

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: P243615

Luminaire Tested: **S124RDR-H1195D930-X4F0-XX-UDD-A-W**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P243615
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-H1195D930-X4F0-XX-UDD-A-W
Description: DEFINE 4 REGRESSED DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER.
HIGH PERFORMANCE LIGHT ENGINE
Light Source: (184) 3000K CCT, 90 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3800.4 lumens
Efficiency: N/A
Efficacy: 100.8 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

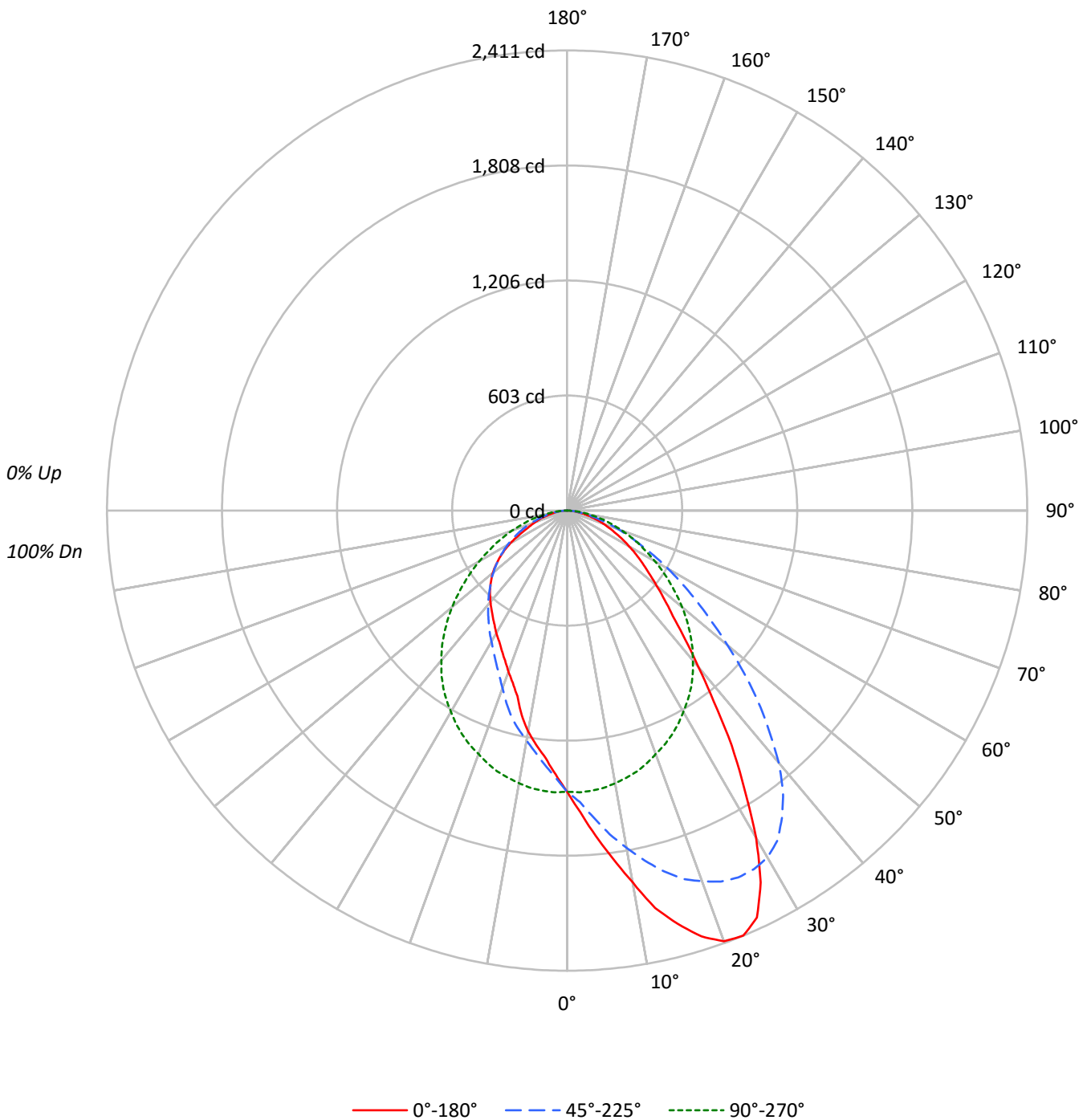
Input Watts (W): 37.7
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	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°	13089	13089	13089
5°	15247	13144	11604
10°	17856	13089	10610
15°	20632	13023	9266
20°	22716	12839	8495
25°	23081	12721	7941
30°	20317	12494	7616
35°	16302	12283	7367
40°	12402	11890	7252
45°	9847	11453	7165
50°	8453	10887	7042
55°	7465	10183	6700
60°	6688	9449	6137
65°	5885	8731	5161
70°	5245	7929	4650
75°	4568	7209	4135
80°	3875	6194	3814
85°	3396	5324	3855



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	142.9	3.8
10°-20°	433.3	11.4
20°-30°	676.2	17.8
30°-40°	754.1	19.8
40°-50°	677.9	17.8
50°-60°	535.6	14.1
60°-70°	355.7	9.4
70°-80°	178.3	4.7
80°-90°	46.5	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°	1252.4	33.0
0°-40°	2006.4	52.8
0°-60°	3219.9	84.7
0°-90°	3800.4	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3800.4	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1472	1472	1472	1472	1472	
5°	1709	1616	1473	1337	1300	171
15°	2242	1956	1415	1121	1007	637
25°	2353	2121	1297	881	810	1053
35°	1502	1963	1132	716	679	933
45°	783	1414	911	573	570	621
55°	482	830	657	434	432	434
65°	280	426	415	284	245	280
75°	133	169	210	140	120	142
85°	33	36	52	39	38	37
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°	1472.5	1472.5	1472.5	1472.5	1472.5	1472.5	1472.5	1472.5	1472.5	1472.5	1472.5
2.5°	1581.5	1575.7	1575.1	1567.7	1567.1	1559.7	1557.4	1551.1	1538.5	1528.7	1529.3
5°	1708.8	1704.2	1703.6	1696.1	1693.8	1684.7	1670.3	1653.1	1633.1	1616.4	1605.5
7.5°	1839.5	1847.5	1838.9	1838.9	1822.3	1811.4	1783.3	1769.0	1734.6	1710.5	1685.2
10°	1978.3	1985.7	1982.3	1975.4	1953.6	1931.2	1902.0	1873.9	1832.0	1794.2	1769.0
12.5°	2133.1	2110.7	2125.0	2103.8	2086.1	2050.5	2022.4	1966.2	1933.0	1877.9	1828.6
15°	2242.0	2233.4	2232.8	2218.5	2199.0	2160.0	2129.6	2071.1	2014.4	1956.5	1900.8
17.5°	2339.5	2340.6	2332.6	2309.7	2284.5	2246.6	2205.3	2153.1	2088.3	2024.1	1958.2
20°	2401.4	2402.0	2396.3	2384.2	2356.7	2322.3	2279.9	2211.6	2138.2	2067.1	2001.2
22.5°	2410.6	2412.3	2410.6	2403.1	2384.2	2356.1	2317.1	2259.2	2185.3	2103.8	2025.3
25°	2353.3	2359.0	2359.6	2369.9	2360.1	2349.2	2320.6	2271.8	2203.6	2121.0	2035.6
27.5°	2196.1	2212.2	2227.1	2245.5	2262.1	2277.0	2279.3	2253.5	2195.0	2118.2	2036.7
30°	1979.4	1998.3	2028.1	2047.6	2099.2	2131.9	2176.1	2185.8	2157.7	2098.7	2020.1
32.5°	1727.1	1747.2	1758.6	1822.9	1896.8	1950.2	2023.6	2067.1	2078.0	2049.9	1985.7
35°	1502.3	1505.8	1514.4	1587.2	1660.6	1741.4	1832.6	1908.3	1959.9	1962.8	1931.2
37.5°	1261.5	1265.5	1299.3	1355.0	1418.6	1507.5	1612.4	1720.2	1814.8	1858.4	1849.2
40°	1068.8	1067.7	1103.8	1152.0	1213.9	1306.2	1414.6	1532.1	1633.1	1724.2	1746.0
42.5°	912.9	916.9	947.8	975.9	1035.6	1100.4	1216.2	1338.3	1467.9	1567.7	1634.2
45°	783.3	793.6	814.8	841.2	885.9	945.5	1040.2	1161.7	1294.2	1414.0	1493.7
47.5°	693.8	696.7	707.6	740.3	770.1	818.3	899.1	1002.3	1119.9	1254.0	1359.0
50°	611.3	618.1	622.1	641.6	670.9	716.8	779.3	856.1	972.5	1095.8	1227.1
52.5°	540.1	544.2	551.6	569.4	592.3	624.4	673.8	741.4	838.3	952.4	1076.3
55°	481.7	482.2	489.7	502.3	520.1	544.7	591.8	640.5	726.5	830.3	942.7
57.5°	428.9	425.5	432.3	439.8	457.0	478.2	508.6	558.5	625.6	713.9	815.4
60°	376.2	379.0	378.4	387.0	396.2	417.4	443.2	475.9	531.0	611.8	697.8
62.5°	326.8	326.3	332.0	337.2	343.5	360.7	381.9	408.8	451.8	511.5	594.6
65°	279.8	281.0	285.6	289.6	296.5	307.3	323.4	345.2	379.6	425.5	495.4
67.5°	237.4	241.4	243.7	244.8	251.2	259.2	272.9	290.7	314.2	350.9	409.4
70°	201.8	203.0	204.1	208.1	211.0	215.6	225.9	235.7	256.9	283.8	326.3
72.5°	168.6	167.4	170.9	172.0	173.2	177.8	184.1	189.2	203.0	225.9	252.3
75°	133.0	133.6	134.2	135.9	140.5	141.1	143.9	149.7	159.4	168.6	186.4
77.5°	99.8	101.5	100.9	102.6	104.4	106.1	107.2	112.4	119.3	126.7	135.3
80°	75.7	75.7	75.7	76.8	75.7	79.7	79.7	81.4	83.1	86.6	92.9
82.5°	51.6	52.8	53.3	53.9	54.5	54.5	55.0	56.2	58.5	59.6	61.4
85°	33.3	32.1	32.7	32.7	32.7	32.7	33.8	35.0	35.0	35.6	37.3
87.5°	14.9	14.9	14.9	14.9	14.3	14.9	15.5	15.5	16.1	16.1	17.2
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°	1472.5	1472.5	1472.5	1472.5	1472.5	1472.5	1472.5	1472.5	1472.5	1472.5	1472.5
2.5°	1525.8	1524.1	1515.5	1506.3	1497.7	1489.1	1486.3	1477.7	1467.3	1458.2	1447.9
5°	1594.1	1580.3	1561.4	1541.9	1521.8	1503.5	1489.1	1473.1	1454.7	1432.9	1415.7
7.5°	1662.9	1637.6	1606.7	1578.0	1543.6	1516.1	1488.6	1465.6	1439.3	1408.3	1384.8
10°	1730.0	1688.1	1650.3	1605.0	1561.4	1523.5	1488.6	1450.1	1415.2	1381.9	1349.2
12.5°	1783.3	1741.4	1687.0	1631.3	1575.1	1525.8	1478.8	1433.5	1389.9	1349.8	1313.7
15°	1844.1	1783.9	1716.8	1655.4	1578.6	1517.8	1463.9	1415.2	1365.3	1316.5	1277.0
17.5°	1888.8	1817.7	1734.6	1664.0	1590.1	1514.4	1449.6	1388.2	1330.9	1279.8	1239.1
20°	1923.2	1838.9	1755.8	1666.3	1578.0	1500.6	1427.8	1357.3	1299.3	1243.7	1200.7
22.5°	1938.1	1849.2	1756.9	1660.0	1566.0	1478.2	1402.6	1329.7	1264.4	1207.0	1157.1
25°	1944.4	1846.9	1751.2	1641.1	1545.9	1456.5	1372.2	1297.0	1230.0	1165.2	1115.8
27.5°	1939.3	1834.9	1724.8	1621.0	1513.2	1425.5	1336.0	1259.8	1189.8	1127.3	1072.3
30°	1925.5	1807.4	1697.9	1581.5	1477.7	1385.4	1298.2	1217.3	1146.8	1083.2	1028.7
32.5°	1889.9	1776.4	1652.0	1538.5	1426.6	1335.5	1256.3	1176.6	1105.0	1038.4	985.7
35°	1845.8	1734.6	1604.4	1485.7	1375.0	1282.7	1203.0	1131.9	1061.4	990.8	936.9
37.5°	1790.2	1677.2	1551.6	1423.8	1315.4	1225.9	1153.1	1081.4	1011.5	946.7	886.5
40°	1715.1	1611.8	1485.7	1357.3	1248.3	1162.3	1090.6	1024.7	962.7	899.1	834.3
42.5°	1621.6	1543.0	1412.9	1286.2	1179.5	1094.1	1030.4	971.4	911.7	846.3	787.9
45°	1521.8	1454.7	1336.6	1208.7	1107.2	1024.1	963.3	911.1	854.9	797.0	735.7
47.5°	1409.4	1359.5	1257.5	1130.8	1024.1	953.0	896.8	849.2	798.2	746.6	686.9
50°	1282.7	1252.3	1165.2	1049.9	948.4	876.2	829.7	787.3	743.7	692.1	641.1
52.5°	1156.0	1150.3	1068.8	967.3	871.6	804.5	759.2	720.2	684.6	635.9	592.9
55°	1023.0	1040.2	972.5	879.0	793.6	728.8	688.7	657.1	626.2	584.9	543.6
57.5°	904.8	924.3	877.9	791.9	712.2	657.1	622.7	594.0	567.1	529.3	501.7
60°	774.1	809.7	785.0	706.4	635.9	586.6	554.5	531.5	509.2	476.5	452.4
62.5°	670.9	695.5	681.2	622.7	560.2	520.1	491.4	470.2	452.4	427.2	403.7
65°	560.2	591.2	583.7	545.3	490.3	453.6	431.8	415.1	396.8	376.7	357.2
67.5°	460.4	492.6	490.8	464.5	423.7	393.4	372.7	360.7	345.8	326.3	314.2
70°	370.4	400.2	401.4	388.2	359.5	330.9	315.9	305.1	293.6	279.2	270.6
72.5°	287.9	314.8	319.4	313.1	294.7	275.8	262.6	255.2	245.4	233.4	225.9
75°	215.0	234.5	245.4	242.6	235.1	222.5	215.0	209.9	200.1	191.5	185.2
77.5°	153.1	168.6	179.5	184.1	180.6	175.5	168.6	164.6	154.2	150.2	146.8
80°	102.6	116.4	126.1	129.0	130.7	129.6	123.3	121.0	115.8	114.1	110.7
82.5°	63.1	70.5	77.4	84.9	88.3	88.3	84.9	85.4	80.9	78.6	77.4
85°	38.4	40.1	41.3	47.0	51.6	53.3	51.6	52.2	50.5	48.7	47.0
87.5°	17.8	17.8	18.3	19.5	20.6	24.1	25.2	27.0	24.7	24.7	20.6
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°	1472.5	1472.5	1472.5	1472.5	1472.5	1472.5	1472.5	1472.5	1472.5	1472.5	1472.5
2.5°	1441.5	1434.1	1428.4	1419.2	1411.7	1399.7	1395.7	1395.7	1398.0	1395.1	1398.0
5°	1403.7	1389.9	1375.0	1361.8	1347.5	1337.2	1326.9	1324.6	1323.4	1316.5	1317.1
7.5°	1365.9	1347.5	1328.6	1311.4	1293.6	1277.6	1266.7	1262.1	1258.1	1253.5	1248.3
10°	1325.1	1303.9	1281.6	1262.1	1244.9	1223.1	1212.2	1208.7	1197.3	1195.0	1187.0
12.5°	1282.1	1260.3	1238.0	1212.8	1196.1	1174.9	1158.9	1151.4	1140.5	1132.5	1120.4
15°	1248.3	1220.8	1191.0	1166.3	1144.5	1121.0	1099.2	1084.9	1070.6	1048.2	1037.3
17.5°	1206.4	1174.9	1149.1	1122.7	1091.2	1056.8	1031.0	1009.8	994.3	975.9	965.0
20°	1161.1	1131.9	1099.8	1062.5	1029.3	990.3	966.8	949.0	936.9	926.1	920.3
22.5°	1121.0	1087.2	1043.0	1007.5	961.0	930.1	911.1	899.7	888.2	876.7	871.0
25°	1077.4	1037.9	984.0	940.4	905.4	881.3	863.0	852.1	840.0	833.2	824.6
27.5°	1034.4	983.4	929.5	889.9	862.4	834.3	818.8	810.2	801.0	791.3	784.4
30°	982.2	924.3	879.6	843.5	816.0	792.4	781.0	768.4	760.3	754.6	750.6
32.5°	927.8	872.2	831.4	800.5	773.5	755.8	741.4	733.4	726.5	720.2	715.6
35°	876.7	822.8	788.4	758.6	736.3	716.2	705.3	697.8	692.1	686.9	684.6
37.5°	826.3	780.4	743.1	719.6	696.1	680.1	669.7	662.9	659.4	654.3	654.8
40°	776.4	735.1	705.3	678.3	656.6	642.8	634.8	631.9	626.7	625.0	626.7
42.5°	731.7	693.8	665.2	639.9	621.0	607.8	601.5	597.5	595.8	595.2	595.8
45°	688.1	652.5	625.0	604.4	584.9	572.8	567.7	564.8	563.1	566.0	566.5
47.5°	644.5	612.4	587.7	563.7	547.6	539.0	533.8	531.5	533.3	534.4	538.4
50°	601.5	571.7	545.9	524.7	512.1	504.0	502.3	498.3	501.2	502.9	505.7
52.5°	557.9	531.0	508.0	488.0	474.8	469.6	465.6	463.9	467.9	467.9	470.8
55°	513.8	490.3	469.0	450.7	440.4	434.1	431.2	428.9	431.2	431.8	431.2
57.5°	472.5	450.1	427.8	412.3	403.7	396.8	393.9	392.8	392.2	394.5	393.9
60°	428.9	407.7	389.9	373.9	365.3	361.2	354.9	356.1	356.1	356.1	350.4
62.5°	385.3	364.1	348.6	337.7	327.4	320.5	319.4	317.7	314.2	313.7	306.2
65°	340.6	324.5	311.4	300.5	290.1	284.4	282.7	277.5	273.5	266.1	260.9
67.5°	299.3	287.9	272.4	263.2	254.6	247.7	241.4	237.4	229.4	221.9	217.3
70°	258.0	246.0	235.7	225.9	217.3	211.0	203.6	196.1	190.9	186.4	182.9
72.5°	216.7	206.4	197.8	188.7	179.5	173.2	167.4	161.7	159.4	157.1	155.4
75°	178.3	168.6	160.6	153.1	147.9	140.5	137.6	135.3	133.0	130.2	126.7
77.5°	141.1	133.6	127.3	121.0	116.4	112.4	110.1	103.2	97.5	96.3	95.2
80°	104.9	99.2	95.2	90.6	85.4	79.7	78.0	75.7	74.5	74.5	75.1
82.5°	73.4	70.0	65.4	61.4	59.6	57.3	57.3	56.8	56.2	56.8	56.8
85°	44.7	40.1	39.0	38.4	39.0	39.0	39.0	39.0	38.4	39.0	37.8
87.5°	19.5	21.2	21.8	20.1	20.6	19.5	20.1	20.1	20.1	20.6	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



TEST NUMBER: P243615

CATALOG NUMBER: S124RDR-H1195D930-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	1472.5	1472.5	1472.5	1472.5
2.5°	1394.5	1394.5	1388.8	1384.2
5°	1316.0	1308.5	1307.4	1300.5
7.5°	1242.6	1241.4	1238.6	1238.6
10°	1184.1	1180.1	1176.1	1175.5
12.5°	1101.5	1107.2	1100.4	1098.6
15°	1029.3	1024.7	1018.9	1006.9
17.5°	962.2	953.6	951.3	946.1
20°	909.4	903.1	900.8	898.0
22.5°	859.5	858.4	851.5	849.8
25°	822.8	817.1	812.5	809.7
27.5°	782.7	778.7	776.4	771.8
30°	746.0	744.9	742.0	742.0
32.5°	712.7	709.3	709.3	708.7
35°	682.4	683.5	680.1	678.9
37.5°	653.7	652.0	652.5	651.4
40°	625.6	624.4	624.4	625.0
42.5°	596.9	597.5	598.6	598.6
45°	568.2	568.8	570.0	570.0
47.5°	541.3	540.1	541.3	540.1
50°	506.9	510.3	509.8	509.2
52.5°	471.9	470.8	473.1	472.5
55°	434.1	432.3	434.6	432.3
57.5°	391.6	392.2	392.2	391.1
60°	349.2	347.5	345.2	345.2
62.5°	299.9	294.7	291.3	293.6
65°	252.3	248.3	247.1	245.4
67.5°	214.5	209.9	208.1	207.6
70°	181.8	179.5	178.9	178.9
72.5°	154.2	154.2	152.5	151.4
75°	125.6	123.3	120.4	120.4
77.5°	94.0	93.5	92.9	92.9
80°	73.4	73.4	74.0	74.5
82.5°	55.0	55.6	56.2	56.2
85°	37.3	37.3	37.8	37.8
87.5°	20.1	20.1	20.1	19.5
90°	0.0	0.0	0.0	0.0

(END OF REPORT)