

Indoor Distribution Test Report

Spectrum Lighting Inc.

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Spectrum Lighting Photometric Lab

Luminaire

EV04IND4GL 20L 35K xx DW xx FS xx

4" Wide x 48" linear pendant or surface mount for semi-direct illumination

Test Number

SP-01621_3

Test Date

11/15/2023

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

Summary of Results

Power

Input Watts	57.2 W
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Lumen Output

Output Lumens	6385
Efficacy	111.63 lm/W

Luminous Dimensions

0° - 180° Size	0.33
90° - 270° Size	4
Height	0.19

Spacing Criterion

Two luminaires, plane 0°	1.39
Two luminaires, plane 90°	1.23
Four luminaires	1.46

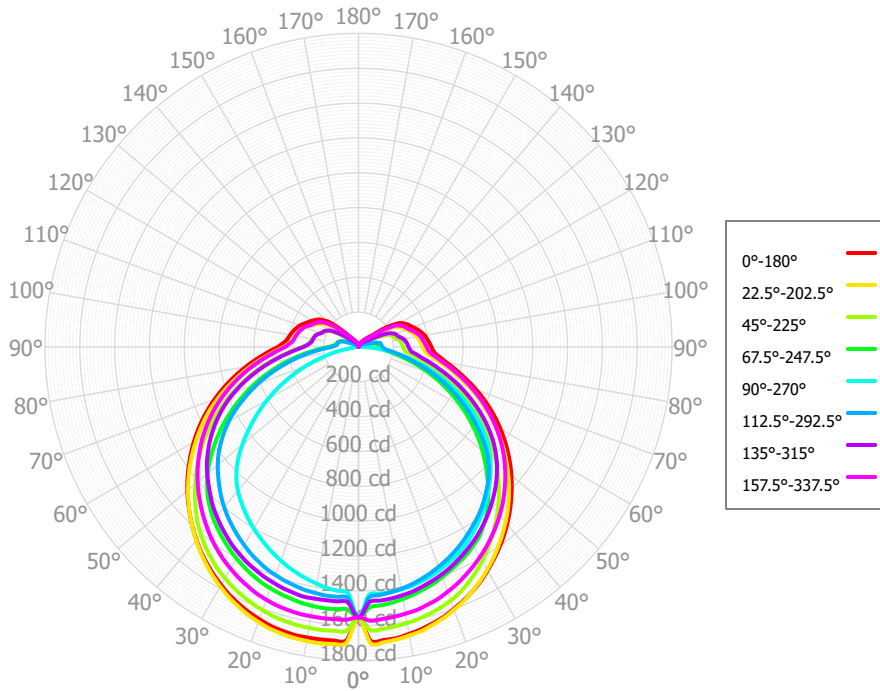
Full Beam Angle

0° - 180°	135°
90° - 270°	107°

IES File Header Contents

Keyword	Value
TEST	SP-01621_3
TESTLAB	Spectrum Lighting Photometric Lab, VLS-245-981
MANUFAC	Spectrum Lighting
TESTDATE	11/15/2023
ISSUEDATE	11/16/2023
LUMCAT	EV04IND4GL 20L 35K xx DW xx FS xx
LUMINAIRE	4" Wide x 48" linear pendant or surface mount for semi-direct illumination
OTHER	Diffuse White Acrylic Lens
OTHER	Matte White interior finish
OTHER	Beam Angle 135 deg 107 deg
OTHER	2000 Source Lms/Ft
OTHER	Total Luminaire Watts is approximate
OTHER	This report prepared by Spectrum Lighting
_CRI	80+
_CCTMULT	30K x 0.98, 40K x 1.0
_LAMPMULT	5L x 0.27, 11L x 0.59, 15L x 0.81

Candela Polar Plot



Zonal Lumen Summary

Zone	Lumens	% Fixture	Zone	Lumens	% Fixture
0.00° - 10.00°	150.01	2.35%	90.00° - 100.00°	269.44	4.22%
10.00° - 20.00°	429.98	6.73%	100.00° - 110.00°	228.00	3.57%
20.00° - 30.00°	668.55	10.47%	100.00° - 120.00°	397.05	6.22%
30.00° - 40.00°	836.42	13.10%	120.00° - 130.00°	98.19	1.54%
40.00° - 50.00°	913.58	14.31%	130.00° - 140.00°	40.09	0.63%
50.00° - 60.00°	886.09	13.88%	140.00° - 150.00°	16.52	0.26%
60.00° - 70.00°	756.76	11.85%	150.00° - 160.00°	6.41	0.10%
70.00° - 80.00°	555.00	8.69%	160.00° - 170.00°	1.70	0.03%
80.00° - 90.00°	359.21	5.63%	170.00° - 180.00°	0.29	0.00%
0.00° - 90.00°	5555.59	87.01%	0.00° - 180.00°	6385.27	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°	1552.53	1552.53	1552.53	1552.53	1552.53	1552.53	1552.53	1552.53	1552.53	1552.53	1552.53	1552.53	1552.53	1552.53	1552.53	1552.53	1552.53
2.50°	1691.48	1707.48	1627.75	1495.84	1422.06	1440.04	1465.41	1566.95	1689.32	1704.93	1632.50	1507.76	1411.78	1437.61	1465.14	1572.70	1691.48
5.00°	1688.57	1700.80	1623.63	1488.49	1421.33	1439.60	1465.48	1568.87	1691.25	1711.25	1635.50	1511.28	1404.23	1429.25	1461.02	1567.74	1688.57
7.50°	1685.32	1693.58	1618.14	1480.84	1420.02	1439.09	1465.63	1570.52	1693.07	1716.37	1638.71	1512.82	1395.36	1420.53	1455.88	1562.48	1685.32
10.00°	1672.66	1681.85	1609.12	1469.00	1413.22	1433.79	1466.46	1570.01	1693.69	1714.28	1637.55	1509.96	1380.13	1409.28	1447.61	1554.60	1672.66
12.50°	1659.67	1669.89	1598.50	1456.20	1406.14	1428.27	1467.38	1568.76	1693.37	1711.26	1635.53	1505.05	1364.30	1397.18	1437.63	1546.35	1659.67
15.00°	1642.73	1650.32	1584.56	1441.07	1393.08	1417.92	1459.34	1563.31	1686.65	1704.17	1628.85	1496.39	1346.25	1380.77	1423.30	1531.80	1642.73
17.50°	1624.87	1630.37	1568.49	1425.53	1379.85	1407.29	1450.59	1556.59	1678.46	1695.24	1621.54	1486.71	1327.11	1363.56	1408.09	1516.66	1624.87
20.00°	1600.34	1605.05	1548.77	1405.68	1362.03	1393.36	1437.85	1544.69	1663.26	1679.87	1608.09	1475.43	1304.76	1343.34	1391.05	1495.68	1600.34
22.50°	1575.27	1578.97	1524.23	1385.32	1343.95	1378.69	1424.94	1531.12	1646.98	1662.66	1594.15	1461.37	1281.48	1322.36	1372.01	1474.07	1575.27
25.00°	1547.27	1546.60	1492.63	1364.45	1322.94	1358.75	1408.35	1512.23	1626.67	1640.39	1575.71	1443.69	1255.97	1299.12	1349.44	1448.43	1547.27
27.50°	1517.70	1513.62	1457.88	1343.55	1301.02	1337.98	1391.53	1492.17	1604.54	1616.24	1557.06	1423.75	1229.98	1274.62	1326.27	1422.19	1517.70
30.00°	1481.90	1477.04	1419.29	1317.05	1272.20	1312.81	1370.50	1469.06	1577.09	1587.81	1532.72	1401.35	1203.02	1247.02	1302.22	1393.22	1481.90
32.50°	1445.68	1439.53	1378.00	1290.14	1242.91	1287.18	1348.99	1444.42	1548.46	1557.45	1508.06	1376.97	1174.40	1219.38	1276.12	1363.32	1445.68
35.00°	1408.11	1398.11	1333.96	1250.89	1211.17	1259.75	1322.59	1416.55	1517.04	1523.52	1476.59	1350.74	1143.06	1191.70	1247.53	1330.10	1408.11
37.50°	1369.35	1356.26	1288.33	1210.79	1178.65	1231.29	1295.87	1386.64	1483.80	1487.83	1444.54	1322.90	1110.83	1161.63	1217.10	1296.29	1369.35
40.00°	1327.59	1312.97	1241.31	1157.10	1143.08	1199.71	1267.11	1353.03	1446.96	1449.41	1406.61	1293.80	1077.37	1127.69	1184.75	1260.88	1327.59
42.50°	1284.62	1268.44	1191.70	1103.01	1106.85	1166.67	1237.35	1318.35	1408.65	1409.49	1367.51	1259.75	1037.26	1093.04	1150.89	1223.95	1284.62
45.00°	1239.17	1220.57	1140.18	1045.41	1068.60	1129.97	1202.71	1282.08	1367.95	1367.58	1320.67	1222.36	989.31	1057.41	1115.69	1183.50	1239.17
47.50°	1192.99	1171.69	1087.00	987.73	1029.17	1092.79	1168.08	1244.52	1326.08	1323.57	1273.25	1178.63	933.21	1015.50	1077.47	1142.26	1192.99
50.00°	1145.56	1120.58	1032.76	929.61	986.78	1054.65	1133.46	1205.36	1282.59	1277.23	1222.94	1131.35	869.09	966.24	1037.02	1099.49	1145.56
52.50°	1096.70	1069.04	976.63	870.58	941.15	1013.20	1097.14	1164.37	1237.22	1229.55	1172.15	1077.05	803.57	910.96	992.01	1055.10	1096.70
55.00°	1045.76	1016.71	919.50	807.52	888.73	966.00	1055.92	1121.43	1189.66	1180.57	1119.55	1019.53	736.86	849.60	944.13	1008.16	1045.76
57.50°	994.08	962.74	861.22	744.39	831.72	916.12	1013.27	1077.28	1141.20	1129.42	1066.12	959.78	669.55	787.05	890.66	959.71	994.08
60.00°	941.51	906.29	802.46	681.05	766.83	862.37	967.23	1032.04	1091.86	1076.55	1010.20	899.18	601.81	723.49	834.27	909.21	941.51
62.50°	887.56	849.67	742.89	617.46	701.52	804.20	919.58	984.28	1041.04	1023.87	953.06	836.15	532.85	659.34	775.44	857.26	887.56
65.00°	832.19	792.82	683.02	553.19	635.62	740.73	868.80	934.55	988.95	971.32	893.01	772.38	463.15	594.76	715.54	803.66	832.19
67.50°	776.33	735.64	621.19	488.97	567.83	676.98	815.12	882.87	934.95	915.10	832.58	708.33	394.10	529.25	654.78	749.39	776.33
70.00°	720.05	678.07	558.80	424.85	497.70	612.93	756.69	829.93	879.60	856.77	771.38	644.21	325.38	463.17	593.72	694.49	720.05
72.50°	664.83	621.82	500.07	362.23	429.15	547.99	697.33	775.74	823.62	798.15	710.15	578.35	258.82	399.32	534.49	640.16	664.83
75.00°	610.40	566.78	442.15	302.36	362.22	482.28	636.71	720.88	767.24	739.38	648.86	512.19	193.15	336.60	475.78	586.32	610.40
77.50°	560.47	514.90	389.96	246.66	295.76	418.24	576.30	666.03	711.96	681.89	588.14	447.31	134.33	281.53	424.17	536.32	560.47
80.00°	513.34	465.51	338.69	197.45	229.73	355.43	516.14	611.19	657.22	624.91	528.19	382.58	77.83	229.68	374.12	488.96	513.34
82.50°	476.06	426.24	303.50	158.59	168.61	296.94	458.84	558.39	604.72	570.41	470.09	322.55	41.71	190.74	338.62	450.52	476.06
85.00°	444.01	393.63	269.94	133.16	111.15	241.14	404.37	506.33	553.13	516.68	414.21	262.88	10.96	156.14	305.41	417.28	444.01
87.50°	427.99	376.88	262.21	118.78	65.14	196.23	357.35	462.53	507.38	471.63	365.79	216.65	4.48	144.05	295.09	400.42	427.99
90.00°	418.91	368.78	256.00	116.56	26.23	156.89	316.54	421.20	463.58	428.65	324.81	171.06	2.79	137.86	287.27	391.41	418.91
92.50°	410.45	362.06	252.19	115.28	8.85	137.36	291.16	398.27	437.84	404.74	298.17	150.27	2.17	134.42	282.25	383.43	410.45
95.00°	402.20	355.97	248.33	114.89	2.83	126.39	276.52	379.55	416.81	384.37	283.45	130.53	1.71	131.53	277.39	375.87	402.20
97.50°	394.00	349.45	242.24	111.06	1.10	122.33	268.70	371.52	406.49	375.96	274.26	128.85	1.79	129.36	270.30	368.29	394.00
100.00°	385.81	342.77	235.78	104.54	1.21	120.66	264.95	365.25	398.36	369.06	269.02	126.96	1.91	127.29	263.00	360.70	385.81
102.50°	373.90	330.64	224.40	88.82	1.27	118.03	260.19	357.93	389.62	360.09	263.09	123.27	1.99	112.86	249.40	348.03	373.90
105.00°	361.19	316.84	213.69	66.90	1.31	115.15	254.94	350.48	380.78	350.97	256.75	118.51	2.07	97.22	236.29	334.10	361.19

Coefficients of Utilization – Zonal Cavity Method

Values are lumens delivered to the workplane.

RCR	ptc	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	7404	7404	7404	7404	7135	7135	7135	7135	6634	6634	6634	6175	6175	6175	5754	5754	5556
	1	6619	6260	5939	5649	6354	6031	5741	5478	5603	5368	5152	5210	5021	4846	4847	4698	4558
	2	5963	5379	4896	4490	5710	5184	4744	4372	4818	4455	4142	4481	4184	3923	4169	3929	3715
	3	5403	4677	4116	3668	5167	4511	3996	3581	4198	3766	3411	3908	3549	3246	3640	3342	3212
	4	4925	4113	3519	3066	4708	3971	3423	2998	3702	3236	2867	3453	3058	2739	3221	2889	2776
	5	4513	3653	3053	2609	4315	3531	2973	2556	3299	2819	2451	3083	2672	2349	2882	2531	2433
	6	4155	3272	2680	2254	3975	3167	2613	2211	2966	2485	2126	2778	2361	2042	2603	2242	2158
	7	3844	2954	2377	1973	3680	2862	2321	1937	2687	2212	1866	2523	2107	1796	2369	2005	1932
	8	3570	2685	2127	1745	3422	2604	2080	1715	2451	1986	1655	2307	1896	1596	2171	1809	1745
	9	3329	2455	1920	1558	3194	2384	1878	1532	2249	1798	1481	2122	1720	1431	2002	1644	1588
	10	3116	2258	1744	1402	2993	2195	1708	1380	2075	1638	1336	1962	1570	1293	1855	1504	1454

Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	51.3 fc	27.1 ft
6.5 ft	36.7 fc	32.1 ft
7.5 ft	27.6 fc	37.0 ft
8.0 ft	24.3 fc	39.5 ft
10.0 ft	15.5 fc	49.3 ft
12.0 ft	10.8 fc	59.2 ft
14.0 ft	7.9 fc	69.0 ft
16.0 ft	6.1 fc	78.9 ft
20.0 ft	3.9 fc	98.6 ft
24.0 ft	2.7 fc	118.4 ft
28.0 ft	2.0 fc	138.1 ft

Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
0.00°	12660	12660	12660
45.00°	9069	9127	11764
55.00°	8159	8023	11832
65.00°	7185	6775	11131
75.00°	6108	5267	9694
85.00°	5480	4183	6740

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	19.6	21.1	20.2	21.6	22.2	18.0	19.4	18.6	20.0	20.6
	3H	22.0	23.3	22.6	23.9	24.6	19.4	20.7	20.0	21.3	22.0
	4H	23.1	24.4	23.7	25.0	25.6	19.9	21.1	20.4	21.7	22.4
	6H	24.3	25.5	24.9	26.0	26.7	20.1	21.3	20.7	21.9	22.6
	8H	24.9	26.0	25.5	26.6	27.3	20.2	21.3	20.8	21.9	22.6
	12H	25.5	26.6	26.2	27.2	27.9	20.2	21.2	20.8	21.9	22.6
4H	2H	20.0	21.2	20.5	21.8	22.5	19.1	20.3	19.6	20.9	21.6
	3H	22.6	23.6	23.2	24.3	24.9	20.8	21.9	21.4	22.5	23.2
	4H	23.8	24.8	24.5	25.5	26.2	21.4	22.4	22.0	23.0	23.7
	6H	25.2	26.0	25.8	26.7	27.4	21.8	22.7	22.5	23.3	24.1
	8H	25.9	26.7	26.5	27.3	28.1	21.9	22.7	22.6	23.4	24.1
	12H	26.7	27.4	27.3	28.1	28.8	22.0	22.7	22.6	23.4	24.1
8H	4H	24.0	24.8	24.6	25.5	26.2	22.2	23.0	22.8	23.7	24.4
	6H	25.5	26.2	26.1	26.8	27.6	22.8	23.5	23.5	24.2	25.0
	8H	26.3	26.9	27.0	27.6	28.4	23.0	23.7	23.7	24.4	25.1
	12H	27.2	27.8	27.9	28.5	29.3	23.2	23.7	23.9	24.4	25.2
12H	4H	24.0	24.7	24.6	25.4	26.1	22.4	23.1	23.1	23.8	24.6
	6H	25.5	26.1	26.2	26.8	27.6	23.2	23.8	23.8	24.4	25.2
	8H	26.4	26.9	27.0	27.6	28.4	23.5	24.0	24.1	24.7	25.5

Corrected UGR values based on total output energy
 SHR = 1.0

Corrected UGR values based on total output lumens

SHR = 1.0