Indoor Distribution Test Report

Spectrum Lighting Inc.

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Spectrum Lighting Photometric Lab

Luminaire
SGRTE8XT 20L 35K ND XX AR8466XT SG GL
N/A

Test Number
SP-01207_M-20L

Test Date
2/11/2021

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

Summary of Results

Power

Input Watts	19.9 W

Lumen Output

Output Lumens	1689
Efficacy	84.86 lm/W

Luminous Dimensions

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

Spacing Criterion

Two luminaires, plane 0°	0.39
Two luminaires, plane 90°	0.4
Four luminaires	0.43

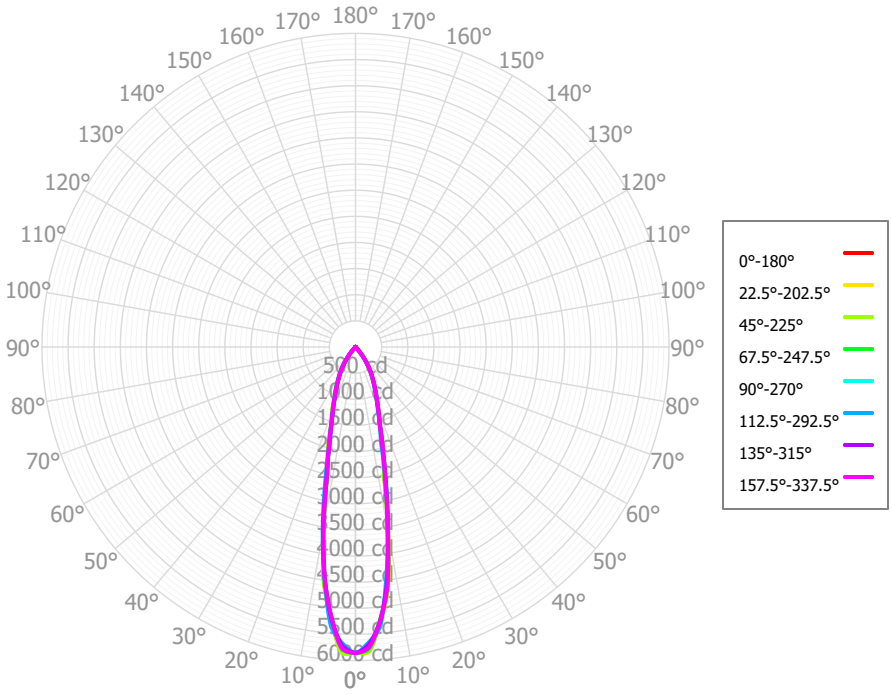
Full Beam Angle

0° - 180°	23°
90° - 270°	23°

IES File Header Contents

Keyword	Value
TEST	SP-01207_M-20L
TESTLAB	Spectrum Lighting Photometric Lab, VLS-245-981
MANUFAC	Spectrum Lighting
TESTDATE	2/11/2021
ISSUEDATE	3/2/2021
LUMCAT	SGRTE8XT 20L 35K ND XX AR8466XT SG GL
LUMINAIRE	N/A
OTHER	Beam Angle: 23 degrees
LAMPCAT	N/A
LAMP	19mm LES
OTHER	LEDXT lumen output is the same for all available CCT's
OTHER	Total luminaire watts is approximate; includes 2 watts for thermal protector
OTHER	This report prepared by Spectrum Lighting, scaled from 50L

Candela Polar Plot



Zonal Lumen Summary

Zone	Lumens	% Fixture	Zone	Lumens	% Fixture
0.00° - 10.00°	452.67	26.81%	90.00° - 100.00°	0.51	0.03%
10.00° - 20.00°	564.80	33.45%	100.00° - 110.00°	0.55	0.03%
20.00° - 30.00°	405.25	24.00%	100.00° - 120.00°	1.08	0.06%
30.00° - 40.00°	226.40	13.41%	120.00° - 130.00°	0.48	0.03%
40.00° - 50.00°	31.31	1.85%	130.00° - 140.00°	0.63	0.04%
50.00° - 60.00°	2.23	0.13%	140.00° - 150.00°	0.79	0.05%
60.00° - 70.00°	0.58	0.03%	150.00° - 160.00°	0.50	0.03%
70.00° - 80.00°	0.55	0.03%	160.00° - 170.00°	0.26	0.02%
80.00° - 90.00°	0.59	0.03%	170.00° - 180.00°	0.08	0.00%
0.00° - 90.00°	1684.39	99.74%	0.00° - 180.00°	1688.73	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°	5851.61	5851.61	5851.61	5851.61	5851.61	5851.61	5851.61	5851.61	5851.61	5851.61	5851.61	5851.61	5851.61	5851.61	5851.61	5851.61	5851.61
2.50°	5816.67	5817.30	5840.87	5790.53	5698.71	5681.29	5726.73	5782.51	5845.16	5862.35	5856.23	5795.96	5708.81	5665.52	5708.11	5763.86	5816.67
5.00°	5288.53	5299.74	5284.25	5275.92	5319.58	5369.92	5238.97	5214.63	5225.84	5237.83	5236.51	5209.18	5259.62	5380.57	5299.64	5298.90	5288.53
7.50°	4694.86	4706.59	4696.63	4657.09	4567.36	4494.66	4488.37	4498.68	4577.57	4571.43	4599.16	4549.95	4482.95	4495.76	4592.11	4653.30	4694.86
10.00°	3583.13	3592.39	3586.79	3564.82	3536.24	3610.70	3571.02	3535.64	3541.36	3546.22	3550.57	3537.33	3592.22	3553.23	3545.48	3570.41	3583.13
12.50°	2553.13	2569.55	2529.43	2584.61	2698.46	2688.45	2555.12	2512.69	2512.58	2510.39	2539.93	2492.64	2598.27	2714.70	2684.45	2640.51	2553.13
15.00°	2015.76	2025.35	2004.91	2016.07	1986.46	1891.50	1936.49	1964.90	2013.98	2017.37	2024.45	1985.89	1938.18	1882.14	2007.37	2032.21	2015.76
17.50°	1528.56	1537.06	1514.88	1525.75	1545.20	1542.55	1520.59	1508.68	1528.75	1532.86	1537.23	1507.23	1541.97	1554.16	1545.06	1546.36	1528.56
20.00°	1276.47	1281.20	1270.25	1273.17	1258.99	1233.35	1245.98	1256.07	1286.95	1289.42	1291.47	1273.24	1258.72	1238.07	1271.49	1282.09	1276.47
22.50°	1043.34	1046.11	1038.36	1044.70	1046.41	1042.04	1034.22	1033.35	1051.61	1051.44	1056.74	1044.22	1053.28	1054.91	1055.30	1055.83	1043.34
25.00°	881.78	883.00	876.92	878.98	870.19	865.90	867.97	871.62	885.21	888.55	890.67	883.38	882.19	873.90	883.13	889.13	881.78
27.50°	730.16	730.74	723.62	727.26	730.55	728.36	718.91	716.52	725.25	730.53	733.28	724.75	731.97	740.54	740.49	740.56	730.16
30.00°	610.16	609.79	605.75	606.54	606.35	597.36	596.56	600.78	612.93	617.35	618.77	610.18	605.35	608.26	617.58	617.07	610.16
32.50°	489.87	488.37	487.07	486.00	485.96	480.51	482.68	487.74	499.13	502.91	502.38	494.90	491.13	488.90	494.47	494.47	489.87
35.00°	368.83	365.78	365.56	365.80	366.95	363.24	362.34	366.59	376.95	380.12	378.55	371.64	370.63	369.43	371.24	372.95	368.83
37.50°	253.41	249.93	249.09	251.16	251.62	245.17	240.31	245.23	254.65	256.52	253.99	249.07	247.31	248.96	255.59	258.17	253.41
40.00°	150.67	148.11	147.40	145.82	137.41	144.32	142.66	138.99	131.74	128.84	127.04	132.03	143.28	136.11	143.79	150.48	150.67
42.50°	72.02	71.53	67.03	70.57	75.78	71.64	50.12	36.10	32.51	24.14	30.39	30.18	46.64	70.04	76.14	77.72	72.02
45.00°	40.79	40.89	39.47	38.89	27.27	25.16	25.71	22.03	19.03	14.33	17.48	18.00	17.08	14.53	27.73	37.63	40.79
47.50°	18.42	19.82	18.61	17.93	14.37	15.93	12.72	8.64	7.96	6.14	7.28	7.39	9.54	9.21	11.17	16.20	18.42
50.00°	11.11	13.82	12.11	10.50	8.75	8.82	7.23	4.75	4.25	3.45	3.40	3.97	5.26	4.59	6.60	10.00	11.11
52.50°	5.59	8.34	6.70	5.21	4.77	4.33	2.65	1.25	1.43	1.34	0.83	1.19	1.87	2.72	4.04	5.65	5.59
55.00°	2.68	3.57	3.28	2.33	1.05	1.66	1.68	1.13	0.91	0.86	0.86	0.82	0.88	1.27	2.10	2.61	2.68
57.50°	0.93	0.88	1.07	0.76	0.53	0.96	1.00	0.99	0.54	0.53	0.79	0.55	0.43	1.15	1.33	1.36	0.93
60.00°	0.68	0.68	0.77	0.47	0.38	0.65	0.77	0.77	0.50	0.55	0.53	0.57	0.36	1.05	0.86	1.22	0.68
62.50°	0.53	0.60	0.60	0.39	0.42	0.71	0.57	0.62	0.48	0.53	0.40	0.54	0.36	0.98	0.76	0.92	0.53
65.00°	0.51	0.66	0.60	0.48	0.47	0.69	0.67	0.83	0.52	0.41	0.48	0.40	0.29	0.92	0.73	0.53	0.51
67.50°	0.52	0.62	0.50	0.57	0.56	0.59	0.78	0.93	0.56	0.34	0.54	0.32	0.21	0.91	0.67	0.51	0.52
70.00°	0.56	0.48	0.26	0.65	0.65	0.55	0.74	0.61	0.61	0.38	0.59	0.34	0.21	0.85	0.61	0.68	0.56
72.50°	0.52	0.39	0.20	0.65	0.52	0.55	0.71	0.41	0.64	0.38	0.58	0.34	0.21	0.71	0.66	0.71	0.52
75.00°	0.42	0.34	0.35	0.59	0.39	0.51	0.95	0.61	0.63	0.31	0.50	0.29	0.42	0.58	0.73	0.70	0.42
77.50°	0.41	0.37	0.39	0.57	0.39	0.43	1.15	0.75	0.60	0.29	0.45	0.28	0.63	0.46	0.77	0.59	0.41
80.00°	0.48	0.47	0.33	0.58	0.40	0.47	0.98	0.72	0.54	0.31	0.41	0.30	0.62	0.39	0.80	0.44	0.48
82.50°	0.48	0.46	0.41	0.45	0.56	0.57	0.83	0.71	0.58	0.36	0.44	0.36	0.60	0.39	0.98	0.43	0.48
85.00°	0.44	0.39	0.62	0.25	0.68	0.62	0.71	0.73	0.73	0.43	0.54	0.45	0.39	0.45	1.18	0.47	0.44
87.50°	0.39	0.39	0.67	0.21	0.51	0.64	0.63	0.67	0.71	0.51	0.51	0.46	0.19	0.57	0.94	0.62	0.39
90.00°	0.34	0.42	0.61	0.24	0.35	0.60	0.72	0.45	0.52	0.61	0.41	0.36	0.19	0.57	0.70	0.80	0.34
92.50°	0.29	0.36	0.48	0.35	0.32	0.53	0.75	0.35	0.43	0.59	0.41	0.35	0.21	0.44	0.61	0.86	0.29
95.00°	0.24	0.25	0.29	0.49	0.32	0.63	0.54	0.48	0.42	0.48	0.50	0.44	0.44	0.35	0.52	0.90	0.24
97.50°	0.35	0.24	0.28	0.46	0.43	0.79	0.38	0.54	0.41	0.41	0.48	0.51	0.64	0.30	0.52	0.90	0.35
100.00°	0.53	0.26	0.37	0.36	0.50	0.88	0.40	0.47	0.38	0.37	0.41	0.55	0.54	0.37	0.54	0.90	0.53
102.50°	0.52	0.29	0.39	0.36	0.42	0.93	0.45	0.53	0.36	0.32	0.37	0.57	0.45	0.54	0.71	0.85	0.52
105.00°	0.44	0.32	0.39	0.38	0.34	0.86	0.54	0.78	0.34	0.25	0.36	0.58	0.42	0.69	0.84	0.79	0.44
107.50°	0.51	0.37	0.56	0.40	0.32	0.77	0.59	0.81	0.45	0.29	0.53	0.57	0.40	0.84	0.60	0.70	0.51
110.00°	0.62	0.44	0.80	0.43	0.32	0.76	0.51	0.58	0.65	0.38	0.79	0.55	0.43	0.72	0.42	0.62	0.62
112.50°	0.60	0.56	0.63	0.38	0.40	0.76	0.50	0.51	0.67	0.38	0.68	0.51	0.44	0.42	0.53	0.71	0.60

Coefficients of Utilization – Zonal Cavity Method

Values are lumens delivered to the workplane.

	ρfc	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	0%
	ρcc	80%	80%	80%	80%	70%	70%	70%	70%	50%	50%	50%	30%	30%	30%	10%	10%	10%	0%
	ρw	70%	50%	30%	10%	70%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	30%
RCR	0	2009	2009	2009	2009	1962	1962	1962	1962	1874	1874	1874	1793	1793	1793	1719	1719	1719	1684
	1	1932	1891	1856	1823	1890	1855	1823	1794	1787	1761	1738	1724	1704	1686	1666	1651	1637	1618
	2	1856	1787	1729	1681	1820	1758	1706	1662	1704	1662	1626	1654	1620	1591	1608	1581	1557	1550
	3	1783	1693	1624	1568	1751	1670	1607	1555	1627	1574	1530	1587	1543	1506	1550	1514	1483	1485
	4	1715	1610	1533	1474	1686	1591	1520	1465	1556	1496	1448	1523	1472	1431	1493	1450	1415	1424
	5	1650	1534	1453	1394	1625	1519	1444	1387	1490	1425	1375	1463	1407	1363	1438	1390	1352	1366
	6	1588	1465	1383	1324	1566	1453	1376	1319	1429	1361	1310	1407	1347	1302	1386	1334	1293	1311
	7	1531	1403	1320	1262	1511	1392	1314	1259	1372	1303	1252	1354	1292	1246	1336	1281	1239	1260
	8	1477	1346	1264	1207	1458	1337	1259	1205	1320	1250	1200	1304	1241	1195	1289	1232	1190	1213
	9	1426	1293	1212	1157	1409	1286	1208	1155	1271	1201	1152	1257	1194	1148	1244	1187	1144	1169
	10	1378	1245	1165	1112	1363	1238	1162	1111	1226	1156	1108	1214	1150	1105	1203	1144	1102	1128

Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	193.4 fc	2.3 ft
6.5 ft	138.5 fc	2.7 ft
7.5 ft	104.0 fc	3.1 ft
8.0 ft	91.4 fc	3.3 ft
10.0 ft	58.5 fc	4.1 ft
12.0 ft	40.6 fc	5.0 ft
14.0 ft	29.9 fc	5.8 ft
16.0 ft	22.9 fc	6.6 ft
20.0 ft	14.6 fc	8.3 ft
24.0 ft	10.2 fc	9.9 ft
28.0 ft	7.5 fc	11.6 ft

Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
0.00°	202057	202057	202057
45.00°	1992	1928	1332
55.00°	162	198	63
65.00°	42	49	38
75.00°	56	47	52
85.00°	173	244	271

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	-16.2	-15.3	-15.8	-15.0	-14.7	-19.2	-18.3	-18.8	-17.9	-17.6
	3H	-15.0	-14.2	-14.6	-13.9	-13.5	-17.4	-16.6	-17.0	-16.2	-15.9
	4H	-14.2	-13.5	-13.8	-13.1	-12.7	-16.3	-15.6	-15.9	-15.2	-14.8
	6H	-13.2	-12.5	-12.8	-12.1	-11.7	-14.3	-13.7	-13.9	-13.3	-12.9
	8H	-12.4	-11.8	-12.0	-11.4	-11.0	-13.0	-12.4	-12.5	-12.0	-11.5
	12H	-11.5	-10.9	-11.1	-10.5	-10.1	-11.4	-10.9	-11.0	-10.5	-10.0
4H	2H	-16.0	-15.2	-15.6	-14.9	-14.5	-18.5	-17.8	-18.1	-17.5	-17.1
	3H	-14.4	-13.8	-14.0	-13.4	-13.0	-16.2	-15.6	-15.8	-15.2	-14.8
	4H	-13.3	-12.8	-12.8	-12.3	-11.9	-15.0	-14.5	-14.5	-14.0	-13.6
	6H	-12.0	-11.5	-11.5	-11.1	-10.6	-13.0	-12.6	-12.6	-12.1	-11.7
	8H	-11.1	-10.7	-10.6	-10.2	-9.7	-11.6	-11.2	-11.1	-10.7	-10.2
	12H	-10.0	-9.7	-9.5	-9.2	-8.7	-9.9	-9.5	-9.4	-9.0	-8.5
8H	4H	-12.7	-12.2	-12.2	-11.8	-11.3	-13.5	-13.1	-13.0	-12.6	-12.1
	6H	-11.0	-10.7	-10.5	-10.2	-9.7	-11.5	-11.1	-10.9	-10.6	-10.1
	8H	-9.9	-9.6	-9.4	-9.1	-8.6	-10.0	-9.8	-9.5	-9.2	-8.7
	12H	-8.7	-8.4	-8.2	-7.9	-7.3	-8.3	-8.0	-7.7	-7.5	-6.9
12H	4H	-12.5	-12.2	-12.0	-11.7	-11.2	-13.2	-12.8	-12.7	-12.3	-11.8
	6H	-10.6	-10.3	-10.0	-9.8	-9.2	-10.9	-10.6	-10.4	-10.1	-9.6
	8H	-9.2	-9.0	-8.7	-8.5	-7.9	-9.4	-9.1	-8.8	-8.6	-8.0

Corrected UGR values based on total output energy
SHR = 1.0

Corrected UGR values based on total output lumens

SHR = 1.0