

## **Indoor Distribution Test Report**

# **Spectrum Lighting Inc.**

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## **Spectrum Lighting Photometric Lab**

### **Luminaire**

ME0713DGV 27L35 KEX TF1 MWI  
Nom 7" diam x 13" H, Mini Espresso Direct

### **Test Number**

SP-00718\_5

### **Test Date**

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	1494
Efficacy	83.02 lm/W

#### Luminous Dimensions

0° - 180° Size	-0.63
90° - 270° Size	-0.63
Height	0

#### Spacing Criterion

Two luminaires, plane 0°	1.18
Two luminaires, plane 90°	1.17
Four luminaires	1.06

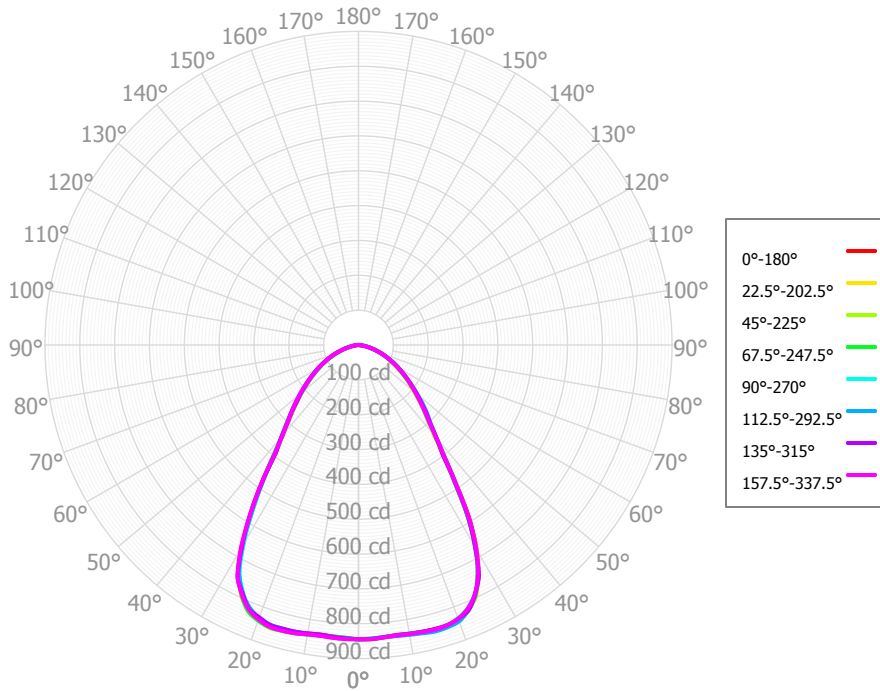
#### Full Beam Angle

0° - 180°	74°
90° - 270°	73°

### IES File Header Contents

Keyword	Value
TEST	SP-00718_5
TESTLAB	Spectrum Lighting Photometric Lab, VLS-245-981
MANUFAC	Spectrum Lighting
ISSUEDATE	3/19/2019
UPDATE	5/28/2019
LUMCAT	ME0713DGV 27L35 KEX TF1 MWI
LUMINAIRE	Nom 7" diam x 13" H, Mini Espresso Direct
LAMPCAT	N/A
LAMP	N/A
OTHER	Beam Angle: 76 degrees
OTHER	CCT Output Multipliers: 27K x 0.97, 30K x 0.98, 40K x 1.03
OTHER	Total luminaire wattages is approximate
OTHER	This report prepared by Spectrum Lighting
_CRI	80+
_CCTMULT	27K x 0.97, 30K x 0.98, 40K x 1.03
_LAMPMULT	15L x 0.57

### Candela Polar Plot



### Zonal Lumen Summary

Zone	Lumens	% Fixture	Zone	Lumens	% Fixture
0.00° - 10.00°	81.61	5.46%	90.00° - 100.00°	0.14	0.01%
10.00° - 20.00°	239.32	16.01%	100.00° - 110.00°	0.00	0.00%
20.00° - 30.00°	357.59	23.93%	100.00° - 120.00°	0.00	0.00%
30.00° - 40.00°	304.55	20.38%	120.00° - 130.00°	0.00	0.00%
40.00° - 50.00°	209.78	14.04%	130.00° - 140.00°	0.00	0.00%
50.00° - 60.00°	152.67	10.22%	140.00° - 150.00°	0.00	0.00%
60.00° - 70.00°	97.82	6.55%	150.00° - 160.00°	0.00	0.00%
70.00° - 80.00°	43.79	2.93%	160.00° - 170.00°	0.00	0.00%
80.00° - 90.00°	7.12	0.48%	170.00° - 180.00°	0.00	0.00%
0.00° - 90.00°	1,494.25	99.99%	0.00° - 180.00°	1,494.39	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°	844.65	844.65	844.65	844.65	844.65	844.65	844.65	844.65	844.65	844.65	844.65	844.65	844.65	844.65	844.65	844.65	844.65
2.50°	844.41	843.61	846.07	844.03	843.52	842.98	842.92	845.14	841.95	843.88	844.65	840.87	844.41	843.89	845.20	844.94	844.41
5.00°	842.46	841.83	842.47	841.22	841.78	841.90	840.89	843.90	840.16	842.87	842.77	839.82	843.21	841.85	842.16	842.20	842.46
7.50°	841.54	841.66	839.68	840.36	841.06	841.33	838.78	842.19	838.45	841.79	840.77	841.15	841.55	842.37	839.73	841.30	841.54
10.00°	842.35	841.84	842.11	841.07	843.22	841.53	840.64	843.74	840.74	841.53	843.76	843.58	843.68	844.62	841.51	842.56	842.35
12.50°	843.40	844.05	844.71	843.20	845.19	842.72	842.92	847.76	845.12	844.29	847.34	847.22	846.93	847.76	843.18	844.25	843.40
15.00°	844.82	846.67	848.30	846.47	846.64	842.90	842.93	849.08	846.85	846.31	849.33	849.25	847.06	851.46	844.12	846.42	844.82
17.50°	843.69	845.82	849.79	844.18	844.85	841.84	842.74	848.40	847.26	845.64	851.16	849.61	846.32	849.49	843.81	843.99	843.69
20.00°	838.61	844.30	839.70	837.65	834.80	833.43	832.10	838.60	837.72	840.88	840.06	842.20	835.50	844.03	836.32	836.70	838.61
22.50°	823.25	822.98	825.54	819.49	819.01	816.13	820.62	822.39	823.38	822.59	827.83	827.19	822.04	823.54	824.69	819.01	823.25
25.00°	792.74	798.25	790.86	792.92	789.47	786.43	787.15	791.65	790.83	795.42	789.38	794.00	784.21	794.07	790.37	790.57	792.74
27.50°	746.36	740.91	748.02	741.81	745.87	742.51	752.21	751.20	750.00	740.92	748.81	743.42	740.44	740.92	748.62	742.97	746.36
30.00°	677.73	678.21	667.63	673.35	669.40	672.51	668.56	676.24	671.79	675.31	662.22	667.35	659.68	674.34	669.71	676.55	677.73
32.50°	594.01	581.07	584.03	584.61	586.08	574.03	582.34	579.38	577.56	576.42	572.57	568.09	570.22	584.45	587.07	590.74	594.01
35.00°	489.60	478.83	486.21	482.24	487.69	482.95	485.71	486.61	485.65	482.66	481.85	479.10	481.40	482.06	487.38	486.83	489.60
37.50°	404.80	405.87	396.99	405.19	402.85	399.77	388.60	396.38	394.72	403.23	391.07	398.99	392.71	406.92	397.19	405.91	404.80
40.00°	345.51	336.75	342.89	344.25	346.13	340.01	343.88	339.61	339.59	335.87	343.68	342.13	344.12	346.06	348.96	345.99	345.51
42.50°	299.32	299.54	294.11	301.21	298.86	304.07	300.92	302.52	298.56	300.26	298.31	304.97	303.48	307.10	304.22	300.56	299.32
45.00°	269.31	266.30	265.39	269.32	270.72	271.96	270.10	272.25	267.06	267.18	269.14	271.43	271.93	278.98	273.71	267.71	269.31
47.50°	240.06	237.63	237.53	240.75	243.23	243.55	239.52	245.78	239.08	240.60	240.51	240.79	242.12	250.24	244.17	239.15	240.06
50.00°	211.71	209.46	212.85	214.14	216.98	216.92	217.38	219.24	213.81	214.72	215.71	213.89	216.70	221.21	218.33	214.12	211.71
52.50°	187.99	187.59	188.48	190.60	192.29	192.00	195.37	192.67	189.52	190.54	190.98	189.84	192.05	195.92	193.38	191.93	187.99
55.00°	169.62	166.31	165.15	168.77	170.40	170.78	173.92	170.70	169.23	168.31	169.32	167.51	170.58	172.35	171.65	172.05	169.62
57.50°	150.41	147.01	144.05	150.28	150.53	152.89	152.51	151.10	150.30	150.54	147.72	146.45	149.61	152.23	150.84	151.50	150.41
60.00°	130.31	127.87	129.71	133.56	134.18	134.75	133.94	133.31	132.31	133.01	130.68	129.24	131.45	133.59	133.02	130.46	130.31
62.50°	113.26	113.77	114.29	116.93	117.35	116.39	115.42	116.41	114.61	116.01	113.64	114.76	113.71	115.32	115.55	113.02	113.26
65.00°	98.46	99.63	96.86	100.32	99.95	99.16	99.40	100.30	97.22	98.99	96.29	98.67	98.74	97.18	98.78	97.41	98.46
67.50°	81.48	85.41	81.85	83.35	85.61	82.87	83.43	84.58	79.92	81.91	78.98	81.49	84.14	83.00	83.33	82.72	81.48
70.00°	65.93	69.05	68.27	68.11	71.78	67.29	68.59	69.16	65.49	66.38	64.75	66.65	68.44	68.14	68.71	68.19	65.93
72.50°	55.25	52.86	55.08	55.29	54.25	52.28	54.00	53.87	51.87	53.81	50.86	53.28	52.62	52.48	53.41	53.82	55.25
75.00°	41.04	40.23	42.86	43.11	42.40	39.79	41.45	39.88	38.29	41.62	40.40	39.46	40.45	40.10	42.20	40.22	41.04
77.50°	30.64	26.51	30.90	30.42	31.28	28.58	29.46	26.39	25.42	29.92	29.41	25.44	28.55	27.28	31.22	29.90	30.64
80.00°	18.94	17.28	19.18	18.23	21.04	19.82	18.57	18.67	18.28	20.15	17.25	18.60	17.28	19.98	19.83	19.23	18.94
82.50°	11.39	12.58	13.58	10.03	13.42	11.81	12.29	11.66	11.82	11.65	11.01	12.11	10.01	12.48	10.60	10.55	11.39
85.00°	0.00	0.00	0.00	0.00	0.00	4.88	7.29	5.79	6.39	5.52	7.23	5.72	5.54	0.00	0.00	0.00	0.00
87.50°	0.00	0.00	0.00	0.00	0.00	2.72	2.67	3.41	3.36	3.48	3.88	2.64	3.16	0.00	0.00	0.00	0.00
90.00°	0.00	0.00	0.00	0.00	0.00	1.44	2.09	2.42	1.46	2.28	2.05	1.95	2.22	0.00	0.00	0.00	0.00
92.50°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
95.00°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
97.50°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
102.50°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
105.00°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
107.50°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
110.00°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
112.50°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

### 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>	1,779	1,779	1,779	1,779	1,738	1,738	1,738	1,738	1,660	1,660	1,660	1,590	1,590	1,590	1,525	1,525	1,494
	<b>1</b>	1,661	1,605	1,554	1,509	1,622	1,572	1,526	1,485	1,510	1,472	1,438	1,453	1,423	1,395	1,400	1,376	1,348
	<b>2</b>	1,542	1,442	1,360	1,291	1,505	1,415	1,340	1,276	1,364	1,302	1,247	1,317	1,265	1,220	1,274	1,231	1,193
	<b>3</b>	1,431	1,302	1,202	1,122	1,398	1,280	1,187	1,112	1,237	1,158	1,094	1,198	1,131	1,075	1,162	1,106	1,058
	<b>4</b>	1,331	1,181	1,072	988	1,300	1,163	1,061	982	1,128	1,039	969	1,095	1,019	957	1,064	999	945
	<b>5</b>	1,241	1,078	964	880	1,213	1,062	955	875	1,033	939	867	1,005	923	858	979	907	850
	<b>6</b>	1,160	988	873	791	1,134	975	867	788	950	854	782	927	841	775	905	829	769
	<b>7</b>	1,086	911	797	717	1,063	899	791	714	878	781	710	858	771	705	839	761	701
	<b>8</b>	1,020	842	731	654	999	833	726	652	814	718	649	797	709	645	781	701	642
	<b>9</b>	960	782	673	600	941	774	670	599	758	663	596	743	656	593	729	650	591
	<b>10</b>	906	729	624	553	889	722	621	552	708	615	550	695	609	548	683	604	546

### Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	27.9 fc	8.2 ft
6.5 ft	20.0 fc	9.7 ft
7.5 ft	15.0 fc	11.2 ft
8.0 ft	13.2 fc	12.0 ft
10.0 ft	8.4 fc	15.0 ft
12.0 ft	5.9 fc	18.0 ft
14.0 ft	4.3 fc	21.0 ft
16.0 ft	3.3 fc	24.0 ft
20.0 ft	2.1 fc	30.0 ft
24.0 ft	1.5 fc	36.0 ft
28.0 ft	1.1 fc	42.0 ft

### Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
<b>0.00°</b>	29,166	29,166	29,166
<b>45.00°</b>	13,151	12,960	13,220
<b>55.00°</b>	10,211	9,942	10,258
<b>65.00°</b>	8,045	7,914	8,166
<b>75.00°</b>	5,475	5,718	5,656
<b>85.00°</b>	0	0	0

### UGR CIE 190:2010

<b>Ceiling reflectance</b>		<b>0.7</b>	<b>0.7</b>	<b>0.5</b>	<b>0.5</b>	<b>0.3</b>	<b>0.7</b>	<b>0.7</b>	<b>0.5</b>	<b>0.5</b>	<b>0.3</b>
<b>Wall reflectance</b>		<b>0.5</b>	<b>0.3</b>	<b>0.5</b>	<b>0.3</b>	<b>0.3</b>	<b>0.5</b>	<b>0.3</b>	<b>0.5</b>	<b>0.3</b>	<b>0.3</b>
<b>Plane reflectance</b>		<b>0.2</b>	<b>0.2</b>	<b>0.2</b>	<b>0.2</b>	<b>0.2</b>	<b>0.2</b>	<b>0.2</b>	<b>0.2</b>	<b>0.2</b>	<b>0.2</b>
<b>Room dimensions</b>		<b>Viewed crosswise</b>					<b>Viewed endwise</b>				
<b>2H</b>	<b>2H</b>	17.8	19.1	18.1	19.4	19.8	17.8	19.2	18.2	19.5	19.8
	<b>3H</b>	19.0	20.3	19.4	20.6	21.0	19.1	20.3	19.5	20.6	21.0
	<b>4H</b>	19.4	20.6	19.8	20.9	21.3	19.5	20.6	19.9	20.9	21.3
	<b>6H</b>	19.6	20.7	20.0	21.0	21.4	19.6	20.7	20.0	21.0	21.4
	<b>8H</b>	19.6	20.6	20.1	21.0	21.4	19.7	20.6	20.1	21.0	21.4
	<b>12H</b>	19.6	20.5	20.0	20.9	21.4	19.6	20.6	20.1	21.0	21.4
<b>4H</b>	<b>2H</b>	18.2	19.3	18.6	19.7	20.1	18.2	19.4	18.6	19.7	20.1
	<b>3H</b>	19.7	20.6	20.1	21.0	21.4	19.7	20.6	20.1	21.0	21.4
	<b>4H</b>	20.1	21.0	20.6	21.4	21.8	20.1	21.0	20.6	21.4	21.8
	<b>6H</b>	20.4	21.1	20.8	21.5	22.0	20.4	21.1	20.8	21.5	22.0
	<b>8H</b>	20.4	21.1	20.9	21.5	22.0	20.4	21.1	20.9	21.5	22.0
	<b>12H</b>	20.4	21.0	20.9	21.5	21.9	20.4	21.0	20.9	21.5	22.0
<b>8H</b>	<b>4H</b>	20.3	20.9	20.7	21.4	21.9	20.3	20.9	20.7	21.4	21.8
	<b>6H</b>	20.6	21.1	21.1	21.6	22.1	20.5	21.1	21.0	21.6	22.1
	<b>8H</b>	20.6	21.1	21.1	21.6	22.1	20.6	21.1	21.1	21.6	22.1
	<b>12H</b>	20.6	21.0	21.1	21.5	22.1	20.6	21.1	21.1	21.6	22.1
<b>12H</b>	<b>4H</b>	20.3	20.8	20.7	21.3	21.8	20.2	20.8	20.7	21.3	21.8
	<b>6H</b>	20.6	21.1	21.1	21.5	22.1	20.5	21.0	21.1	21.5	22.0
	<b>8H</b>	20.6	21.1	21.2	21.6	22.1	20.6	21.1	21.1	21.6	22.1

Corrected UGR values based on total output lumens

SHR = 1.0