



Photometric Indoor Test Report

Relevant Standards

IES LM-9-2009, IES LM-41-1998
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

DRS01-X-4-X-D46/MPL-X-120-T5

LTL Test Number

22917

Test Date

2011-04-07

Prepared By

Zachary Mooney, Project Coordinator

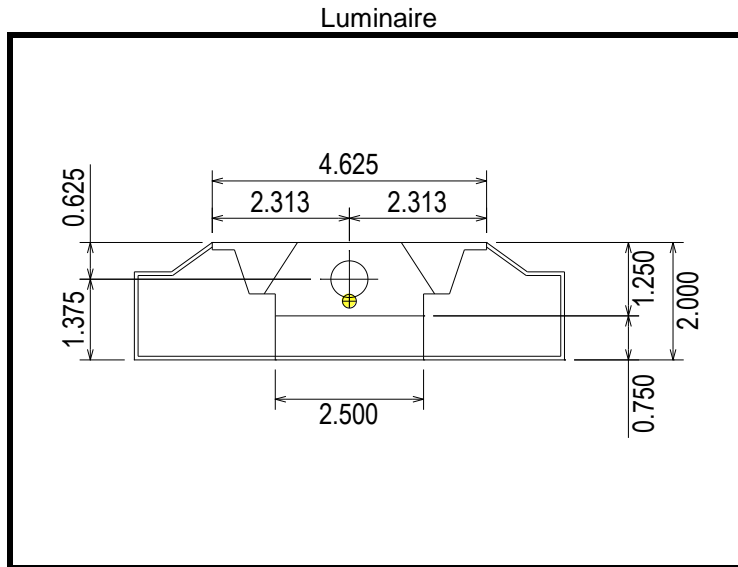
Approved By

Brian Moyer, Engineer

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, clear prismatic plastic lower lens
Catalog Number: DRS01-X-4-X-D46/MPL-X-120-T5
Lamp: One 28 watt T5 linear fluorescent lamp rated at 2610 lumens
Lamp Catalog Number: Philips F28T5/841/ALTO
Mounting: Pendant
Ballast/Driver: One Ultra Save ER235120MHT



Zonal Lumen Summary

Table with 4 columns: Zone (Degrees), Lumens, % of Lamp, % of Luminaire. Rows include zones 0-30, 0-40, 0-60, 0-90, 90-180, and 0-180.

Test Conditions

Test Temperature: 24.9 °C
Voltage: 120.0 VAC
Current: 0.2899 A
Power: 34.61 W
Power Factor: 0.995
Frequency: 60 Hz

Summary of Results

Luminaire Efficiency: 74.5 %

Spacing Criterion: 0 Degree: 1.24 90 Degree: 1.35
180 Degree: 1.24 270 Degree: 1.35

CIE Type: Semi-Direct



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	582.1	582.1	582.1	582.1	582.1	582.1	582.1	582.1	582.1	582.1	582.1	582.1	582.1	582.1	582.1	582.1
5	578.1	581.1	583.8	582.0	584.3	582.0	583.8	581.1	578.1	581.1	583.8	582.0	584.3	582.0	583.8	581.1
10	574.5	578.3	583.3	583.6	587.2	583.6	583.3	578.3	574.5	578.3	583.3	583.6	587.2	583.6	583.3	578.3
15	563.6	569.9	579.9	584.8	589.2	584.8	579.9	569.9	563.6	569.9	579.9	584.8	589.2	584.8	579.9	569.9
20	544.9	553.1	570.1	580.9	586.5	580.9	570.1	553.1	544.9	553.1	570.1	580.9	586.5	580.9	570.1	553.1
25	519.0	530.5	555.0	563.4	565.8	563.4	555.0	530.5	519.0	530.5	555.0	563.4	565.8	563.4	555.0	530.5
30	486.3	504.3	526.5	533.9	537.6	533.9	526.5	504.3	486.3	504.3	526.5	533.9	537.6	533.9	526.5	504.3
35	446.7	468.6	488.5	497.0	504.5	497.0	488.5	468.6	446.7	468.6	488.5	497.0	504.5	497.0	488.5	468.6
40	389.7	411.9	432.7	441.6	447.4	441.6	432.7	411.9	389.7	411.9	432.7	441.6	447.4	441.6	432.7	411.9
45	297.7	298.4	303.8	294.2	291.6	294.2	303.8	298.4	297.7	298.4	303.8	294.2	291.6	294.2	303.8	298.4
50	189.9	178.7	185.0	185.1	181.4	185.1	185.0	178.7	189.9	178.7	185.0	185.1	181.4	185.1	185.0	178.7
55	127.5	122.2	117.4	116.1	121.6	116.1	117.4	122.2	127.5	122.2	117.4	116.1	121.6	116.1	117.4	122.2
60	83.0	84.5	82.4	79.3	84.8	79.3	82.4	84.5	83.0	84.5	82.4	79.3	84.8	79.3	82.4	84.5
65	59.1	63.8	61.9	58.2	58.2	58.2	61.9	63.8	59.1	63.8	61.9	58.2	58.2	58.2	61.9	63.8
70	47.0	49.5	45.3	42.0	45.2	42.0	45.3	49.5	47.0	49.5	45.3	42.0	45.2	42.0	45.3	49.5
75	36.1	38.6	35.3	31.7	32.8	31.7	35.3	38.6	36.1	38.6	35.3	31.7	32.8	31.7	35.3	38.6
80	31.0	26.5	25.3	22.9	21.7	22.9	25.3	26.5	31.0	26.5	25.3	22.9	21.7	22.9	25.3	26.5
85	17.5	15.8	14.5	12.7	10.8	12.7	14.5	15.8	17.5	15.8	14.5	12.7	10.8	12.7	14.5	15.8
90	0.7	1.7	2.1	2.7	2.1	2.7	2.1	1.7	0.7	1.7	2.1	2.7	2.1	2.7	2.1	1.7
95	8.8	18.0	15.3	13.3	10.3	13.3	15.3	18.0	8.8	18.0	15.3	13.3	10.3	13.3	15.3	18.0
100	21.5	47.9	46.1	37.2	29.1	37.2	46.1	47.9	21.5	47.9	46.1	37.2	29.1	37.2	46.1	47.9
105	35.4	63.3	87.0	85.8	75.6	85.8	87.0	63.3	35.4	63.3	87.0	85.8	75.6	85.8	87.0	63.3
110	51.0	76.0	105.1	127.8	120.2	127.8	105.1	76.0	51.0	76.0	105.1	127.8	120.2	127.8	105.1	76.0
115	68.5	92.2	120.4	142.7	144.8	142.7	120.4	92.2	68.5	92.2	120.4	142.7	144.8	142.7	120.4	92.2
120	87.6	106.4	133.0	152.0	155.3	152.0	133.0	106.4	87.6	106.4	133.0	152.0	155.3	152.0	133.0	106.4
125	103.1	119.4	144.1	160.9	166.2	160.9	144.1	119.4	103.1	119.4	144.1	160.9	166.2	160.9	144.1	119.4
130	118.4	131.8	155.6	167.4	171.4	167.4	155.6	131.8	118.4	131.8	155.6	167.4	171.4	167.4	155.6	131.8
135	134.7	142.9	164.8	177.2	177.4	177.2	164.8	142.9	134.7	142.9	164.8	177.2	177.4	177.2	164.8	142.9
140	149.6	155.3	172.8	184.9	182.8	184.9	172.8	155.3	149.6	155.3	172.8	184.9	182.8	184.9	172.8	155.3
145	159.7	165.6	178.7	188.8	187.9	188.8	178.7	165.6	159.7	165.6	178.7	188.8	187.9	188.8	178.7	165.6
150	169.2	173.4	182.5	191.9	191.9	191.9	182.5	173.4	169.2	173.4	182.5	191.9	191.9	191.9	182.5	173.4
155	175.5	178.8	186.2	190.8	192.5	190.8	186.2	178.8	175.5	178.8	186.2	190.8	192.5	190.8	186.2	178.8
160	181.0	181.8	188.3	190.1	190.6	190.1	188.3	181.8	181.0	181.8	188.3	190.1	190.6	190.1	188.3	181.8
165	181.7	182.6	187.4	188.3	188.2	188.3	187.4	182.6	181.7	182.6	187.4	188.3	188.2	188.3	187.4	182.6
170	177.5	177.6	180.3	180.7	181.5	180.7	180.3	177.6	177.5	177.6	180.3	180.7	181.5	180.7	180.3	177.6
175	166.1	165.3	166.1	164.7	164.8	164.7	166.1	165.3	166.1	165.3	166.1	164.7	164.8	164.7	166.1	165.3
180	161.0	161.0	161.0	161.0	161.0	161.0	161.0	161.0	161.0	161.0	161.0	161.0	161.0	161.0	161.0	161.0

Zonal Lumen Tabulation (5 degree zones)

Zone (Degrees)	Lumens	Zone (Degrees)	Lumens	Zone (Degrees)	Lumens	Zone (Degrees)	Lumens
0-5	13.9	45-50	93.7	90-95	3.7	135-140	61.1
5-10	41.6	50-55	65.0	95-100	13.8	140-145	57.8
10-15	68.8	55-60	45.8	100-105	29.9	145-150	52.8
15-20	94.4	60-65	34.4	105-110	45.2	150-155	46.5
20-25	117.1	65-70	26.5	110-115	54.5	155-160	39.0
25-30	135.1	70-75	21.0	115-120	59.3	160-165	30.7
30-35	147.7	75-80	16.0	120-125	62.0	165-170	21.8
35-40	152.4	80-85	10.9	125-130	62.9	170-175	12.4
40-45	137.1	85-90	3.5	130-135	62.6	175-180	3.9



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	0.8751	0.8751	0.8751	0.8751	0.8215	0.8215	0.8215	0.8215	0.7703	0.7703	0.7703	0.7703
1	0.8090	0.7750	0.7447	0.7176	0.7590	0.7296	0.7033	0.6796	0.7116	0.6863	0.6635	0.6429
2	0.7457	0.6874	0.6397	0.5999	0.6993	0.6487	0.6068	0.5715	0.6555	0.6116	0.5749	0.5438
3	0.6873	0.6125	0.5555	0.5106	0.6446	0.5792	0.5287	0.4884	0.6043	0.5473	0.5026	0.4666
4	0.6341	0.5484	0.4868	0.4403	0.5949	0.5196	0.4645	0.4225	0.5579	0.4920	0.4429	0.4049
5	0.5860	0.4934	0.4300	0.3837	0.5501	0.4684	0.4113	0.3691	0.5162	0.4442	0.3930	0.3547
6	0.5427	0.4462	0.3827	0.3378	0.5098	0.4242	0.3668	0.3256	0.4789	0.4031	0.3512	0.3135
7	0.5038	0.4055	0.3431	0.2999	0.4738	0.3861	0.3294	0.2896	0.4454	0.3674	0.3159	0.2793
8	0.4690	0.3702	0.3093	0.2681	0.4414	0.3530	0.2974	0.2592	0.4154	0.3364	0.2857	0.2505
9	0.4377	0.3395	0.2805	0.2412	0.4124	0.3241	0.2701	0.2336	0.3885	0.3093	0.2598	0.2260
10	0.4096	0.3125	0.2556	0.2182	0.3863	0.2988	0.2464	0.2116	0.3643	0.2855	0.2374	0.2050

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	0.6748	0.6748	0.6748	0.6748	0.5874	0.5874	0.5874	0.5071	0.5071	0.5071	0.4694
1	0.6236	0.6051	0.5883	0.5729	0.5306	0.5185	0.5073	0.4619	0.4534	0.4456	0.4129
2	0.5746	0.5420	0.5143	0.4902	0.4779	0.4573	0.4392	0.4185	0.4037	0.3904	0.3616
3	0.5300	0.4872	0.4526	0.4242	0.4315	0.4053	0.3833	0.3799	0.3605	0.3438	0.3181
4	0.4900	0.4397	0.4011	0.3705	0.3912	0.3613	0.3371	0.3460	0.3234	0.3046	0.2815
5	0.4541	0.3986	0.3577	0.3264	0.3560	0.3239	0.2987	0.3163	0.2915	0.2716	0.2507
6	0.4220	0.3629	0.3210	0.2898	0.3253	0.2919	0.2664	0.2902	0.2640	0.2435	0.2245
7	0.3932	0.3318	0.2897	0.2591	0.2985	0.2645	0.2392	0.2672	0.2402	0.2196	0.2022
8	0.3675	0.3047	0.2629	0.2331	0.2749	0.2409	0.2160	0.2469	0.2195	0.1991	0.1831
9	0.3444	0.2809	0.2398	0.2109	0.2542	0.2203	0.1960	0.2290	0.2015	0.1813	0.1666
10	0.3236	0.2599	0.2196	0.1918	0.2358	0.2024	0.1788	0.2131	0.1857	0.1660	0.1523

Average Luminance Table (cd/m²)

		Horizontal Angle (Degrees)		
		0	45	90
Vertical Angle (Degree)	0	8179	8179	8179
	45	5916	6036	5795
	55	3122	2875	2979
	65	1964	2056	1936
	75	1962	1917	1781
	85	2823	1748	1748

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)

