

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: P243260

Luminaire Tested: **S122RDR-H865D835-X4F0-XX-UDD-A-W**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P243260  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-68)  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: S122RDR-H865D835-X4F0-XX-UDD-A-W  
Description: DEFINE 2 REGRESSED DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER.  
HIGH PERFORMANCE LIGHT ENGINE  
Light Source: (184) 3500K CCT, 80 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 3100.9 lumens  
Efficiency: N/A  
Efficacy: 98.4 lumens/watt  
Spacing Criteria (0/90/45): 0.81 / 1.17 / 0.99  
Luminous Opening: Rectangular (W 3.88' x L: 0.15' x H: 0')  
CIE Type: Direct

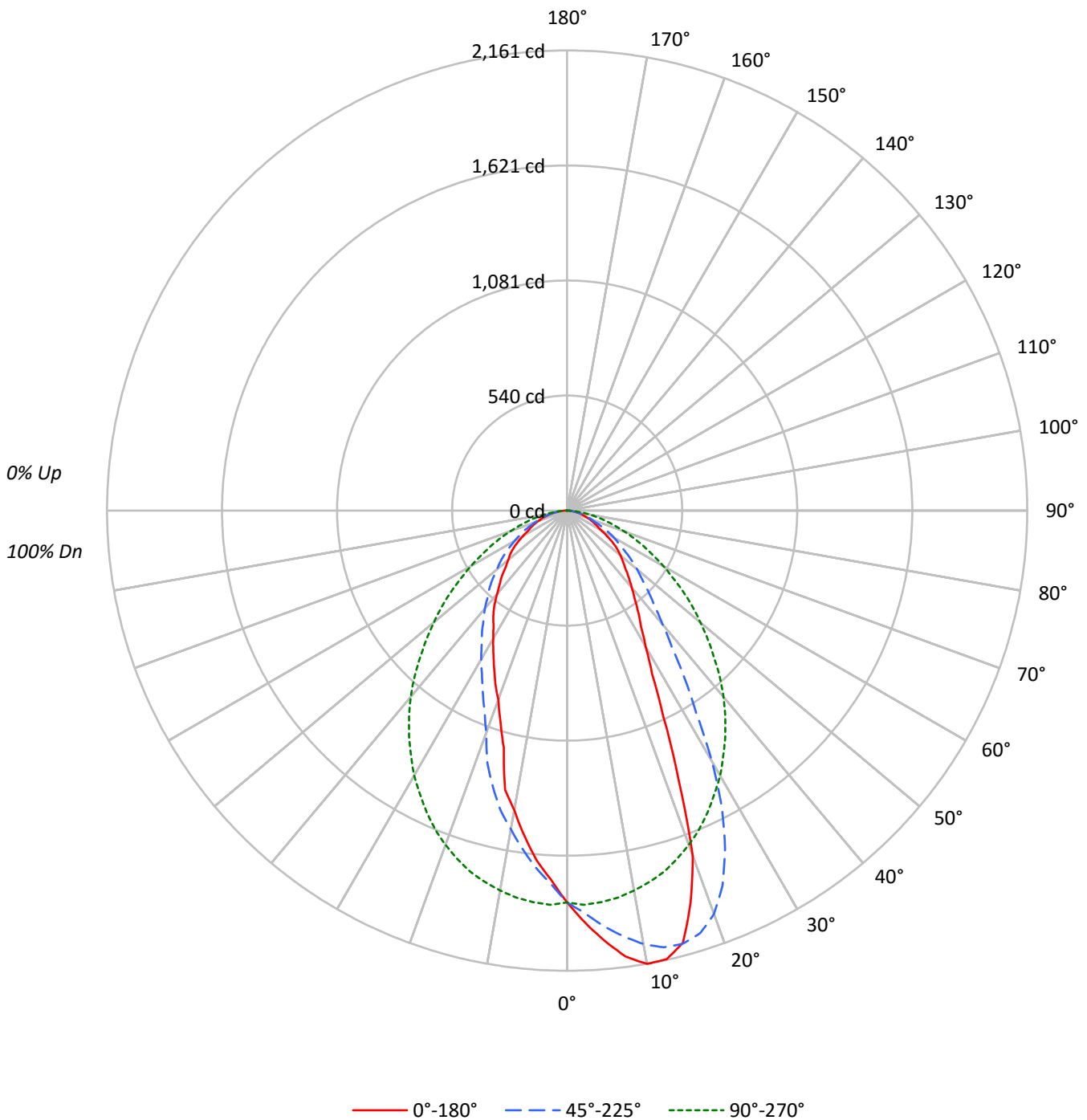
Input Watts (W): 31.5  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	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
1	110	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	86	83	79	84	80	78				76	
3	94	85	78	72	92	84	77	72	81	75	70	78	73	69	76	72	68				66	
4	87	77	69	63	85	76	68	63	73	67	62	71	65	61	69	64	60				58	
5	81	70	62	56	79	69	61	56	67	60	55	65	59	54	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				38	
9	62	50	43	38	61	50	42	37	48	42	37	47	41	37	46	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°	35046	35046	35046
5°	38795	35283	31497
10°	41805	35039	27622
15°	41435	34632	22701
20°	34952	33865	19161
25°	22473	32824	17057
30°	16234	31608	15282
35°	13524	30087	14056
40°	11736	28413	12726
45°	10476	26291	11645
50°	9669	24210	10703
55°	8677	22114	10198
60°	6926	19909	9173
65°	6350	17884	8464
70°	5836	15794	8047
75°	5314	13821	7624
80°	4618	11496	7130
85°	3693	9201	6578



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	174.2	5.6
10°-20°	476.5	15.4
20°-30°	600.7	19.4
30°-40°	576.7	18.6
40°-50°	496.7	16.0
50°-60°	379.7	12.2
60°-70°	241.6	7.8
70°-80°	122.5	3.9
80°-90°	32.3	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°	1251.4	40.4
0°-40°	1828.0	59.0
0°-60°	2704.4	87.2
0°-90°	3100.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3100.9	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	1840	1840	1840	1840	1840	
5°	2029	1958	1845	1684	1647	198
15°	2101	2105	1756	1345	1151	570
25°	1069	1754	1562	938	812	511
35°	582	963	1294	697	604	366
45°	389	540	976	517	432	303
55°	261	329	666	359	307	230
65°	141	181	397	220	188	140
75°	72	82	188	114	104	77
85°	17	20	42	32	30	19
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°	1839.9	1839.9	1839.9	1839.9	1839.9	1839.9	1839.9	1839.9	1839.9	1839.9	1839.9
2.5°	1937.5	1939.9	1941.1	1938.1	1931.4	1932.0	1926.0	1915.8	1903.1	1891.7	1898.3
5°	2029.0	2032.0	2031.4	2026.0	2019.3	2013.3	2003.1	1988.6	1973.6	1957.9	1954.9
7.5°	2113.3	2119.9	2118.1	2107.9	2103.0	2094.6	2077.1	2060.9	2038.0	2015.7	2006.7
10°	2161.4	2166.9	2163.8	2161.4	2156.0	2147.6	2131.9	2116.3	2091.0	2067.5	2054.3
12.5°	2157.8	2162.6	2165.0	2167.5	2165.7	2162.6	2156.0	2142.8	2122.3	2100.6	2083.8
15°	2101.2	2093.4	2088.0	2103.0	2108.5	2128.9	2133.7	2135.5	2121.7	2105.4	2101.2
17.5°	1929.0	1931.4	1973.0	1966.4	1975.4	2025.4	2045.2	2072.3	2083.8	2080.2	2087.4
20°	1724.3	1696.0	1716.5	1746.6	1774.9	1847.8	1895.9	1938.7	1988.0	2015.7	2042.2
22.5°	1367.9	1368.5	1417.9	1467.2	1531.1	1609.9	1683.4	1765.3	1853.2	1906.8	1968.8
25°	1069.3	1098.2	1119.9	1141.5	1234.2	1310.1	1432.3	1531.7	1652.7	1754.4	1858.6
27.5°	864.6	894.7	898.3	947.1	1001.8	1063.3	1143.3	1299.9	1423.9	1573.2	1702.1
30°	738.1	744.2	756.8	769.4	809.8	867.0	953.1	1051.2	1189.1	1359.5	1532.3
32.5°	646.6	645.4	658.1	677.9	700.2	738.7	787.5	868.8	993.4	1128.9	1330.6
35°	581.6	579.8	588.8	596.1	609.3	640.6	684.6	738.1	827.8	962.7	1119.3
37.5°	520.2	523.8	529.2	537.0	554.5	574.4	603.9	648.4	719.5	808.6	958.5
40°	472.0	476.2	482.3	487.7	500.9	517.2	537.0	572.6	620.1	697.8	812.8
42.5°	428.7	430.5	435.3	443.1	452.8	467.2	486.5	513.6	553.3	607.5	708.0
45°	388.9	388.9	394.4	401.6	407.6	421.4	436.5	462.4	493.1	539.5	611.1
47.5°	355.2	355.8	358.8	360.0	366.7	379.3	395.6	416.0	441.3	476.8	543.7
50°	326.3	328.7	329.9	331.7	334.1	340.8	352.2	367.9	395.6	426.9	471.4
52.5°	296.2	299.2	301.6	305.3	308.9	309.5	317.9	328.1	347.4	379.9	416.0
55°	261.3	263.7	268.5	271.5	276.4	280.6	287.2	294.4	307.1	328.7	366.1
57.5°	221.6	222.2	227.0	230.0	239.6	249.3	255.3	263.1	272.1	287.2	315.5
60°	181.8	183.6	184.2	186.6	195.1	205.3	217.3	229.4	239.0	252.3	272.1
62.5°	160.2	160.8	162.6	165.0	165.6	170.4	174.0	188.4	205.3	218.6	231.8
65°	140.9	141.5	141.5	143.3	145.7	148.1	149.9	155.3	162.6	181.2	197.5
67.5°	122.8	122.2	123.4	125.2	125.8	127.6	130.6	133.7	138.5	143.9	160.8
70°	104.8	104.8	104.2	106.0	107.8	108.4	110.2	113.2	116.2	121.0	126.4
72.5°	86.7	87.9	87.9	89.1	89.7	92.1	93.3	94.5	98.7	101.1	105.4
75°	72.2	71.6	73.5	72.9	74.1	74.7	76.5	78.3	79.5	81.9	85.5
77.5°	57.8	56.6	57.8	57.2	58.4	59.6	59.6	61.4	62.6	65.0	66.8
80°	42.1	42.1	42.7	44.0	44.0	44.6	45.8	45.2	47.6	48.2	50.0
82.5°	28.9	29.5	29.5	30.1	30.1	30.1	31.3	31.3	31.9	33.1	33.7
85°	16.9	16.3	16.9	16.9	16.9	17.5	18.1	17.5	18.7	19.9	19.9
87.5°	4.8	4.8	5.4	6.0	6.0	6.6	6.6	6.6	7.2	7.2	7.8
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°	1839.9	1839.9	1839.9	1839.9	1839.9	1839.9	1839.9	1839.9	1839.9	1839.9	1839.9
2.5°	1898.3	1895.3	1887.5	1880.3	1867.0	1856.2	1852.6	1853.2	1836.9	1820.1	1815.2
5°	1950.7	1939.9	1924.2	1908.0	1888.1	1868.2	1855.6	1845.3	1820.1	1794.8	1780.3
7.5°	1994.1	1976.6	1953.7	1927.8	1901.9	1872.4	1852.0	1832.7	1797.8	1763.5	1744.8
10°	2033.8	2009.1	1977.8	1944.1	1909.8	1871.2	1841.7	1811.6	1767.7	1729.1	1697.2
12.5°	2071.7	2032.6	2000.7	1951.9	1914.0	1861.6	1821.3	1786.3	1734.6	1686.4	1650.9
15°	2075.3	2047.6	2004.9	1954.3	1896.5	1847.8	1797.2	1756.2	1697.2	1643.7	1582.8
17.5°	2074.7	2053.1	2008.5	1956.7	1887.5	1823.7	1768.9	1715.3	1647.9	1585.3	1532.9
20°	2053.1	2038.0	1999.5	1938.1	1868.2	1794.8	1734.0	1670.7	1591.9	1527.5	1470.3
22.5°	2001.9	2005.5	1975.4	1920.6	1845.3	1763.5	1693.0	1620.2	1539.5	1465.4	1393.2
25°	1915.2	1953.7	1944.7	1893.5	1813.4	1723.7	1643.7	1561.8	1475.1	1396.2	1329.4
27.5°	1807.4	1879.7	1895.3	1855.6	1779.1	1678.6	1587.7	1498.6	1410.1	1325.2	1256.5
30°	1679.8	1787.5	1827.3	1805.6	1735.2	1629.8	1524.4	1437.1	1340.2	1249.9	1177.7
32.5°	1519.0	1670.1	1740.0	1746.6	1688.8	1575.6	1458.8	1364.9	1265.6	1180.1	1102.4
35°	1339.6	1525.0	1638.8	1669.5	1628.0	1516.0	1393.2	1293.9	1187.9	1101.8	1023.5
37.5°	1159.0	1376.9	1526.3	1585.9	1558.2	1449.8	1319.7	1219.2	1114.4	1026.5	953.1
40°	992.8	1199.9	1393.8	1487.1	1478.7	1378.1	1246.9	1142.7	1036.2	954.9	874.2
42.5°	844.1	1044.0	1257.1	1382.4	1389.0	1301.1	1166.8	1062.1	959.7	879.0	794.7
45°	726.7	902.5	1113.8	1263.1	1292.0	1219.8	1083.7	976.0	882.6	806.8	722.5
47.5°	632.8	769.4	965.7	1140.9	1192.1	1128.9	998.8	896.5	808.6	743.6	664.1
50°	551.5	679.7	846.5	1008.5	1083.7	1036.2	914.5	817.0	737.5	674.9	605.1
52.5°	479.2	578.6	723.1	878.4	979.6	936.2	832.7	743.0	668.3	609.9	551.5
55°	419.6	502.7	630.4	768.8	862.2	838.1	746.0	665.9	600.3	544.9	497.3
57.5°	358.2	428.1	531.0	654.5	746.0	742.4	666.5	589.4	537.6	485.3	451.0
60°	304.6	361.2	444.9	549.7	641.8	642.4	583.4	522.6	478.0	432.9	400.4
62.5°	257.1	302.2	375.1	459.4	532.8	551.5	507.5	454.6	418.4	383.5	355.8
65°	216.1	249.9	304.6	381.1	438.9	464.2	435.3	396.8	366.7	335.4	310.7
67.5°	178.2	202.9	243.2	303.4	361.2	379.9	367.9	338.4	316.7	290.8	272.1
70°	140.3	161.4	189.7	234.8	282.4	308.3	304.6	283.6	265.5	246.8	229.4
72.5°	111.4	123.4	145.1	177.6	215.5	244.4	245.6	234.8	219.8	204.1	192.7
75°	89.7	95.1	105.4	130.6	160.8	184.8	193.3	187.8	175.8	166.2	158.3
77.5°	69.2	74.1	80.7	92.7	116.2	134.9	145.1	145.7	138.5	130.0	124.0
80°	51.8	53.6	58.4	64.4	76.5	92.7	104.8	104.8	100.5	96.3	92.7
82.5°	35.5	37.3	39.7	42.7	48.8	58.4	69.2	71.0	68.6	67.4	62.6
85°	19.9	21.7	22.9	24.7	27.1	31.9	39.7	42.1	42.7	39.1	36.7
87.5°	7.8	7.8	8.4	9.0	9.6	11.4	14.4	18.1	18.1	16.3	15.7
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°	1839.9	1839.9	1839.9	1839.9	1839.9	1839.9	1839.9	1839.9	1839.9	1839.9	1839.9
2.5°	1809.2	1800.8	1790.0	1780.3	1767.1	1753.8	1751.4	1756.2	1757.4	1751.4	1753.2
5°	1766.5	1750.8	1737.6	1715.9	1702.1	1684.0	1672.0	1672.0	1672.0	1662.9	1654.5
7.5°	1721.9	1700.9	1675.6	1655.1	1626.8	1603.3	1591.9	1586.5	1575.6	1566.6	1556.4
10°	1670.1	1640.6	1609.3	1577.4	1552.7	1520.2	1501.0	1488.9	1470.3	1462.4	1447.4
12.5°	1609.3	1579.8	1541.9	1490.1	1482.9	1443.2	1416.1	1393.8	1370.9	1352.3	1345.6
15°	1560.6	1509.4	1458.8	1422.1	1368.5	1345.0	1305.3	1301.7	1283.0	1228.2	1185.5
17.5°	1481.7	1435.9	1379.9	1339.0	1296.3	1243.9	1201.7	1160.2	1120.5	1081.9	1080.7
20°	1411.9	1358.3	1305.3	1260.7	1186.1	1111.4	1085.5	1047.6	1024.1	993.4	984.4
22.5°	1335.4	1279.4	1213.2	1148.2	1060.8	1013.9	985.6	955.5	932.0	918.2	904.3
25°	1258.3	1202.3	1114.4	1034.4	974.8	938.0	913.9	881.4	864.6	852.5	834.5
27.5°	1183.1	1112.0	1019.3	955.5	907.3	865.8	844.1	817.6	798.9	783.3	771.9
30°	1108.4	1010.9	932.0	882.6	833.3	807.4	779.1	759.2	745.4	730.9	712.3
32.5°	1026.5	924.2	873.0	812.2	783.3	746.0	725.5	705.0	687.0	676.7	670.1
35°	931.4	848.9	803.2	758.6	721.9	697.2	668.3	655.7	646.0	626.2	617.7
37.5°	850.7	791.1	743.0	703.2	669.5	643.0	629.8	608.1	594.2	587.6	578.6
40°	783.9	730.9	689.4	649.0	620.7	601.5	578.0	566.5	548.5	541.9	534.6
42.5°	726.1	677.3	634.0	603.3	578.6	552.1	540.1	520.8	513.0	496.7	490.7
45°	667.7	624.3	586.4	556.3	532.8	516.6	494.9	482.9	469.0	460.6	444.3
47.5°	609.3	570.8	539.5	514.2	493.7	473.8	455.8	445.5	428.1	419.0	410.6
50°	564.1	526.8	497.3	472.0	451.0	431.1	419.6	402.8	387.1	376.9	373.9
52.5°	510.6	478.0	451.0	431.7	410.6	396.2	380.5	361.8	354.0	343.8	341.4
55°	463.0	436.5	413.6	393.2	375.1	358.8	340.8	327.5	321.5	316.7	313.1
57.5°	418.4	393.2	372.1	353.4	337.8	320.9	305.9	298.0	292.6	287.2	283.6
60°	374.5	351.6	332.3	316.7	300.4	284.2	273.3	266.7	262.5	254.7	252.3
62.5°	335.4	314.3	294.4	280.0	264.9	252.3	243.2	234.2	227.6	221.6	208.9
65°	292.6	273.9	258.9	244.4	230.0	220.4	210.1	199.9	191.5	191.5	191.5
67.5°	254.7	238.4	222.8	210.1	197.5	186.0	175.8	175.2	172.2	171.0	169.2
70°	216.1	204.7	190.3	176.4	163.8	158.3	156.5	153.5	149.9	149.3	146.9
72.5°	181.2	168.0	154.7	142.7	140.3	137.9	134.3	131.3	128.8	127.0	125.8
75°	148.1	134.9	124.0	121.0	118.0	113.8	110.8	108.4	107.2	107.2	106.6
77.5°	113.2	105.4	100.5	95.7	93.3	90.9	89.1	87.9	86.1	86.7	85.5
80°	83.1	80.7	76.5	73.5	72.2	69.8	68.6	68.0	66.8	66.8	66.2
82.5°	59.6	55.4	53.6	51.8	50.6	49.4	50.0	49.4	48.8	48.2	48.8
85°	34.3	33.7	32.5	32.5	32.5	31.9	31.9	31.9	31.3	30.7	30.7
87.5°	15.1	15.7	15.7	14.4	16.3	16.3	15.7	15.7	15.1	16.3	15.1
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: P243260

CATALOG NUMBER: S122RDR-H865D835-X4F0-XX-UDD-A-W

**CANDELA DISTRIBUTION (continued):**

	165°	170°	175°	180°
0°	1839.9	1839.9	1839.9	1839.9
2.5°	1745.4	1744.8	1741.2	1735.2
5°	1650.9	1648.5	1642.5	1647.3
7.5°	1549.7	1543.1	1537.1	1540.1
10°	1441.4	1439.0	1435.3	1428.1
12.5°	1321.5	1331.2	1320.9	1343.8
15°	1143.9	1186.7	1133.1	1151.2
17.5°	1055.4	1056.0	1048.8	1040.4
20°	972.3	951.3	959.1	945.3
22.5°	892.3	887.5	885.0	880.2
25°	820.6	811.6	808.6	811.6
27.5°	767.6	763.4	752.0	750.2
30°	701.4	699.6	696.0	694.8
32.5°	659.9	652.0	650.2	643.0
35°	613.5	609.3	606.3	604.5
37.5°	567.2	564.7	559.3	562.3
40°	529.2	517.2	512.4	511.8
42.5°	487.7	481.1	471.4	468.4
45°	439.5	436.5	433.5	432.3
47.5°	397.4	395.6	391.9	390.1
50°	367.3	362.4	361.8	361.2
52.5°	338.4	336.6	334.8	337.2
55°	311.3	308.9	307.1	307.1
57.5°	281.8	277.6	273.9	274.5
60°	247.5	245.0	242.0	240.8
62.5°	207.7	207.7	207.1	207.1
65°	189.1	187.8	187.2	187.8
67.5°	168.6	167.4	165.6	166.2
70°	145.1	144.5	145.1	144.5
72.5°	124.0	123.4	124.0	125.2
75°	104.8	104.2	103.6	103.6
77.5°	84.9	84.3	83.1	84.3
80°	66.2	65.6	65.0	65.0
82.5°	47.0	47.6	47.0	47.0
85°	30.7	31.3	30.7	30.1
87.5°	15.7	16.3	15.1	14.4
90°	0.0	0.0	0.0	0.0

(END OF REPORT)