



Photometric Indoor Test Report

Relevant Standards

IES LM-9-2009, IES LM-41-1998 (Withdrawn)
ANSI C78.81-2010, ANSI C82.1-2004, ANSI C82.11, ANSI C82.2, ANSI C82.77
IEC 60081, IEC 60901, IEC 61347-2-3

Prepared For

Precision Architectural Lighting, Inc.

Fred Compton

4830 Timber Creek Drive

Houston, TX 77017

Catalog Number

DRS02-X-4-X-D28R1/PB-X-120-T5

LTL Test Number

24014

Test Date

2011-07-01

Prepared By

Eric Gaudreau, Technician III

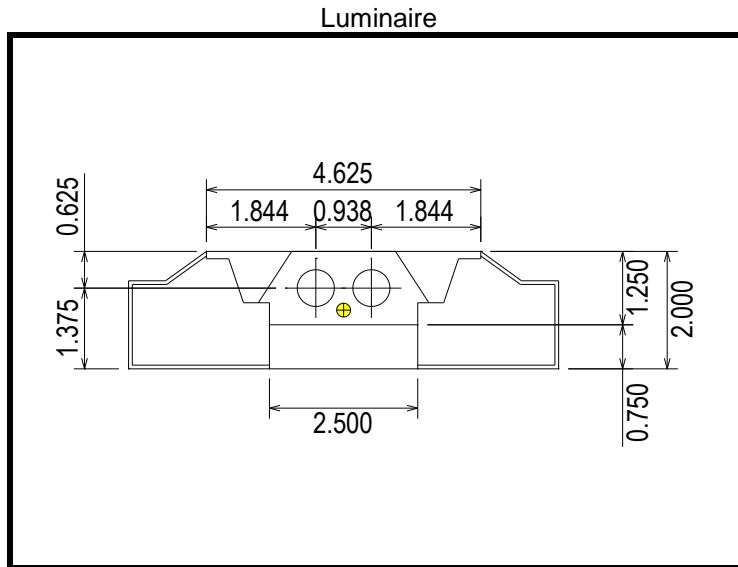
Approved By

Zachary Mooney, Project Coordinator

The results contained in this report pertain only to the tested sample.
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Luminaire Description: Extruded aluminum housing, formed white enamel aluminum side reflectors, formed white enamel slotted aluminum upper reflector, formed semi-specular 29 cell, 3/4" deep aluminum louver
 Catalog Number: DRS02-X-4-X-D28R1/PB-X-120-T5
 Lamp: Two 28 watt T5 linear fluorescent lamps rated at 2610 lumens each
 Lamp Catalog Number: Philips F28T5/841/ALTO
 Mounting: Pendant
 Ballast/Driver: One Ultra Save ER235120MHT



Zonal Lumen Summary

Zone (Degrees)	Lumens	% of Lamp	% of Luminaire
0-30	953	18.2%	27.8%
0-40	1547	29.6%	45.1%
0-60	2576	49.3%	75.2%
0-90	2760	52.9%	80.5%
90-180	667	12.8%	19.5%
0-180	3427	65.7%	100.0%

Test Conditions

Test Temperature: 24.7 °C
 Voltage: 120.0 VAC
 Current: 0.5282 A
 Power: 63.30 W
 Power Factor: 0.999
 Frequency: 60 Hz

Summary of Results

Luminaire Efficiency: 65.7 %

Spacing Criterion: 0 Degree: 1.20 90 Degree: 1.28
 180 Degree: 1.20 270 Degree: 1.28

CIE Type: Semi-Direct

Shielding Angle: 0 Degree: 29.0° 90 Degree: 30.0°



Candela Tabulation
Horizontal Angle (Degrees)

	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	1228	1228	1228	1228	1228	1228	1228	1228	1228	1228	1228	1228	1228	1228	1228	1228
5	1215	1224	1230	1225	1228	1225	1230	1224	1215	1224	1230	1225	1228	1225	1230	1224
10	1197	1209	1218	1212	1216	1212	1218	1209	1197	1209	1218	1212	1216	1212	1218	1209
15	1161	1177	1186	1178	1183	1178	1186	1177	1161	1177	1186	1178	1183	1178	1186	1177
20	1113	1130	1134	1151	1164	1151	1134	1130	1113	1130	1134	1151	1164	1151	1134	1130
25	1057	1070	1087	1124	1137	1124	1087	1070	1057	1070	1087	1124	1137	1124	1087	1070
30	989	1000	1037	1058	1068	1058	1037	1000	989	1000	1037	1058	1068	1058	1037	1000
35	912	924	962	970	987	970	962	924	912	924	962	970	987	970	962	924
40	824	840	864	877	897	877	864	840	824	840	864	877	897	877	864	840
45	721	745	761	779	816	779	761	745	721	745	761	779	816	779	761	745
50	592	624	645	706	745	706	645	624	592	624	645	706	745	706	645	624
55	409	456	512	544	569	544	512	456	409	456	512	544	569	544	512	456
60	183	240	342	361	369	361	342	240	183	240	342	361	369	361	342	240
65	43	65	153	212	250	212	153	65	43	65	153	212	250	212	153	65
70	18	21	39	106	160	106	39	21	18	21	39	106	160	106	39	21
75	9	10	12	27	42	27	12	10	9	10	12	27	42	27	12	10
80	4	5	6	9	12	9	6	5	4	5	6	9	12	9	6	5
85	1	2	2	2	3	2	2	2	1	2	2	2	3	2	2	2
90	1	1	1	0	0	0	1	1	1	1	1	0	0	0	1	1
95	13	13	14	11	10	11	14	13	13	13	14	11	10	11	14	13
100	30	28	28	27	26	27	28	28	30	28	28	27	26	27	28	28
105	49	49	39	39	39	39	39	49	49	39	39	39	39	39	39	49
110	69	73	60	52	49	52	60	73	69	73	60	52	49	52	60	73
115	90	88	85	74	69	74	85	88	90	88	85	74	69	74	85	88
120	111	102	112	98	94	98	112	102	111	102	112	98	94	98	112	102
125	132	116	133	126	120	126	133	116	132	116	133	126	120	126	133	116
130	151	133	144	151	147	151	144	133	151	133	144	151	147	151	144	133
135	168	151	153	162	165	162	153	151	168	151	153	162	165	162	153	151
140	184	170	161	169	172	169	161	170	184	170	161	169	172	169	161	170
145	197	186	172	174	178	174	172	186	197	186	172	174	178	174	172	186
150	209	200	186	181	183	181	186	200	209	200	186	181	183	181	186	200
155	219	213	202	192	192	192	202	213	219	213	202	192	192	192	202	213
160	227	223	215	208	206	208	215	223	227	223	215	208	206	208	215	223
165	233	231	227	221	221	221	227	231	233	231	227	221	221	221	227	231
170	237	236	234	231	231	231	234	236	237	236	234	231	231	231	234	236
175	239	238	239	237	238	237	239	238	239	238	239	237	238	237	239	238
180	239	239	239	239	239	239	239	239	239	239	239	239	239	239	239	239

Zonal Lumen Tabulation (5 degree zones)

Zone (Degrees)	Lumens	Zone (Degrees)	Lumens	Zone (Degrees)	Lumens	Zone (Degrees)	Lumens
0-5	29.3	45-50	288.6	90-95	3.0	135-140	60.8
5-10	87.2	50-55	253.9	95-100	11.0	140-145	58.2
10-15	141.8	55-60	186.4	100-105	18.7	145-150	54.5
15-20	190.8	60-65	105.2	105-110	26.8	150-155	49.7
20-25	234.2	65-70	50.4	110-115	36.0	155-160	43.8
25-30	269.1	70-75	19.8	115-120	45.1	160-165	36.4
30-35	292.0	75-80	6.2	120-125	53.0	165-170	27.3
35-40	302.3	80-85	2.3	125-130	58.7	170-175	16.9
40-45	300.4	85-90	0.5	130-135	61.4	175-180	5.7



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	0.7851	0.7851	0.7851	0.7851	0.7512	0.7512	0.7512	0.7512	0.7189	0.7189	0.7189	0.7189
1	0.7302	0.7018	0.6765	0.6538	0.6985	0.6735	0.6512	0.6310	0.6685	0.6466	0.6268	0.6089
2	0.6737	0.6235	0.5823	0.5481	0.6442	0.5996	0.5628	0.5317	0.6163	0.5768	0.5438	0.5158
3	0.6205	0.5549	0.5049	0.4655	0.5931	0.5346	0.4893	0.4532	0.5672	0.5151	0.4741	0.4411
4	0.5717	0.4958	0.4412	0.4000	0.5464	0.4783	0.4285	0.3904	0.5226	0.4615	0.4161	0.3810
5	0.5275	0.4451	0.3885	0.3473	0.5043	0.4300	0.3780	0.3397	0.4825	0.4154	0.3678	0.3321
6	0.4879	0.4017	0.3449	0.3047	0.4667	0.3885	0.3361	0.2985	0.4467	0.3759	0.3275	0.2923
7	0.4525	0.3645	0.3085	0.2698	0.4331	0.3530	0.3010	0.2646	0.4148	0.3418	0.2936	0.2594
8	0.4210	0.3324	0.2778	0.2408	0.4032	0.3223	0.2714	0.2364	0.3864	0.3125	0.2650	0.2320
9	0.3928	0.3047	0.2518	0.2166	0.3765	0.2957	0.2462	0.2128	0.3612	0.2870	0.2407	0.2090
10	0.3676	0.2806	0.2295	0.1960	0.3527	0.2726	0.2246	0.1927	0.3386	0.2648	0.2198	0.1894

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	0.6585	0.6585	0.6585	0.6585	0.6033	0.6033	0.6033	0.5526	0.5526	0.5526	0.5288
1	0.6128	0.5961	0.5808	0.5668	0.5497	0.5381	0.5273	0.5070	0.4983	0.4902	0.4691
2	0.5647	0.5339	0.5077	0.4850	0.4944	0.4738	0.4557	0.4579	0.4419	0.4276	0.4082
3	0.5196	0.4783	0.4450	0.4177	0.4443	0.4175	0.3950	0.4128	0.3914	0.3731	0.3551
4	0.4788	0.4298	0.3922	0.3625	0.4004	0.3695	0.3445	0.3730	0.3479	0.3271	0.3102
5	0.4423	0.3879	0.3479	0.3172	0.3623	0.3289	0.3027	0.3384	0.3107	0.2885	0.2727
6	0.4099	0.3518	0.3107	0.2800	0.3294	0.2946	0.2680	0.3083	0.2791	0.2562	0.2414
7	0.3811	0.3207	0.2793	0.2491	0.3009	0.2655	0.2390	0.2823	0.2521	0.2291	0.2152
8	0.3556	0.2938	0.2526	0.2233	0.2762	0.2407	0.2147	0.2597	0.2291	0.2062	0.1931
9	0.3329	0.2704	0.2299	0.2015	0.2547	0.2194	0.1941	0.2400	0.2093	0.1868	0.1745
10	0.3126	0.2500	0.2103	0.1830	0.2359	0.2011	0.1765	0.2227	0.1922	0.1702	0.1586

Average Luminance Table (cd/m²)

		Horizontal Angle (Degrees)		
		0	45	90
Vertical Angle (Degree)	0	17260	17260	17260
	45	14320	15120	16210
	55	10010	12550	13950
	65	1429	5096	8302
	75	468	663	2302
	85	165	295	542

This test was conducted using photometry techniques according to standard IES procedures. The user must therefore use caution in the following situations: 1) This test was performed using a specific ballast/lamp combination. Extrapolation of this 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. 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.



Polar Plot (Candela)

