



Photometric Indoor Test Report

Relevant Standards

IES LM-9-2009, IES LM-4-1998 (Withdrawn)
ANSI C78.81-2010, ANSI C82.1-2004, ANSI C82.11, ANSI82.2, 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-T5

LTL Test Number
24015

Test Date
2011-07-06

Prepared By

Eric Gaudreau, Technician III

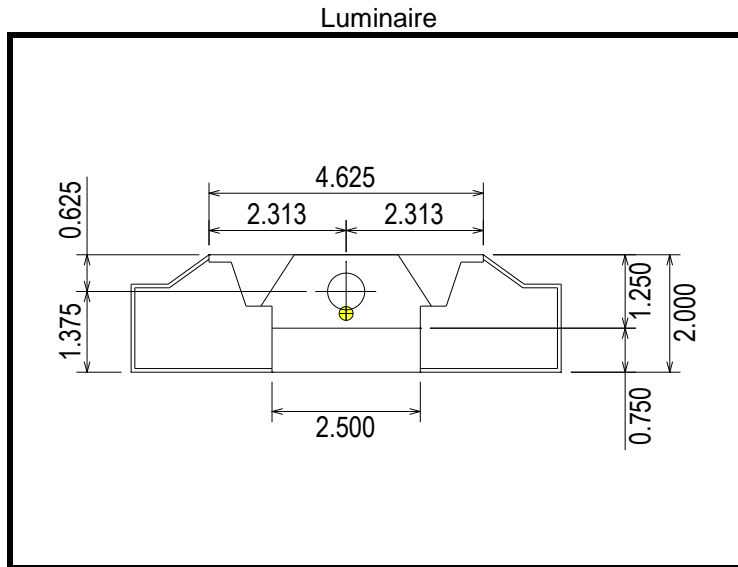
Approved By

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-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: 24.5 °C
Voltage: 120.0 VAC
Current: 0.2904 A
Power: 34.68 W
Power Factor: 0.995
Frequency: 60 Hz

Summary of Results

Luminaire Efficiency: 70.1 %

Spacing Criterion: 0 Degree: 1.20 90 Degree: 1.57
180 Degree: 1.20 270 Degree: 1.57

CIE Type: Semi-Direct

Shielding Angle: 0 Degree: 29.0° 90 Degree: 38.0°



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	619.4	619.4	619.4	619.4	619.4	619.4	619.4	619.4	619.4	619.4	619.4	619.4	619.4	619.4	619.4	619.4
5	613.2	617.5	620.1	617.4	619.1	617.4	620.1	617.5	613.2	617.5	620.1	617.4	619.1	617.4	620.1	617.5
10	603.9	609.9	614.3	612.1	614.7	612.1	614.3	609.9	603.9	609.9	614.3	612.1	614.7	612.1	614.3	609.9
15	585.3	593.7	601.2	604.0	609.0	604.0	601.2	593.7	585.3	593.7	601.2	604.0	609.0	604.0	601.2	593.7
20	561.1	570.3	584.4	599.1	607.6	599.1	584.4	570.3	561.1	570.3	584.4	599.1	607.6	599.1	584.4	570.3
25	531.2	542.3	567.8	592.6	603.1	592.6	567.8	542.3	531.2	542.3	567.8	592.6	603.1	592.6	567.8	542.3
30	496.0	510.7	550.0	580.7	597.2	580.7	550.0	510.7	496.0	510.7	550.0	580.7	597.2	580.7	550.0	510.7
35	455.8	478.8	528.0	583.1	623.2	583.1	528.0	478.8	455.8	478.8	528.0	583.1	623.2	583.1	528.0	478.8
40	409.8	443.0	505.1	595.7	627.0	595.7	505.1	443.0	409.8	443.0	505.1	595.7	627.0	595.7	505.1	443.0
45	355.8	401.2	483.0	532.2	551.4	532.2	483.0	401.2	355.8	401.2	483.0	532.2	551.4	532.2	483.0	401.2
50	290.6	344.8	418.5	425.2	438.2	425.2	418.5	344.8	290.6	344.8	418.5	425.2	438.2	425.2	418.5	344.8
55	199.3	260.7	309.5	292.0	284.7	292.0	309.5	260.7	199.3	260.7	309.5	292.0	284.7	292.0	309.5	260.7
60	86.6	137.7	188.2	179.2	185.6	179.2	188.2	137.7	86.6	137.7	188.2	179.2	185.6	179.2	188.2	137.7
65	20.3	34.8	79.3	115.0	139.0	115.0	79.3	34.8	20.3	34.8	79.3	115.0	139.0	115.0	79.3	34.8
70	9.3	11.3	20.5	59.2	89.5	59.2	20.5	11.3	9.3	11.3	20.5	59.2	89.5	59.2	20.5	11.3
75	4.4	5.2	6.7	14.8	23.8	14.8	6.7	5.2	4.4	5.2	6.7	14.8	23.8	14.8	6.7	5.2
80	2.3	2.3	3.1	4.9	6.9	4.9	3.1	2.3	2.3	2.3	3.1	4.9	6.9	4.9	3.1	2.3
85	0.4	0.4	0.8	1.1	1.4	1.1	0.8	0.4	0.4	0.4	0.8	1.1	1.4	1.1	0.8	0.4
90	0.6	1.1	0.6	0.3	0.0	0.3	0.6	1.1	0.6	1.1	0.6	0.3	0.0	0.3	0.6	1.1
95	5.8	6.1	5.9	4.7	4.2	4.7	5.9	6.1	5.8	6.1	5.9	4.7	4.2	4.7	5.9	6.1
100	12.4	12.1	12.3	11.3	10.8	11.3	12.3	12.1	12.4	12.1	12.3	11.3	10.8	11.3	12.3	12.1
105	20.4	19.3	17.9	17.7	17.2	17.7	17.9	19.3	20.4	19.3	17.9	17.7	17.2	17.7	17.9	19.3
110	28.1	28.0	22.1	22.2	22.1	22.2	22.1	28.0	28.1	28.0	22.1	22.2	22.1	22.2	22.1	28.0
115	38.1	38.6	29.9	26.5	26.0	26.5	29.9	38.6	38.1	38.6	29.9	26.5	26.0	26.5	29.9	38.6
120	48.2	49.4	40.1	33.8	31.9	33.8	40.1	49.4	48.2	49.4	40.1	33.8	31.9	33.8	40.1	49.4
125	57.2	60.1	51.2	44.9	41.9	44.9	51.2	60.1	57.2	60.1	51.2	44.9	41.9	44.9	51.2	60.1
130	66.4	70.0	63.1	55.6	53.2	55.6	63.1	70.0	66.4	70.0	63.1	55.6	53.2	55.6	63.1	70.0
135	75.1	79.0	74.3	67.3	64.4	67.3	74.3	79.0	75.1	79.0	74.3	67.3	64.4	67.3	74.3	79.0
140	82.7	87.4	84.2	78.7	76.2	78.7	84.2	87.4	82.7	87.4	84.2	78.7	76.2	78.7	84.2	87.4
145	88.6	93.9	92.7	88.7	86.8	88.7	92.7	93.9	88.6	93.9	92.7	88.7	86.8	88.7	92.7	93.9
150	94.2	99.4	100.1	97.6	96.8	97.6	100.1	99.4	94.2	99.4	100.1	97.6	96.8	97.6	100.1	99.4
155	99.2	102.9	105.6	103.9	103.8	103.9	105.6	102.9	99.2	102.9	105.6	103.9	103.8	103.9	105.6	102.9
160	103.4	106.1	109.4	109.6	109.3	109.6	109.4	106.1	103.4	106.1	109.4	109.6	109.3	109.6	109.4	106.1
165	107.0	108.2	111.2	112.3	112.9	112.3	111.2	108.2	107.0	108.2	111.2	112.3	112.9	112.3	111.2	108.2
170	109.1	109.7	111.5	112.4	113.1	112.4	111.5	109.7	109.1	109.7	111.5	112.4	113.1	112.4	111.5	109.7
175	110.5	110.5	111.2	111.1	111.2	111.1	111.2	110.5	110.5	110.5	111.2	111.1	111.2	111.1	111.2	110.5
180	110.8	110.8	110.8	110.8	110.8	110.8	110.8	110.8	110.8	110.8	110.8	110.8	110.8	110.8	110.8	110.8

Zonal Lumen Tabulation (5 degree zones)

Zone (Degrees)	Lumens	Zone (Degrees)	Lumens	Zone (Degrees)	Lumens	Zone (Degrees)	Lumens
0-5	14.8	45-50	173.8	90-95	1.4	135-140	28.7
5-10	44.0	50-55	145.2	95-100	4.7	140-145	29.0
10-15	71.8	55-60	99.7	100-105	8.1	145-150	27.9
15-20	97.5	60-65	55.6	105-110	11.2	150-155	25.5
20-25	120.9	65-70	27.5	110-115	14.1	155-160	22.2
25-30	141.0	70-75	10.8	115-120	17.6	160-165	18.0
30-35	158.6	75-80	3.3	120-125	21.2	165-170	13.2
35-40	175.3	80-85	1.2	125-130	24.7	170-175	7.9
40-45	182.8	85-90	0.2	130-135	27.2	175-180	2.7



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	0.8405	0.8405	0.8405	0.8405	0.8065	0.8065	0.8065	0.8065	0.7742	0.7742	0.7742	0.7742
1	0.7818	0.7514	0.7244	0.7002	0.7500	0.7232	0.6992	0.6776	0.7200	0.6963	0.6750	0.6557
2	0.7210	0.6671	0.6230	0.5863	0.6914	0.6434	0.6037	0.5703	0.6633	0.6207	0.5850	0.5548
3	0.6636	0.5931	0.5394	0.4970	0.6360	0.5729	0.5241	0.4852	0.6099	0.5535	0.5092	0.4735
4	0.6108	0.5292	0.4704	0.4261	0.5853	0.5118	0.4580	0.4169	0.5613	0.4952	0.4459	0.4079
5	0.5631	0.4743	0.4134	0.3691	0.5397	0.4594	0.4032	0.3618	0.5176	0.4449	0.3932	0.3546
6	0.5202	0.4273	0.3662	0.3229	0.4988	0.4143	0.3576	0.3170	0.4786	0.4018	0.3493	0.3111
7	0.4820	0.3871	0.3268	0.2851	0.4624	0.3757	0.3195	0.2801	0.4439	0.3647	0.3124	0.2752
8	0.4478	0.3524	0.2936	0.2537	0.4299	0.3424	0.2873	0.2495	0.4130	0.3327	0.2812	0.2454
9	0.4174	0.3225	0.2655	0.2275	0.4011	0.3136	0.2601	0.2239	0.3856	0.3050	0.2548	0.2204
10	0.3903	0.2965	0.2414	0.2053	0.3753	0.2886	0.2367	0.2022	0.3611	0.2810	0.2321	0.1992

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	0.7138	0.7138	0.7138	0.7138	0.6585	0.6585	0.6585	0.6078	0.6078	0.6078	0.5839
1	0.6642	0.6460	0.6294	0.6141	0.5997	0.5869	0.5751	0.5570	0.5474	0.5384	0.5171
2	0.6114	0.5780	0.5494	0.5247	0.5386	0.5159	0.4960	0.5022	0.4845	0.4686	0.4489
3	0.5620	0.5170	0.4807	0.4508	0.4832	0.4537	0.4289	0.4518	0.4281	0.4077	0.3892
4	0.5171	0.4637	0.4227	0.3902	0.4345	0.4005	0.3730	0.4073	0.3793	0.3562	0.3387
5	0.4771	0.4177	0.3739	0.3404	0.3923	0.3555	0.3266	0.3686	0.3378	0.3131	0.2966
6	0.4415	0.3780	0.3330	0.2995	0.3558	0.3174	0.2881	0.3350	0.3024	0.2770	0.2614
7	0.4099	0.3438	0.2985	0.2656	0.3243	0.2852	0.2560	0.3059	0.2723	0.2467	0.2320
8	0.3819	0.3143	0.2693	0.2372	0.2970	0.2578	0.2291	0.2807	0.2466	0.2212	0.2073
9	0.3570	0.2887	0.2444	0.2133	0.2733	0.2343	0.2064	0.2587	0.2246	0.1996	0.1865
10	0.3349	0.2664	0.2230	0.1931	0.2526	0.2142	0.1871	0.2396	0.2056	0.1812	0.1688

Average Luminance Table (cd/m²)

		Horizontal Angle (Degrees)		
		0	45	90
Vertical Angle (Degree)	0	8703	8703	8703
	45	7070	9597	10960
	55	4882	7583	6973
	65	673	2637	4620
	75	237	363	1290
	85	68	125	227

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)

