

Indoor Distribution Test Report

Spectrum Lighting Inc.

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Spectrum Lighting Photometric Lab

Luminaire

CK0407PC 15L 35K XW xx NL xx MW
Nom. 4.5" Diam x 7"H Round Cylinder, Xtra Wide Beam

Test Number

SP-01445_M-15L

Test Date

11/23/2022

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

Summary of Results

Power

Input Watts	9.5 W
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Lumen Output

Output Lumens	963
Efficacy	101.36 lm/W

Luminous Dimensions

0° - 180° Size	-0.38
90° - 270° Size	-0.38
Height	0

Spacing Criterion

Two luminaires, plane 0°	1
Two luminaires, plane 90°	0.99
Four luminaires	0.93

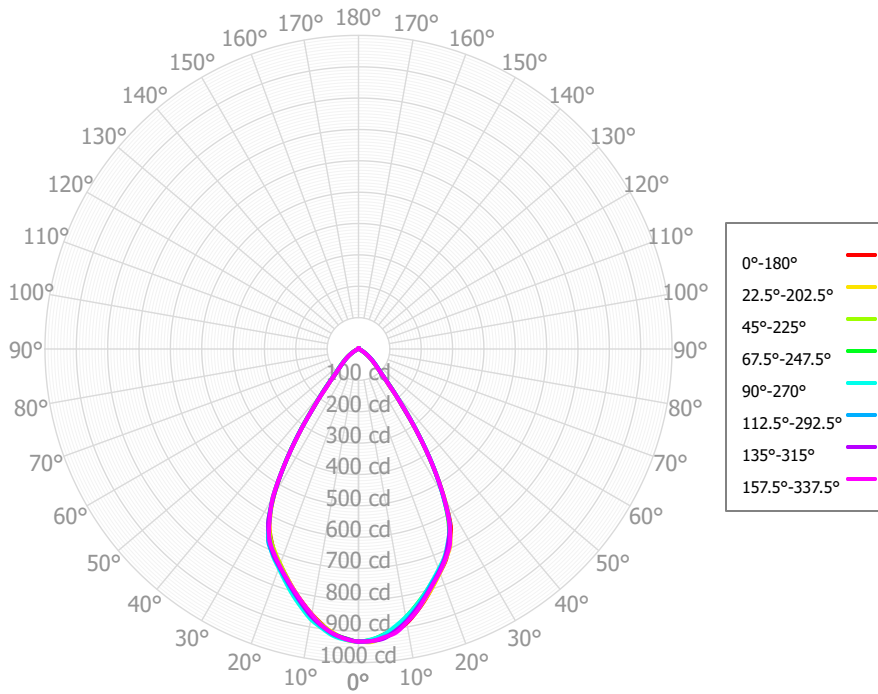
Full Beam Angle

0° - 180°	64°
90° - 270°	64°

IES File Header Contents

Keyword	Value
TEST	SP-01445_M-15L
TESTLAB	Spectrum Lighting Photometric Lab, VLS-245-981
MANUFAC	Spectrum Lighting
TESTDATE	11/23/2022
ISSUEDATE	11/23/2022
LUMCAT	CK0407PC 15L 35K XW xx NL xx MW
LUMINAIRE	Nom. 4.5" Diam x 7"H Round Cylinder, Xtra Wide Beam
OTHER	No lens, Matte White finish
OTHER	64 Degree Beam Angle
OTHER	Reference Project SL378
LAMP	N/A
LAMPCAT	N/A, Min. 80 CRI
OTHER	Total Luminaire Watts is approximate
OTHER	CCT Multipliers: 27K x 0.95, 30K x 0.97, 40K x 1.03
OTHER	This report prepared by Spectrum Lighting

Candela Polar Plot



Zonal Lumen Summary

Zone	Lumens	% Fixture	Zone	Lumens	% Fixture
0.00° - 10.00°	87.28	9.06%	90.00° - 100.00°	1.94	0.20%
10.00° - 20.00°	227.06	23.58%	100.00° - 110.00°	1.89	0.20%
20.00° - 30.00°	304.49	31.62%	100.00° - 120.00°	3.70	0.38%
30.00° - 40.00°	208.93	21.70%	120.00° - 130.00°	1.62	0.17%
40.00° - 50.00°	73.63	7.65%	130.00° - 140.00°	1.44	0.15%
50.00° - 60.00°	33.72	3.50%	140.00° - 150.00°	1.23	0.13%
60.00° - 70.00°	10.39	1.08%	150.00° - 160.00°	0.91	0.10%
70.00° - 80.00°	3.56	0.37%	160.00° - 170.00°	0.57	0.06%
80.00° - 90.00°	2.22	0.23%	170.00° - 180.00°	0.19	0.02%
0.00° - 90.00°	951.27	98.79%	0.00° - 180.00°	962.88	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°	933.21	933.21	933.21	933.21	933.21	933.21	933.21	933.21	933.21	933.21	933.21	933.21	933.21	933.21	933.21	933.21	933.21
2.50°	932.64	935.61	928.98	928.26	927.35	926.09	924.40	926.64	927.07	928.37	924.40	924.33	928.59	932.68	932.24	932.84	932.64
5.00°	924.87	921.95	922.24	914.29	915.06	914.23	912.76	911.44	913.64	908.88	912.33	912.15	919.00	922.38	927.18	923.68	924.87
7.50°	908.18	906.37	900.42	897.46	892.46	893.47	890.80	890.69	886.29	887.68	888.57	894.01	898.12	907.03	906.18	912.96	908.18
10.00°	887.55	881.82	877.38	868.78	867.85	865.66	866.34	859.62	858.27	859.23	862.70	867.33	875.83	879.24	882.49	885.72	887.55
12.50°	857.92	855.42	848.84	839.54	840.71	834.77	832.97	828.19	827.35	829.11	832.07	836.15	844.05	848.53	851.49	857.31	857.92
15.00°	826.07	824.62	819.40	809.90	810.56	802.42	800.00	796.34	795.66	795.32	799.31	801.07	811.82	814.99	819.89	821.83	826.07
17.50°	791.24	792.76	787.91	780.30	778.14	771.16	767.78	765.55	762.24	762.05	763.75	769.32	777.38	781.51	787.33	787.74	791.24
20.00°	758.84	759.44	756.30	750.89	747.22	740.18	737.65	735.48	730.35	729.45	731.23	739.31	744.25	752.25	754.30	757.49	758.84
22.50°	728.43	726.17	724.51	718.70	717.00	711.12	709.91	704.58	700.48	698.07	701.15	708.77	714.31	721.15	720.83	725.15	728.43
25.00°	686.06	692.92	681.44	680.67	675.52	680.51	670.95	673.35	662.68	667.66	664.48	678.08	675.36	681.65	678.21	689.50	686.06
27.50°	637.83	627.17	629.14	622.38	631.44	615.71	624.16	613.45	618.52	610.64	624.67	614.72	623.71	627.08	630.40	628.19	637.83
30.00°	544.79	545.19	543.42	538.97	540.03	544.38	540.59	548.05	538.90	541.11	539.44	546.96	545.23	537.28	542.38	542.30	544.79
32.50°	440.20	440.19	441.33	442.33	444.64	440.98	442.17	441.89	442.48	441.11	442.68	442.84	443.72	439.94	441.56	441.47	440.20
35.00°	333.16	329.11	336.48	335.69	337.21	338.54	338.37	335.17	339.28	333.68	338.62	340.05	340.78	332.32	335.66	331.93	333.16
37.50°	227.54	237.42	230.93	242.91	236.36	238.44	233.50	239.53	234.38	241.78	235.73	244.81	237.09	239.88	229.35	239.64	227.54
40.00°	164.43	149.57	168.25	156.31	165.40	161.37	169.16	155.96	169.87	153.83	171.18	164.16	171.48	160.01	165.78	153.02	164.43
42.50°	108.06	116.76	110.87	116.69	109.74	116.61	110.00	118.39	110.64	119.19	113.83	123.04	116.45	116.58	107.87	116.26	108.06
45.00°	86.83	86.70	89.63	87.75	89.09	86.77	89.02	88.25	90.73	87.79	92.76	92.05	94.90	91.25	88.85	86.52	86.83
47.50°	68.04	71.48	69.82	72.68	71.48	69.80	70.05	73.09	72.16	71.91	74.18	76.68	76.94	75.29	71.30	71.32	68.04
50.00°	55.39	57.22	57.33	58.66	58.00	56.90	58.90	59.90	60.26	57.76	61.73	63.55	63.56	61.79	58.22	56.65	55.39
52.50°	44.03	45.40	45.54	46.89	46.26	46.10	47.96	49.08	48.72	47.72	50.30	52.53	50.63	49.24	46.11	45.76	44.03
55.00°	34.55	34.58	35.52	35.58	35.95	36.37	37.46	38.61	38.05	38.16	40.32	41.93	40.32	36.91	35.66	35.32	34.55
57.50°	26.00	25.24	26.39	26.30	27.07	26.95	27.93	28.40	28.76	29.24	30.76	31.55	30.32	28.16	26.35	26.27	26.00
60.00°	18.27	18.06	18.54	18.33	18.90	19.81	19.62	20.62	21.40	21.54	21.59	23.42	21.15	19.85	18.18	18.53	18.27
62.50°	12.85	12.84	12.77	13.33	13.69	13.00	13.61	13.89	15.22	14.87	14.92	16.00	13.93	13.86	12.59	13.05	12.85
65.00°	8.67	9.32	8.84	9.31	9.25	9.47	9.32	9.97	10.07	10.67	9.55	11.73	9.67	8.82	8.60	8.90	8.67
67.50°	6.30	6.74	6.26	6.61	6.77	6.25	6.63	6.67	7.09	7.73	6.75	7.89	6.91	6.14	6.23	6.14	6.30
70.00°	4.45	5.15	4.40	4.91	4.53	4.75	4.64	4.91	5.23	5.66	4.66	5.90	5.56	4.34	4.43	4.50	4.45
72.50°	3.85	3.86	3.61	4.04	3.80	3.54	3.78	3.33	4.09	3.81	3.82	4.08	4.52	3.82	3.67	3.57	3.85
75.00°	3.40	3.37	3.14	3.34	3.14	3.06	3.17	2.84	3.15	3.31	3.11	3.40	3.66	3.23	3.09	3.08	3.40
77.50°	2.94	2.98	2.95	2.74	2.92	2.66	2.66	2.44	2.99	2.94	2.74	2.81	2.93	2.57	2.49	2.76	2.94
80.00°	2.50	2.76	2.79	2.38	2.70	2.36	2.16	2.45	2.89	2.48	2.39	2.44	2.25	2.20	1.95	2.65	2.50
82.50°	2.21	2.53	2.23	2.08	2.48	2.04	1.87	2.32	2.48	2.08	2.19	2.22	2.07	1.98	1.94	2.58	2.21
85.00°	2.00	2.20	1.76	1.89	2.19	1.70	1.60	1.89	2.07	1.96	2.05	2.25	1.96	1.90	1.89	2.24	2.00
87.50°	1.99	1.97	1.85	1.71	1.82	1.61	1.47	1.66	1.70	1.87	2.04	2.20	1.84	1.87	1.73	1.93	1.99
90.00°	1.93	1.97	1.96	1.53	1.65	1.65	1.47	1.71	1.51	1.86	2.04	2.08	1.73	1.93	1.61	1.95	1.93
92.50°	1.79	1.97	2.07	1.39	1.66	1.75	1.77	1.68	1.79	1.78	2.03	2.01	1.66	2.01	1.54	1.97	1.79
95.00°	1.69	1.97	2.10	1.41	1.68	1.86	1.84	1.59	1.93	1.59	1.99	1.96	1.66	1.92	1.55	1.99	1.69
97.50°	1.63	1.90	1.97	1.45	1.70	1.90	1.59	1.49	1.84	1.54	1.92	1.83	1.85	1.82	1.63	1.98	1.63
100.00°	1.69	1.76	1.80	1.53	1.76	1.92	1.56	1.39	1.78	1.62	1.96	1.69	1.96	1.70	1.59	1.92	1.69

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%	20%	0%
	pcc	80%	80%	80%	80%	70%	70%	70%	70%	50%	50%	50%	30%	30%	30%	10%	10%	10%	0%
	pw	70%	50%	30%	10%	70%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	30%
	0	1144	1144	1144	1144	1116	1116	1116	1116	1063	1063	1063	1016	1016	1016	972	972	972	951
	1	1085	1057	1031	1008	1060	1034	1011	990	993	975	958	955	941	927	920	909	898	890
	2	1026	976	934	899	1004	958	920	888	925	894	867	894	869	846	866	845	827	827
	3	970	903	852	811	949	889	842	803	861	822	789	836	803	775	813	785	762	769
	4	916	838	781	738	897	826	773	732	804	758	722	783	744	713	763	730	703	716
	5	866	780	720	676	849	770	714	672	751	702	665	733	691	658	717	680	651	667
	6	819	728	666	622	803	719	661	619	703	652	614	688	643	609	674	635	604	623
	7	775	680	619	576	761	673	615	574	660	608	570	647	600	566	635	594	562	583
	8	735	638	577	535	722	632	574	533	620	568	530	609	562	527	599	556	524	547
	9	698	600	540	499	686	594	537	498	584	532	495	575	527	493	565	522	491	514
	10	663	565	506	467	653	560	504	466	551	500	464	543	496	462	535	492	460	484

Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	30.9 fc	6.8 ft
6.5 ft	22.1 fc	8.1 ft
7.5 ft	16.6 fc	9.3 ft
8.0 ft	14.6 fc	9.9 ft
10.0 ft	9.3 fc	12.4 ft
12.0 ft	6.5 fc	14.9 ft
14.0 ft	4.8 fc	17.4 ft
16.0 ft	3.6 fc	19.9 ft
20.0 ft	2.3 fc	24.8 ft
24.0 ft	1.6 fc	29.8 ft
28.0 ft	1.2 fc	34.8 ft

Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
0.00°	88572	88572	88572
45.00°	11654	12031	11957
55.00°	5717	5878	5948
65.00°	1947	1986	2078
75.00°	1246	1152	1153
85.00°	2177	1916	2390

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	10.8	11.9	11.2	12.2	12.6	11.7	12.8	12.1	13.1	13.5
	3H	11.0	11.9	11.4	12.2	12.6	11.8	12.8	12.2	13.1	13.5
	4H	11.0	11.9	11.4	12.2	12.7	11.8	12.7	12.3	13.1	13.5
	6H	11.1	11.8	11.5	12.2	12.7	11.9	12.6	12.3	13.0	13.5
	8H	11.1	11.8	11.6	12.3	12.7	11.9	12.6	12.3	13.0	13.5
	12H	11.2	11.9	11.6	12.3	12.8	11.9	12.6	12.4	13.0	13.5
4H	2H	10.8	11.6	11.2	12.0	12.4	11.6	12.5	12.1	12.9	13.3
	3H	11.0	11.7	11.4	12.1	12.5	11.8	12.5	12.2	12.9	13.4
	4H	11.0	11.7	11.5	12.1	12.6	11.8	12.5	12.3	12.9	13.4
	6H	11.2	11.7	11.7	12.2	12.7	11.9	12.5	12.4	12.9	13.4
	8H	11.3	11.8	11.8	12.3	12.8	12.0	12.5	12.5	13.0	13.5
	12H	11.5	11.9	12.0	12.4	12.9	12.1	12.5	12.6	13.0	13.5
8H	4H	11.0	11.5	11.5	11.9	12.4	11.8	12.3	12.3	12.7	13.2
	6H	11.2	11.6	11.8	12.1	12.7	11.9	12.3	12.4	12.8	13.3
	8H	11.4	11.8	12.0	12.3	12.8	12.0	12.4	12.6	12.9	13.4
	12H	11.7	12.0	12.3	12.6	13.2	12.2	12.6	12.8	13.1	13.7
12H	4H	10.9	11.4	11.5	11.9	12.4	11.7	12.1	12.2	12.7	13.2
	6H	11.2	11.6	11.8	12.1	12.6	11.9	12.2	12.4	12.7	13.3
	8H	11.5	11.8	12.0	12.3	12.9	12.0	12.3	12.6	12.9	13.5

Corrected UGR values based on total output energy
 SHR = 1.0

Corrected UGR values based on total output lumens

SHR = 1.0