0.258	0.223	0.198	0.253	0.221	0.197	0.187

Average Luminance Table (cd/m²)

	0	45	90
0	7851	7851	7851
45	6409	7481	6378
55	5047	4365	4202
65	1381	1626	1348
75	465	380	528
85	0	0	8

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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