



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IES LM-9-2009, IES LM-41-1998 (Withdrawn)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

DRS01-X-4-X-D28R1/PB-X-120-T8

LTL Test Number

24016

Test Date

2011-07-01

Prepared By

Eric Gaudreau, Technician III

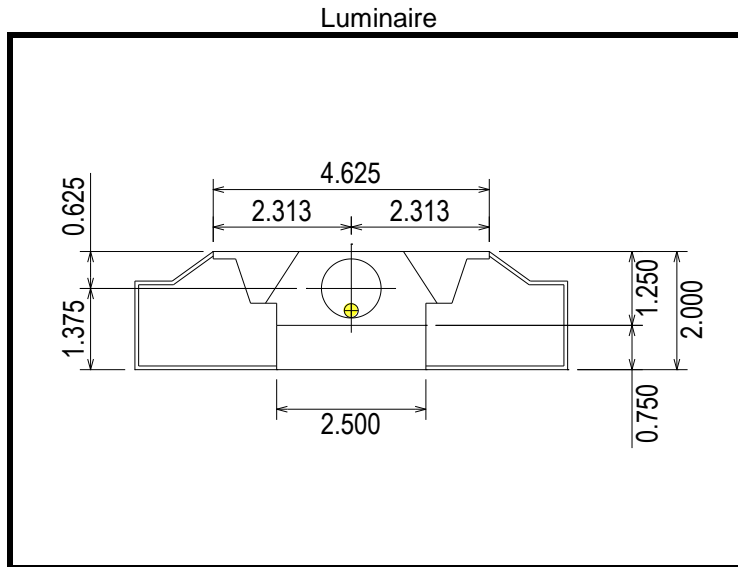
Approved By

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: DRS01-X-4-X-D28R1/PB-X-120-T8
 Lamp: One 32 watt T8 linear fluorescent lamp rated at 2850 lumens
 Lamp Catalog Number: Philips F32T8/TL841/ALTO
 Mounting: Pendant
 Ballast/Driver: One Universal Lighting Technologies "Triad" B232IUNV-C



Zonal Lumen Summary

Zone (Degrees)	Lumens	% of Lamp	% of Luminaire
0-30	523	18.3%	26.5%
0-40	867	30.4%	44.0%
0-60	1465	51.4%	74.4%
0-90	1579	55.4%	80.2%
90-180	391	13.7%	19.8%
0-180	1970	69.1%	100.0%

Test Conditions

Test Temperature: 24.7 °C
 Voltage: 120.0 VAC
 Current: 0.3012 A
 Power: 36.12 W
 Power Factor: 1.00
 Frequency: 60 Hz

Summary of Results

Luminaire Efficiency: 69.1 %
 Spacing Criterion: 0 Degree: 1.20 90 Degree: 1.40
 180 Degree: 1.20 270 Degree: 1.40
 CIE Type: Semi-Direct
 Shielding Angle: 0 Degree: 29.0° 90 Degree: 32.0°



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	663.5	663.5	663.5	663.5	663.5	663.5	663.5	663.5	663.5	663.5	663.5	663.5	663.5	663.5	663.5	663.5
5	657.1	660.9	663.7	661.1	662.4	661.1	663.7	660.9	657.1	660.9	663.7	661.1	662.4	661.1	663.7	660.9
10	646.7	652.1	655.9	653.7	656.7	653.7	655.9	652.1	646.7	652.1	655.9	653.7	656.7	653.7	655.9	652.1
15	627.4	634.3	640.5	642.5	648.2	642.5	640.5	634.3	627.4	634.3	640.5	642.5	648.2	642.5	640.5	634.3
20	602.0	608.9	620.1	635.0	644.9	635.0	620.1	608.9	602.0	608.9	620.1	635.0	644.9	635.0	620.1	608.9
25	571.3	579.5	601.1	630.7	646.0	630.7	601.1	579.5	571.3	579.5	601.1	630.7	646.0	630.7	601.1	579.5
30	534.8	545.4	582.3	621.7	641.4	621.7	582.3	545.4	534.8	545.4	582.3	621.7	641.4	621.7	582.3	545.4
35	493.3	510.1	558.1	590.6	604.4	590.6	558.1	510.1	493.3	510.1	558.1	590.6	604.4	590.6	558.1	510.1
40	445.8	470.3	520.3	533.7	547.7	533.7	520.3	470.3	445.8	470.3	520.3	533.7	547.7	533.7	520.3	470.3
45	392.9	424.2	458.1	464.9	481.3	464.9	458.1	424.2	392.9	424.2	458.1	464.9	481.3	464.9	458.1	424.2
50	328.3	365.5	382.7	390.5	408.0	390.5	382.7	365.5	328.3	365.5	382.7	390.5	408.0	390.5	382.7	365.5
55	230.4	278.0	298.4	307.4	327.6	307.4	298.4	278.0	230.4	278.0	298.4	307.4	327.6	307.4	298.4	278.0
60	101.4	144.5	199.2	221.6	240.1	221.6	199.2	144.5	101.4	144.5	199.2	221.6	240.1	221.6	199.2	144.5
65	23.7	37.1	89.5	138.4	167.5	138.4	89.5	37.1	23.7	37.1	89.5	138.4	167.5	138.4	89.5	37.1
70	10.5	12.2	22.0	66.1	100.9	66.1	22.0	12.2	10.5	12.2	22.0	66.1	100.9	66.1	22.0	12.2
75	4.9	5.6	7.2	16.1	26.5	16.1	7.2	5.6	4.9	5.6	7.2	16.1	26.5	16.1	7.2	5.6
80	2.4	2.7	3.3	5.2	7.3	5.2	3.3	2.7	2.4	2.7	3.3	5.2	7.3	5.2	3.3	2.7
85	0.8	1.0	1.1	1.4	1.9	1.4	1.1	1.0	0.8	1.0	1.1	1.4	1.9	1.4	1.1	1.0
90	0.3	0.9	0.5	0.3	0.0	0.3	0.5	0.9	0.3	0.9	0.5	0.3	0.0	0.3	0.5	0.9
95	7.3	7.2	7.3	6.0	5.7	6.0	7.3	7.2	7.3	7.2	7.3	6.0	5.7	6.0	7.3	7.2
100	17.3	16.4	15.3	14.5	14.0	14.5	15.3	16.4	17.3	16.4	15.3	14.5	14.0	14.5	15.3	16.4
105	29.4	28.4	24.8	23.0	22.2	23.0	24.8	28.4	29.4	28.4	24.8	23.0	22.2	23.0	24.8	28.4
110	42.1	42.2	36.2	33.8	32.7	33.8	36.2	42.2	42.1	42.2	36.2	33.8	32.7	33.8	36.2	42.2
115	55.8	54.0	48.5	45.0	44.0	45.0	48.5	54.0	55.8	54.0	48.5	45.0	44.0	45.0	48.5	54.0
120	68.5	63.6	61.5	56.2	54.8	56.2	61.5	63.6	68.5	63.6	61.5	56.2	54.8	56.2	61.5	63.6
125	79.8	73.3	74.1	68.3	66.9	68.3	74.1	73.3	79.8	73.3	74.1	68.3	66.9	68.3	74.1	73.3
130	90.4	83.1	83.1	80.6	79.0	80.6	83.1	83.1	90.4	83.1	83.1	80.6	79.0	80.6	83.1	83.1
135	99.5	93.6	90.0	90.3	89.6	90.3	90.0	93.6	99.5	93.6	90.0	90.3	89.6	90.3	90.0	93.6
140	107.6	103.8	96.3	96.3	96.1	96.3	96.3	103.8	107.6	103.8	96.3	96.3	96.1	96.3	96.3	103.8
145	113.9	111.9	103.2	101.1	101.0	101.1	103.2	111.9	113.9	111.9	103.2	101.1	101.0	101.1	103.2	111.9
150	119.8	118.9	111.9	106.8	106.3	106.8	111.9	118.9	119.8	118.9	111.9	106.8	106.3	106.8	111.9	118.9
155	125.4	124.7	120.9	114.6	113.4	114.6	120.9	124.7	125.4	124.7	120.9	114.6	113.4	114.6	120.9	124.7
160	129.5	129.4	127.7	124.3	122.8	124.3	127.7	129.4	129.5	129.4	127.7	124.3	122.8	124.3	127.7	129.4
165	133.0	132.8	132.7	130.8	130.6	130.8	132.7	132.8	133.0	132.8	132.7	130.8	130.6	130.8	132.7	132.8
170	135.5	135.2	135.4	135.1	135.1	135.1	135.4	135.2	135.5	135.2	135.4	135.1	135.1	135.1	135.4	135.2
175	137.1	136.6	137.0	136.5	136.5	136.5	137.0	136.6	137.1	136.6	137.0	136.5	136.5	136.5	137.0	136.6
180	137.0	137.0	137.0	137.0	137.0	137.0	137.0	137.0	137.0	137.0	137.0	137.0	137.0	137.0	137.0	137.0

Zonal Lumen Tabulation (5 degree zones)

Zone (Degrees)	Lumens	Zone (Degrees)	Lumens	Zone (Degrees)	Lumens	Zone (Degrees)	Lumens
0-5	15.8	45-50	166.4	90-95	1.7	135-140	35.5
5-10	47.0	50-55	145.8	95-100	6.0	140-145	34.2
10-15	76.6	55-60	109.9	100-105	10.9	145-150	32.2
15-20	103.9	60-65	64.8	105-110	16.4	150-155	29.4
20-25	128.7	65-70	31.4	110-115	22.0	155-160	25.9
25-30	150.5	70-75	12.0	115-120	26.8	160-165	21.4
30-35	167.7	75-80	3.7	120-125	30.7	165-170	15.9
35-40	176.7	80-85	1.4	125-130	33.7	170-175	9.7
40-45	176.3	85-90	0.3	130-135	35.4	175-180	3.3



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	0.8261	0.8261	0.8261	0.8261	0.7901	0.7901	0.7901	0.7901	0.7558	0.7558	0.7558	0.7558
1	0.7677	0.7375	0.7107	0.6866	0.7341	0.7076	0.6838	0.6624	0.7022	0.6789	0.6579	0.6389
2	0.7077	0.6543	0.6106	0.5742	0.6763	0.6290	0.5898	0.5568	0.6466	0.6047	0.5696	0.5399
3	0.6512	0.5815	0.5283	0.4865	0.6220	0.5598	0.5117	0.4734	0.5945	0.5391	0.4956	0.4606
4	0.5994	0.5188	0.4608	0.4170	0.5725	0.5002	0.4472	0.4068	0.5471	0.4823	0.4341	0.3967
5	0.5526	0.4651	0.4050	0.3613	0.5279	0.4490	0.3938	0.3531	0.5046	0.4335	0.3829	0.3451
6	0.5107	0.4191	0.3589	0.3163	0.4881	0.4051	0.3495	0.3096	0.4667	0.3916	0.3403	0.3030
7	0.4732	0.3798	0.3205	0.2795	0.4526	0.3676	0.3125	0.2739	0.4331	0.3557	0.3046	0.2683
8	0.4399	0.3460	0.2881	0.2489	0.4210	0.3352	0.2812	0.2442	0.4032	0.3247	0.2745	0.2395
9	0.4102	0.3168	0.2608	0.2234	0.3929	0.3072	0.2548	0.2193	0.3765	0.2979	0.2488	0.2153
10	0.3836	0.2914	0.2373	0.2018	0.3678	0.2829	0.2321	0.1983	0.3528	0.2746	0.2269	0.1948

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	0.6917	0.6917	0.6917	0.6917	0.6331	0.6331	0.6331	0.5793	0.5793	0.5793	0.5540
1	0.6431	0.6253	0.6090	0.5941	0.5760	0.5636	0.5522	0.5305	0.5213	0.5127	0.4903
2	0.5917	0.5591	0.5312	0.5071	0.5171	0.4951	0.4759	0.4782	0.4612	0.4460	0.4255
3	0.5438	0.5000	0.4646	0.4356	0.4638	0.4353	0.4114	0.4302	0.4076	0.3882	0.3690
4	0.5005	0.4485	0.4086	0.3771	0.4172	0.3844	0.3579	0.3880	0.3614	0.3393	0.3214
5	0.4619	0.4042	0.3617	0.3292	0.3769	0.3415	0.3137	0.3514	0.3221	0.2985	0.2817
6	0.4276	0.3660	0.3224	0.2899	0.3421	0.3052	0.2770	0.3197	0.2887	0.2645	0.2487
7	0.3972	0.3332	0.2893	0.2573	0.3121	0.2745	0.2465	0.2923	0.2603	0.2359	0.2211
8	0.3703	0.3048	0.2612	0.2301	0.2861	0.2485	0.2210	0.2685	0.2361	0.2119	0.1980
9	0.3464	0.2802	0.2373	0.2073	0.2635	0.2262	0.1994	0.2478	0.2153	0.1915	0.1785
10	0.3251	0.2588	0.2168	0.1878	0.2438	0.2070	0.1810	0.2297	0.1974	0.1742	0.1619

Average Luminance Table (cd/m²)

		Horizontal Angle (Degrees)		
		0	45	90
Vertical Angle (Degree)	0	9323	9323	9323
	45	7808	9102	9563
	55	5644	7310	8026
	65	787	2977	5568
	75	267	393	1440
	85	128	179	307

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)

