

Indoor Distribution Test Report

Spectrum Lighting Inc.

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Spectrum Lighting Photometric Lab

Luminaire

PAC0609GV 15L 35K xx FG6

Nom. 6" diam x 9" H tubular luminaire with wrap around slotted cover

Test Number

SP-00966_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	790
Efficacy	79 lm/W

Luminous Dimensions

0° - 180° Size	-0.5
90° - 270° Size	-0.5
Height	0.58

Spacing Criterion

Two luminaires, plane 0°	0.8
Two luminaires, plane 90°	0.79
Four luminaires	0.88

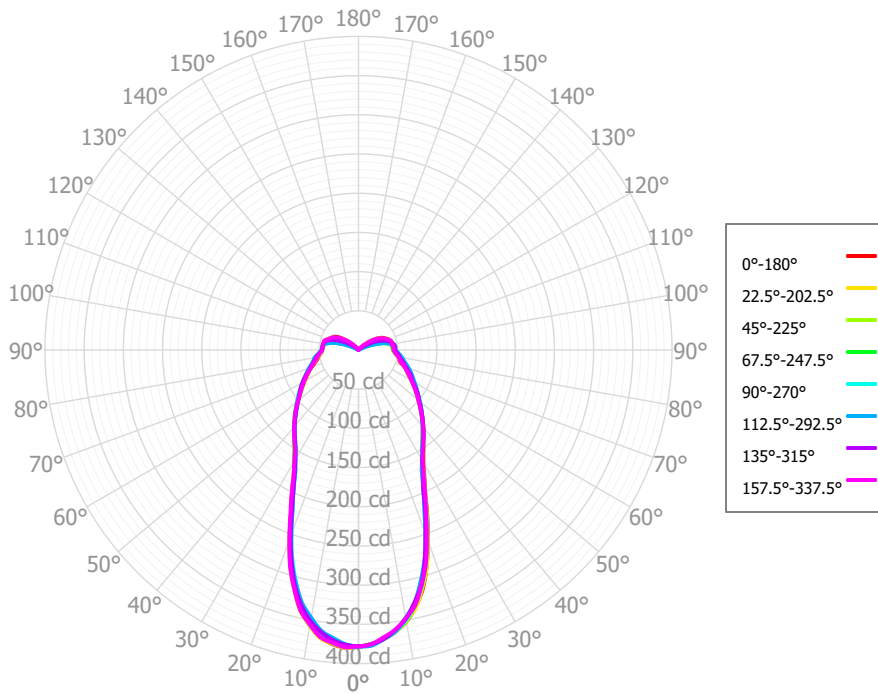
Full Beam Angle

0° - 180°	53°
90° - 270°	52°

IES File Header Contents

Keyword	Value
TEST	SP-00966_M-15L
TESTLAB	Spectrum Lighting Photometric Lab VLS-245-981
MANUFAC	Spectrum Lighting
TESTDATE	12/19/2019
ISSUEDATE	1/7/2020
LUMCAT	PAC0609GV 15L 35K xx FG6
LUMINAIRE	Nom. 6" diam x 9" H tubular luminaire with wrap around slotted cover
OTHER	Beam Angle (downlight): 53 degrees
OTHER	Uplight: 16.6%
OTHER	Downlight: 83.4%
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°	35.36	4.48%	90.00° - 100.00°	49.34	6.25%
10.00° - 20.00°	85.87	10.87%	100.00° - 110.00°	41.56	5.26%
20.00° - 30.00°	92.08	11.66%	100.00° - 120.00°	66.14	8.37%
30.00° - 40.00°	89.71	11.36%	120.00° - 130.00°	10.77	1.36%
40.00° - 50.00°	87.82	11.12%	130.00° - 140.00°	3.16	0.40%
50.00° - 60.00°	80.68	10.21%	140.00° - 150.00°	0.78	0.10%
60.00° - 70.00°	71.56	9.06%	150.00° - 160.00°	0.40	0.05%
70.00° - 80.00°	62.03	7.85%	160.00° - 170.00°	0.24	0.03%
80.00° - 90.00°	53.97	6.83%	170.00° - 180.00°	0.08	0.01%
0.00° - 90.00°	659.07	83.43%	0.00° - 180.00°	789.98	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°	378.15	378.15	378.15	378.15	378.15	378.15	378.15	378.15	378.15	378.15	378.15	378.15	378.15	378.15	378.15	378.15	378.15
2.50°	375.59	375.73	375.40	376.73	375.58	375.82	376.43	379.57	380.04	380.16	378.52	379.22	378.29	377.47	375.68	375.60	375.59
5.00°	370.26	369.58	370.40	368.85	370.01	369.06	371.87	375.06	376.68	375.92	375.91	374.13	372.51	370.13	370.05	367.99	370.26
7.50°	362.21	362.81	361.63	360.36	361.90	361.57	363.36	369.79	369.80	371.19	368.65	368.65	364.33	362.30	359.93	360.04	362.21
10.00°	351.76	350.79	351.78	347.89	349.52	347.04	351.56	356.06	356.82	357.06	357.20	353.64	349.66	346.94	348.30	347.51	351.76
12.50°	335.86	337.10	333.33	333.43	333.13	331.34	334.84	340.91	340.06	341.81	338.73	337.88	333.14	330.57	330.09	333.69	335.86
15.00°	316.10	314.53	313.11	310.08	311.34	308.38	312.54	316.22	315.78	316.30	315.46	312.43	307.82	306.06	310.26	310.50	316.10
17.50°	289.11	289.97	284.29	284.69	285.30	283.55	283.51	290.10	287.69	289.65	285.56	286.18	280.61	280.42	281.05	285.92	289.11
20.00°	258.01	257.63	254.33	252.44	254.66	250.91	253.24	257.60	256.94	256.24	255.14	253.91	250.21	248.99	250.18	254.72	258.01
22.50°	229.03	226.99	225.87	222.41	225.80	220.28	221.72	226.77	225.13	224.66	224.14	222.92	219.35	219.24	222.69	225.04	229.03
25.00°	201.03	201.31	197.53	198.01	198.54	195.83	196.39	201.38	200.70	200.60	198.54	198.14	196.74	195.60	195.57	200.84	201.03
27.50°	181.58	179.45	179.42	176.95	178.17	174.50	176.08	178.84	178.48	178.99	177.85	176.06	174.76	174.81	178.84	179.29	181.58
30.00°	165.19	166.15	161.78	162.53	162.82	160.82	161.18	163.59	163.78	164.78	162.53	163.34	162.02	162.12	162.62	164.89	165.19
32.50°	153.87	154.22	151.99	150.43	151.98	149.01	149.81	150.69	150.79	152.21	151.26	151.59	149.66	150.81	153.39	152.39	153.87
35.00°	143.90	144.75	142.39	142.12	143.78	140.80	141.23	142.46	142.08	143.59	142.57	142.47	141.99	142.53	144.23	143.89	143.90
37.50°	136.02	136.03	134.85	134.35	135.70	133.25	134.17	134.66	134.02	135.31	135.45	134.18	134.34	134.65	136.45	135.72	136.02
40.00°	128.54	128.41	127.37	127.28	127.69	126.70	126.99	127.55	127.08	127.69	127.94	127.61	126.74	127.45	128.72	128.09	128.54
42.50°	121.21	121.00	120.34	120.24	120.76	119.99	119.78	120.69	120.24	120.50	120.26	121.05	119.30	120.61	121.40	120.53	121.21
45.00°	113.91	113.80	113.36	113.24	114.24	113.05	112.99	114.15	113.52	113.93	113.36	114.49	112.95	114.26	114.18	113.06	113.91
47.50°	106.87	106.87	106.56	106.71	108.24	106.56	106.35	107.44	106.81	107.24	106.77	108.14	106.86	107.96	107.59	106.16	106.87
50.00°	99.86	100.13	100.03	100.61	102.39	100.52	100.74	100.55	100.69	100.37	100.53	102.07	101.98	101.72	101.28	99.90	99.86
52.50°	94.41	94.38	94.34	94.88	96.61	95.10	95.40	94.55	94.65	94.14	94.39	96.55	96.99	96.25	96.06	93.94	94.41
55.00°	88.99	89.41	89.00	89.41	90.84	90.20	91.00	89.32	89.65	88.53	89.08	91.65	91.63	91.51	90.66	88.26	88.99
57.50°	83.47	84.33	84.55	84.77	86.30	85.54	86.75	84.53	84.64	83.40	83.93	86.79	86.51	86.91	84.76	83.18	83.47
60.00°	78.04	79.17	79.92	80.60	81.92	81.06	82.19	80.06	79.56	78.65	79.88	81.96	81.97	82.44	79.70	78.56	78.04
62.50°	73.55	74.81	74.96	76.07	77.11	77.18	77.60	75.84	74.76	74.42	75.98	77.63	77.60	78.63	76.56	74.19	73.55
65.00°	69.25	70.85	70.59	71.37	72.27	73.64	72.86	71.77	71.31	70.55	72.15	73.68	73.57	75.23	72.96	69.96	69.25
67.50°	66.10	67.13	67.16	67.54	68.70	70.21	68.12	68.15	67.72	67.50	68.31	69.83	69.76	71.73	68.51	66.14	66.10
70.00°	62.66	63.51	63.73	64.03	65.19	66.82	64.94	64.75	63.63	64.90	65.01	66.03	66.31	68.18	64.66	62.51	62.66
72.50°	57.97	59.72	60.27	60.85	62.56	63.35	61.80	61.41	59.77	61.49	61.72	63.10	62.91	64.73	61.69	59.12	57.97
75.00°	54.23	55.87	57.13	57.77	59.93	59.86	59.31	58.09	56.55	57.73	58.64	60.57	59.54	61.33	58.72	55.81	54.23
77.50°	53.46	53.28	54.30	55.70	57.23	58.13	56.86	55.79	53.88	55.46	55.65	58.33	57.10	58.82	55.74	53.66	53.46
80.00°	52.14	50.98	51.79	53.84	54.54	56.84	54.83	53.77	52.35	53.69	53.62	56.18	55.65	56.57	53.42	51.83	52.14
82.50°	49.45	49.14	49.54	50.75	51.95	53.82	52.73	51.87	50.58	51.10	51.59	53.78	53.45	54.08	51.74	49.63	49.45
85.00°	47.14	47.38	47.17	47.50	49.47	50.48	50.18	49.99	48.39	48.31	49.52	51.31	50.59	51.54	49.85	47.35	47.14
87.50°	45.56	45.60	44.70	46.03	47.52	48.68	47.95	48.11	46.89	47.31	47.74	48.97	48.65	49.28	47.79	45.96	45.56
90.00°	44.45	43.81	43.77	44.68	45.87	47.05	46.94	46.24	46.33	46.61	47.30	46.67	47.38	47.06	47.00	44.69	44.45
92.50°	44.07	43.51	43.71	43.95	45.23	46.36	46.12	46.30	45.91	46.04	46.92	46.41	46.75	46.95	47.01	44.72	44.07
95.00°	43.71	43.28	43.64	43.23	44.62	45.73	45.88	46.49	45.64	45.48	46.72	46.43	46.50	47.03	46.80	44.85	43.71
97.50°	43.37	43.46	43.55	42.46	44.07	45.15	45.67	46.10	45.41	45.69	46.29	45.04	45.62	45.70	46.45	43.83	43.37
100.00°	43.28	43.63	42.83	41.41	42.60	44.41	45.52	45.71	45.23	45.93	45.26	43.54	44.44	44.27	45.18	42.82	43.28
102.50°	43.45	43.46	41.87	37.46	39.31	40.16	44.80	45.52	44.89	44.52	44.04	39.98	40.70	39.58	43.52	43.08	43.45
105.00°	42.99	43.13	39.86	33.12	34.98	35.68	43.08	45.15	44.41	43.13	42.43	36.28	36.02	34.74	41.23	43.19	42.99
107.50°	42.00	41.56	37.56	26.29	28.98	29.03	40.61	42.86	43.05	42.15	40.20	29.92	30.39	27.99	38.75	41.51	42.00
110.00°	40.27	39.75	33.98	19.62	23.08	22.42	37.03	40.64	41.14	41.06	36.95	23.58	24.49	21.27	35.06	39.72	40.27
112.50°	38.02	36.79	30.16	13.63	17.30	15.95	33.05	38.89	39.28	39.03	33.30	17.42	18.75	14.73	31.08	37.12	38.02

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	909	909	909	909	873	873	873	873	805	805	805	743	743	743	686	686	659
	1	814	771	732	697	779	740	705	673	682	654	628	629	606	586	580	562	539
	2	740	671	614	566	706	645	593	549	595	553	517	550	516	486	508	480	460
	3	677	592	526	474	646	570	510	462	527	478	437	488	447	413	452	418	401
	4	622	528	459	406	594	509	446	397	473	419	377	439	394	358	408	371	355
	5	575	476	406	355	550	459	395	347	428	373	331	399	352	316	371	332	319
	6	534	432	363	314	511	417	354	307	390	335	294	365	318	282	341	301	289
	7	498	395	328	281	477	382	320	275	358	304	265	336	289	254	315	275	264
	8	466	363	298	254	446	352	291	249	331	278	240	311	265	231	293	253	244
	9	437	336	273	231	420	326	267	227	307	256	220	290	245	212	274	234	226
	10	412	312	252	212	396	303	247	209	287	237	202	271	227	195	257	217	210

Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	12.5 fc	5.4 ft
6.5 ft	9.0 fc	6.4 ft
7.5 ft	6.7 fc	7.4 ft
8.0 ft	5.9 fc	7.9 ft
10.0 ft	3.8 fc	9.9 ft
12.0 ft	2.6 fc	11.9 ft
14.0 ft	1.9 fc	13.8 ft
16.0 ft	1.5 fc	15.8 ft
20.0 ft	0.9 fc	19.8 ft
24.0 ft	0.7 fc	23.7 ft
28.0 ft	0.5 fc	27.7 ft

Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
0.00°	20,730	20,730	20,730
45.00°	3,565	3,548	3,576
55.00°	2,735	2,736	2,792
65.00°	2,155	2,197	2,250
75.00°	1,764	1,858	1,949
85.00°	1,658	1,659	1,740

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