



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-T8

LTL Test Number

22919

Test Date

2011-04-06

Prepared By

Zachary Mooney, Project Coordinator

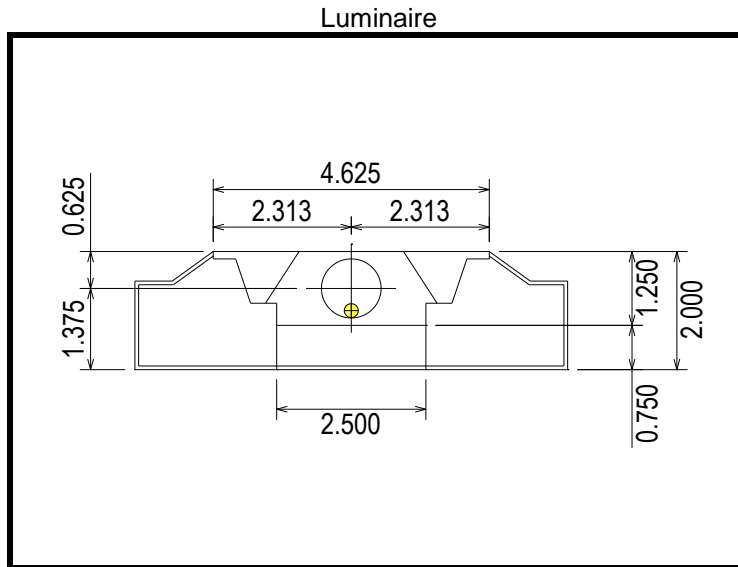
Approved By

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-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	508	17.8%	23.6%
0-40	827	29.0%	38.5%
0-60	1189	41.7%	55.3%
0-90	1310	46.0%	61.0%
90-180	839	29.5%	39.0%
0-180	2149	75.4%	100.0%

Test Conditions

Test Temperature: 24.2 °C
 Voltage: 120.0 VAC
 Current: 0.2958 A
 Power: 35.47 W
 Power Factor: 0.999
 Frequency: 60 Hz

Summary of Results

Luminaire Efficiency: 75.4 %

Spacing Criterion: 0 Degree: 1.24 90 Degree: 1.31
 180 Degree: 1.24 270 Degree: 1.31

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	634.4	634.4	634.4	634.4	634.4	634.4	634.4	634.4	634.4	634.4	634.4	634.4	634.4	634.4	634.4	634.4
5	629.1	632.6	636.0	633.7	636.5	633.7	636.0	632.6	629.1	632.6	636.0	633.7	636.5	633.7	636.0	632.6
10	623.5	628.3	633.7	633.7	637.6	633.7	633.7	628.3	623.5	628.3	633.7	633.7	637.6	633.7	633.7	628.3
15	611.6	618.4	628.8	632.0	636.5	632.0	628.8	618.4	611.6	618.4	628.8	632.0	636.5	632.0	628.8	618.4
20	592.6	600.9	615.3	620.5	625.2	620.5	615.3	600.9	592.6	600.9	615.3	620.5	625.2	620.5	615.3	600.9
25	565.2	575.9	593.0	600.0	603.1	600.0	593.0	575.9	565.2	575.9	593.0	600.0	603.1	600.0	593.0	575.9
30	531.4	545.0	563.6	568.6	571.4	568.6	563.6	545.0	531.4	545.0	563.6	568.6	571.4	568.6	563.6	545.0
35	489.4	504.5	520.2	520.7	521.9	520.7	520.2	504.5	489.4	504.5	520.2	520.7	521.9	520.7	520.2	504.5
40	430.6	446.3	450.2	450.5	455.9	450.5	450.2	446.3	430.6	446.3	450.2	450.5	455.9	450.5	450.2	446.3
45	325.2	320.4	317.7	309.3	307.7	309.3	317.7	320.4	325.2	320.4	317.7	309.3	307.7	309.3	317.7	320.4
50	204.6	192.2	195.9	193.8	190.6	193.8	195.9	192.2	204.6	192.2	195.9	193.8	190.6	193.8	195.9	192.2
55	135.8	131.4	125.4	123.0	128.6	123.0	125.4	131.4	135.8	131.4	125.4	123.0	128.6	123.0	125.4	131.4
60	88.3	90.6	88.1	84.9	90.0	84.9	88.1	90.6	88.3	90.6	88.1	84.9	90.0	84.9	88.1	90.6
65	63.4	69.0	67.0	63.1	63.3	63.1	67.0	69.0	63.4	69.0	67.0	63.1	63.3	63.1	67.0	69.0
70	50.3	53.3	48.5	45.8	49.0	45.8	48.5	53.3	50.3	53.3	48.5	45.8	49.0	45.8	48.5	53.3
75	38.3	41.3	37.9	34.4	35.9	34.4	37.9	41.3	38.3	41.3	37.9	34.4	35.9	34.4	37.9	41.3
80	33.8	28.8	27.5	25.5	23.9	25.5	27.5	28.8	33.8	28.8	27.5	25.5	23.9	25.5	27.5	28.8
85	18.9	16.7	15.1	13.5	11.7	13.5	15.1	16.7	18.9	16.7	15.1	13.5	11.7	13.5	15.1	16.7
90	0.5	2.6	2.9	4.8	3.0	4.8	2.9	2.6	0.5	2.6	2.9	4.8	3.0	4.8	2.9	2.6
95	11.2	24.6	23.2	22.2	16.3	22.2	23.2	24.6	11.2	24.6	23.2	22.2	16.3	22.2	23.2	24.6
100	28.2	51.8	56.7	59.0	51.3	59.0	56.7	51.8	28.2	51.8	56.7	59.0	51.3	59.0	56.7	51.8
105	46.5	74.5	89.5	97.4	87.8	97.4	89.5	74.5	46.5	74.5	89.5	97.4	87.8	97.4	89.5	74.5
110	65.5	92.8	113.2	129.3	120.8	129.3	113.2	92.8	65.5	92.8	113.2	129.3	120.8	129.3	113.2	92.8
115	86.7	109.5	137.0	151.4	148.5	151.4	137.0	109.5	86.7	109.5	137.0	151.4	148.5	151.4	137.0	109.5
120	107.7	125.8	155.1	170.4	172.0	170.4	155.1	125.8	107.7	125.8	155.1	170.4	172.0	170.4	155.1	125.8
125	128.0	140.3	168.1	186.2	189.5	186.2	168.1	140.3	128.0	140.3	168.1	186.2	189.5	186.2	168.1	140.3
130	147.2	154.6	180.6	196.8	198.3	196.8	180.6	154.6	147.2	154.6	180.6	196.8	198.3	196.8	180.6	154.6
135	164.2	169.1	190.9	204.4	204.4	204.4	190.9	169.1	164.2	169.1	190.9	204.4	204.4	204.4	190.9	169.1
140	179.1	183.4	199.2	210.7	211.8	210.7	199.2	183.4	179.1	183.4	199.2	210.7	211.8	210.7	199.2	183.4
145	190.5	196.0	205.9	216.0	217.9	216.0	205.9	196.0	190.5	196.0	205.9	216.0	217.9	216.0	205.9	196.0
150	200.1	205.3	211.5	218.7	221.1	218.7	211.5	205.3	200.1	205.3	211.5	218.7	221.1	218.7	211.5	205.3
155	207.5	211.3	217.6	220.9	223.3	220.9	217.6	211.3	207.5	211.3	217.6	220.9	223.3	220.9	217.6	211.3
160	213.7	214.7	222.4	223.3	224.6	223.3	222.4	214.7	213.7	214.7	222.4	223.3	224.6	223.3	222.4	214.7
165	215.5	216.7	222.8	224.5	225.9	224.5	222.8	216.7	215.5	216.7	222.8	224.5	225.9	224.5	222.8	216.7
170	213.7	214.5	217.2	218.4	220.6	218.4	217.2	214.5	213.7	214.5	217.2	218.4	220.6	218.4	217.2	214.5
175	205.9	205.3	206.2	204.8	205.5	204.8	206.2	205.3	205.9	205.3	206.2	204.8	205.5	204.8	206.2	205.3
180	202.5	202.5	202.5	202.5	202.5	202.5	202.5	202.5	202.5	202.5	202.5	202.5	202.5	202.5	202.5	202.5

Zonal Lumen Tabulation (5 degree zones)

Zone (Degrees)	Lumens	Zone (Degrees)	Lumens	Zone (Degrees)	Lumens	Zone (Degrees)	Lumens
0-5	15.2	45-50	99.4	90-95	5.5	135-140	71.2
5-10	45.3	50-55	69.0	95-100	19.9	140-145	67.2
10-15	74.6	55-60	48.9	100-105	35.9	145-150	61.4
15-20	102.1	60-65	36.9	105-110	49.6	150-155	54.2
20-25	125.9	65-70	28.6	110-115	59.8	155-160	45.8
25-30	145.0	70-75	22.8	115-120	67.2	160-165	36.4
30-35	157.9	75-80	17.5	120-125	72.0	165-170	26.1
35-40	160.8	80-85	11.7	125-130	73.9	170-175	15.2
40-45	144.8	85-90	3.9	130-135	73.4	175-180	4.9



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	0.8838	0.8838	0.8838	0.8838	0.8277	0.8277	0.8277	0.8277	0.7742	0.7742	0.7742	0.7742
1	0.8167	0.7821	0.7514	0.7238	0.7644	0.7347	0.7080	0.6840	0.7149	0.6893	0.6663	0.6455
2	0.7525	0.6934	0.6450	0.6047	0.7041	0.6529	0.6105	0.5748	0.6583	0.6141	0.5770	0.5456
3	0.6934	0.6177	0.5599	0.5144	0.6488	0.5828	0.5317	0.4909	0.6067	0.5493	0.5043	0.4679
4	0.6397	0.5529	0.4904	0.4433	0.5987	0.5227	0.4670	0.4245	0.5601	0.4937	0.4442	0.4059
5	0.5910	0.4973	0.4330	0.3862	0.5535	0.4710	0.4133	0.3708	0.5182	0.4457	0.3941	0.3555
6	0.5473	0.4496	0.3854	0.3399	0.5130	0.4266	0.3686	0.3269	0.4806	0.4043	0.3521	0.3142
7	0.5080	0.4085	0.3453	0.3016	0.4766	0.3882	0.3309	0.2907	0.4470	0.3685	0.3167	0.2798
8	0.4728	0.3729	0.3113	0.2696	0.4441	0.3548	0.2987	0.2602	0.4169	0.3374	0.2863	0.2509
9	0.4413	0.3419	0.2823	0.2425	0.4149	0.3258	0.2712	0.2344	0.3899	0.3102	0.2604	0.2263
10	0.4129	0.3148	0.2572	0.2194	0.3886	0.3003	0.2474	0.2123	0.3656	0.2863	0.2378	0.2052

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	0.6744	0.6744	0.6744	0.6744	0.5830	0.5830	0.5830	0.4991	0.4991	0.4991	0.4597
1	0.6229	0.6044	0.5875	0.5721	0.5264	0.5143	0.5032	0.4545	0.4462	0.4384	0.4044
2	0.5738	0.5412	0.5133	0.4892	0.4740	0.4535	0.4355	0.4118	0.3972	0.3841	0.3542
3	0.5292	0.4863	0.4517	0.4232	0.4280	0.4019	0.3800	0.3739	0.3547	0.3383	0.3117
4	0.4892	0.4388	0.4002	0.3696	0.3880	0.3583	0.3342	0.3406	0.3183	0.2999	0.2760
5	0.4533	0.3977	0.3568	0.3255	0.3531	0.3212	0.2961	0.3114	0.2870	0.2674	0.2459
6	0.4213	0.3621	0.3202	0.2889	0.3227	0.2895	0.2642	0.2858	0.2600	0.2399	0.2204
7	0.3926	0.3311	0.2890	0.2584	0.2961	0.2624	0.2372	0.2632	0.2367	0.2164	0.1986
8	0.3669	0.3040	0.2622	0.2324	0.2728	0.2389	0.2142	0.2433	0.2164	0.1963	0.1799
9	0.3438	0.2803	0.2392	0.2103	0.2522	0.2186	0.1945	0.2257	0.1987	0.1789	0.1638
10	0.3231	0.2594	0.2191	0.1913	0.2340	0.2009	0.1774	0.2101	0.1832	0.1638	0.1499

Average Luminance Table (cd/m²)

		Horizontal Angle (Degrees)		
		0	45	90
Vertical Angle (Degree)	0	8914	8914	8914
	45	6462	6314	6115
	55	3328	3071	3151
	65	2109	2226	2104
	75	2079	2057	1948
	85	3047	1885	1885

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)

