

Indoor Distribution Test Report

Spectrum Lighting Inc.

994 Jefferson Street
Fall River, MA 02721
+1.508.678.2303

Spectrum Lighting Photometric Lab

Luminaire

PAC0810GV 15L 35K xx FG8

Nom. 8" diam x 10" H tubular luminaire with wrap around slotted cover

Test Number

SP-00968_M-15L

Test Date

12/19/2019

The results contained in this report pertain only to this IES file.

Summary of Results

Power

Input Watts	10 W
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Lumen Output

Output Lumens	808
Efficacy	80.8 lm/W

Luminous Dimensions

0° - 180° Size	-0.66
90° - 270° Size	-0.66
Height	0.66

Spacing Criterion

Two luminaires, plane 0°	0.88
Two luminaires, plane 90°	0.87
Four luminaires	0.94

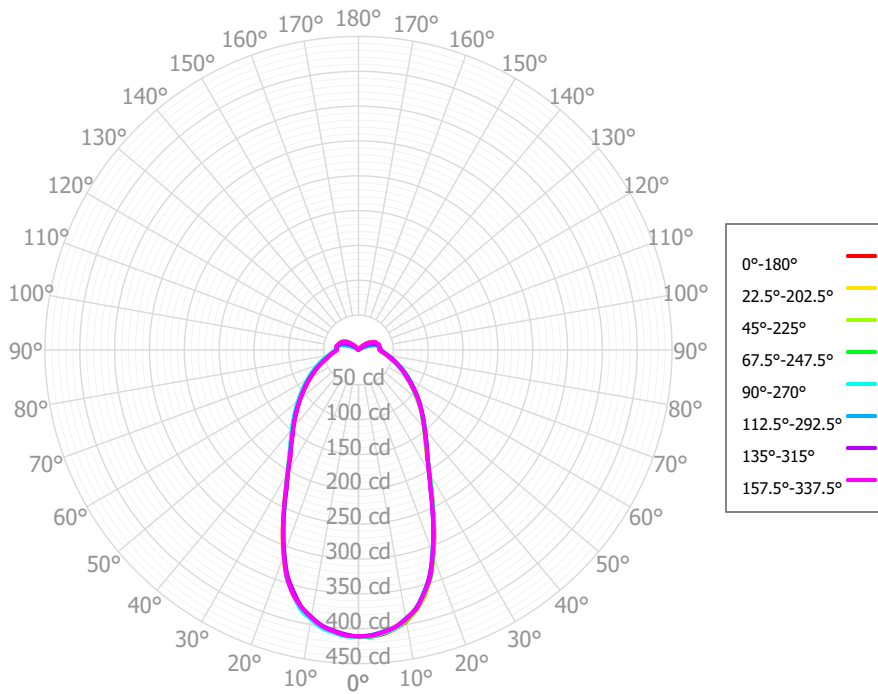
Full Beam Angle

0° - 180°	59°
90° - 270°	59°

IES File Header Contents

Keyword	Value
TEST	SP-00968_M-15L
TESTLAB	Spectrum Lighting Photometric Lab VLS-245-981
MANUFAC	Spectrum Lighting
TESTDATE	12/19/2019
ISSUEDATE	1/7/2020
LUMCAT	PAC0810GV 15L 35K xx FG8
LUMINAIRE	Nom. 8" diam x 10" H tubular luminaire with wrap around slotted cover
OTHER	Beam Angle (downlight): 60 degrees
OTHER	Uplight: 12.4%
OTHER	Downlight: 87.6%
LAMP	N/A
LAMPCAT	N/A
OTHER	CCT Multipliers: 27K x 0.97, 30K x 0.99, 40K x 1.03
OTHER	Total luminaire watts is approximate
OTHER	This report generated by Spectrum Lighting, scaled from 27L

Candela Polar Plot



Zonal Lumen Summary

Zone	Lumens	% Fixture	Zone	Lumens	% Fixture
0.00° - 10.00°	38.92	4.82%	90.00° - 100.00°	33.71	4.17%
10.00° - 20.00°	100.45	12.43%	100.00° - 110.00°	29.79	3.69%
20.00° - 30.00°	115.92	14.35%	100.00° - 120.00°	50.09	6.20%
30.00° - 40.00°	107.01	13.24%	120.00° - 130.00°	10.32	1.28%
40.00° - 50.00°	99.01	12.25%	130.00° - 140.00°	4.19	0.52%
50.00° - 60.00°	85.61	10.60%	140.00° - 150.00°	1.35	0.17%
60.00° - 70.00°	69.28	8.57%	150.00° - 160.00°	0.48	0.06%
70.00° - 80.00°	52.27	6.47%	160.00° - 170.00°	0.26	0.03%
80.00° - 90.00°	39.04	4.83%	170.00° - 180.00°	0.09	0.01%
0.00° - 90.00°	707.51	87.56%	0.00° - 180.00°	808.01	100.00%

Candela Distribution

	0.00°	22.50°	45.00°	67.50°	90.00°	112.50°	135.00°	157.50°	180.00°	202.50°	225.00°	247.50°	270.00°	292.50°	315.00°	337.50°	360.00°
0.00°	410.95	410.95	410.95	410.95	410.95	410.95	410.95	410.95	410.95	410.95	410.95	410.95	410.95	410.95	410.95	410.95	410.95
2.50°	411.37	410.65	410.36	412.12	411.18	410.49	408.52	409.78	409.63	409.53	409.83	410.67	411.40	409.63	409.78	410.58	411.37
5.00°	409.12	407.74	407.52	407.86	407.69	405.31	404.29	405.58	405.68	405.59	405.53	406.16	407.29	405.62	406.38	406.43	409.12
7.50°	403.55	403.65	402.74	402.77	402.77	399.37	398.96	399.70	399.94	399.70	399.92	400.42	402.69	401.40	401.03	401.20	403.55
10.00°	395.55	394.00	394.70	392.35	392.69	389.41	388.99	390.13	391.28	390.79	390.27	391.07	392.63	390.93	392.53	391.72	395.55
12.50°	382.31	382.56	382.80	381.32	380.59	377.91	377.64	378.41	380.46	379.07	379.48	379.44	382.18	380.01	380.01	381.43	382.31
15.00°	365.96	363.97	365.69	362.35	362.80	360.63	359.20	362.96	363.23	363.87	361.58	362.62	362.85	360.49	362.27	362.36	365.96
17.50°	341.87	343.70	342.88	342.96	341.38	340.23	339.21	342.07	342.23	342.55	342.24	341.50	342.95	340.00	339.36	342.16	341.87
20.00°	314.15	313.90	313.65	313.03	312.01	310.91	311.38	313.57	314.37	314.95	312.71	312.43	312.30	309.95	310.86	311.61	314.15
22.50°	284.16	282.48	283.67	283.06	282.48	281.37	282.33	284.10	283.19	285.16	281.77	282.75	281.79	280.02	281.09	280.37	284.16
25.00°	253.31	253.27	253.02	253.25	252.65	251.33	252.69	253.50	253.64	253.57	252.75	252.21	252.71	250.88	250.20	251.45	253.31
27.50°	227.16	224.29	226.60	224.38	225.93	224.30	223.00	226.35	224.71	226.66	223.88	225.58	224.75	223.42	224.25	222.90	227.16
30.00°	202.34	203.22	203.31	203.79	203.62	202.63	202.08	202.44	203.19	202.90	203.63	203.63	203.75	202.77	201.79	202.93	202.34
32.50°	184.92	182.52	184.56	184.19	185.23	183.84	181.55	183.76	183.77	184.88	183.71	185.46	184.31	184.05	184.92	183.56	184.92
35.00°	169.01	169.90	168.59	170.41	171.33	169.12	168.33	169.06	169.66	169.95	170.15	171.02	171.44	171.33	171.20	170.29	169.01
37.50°	157.82	157.44	156.51	157.23	158.80	156.34	155.35	156.74	156.67	157.51	156.89	158.65	159.23	159.35	158.97	157.49	157.82
40.00°	147.29	147.42	146.32	146.49	147.56	145.85	145.60	145.92	145.88	146.17	147.15	147.92	149.04	149.12	147.42	147.53	147.29
42.50°	137.97	137.48	137.02	136.42	137.68	136.42	135.90	135.76	135.40	136.64	137.42	138.19	139.16	139.19	138.07	137.76	137.97
45.00°	128.75	128.14	128.04	128.33	128.86	128.00	126.51	125.93	126.27	127.72	127.80	129.11	130.03	129.81	129.50	128.80	128.75
47.50°	120.31	118.97	118.66	120.05	120.01	119.15	117.25	117.33	117.23	119.13	118.46	120.13	121.26	120.95	121.33	120.03	120.31
50.00°	111.88	110.66	109.16	111.38	111.15	109.96	108.69	109.23	109.28	110.61	110.34	111.21	113.20	112.87	113.27	111.90	111.88
52.50°	103.10	102.55	101.49	102.93	103.01	102.29	100.55	101.41	101.37	102.57	102.44	103.74	105.40	105.09	105.40	103.78	103.10
55.00°	94.45	95.21	94.19	94.87	95.23	95.59	93.91	93.68	93.90	94.61	95.29	96.88	98.01	97.68	97.56	95.69	94.45
57.50°	87.36	88.16	87.84	87.53	88.20	88.56	87.28	86.52	86.56	87.75	88.49	90.20	91.05	90.90	89.89	88.09	87.36
60.00°	80.48	81.93	81.62	81.23	81.48	81.35	80.63	79.49	80.63	81.01	82.56	83.58	84.63	84.77	82.24	81.45	80.48
62.50°	74.93	75.66	75.46	74.94	74.99	75.44	74.19	73.55	74.72	74.77	76.54	77.63	78.47	78.62	76.24	75.28	74.93
65.00°	69.37	69.32	69.30	68.68	68.58	70.04	68.15	67.78	68.98	68.54	70.33	71.85	72.56	72.48	70.35	69.87	69.37
67.50°	63.80	63.27	63.57	62.95	63.05	64.14	62.41	62.58	63.31	63.74	64.75	66.18	67.14	66.54	64.89	64.32	63.80
70.00°	58.25	57.72	57.86	57.75	57.71	58.09	57.16	57.44	58.02	58.91	60.17	60.53	62.14	60.74	59.48	58.58	58.25
72.50°	52.76	52.38	52.45	52.71	53.47	53.56	52.25	52.37	52.86	53.59	55.30	55.93	57.24	55.70	55.19	53.29	52.76
75.00°	47.68	47.31	47.19	47.78	49.39	49.38	47.81	47.34	48.13	48.42	50.05	51.44	52.42	51.07	50.88	48.45	47.68
77.50°	43.65	43.35	43.86	44.05	45.31	45.17	44.20	44.17	43.97	44.50	45.40	47.01	47.99	46.87	46.32	44.52	43.65
80.00°	39.91	40.70	40.48	41.12	41.22	40.96	41.51	41.00	41.30	40.77	41.38	42.60	43.76	42.85	41.96	41.37	39.91
82.50°	36.73	37.94	36.80	37.91	37.80	37.88	38.72	37.94	38.61	38.14	38.13	39.72	40.57	39.42	38.91	37.98	36.73
85.00°	33.93	35.07	33.51	34.57	34.44	34.90	35.83	34.97	35.88	35.55	35.55	36.87	37.82	36.18	36.04	34.44	33.93
87.50°	31.73	32.47	31.96	32.61	33.13	33.23	33.57	32.70	33.56	33.11	33.47	34.54	35.23	33.13	33.94	32.05	31.73
90.00°	30.44	30.08	30.56	31.24	31.86	31.63	31.78	30.86	31.91	31.33	31.75	32.47	32.70	30.14	32.30	30.29	30.44
92.50°	30.35	29.38	29.63	30.64	31.21	31.56	31.13	31.14	31.00	31.51	30.97	32.60	32.12	30.21	32.09	30.27	30.35
95.00°	30.11	29.75	29.10	30.30	30.63	31.46	31.18	31.50	31.06	31.67	30.72	32.54	32.04	30.83	31.70	31.03	30.11
97.50°	29.72	29.80	29.62	29.98	30.49	31.06	31.18	32.19	31.08	31.83	30.51	31.54	31.52	30.33	30.86	30.64	29.72
100.00°	29.53	29.70	29.80	29.66	30.15	30.62	31.15	32.39	31.07	31.71	30.33	30.28	30.93	29.72	30.06	29.87	29.53
102.50°	29.52	29.19	29.29	28.09	28.84	29.85	30.62	31.27	30.64	31.10	29.68	28.08	29.21	28.16	29.33	30.13	29.52
105.00°	29.23	28.52	28.82	26.31	27.14	28.65	29.90	30.28	29.85	30.41	28.86	25.76	27.36	26.55	28.40	30.65	29.23
107.50°	28.73	28.42	28.45	23.46	24.08	25.35	28.35	29.54	29.31	29.59	27.30	23.08	23.97	22.47	27.16	29.47	28.73
110.00°	28.16	28.50	27.06	20.52	20.94	22.02	26.58	28.79	28.95	28.95	25.55	19.94	20.48	18.40	25.57	27.98	28.16
112.50°	27.55	27.67	24.32	17.75	17.59	18.54	24.58	28.01	28.36	28.52	23.51	15.81	16.86	14.40	23.54	27.38	27.55

Coefficients of Utilization – Zonal Cavity Method

Values are lumens delivered to the workplane.

RCR	pfc	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	0%
	pcc	80%	80%	80%	80%	70%	70%	70%	70%	50%	50%	50%	30%	30%	30%	10%	10%	0%
	pw	70%	50%	30%	10%	70%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	30%
	0	938	938	938	938	904	904	904	904	842	842	842	785	785	785	732	732	708
	1	851	810	774	741	818	782	749	720	729	703	679	681	660	640	636	619	598
	2	777	711	657	611	747	688	638	596	643	602	567	602	569	540	563	537	518
	3	714	632	568	517	685	611	553	506	573	525	485	538	498	464	505	472	455
	4	658	566	498	447	632	549	486	438	516	463	422	486	442	406	458	421	406
	5	610	511	443	392	586	497	433	385	469	414	372	443	396	359	418	379	366
	6	567	466	397	348	546	453	389	343	429	373	332	406	358	322	385	344	332
	7	529	426	360	313	510	415	353	309	394	340	300	374	327	291	356	314	304
	8	496	393	328	284	478	383	322	280	365	311	273	347	300	265	331	289	281
	9	466	364	301	259	450	355	296	256	339	286	250	324	277	243	309	268	260
	10	439	338	278	238	424	331	274	235	316	265	230	303	257	225	290	249	242

Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	13.6 fc	6.3 ft
6.5 ft	9.7 fc	7.4 ft
7.5 ft	7.3 fc	8.5 ft
8.0 ft	6.4 fc	9.1 ft
10.0 ft	4.1 fc	11.4 ft
12.0 ft	2.9 fc	13.7 ft
14.0 ft	2.1 fc	15.9 ft
16.0 ft	1.6 fc	18.2 ft
20.0 ft	1.0 fc	22.8 ft
24.0 ft	0.7 fc	27.3 ft
28.0 ft	0.5 fc	31.9 ft

Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
0.00°	12,929	12,929	12,929
45.00°	2,520	2,506	2,522
55.00°	1,838	1,833	1,853
65.00°	1,384	1,383	1,369
75.00°	1,008	997	1,044
85.00°	788	778	799

UGR CIE 190:2010

Ceiling reflectance		0.7	0.7	0.5	0.5	0.3	0.7	0.7	0.5	0.5	0.3
Wall reflectance		0.5	0.3	0.5	0.3	0.3	0.5	0.3	0.5	0.3	0.3
Plane reflectance		0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Room dimensions		Viewed crosswise					Viewed endwise				
2H	2H	-	-	-	-	-	-	-	-	-	-
	3H	-	-	-	-	-	-	-	-	-	-
	4H	-	-	-	-	-	-	-	-	-	-
	6H	-	-	-	-	-	-	-	-	-	-
	8H	-	-	-	-	-	-	-	-	-	-
	12H	-	-	-	-	-	-	-	-	-	-
4H	2H	-	-	-	-	-	-	-	-	-	-
	3H	-	-	-	-	-	-	-	-	-	-
	4H	-	-	-	-	-	-	-	-	-	-
	6H	-	-	-	-	-	-	-	-	-	-
	8H	-	-	-	-	-	-	-	-	-	-
	12H	-	-	-	-	-	-	-	-	-	-
8H	4H	-	-	-	-	-	-	-	-	-	-
	6H	-	-	-	-	-	-	-	-	-	-
	8H	-	-	-	-	-	-	-	-	-	-
	12H	-	-	-	-	-	-	-	-	-	-
12H	4H	-	-	-	-	-	-	-	-	-	-
	6H	-	-	-	-	-	-	-	-	-	-
	8H	-	-	-	-	-	-	-	-	-	-

Corrected UGR values based on total output lumens

SHR = 1.0