

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: P242405

Luminaire Tested: **S122RDR-S865D840-X4F0-XX-UDD-A-W**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P242405
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-S865D840-X4F0-XX-UDD-A-W
Description: DEFINE 2 REGRESSED DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER
STANDARD LIGHT ENGINE
Light Source: (92) 4000K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3202.5 lumens
Efficiency: N/A
Efficacy: 92.0 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

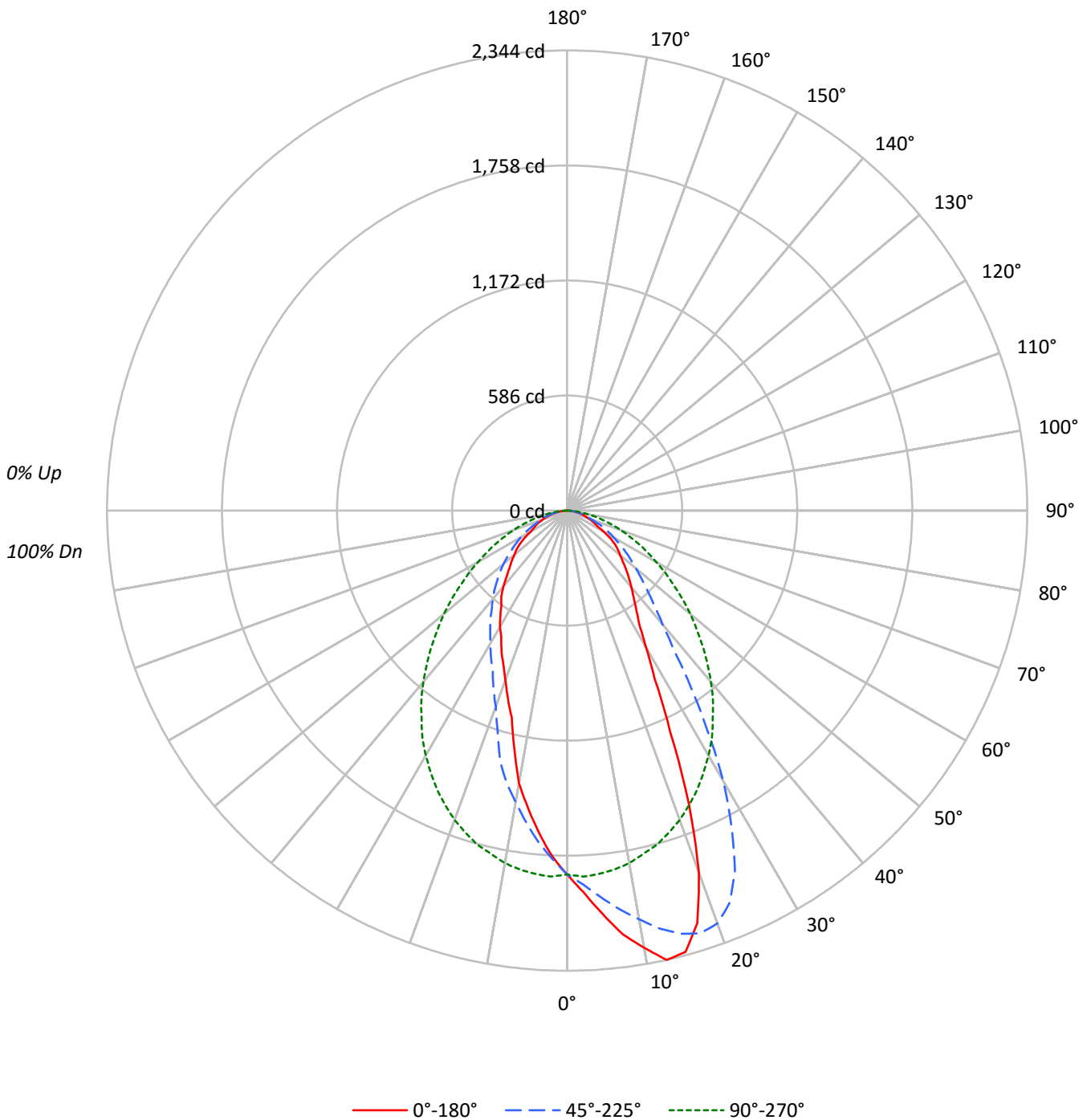
Input Watts (W): 34.8
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





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

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	35301	35301	35301
5°	39424	35522	31495
10°	43741	35273	27301
15°	45892	34756	21510
20°	39786	33989	18614
25°	26092	32942	16620
30°	17563	31670	15042
35°	14226	30066	13566
40°	12649	28324	12554
45°	11448	26280	11206
50°	10419	24255	10380
55°	9793	22004	9667
60°	8194	19943	8095
65°	6909	18109	7838
70°	6382	16173	7390
75°	5969	14079	6822
80°	5507	11583	6077
85°	5070	9157	5354



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	175.8	5.5
10°-20°	490.6	15.3
20°-30°	631.5	19.7
30°-40°	599.0	18.7
40°-50°	513.3	16.0
50°-60°	391.0	12.2
60°-70°	246.6	7.7
70°-80°	123.1	3.8
80°-90°	31.6	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°	1297.9	40.5
0°-40°	1896.9	59.2
0°-60°	2801.2	87.5
0°-90°	3202.5	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3202.5	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1853	1853	1853	1853	1853	
5°	2062	1977	1858	1693	1647	203
15°	2327	2232	1762	1319	1091	633
25°	1242	2023	1567	898	791	586
35°	612	1099	1293	681	583	389
45°	425	580	976	503	416	329
55°	295	361	663	341	291	260
65°	153	206	402	205	174	155
75°	81	91	191	104	93	86
85°	23	24	42	24	24	26
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1853.3	1853.3	1853.3	1853.3	1853.3	1853.3	1853.3	1853.3	1853.3	1853.3	1853.3
2.5°	1947.3	1949.2	1951.2	1946.7	1946.7	1942.8	1934.4	1928.0	1909.9	1907.4	1907.4
5°	2061.9	2060.6	2063.2	2054.8	2043.2	2040.7	2028.4	2012.3	1995.6	1976.9	1973.1
7.5°	2177.8	2170.1	2166.9	2170.7	2158.5	2141.8	2121.2	2101.8	2072.9	2049.0	2034.2
10°	2261.5	2282.8	2269.9	2247.4	2251.9	2221.6	2205.5	2177.8	2154.7	2114.1	2105.1
12.5°	2344.0	2349.1	2347.2	2336.9	2328.5	2309.8	2286.7	2263.5	2215.8	2180.4	2143.1
15°	2327.2	2339.5	2342.7	2338.8	2342.0	2340.8	2329.2	2309.2	2271.8	2231.9	2197.2
17.5°	2203.6	2217.8	2229.3	2239.7	2255.7	2287.3	2297.0	2300.8	2285.4	2257.0	2228.1
20°	1962.8	1948.6	2007.8	2038.1	2063.9	2128.2	2183.6	2204.9	2239.0	2238.4	2231.9
22.5°	1621.5	1629.2	1684.6	1721.9	1809.5	1873.9	1938.9	2033.6	2107.6	2162.4	2195.9
25°	1241.5	1266.0	1322.0	1371.0	1454.7	1574.5	1683.3	1809.5	1928.6	2022.6	2112.1
27.5°	965.9	969.1	1020.0	1069.6	1121.1	1224.8	1370.3	1521.6	1691.7	1814.0	1968.5
30°	798.5	794.6	813.3	841.0	883.5	959.5	1062.5	1210.6	1380.0	1591.2	1779.2
32.5°	680.0	681.3	694.2	712.9	746.3	791.4	853.9	967.2	1125.0	1331.7	1560.3
35°	611.8	611.1	621.4	636.2	651.0	683.9	732.2	795.3	905.4	1099.2	1324.6
37.5°	555.1	558.3	562.8	572.5	590.5	609.8	640.1	684.5	768.2	888.6	1090.8
40°	508.7	510.0	517.1	524.8	534.5	548.6	572.5	606.6	663.9	755.4	893.8
42.5°	466.2	467.5	472.0	479.1	486.2	500.3	519.0	547.4	591.1	657.5	765.7
45°	425.0	425.0	429.5	432.7	441.1	454.0	470.1	494.6	526.7	579.6	655.5
47.5°	385.1	385.1	388.3	394.1	399.9	410.2	426.9	447.5	470.7	513.9	581.5
50°	351.6	352.2	354.2	358.7	361.9	370.9	383.1	400.5	425.0	456.6	510.7
52.5°	324.5	323.9	326.5	327.8	329.7	335.5	343.9	358.7	379.9	406.3	448.8
55°	294.9	292.4	296.2	299.4	301.4	303.9	309.1	318.8	337.4	360.6	394.1
57.5°	260.2	258.9	260.8	264.0	269.8	276.3	279.5	285.9	295.6	313.6	349.0
60°	215.1	215.1	220.9	222.8	229.9	238.9	247.9	253.1	262.7	273.7	298.1
62.5°	175.2	175.8	177.7	179.7	182.9	194.5	208.0	220.9	229.9	240.2	254.4
65°	153.3	154.5	154.5	155.8	158.4	161.0	166.1	175.2	191.3	206.1	218.3
67.5°	133.9	133.9	134.6	135.9	136.5	139.7	141.7	146.2	149.4	166.1	182.9
70°	114.6	116.6	115.9	117.2	117.8	119.1	121.7	123.6	129.4	132.7	141.7
72.5°	96.6	97.9	97.9	98.5	100.5	100.5	102.4	104.3	107.5	110.1	114.0
75°	81.1	80.5	81.1	82.4	83.1	83.7	83.7	86.3	88.2	90.8	94.0
77.5°	65.7	66.3	66.3	66.3	66.3	67.6	67.6	68.9	70.8	72.1	74.1
80°	50.2	50.9	50.2	50.9	51.5	52.2	51.5	52.2	54.1	55.4	55.4
82.5°	36.1	36.1	36.7	36.7	36.7	36.7	38.0	38.0	39.3	38.6	39.3
85°	23.2	22.5	22.5	22.5	23.2	23.8	23.2	23.2	23.8	23.8	23.8
87.5°	10.3	10.9	10.9	10.9	10.9	10.9	10.9	11.6	10.9	11.6	10.9
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	1853.3	1853.3	1853.3	1853.3	1853.3	1853.3	1853.3	1853.3	1853.3	1853.3	1853.3
2.5°	1908.7	1903.5	1899.0	1887.4	1881.6	1868.7	1866.8	1866.2	1849.4	1833.3	1828.8
5°	1962.8	1952.5	1937.0	1919.0	1900.3	1881.0	1868.1	1857.8	1832.0	1807.6	1793.4
7.5°	2016.2	1997.5	1973.1	1942.1	1915.7	1884.8	1863.6	1844.3	1808.9	1776.7	1755.4
10°	2077.4	2041.3	2005.9	1958.9	1922.2	1886.1	1852.6	1823.7	1782.4	1736.1	1703.2
12.5°	2115.4	2074.8	2022.6	1976.9	1926.7	1878.4	1830.7	1791.5	1741.2	1692.9	1652.4
15°	2148.9	2106.4	2047.1	1981.4	1920.3	1860.4	1808.9	1762.5	1699.4	1642.1	1594.4
17.5°	2179.8	2121.2	2060.0	1984.0	1916.4	1843.6	1778.6	1720.6	1651.7	1584.1	1530.0
20°	2193.3	2135.3	2061.9	1985.9	1902.2	1812.7	1741.2	1676.8	1601.5	1526.2	1461.8
22.5°	2184.9	2143.1	2059.3	1964.7	1878.4	1783.7	1700.7	1623.4	1537.7	1460.5	1383.2
25°	2141.1	2125.7	2048.4	1949.2	1851.4	1742.5	1649.2	1567.4	1472.1	1389.6	1308.5
27.5°	2060.6	2083.2	2028.4	1920.9	1815.3	1698.1	1596.3	1504.3	1407.0	1314.9	1233.8
30°	1933.1	2009.8	1989.2	1891.3	1769.6	1654.9	1537.1	1439.9	1334.3	1239.0	1159.1
32.5°	1758.6	1897.7	1928.0	1850.1	1723.2	1594.4	1469.5	1372.9	1261.5	1159.8	1082.5
35°	1571.2	1760.6	1847.5	1795.3	1669.1	1533.2	1405.7	1293.0	1182.3	1083.1	1005.8
37.5°	1349.1	1601.5	1735.4	1729.6	1609.2	1470.8	1332.3	1220.9	1106.9	1009.1	928.6
40°	1134.0	1413.5	1602.1	1644.0	1546.1	1393.5	1253.1	1139.1	1028.4	933.1	837.1
42.5°	940.8	1219.0	1461.8	1542.3	1469.5	1318.2	1177.1	1056.7	949.8	861.0	762.4
45°	792.1	1035.5	1291.1	1421.2	1378.0	1237.7	1088.9	975.6	874.5	796.6	702.5
47.5°	685.8	862.9	1119.8	1289.8	1284.7	1151.4	1003.3	894.4	799.1	727.0	647.2
50°	597.6	747.0	956.3	1155.9	1172.6	1065.1	926.0	818.5	730.9	654.3	593.1
52.5°	518.4	634.9	817.8	1007.1	1062.5	973.0	839.1	741.8	657.5	588.6	538.3
55°	451.4	546.7	689.7	868.7	940.8	875.1	755.4	662.6	593.7	534.5	489.4
57.5°	392.8	467.5	586.6	736.7	818.5	774.0	671.6	595.0	533.8	478.5	442.4
60°	338.1	396.7	493.9	614.3	707.1	678.1	593.7	523.5	473.3	426.9	393.5
62.5°	286.6	334.9	414.7	506.8	589.9	582.1	517.1	461.1	418.6	377.4	350.3
65°	238.9	275.6	340.6	417.3	485.5	491.3	441.7	401.8	362.5	329.1	303.9
67.5°	197.7	222.8	271.7	339.4	391.5	409.6	376.1	343.9	311.7	284.6	262.1
70°	160.3	179.7	213.1	265.3	312.3	331.6	314.2	290.4	263.4	242.1	223.4
72.5°	122.4	141.0	163.6	198.3	237.0	258.2	255.0	239.5	218.9	202.2	184.8
75°	97.9	103.7	120.4	146.2	177.7	195.8	200.3	191.3	173.9	160.3	150.0
77.5°	76.0	79.8	88.9	104.3	126.2	142.3	149.4	148.1	135.2	126.2	116.6
80°	58.0	59.9	63.8	69.5	85.0	101.1	105.6	105.6	97.2	94.0	84.4
82.5°	40.6	41.9	43.8	46.4	51.5	65.0	70.2	71.5	67.0	62.5	55.4
85°	25.1	24.5	25.8	27.7	29.0	32.8	40.6	41.9	40.6	35.4	33.5
87.5°	10.9	11.6	11.6	10.9	11.6	12.2	15.5	18.7	16.1	14.2	12.9
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



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CANDELA DISTRIBUTION (continued):

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	1853.3	1853.3	1853.3	1853.3	1853.3	1853.3	1853.3	1853.3	1853.3	1853.3	1853.3
2.5°	1820.4	1815.9	1807.6	1794.7	1787.0	1773.4	1764.4	1769.6	1770.9	1769.6	1768.3
5°	1777.9	1764.4	1745.7	1727.7	1711.0	1692.9	1682.6	1678.1	1669.1	1664.0	1661.4
7.5°	1729.6	1709.7	1683.3	1654.3	1627.3	1601.5	1589.9	1580.9	1564.1	1555.1	1546.8
10°	1674.3	1637.6	1611.2	1569.9	1544.8	1508.1	1483.0	1483.7	1458.5	1444.4	1434.1
12.5°	1613.1	1571.9	1523.6	1487.5	1450.2	1422.5	1390.9	1375.5	1348.4	1334.9	1302.7
15°	1544.2	1497.2	1450.8	1400.6	1365.2	1319.4	1275.7	1222.2	1179.1	1141.7	1131.4
17.5°	1470.8	1412.8	1367.1	1315.6	1260.2	1177.1	1123.0	1090.2	1064.4	1045.1	1029.7
20°	1394.8	1335.5	1286.0	1197.1	1115.3	1063.2	1025.8	1002.0	974.9	953.7	942.1
22.5°	1314.9	1252.5	1180.4	1078.6	1019.4	980.1	947.9	919.6	903.5	888.0	877.7
25°	1240.2	1172.6	1061.2	993.0	941.5	897.7	874.5	857.7	838.4	815.9	805.6
27.5°	1162.3	1054.8	970.4	920.8	868.0	840.4	820.4	792.7	775.3	766.9	755.4
30°	1072.8	965.3	902.8	847.4	812.7	781.1	756.6	742.5	725.7	708.3	701.3
32.5°	973.0	892.5	833.3	789.5	754.1	728.3	710.3	685.2	674.2	665.2	648.5
35°	893.8	828.8	774.0	736.7	703.2	681.3	658.8	645.2	623.3	614.3	608.5
37.5°	821.7	765.0	723.8	682.6	656.8	631.1	618.2	595.7	587.3	573.1	561.5
40°	762.4	707.1	667.8	635.6	606.0	587.9	570.5	553.2	539.0	533.2	518.4
42.5°	701.9	659.4	620.1	584.1	566.7	547.4	524.2	512.6	497.8	487.5	479.7
45°	647.2	607.2	573.8	544.8	522.9	502.9	488.8	467.5	459.1	440.5	432.7
47.5°	598.9	560.2	528.0	499.7	477.8	466.2	445.6	426.9	415.3	402.5	391.5
50°	546.7	515.8	484.9	460.4	441.1	422.4	401.2	392.8	372.2	366.4	360.6
52.5°	499.1	470.1	442.4	418.6	399.2	381.2	363.2	351.6	339.4	333.6	329.7
55°	455.3	426.9	399.9	378.6	359.3	340.6	329.1	315.5	309.1	304.6	299.4
57.5°	410.2	384.4	363.2	341.3	322.0	306.5	292.4	284.6	278.2	273.0	266.0
60°	367.7	343.2	324.5	304.6	284.6	272.4	262.1	252.4	244.7	235.7	233.1
62.5°	322.6	302.0	285.3	266.0	249.2	238.3	228.6	219.6	209.9	195.8	191.9
65°	282.0	265.3	247.3	231.2	215.7	204.8	190.6	180.3	176.4	175.2	174.5
67.5°	244.7	228.6	213.1	196.4	182.2	170.0	161.6	160.3	157.8	157.1	155.2
70°	207.4	192.5	177.1	161.6	148.1	146.2	143.6	141.0	137.8	136.5	135.2
72.5°	173.9	158.4	143.0	131.4	127.5	124.9	122.4	119.8	117.8	116.6	115.9
75°	138.4	124.3	114.0	109.5	106.3	104.3	100.5	98.5	97.2	95.3	94.7
77.5°	105.6	96.6	91.4	88.9	85.0	83.1	80.5	78.6	76.6	76.6	75.3
80°	76.0	72.1	68.9	65.0	63.8	61.2	60.5	58.6	59.2	57.3	57.3
82.5°	54.7	49.6	47.0	45.7	44.4	42.5	41.9	41.2	41.2	39.9	39.9
85°	30.3	29.0	27.7	26.4	26.4	24.5	25.1	24.5	24.5	23.2	22.5
87.5°	12.2	11.6	10.3	10.3	10.3	9.7	9.7	9.0	9.0	9.0	8.4
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: P242405

CATALOG NUMBER: S122RDR-S865D840-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	1853.3	1853.3	1853.3	1853.3
2.5°	1761.2	1762.5	1760.6	1761.8
5°	1658.2	1650.4	1649.2	1647.2
7.5°	1536.5	1535.8	1532.0	1527.4
10°	1419.9	1416.7	1416.0	1411.5
12.5°	1283.4	1258.3	1255.7	1242.8
15°	1116.0	1112.1	1099.2	1090.8
17.5°	1022.6	1009.7	1005.2	1003.3
20°	933.1	921.5	919.6	918.3
22.5°	871.3	859.0	853.2	848.7
25°	799.1	794.6	792.1	790.8
27.5°	742.5	730.9	729.6	726.4
30°	695.5	692.2	687.7	683.9
32.5°	640.1	637.5	633.6	632.4
35°	602.1	593.1	589.2	583.4
37.5°	560.2	555.1	548.6	551.2
40°	510.0	506.8	505.5	504.9
42.5°	470.1	459.8	455.9	455.9
45°	429.5	421.1	415.3	416.0
47.5°	385.7	386.4	382.5	383.8
50°	356.1	352.2	349.7	350.3
52.5°	327.8	324.5	322.6	325.8
55°	296.2	292.4	291.7	291.1
57.5°	262.1	260.2	256.9	255.0
60°	224.7	219.6	213.1	212.5
62.5°	190.6	190.6	190.6	190.6
65°	173.2	172.6	173.2	173.9
67.5°	155.2	153.9	152.6	153.3
70°	133.9	133.3	132.7	132.7
72.5°	113.3	113.3	112.7	112.0
75°	94.0	92.7	92.7	92.7
77.5°	75.3	74.7	74.1	73.4
80°	56.7	56.0	55.4	55.4
82.5°	39.9	39.3	39.3	38.6
85°	23.2	23.8	23.2	24.5
87.5°	8.4	7.7	8.4	7.7
90°	0.0	0.0	0.0	0.0

(END OF REPORT)