

## Indoor Distribution Test Report

# Spectrum Lighting Inc.

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## Spectrum Lighting Photometric Lab

### Luminaire

GPRF2000GV 27L 35K EX MW  
Nom 20" Globe (Sphere) luminaire

### Test Number

SP-00647\_5\_M-27L

### Test Date

1/27/2020

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

### Summary of Results

#### Power

Input Watts	18 W
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#### Lumen Output

Output Lumens	2333
Efficacy	129.59 lm/W

#### Luminous Dimensions

0° - 180° Size	-1.67
90° - 270° Size	-1.67
Height	1.67

#### Spacing Criterion

Two luminaires, plane 0°	1.53
Two luminaires, plane 90°	1.47
Four luminaires	1.72

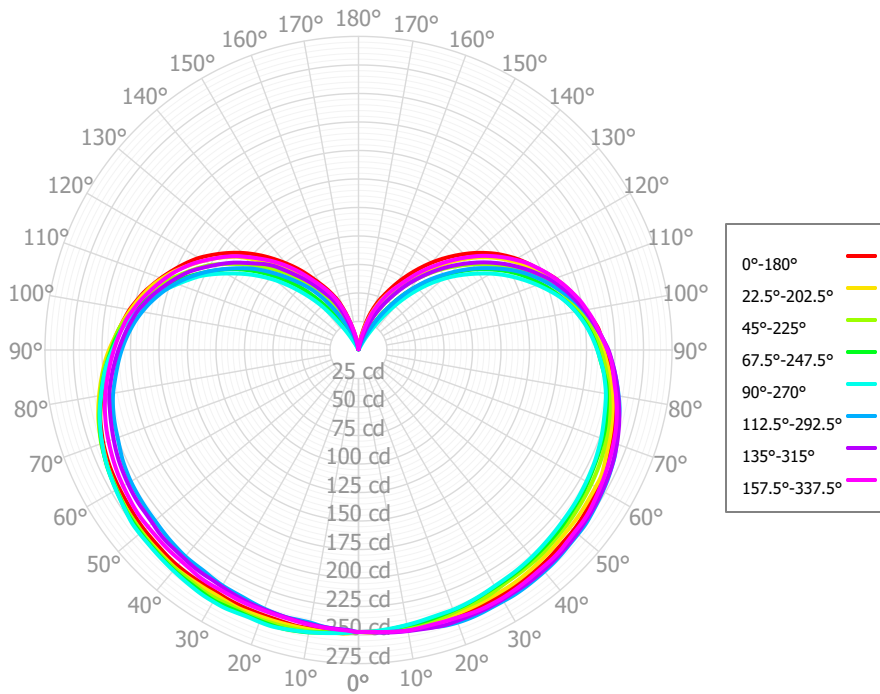
#### Full Beam Angle

0° - 180°	263°
90° - 270°	244°

### IES File Header Contents

Keyword	Value
TEST	SP-00647_5_M-27L
TESTLAB	Spectrum Lighting Photometric Lab, VLS-245-981
MANUFAC	Spectrum Lighting
TESTDATE	1/27/2020
ISSUEDATE	1/29/2020
LUMCAT	GPRF2000GV 27L 35K EX MW
LUMINAIRE	Nom 20" 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°	24.00	1.03%	90.00° - 100.00°	226.41	9.71%
10.00° - 20.00°	70.24	3.01%	100.00° - 110.00°	199.47	8.55%
20.00° - 30.00°	114.48	4.91%	100.00° - 120.00°	361.57	15.50%
30.00° - 40.00°	154.72	6.63%	120.00° - 130.00°	119.04	5.10%
40.00° - 50.00°	189.46	8.12%	130.00° - 140.00°	75.98	3.26%
50.00° - 60.00°	217.19	9.31%	140.00° - 150.00°	39.25	1.68%
60.00° - 70.00°	236.12	10.12%	150.00° - 160.00°	15.10	0.65%
70.00° - 80.00°	244.38	10.48%	160.00° - 170.00°	3.35	0.14%
80.00° - 90.00°	241.10	10.34%	170.00° - 180.00°	0.17	0.01%
0.00° - 90.00°	1,491.71	63.95%	0.00° - 180.00°	2,332.57	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°	247.37	247.37	247.37	247.37	247.37	247.37	247.37	247.37	247.37	247.37	247.37	247.37	247.37	247.37	247.37	247.37	247.37
2.50°	247.54	248.12	247.32	247.56	247.33	245.61	245.74	246.26	247.72	248.93	248.17	247.57	248.42	247.48	247.95	247.54	247.54
5.00°	247.80	247.66	246.93	247.34	246.52	245.50	245.27	245.77	247.41	248.96	249.10	248.58	249.28	248.47	248.81	248.35	247.80
7.50°	248.07	247.55	246.55	246.11	245.70	244.44	244.79	245.33	247.21	248.87	249.97	249.97	250.33	249.11	249.66	249.15	248.07
10.00°	248.52	247.40	246.49	245.31	244.88	242.83	244.11	244.86	247.73	248.75	250.38	251.53	251.31	249.77	250.33	249.92	248.52
12.50°	248.93	247.18	246.41	245.04	244.02	242.53	243.46	244.20	248.06	248.78	250.75	252.46	252.26	250.46	251.03	249.67	248.93
15.00°	248.82	247.05	246.18	244.48	243.11	242.80	242.94	243.62	247.53	248.85	250.98	253.18	253.17	251.73	252.09	249.47	248.82
17.50°	248.72	247.06	245.86	243.65	242.60	242.27	242.47	243.35	247.11	248.93	251.20	253.09	254.07	253.50	252.98	249.78	248.72
20.00°	248.73	246.97	244.90	242.99	242.46	241.46	242.15	243.18	247.03	249.02	251.40	252.78	253.88	254.41	252.90	250.15	248.73
22.50°	248.75	246.78	244.10	242.46	241.91	240.46	241.76	243.29	246.99	249.32	251.42	252.66	253.46	254.77	252.88	250.92	248.75
25.00°	248.79	246.52	244.09	241.63	241.04	239.40	241.18	243.26	247.03	249.64	250.98	252.58	254.11	254.65	253.09	251.56	248.79
27.50°	248.83	246.18	243.82	240.61	240.08	238.91	240.51	242.92	246.89	249.13	250.81	253.10	254.92	254.29	253.17	251.63	248.83
30.00°	248.86	246.00	242.64	239.95	239.06	238.53	239.63	242.84	246.38	248.62	251.25	253.70	254.85	254.37	252.85	251.60	248.86
32.50°	248.80	245.94	241.72	239.48	238.45	237.61	239.07	243.24	246.20	248.79	251.28	253.13	254.70	254.64	252.66	251.22	248.80
35.00°	248.50	245.60	241.46	239.09	238.05	236.62	239.14	243.14	246.59	248.98	250.60	252.49	254.00	254.42	252.77	250.79	248.50
37.50°	248.20	245.08	241.21	238.74	237.46	236.44	238.94	242.30	246.85	249.39	250.25	252.24	253.29	254.03	252.72	250.26	248.20
40.00°	247.90	244.48	240.97	238.23	236.80	236.31	238.34	241.86	246.92	249.69	250.35	251.97	252.66	253.67	252.38	249.91	247.90
42.50°	247.45	243.85	240.52	237.67	236.02	235.57	237.98	241.91	246.64	249.23	250.18	251.29	252.04	253.31	251.99	249.93	247.45
45.00°	246.72	243.14	239.70	237.12	235.21	234.81	237.94	241.72	245.97	248.81	249.70	250.63	251.42	252.56	251.51	249.56	246.72
47.50°	246.24	242.41	239.02	236.58	234.44	233.86	237.29	241.29	245.51	248.54	249.04	250.12	250.84	251.73	250.95	248.52	246.24
50.00°	246.11	242.07	238.52	235.68	233.68	232.95	236.01	241.08	245.27	248.19	248.21	249.59	250.57	251.37	250.27	247.88	246.11
52.50°	245.50	241.86	237.91	234.71	233.09	232.45	235.33	241.04	244.65	247.57	247.50	248.95	250.09	251.07	249.59	247.74	245.50
55.00°	244.33	241.28	237.17	233.95	232.53	231.93	235.17	240.40	243.76	246.91	246.89	248.14	248.49	249.91	248.90	246.98	244.33
57.50°	243.46	240.61	236.43	233.21	231.70	231.30	234.60	239.35	243.05	246.13	245.94	246.61	246.97	248.69	248.03	245.54	243.46
60.00°	242.88	240.22	235.69	232.12	230.84	230.60	233.72	238.39	242.44	245.23	244.76	245.20	245.70	247.54	246.99	244.11	242.88
62.50°	241.82	239.88	234.82	231.00	229.96	229.54	232.72	237.48	241.70	244.11	243.69	244.22	244.39	246.37	245.85	242.69	241.82
65.00°	240.39	237.90	233.85	230.03	229.07	228.30	231.66	236.22	240.88	242.73	242.69	243.06	242.98	244.88	244.64	241.23	240.39
67.50°	238.74	235.75	232.54	229.06	227.83	226.49	230.21	234.82	239.67	240.93	241.45	241.44	241.37	243.28	243.04	239.72	238.74
70.00°	236.94	233.99	231.04	228.00	226.56	224.86	228.60	233.33	238.30	239.34	240.12	239.66	239.34	240.70	241.25	238.12	236.94
72.50°	234.69	232.25	229.46	226.86	224.91	223.66	226.95	231.82	236.45	238.05	238.03	237.57	237.22	238.24	239.11	236.48	234.69
75.00°	232.20	230.34	227.84	225.02	223.29	222.31	225.30	229.92	234.45	236.21	235.69	235.15	234.96	236.49	236.82	234.39	232.20
77.50°	229.94	228.41	225.66	223.17	221.88	220.66	223.64	227.92	231.70	233.74	232.96	232.21	232.37	234.53	234.17	232.09	229.94
80.00°	227.77	226.13	223.26	221.29	220.34	218.57	221.99	225.44	228.78	231.08	230.12	229.34	229.31	231.69	231.39	229.40	227.77
82.50°	225.36	223.76	220.77	219.13	218.11	215.79	219.39	222.88	226.41	228.22	227.52	226.56	226.35	228.78	228.56	226.55	225.36
85.00°	222.87	220.68	218.26	215.74	215.69	213.10	216.60	220.16	224.13	225.33	224.96	223.53	223.50	225.60	225.71	224.19	222.87
87.50°	219.36	217.65	215.49	212.52	212.61	210.55	213.59	217.42	221.09	222.41	221.18	220.20	219.97	222.27	222.52	221.97	219.36
90.00°	215.61	214.96	212.66	209.80	209.46	207.71	210.54	214.54	217.99	218.82	217.27	216.81	215.78	218.56	219.26	218.40	215.61
92.50°	213.35	212.10	209.35	206.81	206.12	204.56	207.33	211.65	214.39	214.81	214.13	213.34	212.05	214.62	214.79	214.54	213.35
95.00°	211.35	208.54	205.96	203.16	202.50	201.05	204.10	208.48	210.77	210.94	211.04	208.89	208.67	210.23	210.16	210.95	211.35
97.50°	206.95	204.71	201.79	199.01	198.23	197.21	200.45	205.26	207.33	207.13	206.00	203.69	203.42	205.52	205.74	207.40	206.95
100.00°	202.31	200.11	197.55	193.87	193.56	192.79	196.75	200.96	203.84	203.00	200.95	198.36	196.94	200.31	201.34	203.34	202.31
102.50°	198.07	195.48	192.42	188.50	188.19	187.94	191.78	196.59	199.44	198.73	195.66	192.94	190.66	194.57	196.25	199.25	198.07
105.00°	193.85	190.76	187.24	182.79	181.99	182.56	186.75	191.61	194.95	194.06	190.31	186.48	184.48	188.14	191.12	194.25	193.85
107.50°	188.77	185.89	181.50	176.71	174.57	176.86	181.04	186.61	189.67	189.25	184.37	179.52	177.00	181.53	185.41	189.22	188.77
110.00°	183.64	180.73	175.69	170.14	166.94	170.50	175.30	181.51	184.35	183.44	178.22	172.42	168.97	174.71	179.57	183.52	183.64
112.50°	177.48	175.11	168.74	163.43	159.05	163.83	169.33	176.24	178.81	177.40	170.92	165.28	161.14	167.53	172.48	177.80	177.48

### Coefficients of Utilization – Zonal Cavity Method

Values are lumens delivered to the workplane.

<b>RCR</b>	<b>pfc</b>	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	0%
	<b>pcc</b>	80%	80%	80%	80%	70%	70%	70%	70%	50%	50%	50%	30%	30%	30%	10%	10%	0%
	<b>pw</b>	70%	50%	30%	10%	70%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	30%
	<b>0</b>	2,577	2,577	2,577	2,577	2,419	2,419	2,419	2,419	2,125	2,125	2,125	1,855	1,855	1,855	1,608	1,608	1,492
	<b>1</b>	2,236	2,082	1,945	1,821	2,081	1,945	1,823	1,711	1,689	1,592	1,503	1,453	1,378	1,308	1,236	1,178	1,078
	<b>2</b>	1,991	1,756	1,562	1,399	1,846	1,638	1,464	1,317	1,416	1,278	1,158	1,212	1,103	1,007	1,023	938	853
	<b>3</b>	1,791	1,509	1,290	1,116	1,658	1,407	1,210	1,052	1,215	1,056	926	1,037	911	805	872	773	699
	<b>4</b>	1,625	1,315	1,089	916	1,502	1,227	1,022	863	1,060	893	761	905	770	661	761	654	591
	<b>5</b>	1,483	1,159	933	767	1,371	1,082	877	723	937	768	639	801	664	556	675	564	509
	<b>6</b>	1,361	1,032	811	652	1,259	964	763	616	837	670	545	717	580	475	606	494	447
	<b>7</b>	1,255	926	712	563	1,162	866	671	532	754	590	471	648	513	412	549	438	397
	<b>8</b>	1,162	836	632	491	1,078	784	596	465	684	526	412	590	458	361	502	392	356
	<b>9</b>	1,081	761	565	432	1,003	714	533	410	625	472	364	541	412	320	462	355	323
	<b>10</b>	1,009	696	509	384	938	654	481	364	574	427	325	499	374	286	428	323	294

### Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	8.2 fc	-12.4 ft
6.5 ft	5.9 fc	-14.7 ft
7.5 ft	4.4 fc	-16.9 ft
8.0 ft	3.9 fc	-18.1 ft
10.0 ft	2.5 fc	-22.6 ft
12.0 ft	1.7 fc	-27.1 ft
14.0 ft	1.3 fc	-31.6 ft
16.0 ft	1.0 fc	-36.1 ft
20.0 ft	0.6 fc	-45.2 ft
24.0 ft	0.4 fc	-54.2 ft
28.0 ft	0.3 fc	-63.2 ft

### Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
<b>0.00°</b>	1,216	1,216	1,216
<b>45.00°</b>	754	733	719
<b>55.00°</b>	743	721	707
<b>65.00°</b>	749	729	714
<b>75.00°</b>	767	752	737
<b>85.00°</b>	808	791	782

### 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