

## **Indoor Distribution Test Report**

# **Spectrum Lighting Inc.**

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## **Spectrum Lighting Photometric Lab**

### **Luminaire**

GPRF1600GV 55L 35K EX MW  
Nom 16" Globe (Sphere) luminaire

### **Test Number**

SP-00647\_4

### **Test Date**

1/27/2020

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

### Summary of Results

#### Power

Input Watts	39 W
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#### Lumen Output

Output Lumens	4586
Efficacy	117.59 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

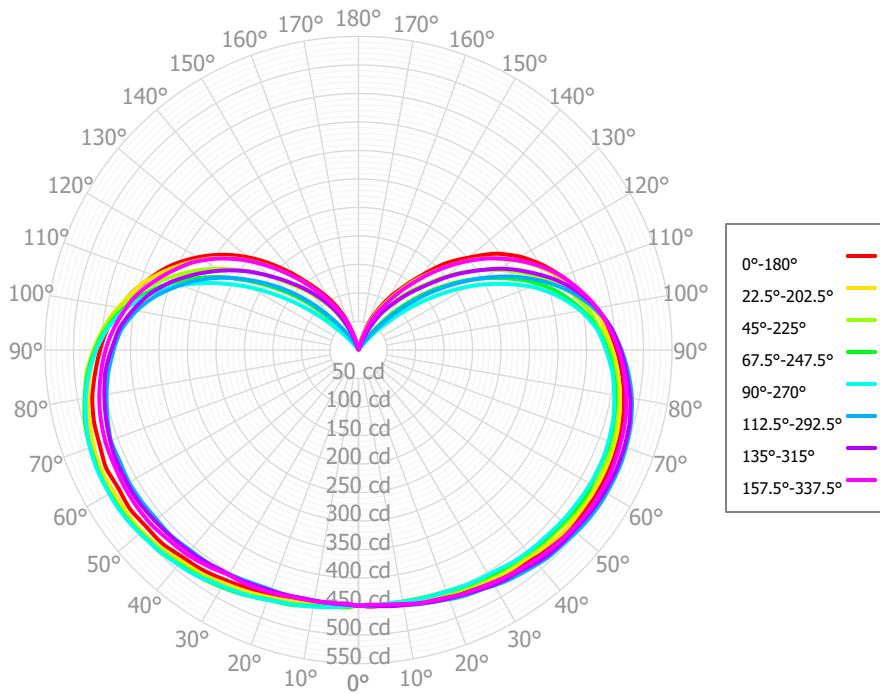
#### Full Beam Angle

0° - 180°	260°
90° - 270°	234°

### IES File Header Contents

Keyword	Value
TEST	SP-00647_4
TESTLAB	Spectrum Lighting Photometric Lab, VLS-245-981
MANUFAC	Spectrum Lighting
TESTDATE	1/27/2020
ISSUEDATE	1/29/2020
LUMCAT	GPRF1600GV 55L 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
_CRI	80+
_CCTMULT	27K x 0.97, 30K x 0.99, 40K x 1.03
_LAMPMULT	15L x 0.27, 27L x 0.47, 37L x 0.69

### Candela Polar Plot



### Zonal Lumen Summary

Zone	Lumens	% Fixture	Zone	Lumens	% Fixture
0.00° - 10.00°	43.63	0.95%	90.00° - 100.00°	473.46	10.32%
10.00° - 20.00°	128.95	2.81%	100.00° - 110.00°	410.53	8.95%
20.00° - 30.00°	214.13	4.67%	100.00° - 120.00°	728.89	15.89%
30.00° - 40.00°	296.32	6.46%	120.00° - 130.00°	213.88	4.66%
40.00° - 50.00°	371.90	8.11%	130.00° - 140.00°	117.31	2.56%
50.00° - 60.00°	435.55	9.50%	140.00° - 150.00°	51.46	1.12%
60.00° - 70.00°	481.73	10.50%	150.00° - 160.00°	17.69	0.39%
70.00° - 80.00°	505.52	11.02%	160.00° - 170.00°	2.24	0.05%
80.00° - 90.00°	503.20	10.97%	170.00° - 180.00°	0.14	0.00%
0.00° - 90.00°	2,980.94	65.00%	0.00° - 180.00°	4,586.00	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°	448.64	448.64	448.64	448.64	448.64	448.64	448.64	448.64	448.64	448.64	448.64	448.64	448.64	448.64	448.64	448.64	448.64
2.50°	450.68	449.10	449.01	449.10	449.12	445.58	447.36	445.63	447.60	449.49	452.66	450.86	450.56	448.88	448.79	447.18	450.68
5.00°	450.69	449.20	449.36	448.27	448.10	446.57	446.99	446.24	448.62	449.91	452.37	451.63	452.59	450.39	451.08	448.64	450.69
7.50°	449.89	450.09	450.11	448.04	447.64	446.95	446.65	446.82	449.47	451.35	452.64	453.65	454.89	451.66	453.16	450.21	449.89
10.00°	451.17	451.12	450.39	447.97	448.77	446.29	446.49	447.38	450.06	452.81	454.69	455.80	457.21	454.34	454.60	452.53	451.17
12.50°	453.08	452.83	450.62	448.39	449.60	446.42	446.36	448.07	451.22	454.35	456.95	459.18	459.54	457.41	456.39	455.62	453.08
15.00°	455.35	454.37	452.51	448.91	449.82	447.62	447.34	448.82	453.14	455.98	459.72	462.59	461.36	459.76	459.05	457.69	455.35
17.50°	457.70	455.21	454.47	449.68	450.23	448.05	448.37	450.50	454.64	458.54	462.37	464.04	463.16	461.97	461.52	458.92	457.70
20.00°	459.52	456.16	455.90	450.85	450.98	447.64	449.36	452.50	455.71	461.16	464.79	465.65	466.61	465.21	463.64	461.42	459.52
22.50°	461.26	457.38	457.32	452.84	452.10	448.28	450.40	454.00	457.80	464.08	467.80	469.81	470.06	468.60	466.05	464.74	461.26
25.00°	464.24	458.99	458.40	454.51	453.74	449.84	452.18	455.38	460.77	466.93	471.69	473.86	472.94	470.80	468.90	466.98	464.24
27.50°	467.32	461.48	459.50	455.68	454.80	451.86	453.85	455.62	463.57	469.47	474.61	477.10	475.83	472.92	472.03	468.63	467.32
30.00°	469.57	464.10	460.77	457.30	455.20	454.21	454.51	455.65	466.25	472.33	476.33	480.29	478.86	476.89	475.50	471.24	469.57
32.50°	471.79	466.95	462.12	459.46	456.69	455.89	455.44	458.83	469.36	476.22	478.76	483.22	482.00	480.87	477.91	474.27	471.79
35.00°	472.89	468.87	463.84	460.90	459.24	457.17	457.83	462.35	472.70	479.47	481.92	485.98	485.86	483.67	479.24	476.55	472.89
37.50°	474.19	469.45	465.61	461.60	461.09	458.09	459.97	465.26	474.84	481.17	484.82	488.11	489.41	486.51	482.16	478.59	474.19
40.00°	477.91	471.16	467.57	463.16	462.40	458.84	461.16	468.12	476.42	483.50	487.51	490.59	491.62	489.83	486.39	481.06	477.91
42.50°	481.24	474.17	469.26	465.42	463.31	460.55	462.40	469.64	479.52	487.04	490.05	494.02	493.87	492.86	489.26	483.65	481.24
45.00°	481.68	477.12	470.20	466.89	463.99	462.62	463.80	471.20	483.17	490.36	492.48	496.76	496.19	493.98	491.20	485.78	481.68
47.50°	482.29	480.01	471.47	467.81	465.19	462.77	465.12	473.35	484.17	493.32	495.08	497.98	498.48	495.34	492.35	487.84	482.29
50.00°	483.78	481.23	473.49	469.36	466.64	462.36	466.24	475.33	484.47	495.41	497.76	499.56	500.68	497.74	493.07	489.61	483.78
52.50°	485.33	481.17	474.98	471.26	467.51	463.13	467.39	475.82	486.21	496.37	499.36	501.80	502.62	499.91	494.65	491.37	485.33
55.00°	487.14	481.16	475.55	472.36	468.16	464.14	468.58	476.18	488.23	496.49	500.49	503.19	504.09	501.35	496.60	492.09	487.14
57.50°	488.36	481.17	475.82	473.12	468.93	464.47	468.99	475.87	487.34	495.73	501.54	503.40	504.82	502.39	497.65	492.76	488.36
60.00°	488.02	481.09	475.68	471.80	469.74	464.71	468.25	475.43	486.09	496.05	502.57	503.72	504.42	502.38	498.40	492.76	488.02
62.50°	487.67	480.98	475.85	469.78	469.85	463.52	467.65	474.49	487.34	497.29	502.28	504.18	504.22	502.29	498.59	492.68	487.67
65.00°	487.30	480.16	476.37	469.65	469.80	462.21	467.19	473.67	488.74	497.39	501.64	503.59	504.25	502.02	498.64	491.31	487.30
67.50°	486.36	479.07	475.76	470.01	468.50	462.37	465.89	473.21	486.14	496.72	500.85	502.00	503.24	501.18	497.66	489.91	486.36
70.00°	484.46	477.67	474.07	468.50	467.00	462.47	463.81	472.29	483.53	494.38	500.02	500.50	501.15	499.45	496.49	488.24	484.46
72.50°	482.22	476.16	471.32	466.64	464.93	459.22	461.42	470.35	482.15	491.13	497.57	499.07	498.10	497.33	494.51	486.47	482.22
75.00°	479.56	473.10	467.75	463.77	462.80	455.95	458.79	468.08	480.63	488.33	494.94	496.17	494.27	494.69	492.43	484.18	479.56
77.50°	476.43	469.68	464.34	460.79	459.21	452.39	455.87	465.18	477.60	485.73	490.71	492.38	490.29	491.22	488.40	481.45	476.43
80.00°	472.80	465.63	461.02	457.24	455.57	448.78	452.77	461.78	474.28	481.98	486.39	487.69	486.21	486.85	484.25	477.02	472.80
82.50°	468.63	461.49	456.93	453.67	451.39	444.72	449.36	457.66	469.06	477.84	482.95	482.56	480.83	481.57	478.13	472.48	468.63
85.00°	463.98	456.33	452.44	448.47	447.05	440.41	445.80	453.37	463.85	472.92	479.33	476.37	474.74	475.48	472.01	467.60	463.98
87.50°	458.76	451.09	447.33	443.19	440.67	434.88	440.16	448.87	458.63	467.80	472.18	469.76	467.69	468.67	466.13	462.28	458.76
90.00°	453.13	445.27	441.98	436.43	434.25	429.39	433.67	443.66	453.34	461.50	464.92	461.80	460.21	461.35	460.09	455.93	453.13
92.50°	446.30	439.44	434.26	429.51	427.50	424.00	427.57	437.78	447.80	455.00	456.79	453.45	451.09	453.45	452.61	449.21	446.30
95.00°	438.74	433.49	425.82	420.98	419.95	417.22	421.57	430.87	441.60	447.31	448.18	442.73	441.42	445.23	444.77	441.79	438.74
97.50°	430.94	427.31	417.47	411.83	408.41	406.89	412.18	423.16	433.80	439.49	436.83	431.48	428.67	433.42	434.96	433.72	430.94
100.00°	423.03	417.75	409.14	399.20	395.91	395.57	402.02	415.00	425.55	428.26	425.04	417.76	415.13	419.97	424.42	424.68	423.03
102.50°	413.15	408.09	397.97	386.18	380.04	382.22	390.79	406.55	416.47	416.86	411.48	403.66	397.10	404.78	411.06	414.42	413.15
105.00°	402.52	397.61	386.35	371.65	363.38	367.39	379.38	395.70	406.14	405.90	397.03	385.63	378.26	388.94	397.09	402.71	402.52
107.50°	390.89	386.76	371.21	356.18	344.64	350.15	364.57	383.60	393.92	394.75	379.98	367.26	355.59	369.44	381.32	390.75	390.89
110.00°	378.95	374.07	355.75	337.87	324.04	332.54	349.44	370.74	381.86	379.80	362.46	345.55	332.50	348.95	364.37	378.55	378.95
112.50°	366.83	361.19	337.78	318.32	299.52	314.45	332.03	357.58	370.00	364.78	343.84	323.70	305.29	326.78	344.73	364.63	366.83

### Coefficients of Utilization – Zonal Cavity Method

Values are lumens delivered to the workplane.

	<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>RCR</b>	<b>0</b>	5,077	5,077	5,077	5,077	4,773	4,773	4,773	4,773	4,204	4,204	4,204	3,683	3,683	3,683	3,206	3,206	2,981
	<b>1</b>	4,390	4,081	3,803	3,554	4,090	3,816	3,568	3,344	3,319	3,123	2,943	2,864	2,710	2,568	2,443	2,325	2,132
	<b>2</b>	3,902	3,432	3,043	2,716	3,621	3,203	2,854	2,558	2,774	2,495	2,254	2,378	2,157	1,963	2,012	1,840	1,675
	<b>3</b>	3,507	2,942	2,506	2,158	3,247	2,745	2,351	2,034	2,373	2,055	1,793	2,030	1,774	1,560	1,711	1,509	1,367
	<b>4</b>	3,178	2,560	2,109	1,764	2,940	2,390	1,980	1,663	2,067	1,732	1,467	1,767	1,496	1,277	1,489	1,271	1,150
	<b>5</b>	2,898	2,255	1,805	1,473	2,682	2,106	1,696	1,390	1,824	1,487	1,228	1,562	1,286	1,069	1,318	1,094	914
	<b>6</b>	2,658	2,004	1,565	1,250	2,461	1,874	1,473	1,181	1,628	1,294	1,045	1,397	1,122	911	1,182	956	780
	<b>7</b>	2,450	1,797	1,373	1,076	2,271	1,683	1,294	1,018	1,465	1,139	902	1,262	990	787	1,070	846	675
	<b>8</b>	2,269	1,623	1,217	937	2,105	1,522	1,148	887	1,329	1,013	787	1,148	883	689	978	757	592
	<b>9</b>	2,110	1,476	1,087	825	1,960	1,386	1,027	781	1,214	909	695	1,052	794	609	899	684	525
	<b>10</b>	1,969	1,350	979	732	1,832	1,269	926	694	1,115	821	618	970	720	544	832	622	470

### Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	14.8 fc	-13.1 ft
6.5 ft	10.6 fc	-15.5 ft
7.5 ft	8.0 fc	-17.9 ft
8.0 ft	7.0 fc	-19.1 ft
10.0 ft	4.5 fc	-23.8 ft
12.0 ft	3.1 fc	-28.6 ft
14.0 ft	2.3 fc	-33.4 ft
16.0 ft	1.8 fc	-38.1 ft
20.0 ft	1.1 fc	-47.7 ft
24.0 ft	0.8 fc	-57.2 ft
28.0 ft	0.6 fc	-66.7 ft

### Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
<b>0.00°</b>	3,476	3,476	3,476
<b>45.00°</b>	2,322	2,266	2,236
<b>55.00°</b>	2,335	2,279	2,244
<b>65.00°</b>	2,395	2,341	2,309
<b>75.00°</b>	2,496	2,434	2,409
<b>85.00°</b>	2,652	2,586	2,555

### 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