

## **Indoor Distribution Test Report**

# **Spectrum Lighting Inc.**

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## **Spectrum Lighting Photometric Lab**

### **Luminaire**

GPRF1600GV 37L 35K EX MW  
Nom 16" Globe (Sphere) luminaire

### **Test Number**

SP-00647\_4\_M-37L

### **Test Date**

1/27/2020

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

### Summary of Results

#### Power

Input Watts	26 W
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#### Lumen Output

Output Lumens	3164
Efficacy	121.71 lm/W

#### Luminous Dimensions

0° - 180° Size	-1.33
90° - 270° Size	-1.33
Height	1.33

#### Spacing Criterion

Two luminaires, plane 0°	1.61
Two luminaires, plane 90°	1.56
Four luminaires	1.81

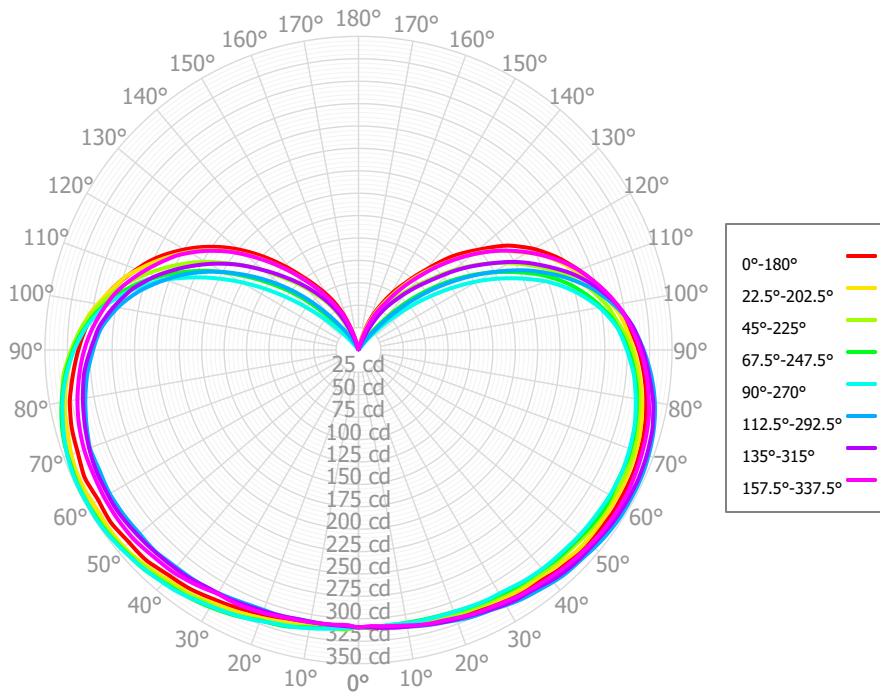
#### Full Beam Angle

0° - 180°	260°
90° - 270°	234°

### IES File Header Contents

Keyword	Value
TEST	SP-00647_4_M-37L
TESTLAB	Spectrum Lighting Photometric Lab, VLS-245-981
MANUFAC	Spectrum Lighting
TESTDATE	1/27/2020
ISSUEDATE	1/29/2020
LUMCAT	GPRF1600GV 37L 35K EX MW
LUMINAIRE	Nom 16" Globe (Sphere) luminaire
LAMPCAT	N/A
LAMP	N/A
OTHER	CCT Output Multipliers: 27K x 0.97, 30K x 0.99, 40K x 1.03
OTHER	Total luminaire wattage is approximate
OTHER	This report prepared by Spectrum Lighting, scaled from 55L

### Candela Polar Plot



### Zonal Lumen Summary

Zone	Lumens	% Fixture	Zone	Lumens	% Fixture
0.00° - 10.00°	30.10	0.95%	90.00° - 100.00°	326.69	10.32%
10.00° - 20.00°	88.97	2.81%	100.00° - 110.00°	283.27	8.95%
20.00° - 30.00°	147.75	4.67%	100.00° - 120.00°	502.93	15.89%
30.00° - 40.00°	204.46	6.46%	120.00° - 130.00°	147.58	4.66%
40.00° - 50.00°	256.61	8.11%	130.00° - 140.00°	80.94	2.56%
50.00° - 60.00°	300.53	9.50%	140.00° - 150.00°	35.51	1.12%
60.00° - 70.00°	332.40	10.50%	150.00° - 160.00°	12.21	0.39%
70.00° - 80.00°	348.81	11.02%	160.00° - 170.00°	1.54	0.05%
80.00° - 90.00°	347.21	10.97%	170.00° - 180.00°	0.10	0.00%
0.00° - 90.00°	2,056.85	65.00%	0.00° - 180.00°	3,164.34	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°	309.56	309.56	309.56	309.56	309.56	309.56	309.56	309.56	309.56	309.56	309.56	309.56	309.56	309.56	309.56	309.56	309.56
2.50°	310.97	309.88	309.82	309.88	309.89	307.45	308.68	307.48	308.84	310.15	312.34	311.09	310.89	309.73	309.66	308.56	310.97
5.00°	310.98	309.95	310.06	309.31	309.19	308.14	308.42	307.90	309.55	310.44	312.13	311.62	312.29	310.77	311.24	309.56	310.98
7.50°	310.42	310.56	310.58	309.15	308.87	308.39	308.19	308.30	310.13	311.43	312.32	313.02	313.87	311.65	312.68	310.64	310.42
10.00°	311.31	311.27	310.77	309.10	309.65	307.94	308.08	308.69	310.54	312.44	313.74	314.50	315.48	313.49	313.67	312.25	311.31
12.50°	312.63	312.46	310.92	309.39	310.23	308.03	307.99	309.17	311.34	313.50	315.30	316.84	317.08	315.61	314.91	314.38	312.63
15.00°	314.19	313.51	312.23	309.75	310.37	308.86	308.66	309.68	312.66	314.62	317.21	319.19	318.34	317.24	316.75	315.81	314.19
17.50°	315.81	314.10	313.58	310.28	310.66	309.16	309.37	310.85	313.70	316.39	319.04	320.19	319.58	318.76	318.45	316.66	315.81
20.00°	317.07	314.75	314.57	311.09	311.18	308.87	310.06	312.22	314.44	318.20	320.71	321.30	321.96	321.00	319.91	318.38	317.07
22.50°	318.27	315.59	315.55	312.46	311.95	309.31	310.77	313.26	315.88	320.22	322.78	324.17	324.34	323.34	321.57	320.67	318.27
25.00°	320.32	316.70	316.29	313.61	313.08	310.39	312.01	314.21	317.93	322.18	325.47	326.96	326.33	324.85	323.54	322.22	320.32
27.50°	322.45	318.42	317.05	314.42	313.81	311.78	313.15	314.37	319.86	323.93	327.48	329.20	328.32	326.31	325.70	323.36	322.45
30.00°	324.01	320.23	317.93	315.53	314.09	313.41	313.61	314.40	321.71	325.91	328.67	331.40	330.41	329.05	328.10	325.16	324.01
32.50°	325.53	322.19	318.86	317.02	315.12	314.56	314.25	316.60	323.86	328.59	330.34	333.42	332.58	331.80	329.76	327.24	325.53
35.00°	326.30	323.52	320.05	318.02	316.87	315.44	315.90	319.02	326.16	330.83	332.52	335.33	335.24	333.73	330.67	328.82	326.30
37.50°	327.19	323.92	321.27	318.51	318.15	316.08	317.38	321.03	327.64	332.01	334.53	336.80	337.69	335.69	332.69	330.23	327.19
40.00°	329.76	325.10	322.62	319.58	319.05	316.60	318.20	323.00	328.73	333.62	336.38	338.50	339.22	337.98	335.61	331.93	329.76
42.50°	332.06	327.18	323.79	321.14	319.69	317.78	319.06	324.05	330.87	336.06	338.13	340.87	340.77	340.07	337.59	333.72	332.06
45.00°	332.36	329.21	324.44	322.15	320.15	319.21	320.02	325.13	333.38	338.35	339.81	342.76	342.37	340.85	338.93	335.19	332.36
47.50°	332.78	331.21	325.32	322.79	320.98	319.31	320.93	326.61	334.08	340.39	341.60	343.60	343.95	341.78	339.72	336.61	332.78
50.00°	333.81	332.05	326.71	323.86	321.98	319.03	321.71	327.98	334.28	341.83	343.45	344.70	345.47	343.44	340.22	337.83	333.81
52.50°	334.88	332.01	327.74	325.17	322.58	319.56	322.50	328.31	335.48	342.50	344.56	346.24	346.81	344.94	341.31	339.04	334.88
55.00°	336.13	332.00	328.13	325.93	323.03	320.26	323.32	328.56	336.88	342.57	345.34	347.20	347.82	345.93	342.65	339.54	336.13
57.50°	336.97	332.00	328.32	326.46	323.56	320.49	323.60	328.35	336.27	342.05	346.07	347.35	348.33	346.65	343.38	340.01	336.97
60.00°	336.73	331.95	328.22	325.54	324.12	320.65	323.09	328.05	335.40	342.28	346.78	347.57	348.05	346.65	343.89	340.00	336.73
62.50°	336.49	331.88	328.33	324.15	324.19	319.83	322.68	327.40	336.26	343.13	346.57	347.88	347.91	346.58	344.03	339.95	336.49
65.00°	336.24	331.31	328.30	324.06	324.16	318.92	322.36	326.83	337.23	343.20	346.13	347.48	347.94	346.39	344.06	339.00	336.24
67.50°	335.59	330.56	328.27	324.31	323.26	319.04	321.47	326.51	335.43	342.74	345.58	346.38	347.24	345.81	343.38	338.04	335.59
70.00°	334.27	329.59	327.10	323.26	322.23	319.11	320.03	325.88	333.64	341.12	345.02	345.35	345.79	344.62	342.58	336.88	334.27
72.50°	332.74	328.55	325.21	321.98	320.80	316.86	318.38	324.54	332.69	338.88	343.32	344.36	343.69	343.16	341.21	335.66	332.74
75.00°	330.89	326.44	322.75	320.00	319.33	314.60	316.56	322.97	331.63	336.95	341.51	342.36	341.05	341.34	339.78	334.08	330.89
77.50°	328.74	324.08	320.39	317.94	316.86	312.15	314.55	320.97	329.55	335.15	338.59	339.74	338.30	338.94	336.99	332.20	328.74
80.00°	326.23	321.29	318.11	315.50	314.35	309.66	312.41	318.63	327.25	332.57	335.61	336.51	335.48	335.93	334.13	329.14	326.23
82.50°	323.36	318.43	315.28	313.03	311.46	306.86	310.06	315.78	323.65	329.71	333.24	332.97	331.77	332.28	329.91	326.01	323.36
85.00°	320.14	314.87	312.19	309.44	308.46	303.88	307.60	312.82	320.06	326.31	330.74	328.70	327.57	328.08	325.69	322.65	320.14
87.50°	316.54	311.25	308.66	305.80	304.06	300.07	303.71	309.72	316.46	322.78	325.80	324.13	322.70	323.38	321.63	318.97	316.54
90.00°	312.66	307.24	304.96	301.14	299.63	296.28	299.23	306.13	312.80	318.44	320.80	318.64	317.55	318.33	317.46	314.59	312.66
92.50°	307.94	303.21	299.64	296.36	294.98	292.56	295.02	302.07	308.98	313.95	315.18	312.88	311.25	312.88	312.30	309.95	307.94
95.00°	302.73	299.11	293.82	290.47	289.77	287.88	290.89	297.30	304.71	308.64	309.24	305.48	304.58	307.21	306.89	304.84	302.73
97.50°	297.35	294.84	288.06	284.17	281.80	280.76	284.40	291.98	299.32	303.25	301.41	297.72	295.78	299.06	300.12	299.26	297.35
100.00°	291.89	288.25	282.31	275.45	273.18	272.95	277.40	286.35	293.63	295.50	293.28	288.25	286.44	289.78	292.85	293.03	291.89
102.50°	285.07	281.58	274.60	266.47	262.23	263.73	269.64	280.52	287.36	287.63	283.92	278.53	274.00	279.30	283.63	285.95	285.07
105.00°	277.74	274.35	266.58	256.44	250.73	253.50	261.77	273.03	280.24	280.07	273.95	266.08	261.00	268.37	273.99	277.87	277.74
107.50°	269.71	266.86	256.14	245.77	237.80	241.60	251.55	264.68	271.81	272.38	262.18	253.41	245.36	254.92	263.11	269.62	269.71
110.00°	261.48	258.11	245.47	233.13	223.59	229.45	241.12	255.81	263.48	262.06	250.09	238.43	229.43	240.77	251.41	261.20	261.48
112.50°	253.11	249.22	233.07	219.64	206.67	216.97	229.10	246.73	255.30	251.70	237.25	223.36	210.65	225.48	237.87	251.60	253.11

### 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%	10%
	pw	70%	50%	30%	10%	70%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	30%
	0	3,503	3,503	3,503	3,503	3,293	3,293	3,293	3,293	2,901	2,901	2,901	2,542	2,542	2,542	2,212	2,212	2,212
	1	3,029	2,816	2,624	2,452	2,822	2,633	2,462	2,307	2,290	2,155	2,031	1,976	1,870	1,772	1,686	1,604	1,528
	2	2,693	2,368	2,099	1,874	2,499	2,210	1,969	1,765	1,914	1,721	1,555	1,641	1,488	1,355	1,388	1,269	1,163
	3	2,420	2,030	1,729	1,489	2,240	1,894	1,622	1,403	1,638	1,418	1,237	1,400	1,224	1,076	1,180	1,041	922
	4	2,193	1,767	1,455	1,217	2,028	1,649	1,366	1,148	1,426	1,195	1,013	1,219	1,033	881	1,027	877	753
	5	2,000	1,556	1,245	1,016	1,850	1,453	1,170	959	1,259	1,026	847	1,078	887	738	909	755	631
	6	1,834	1,383	1,080	863	1,698	1,293	1,016	815	1,123	893	721	964	774	629	815	660	538
	7	1,691	1,240	948	743	1,567	1,161	893	702	1,011	786	622	870	683	543	739	584	466
	8	1,566	1,120	839	647	1,453	1,050	792	612	917	699	543	792	609	475	675	522	409
	9	1,456	1,018	750	569	1,353	956	708	539	838	627	479	726	548	420	621	472	362
	10	1,359	931	675	505	1,264	876	639	479	769	567	427	669	497	375	574	429	324

### Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	10.2 fc	-13.1 ft
6.5 ft	7.3 fc	-15.5 ft
7.5 ft	5.5 fc	-17.9 ft
8.0 ft	4.8 fc	-19.1 ft
10.0 ft	3.1 fc	-23.8 ft
12.0 ft	2.1 fc	-28.6 ft
14.0 ft	1.6 fc	-33.4 ft
16.0 ft	1.2 fc	-38.1 ft
20.0 ft	0.8 fc	-47.7 ft
24.0 ft	0.5 fc	-57.2 ft
28.0 ft	0.4 fc	-66.7 ft

### Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
<b>0.00°</b>	2,398	2,398	2,398
<b>45.00°</b>	1,602	1,564	1,543
<b>55.00°</b>	1,611	1,573	1,548
<b>65.00°</b>	1,652	1,615	1,593
<b>75.00°</b>	1,722	1,680	1,662
<b>85.00°</b>	1,830	1,784	1,763

### 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