

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: P242765

Luminaire Tested: **S124RDR-S1195D940-X4F0-XX-UDD-A-W**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P242765
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-31)
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S124RDR-S1195D940-X4F0-XX-UDD-A-W
Description: DEFINE 4 REGRESSED DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER
STANDARD LIGHT ENGINE
Light Source: (92) 4000K CCT, 90 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4145.9 lumens
Efficiency: N/A
Efficacy: 100.9 lumens/watt
Spacing Criteria (0/90/45): 1.27 / 1.22 / 1.39
Luminous Opening: Rectangular (W 3.88' x L: 0.31' x H: 0')
CIE Type: Direct

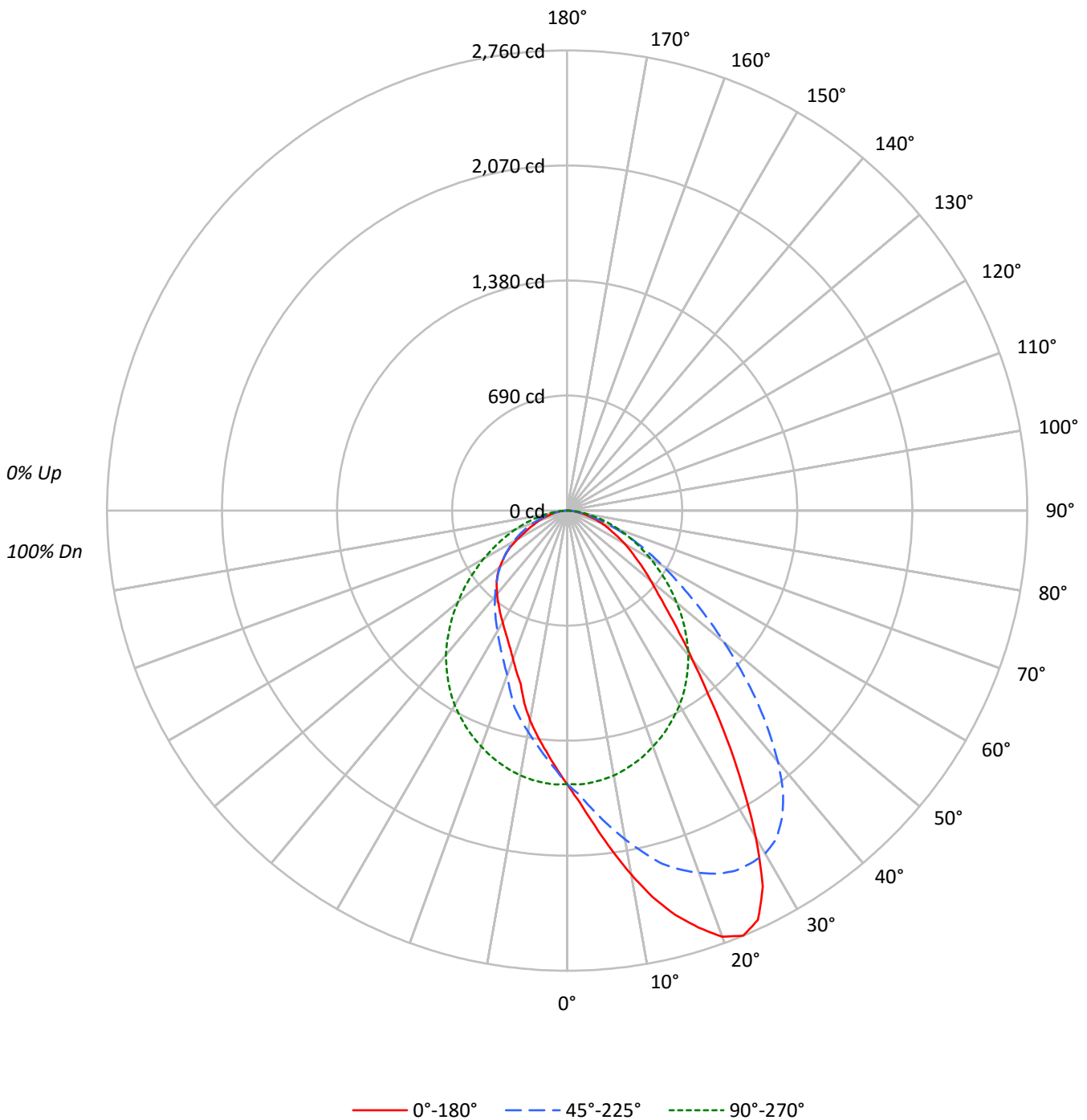
Input Watts (W): 41.1
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	110	106	102	98	107	103	100	97	99	96	94	95	93	91	92	90	88	86
2	101	93	87	82	98	92	86	81	88	83	79	85	81	77	82	79	76	74
3	93	83	76	70	90	81	75	69	79	73	68	76	71	67	73	69	65	63
4	85	74	66	60	83	73	65	59	71	64	59	68	63	58	66	61	57	55
5	79	67	58	52	77	66	58	52	64	57	51	62	56	51	60	55	50	48
6	73	61	52	46	71	60	52	46	58	51	46	56	50	45	55	49	45	43
7	68	55	47	41	66	54	47	41	53	46	41	52	45	40	50	44	40	38
8	64	51	42	37	62	50	42	37	49	42	37	47	41	36	46	40	36	34
9	59	47	39	33	58	46	38	33	45	38	33	44	38	33	43	37	33	31
10	56	43	35	30	55	43	35	30	42	35	30	41	34	30	40	34	30	28

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	14579	14579	14579
5°	16911	14623	12925
10°	20004	14559	11535
15°	23107	14424	9912
20°	25728	14239	8964
25°	26559	14058	8322
30°	23250	13836	7935
35°	18098	13509	7701
40°	13572	13134	7576
45°	10715	12534	7510
50°	9047	11843	7292
55°	7885	11081	6903
60°	7095	10292	6108
65°	6255	9437	5254
70°	5632	8553	4740
75°	4719	7580	4039
80°	3993	6460	3788
85°	3366	5059	3366



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	158.8	3.8
10°-20°	479.6	11.6
20°-30°	751.2	18.1
30°-40°	834.2	20.1
40°-50°	739.3	17.8
50°-60°	576.1	13.9
60°-70°	376.8	9.1
70°-80°	184.9	4.5
80°-90°	45.0	1.1
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°	1389.6	33.5
0°-40°	2223.8	53.6
0°-60°	3539.2	85.4
0°-90°	4145.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4145.9	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1640	1640	1640	1640	1640	
5°	1895	1804	1639	1483	1448	191
15°	2511	2192	1567	1221	1077	714
25°	2708	2384	1433	934	848	1209
35°	1668	2249	1245	751	710	1044
45°	852	1602	997	597	597	672
55°	509	907	715	450	445	462
65°	297	466	449	291	250	299
75°	137	177	221	141	118	151
85°	33	36	50	35	33	38
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°	1640.1	1640.1	1640.1	1640.1	1640.1	1640.1	1640.1	1640.1	1640.1	1640.1	1640.1
2.5°	1752.4	1758.4	1752.4	1751.8	1745.2	1743.2	1740.5	1731.9	1716.1	1706.8	1708.8
5°	1895.2	1911.7	1902.4	1901.1	1886.6	1872.0	1862.8	1841.6	1819.2	1804.0	1791.4
7.5°	2053.7	2063.7	2057.1	2049.8	2024.7	2016.7	1994.9	1969.8	1932.2	1903.7	1878.0
10°	2216.3	2224.2	2221.6	2204.4	2187.2	2152.2	2132.4	2093.4	2042.5	2002.2	1964.5
12.5°	2376.2	2384.8	2356.4	2361.7	2325.3	2299.6	2265.2	2213.7	2152.9	2098.0	2048.5
15°	2511.0	2500.4	2500.4	2487.2	2450.9	2412.6	2380.2	2328.6	2254.6	2192.5	2127.1
17.5°	2622.0	2626.7	2621.4	2587.7	2561.2	2522.3	2464.1	2405.3	2341.2	2257.9	2193.2
20°	2719.8	2719.8	2713.9	2692.7	2655.7	2613.4	2549.3	2483.9	2396.7	2312.8	2237.5
22.5°	2759.5	2762.1	2754.9	2738.3	2706.0	2665.0	2612.8	2546.0	2455.5	2358.4	2260.6
25°	2707.9	2720.5	2721.8	2717.2	2707.3	2682.2	2635.2	2567.2	2486.6	2384.1	2283.7
27.5°	2541.4	2557.9	2564.5	2579.1	2606.2	2616.1	2610.1	2564.5	2486.6	2385.5	2285.7
30°	2265.2	2278.4	2321.4	2377.5	2421.2	2460.8	2495.2	2504.4	2464.8	2376.2	2269.8
32.5°	1958.6	1977.8	2020.7	2082.2	2162.1	2236.1	2324.0	2370.9	2379.5	2335.2	2238.8
35°	1667.8	1681.1	1720.7	1784.1	1871.4	1971.1	2093.4	2188.6	2253.3	2248.7	2188.6
37.5°	1389.0	1407.5	1447.8	1500.0	1585.9	1713.4	1829.1	1956.6	2072.9	2129.7	2099.3
40°	1169.6	1170.3	1209.3	1263.4	1342.7	1450.4	1579.3	1724.7	1858.2	1967.2	1988.3
42.5°	996.5	996.5	1018.9	1078.4	1130.0	1229.7	1351.3	1495.4	1657.3	1787.4	1852.2
45°	852.4	858.4	879.5	914.5	959.5	1045.4	1143.8	1278.0	1453.1	1602.4	1695.6
47.5°	738.8	749.3	761.9	793.6	830.6	890.8	974.7	1100.2	1245.6	1411.5	1540.3
50°	654.2	655.5	672.7	688.5	719.6	765.2	836.6	937.0	1067.8	1225.8	1373.1
52.5°	581.5	580.8	589.4	610.6	634.4	667.4	721.6	810.8	923.1	1060.6	1213.9
55°	508.8	512.1	520.0	535.9	555.1	580.2	625.8	694.5	785.7	906.6	1044.7
57.5°	453.3	455.3	462.6	468.5	487.0	505.5	542.5	592.1	672.0	773.1	908.6
60°	399.1	399.8	401.8	411.7	425.6	442.7	465.9	506.2	570.9	661.5	763.2
62.5°	346.3	347.6	350.9	357.5	367.4	378.0	402.4	432.8	483.7	557.7	646.9
65°	297.4	298.0	302.6	305.3	313.9	324.5	342.3	364.1	401.1	465.9	535.2
67.5°	256.4	256.4	256.4	260.4	267.0	274.2	286.1	304.6	334.4	376.0	440.7
70°	216.7	216.7	218.1	220.0	223.3	229.3	235.2	248.5	268.9	301.3	348.2
72.5°	179.7	180.4	181.7	181.7	183.0	187.7	191.6	198.9	212.8	235.2	270.9
75°	137.4	139.4	142.7	145.4	148.7	148.0	152.6	157.9	162.6	177.1	198.9
77.5°	108.4	107.0	107.0	109.7	110.4	111.0	114.3	118.9	122.9	130.8	138.8
80°	78.0	78.0	80.0	80.6	80.0	80.6	83.9	85.9	87.2	89.9	97.1
82.5°	54.2	55.5	54.2	54.8	55.5	56.2	58.8	58.8	60.1	60.8	62.8
85°	33.0	33.7	34.4	33.0	33.0	33.0	34.4	35.0	36.3	35.7	37.0
87.5°	14.5	13.9	14.5	14.5	15.2	14.5	15.2	16.5	15.2	15.9	15.9
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°	1640.1	1640.1	1640.1	1640.1	1640.1	1640.1	1640.1	1640.1	1640.1	1640.1	1640.1
2.5°	1702.2	1693.0	1688.3	1677.8	1665.2	1658.6	1652.6	1644.1	1632.8	1620.9	1612.3
5°	1775.6	1759.7	1739.9	1716.1	1694.9	1674.5	1656.6	1638.8	1618.3	1597.1	1576.0
7.5°	1848.2	1819.8	1789.4	1753.1	1718.1	1685.7	1656.6	1628.2	1595.8	1566.7	1539.7
10°	1924.9	1882.6	1835.7	1786.1	1736.6	1693.6	1651.3	1613.0	1570.7	1533.0	1501.3
12.5°	1987.0	1935.5	1876.7	1811.9	1749.8	1695.6	1645.4	1592.5	1543.0	1501.3	1456.4
15°	2057.1	1989.0	1913.0	1839.0	1761.7	1691.0	1625.6	1567.4	1512.6	1455.1	1414.8
17.5°	2105.3	2026.7	1936.8	1850.9	1762.3	1680.4	1606.4	1539.0	1476.2	1418.7	1371.1
20°	2147.6	2058.4	1956.0	1854.9	1752.4	1663.2	1581.9	1505.3	1439.9	1376.4	1326.9
22.5°	2171.4	2070.3	1956.0	1848.9	1741.9	1643.4	1552.2	1471.6	1398.9	1335.5	1279.3
25°	2172.7	2067.0	1952.6	1831.1	1714.8	1612.3	1519.8	1433.3	1354.0	1290.5	1232.4
27.5°	2167.4	2045.2	1930.2	1806.6	1687.0	1578.0	1482.2	1390.3	1311.7	1244.3	1184.8
30°	2151.5	2018.1	1892.5	1763.0	1641.4	1537.7	1435.2	1348.0	1265.4	1194.7	1134.6
32.5°	2117.2	1985.0	1847.6	1714.1	1590.5	1482.8	1387.0	1299.1	1218.5	1145.8	1081.1
35°	2069.6	1935.5	1788.8	1652.6	1531.7	1420.7	1329.5	1244.9	1167.6	1090.3	1022.9
37.5°	2014.8	1874.7	1730.0	1580.6	1460.4	1354.6	1269.4	1188.1	1112.8	1042.1	967.4
40°	1930.2	1805.3	1654.6	1506.6	1382.4	1281.3	1204.0	1131.9	1055.9	985.9	911.2
42.5°	1827.8	1726.0	1573.4	1424.7	1302.4	1205.9	1135.2	1065.2	997.8	930.4	851.8
45°	1711.5	1630.8	1488.1	1345.4	1221.8	1125.3	1059.3	997.1	936.3	871.6	798.2
47.5°	1581.9	1522.5	1398.2	1248.9	1133.3	1044.7	981.3	929.7	876.2	810.8	744.7
50°	1445.8	1410.8	1291.9	1158.4	1049.3	969.4	904.0	856.4	813.4	751.3	693.8
52.5°	1300.4	1285.9	1190.1	1063.9	959.5	881.5	828.0	786.3	742.7	693.8	641.0
55°	1152.4	1162.3	1077.1	966.7	867.6	801.5	750.7	715.0	678.0	634.4	592.7
57.5°	998.5	1036.1	972.7	872.9	777.1	715.0	676.0	644.3	613.2	576.2	538.5
60°	863.0	893.4	861.0	775.8	694.5	637.7	602.0	578.9	547.8	514.8	487.7
62.5°	730.8	763.9	748.0	683.3	609.3	562.3	531.9	510.8	489.6	461.9	433.5
65°	624.5	645.6	636.3	588.8	535.2	493.6	464.5	448.7	427.5	406.4	381.3
67.5°	499.6	541.2	534.6	508.2	456.6	423.6	403.1	388.5	368.7	352.9	335.0
70°	393.2	430.8	430.2	409.7	384.6	354.2	341.0	329.1	311.9	296.7	282.8
72.5°	304.0	337.7	344.3	329.7	314.5	293.4	280.8	273.6	257.0	247.8	237.2
75°	225.3	250.4	257.0	257.0	249.1	237.2	226.0	220.7	208.8	199.6	193.0
77.5°	158.6	175.8	185.7	187.7	188.3	183.7	173.1	169.2	159.9	156.6	149.3
80°	104.4	115.0	126.9	130.8	134.1	132.8	128.9	126.2	117.6	114.3	111.7
82.5°	64.1	68.7	78.0	87.9	85.9	90.5	87.2	85.2	79.3	78.6	76.0
85°	37.7	38.3	39.6	45.6	48.9	50.2	50.9	49.6	47.6	47.6	43.0
87.5°	15.9	15.2	16.5	16.5	17.2	19.8	21.8	22.5	20.5	18.5	16.5
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°	1640.1	1640.1	1640.1	1640.1	1640.1	1640.1	1640.1	1640.1	1640.1	1640.1	1640.1
2.5°	1603.1	1596.5	1587.9	1578.0	1566.1	1555.5	1550.9	1554.8	1556.8	1551.5	1550.9
5°	1561.5	1544.9	1531.7	1511.9	1496.0	1482.8	1473.6	1469.6	1470.9	1460.4	1457.7
7.5°	1515.2	1497.4	1475.6	1453.1	1431.9	1413.4	1403.5	1398.9	1387.7	1383.0	1375.8
10°	1470.9	1444.5	1423.4	1395.6	1370.5	1347.4	1336.1	1326.9	1315.6	1310.4	1299.1
12.5°	1425.3	1393.6	1369.8	1340.8	1315.0	1285.9	1275.3	1256.2	1237.0	1224.5	1209.3
15°	1383.0	1346.0	1317.6	1283.3	1252.9	1221.1	1192.7	1161.0	1149.1	1124.0	1109.5
17.5°	1332.8	1294.5	1262.8	1218.5	1172.9	1134.6	1102.9	1069.8	1052.0	1034.8	1027.5
20°	1283.3	1248.9	1200.0	1146.5	1094.3	1050.7	1026.2	1006.4	986.6	975.3	967.4
22.5°	1236.3	1190.1	1131.3	1072.5	1020.3	988.5	968.7	948.2	933.0	922.5	911.2
25°	1182.8	1125.3	1065.2	999.1	963.4	933.7	911.2	894.7	884.8	870.9	865.6
27.5°	1130.6	1061.2	993.2	948.2	911.2	882.8	862.3	850.4	837.2	828.0	820.7
30°	1068.5	997.8	938.3	896.0	858.4	835.9	820.0	805.5	795.6	788.3	783.0
32.5°	1007.1	936.3	888.8	842.5	814.8	793.0	775.8	765.9	758.6	748.7	746.0
35°	948.2	885.5	841.9	800.9	770.5	750.7	737.4	726.2	719.6	717.0	715.0
37.5°	890.8	838.5	790.3	757.3	728.9	713.7	696.5	691.2	686.6	680.6	683.3
40°	836.6	788.3	746.7	711.0	689.2	672.0	662.8	656.2	652.2	652.2	652.2
42.5°	789.6	742.7	702.4	671.4	649.6	635.7	625.1	619.8	619.2	618.5	622.5
45°	740.8	697.1	656.2	629.7	611.2	596.7	590.8	586.1	586.1	588.8	589.4
47.5°	691.9	650.9	617.8	587.4	570.3	561.0	555.7	553.1	553.1	556.4	559.0
50°	647.6	607.3	574.9	548.5	532.6	524.0	519.4	518.1	519.4	519.4	524.0
52.5°	599.3	564.3	532.6	511.5	493.0	485.0	483.0	481.1	481.7	484.4	485.7
55°	552.4	520.0	489.6	468.5	455.3	450.0	444.1	444.7	443.4	444.7	444.7
57.5°	504.8	476.4	446.7	429.5	418.3	410.4	403.7	405.7	403.7	403.7	403.1
60°	459.3	427.5	405.1	389.9	376.7	370.0	364.1	365.4	363.4	362.1	359.5
62.5°	409.7	384.6	363.4	348.9	339.0	331.1	325.1	323.1	317.8	312.6	305.9
65°	362.1	340.3	321.1	307.3	297.4	291.4	286.8	282.8	272.9	262.3	257.0
67.5°	315.2	299.3	280.8	268.9	261.0	253.1	244.5	237.2	227.3	220.7	217.4
70°	270.3	255.1	239.9	228.6	220.0	212.8	202.9	198.2	191.6	189.0	185.7
72.5°	227.3	213.4	199.6	189.6	180.4	175.1	167.8	163.2	161.2	160.6	157.3
75°	183.7	172.5	161.9	152.6	145.4	141.4	138.1	134.8	133.5	127.5	124.2
77.5°	141.4	133.5	126.9	119.6	115.0	112.3	105.1	100.4	97.8	94.5	93.8
80°	104.4	99.1	92.5	88.5	81.3	78.6	76.0	75.3	74.7	74.0	73.3
82.5°	72.0	66.7	60.1	58.1	57.5	56.2	54.8	54.2	53.5	54.2	54.2
85°	39.6	37.0	37.0	36.3	35.7	35.0	34.4	34.4	33.7	34.4	33.7
87.5°	16.5	15.9	15.9	14.5	15.2	15.2	14.5	14.5	15.2	13.9	13.9
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: P242765

CATALOG NUMBER: S124RDR-S1195D940-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	1640.1	1640.1	1640.1	1640.1
2.5°	1546.9	1548.2	1543.6	1542.3
5°	1452.4	1451.1	1447.8	1448.5
7.5°	1370.5	1365.9	1369.2	1363.9
10°	1296.5	1289.2	1283.3	1278.0
12.5°	1195.4	1189.4	1180.8	1184.1
15°	1100.9	1091.0	1075.1	1077.1
17.5°	1016.3	1017.6	1008.4	1011.0
20°	953.5	948.9	949.6	947.6
22.5°	909.9	904.0	898.0	893.4
25°	859.7	855.7	849.8	848.5
27.5°	815.4	814.8	812.1	808.8
30°	777.8	776.4	775.1	773.1
32.5°	744.1	743.4	742.1	742.7
35°	712.3	711.7	710.4	709.7
37.5°	682.6	684.6	683.3	683.3
40°	651.5	652.2	653.5	652.9
42.5°	625.8	625.8	627.8	625.1
45°	594.1	598.0	597.4	597.4
47.5°	560.4	565.0	565.6	565.6
50°	527.3	526.0	528.0	527.3
52.5°	487.0	487.7	487.0	486.3
55°	445.4	446.0	444.7	445.4
57.5°	401.1	398.5	400.4	399.1
60°	352.9	347.6	346.3	343.6
62.5°	298.7	295.4	290.1	293.4
65°	251.8	249.1	247.1	249.8
67.5°	214.1	212.8	212.8	211.5
70°	185.7	183.7	183.7	182.4
72.5°	156.6	154.6	155.3	154.6
75°	120.3	117.0	117.0	117.6
77.5°	93.8	93.2	94.5	92.5
80°	73.3	72.7	72.0	74.0
82.5°	52.9	52.9	52.9	55.5
85°	34.4	33.0	34.4	33.0
87.5°	15.2	14.5	13.9	14.5
90°	0.0	0.0	0.0	0.0

(END OF REPORT)