

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: P243265

Luminaire Tested: **S122RDR-H865D840-X4F0-XX-UDD-A-W**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P243265  
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-H865D840-X4F0-XX-UDD-A-W  
Description: DEFINE 2 REGRESSED DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER.  
HIGH PERFORMANCE LIGHT ENGINE  
Light Source: (184) 4000K CCT, 80 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 3131.5 lumens  
Efficiency: N/A  
Efficacy: 99.4 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

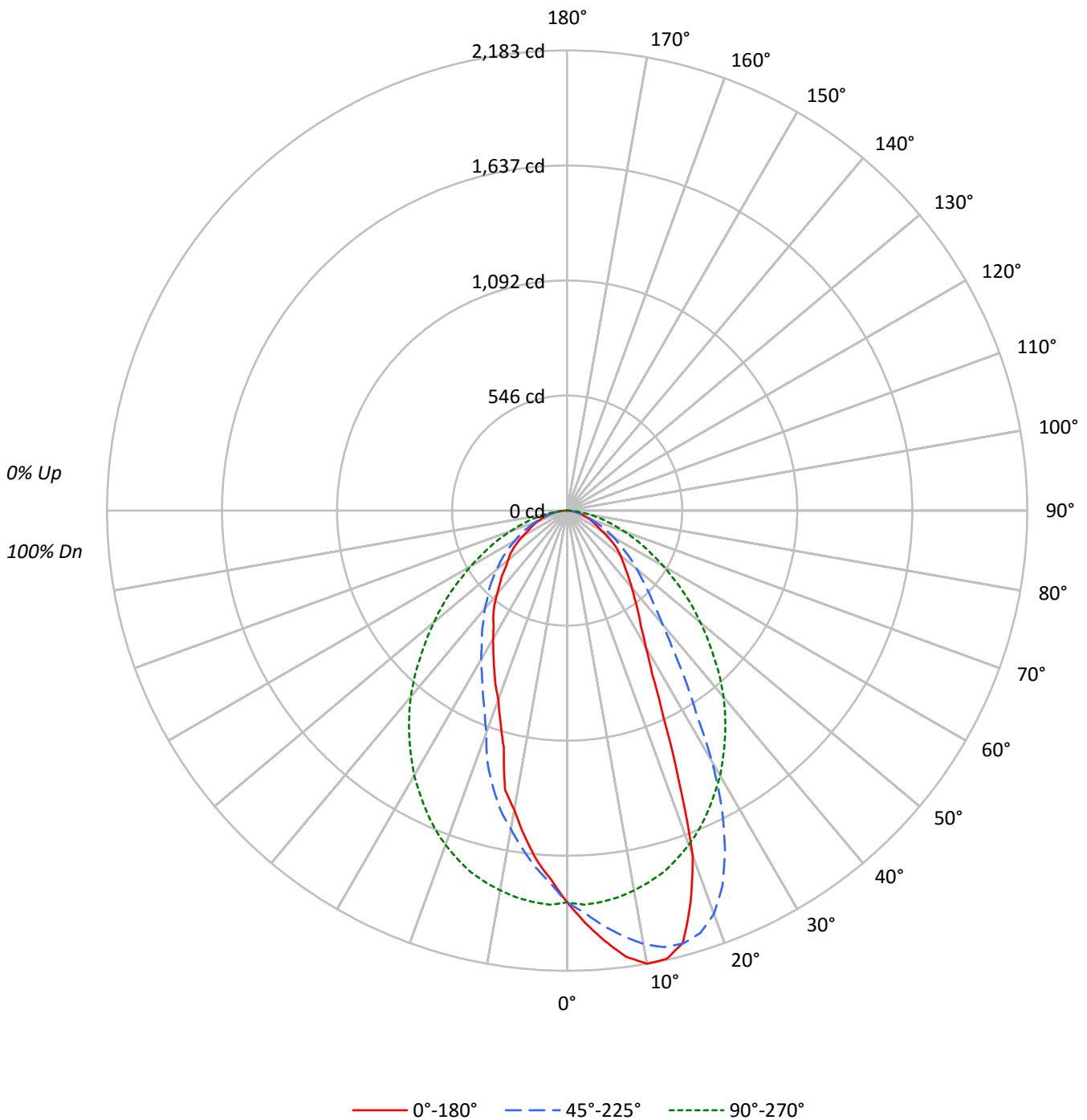
Input Watts (W): 31.5  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	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°	35393	35393	35393
5°	39178	35633	31807
10°	42219	35385	27894
15°	41845	34975	22924
20°	35296	34200	19350
25°	22694	33148	17225
30°	16395	31920	15431
35°	13656	30382	14194
40°	11853	28694	12850
45°	10581	26550	11761
50°	9764	24450	10810
55°	8764	22333	10298
60°	6994	20107	9265
65°	6414	18060	8550
70°	5892	15950	8125
75°	5372	13961	7698
80°	4673	11605	7207
85°	3715	9310	6644



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	175.9	5.6
10°-20°	481.2	15.4
20°-30°	606.6	19.4
30°-40°	582.3	18.6
40°-50°	501.6	16.0
50°-60°	383.5	12.2
60°-70°	244.0	7.8
70°-80°	123.7	3.9
80°-90°	32.6	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°	1263.7	40.4
0°-40°	1846.1	59.0
0°-60°	2731.1	87.2
0°-90°	3131.5	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3131.5	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	1858	1858	1858	1858	1858	
5°	2049	1977	1864	1701	1664	200
15°	2122	2126	1774	1358	1162	575
25°	1080	1772	1577	947	820	516
35°	587	972	1307	704	610	370
45°	393	545	986	522	437	306
55°	264	332	672	362	310	233
65°	142	183	401	222	190	142
75°	73	83	190	115	105	77
85°	17	20	43	32	30	20
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°	1858.1	1858.1	1858.1	1858.1	1858.1	1858.1	1858.1	1858.1	1858.1	1858.1	1858.1
2.5°	1956.6	1959.0	1960.2	1957.2	1950.5	1951.1	1945.0	1934.7	1921.9	1910.4	1917.1
5°	2049.0	2052.0	2051.4	2046.0	2039.3	2033.2	2022.9	2008.3	1993.1	1977.3	1974.2
7.5°	2134.1	2140.8	2139.0	2128.6	2123.8	2115.3	2097.6	2081.2	2058.1	2035.6	2026.5
10°	2182.8	2188.2	2185.2	2182.8	2177.3	2168.8	2153.0	2137.2	2111.6	2087.9	2074.5
12.5°	2179.1	2184.0	2186.4	2188.8	2187.0	2184.0	2177.3	2163.9	2143.2	2121.3	2104.3
15°	2122.0	2114.1	2108.6	2123.8	2129.3	2149.9	2154.8	2156.6	2142.6	2126.2	2122.0
17.5°	1948.1	1950.5	1992.5	1985.8	1994.9	2045.3	2065.4	2092.8	2104.3	2100.7	2108.0
20°	1741.3	1712.8	1733.4	1763.8	1792.4	1866.0	1914.6	1957.8	2007.7	2035.6	2062.4
22.5°	1381.4	1382.0	1431.9	1481.7	1546.2	1625.8	1700.0	1782.7	1871.5	1925.6	1988.2
25°	1079.8	1109.0	1130.9	1152.8	1246.4	1323.0	1446.5	1546.8	1669.0	1771.7	1876.9
27.5°	873.1	903.5	907.2	956.4	1011.7	1073.7	1154.6	1312.7	1437.9	1588.7	1718.8
30°	745.4	751.5	764.3	777.0	817.8	875.5	962.5	1061.6	1200.8	1372.9	1547.4
32.5°	653.0	651.8	664.6	684.6	707.1	746.0	795.3	877.4	1003.2	1140.0	1343.7
35°	587.3	585.5	594.6	601.9	615.3	646.9	691.3	745.4	836.0	972.2	1130.3
37.5°	525.3	529.0	534.4	542.3	560.0	580.0	609.8	654.8	726.6	816.6	968.0
40°	476.7	480.9	487.0	492.5	505.9	522.3	542.3	578.2	626.3	704.7	820.8
42.5°	432.9	434.7	439.6	447.5	457.2	471.8	491.3	518.6	558.8	613.5	715.0
45°	392.8	392.8	398.2	405.5	411.6	425.6	440.8	467.0	498.0	544.8	617.1
47.5°	358.7	359.3	362.4	363.6	370.3	383.0	399.5	420.1	445.7	481.5	549.0
50°	329.5	332.0	333.2	335.0	337.4	344.1	355.7	371.5	399.5	431.1	476.1
52.5°	299.1	302.2	304.6	308.3	311.9	312.5	321.0	331.4	350.8	383.7	420.1
55°	263.9	266.3	271.2	274.2	279.1	283.3	290.0	297.3	310.1	332.0	369.7
57.5°	223.7	224.4	229.2	232.3	242.0	251.7	257.8	265.7	274.8	290.0	318.6
60°	183.6	185.4	186.1	188.5	197.0	207.3	219.5	231.7	241.4	254.8	274.8
62.5°	161.7	162.3	164.2	166.6	167.2	172.1	175.7	190.3	207.3	220.7	234.1
65°	142.3	142.9	142.9	144.7	147.1	149.6	151.4	156.9	164.2	183.0	199.4
67.5°	124.0	123.4	124.6	126.5	127.1	128.9	131.9	135.0	139.8	145.3	162.3
70°	105.8	105.8	105.2	107.0	108.8	109.4	111.3	114.3	117.3	122.2	127.7
72.5°	87.6	88.8	88.8	90.0	90.6	93.0	94.2	95.5	99.7	102.1	106.4
75°	73.0	72.4	74.2	73.6	74.8	75.4	77.2	79.0	80.3	82.7	86.3
77.5°	58.4	57.2	58.4	57.8	59.0	60.2	60.2	62.0	63.2	65.7	67.5
80°	42.6	42.6	43.2	44.4	44.4	45.0	46.2	45.6	48.0	48.6	50.5
82.5°	29.2	29.8	29.8	30.4	30.4	30.4	31.6	31.6	32.2	33.4	34.0
85°	17.0	16.4	17.0	17.0	17.0	17.6	18.2	17.6	18.8	20.1	20.1
87.5°	4.9	4.9	5.5	6.1	6.1	6.7	6.7	6.7	7.3	7.3	7.9
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°	1858.1	1858.1	1858.1	1858.1	1858.1	1858.1	1858.1	1858.1	1858.1	1858.1	1858.1
2.5°	1917.1	1914.0	1906.1	1898.8	1885.4	1874.5	1870.8	1871.5	1855.0	1838.0	1833.2
5°	1970.0	1959.0	1943.2	1926.8	1906.7	1886.7	1873.9	1863.6	1838.0	1812.5	1797.9
7.5°	2013.7	1996.1	1973.0	1946.9	1920.7	1890.9	1870.2	1850.8	1815.5	1780.9	1762.0
10°	2053.9	2028.9	1997.3	1963.3	1928.6	1889.7	1859.9	1829.5	1785.1	1746.2	1714.0
12.5°	2092.2	2052.6	2020.4	1971.2	1932.9	1880.0	1839.2	1804.0	1751.7	1703.0	1667.2
15°	2095.8	2067.8	2024.7	1973.6	1915.2	1866.0	1814.9	1773.6	1714.0	1659.9	1598.5
17.5°	2095.2	2073.3	2028.3	1976.0	1906.1	1841.7	1786.3	1732.2	1664.1	1600.9	1548.0
20°	2073.3	2058.1	2019.2	1957.2	1886.7	1812.5	1751.1	1687.2	1607.6	1542.5	1484.8
22.5°	2021.6	2025.3	1994.9	1939.6	1863.6	1780.9	1709.7	1636.2	1554.7	1479.9	1406.9
25°	1934.1	1973.0	1963.9	1912.2	1831.3	1740.7	1659.9	1577.2	1489.6	1410.0	1342.5
27.5°	1825.2	1898.2	1914.0	1873.9	1796.7	1695.1	1603.3	1513.3	1424.0	1338.2	1268.9
30°	1696.4	1805.2	1845.3	1823.4	1752.3	1645.9	1539.5	1451.3	1353.4	1262.2	1189.3
32.5°	1534.0	1686.6	1757.2	1763.8	1705.5	1591.2	1473.2	1378.4	1278.0	1191.7	1113.3
35°	1352.8	1540.1	1655.0	1686.0	1644.1	1531.0	1406.9	1306.6	1199.6	1112.7	1033.6
37.5°	1170.4	1390.5	1541.3	1601.5	1573.5	1464.1	1332.8	1231.2	1125.4	1036.7	962.5
40°	1002.6	1211.8	1407.5	1501.8	1493.3	1391.7	1259.2	1154.0	1046.4	964.3	882.8
42.5°	852.4	1054.3	1269.5	1396.0	1402.7	1313.9	1178.3	1072.5	969.2	887.7	802.6
45°	733.9	911.4	1124.8	1275.6	1304.8	1231.8	1094.4	985.6	891.3	814.7	729.6
47.5°	639.0	777.0	975.2	1152.2	1203.9	1140.0	1008.7	905.3	816.6	750.9	670.6
50°	556.9	686.4	854.9	1018.4	1094.4	1046.4	923.6	825.1	744.8	681.6	611.1
52.5°	484.0	584.3	730.2	887.1	989.2	945.5	840.9	750.3	674.9	615.9	556.9
55°	423.8	507.7	636.6	776.4	870.7	846.4	753.3	672.5	606.2	550.2	502.2
57.5°	361.8	432.3	536.3	660.9	753.3	749.7	673.1	595.2	543.0	490.1	455.4
60°	307.7	364.8	449.3	555.1	648.1	648.7	589.2	527.8	482.8	437.2	404.3
62.5°	259.6	305.2	378.8	463.9	538.1	556.9	512.6	459.0	422.6	387.3	359.3
65°	218.3	252.3	307.7	384.9	443.2	468.8	439.6	400.7	370.3	338.7	313.7
67.5°	180.0	204.9	245.6	306.4	364.8	383.7	371.5	341.7	319.8	293.7	274.8
70°	141.7	162.9	191.5	237.1	285.2	311.3	307.7	286.4	268.1	249.3	231.7
72.5°	112.5	124.6	146.5	179.4	217.7	246.9	248.1	237.1	221.9	206.1	194.6
75°	90.6	96.1	106.4	131.9	162.3	186.7	195.2	189.7	177.5	167.8	159.9
77.5°	69.9	74.8	81.5	93.6	117.3	136.2	146.5	147.1	139.8	131.3	125.3
80°	52.3	54.1	59.0	65.1	77.2	93.6	105.8	105.8	101.5	97.3	93.6
82.5°	35.9	37.7	40.1	43.2	49.2	59.0	69.9	71.7	69.3	68.1	63.2
85°	20.1	21.9	23.1	24.9	27.4	32.2	40.1	42.6	43.2	39.5	37.1
87.5°	7.9	7.9	8.5	9.1	9.7	11.6	14.6	18.2	18.2	16.4	15.8
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):**

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	1858.1	1858.1	1858.1	1858.1	1858.1	1858.1	1858.1	1858.1	1858.1	1858.1	1858.1
2.5°	1827.1	1818.6	1807.6	1797.9	1784.5	1771.1	1768.7	1773.6	1774.8	1768.7	1770.5
5°	1783.9	1768.1	1754.7	1732.8	1718.8	1700.6	1688.4	1688.4	1688.4	1679.3	1670.8
7.5°	1738.9	1717.6	1692.1	1671.4	1642.8	1619.1	1607.6	1602.1	1591.2	1582.0	1571.7
10°	1686.6	1656.8	1625.2	1593.0	1568.1	1535.2	1515.8	1503.6	1484.8	1476.9	1461.7
12.5°	1625.2	1595.4	1557.1	1504.8	1497.5	1457.4	1430.0	1407.5	1384.4	1365.6	1358.9
15°	1576.0	1524.3	1473.2	1436.1	1382.0	1358.3	1318.2	1314.5	1295.7	1240.3	1197.2
17.5°	1496.3	1450.1	1393.6	1352.2	1309.0	1256.2	1213.6	1171.6	1131.5	1092.6	1091.4
20°	1425.8	1371.7	1318.2	1273.2	1197.8	1122.4	1096.2	1057.9	1034.2	1003.2	994.1
22.5°	1348.6	1292.0	1225.1	1159.5	1071.3	1023.9	995.3	964.9	941.2	927.2	913.2
25°	1270.7	1214.2	1125.4	1044.6	984.4	947.3	923.0	890.1	873.1	860.9	842.7
27.5°	1194.7	1123.0	1029.4	964.9	916.3	874.3	852.4	825.7	806.8	791.0	779.5
30°	1119.3	1020.9	941.2	891.3	841.5	815.3	786.8	766.7	752.7	738.1	719.3
32.5°	1036.7	933.3	881.6	820.2	791.0	753.3	732.7	712.0	693.7	683.4	676.7
35°	940.6	857.3	811.1	766.1	729.0	704.1	674.9	662.1	652.4	632.3	623.8
37.5°	859.1	798.9	750.3	710.2	676.1	649.4	636.0	614.1	600.1	593.4	584.3
40°	791.6	738.1	696.2	655.4	626.9	607.4	583.7	572.1	553.9	547.2	539.9
42.5°	733.3	684.0	640.2	609.2	584.3	557.5	545.4	525.9	518.0	501.6	495.5
45°	674.3	630.5	592.2	561.8	538.1	521.7	499.8	487.6	473.6	465.1	448.7
47.5°	615.3	576.4	544.8	519.2	498.6	478.5	460.3	449.9	432.3	423.2	414.7
50°	569.7	532.0	502.2	476.7	455.4	435.3	423.8	406.8	391.0	380.6	377.6
52.5°	515.6	482.8	455.4	435.9	414.7	400.1	384.3	365.4	357.5	347.2	344.7
55°	467.6	440.8	417.7	397.0	378.8	362.4	344.1	330.8	324.7	319.8	316.2
57.5°	422.6	397.0	375.8	356.9	341.1	324.1	308.9	301.0	295.5	290.0	286.4
60°	378.2	355.1	335.6	319.8	303.4	287.0	276.0	269.3	265.1	257.2	254.8
62.5°	338.7	317.4	297.3	282.7	267.5	254.8	245.6	236.5	229.8	223.7	211.0
65°	295.5	276.6	261.4	246.9	232.3	222.5	212.2	201.9	193.3	193.3	193.3
67.5°	257.2	240.8	225.0	212.2	199.4	187.9	177.5	176.9	173.9	172.7	170.9
70°	218.3	206.7	192.1	178.1	165.4	159.9	158.1	155.0	151.4	150.8	148.4
72.5°	183.0	169.6	156.3	144.1	141.7	139.2	135.6	132.5	130.1	128.3	127.1
75°	149.6	136.2	125.3	122.2	119.2	114.9	111.9	109.4	108.2	108.2	107.6
77.5°	114.3	106.4	101.5	96.7	94.2	91.8	90.0	88.8	86.9	87.6	86.3
80°	83.9	81.5	77.2	74.2	73.0	70.5	69.3	68.7	67.5	67.5	66.9
82.5°	60.2	55.9	54.1	52.3	51.1	49.9	50.5	49.9	49.2	48.6	49.2
85°	34.7	34.0	32.8	32.8	32.8	32.2	32.2	32.2	31.6	31.0	31.0
87.5°	15.2	15.8	15.8	14.6	16.4	16.4	15.8	15.8	15.2	16.4	15.2
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: P243265

CATALOG NUMBER: S122RDR-H865D840-X4F0-XX-UDD-A-W

**CANDELA DISTRIBUTION (continued):**

	165°	170°	175°	180°
0°	1858.1	1858.1	1858.1	1858.1
2.5°	1762.6	1762.0	1758.4	1752.3
5°	1667.2	1664.7	1658.7	1663.5
7.5°	1565.0	1558.3	1552.3	1555.3
10°	1455.6	1453.1	1449.5	1442.2
12.5°	1334.6	1344.3	1334.0	1357.1
15°	1155.2	1198.4	1144.3	1162.5
17.5°	1065.8	1066.5	1059.2	1050.6
20°	981.9	960.7	968.6	954.6
22.5°	901.1	896.2	893.8	888.9
25°	828.7	819.6	816.6	819.6
27.5°	775.2	771.0	759.4	757.6
30°	708.3	706.5	702.9	701.6
32.5°	666.4	658.5	656.7	649.4
35°	619.6	615.3	612.3	610.4
37.5°	572.7	570.3	564.8	567.9
40°	534.4	522.3	517.4	516.8
42.5°	492.5	485.8	476.1	473.0
45°	443.8	440.8	437.8	436.6
47.5°	401.3	399.5	395.8	394.0
50°	370.9	366.0	365.4	364.8
52.5°	341.7	339.9	338.1	340.5
55°	314.3	311.9	310.1	310.1
57.5°	284.5	280.3	276.6	277.3
60°	249.9	247.5	244.4	243.2
62.5°	209.8	209.8	209.2	209.2
65°	190.9	189.7	189.1	189.7
67.5°	170.2	169.0	167.2	167.8
70°	146.5	145.9	146.5	145.9
72.5°	125.3	124.6	125.3	126.5
75°	105.8	105.2	104.6	104.6
77.5°	85.7	85.1	83.9	85.1
80°	66.9	66.3	65.7	65.7
82.5°	47.4	48.0	47.4	47.4
85°	31.0	31.6	31.0	30.4
87.5°	15.8	16.4	15.2	14.6
90°	0.0	0.0	0.0	0.0

(END OF REPORT)