

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: P334224

Luminaire Tested: **S124RDS-S1195D935-4F0-1E-UDD-A**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P334224
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: S124RDS-S1195D935-4F0-1E-UDD-A
Description: DEFINE 4 REGRESSED DIRECT LED LUMINAIRE, ASYMMETRIC DIFFUSER
PENDANT/SURFACE/WALL MOUNT, 1195 LUMENS PER FOOT
Light Source: 3500K CCT, 90 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4003.2 lumens
Efficiency: N/A
Efficacy: 97.4 lumens/watt
Spacing Criteria (0/90/45): 1.27 / 1.22 / 1.39
Luminous Opening: Rectangular (W 4' x L: 0.33' x H: 0')
CIE Type: Direct

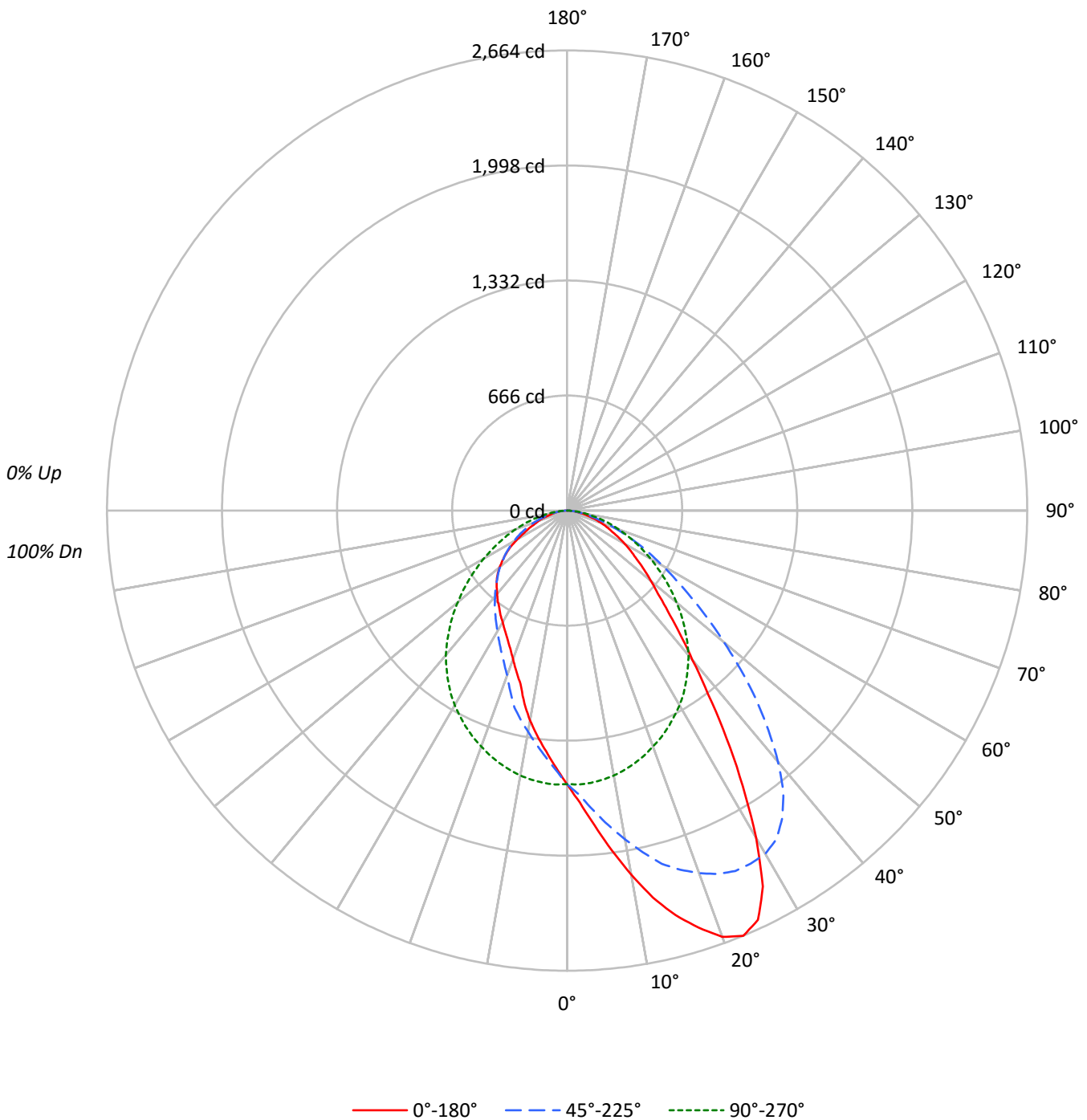
Input Watts (W): 41.1
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	12784	12784	12784
5°	14829	12823	11334
10°	17543	12767	10116
15°	20263	12649	8692
20°	22562	12486	7860
25°	23290	12327	7297
30°	20389	12133	6959
35°	15871	11847	6754
40°	11901	11519	6643
45°	9397	10992	6585
50°	7934	10385	6395
55°	6915	9717	6052
60°	6223	9024	5357
65°	5484	8275	4607
70°	4940	7499	4157
75°	4139	6647	3543
80°	3501	5667	3324
85°	2955	4437	2955



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	153.3	3.8
10°-20°	463.1	11.6
20°-30°	725.4	18.1
30°-40°	805.5	20.1
40°-50°	713.8	17.8
50°-60°	556.3	13.9
60°-70°	363.9	9.1
70°-80°	178.5	4.5
80°-90°	43.5	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°	1341.7	33.5
0°-40°	2147.3	53.6
0°-60°	3417.3	85.4
0°-90°	4003.2	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4003.2	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1584	1584	1584	1584	1584	
5°	1830	1742	1582	1432	1399	184
15°	2424	2117	1513	1179	1040	690
25°	2615	2302	1384	902	819	1168
35°	1610	2171	1202	725	685	1008
45°	823	1547	963	576	577	649
55°	491	875	690	434	430	446
65°	287	450	433	281	241	288
75°	133	171	213	136	114	146
85°	32	34	48	34	32	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°	1583.6	1583.6	1583.6	1583.6	1583.6	1583.6	1583.6	1583.6	1583.6	1583.6	1583.6
2.5°	1692.1	1697.8	1692.1	1691.4	1685.1	1683.1	1680.6	1672.3	1657.0	1648.0	1650.0
5°	1829.9	1845.8	1836.9	1835.6	1821.6	1807.6	1798.6	1778.2	1756.5	1741.8	1729.7
7.5°	1983.0	1992.6	1986.2	1979.2	1954.9	1947.3	1926.2	1902.0	1865.6	1838.2	1813.3
10°	2140.0	2147.6	2145.1	2128.5	2111.9	2078.1	2058.9	2021.3	1972.2	1933.3	1896.9
12.5°	2294.4	2302.7	2275.2	2280.3	2245.3	2220.4	2187.2	2137.4	2078.7	2025.8	1977.9
15°	2424.5	2414.3	2414.3	2401.6	2366.5	2329.5	2298.2	2248.4	2177.0	2117.0	2053.8
17.5°	2531.7	2536.2	2531.1	2498.6	2473.0	2435.4	2379.2	2322.5	2260.6	2180.2	2117.6
20°	2626.2	2626.2	2620.4	2600.0	2564.3	2523.4	2461.5	2398.4	2314.2	2233.1	2160.4
22.5°	2664.4	2667.0	2660.0	2644.0	2612.8	2573.2	2522.8	2458.4	2370.9	2277.2	2182.7
25°	2614.7	2626.8	2628.1	2623.6	2614.0	2589.8	2544.5	2478.8	2400.9	2302.0	2205.1
27.5°	2453.9	2469.8	2476.2	2490.3	2516.4	2526.0	2520.2	2476.2	2400.9	2303.3	2207.0
30°	2187.2	2199.9	2241.4	2295.7	2337.8	2376.0	2409.2	2418.2	2379.9	2294.4	2191.7
32.5°	1891.1	1909.6	1951.1	2010.5	2087.7	2159.1	2244.0	2289.3	2297.6	2254.8	2161.7
35°	1610.4	1623.2	1661.4	1722.7	1806.9	1903.3	2021.3	2113.2	2175.7	2171.2	2113.2
37.5°	1341.2	1359.0	1397.9	1448.3	1531.3	1654.4	1766.1	1889.2	2001.5	2056.4	2027.0
40°	1129.3	1130.0	1167.6	1219.9	1296.5	1400.5	1524.9	1665.3	1794.2	1899.4	1919.9
42.5°	962.2	962.2	983.9	1041.3	1091.0	1187.4	1304.8	1443.9	1600.2	1725.9	1788.4
45°	823.1	828.8	849.2	883.0	926.4	1009.4	1104.4	1234.0	1403.0	1547.2	1637.2
47.5°	713.3	723.5	735.7	766.3	802.0	860.1	941.1	1062.3	1202.7	1362.8	1487.3
50°	631.7	632.9	649.5	664.8	694.8	738.8	807.8	904.7	1031.1	1183.6	1325.8
52.5°	561.5	560.8	569.1	589.5	612.5	644.4	696.7	782.9	891.3	1024.0	1172.1
55°	491.3	494.5	502.1	517.4	536.0	560.2	604.2	670.6	758.6	875.4	1008.7
57.5°	437.7	439.6	446.6	452.4	470.2	488.1	523.8	571.7	648.9	746.5	877.3
60°	385.4	386.0	387.9	397.5	410.9	427.5	449.8	488.7	551.3	638.7	736.9
62.5°	334.3	335.6	338.8	345.2	354.7	365.0	388.6	417.9	467.0	538.5	624.6
65°	287.1	287.8	292.2	294.8	303.1	313.3	330.5	351.6	387.3	449.8	516.8
67.5°	247.6	247.6	247.6	251.4	257.8	264.8	276.3	294.1	322.8	363.0	425.6
70°	209.3	209.3	210.6	212.5	215.7	221.4	227.1	239.9	259.7	290.9	336.2
72.5°	173.5	174.2	175.5	175.5	176.7	181.2	185.0	192.0	205.4	227.1	261.6
75°	132.7	134.6	137.8	140.4	143.6	142.9	147.4	152.5	157.0	171.0	192.0
77.5°	104.6	103.4	103.4	105.9	106.6	107.2	110.4	114.8	118.7	126.3	134.0
80°	75.3	75.3	77.2	77.8	77.2	77.8	81.0	82.9	84.2	86.8	93.8
82.5°	52.3	53.6	52.3	53.0	53.6	54.2	56.8	56.8	58.1	58.7	60.6
85°	31.9	32.5	33.2	31.9	31.9	31.9	33.2	33.8	35.1	34.5	35.7
87.5°	14.0	13.4	14.0	14.0	14.7	14.0	14.7	16.0	14.7	15.3	15.3
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°	1583.6	1583.6	1583.6	1583.6	1583.6	1583.6	1583.6	1583.6	1583.6	1583.6	1583.6
2.5°	1643.6	1634.6	1630.2	1620.0	1607.9	1601.5	1595.7	1587.4	1576.6	1565.1	1556.8
5°	1714.4	1699.1	1680.0	1657.0	1636.6	1616.8	1599.6	1582.3	1562.6	1542.1	1521.7
7.5°	1784.6	1757.2	1727.8	1692.7	1658.9	1627.6	1599.6	1572.1	1540.9	1512.8	1486.6
10°	1858.6	1817.8	1772.5	1724.6	1676.8	1635.3	1594.5	1557.4	1516.6	1480.2	1449.6
12.5°	1918.6	1868.8	1812.0	1749.5	1689.5	1637.2	1588.7	1537.7	1489.8	1449.6	1406.2
15°	1986.2	1920.5	1847.1	1775.7	1701.0	1632.7	1569.6	1513.4	1460.5	1405.0	1366.0
17.5°	2032.8	1956.9	1870.1	1787.1	1701.6	1622.5	1551.1	1486.0	1425.4	1369.9	1323.9
20°	2073.6	1987.5	1888.6	1791.0	1692.1	1605.9	1527.5	1453.4	1390.3	1329.0	1281.2
22.5°	2096.6	1999.0	1888.6	1785.2	1681.9	1586.8	1498.7	1420.9	1350.7	1289.5	1235.2
25°	2097.9	1995.8	1885.4	1768.0	1655.7	1556.8	1467.5	1383.9	1307.3	1246.1	1189.9
27.5°	2092.8	1974.7	1863.7	1744.4	1628.9	1523.6	1431.1	1342.4	1266.5	1201.4	1144.0
30°	2077.4	1948.6	1827.3	1702.3	1584.9	1484.7	1385.8	1301.6	1221.8	1153.6	1095.5
32.5°	2044.3	1916.7	1783.9	1655.1	1535.8	1431.8	1339.2	1254.4	1176.5	1106.4	1043.8
35°	1998.3	1868.8	1727.2	1595.7	1479.0	1371.8	1283.7	1202.1	1127.4	1052.8	987.7
37.5°	1945.4	1810.1	1670.4	1526.2	1410.1	1308.0	1225.7	1147.2	1074.5	1006.2	934.1
40°	1863.7	1743.1	1597.6	1454.7	1334.8	1237.2	1162.5	1093.0	1019.6	952.0	879.9
42.5°	1764.8	1666.6	1519.2	1375.6	1257.6	1164.4	1096.1	1028.5	963.4	898.4	822.4
45°	1652.5	1574.7	1436.9	1299.0	1179.7	1086.6	1022.8	962.8	904.1	841.6	770.7
47.5°	1527.5	1470.0	1350.1	1205.9	1094.2	1008.7	947.5	897.7	846.0	782.9	719.1
50°	1396.0	1362.2	1247.4	1118.5	1013.2	936.0	872.8	826.9	785.4	725.4	669.9
52.5°	1255.7	1241.6	1149.1	1027.2	926.4	851.1	799.5	759.3	717.2	669.9	618.9
55°	1112.7	1122.3	1040.0	933.4	837.7	773.9	724.8	690.4	654.6	612.5	572.3
57.5°	964.1	1000.4	939.2	842.8	750.3	690.4	652.7	622.1	592.1	556.4	520.0
60°	833.3	862.6	831.4	749.1	670.6	615.7	581.3	558.9	528.9	497.0	470.9
62.5°	705.7	737.6	722.3	659.7	588.3	543.0	513.6	493.2	472.8	446.0	418.6
65°	602.9	623.4	614.4	568.5	516.8	476.6	448.5	433.2	412.8	392.4	368.1
67.5°	482.4	522.6	516.2	490.7	440.9	409.0	389.2	375.2	356.0	340.7	323.5
70°	379.6	416.0	415.4	395.6	371.3	342.0	329.2	317.7	301.2	286.5	273.1
72.5°	293.5	326.0	332.4	318.4	303.7	283.3	271.2	264.1	248.2	239.3	229.1
75°	217.6	241.8	248.2	248.2	240.5	229.1	218.2	213.1	201.6	192.7	186.3
77.5°	153.1	169.7	179.3	181.2	181.8	177.4	167.2	163.3	154.4	151.2	144.2
80°	100.8	111.0	122.5	126.3	129.5	128.2	124.4	121.9	113.6	110.4	107.8
82.5°	61.9	66.4	75.3	84.9	82.9	87.4	84.2	82.3	76.6	75.9	73.4
85°	36.4	37.0	38.3	44.0	47.2	48.5	49.1	47.9	45.9	45.9	41.5
87.5°	15.3	14.7	16.0	16.0	16.6	19.1	21.1	21.7	19.8	17.9	16.0
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°	1583.6	1583.6	1583.6	1583.6	1583.6	1583.6	1583.6	1583.6	1583.6	1583.6	1583.6
2.5°	1547.9	1541.5	1533.2	1523.6	1512.1	1501.9	1497.5	1501.3	1503.2	1498.1	1497.5
5°	1507.7	1491.7	1479.0	1459.8	1444.5	1431.8	1422.8	1419.0	1420.3	1410.1	1407.5
7.5°	1463.0	1445.8	1424.7	1403.0	1382.6	1364.8	1355.2	1350.7	1339.9	1335.4	1328.4
10°	1420.3	1394.7	1374.3	1347.5	1323.3	1301.0	1290.1	1281.2	1270.3	1265.2	1254.4
12.5°	1376.2	1345.6	1322.6	1294.6	1269.7	1241.6	1231.4	1212.9	1194.4	1182.3	1167.6
15°	1335.4	1299.7	1272.2	1239.1	1209.7	1179.1	1151.7	1121.0	1109.5	1085.3	1071.3
17.5°	1286.9	1249.9	1219.3	1176.5	1132.5	1095.5	1064.9	1033.0	1015.8	999.2	992.1
20°	1239.1	1205.9	1158.7	1107.0	1056.6	1014.5	990.9	971.7	952.6	941.7	934.1
22.5°	1193.8	1149.1	1092.3	1035.5	985.1	954.5	935.4	915.6	900.9	890.7	879.9
25°	1142.1	1086.6	1028.5	964.7	930.3	901.5	879.9	863.9	854.3	840.9	835.8
27.5°	1091.7	1024.7	959.0	915.6	879.9	852.4	832.6	821.2	808.4	799.5	792.4
30°	1031.7	963.4	906.0	865.2	828.8	807.1	791.8	777.8	768.2	761.2	756.1
32.5°	972.4	904.1	858.2	813.5	786.7	765.6	749.1	739.5	732.5	722.9	720.3
35°	915.6	855.0	812.9	773.3	744.0	724.8	712.0	701.2	694.8	692.3	690.4
37.5°	860.1	809.7	763.1	731.2	703.8	689.1	672.5	667.4	662.9	657.2	659.7
40°	807.8	761.2	721.0	686.5	665.5	648.9	640.0	633.6	629.7	629.7	629.7
42.5°	762.5	717.2	678.2	648.2	627.2	613.8	603.6	598.5	597.8	597.2	601.0
45°	715.2	673.1	633.6	608.0	590.2	576.1	570.4	565.9	565.9	568.5	569.1
47.5°	668.0	628.5	596.6	567.2	550.6	541.7	536.6	534.0	534.0	537.2	539.8
50°	625.3	586.4	555.1	529.6	514.3	506.0	501.5	500.2	501.5	501.5	506.0
52.5°	578.7	544.9	514.3	493.8	476.0	468.3	466.4	464.5	465.1	467.7	469.0
55°	533.4	502.1	472.8	452.4	439.6	434.5	428.8	429.4	428.1	429.4	429.4
57.5°	487.5	460.0	431.3	414.7	403.9	396.2	389.8	391.8	389.8	389.8	389.2
60°	443.4	412.8	391.1	376.4	363.7	357.3	351.6	352.8	350.9	349.6	347.1
62.5°	395.6	371.3	350.9	336.9	327.3	319.7	313.9	312.0	306.9	301.8	295.4
65°	349.6	328.6	310.1	296.7	287.1	281.4	276.9	273.1	263.5	253.3	248.2
67.5°	304.3	289.0	271.2	259.7	252.0	244.4	236.1	229.1	219.5	213.1	209.9
70°	261.0	246.3	231.6	220.8	212.5	205.4	195.9	191.4	185.0	182.5	179.3
72.5°	219.5	206.1	192.7	183.1	174.2	169.1	162.1	157.6	155.7	155.0	151.9
75°	177.4	166.5	156.3	147.4	140.4	136.5	133.3	130.2	128.9	123.1	120.0
77.5°	136.5	128.9	122.5	115.5	111.0	108.5	101.4	97.0	94.4	91.2	90.6
80°	100.8	95.7	89.3	85.5	78.5	75.9	73.4	72.7	72.1	71.5	70.8
82.5°	69.5	64.4	58.1	56.1	55.5	54.2	53.0	52.3	51.7	52.3	52.3
85°	38.3	35.7	35.7	35.1	34.5	33.8	33.2	33.2	32.5	33.2	32.5
87.5°	16.0	15.3	15.3	14.0	14.7	14.7	14.0	14.0	14.7	13.4	13.4
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: P334224

CATALOG NUMBER: S124RDS-S1195D935-4F0-1E-UDD-A

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	1583.6	1583.6	1583.6	1583.6
2.5°	1493.6	1494.9	1490.5	1489.2
5°	1402.4	1401.1	1397.9	1398.6
7.5°	1323.3	1318.8	1322.0	1316.9
10°	1251.8	1244.8	1239.1	1234.0
12.5°	1154.2	1148.5	1140.2	1143.4
15°	1063.0	1053.4	1038.1	1040.0
17.5°	981.3	982.6	973.6	976.2
20°	920.7	916.2	916.9	914.9
22.5°	878.6	872.8	867.1	862.6
25°	830.1	826.3	820.5	819.2
27.5°	787.3	786.7	784.1	781.0
30°	751.0	749.7	748.4	746.5
32.5°	718.4	717.8	716.5	717.2
35°	687.8	687.2	685.9	685.3
37.5°	659.1	661.0	659.7	659.7
40°	629.1	629.7	631.0	630.4
42.5°	604.2	604.2	606.1	603.6
45°	573.6	577.4	576.8	576.8
47.5°	541.1	545.5	546.2	546.2
50°	509.2	507.9	509.8	509.2
52.5°	470.2	470.9	470.2	469.6
55°	430.0	430.7	429.4	430.0
57.5°	387.3	384.7	386.7	385.4
60°	340.7	335.6	334.3	331.8
62.5°	288.4	285.2	280.1	283.3
65°	243.1	240.5	238.6	241.2
67.5°	206.7	205.4	205.4	204.2
70°	179.3	177.4	177.4	176.1
72.5°	151.2	149.3	149.9	149.3
75°	116.1	112.9	112.9	113.6
77.5°	90.6	90.0	91.2	89.3
80°	70.8	70.2	69.5	71.5
82.5°	51.0	51.0	51.0	53.6
85°	33.2	31.9	33.2	31.9
87.5°	14.7	14.0	13.4	14.0
90°	0.0	0.0	0.0	0.0

(END OF REPORT)