



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IES LM-9-2009, IES LM-41-1998 (Withdrawn)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

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Houston, TX 77017

Catalog Number

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

LTL Test Number

24018

Test Date

2011-07-05

Prepared By

Eric Gaudreau, Technician III

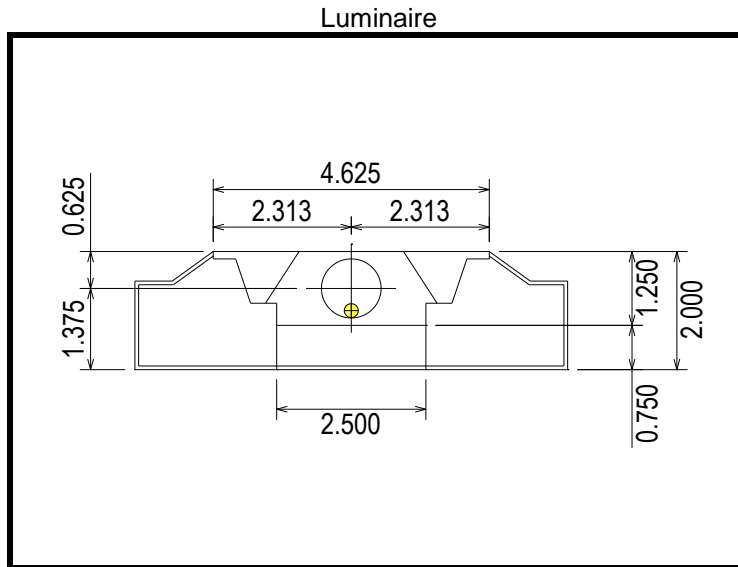
Approved By

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, clear prismatic plastic lower lens
Catalog Number: DRS01-X-4-X-D28R1/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

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: 24.4 °C
Voltage: 120.0 VAC
Current: 0.2964 A
Power: 35.55 W
Power Factor: 0.999
Frequency: 60 Hz

Summary of Results

Luminaire Efficiency: 69.9 %

Spacing Criterion: 0 Degree: 1.23 90 Degree: 1.25
180 Degree: 1.23 270 Degree: 1.25

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	788.7	788.7	788.7	788.7	788.7	788.7	788.7	788.7	788.7	788.7	788.7	788.7	788.7	788.7	788.7	788.7
5	782.0	787.0	790.2	787.0	788.4	787.0	790.2	787.0	782.0	787.0	790.2	787.0	788.4	787.0	790.2	787.0
10	775.8	781.6	785.1	783.0	787.0	783.0	785.1	781.6	775.8	781.6	785.1	783.0	787.0	783.0	785.1	781.6
15	760.5	767.1	773.5	773.0	776.3	773.0	773.5	767.1	760.5	767.1	773.5	773.0	776.3	773.0	773.5	767.1
20	735.1	741.0	749.8	750.1	752.6	750.1	749.8	741.0	735.1	741.0	749.8	750.1	752.6	750.1	749.8	741.0
25	698.8	705.8	714.3	716.3	716.9	716.3	714.3	705.8	698.8	705.8	714.3	716.3	716.9	716.3	714.3	705.8
30	654.8	663.1	671.1	670.0	669.2	670.0	671.1	663.1	654.8	663.1	671.1	670.0	669.2	670.0	671.1	663.1
35	599.9	608.2	612.5	605.4	605.6	605.4	612.5	608.2	599.9	608.2	612.5	605.4	605.6	605.4	612.5	608.2
40	524.3	531.1	524.9	518.8	522.7	518.8	524.9	531.1	524.3	531.1	524.9	518.8	522.7	518.8	524.9	531.1
45	389.7	380.0	374.5	361.7	358.7	361.7	374.5	380.0	389.7	380.0	374.5	361.7	358.7	361.7	374.5	380.0
50	239.3	229.7	231.1	226.9	222.1	226.9	231.1	229.7	239.3	229.7	231.1	226.9	222.1	226.9	231.1	229.7
55	158.6	156.3	148.0	143.4	149.3	143.4	148.0	156.3	158.6	156.3	148.0	143.4	149.3	143.4	148.0	156.3
60	104.4	107.6	104.7	99.4	105.6	99.4	104.7	107.6	104.4	107.6	104.7	99.4	105.6	99.4	104.7	107.6
65	73.9	80.9	78.4	73.2	73.7	73.2	78.4	80.9	73.9	80.9	78.4	73.2	73.7	73.2	78.4	80.9
70	59.5	63.3	58.0	54.0	57.8	54.0	58.0	63.3	59.5	63.3	58.0	54.0	57.8	54.0	58.0	63.3
75	45.7	49.0	44.8	40.4	41.9	40.4	44.8	49.0	45.7	49.0	44.8	40.4	41.9	40.4	44.8	49.0
80	40.1	33.5	31.9	29.4	27.7	29.4	31.9	33.5	40.1	33.5	31.9	29.4	27.7	29.4	31.9	33.5
85	22.3	19.6	17.0	15.0	13.1	15.0	17.0	19.6	22.3	19.6	17.0	15.0	13.1	15.0	17.0	19.6
90	0.8	1.4	1.1	0.6	0.2	0.6	1.1	1.4	0.8	1.4	1.1	0.6	0.2	0.6	1.1	1.4
95	8.4	8.4	8.1	6.8	5.9	6.8	8.1	8.4	8.4	8.4	8.1	6.8	5.9	6.8	8.1	8.4
100	21.0	18.5	18.1	17.0	16.1	17.0	18.1	18.5	21.0	18.5	18.1	17.0	16.1	17.0	18.1	18.5
105	33.6	30.6	27.5	25.9	25.2	25.9	27.5	30.6	33.6	30.6	27.5	25.9	25.2	25.9	27.5	30.6
110	47.4	44.9	39.5	36.4	34.7	36.4	39.5	44.9	47.4	44.9	39.5	36.4	34.7	36.4	39.5	44.9
115	62.7	57.5	52.1	48.4	46.7	48.4	52.1	57.5	62.7	57.5	52.1	48.4	46.7	48.4	52.1	57.5
120	77.5	70.0	66.0	60.4	58.0	60.4	66.0	70.0	77.5	70.0	66.0	60.4	58.0	60.4	66.0	70.0
125	90.8	81.4	78.5	73.1	70.9	73.1	78.5	81.4	90.8	81.4	78.5	73.1	70.9	73.1	78.5	81.4
130	102.5	92.6	88.6	85.2	83.6	85.2	88.6	92.6	102.5	92.6	88.6	85.2	83.6	85.2	88.6	92.6
135	112.6	104.1	97.8	95.1	94.3	95.1	97.8	104.1	112.6	104.1	97.8	95.1	94.3	95.1	97.8	104.1
140	121.8	115.6	106.2	103.8	102.8	103.8	106.2	115.6	121.8	115.6	106.2	103.8	102.8	103.8	106.2	115.6
145	129.4	125.5	114.0	111.8	110.2	111.8	114.0	125.5	129.4	125.5	114.0	111.8	110.2	111.8	114.0	125.5
150	135.6	133.0	122.8	117.3	116.5	117.3	122.8	133.0	135.6	133.0	122.8	117.3	116.5	117.3	122.8	133.0
155	141.5	139.8	132.5	125.5	123.5	125.5	132.5	139.8	141.5	139.8	132.5	125.5	123.5	125.5	132.5	139.8
160	145.7	144.7	141.1	134.7	132.9	134.7	141.1	144.7	145.7	144.7	141.1	134.7	132.9	134.7	141.1	144.7
165	148.4	147.7	146.6	142.9	141.9	142.9	146.6	147.7	148.4	147.7	146.6	142.9	141.9	142.9	146.6	147.7
170	150.1	149.0	148.9	147.7	147.3	147.7	148.9	149.0	150.1	149.0	148.9	147.7	147.3	147.7	148.9	149.0
175	149.2	148.2	148.5	147.3	147.4	147.3	148.5	148.2	149.2	148.2	148.5	147.3	147.4	147.3	148.5	148.2
180	147.7	147.7	147.7	147.7	147.7	147.7	147.7	147.7	147.7	147.7	147.7	147.7	147.7	147.7	147.7	147.7

Zonal Lumen Tabulation (5 degree zones)

Zone (Degrees)	Lumens	Zone (Degrees)	Lumens	Zone (Degrees)	Lumens	Zone (Degrees)	Lumens
0-5	18.8	45-50	116.9	90-95	1.9	135-140	38.8
5-10	56.2	50-55	81.2	95-100	6.9	140-145	37.9
10-15	92.2	55-60	57.6	100-105	12.4	145-150	35.8
15-20	125.1	60-65	43.5	105-110	18.0	150-155	32.5
20-25	152.9	65-70	33.7	110-115	23.6	155-160	28.6
25-30	174.4	70-75	26.9	115-120	29.0	160-165	23.6
30-35	187.9	75-80	20.4	120-125	33.4	165-170	17.5
35-40	189.4	80-85	13.6	125-130	36.5	170-175	10.6
40-45	169.6	85-90	4.1	130-135	38.4	175-180	3.5



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	0.8345	0.8345	0.8345	0.8345	0.7968	0.7968	0.7968	0.7968	0.7607	0.7607	0.7607	0.7607
1	0.7743	0.7432	0.7155	0.6907	0.7390	0.7116	0.6872	0.6651	0.7054	0.6815	0.6599	0.6403
2	0.7159	0.6623	0.6185	0.5820	0.6830	0.6356	0.5965	0.5635	0.6519	0.6101	0.5751	0.5454
3	0.6617	0.5928	0.5403	0.4989	0.6314	0.5701	0.5227	0.4849	0.6027	0.5483	0.5056	0.4711
4	0.6123	0.5333	0.4763	0.4334	0.5845	0.5137	0.4620	0.4224	0.5582	0.4950	0.4480	0.4116
5	0.5675	0.4820	0.4233	0.3806	0.5420	0.4651	0.4114	0.3717	0.5179	0.4489	0.3997	0.3630
6	0.5271	0.4378	0.3790	0.3374	0.5037	0.4231	0.3689	0.3301	0.4817	0.4089	0.3591	0.3229
7	0.4906	0.3995	0.3416	0.3015	0.4693	0.3866	0.3330	0.2954	0.4492	0.3742	0.3246	0.2894
8	0.4578	0.3661	0.3096	0.2713	0.4383	0.3548	0.3022	0.2662	0.4199	0.3438	0.2950	0.2610
9	0.4283	0.3370	0.2822	0.2457	0.4105	0.3270	0.2758	0.2413	0.3936	0.3172	0.2695	0.2369
10	0.4017	0.3114	0.2585	0.2237	0.3854	0.3025	0.2529	0.2198	0.3699	0.2938	0.2473	0.2160

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	0.6935	0.6935	0.6935	0.6935	0.6320	0.6320	0.6320	0.5755	0.5755	0.5755	0.5489
1	0.6433	0.6250	0.6084	0.5931	0.5732	0.5605	0.5488	0.5254	0.5160	0.5072	0.4837
2	0.5946	0.5622	0.5345	0.5106	0.5180	0.4964	0.4774	0.4771	0.4605	0.4456	0.4243
3	0.5500	0.5072	0.4727	0.4444	0.4692	0.4417	0.4185	0.4339	0.4122	0.3936	0.3739
4	0.5098	0.4595	0.4209	0.3904	0.4267	0.3952	0.3698	0.3960	0.3707	0.3497	0.3316
5	0.4737	0.4181	0.3772	0.3458	0.3895	0.3556	0.3291	0.3628	0.3350	0.3127	0.2958
6	0.4413	0.3820	0.3400	0.3087	0.3569	0.3217	0.2948	0.3335	0.3041	0.2812	0.2655
7	0.4122	0.3505	0.3083	0.2775	0.3284	0.2925	0.2658	0.3076	0.2773	0.2542	0.2396
8	0.3860	0.3229	0.2809	0.2509	0.3032	0.2672	0.2409	0.2847	0.2540	0.2311	0.2173
9	0.3625	0.2986	0.2572	0.2281	0.2810	0.2452	0.2195	0.2645	0.2336	0.2110	0.1981
10	0.3412	0.2771	0.2365	0.2085	0.2614	0.2260	0.2010	0.2465	0.2158	0.1936	0.1815

Average Luminance Table (cd/m²)

		Horizontal Angle (Degrees)		
		0	45	90
Vertical Angle (Degree)	0	11080	11080	11080
	45	7745	7441	7128
	55	3885	3625	3658
	65	2456	2607	2451
	75	2481	2433	2273
	85	3593	2734	2105

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)

