

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: P243595

Luminaire Tested: **S124RDR-H1195D927-X4F0-XX-UDD-A-W**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P243595
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-70)
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S124RDR-H1195D927-X4F0-XX-UDD-A-W
Description: DEFINE 4 REGRESSED DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER.
HIGH PERFORMANCE LIGHT ENGINE
Light Source: (184) 2700K CCT, 90 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3692.7 lumens
Efficiency: N/A
Efficacy: 97.9 lumens/watt
Spacing Criteria (0/90/45): 1.27 / 1.23 / 1.39
Luminous Opening: Rectangular (W 3.88' x L: 0.31' x H: 0')
CIE Type: Direct

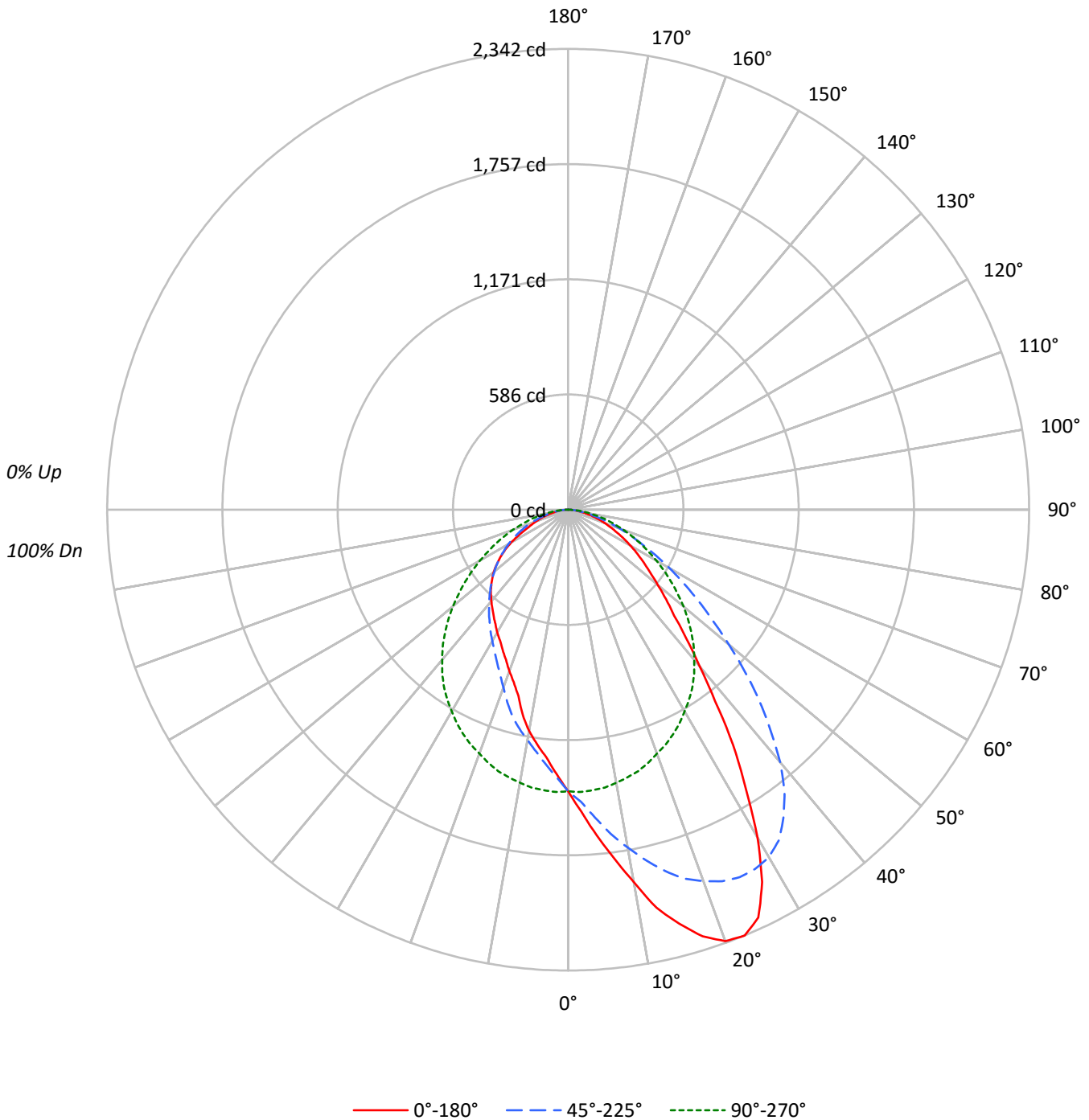
Input Watts (W): 37.7
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	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	105	102	98	107	103	100	97	99	96	93	95	93	91	92	90	88					86				
2	101	93	87	82	98	91	86	81	88	83	79	85	81	77	82	78	75					73				
3	92	83	75	69	90	81	74	68	78	72	67	76	70	66	73	69	65					63				
4	85	74	66	59	83	73	65	59	70	63	58	68	62	57	66	61	57					55				
5	79	66	58	52	77	65	57	51	63	56	51	61	55	50	60	54	50					48				
6	73	60	52	46	71	59	51	45	58	50	45	56	50	45	54	49	44					42				
7	68	55	46	41	66	54	46	40	53	45	40	51	45	40	50	44	40					38				
8	63	50	42	36	62	50	42	36	48	41	36	47	41	36	46	40	36					34				
9	59	46	38	33	58	46	38	33	45	38	33	43	37	33	42	37	32					31				
10	56	43	35	30	54	42	35	30	41	35	30	40	34	30	39	34	30					28				

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	12718	12718	12718
5°	14815	12771	11275
10°	17350	12718	10310
15°	20048	12653	9004
20°	22072	12475	8253
25°	22426	12361	7716
30°	19741	12140	7400
35°	15840	11934	7159
40°	12050	11553	7047
45°	9568	11129	6962
50°	8213	10579	6841
55°	7253	9895	6510
60°	6498	9182	5963
65°	5719	8485	5016
70°	5097	7703	4517
75°	4441	7003	4018
80°	3762	6020	3706
85°	3294	5171	3753



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	138.8	3.8
10°-20°	421.0	11.4
20°-30°	657.0	17.8
30°-40°	732.7	19.8
40°-50°	658.6	17.8
50°-60°	520.4	14.1
60°-70°	345.6	9.4
70°-80°	173.3	4.7
80°-90°	45.1	1.2
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°	1216.9	33.0
0°-40°	1949.6	52.8
0°-60°	3128.6	84.7
0°-90°	3692.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3692.7	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1431	1431	1431	1431	1431	
5°	1660	1571	1431	1299	1264	166
15°	2178	1901	1375	1089	978	619
25°	2286	2061	1260	856	787	1023
35°	1460	1907	1100	696	660	907
45°	761	1374	885	557	554	603
55°	468	807	638	422	420	422
65°	272	413	403	276	238	272
75°	129	164	204	136	117	138
85°	32	34	51	38	37	36
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°	1430.8	1430.8	1430.8	1430.8	1430.8	1430.8	1430.8	1430.8	1430.8	1430.8	1430.8
2.5°	1536.6	1531.0	1530.5	1523.2	1522.7	1515.4	1513.2	1507.1	1494.8	1485.4	1485.9
5°	1660.3	1655.8	1655.3	1648.0	1645.8	1636.9	1623.0	1606.3	1586.8	1570.6	1560.0
7.5°	1787.3	1795.1	1786.8	1786.8	1770.6	1760.0	1732.7	1718.8	1685.4	1662.0	1637.5
10°	1922.2	1929.4	1926.1	1919.4	1898.2	1876.5	1848.1	1820.8	1780.1	1743.3	1718.8
12.5°	2072.6	2050.9	2064.8	2044.2	2026.9	1992.4	1965.1	1910.5	1878.1	1824.7	1776.7
15°	2178.5	2170.1	2169.5	2155.6	2136.7	2098.8	2069.2	2012.4	1957.3	1901.0	1846.9
17.5°	2273.2	2274.3	2266.5	2244.2	2219.7	2182.9	2142.8	2092.1	2029.1	1966.7	1902.7
20°	2333.3	2333.9	2328.3	2316.6	2289.9	2256.5	2215.2	2148.9	2077.6	2008.5	1944.4
22.5°	2342.3	2343.9	2342.3	2335.0	2316.6	2289.3	2251.4	2195.2	2123.3	2044.2	1967.8
25°	2286.5	2292.1	2292.7	2302.7	2293.2	2282.6	2254.8	2207.4	2141.1	2060.9	1977.9
27.5°	2133.9	2149.5	2164.0	2181.8	2198.0	2212.4	2214.7	2189.6	2132.8	2058.1	1979.0
30°	1923.3	1941.7	1970.6	1989.6	2039.7	2071.5	2114.4	2123.8	2096.5	2039.2	1962.8
32.5°	1678.1	1697.6	1708.8	1771.2	1843.0	1894.9	1966.2	2008.5	2019.1	1991.8	1929.4
35°	1459.7	1463.1	1471.4	1542.2	1613.5	1692.1	1780.6	1854.2	1904.3	1907.1	1876.5
37.5°	1225.7	1229.6	1262.5	1316.5	1378.4	1464.7	1566.7	1671.4	1763.4	1805.7	1796.8
40°	1038.5	1037.4	1072.5	1119.3	1179.5	1269.2	1374.5	1488.7	1586.8	1675.3	1696.5
42.5°	887.0	890.9	921.0	948.3	1006.2	1069.2	1181.7	1300.4	1426.3	1523.2	1587.9
45°	761.1	771.1	791.7	817.3	860.8	918.7	1010.7	1128.8	1257.5	1373.9	1451.4
47.5°	674.1	676.9	687.5	719.3	748.3	795.1	873.6	973.9	1088.1	1218.5	1320.4
50°	593.9	600.6	604.5	623.4	651.9	696.4	757.2	831.8	944.9	1064.7	1192.3
52.5°	524.8	528.7	536.0	553.2	575.5	606.7	654.6	720.4	814.6	925.4	1045.8
55°	468.0	468.6	475.8	488.1	505.3	529.3	575.0	622.3	705.9	806.8	916.0
57.5°	416.7	413.4	420.1	427.3	444.0	464.7	494.2	542.7	607.8	693.6	792.3
60°	365.5	368.3	367.7	376.1	385.0	405.6	430.7	462.4	515.9	594.5	678.0
62.5°	317.6	317.0	322.6	327.6	333.7	350.4	371.1	397.2	439.0	497.0	577.8
65°	271.9	273.0	277.5	281.4	288.0	298.6	314.2	335.4	368.8	413.4	481.4
67.5°	230.7	234.6	236.8	237.9	244.0	251.8	265.2	282.5	305.3	341.0	397.8
70°	196.1	197.2	198.3	202.2	205.0	209.5	219.5	229.0	249.6	275.8	317.0
72.5°	163.8	162.7	166.0	167.1	168.3	172.7	178.8	183.9	197.2	219.5	245.1
75°	129.3	129.8	130.4	132.0	136.5	137.1	139.8	145.4	154.9	163.8	181.1
77.5°	96.9	98.6	98.1	99.7	101.4	103.1	104.2	109.2	115.9	123.1	131.5
80°	73.5	73.5	73.5	74.7	73.5	77.4	77.4	79.1	80.8	84.1	90.3
82.5°	50.1	51.3	51.8	52.4	52.9	52.9	53.5	54.6	56.8	57.9	59.6
85°	32.3	31.2	31.8	31.8	31.8	31.8	32.9	34.0	34.0	34.5	36.2
87.5°	14.5	14.5	14.5	14.5	13.9	14.5	15.0	15.0	15.6	15.6	16.7
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):

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	1430.8	1430.8	1430.8	1430.8	1430.8	1430.8	1430.8	1430.8	1430.8	1430.8	1430.8
2.5°	1482.6	1480.9	1472.5	1463.6	1455.3	1446.9	1444.1	1435.8	1425.7	1416.8	1406.8
5°	1548.9	1535.5	1517.1	1498.2	1478.7	1460.8	1446.9	1431.3	1413.5	1392.3	1375.6
7.5°	1615.7	1591.2	1561.1	1533.3	1499.8	1473.1	1446.4	1424.1	1398.4	1368.4	1345.5
10°	1680.9	1640.2	1603.5	1559.5	1517.1	1480.3	1446.4	1409.0	1375.0	1342.7	1311.0
12.5°	1732.7	1692.1	1639.1	1585.1	1530.5	1482.6	1436.9	1392.9	1350.5	1311.5	1276.4
15°	1791.8	1733.3	1668.1	1608.5	1533.8	1474.8	1422.4	1375.0	1326.6	1279.2	1240.8
17.5°	1835.2	1766.2	1685.4	1616.8	1545.0	1471.4	1408.5	1348.9	1293.1	1243.6	1204.0
20°	1868.7	1786.8	1706.0	1619.1	1533.3	1458.1	1387.3	1318.8	1262.5	1208.5	1166.7
22.5°	1883.2	1796.8	1707.1	1612.9	1521.6	1436.3	1362.8	1292.0	1228.5	1172.8	1124.3
25°	1889.3	1794.6	1701.5	1594.6	1502.1	1415.2	1333.3	1260.3	1195.1	1132.1	1084.2
27.5°	1884.3	1782.9	1675.9	1575.1	1470.3	1385.1	1298.2	1224.1	1156.1	1095.4	1041.9
30°	1870.9	1756.1	1649.7	1536.6	1435.8	1346.1	1261.4	1182.8	1114.3	1052.5	999.5
32.5°	1836.4	1726.0	1605.1	1494.8	1386.2	1297.6	1220.7	1143.3	1073.6	1009.0	957.7
35°	1793.5	1685.4	1558.9	1443.6	1336.0	1246.3	1168.9	1099.8	1031.3	962.8	910.4
37.5°	1739.4	1629.7	1507.6	1383.4	1278.1	1191.2	1120.4	1050.8	982.8	919.9	861.4
40°	1666.4	1566.1	1443.6	1318.8	1212.9	1129.3	1059.7	995.6	935.5	873.6	810.7
42.5°	1575.6	1499.3	1372.8	1249.7	1146.1	1063.0	1001.2	943.8	885.9	822.4	765.5
45°	1478.7	1413.5	1298.7	1174.5	1075.9	995.1	936.0	885.3	830.7	774.4	714.8
47.5°	1369.5	1321.0	1221.8	1098.7	995.1	926.0	871.4	825.1	775.6	725.4	667.5
50°	1246.3	1216.8	1132.1	1020.1	921.5	851.3	806.2	765.0	722.6	672.5	622.9
52.5°	1123.2	1117.6	1038.5	939.9	846.9	781.7	737.7	699.8	665.2	617.9	576.1
55°	994.0	1010.7	944.9	854.1	771.1	708.1	669.1	638.5	608.4	568.3	528.2
57.5°	879.2	898.1	853.0	769.4	692.0	638.5	605.1	577.2	551.0	514.2	487.5
60°	752.2	786.7	762.7	686.4	617.9	570.0	538.8	516.5	494.7	463.0	439.6
62.5°	651.9	675.8	661.9	605.1	544.3	505.3	477.5	456.9	439.6	415.1	392.2
65°	544.3	574.4	567.2	529.8	476.4	440.7	419.5	403.4	385.5	366.0	347.1
67.5°	447.4	478.6	476.9	451.3	411.7	382.2	362.1	350.4	336.0	317.0	305.3
70°	359.9	388.9	390.0	377.2	349.3	321.5	307.0	296.4	285.3	271.3	263.0
72.5°	279.7	305.9	310.3	304.2	286.4	268.0	255.2	247.9	238.5	226.8	219.5
75°	208.9	227.9	238.5	235.7	228.4	216.2	208.9	203.9	194.4	186.1	180.0
77.5°	148.8	163.8	174.4	178.8	175.5	170.5	163.8	159.9	149.9	146.0	142.6
80°	99.7	113.1	122.6	125.4	127.0	125.9	119.8	117.6	112.5	110.9	107.5
82.5°	61.3	68.5	75.2	82.5	85.8	85.8	82.5	83.0	78.6	76.3	75.2
85°	37.3	39.0	40.1	45.7	50.1	51.8	50.1	50.7	49.0	47.4	45.7
87.5°	17.3	17.3	17.8	18.9	20.1	23.4	24.5	26.2	24.0	24.0	20.1
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°	1430.8	1430.8	1430.8	1430.8	1430.8	1430.8	1430.8	1430.8	1430.8	1430.8	1430.8
2.5°	1400.7	1393.4	1387.9	1378.9	1371.7	1360.0	1356.1	1356.1	1358.3	1355.5	1358.3
5°	1363.9	1350.5	1336.0	1323.2	1309.3	1299.3	1289.2	1287.0	1285.9	1279.2	1279.8
7.5°	1327.1	1309.3	1290.9	1274.2	1256.9	1241.3	1230.7	1226.3	1222.4	1217.9	1212.9
10°	1287.6	1267.0	1245.2	1226.3	1209.6	1188.4	1177.8	1174.5	1163.3	1161.1	1153.3
12.5°	1245.8	1224.6	1202.9	1178.4	1162.2	1141.6	1126.0	1118.8	1108.2	1100.4	1088.7
15°	1212.9	1186.2	1157.2	1133.2	1112.1	1089.2	1068.1	1054.1	1040.2	1018.5	1007.9
17.5°	1172.2	1141.6	1116.5	1090.9	1060.3	1026.8	1001.8	981.1	966.1	948.3	937.7
20°	1128.2	1099.8	1068.6	1032.4	1000.1	962.2	939.4	922.1	910.4	899.8	894.2
22.5°	1089.2	1056.4	1013.5	978.9	933.8	903.7	885.3	874.2	863.0	851.9	846.3
25°	1046.9	1008.4	956.1	913.7	879.7	856.3	838.5	827.9	816.2	809.5	801.2
27.5°	1005.1	955.5	903.1	864.7	838.0	810.7	795.6	787.3	778.3	768.9	762.2
30°	954.4	898.1	854.7	819.6	792.8	770.0	758.8	746.6	738.8	733.2	729.3
32.5°	901.5	847.4	807.9	777.8	751.6	734.3	720.4	712.6	705.9	699.8	695.3
35°	851.9	799.5	766.1	737.1	715.4	695.9	685.3	678.0	672.5	667.5	665.2
37.5°	802.9	758.3	722.1	699.2	676.4	660.8	650.7	644.1	640.7	635.7	636.3
40°	754.4	714.3	685.3	659.1	637.9	624.6	616.8	614.0	609.0	607.3	609.0
42.5°	710.9	674.1	646.3	621.8	603.4	590.6	584.4	580.5	578.9	578.3	578.9
45°	668.6	634.0	607.3	587.2	568.3	556.6	551.6	548.8	547.1	549.9	550.5
47.5°	626.2	595.0	571.1	547.7	532.1	523.7	518.7	516.5	518.1	519.3	523.2
50°	584.4	555.5	530.4	509.8	497.5	489.7	488.1	484.2	486.9	488.6	491.4
52.5°	542.1	515.9	493.6	474.1	461.3	456.3	452.4	450.7	454.6	454.6	457.4
55°	499.2	476.4	455.7	437.9	427.9	421.8	419.0	416.7	419.0	419.5	419.0
57.5°	459.1	437.4	415.6	400.6	392.2	385.5	382.8	381.6	381.1	383.3	382.8
60°	416.7	396.1	378.9	363.3	354.9	351.0	344.9	346.0	346.0	346.0	340.4
62.5°	374.4	353.8	338.7	328.2	318.1	311.4	310.3	308.7	305.3	304.8	297.5
65°	330.9	315.3	302.5	291.9	281.9	276.3	274.7	269.7	265.8	258.5	253.5
67.5°	290.8	279.7	264.6	255.7	247.4	240.7	234.6	230.7	222.9	215.6	211.2
70°	250.7	239.0	229.0	219.5	211.2	205.0	197.8	190.5	185.5	181.1	177.7
72.5°	210.6	200.6	192.2	183.3	174.4	168.3	162.7	157.1	154.9	152.7	151.0
75°	173.3	163.8	156.0	148.8	143.7	136.5	133.7	131.5	129.3	126.5	123.1
77.5°	137.1	129.8	123.7	117.6	113.1	109.2	107.0	100.3	94.7	93.6	92.5
80°	102.0	96.4	92.5	88.0	83.0	77.4	75.8	73.5	72.4	72.4	73.0
82.5°	71.3	68.0	63.5	59.6	57.9	55.7	55.7	55.2	54.6	55.2	55.2
85°	43.5	39.0	37.9	37.3	37.9	37.9	37.9	37.9	37.3	37.9	36.8
87.5°	18.9	20.6	21.2	19.5	20.1	18.9	19.5	19.5	19.5	20.1	19.5
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: P243595

CATALOG NUMBER: S124RDR-H1195D927-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	1430.8	1430.8	1430.8	1430.8
2.5°	1355.0	1355.0	1349.4	1345.0
5°	1278.7	1271.4	1270.3	1263.6
7.5°	1207.3	1206.2	1203.4	1203.4
10°	1150.5	1146.6	1142.7	1142.2
12.5°	1070.3	1075.9	1069.2	1067.5
15°	1000.1	995.6	990.1	978.4
17.5°	934.9	926.5	924.3	919.3
20°	883.6	877.5	875.3	872.5
22.5°	835.2	834.1	827.4	825.7
25°	799.5	793.9	789.5	786.7
27.5°	760.5	756.6	754.4	749.9
30°	724.9	723.7	721.0	721.0
32.5°	692.5	689.2	689.2	688.6
35°	663.0	664.1	660.8	659.7
37.5°	635.1	633.5	634.0	632.9
40°	607.8	606.7	606.7	607.3
42.5°	580.0	580.5	581.7	581.7
45°	552.1	552.7	553.8	553.8
47.5°	525.9	524.8	525.9	524.8
50°	492.5	495.9	495.3	494.7
52.5°	458.5	457.4	459.6	459.1
55°	421.8	420.1	422.3	420.1
57.5°	380.5	381.1	381.1	380.0
60°	339.3	337.6	335.4	335.4
62.5°	291.4	286.4	283.0	285.3
65°	245.1	241.2	240.1	238.5
67.5°	208.4	203.9	202.2	201.7
70°	176.6	174.4	173.8	173.8
72.5°	149.9	149.9	148.2	147.1
75°	122.0	119.8	117.0	117.0
77.5°	91.4	90.8	90.3	90.3
80°	71.3	71.3	71.9	72.4
82.5°	53.5	54.0	54.6	54.6
85°	36.2	36.2	36.8	36.8
87.5°	19.5	19.5	19.5	18.9
90°	0.0	0.0	0.0	0.0

(END OF REPORT)