



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-MPL-X-120-T5

LTL Test Number
22464

Test Date

2011-03-02

Prepared By

Zachary Mooney, Technician III

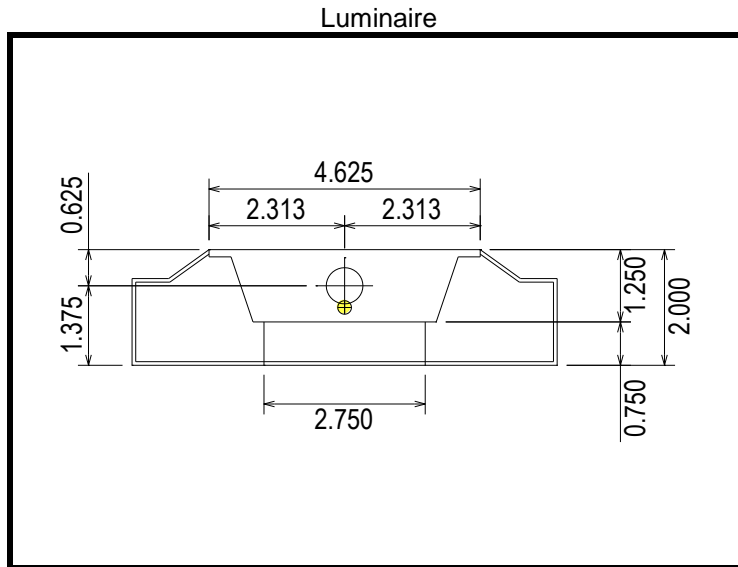
Approved By

Michael Grather, PDE

The results contained in this report pertain only to the tested sample.
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Luminaire Description: Extruded aluminum housing, formed specular aluminum side reflectors, clear prismatic plastic lower lens, open top
Catalog Number: DRS01-X-4-X-MPL-X-120-T5
Lamp: One horizontal 28 watt T5 linear fluorescent lamp rated at 2610 lumens
Lamp Catalog Number: Philips F28T5/841/ALTO
Mounting: Pendant
Ballast/Driver: One Universal Lighting Technologies B228PUNV-CUS



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: 24.2 °C
Voltage: 120.0 VAC
Current: 0.2775 A
Power: 33.24 W
Power Factor: 0.998
Frequency: 60 Hz

Summary of Results

Luminaire Efficiency: 88.6 %

Spacing Criterion: 0 Degree: 1.20 90 Degree: 1.32
180 Degree: 1.20 270 Degree: 1.32

CIE Type: Semi-Indirect



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	282.0	282.0	282.0	282.0	282.0	282.0	282.0	282.0	282.0	282.0	282.0	282.0	282.0	282.0	282.0	282.0
5	278.9	280.9	282.4	281.9	283.2	281.9	282.4	280.9	278.9	280.9	282.4	281.9	283.2	281.9	282.4	280.9
10	275.3	277.8	281.3	282.4	284.9	282.4	281.3	277.8	275.3	277.8	281.3	282.4	284.9	282.4	281.3	277.8
15	269.3	273.5	280.6	284.9	288.0	284.9	280.6	273.5	269.3	273.5	280.6	284.9	288.0	284.9	280.6	273.5
20	259.6	265.3	277.5	285.7	289.0	285.7	277.5	265.3	259.6	265.3	277.5	285.7	289.0	285.7	277.5	265.3
25	245.4	254.2	271.0	272.4	272.6	272.4	271.0	254.2	245.4	254.2	271.0	272.4	272.6	272.4	271.0	254.2
30	227.5	241.5	250.2	251.5	253.3	251.5	250.2	241.5	227.5	241.5	250.2	251.5	253.3	251.5	250.2	241.5
35	205.2	220.3	226.2	234.5	242.7	234.5	226.2	220.3	205.2	220.3	226.2	234.5	242.7	234.5	226.2	220.3
40	174.6	184.8	208.4	230.7	239.4	230.7	208.4	184.8	174.6	184.8	208.4	230.7	239.4	230.7	208.4	184.8
45	133.4	138.4	151.6	150.7	148.3	150.7	151.6	138.4	133.4	138.4	151.6	150.7	148.3	150.7	151.6	138.4
50	89.0	85.1	91.5	93.2	92.2	93.2	91.5	85.1	89.0	85.1	91.5	93.2	92.2	93.2	91.5	85.1
55	60.0	58.6	57.3	57.2	61.6	57.2	57.3	58.6	60.0	58.6	57.3	57.2	61.6	57.2	57.3	58.6
60	39.7	40.5	40.5	39.4	41.3	39.4	40.5	40.5	39.7	40.5	40.5	39.4	41.3	39.4	40.5	40.5
65	28.6	30.6	29.8	27.7	28.0	27.7	29.8	30.6	28.6	30.6	29.8	27.7	28.0	27.7	29.8	30.6
70	22.7	24.0	21.3	19.9	20.5	19.9	21.3	24.0	22.7	24.0	21.3	19.9	20.5	19.9	21.3	24.0
75	17.6	18.6	17.0	15.2	15.2	15.2	17.0	18.6	17.6	18.6	17.0	15.2	15.2	15.2	17.0	18.6
80	14.4	12.7	12.0	10.5	9.8	10.5	12.0	12.7	14.4	12.7	12.0	10.5	9.8	10.5	12.0	12.7
85	7.9	7.4	7.3	6.7	5.6	6.7	7.3	7.4	7.9	7.4	7.3	6.7	5.6	6.7	7.3	7.4
90	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
95	10.6	20.8	4.1	5.2	5.6	5.2	4.1	20.8	10.6	20.8	4.1	5.2	5.6	5.2	4.1	20.8
100	28.4	123.3	70.4	32.9	21.0	32.9	70.4	123.3	28.4	123.3	70.4	32.9	21.0	32.9	70.4	123.3
105	52.8	187.1	206.3	147.2	133.1	147.2	206.3	187.1	52.8	187.1	206.3	147.2	133.1	147.2	206.3	187.1
110	83.0	212.9	338.9	321.7	285.7	321.7	338.9	212.9	83.0	212.9	338.9	321.7	285.7	321.7	338.9	212.9
115	117.4	223.8	395.6	464.3	467.6	464.3	395.6	223.8	117.4	223.8	395.6	464.3	467.6	464.3	395.6	223.8
120	152.0	234.5	416.5	520.3	547.9	520.3	416.5	234.5	152.0	234.5	416.5	520.3	547.9	520.3	416.5	234.5
125	183.2	251.8	412.2	524.5	556.7	524.5	412.2	251.8	183.2	251.8	412.2	524.5	556.7	524.5	412.2	251.8
130	217.2	264.6	389.1	532.2	562.5	532.2	389.1	264.6	217.2	264.6	389.1	532.2	562.5	532.2	389.1	264.6
135	249.9	277.4	379.1	506.5	552.3	506.5	379.1	277.4	249.9	277.4	379.1	506.5	552.3	506.5	379.1	277.4
140	276.4	297.0	388.7	471.6	515.1	471.6	388.7	297.0	276.4	297.0	388.7	471.6	515.1	471.6	388.7	297.0
145	297.0	313.2	382.6	448.0	473.1	448.0	382.6	313.2	297.0	313.2	382.6	448.0	473.1	448.0	382.6	313.2
150	313.5	327.2	372.2	430.4	453.1	430.4	372.2	327.2	313.5	327.2	372.2	430.4	453.1	430.4	372.2	327.2
155	328.2	337.9	373.0	398.3	417.0	398.3	373.0	337.9	328.2	337.9	373.0	398.3	417.0	398.3	373.0	337.9
160	340.3	346.5	374.6	387.8	391.8	387.8	374.6	346.5	340.3	346.5	374.6	387.8	391.8	387.8	374.6	346.5
165	347.2	352.7	371.2	383.7	387.1	383.7	371.2	352.7	347.2	352.7	371.2	383.7	387.1	383.7	371.2	352.7
170	341.2	347.4	360.7	369.8	374.2	369.8	360.7	347.4	341.2	347.4	360.7	369.8	374.2	369.8	360.7	347.4
175	327.7	328.4	333.9	335.1	336.7	335.1	333.9	328.4	327.7	328.4	333.9	335.1	336.7	335.1	333.9	328.4
180	323.3	323.3	323.3	323.3	323.3	323.3	323.3	323.3	323.3	323.3	323.3	323.3	323.3	323.3	323.3	323.3

Zonal Lumen Tabulation (5 degree zones)

Zone (Degrees)	Lumens	Zone (Degrees)	Lumens	Zone (Degrees)	Lumens	Zone (Degrees)	Lumens
0-5	6.7	45-50	45.8	90-95	2.1	135-140	144.2
5-10	20.1	50-55	31.7	95-100	16.0	140-145	128.5
10-15	33.2	55-60	22.4	100-105	58.3	145-150	112.2
15-20	45.8	60-65	16.7	105-110	109.8	150-155	94.8
20-25	56.7	65-70	12.7	110-115	156.6	155-160	77.4
25-30	64.6	70-75	10.0	115-120	177.2	160-165	60.8
30-35	69.5	75-80	7.7	120-125	178.5	165-170	43.4
35-40	72.6	80-85	5.1	125-130	170.5	170-175	24.9
40-45	67.6	85-90	1.6	130-135	158.8	175-180	7.8



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	1.000	1.000	1.000	1.000	0.898	0.898	0.898	0.898	0.800	0.800	0.800	0.800
1	0.917	0.875	0.837	0.803	0.822	0.787	0.755	0.727	0.732	0.703	0.677	0.654
2	0.840	0.768	0.709	0.660	0.752	0.692	0.642	0.601	0.669	0.620	0.578	0.543
3	0.769	0.677	0.608	0.552	0.689	0.612	0.553	0.505	0.613	0.549	0.499	0.459
4	0.705	0.601	0.525	0.469	0.631	0.544	0.479	0.430	0.562	0.489	0.434	0.392
5	0.648	0.535	0.458	0.402	0.580	0.485	0.419	0.369	0.517	0.437	0.380	0.338
6	0.596	0.479	0.403	0.348	0.535	0.435	0.369	0.321	0.476	0.393	0.335	0.294
7	0.551	0.432	0.357	0.304	0.494	0.393	0.327	0.281	0.441	0.355	0.298	0.258
8	0.510	0.391	0.318	0.268	0.458	0.356	0.292	0.248	0.409	0.322	0.267	0.228
9	0.474	0.356	0.285	0.238	0.426	0.324	0.262	0.220	0.380	0.294	0.240	0.203
10	0.441	0.325	0.257	0.212	0.397	0.297	0.237	0.197	0.355	0.269	0.217	0.181

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	0.618	0.618	0.618	0.618	0.451	0.451	0.451	0.298	0.298	0.298	0.226
1	0.565	0.546	0.529	0.514	0.402	0.392	0.383	0.270	0.264	0.260	0.199
2	0.516	0.484	0.456	0.432	0.359	0.342	0.327	0.243	0.234	0.226	0.174
3	0.473	0.431	0.397	0.369	0.321	0.300	0.281	0.220	0.208	0.197	0.153
4	0.434	0.385	0.347	0.317	0.289	0.264	0.244	0.199	0.185	0.174	0.136
5	0.400	0.345	0.306	0.275	0.260	0.234	0.214	0.181	0.166	0.154	0.121
6	0.369	0.312	0.271	0.241	0.236	0.209	0.188	0.165	0.150	0.137	0.108
7	0.342	0.283	0.242	0.212	0.215	0.188	0.167	0.152	0.135	0.123	0.097
8	0.318	0.258	0.217	0.188	0.197	0.169	0.149	0.140	0.123	0.111	0.088
9	0.297	0.236	0.196	0.168	0.181	0.154	0.134	0.129	0.113	0.101	0.080
10	0.278	0.217	0.178	0.151	0.167	0.140	0.121	0.120	0.103	0.092	0.073

Average Luminance Table (cd/m²)

		Horizontal Angle (Degrees)		
		0	45	90
Vertical Angle (Degree)	0	3612	3612	3612
	45	2416	2746	2687
	55	1339	1280	1375
	65	866	902	849
	75	871	842	755
	85	1163	819	819

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)

