



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

DRSO2-X-4-X-D28R1/MPL-X-120-T5

LTL Test Number

23334

Test Date

2011-05-10

Prepared By

Eric Gaudreau, Technician III

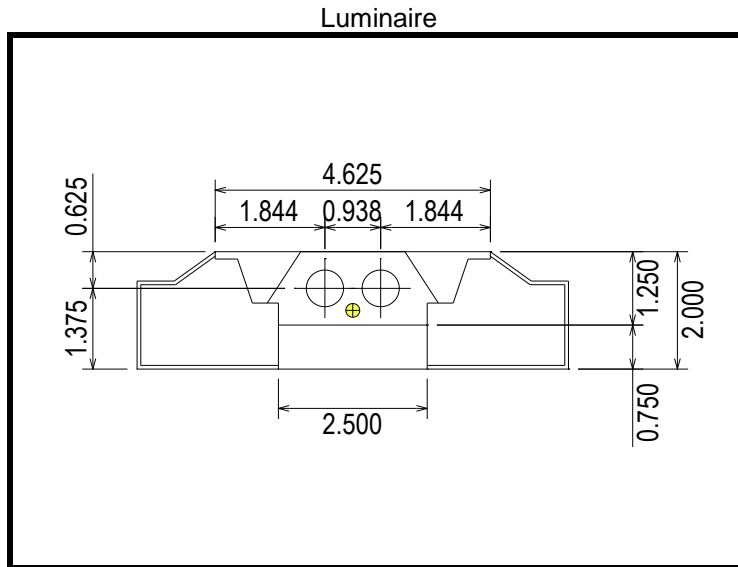
Approved By

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: DRSO2-X-4-X-D28R1/MPL-X-120-T5
Lamp: Two 28 watt T5 linear fluorescent lamps rated at 2610 lumens each
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: 0.5303 A
Power: 63.46 W
Power Factor: 0.997
Frequency: 60 Hz

Summary of Results

Luminaire Efficiency: 69.0 %

Spacing Criterion: 0 Degree: 1.22 90 Degree: 1.22
180 Degree: 1.22 270 Degree: 1.22

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	1481	1481	1481	1481	1481	1481	1481	1481	1481	1481	1481	1481	1481	1481	1481	1481
5	1468	1476	1483	1476	1482	1476	1483	1476	1468	1476	1483	1476	1482	1476	1483	1476
10	1455	1463	1468	1459	1465	1459	1468	1463	1455	1463	1468	1459	1465	1459	1468	1463
15	1425	1433	1438	1431	1436	1431	1438	1433	1425	1433	1438	1431	1436	1431	1438	1433
20	1374	1378	1386	1384	1389	1384	1386	1378	1374	1378	1386	1384	1389	1384	1386	1378
25	1304	1305	1319	1319	1319	1319	1319	1305	1304	1305	1319	1319	1319	1319	1319	1305
30	1216	1221	1234	1231	1227	1231	1234	1221	1216	1221	1234	1231	1227	1231	1234	1221
35	1104	1115	1120	1094	1088	1094	1120	1115	1104	1115	1120	1094	1088	1094	1120	1115
40	945	964	937	917	920	917	937	964	945	964	937	917	920	917	937	964
45	684	676	654	624	616	624	654	676	684	676	654	624	616	624	654	676
50	423	409	408	396	388	396	408	409	423	409	408	396	388	396	408	409
55	282	278	260	251	262	251	260	278	282	278	260	251	262	251	260	278
60	184	190	184	175	186	175	184	190	184	190	184	175	186	175	184	190
65	132	144	140	130	131	130	140	144	132	144	140	130	131	130	140	144
70	107	113	103	96	104	96	103	113	107	113	103	96	104	96	103	113
75	82	87	80	72	75	72	80	87	82	87	80	72	75	72	80	87
80	72	60	57	53	50	53	57	60	72	60	57	53	50	53	57	60
85	40	35	31	27	23	27	31	35	40	35	31	27	23	27	31	35
90	2	3	2	1	0	1	2	3	2	3	2	1	0	1	2	3
95	15	16	16	14	13	14	16	16	15	16	16	14	13	14	16	16
100	37	33	34	32	31	32	34	33	37	33	34	32	31	32	34	33
105	59	55	48	48	47	48	48	55	59	55	48	48	47	48	48	55
110	80	83	69	61	59	61	69	83	80	83	69	61	59	61	69	83
115	106	103	95	84	80	84	95	103	106	103	95	84	80	84	95	103
120	130	119	125	110	105	110	125	119	130	119	125	110	105	110	125	119
125	151	136	151	139	132	139	151	136	151	136	151	139	132	139	151	136
130	174	155	165	168	163	168	165	155	174	155	165	168	163	168	165	155
135	193	174	176	184	187	184	176	174	193	174	176	184	187	184	176	174
140	213	194	187	193	195	193	187	194	213	194	187	193	195	193	187	194
145	228	214	200	200	201	200	200	214	228	214	200	200	201	200	200	214
150	241	230	214	209	209	209	214	230	241	230	214	209	209	209	214	230
155	252	244	228	220	220	220	228	244	252	244	228	220	220	220	228	244
160	259	254	244	232	231	232	244	254	259	254	244	232	231	232	244	254
165	265	261	256	248	247	248	256	261	265	261	256	248	247	248	256	261
170	266	264	263	258	259	258	263	264	266	264	263	258	259	258	263	264
175	263	262	263	261	262	261	263	262	263	262	263	261	262	261	263	262
180	262	262	262	262	262	262	262	262	262	262	262	262	262	262	262	262

Zonal Lumen Tabulation (5 degree zones)

Zone (Degrees)	Lumens	Zone (Degrees)	Lumens	Zone (Degrees)	Lumens	Zone (Degrees)	Lumens
0-5	35.4	45-50	205.7	90-95	3.9	135-140	69.5
5-10	105.2	50-55	143.2	95-100	13.2	140-145	66.9
10-15	171.8	55-60	101.5	100-105	22.4	145-150	62.7
15-20	232.2	60-65	76.9	105-110	31.6	150-155	57.1
20-25	282.9	65-70	60.0	110-115	41.6	155-160	49.9
25-30	321.7	70-75	48.0	115-120	51.4	160-165	41.1
30-35	344.3	75-80	36.6	120-125	59.9	165-170	30.7
35-40	342.1	80-85	24.4	125-130	66.6	170-175	18.8
40-45	299.8	85-90	7.3	130-135	70.1	175-180	6.3



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	0.8238	0.8238	0.8238	0.8238	0.7868	0.7868	0.7868	0.7868	0.7515	0.7515	0.7515	0.7515
1	0.7647	0.7342	0.7070	0.6827	0.7301	0.7033	0.6792	0.6576	0.6972	0.6737	0.6525	0.6333
2	0.7074	0.6548	0.6118	0.5760	0.6752	0.6287	0.5903	0.5579	0.6448	0.6037	0.5694	0.5403
3	0.6543	0.5867	0.5352	0.4945	0.6246	0.5645	0.5179	0.4808	0.5965	0.5431	0.5012	0.4674
4	0.6058	0.5282	0.4724	0.4302	0.5785	0.5091	0.4583	0.4195	0.5528	0.4908	0.4446	0.4089
5	0.5618	0.4778	0.4202	0.3783	0.5368	0.4613	0.4086	0.3697	0.5133	0.4455	0.3972	0.3611
6	0.5220	0.4344	0.3767	0.3358	0.4992	0.4200	0.3669	0.3287	0.4777	0.4062	0.3573	0.3217
7	0.4862	0.3967	0.3398	0.3005	0.4653	0.3841	0.3315	0.2946	0.4456	0.3720	0.3233	0.2887
8	0.4539	0.3639	0.3084	0.2707	0.4348	0.3528	0.3012	0.2657	0.4168	0.3420	0.2941	0.2607
9	0.4248	0.3352	0.2813	0.2454	0.4074	0.3253	0.2751	0.2411	0.3909	0.3158	0.2689	0.2368
10	0.3986	0.3099	0.2579	0.2237	0.3826	0.3012	0.2524	0.2200	0.3675	0.2926	0.2470	0.2163

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	0.6856	0.6856	0.6856	0.6856	0.6253	0.6253	0.6253	0.5699	0.5699	0.5699	0.5439
1	0.6363	0.6184	0.6021	0.5871	0.5676	0.5552	0.5437	0.5208	0.5116	0.5029	0.4799
2	0.5886	0.5568	0.5297	0.5062	0.5135	0.4923	0.4737	0.4735	0.4572	0.4426	0.4217
3	0.5449	0.5029	0.4691	0.4412	0.4657	0.4387	0.4159	0.4312	0.4098	0.3915	0.3723
4	0.5055	0.4561	0.4182	0.3882	0.4239	0.3931	0.3680	0.3940	0.3691	0.3485	0.3307
5	0.4700	0.4154	0.3752	0.3444	0.3874	0.3541	0.3280	0.3613	0.3339	0.3120	0.2955
6	0.4381	0.3799	0.3386	0.3079	0.3554	0.3207	0.2943	0.3324	0.3035	0.2810	0.2656
7	0.4094	0.3488	0.3073	0.2771	0.3272	0.2919	0.2656	0.3069	0.2771	0.2544	0.2400
8	0.3836	0.3216	0.2803	0.2508	0.3024	0.2670	0.2411	0.2843	0.2541	0.2315	0.2180
9	0.3604	0.2976	0.2569	0.2283	0.2804	0.2452	0.2199	0.2643	0.2339	0.2117	0.1990
10	0.3394	0.2764	0.2364	0.2089	0.2610	0.2262	0.2016	0.2465	0.2162	0.1944	0.1825

Average Luminance Table (cd/m²)

		Horizontal Angle (Degrees)		
		0	45	90
Vertical Angle (Degree)	0	20810	20810	20810
	45	13590	12990	12250
	55	6906	6369	6419
	65	4391	4644	4341
	75	4439	4341	4096
	85	6506	3739	3739

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.

