

Scaled data based on original data using
LM-79-08 Approved Method: Electrical and Photometric Measurements of Solid-State
Lighting Products

Test Report Prepared for

Cooper Lighting Solutions

(formerly Eaton)

Brand: NEO-RAY

Report Number: P242400

Luminaire Tested: **S122RDR-S865D835-X4F0-XX-UDD-A-W**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P242400
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-29)
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S122RDR-S865D835-X4F0-XX-UDD-A-W
Description: DEFINE 2 REGRESSED DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER
STANDARD LIGHT ENGINE
Light Source: (92) 3500K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3171.2 lumens
Efficiency: N/A
Efficacy: 91.1 lumens/watt
Spacing Criteria (0/90/45): 0.85 / 1.16 / 1.02
Luminous Opening: Rectangular (W 3.88' x L: 0.15' x H: 0')
CIE Type: Direct

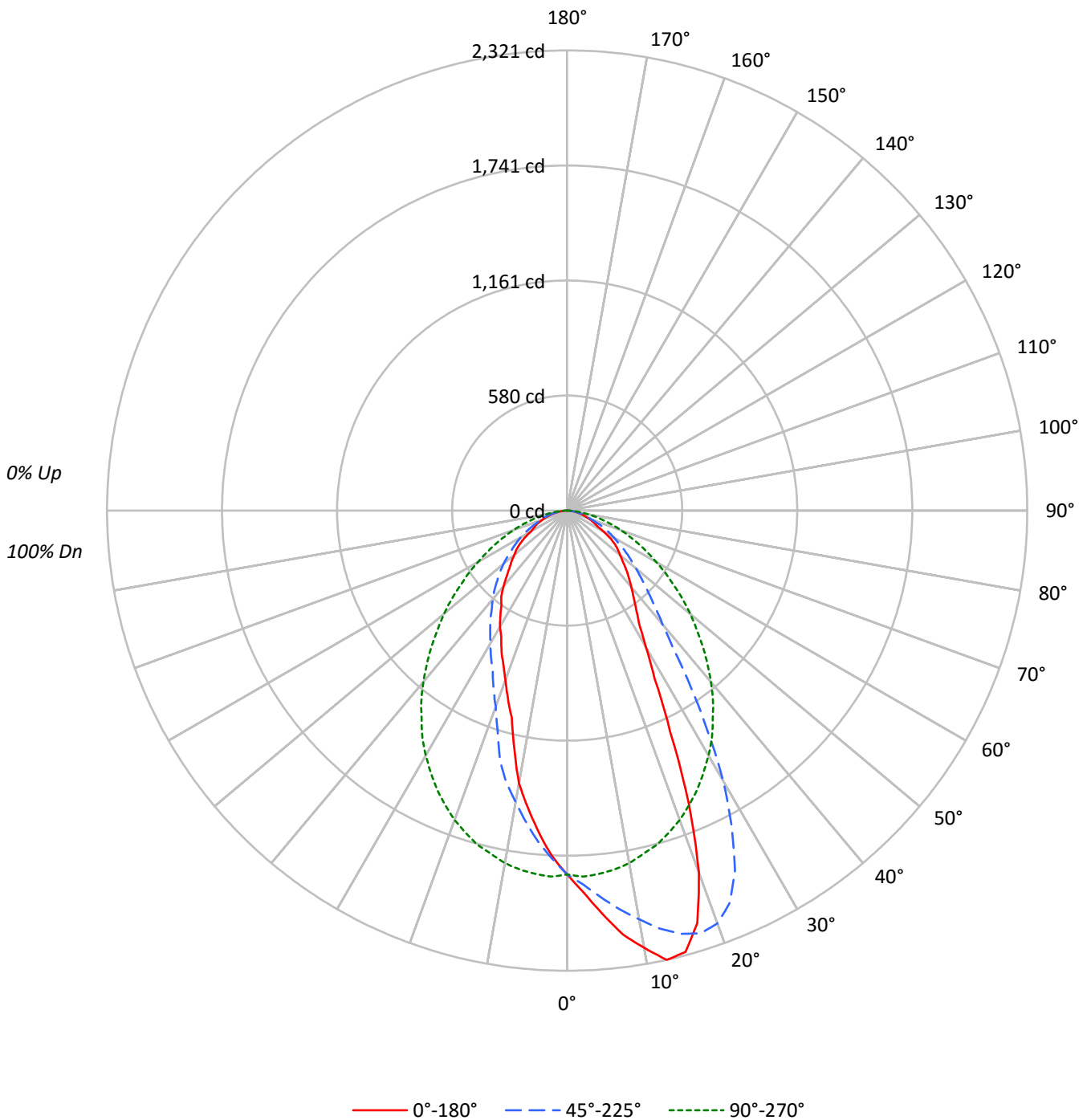
Input Watts (W): 34.8
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P242400

CATALOG NUMBER: S122RDR-S865D835-X4F0-XX-UDD-A-W

Luminous Intensity Polar Plot





TEST NUMBER: P242400

CATALOG NUMBER: S122RDR-S865D835-X4F0-XX-UDD-A-W

COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20					20					20					20					20					
RC	80					70					50					30					10					0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0		
RCR																										
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100	100	100	100	100	100	100		
1	111	106	103	100	108	104	101	98	100	97	95	96	94	92	93	91	89	87	87	87	87	87	87	87		
2	102	95	89	84	100	93	88	83	90	85	81	87	83	80	84	81	78	76	76	76	76	76	76	76		
3	94	85	78	72	92	84	77	72	81	75	71	78	73	69	76	72	68	66	66	66	66	66	66	66		
4	87	77	69	63	85	76	68	63	73	67	62	71	66	61	69	64	60	59	59	59	59	59	59	59		
5	81	70	62	56	79	69	61	56	67	60	55	65	59	55	63	58	54	52	52	52	52	52	52	52		
6	76	64	56	50	74	63	55	50	61	54	49	60	54	49	58	53	49	47	47	47	47	47	47	47		
7	71	59	51	45	69	58	50	45	56	50	45	55	49	44	54	48	44	42	42	42	42	42	42	42		
8	66	54	46	41	65	53	46	41	52	45	41	51	45	40	50	44	40	39	39	39	39	39	39	39		
9	62	50	43	38	61	50	42	37	49	42	37	47	41	37	47	41	37	35	35	35	35	35	35	35		
10	59	47	39	35	58	46	39	35	45	39	34	44	38	34	44	38	34	33	33	33	33	33	33	33		

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	34956	34956	34956
5°	39040	35174	31187
10°	43315	34927	27034
15°	45444	34417	21301
20°	39397	33659	18432
25°	25838	32620	16456
30°	17391	31360	14895
35°	14087	29773	13433
40°	12525	28048	12430
45°	11338	26024	11096
50°	10318	24018	10280
55°	9697	21788	9571
60°	8114	19749	8015
65°	6842	17934	7761
70°	6321	16017	7318
75°	5910	13939	6756
80°	5452	11474	6011
85°	5027	9048	5289



TEST NUMBER: P242400

CATALOG NUMBER: S122RDR-S865D835-X4F0-XX-UDD-A-W

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	174.1	5.5
10°-20°	485.9	15.3
20°-30°	625.3	19.7
30°-40°	593.2	18.7
40°-50°	508.3	16.0
50°-60°	387.2	12.2
60°-70°	244.2	7.7
70°-80°	121.9	3.8
80°-90°	31.3	1.0
90°-100°	0.0	0.0
100°-110°	0.0	0.0
110°-120°	0.0	0.0
120°-130°	0.0	0.0
130°-140°	0.0	0.0
140°-150°	0.0	0.0
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	1285.2	40.5
0°-40°	1878.4	59.2
0°-60°	2773.9	87.5
0°-90°	3171.2	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3171.2	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1835	1835	1835	1835	1835	
5°	2042	1958	1840	1676	1631	201
15°	2304	2210	1745	1307	1080	627
25°	1229	2003	1552	889	783	581
35°	606	1088	1280	675	578	386
45°	421	574	966	498	412	326
55°	292	357	656	337	288	257
65°	152	204	398	203	172	154
75°	80	90	189	103	92	85
85°	23	24	41	24	24	26
90°	0	0	0	0	0	



TEST NUMBER: P242400

CATALOG NUMBER: S122RDR-S865D835-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1835.2	1835.2	1835.2	1835.2	1835.2	1835.2	1835.2	1835.2	1835.2	1835.2	1835.2
2.5°	1928.3	1930.2	1932.1	1927.6	1927.6	1923.8	1915.5	1909.1	1891.3	1888.7	1888.7
5°	2041.8	2040.5	2043.1	2034.8	2023.3	2020.7	2008.6	1992.7	1976.1	1957.6	1953.8
7.5°	2156.6	2148.9	2145.7	2149.5	2137.4	2120.8	2100.4	2081.3	2052.6	2029.0	2014.4
10°	2239.5	2260.5	2247.7	2225.4	2229.9	2199.9	2184.0	2156.6	2133.6	2093.4	2084.5
12.5°	2321.1	2326.2	2324.3	2314.1	2305.8	2287.3	2264.3	2241.4	2194.2	2159.1	2122.1
15°	2304.5	2316.6	2319.8	2316.0	2319.2	2317.9	2306.4	2286.6	2249.7	2210.1	2175.7
17.5°	2182.1	2196.1	2207.6	2217.8	2233.7	2265.0	2274.5	2278.4	2263.0	2235.0	2206.3
20°	1943.6	1929.6	1988.2	2018.2	2043.7	2107.5	2162.3	2183.3	2217.1	2216.5	2210.1
22.5°	1605.6	1613.3	1668.1	1705.1	1791.8	1855.6	1920.0	2013.7	2087.1	2141.3	2174.4
25°	1229.4	1253.6	1309.1	1357.6	1440.5	1559.1	1666.8	1791.8	1909.8	2002.9	2091.5
27.5°	956.5	959.7	1010.0	1059.1	1110.2	1212.8	1356.9	1506.8	1675.1	1796.3	1949.3
30°	790.7	786.9	805.4	832.8	874.9	950.1	1052.1	1198.8	1366.5	1575.7	1761.8
32.5°	673.4	674.6	687.4	705.9	739.0	783.7	845.5	957.8	1114.0	1318.7	1545.0
35°	605.8	605.1	615.3	630.0	644.7	677.2	725.0	787.5	896.5	1088.5	1311.7
37.5°	549.7	552.8	557.3	566.9	584.7	603.9	633.8	677.8	760.7	880.0	1080.2
40°	503.7	505.0	512.0	519.7	529.3	543.3	566.9	600.7	657.4	748.0	885.1
42.5°	461.7	462.9	467.4	474.4	481.4	495.5	514.0	542.0	585.4	651.0	758.2
45°	420.9	420.9	425.3	428.5	436.8	449.5	465.5	489.7	521.6	573.9	649.1
47.5°	381.3	381.3	384.5	390.2	396.0	406.2	422.8	443.2	466.1	508.9	575.8
50°	348.2	348.8	350.7	355.2	358.4	367.3	379.4	396.6	420.9	452.1	505.7
52.5°	321.4	320.7	323.3	324.6	326.5	332.2	340.5	355.2	376.2	402.4	444.4
55°	292.0	289.5	293.3	296.5	298.4	301.0	306.1	315.6	334.1	357.1	390.2
57.5°	257.6	256.3	258.3	261.4	267.2	273.6	276.7	283.1	292.7	310.5	345.6
60°	213.0	213.0	218.7	220.6	227.6	236.6	245.5	250.6	260.2	271.0	295.2
62.5°	173.4	174.1	176.0	177.9	181.1	192.6	206.0	218.7	227.6	237.8	251.9
65°	151.8	153.0	153.0	154.3	156.9	159.4	164.5	173.4	189.4	204.1	216.2
67.5°	132.6	132.6	133.3	134.5	135.2	138.4	140.3	144.7	147.9	164.5	181.1
70°	113.5	115.4	114.8	116.1	116.7	118.0	120.5	122.4	128.2	131.4	140.3
72.5°	95.6	96.9	96.9	97.6	99.5	99.5	101.4	103.3	106.5	109.0	112.9
75°	80.3	79.7	80.3	81.6	82.3	82.9	82.9	85.4	87.4	89.9	93.1
77.5°	65.0	65.7	65.7	65.7	65.7	67.0	67.0	68.2	70.1	71.4	73.3
80°	49.7	50.4	49.7	50.4	51.0	51.7	51.0	51.7	53.6	54.8	54.8
82.5°	35.7	35.7	36.3	36.3	36.3	36.3	37.6	37.6	38.9	38.3	38.9
85°	23.0	22.3	22.3	22.3	23.0	23.6	23.0	23.0	23.6	23.6	23.6
87.5°	10.2	10.8	10.8	10.8	10.8	10.8	10.8	11.5	10.8	11.5	10.8
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P242400

CATALOG NUMBER: S122RDR-S865D835-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	1835.2	1835.2	1835.2	1835.2	1835.2	1835.2	1835.2	1835.2	1835.2	1835.2	1835.2
2.5°	1890.0	1884.9	1880.5	1869.0	1863.2	1850.5	1848.6	1847.9	1831.4	1815.4	1810.9
5°	1943.6	1933.4	1918.1	1900.2	1881.7	1862.6	1849.8	1839.6	1814.1	1789.9	1775.9
7.5°	1996.5	1978.0	1953.8	1923.2	1897.0	1866.4	1845.4	1826.3	1791.2	1759.3	1738.3
10°	2057.1	2021.4	1986.3	1939.8	1903.4	1867.7	1834.5	1805.8	1765.0	1719.1	1686.6
12.5°	2094.7	2054.5	2002.9	1957.6	1907.9	1860.0	1812.9	1774.0	1724.2	1676.4	1636.2
15°	2127.9	2085.8	2027.1	1962.1	1901.5	1842.2	1791.2	1745.3	1682.8	1626.0	1578.8
17.5°	2158.5	2100.4	2039.9	1964.6	1897.7	1825.6	1761.2	1703.8	1635.6	1568.6	1515.1
20°	2171.9	2114.5	2041.8	1966.5	1883.6	1795.0	1724.2	1660.5	1585.9	1511.2	1447.5
22.5°	2163.6	2122.1	2039.2	1945.5	1860.0	1766.3	1684.1	1607.5	1522.7	1446.2	1369.7
25°	2120.2	2104.9	2028.4	1930.2	1833.3	1725.5	1633.0	1552.1	1457.7	1376.1	1295.7
27.5°	2040.5	2062.8	2008.6	1902.1	1797.6	1681.5	1580.8	1489.6	1393.3	1302.1	1221.8
30°	1914.2	1990.1	1969.7	1872.8	1752.3	1638.8	1522.1	1425.8	1321.2	1226.9	1147.8
32.5°	1741.4	1879.2	1909.1	1832.0	1706.4	1578.8	1455.1	1359.5	1249.2	1148.4	1071.9
35°	1555.9	1743.4	1829.4	1777.8	1652.8	1518.3	1392.0	1280.4	1170.7	1072.5	996.0
37.5°	1335.9	1585.9	1718.5	1712.7	1593.5	1456.4	1319.3	1209.0	1096.1	999.2	919.5
40°	1122.9	1399.7	1586.5	1627.9	1531.0	1379.9	1240.9	1128.0	1018.3	924.0	829.0
42.5°	931.6	1207.1	1447.5	1527.2	1455.1	1305.3	1165.6	1046.4	940.5	852.5	755.0
45°	784.3	1025.4	1278.5	1407.3	1364.6	1225.6	1078.3	966.1	865.9	788.8	695.7
47.5°	679.1	854.5	1108.9	1277.2	1272.1	1140.1	993.5	885.7	791.3	719.9	640.8
50°	591.7	739.7	946.9	1144.6	1161.2	1054.7	917.0	810.5	723.7	647.9	587.3
52.5°	513.3	628.7	809.8	997.3	1052.1	963.5	830.9	734.6	651.0	582.8	533.1
55°	447.0	541.4	682.9	860.2	931.6	866.6	748.0	656.1	587.9	529.3	484.6
57.5°	389.0	462.9	580.9	729.5	810.5	766.5	665.1	589.2	528.6	473.8	438.1
60°	334.8	392.8	489.1	608.3	700.1	671.5	587.9	518.4	468.7	422.8	389.6
62.5°	283.8	331.6	410.7	501.8	584.1	576.4	512.0	456.6	414.5	373.7	346.9
65°	236.6	272.9	337.3	413.2	480.8	486.5	437.4	397.9	359.0	325.8	301.0
67.5°	195.8	220.6	269.1	336.0	387.7	405.6	372.4	340.5	308.6	281.8	259.5
70°	158.8	177.9	211.1	262.7	309.3	328.4	311.2	287.6	260.8	239.8	221.3
72.5°	121.2	139.6	162.0	196.4	234.7	255.7	252.5	237.2	216.8	200.2	183.0
75°	96.9	102.7	119.2	144.7	176.0	193.8	198.3	189.4	172.2	158.8	148.6
77.5°	75.2	79.1	88.0	103.3	125.0	140.9	147.9	146.7	133.9	125.0	115.4
80°	57.4	59.3	63.1	68.9	84.2	100.1	104.6	104.6	96.3	93.1	83.5
82.5°	40.2	41.4	43.4	45.9	51.0	64.4	69.5	70.8	66.3	61.9	54.8
85°	24.9	24.2	25.5	27.4	28.7	32.5	40.2	41.4	40.2	35.1	33.2
87.5°	10.8	11.5	11.5	10.8	11.5	12.1	15.3	18.5	15.9	14.0	12.8
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P242400

CATALOG NUMBER: S122RDR-S865D835-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	1835.2	1835.2	1835.2	1835.2	1835.2	1835.2	1835.2	1835.2	1835.2	1835.2	1835.2
2.5°	1802.7	1798.2	1789.9	1777.2	1769.5	1756.1	1747.2	1752.3	1753.6	1752.3	1751.0
5°	1760.6	1747.2	1728.7	1710.8	1694.3	1676.4	1666.2	1661.7	1652.8	1647.7	1645.2
7.5°	1712.7	1693.0	1666.8	1638.1	1611.4	1585.9	1574.4	1565.4	1548.9	1539.9	1531.7
10°	1657.9	1621.6	1595.4	1554.6	1529.7	1493.4	1468.5	1469.2	1444.3	1430.3	1420.1
12.5°	1597.3	1556.5	1508.7	1473.0	1436.0	1408.6	1377.3	1362.0	1335.3	1321.9	1290.0
15°	1529.1	1482.6	1436.6	1386.9	1351.8	1306.6	1263.2	1210.3	1167.6	1130.6	1120.4
17.5°	1456.4	1399.0	1353.7	1302.7	1247.9	1165.6	1112.1	1079.6	1054.0	1034.9	1019.6
20°	1381.2	1322.5	1273.4	1185.4	1104.4	1052.8	1015.8	992.2	965.4	944.4	932.9
22.5°	1302.1	1240.2	1168.8	1068.1	1009.4	970.5	938.6	910.6	894.6	879.3	869.1
25°	1228.1	1161.2	1050.9	983.3	932.3	888.9	865.9	849.4	830.2	807.9	797.7
27.5°	1151.0	1044.5	960.9	911.9	859.6	832.1	812.4	785.0	767.7	759.5	748.0
30°	1062.3	955.8	894.0	839.2	804.7	773.5	749.2	735.2	718.6	701.4	694.4
32.5°	963.5	883.8	825.1	781.8	746.7	721.2	703.3	678.5	667.6	658.7	642.1
35°	885.1	820.7	766.5	729.5	696.3	674.6	652.3	638.9	617.3	608.3	602.6
37.5°	813.7	757.5	716.7	675.9	650.4	624.9	612.2	589.8	581.5	567.5	556.0
40°	755.0	700.1	661.3	629.4	600.0	582.2	565.0	547.7	533.7	528.0	513.3
42.5°	695.0	653.0	614.1	578.4	561.1	542.0	519.1	507.6	492.9	482.7	475.1
45°	640.8	601.3	568.2	539.5	517.8	498.0	484.0	462.9	454.6	436.2	428.5
47.5°	593.0	554.8	522.9	494.8	473.1	461.7	441.3	422.8	411.3	398.5	387.7
50°	541.4	510.8	480.2	455.9	436.8	418.3	397.3	389.0	368.6	362.8	357.1
52.5°	494.2	465.5	438.1	414.5	395.3	377.5	359.6	348.2	336.0	330.3	326.5
55°	450.8	422.8	396.0	374.9	355.8	337.3	325.8	312.5	306.1	301.6	296.5
57.5°	406.2	380.7	359.6	338.0	318.8	303.5	289.5	281.8	275.5	270.4	263.4
60°	364.1	339.9	321.4	301.6	281.8	269.7	259.5	250.0	242.3	233.4	230.8
62.5°	319.5	299.1	282.5	263.4	246.8	235.9	226.4	217.4	207.9	193.8	190.0
65°	279.3	262.7	244.9	228.9	213.6	202.8	188.7	178.5	174.7	173.4	172.8
67.5°	242.3	226.4	211.1	194.5	180.5	168.3	160.1	158.8	156.2	155.6	153.7
70°	205.3	190.7	175.4	160.1	146.7	144.7	142.2	139.6	136.5	135.2	133.9
72.5°	172.2	156.9	141.6	130.1	126.3	123.7	121.2	118.6	116.7	115.4	114.8
75°	137.1	123.1	112.9	108.4	105.2	103.3	99.5	97.6	96.3	94.4	93.7
77.5°	104.6	95.6	90.5	88.0	84.2	82.3	79.7	77.8	75.9	75.9	74.6
80°	75.2	71.4	68.2	64.4	63.1	60.6	59.9	58.0	58.7	56.8	56.8
82.5°	54.2	49.1	46.5	45.3	44.0	42.1	41.4	40.8	40.8	39.5	39.5
85°	30.0	28.7	27.4	26.1	26.1	24.2	24.9	24.2	24.2	23.0	22.3
87.5°	12.1	11.5	10.2	10.2	10.2	9.6	9.6	8.9	8.9	8.9	8.3
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P242400

CATALOG NUMBER: S122RDR-S865D835-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	1835.2	1835.2	1835.2	1835.2
2.5°	1744.0	1745.3	1743.4	1744.6
5°	1642.0	1634.3	1633.0	1631.1
7.5°	1521.5	1520.8	1517.0	1512.5
10°	1406.0	1402.8	1402.2	1397.7
12.5°	1270.9	1246.0	1243.4	1230.7
15°	1105.1	1101.2	1088.5	1080.2
17.5°	1012.6	999.8	995.4	993.5
20°	924.0	912.5	910.6	909.3
22.5°	862.8	850.6	844.9	840.4
25°	791.3	786.9	784.3	783.0
27.5°	735.2	723.7	722.5	719.3
30°	688.7	685.5	681.0	677.2
32.5°	633.8	631.3	627.5	626.2
35°	596.2	587.3	583.5	577.7
37.5°	554.8	549.7	543.3	545.8
40°	505.0	501.8	500.6	499.9
42.5°	465.5	455.3	451.5	451.5
45°	425.3	417.0	411.3	411.9
47.5°	382.0	382.6	378.8	380.0
50°	352.6	348.8	346.2	346.9
52.5°	324.6	321.4	319.5	322.7
55°	293.3	289.5	288.9	288.2
57.5°	259.5	257.6	254.4	252.5
60°	222.5	217.4	211.1	210.4
62.5°	188.7	188.7	188.7	188.7
65°	171.5	170.9	171.5	172.2
67.5°	153.7	152.4	151.1	151.8
70°	132.6	132.0	131.4	131.4
72.5°	112.2	112.2	111.6	111.0
75°	93.1	91.8	91.8	91.8
77.5°	74.6	74.0	73.3	72.7
80°	56.1	55.5	54.8	54.8
82.5°	39.5	38.9	38.9	38.3
85°	23.0	23.6	23.0	24.2
87.5°	8.3	7.7	8.3	7.7
90°	0.0	0.0	0.0	0.0

(END OF REPORT)