

Indoor Distribution Test Report

Spectrum Lighting Inc.

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Spectrum Lighting Photometric Lab

Luminaire

CW04XXPC 20L 35K WD XX CL XX

Nom 4" diam Gamma Cylinder (wet location), WD optic, clear glass lens

Test Number

SP-01072

Test Date

1/30/2020

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

Summary of Results

Power

Input Watts	12.9 W
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Lumen Output

Output Lumens	1203
Efficacy	93.29 lm/W

Luminous Dimensions

0° - 180° Size	-0.33
90° - 270° Size	-0.33
Height	0

Spacing Criterion

Two luminaires, plane 0°	0.77
Two luminaires, plane 90°	0.79
Four luminaires	0.74

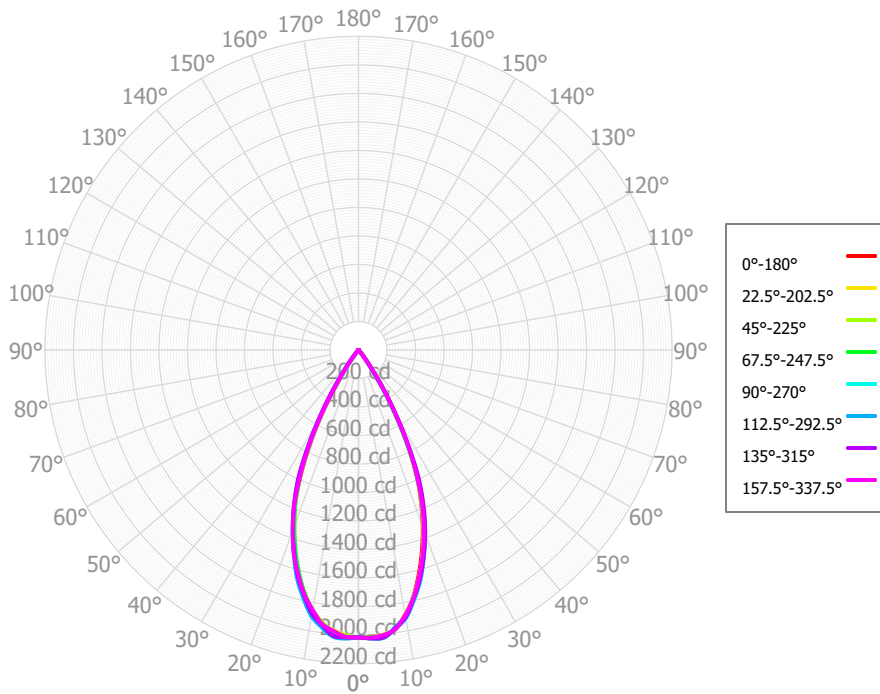
Full Beam Angle

0° - 180°	49°
90° - 270°	49°

IES File Header Contents

Keyword	Value
TEST	SP-01072
TESTLAB	Spectrum Lighting Photometric Lab, VLS-245-981
MANUFAC	Spectrum Lighting
TESTDATE	1/30/2020
ISSUEDATE	12/8/2020
LUMCAT	CW04XXPC 20L 35K WD XX CL XX
LUMINAIRE	Nom 4" diam Gamma Cylinder (wet location), WD optic, clear glass lens
OTHER	Beam Angle: 47.6 deg
OTHER	Wide optic
LAMPCAT	N/A
LAMP	N/A
OTHER	CCT Output Multipliers: 27K x 0.97, 30K x 0.98, 40K x 1.04, 27HK x 0.89, 30HK x 0.83
OTHER	Total luminaire wattage is approximate
OTHER	This report prepared by Spectrum Lighting
_CRI	80
_CCTMULT	27K x 0.97, 30K x 0.98, 40K x 1.04
_CCTMULTA	27HK x 0.89, 30HK x 0.83
_LAMPMULT	10L x 0.50, 15L x 0.74

Candela Polar Plot



Zonal Lumen Summary

Zone	Lumens	% Fixture	Zone	Lumens	% Fixture
0.00° - 10.00°	189.96	15.79%	90.00° - 100.00°	0.08	0.01%
10.00° - 20.00°	453.46	37.68%	100.00° - 110.00°	0.00	0.00%
20.00° - 30.00°	427.64	35.54%	100.00° - 120.00°	0.00	0.00%
30.00° - 40.00°	119.27	9.91%	120.00° - 130.00°	0.00	0.00%
40.00° - 50.00°	5.88	0.49%	130.00° - 140.00°	0.00	0.00%
50.00° - 60.00°	1.95	0.16%	140.00° - 150.00°	0.00	0.00%
60.00° - 70.00°	1.84	0.15%	150.00° - 160.00°	0.00	0.00%
70.00° - 80.00°	1.87	0.16%	160.00° - 170.00°	0.00	0.00%
80.00° - 90.00°	1.44	0.12%	170.00° - 180.00°	0.00	0.00%
0.00° - 90.00°	1203.31	99.99%	0.00° - 180.00°	1203.39	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°	2017.37	2017.37	2017.37	2017.37	2017.37	2017.37	2017.37	2017.37	2017.37	2017.37	2017.37	2017.37	2017.37	2017.37	2017.37	2017.37	2017.37
2.50°	2013.52	2018.89	2017.41	2018.08	2024.79	2026.39	2017.93	2015.03	2011.55	2003.80	2004.71	2014.26	2019.31	2025.55	2025.89	2020.69	2013.52
5.00°	2015.17	2005.59	2025.81	2015.13	2026.24	2020.12	2013.94	1980.66	1983.61	1974.88	1990.49	1986.43	2015.22	2026.95	2024.53	2008.12	2015.17
7.50°	1973.29	1972.03	1967.25	1976.40	1972.84	1964.17	1947.53	1941.69	1936.07	1942.01	1928.77	1942.46	1950.70	1964.19	1969.85	1977.49	1973.29
10.00°	1890.82	1884.15	1903.77	1901.17	1913.10	1897.60	1878.51	1851.50	1857.48	1855.89	1856.29	1856.72	1880.58	1898.53	1906.26	1888.09	1890.82
12.50°	1774.49	1780.81	1777.72	1796.54	1798.48	1785.00	1763.20	1756.61	1760.93	1762.45	1745.53	1749.08	1760.14	1782.28	1789.39	1784.45	1774.49
15.00°	1632.64	1645.29	1649.67	1667.64	1677.95	1662.36	1644.59	1632.13	1637.43	1632.36	1624.45	1616.21	1636.66	1664.17	1666.67	1644.99	1632.64
17.50°	1479.61	1499.07	1495.77	1518.39	1523.63	1508.01	1498.15	1505.92	1501.20	1499.60	1474.71	1472.96	1496.38	1517.46	1519.92	1499.43	1479.61
20.00°	1319.81	1334.64	1339.11	1355.19	1363.40	1349.80	1348.67	1343.99	1339.74	1338.02	1318.80	1317.69	1349.16	1366.71	1367.07	1341.71	1319.81
22.50°	1144.99	1155.03	1154.49	1163.99	1179.81	1182.28	1183.07	1178.32	1169.04	1173.83	1149.64	1158.52	1173.86	1184.75	1195.76	1166.64	1144.99
25.00°	962.96	954.70	962.72	957.44	982.80	994.22	1003.87	960.45	950.77	947.36	961.41	955.77	982.28	992.83	1003.35	964.02	962.96
27.50°	745.03	740.32	725.25	730.70	746.54	766.08	771.75	741.57	719.43	721.09	740.77	742.60	742.13	748.63	760.34	749.23	745.03
30.00°	513.21	510.45	495.51	495.24	519.01	543.74	546.08	515.34	499.67	496.97	524.57	522.98	514.79	514.31	530.09	518.89	513.21
32.50°	322.69	316.16	299.17	305.38	311.82	330.44	339.09	304.49	282.27	285.86	314.61	302.30	316.82	316.56	323.88	321.24	322.69
35.00°	144.24	154.58	133.97	131.19	149.45	170.90	169.58	167.55	158.39	157.69	161.54	175.09	160.22	151.31	164.78	158.40	144.24
37.50°	71.42	63.57	67.08	61.74	69.25	78.64	83.57	54.60	46.93	48.48	72.94	57.24	80.67	76.09	76.47	63.19	71.42
40.00°	20.76	25.00	17.22	18.99	18.01	24.93	24.45	27.72	23.81	24.89	24.16	32.15	27.43	21.53	22.43	26.28	20.76
42.50°	9.89	8.39	9.80	8.78	9.19	11.40	12.64	7.50	6.79	6.41	11.92	11.32	13.33	12.03	11.09	8.96	9.89
45.00°	4.85	4.88	4.51	4.32	3.89	4.32	5.04	5.25	4.96	4.69	5.77	7.78	4.92	5.45	4.83	5.28	4.85
47.50°	3.36	2.87	3.39	2.85	2.87	2.69	3.57	3.50	3.45	3.39	4.27	4.41	3.34	3.99	3.70	3.17	3.36
50.00°	2.17	1.59	2.58	1.73	2.17	2.03	2.60	2.81	2.73	3.15	3.38	3.61	2.65	2.99	3.26	1.97	2.17
52.50°	1.96	1.48	2.28	1.75	1.77	2.03	2.20	2.29	2.05	2.91	2.87	2.85	2.83	2.64	3.38	1.72	1.96
55.00°	1.77	1.81	2.04	1.84	1.85	1.95	2.07	2.07	1.86	2.67	2.67	2.41	2.63	2.39	2.93	1.90	1.77
57.50°	1.64	1.75	1.85	1.80	2.30	1.82	2.18	1.92	1.71	2.33	2.63	2.07	2.13	2.24	2.09	1.59	1.64
60.00°	1.56	1.58	1.83	1.75	2.35	1.71	2.27	1.85	1.82	1.81	2.25	2.27	1.97	2.24	1.66	1.12	1.56
62.50°	1.93	1.50	1.98	1.58	2.13	1.60	2.34	1.83	1.93	1.52	1.73	2.43	2.04	2.39	1.45	1.26	1.93
65.00°	2.19	1.43	1.85	1.44	1.96	1.80	2.29	1.87	2.02	1.52	1.80	2.41	1.92	2.30	1.50	1.57	2.19
67.50°	1.73	1.49	1.51	1.47	1.82	2.11	2.16	2.02	2.03	1.57	2.03	2.28	1.72	2.03	1.66	1.71	1.73
70.00°	1.44	1.57	1.55	1.54	1.69	1.85	1.95	2.25	1.89	1.65	2.12	1.92	1.65	2.24	2.23	1.81	1.44
72.50°	1.69	1.86	1.80	1.71	1.58	1.53	1.79	1.95	1.86	1.50	2.09	1.55	1.64	2.62	2.83	2.37	1.69
75.00°	1.66	1.94	1.79	1.89	1.53	1.44	2.16	1.63	1.86	1.33	1.79	1.18	1.87	2.38	2.42	2.50	1.66
77.50°	1.36	1.58	1.85	1.99	1.43	1.56	1.91	1.51	1.69	1.19	2.15	1.16	1.76	2.09	1.96	1.73	1.36
80.00°	1.29	1.62	2.11	1.33	1.32	1.73	1.54	1.33	1.22	1.19	2.14	1.36	1.62	1.77	1.53	1.27	1.29
82.50°	1.44	1.54	1.91	1.14	1.40	1.65	1.59	1.12	1.25	1.30	1.76	1.62	1.72	1.49	1.62	1.26	1.44
85.00°	1.66	1.37	1.77	1.57	1.32	1.65	1.63	1.21	1.55	1.09	1.59	1.55	1.28	1.51	1.33	1.50	1.66
87.50°	1.41	1.30	1.32	1.50	0.97	1.34	1.73	1.40	1.20	0.85	1.35	1.16	1.20	1.01	1.03	1.34	1.41
90.00°	1.10	1.33	1.15	0.98	1.18	1.26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.33	1.22	1.10
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.

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%	0%
	pw	70%	50%	30%	10%	70%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	30%
	0	1433	1433	1433	1433	1399	1399	1399	1399	1337	1337	1337	1280	1280	1280	1228	1228	1203
	1	1374	1344	1317	1293	1345	1318	1294	1272	1270	1251	1233	1225	1210	1196	1184	1173	1162
	2	1317	1265	1222	1186	1291	1244	1206	1173	1206	1175	1147	1171	1145	1123	1138	1118	1100
	3	1262	1194	1142	1100	1239	1178	1130	1092	1147	1107	1074	1119	1086	1058	1093	1065	1042
	4	1209	1131	1073	1029	1189	1117	1064	1023	1092	1047	1011	1069	1031	999	1048	1015	988
	5	1160	1073	1012	967	1141	1062	1005	963	1041	992	954	1022	980	946	1004	968	938
	6	1112	1020	957	913	1096	1011	952	910	994	942	904	978	932	898	963	923	892
	7	1067	971	908	864	1053	963	904	862	949	896	858	935	888	853	923	881	849
	8	1025	926	863	821	1012	919	860	819	907	854	816	896	848	813	885	842	809
	9	985	884	823	781	973	879	820	780	868	815	777	858	810	775	849	805	772
	10	947	846	785	745	936	841	783	744	832	778	742	823	774	740	815	770	738

Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	66.7 fc	5.0 ft
6.5 ft	47.7 fc	5.9 ft
7.5 ft	35.9 fc	6.8 ft
8.0 ft	31.5 fc	7.3 ft
10.0 ft	20.2 fc	9.1 ft
12.0 ft	14.0 fc	10.9 ft
14.0 ft	10.3 fc	12.7 ft
16.0 ft	7.9 fc	14.6 ft
20.0 ft	5.0 fc	18.2 ft
24.0 ft	3.5 fc	21.8 ft
28.0 ft	2.6 fc	25.5 ft

Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
0.00°	253885	253885	253885
45.00°	862	804	692
55.00°	388	447	406
65.00°	653	552	585
75.00°	805	870	743
85.00°	2391	2553	1907

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	-7.7	-6.8	-7.3	-6.4	-6.1	-6.3	-5.4	-5.9	-5.1	-4.8
	3H	-4.2	-3.4	-3.8	-3.1	-2.7	-3.0	-2.2	-2.6	-1.9	-1.5
	4H	-1.9	-1.2	-1.5	-0.8	-0.4	-1.7	-1.0	-1.3	-0.6	-0.2
	6H	-0.5	0.2	-0.1	0.6	1.0	-0.1	0.5	0.3	0.9	1.3
	8H	0.4	1.1	0.9	1.5	1.9	0.9	1.5	1.3	1.9	2.3
	12H	1.8	2.4	2.2	2.8	3.2	1.9	2.5	2.3	2.9	3.3
4H	2H	-6.6	-5.9	-6.2	-5.5	-5.1	-5.2	-4.5	-4.8	-4.1	-3.7
	3H	-2.6	-2.0	-2.2	-1.6	-1.2	-1.9	-1.3	-1.4	-0.9	-0.4
	4H	-0.1	0.5	0.4	0.9	1.3	-0.6	0.0	-0.1	0.4	0.8
	6H	1.4	1.8	1.9	2.3	2.8	1.2	1.7	1.7	2.1	2.6
	8H	2.3	2.7	2.8	3.2	3.6	2.4	2.8	2.9	3.2	3.7
	12H	3.6	4.0	4.1	4.5	5.0	3.5	3.9	4.0	4.4	4.9
8H	4H	0.8	1.2	1.3	1.7	2.2	0.3	0.7	0.8	1.2	1.7
	6H	2.5	2.9	3.0	3.4	3.9	2.4	2.7	2.9	3.2	3.7
	8H	3.6	3.9	4.1	4.4	4.9	3.7	4.0	4.2	4.5	5.0
	12H	5.1	5.3	5.6	5.8	6.4	5.1	5.3	5.6	5.8	6.4
12H	4H	1.0	1.3	1.5	1.8	2.3	0.5	0.8	0.9	1.3	1.8
	6H	2.9	3.2	3.4	3.6	4.2	2.7	3.0	3.2	3.5	4.0
	8H	4.1	4.3	4.6	4.8	5.4	4.2	4.4	4.7	4.9	5.5

Corrected UGR values based on total output energy
 SHR = 1.0

Corrected UGR values based on total output lumens

SHR = 1.0