

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: P242740

Luminaire Tested: **S124RDR-S1195D830-X4F0-XX-UDD-A-W**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P242740
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-S1195D830-X4F0-XX-UDD-A-W
Description: DEFINE 4 REGRESSED DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER
STANDARD LIGHT ENGINE
Light Source: (92) 3000K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4382.3 lumens
Efficiency: N/A
Efficacy: 106.6 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

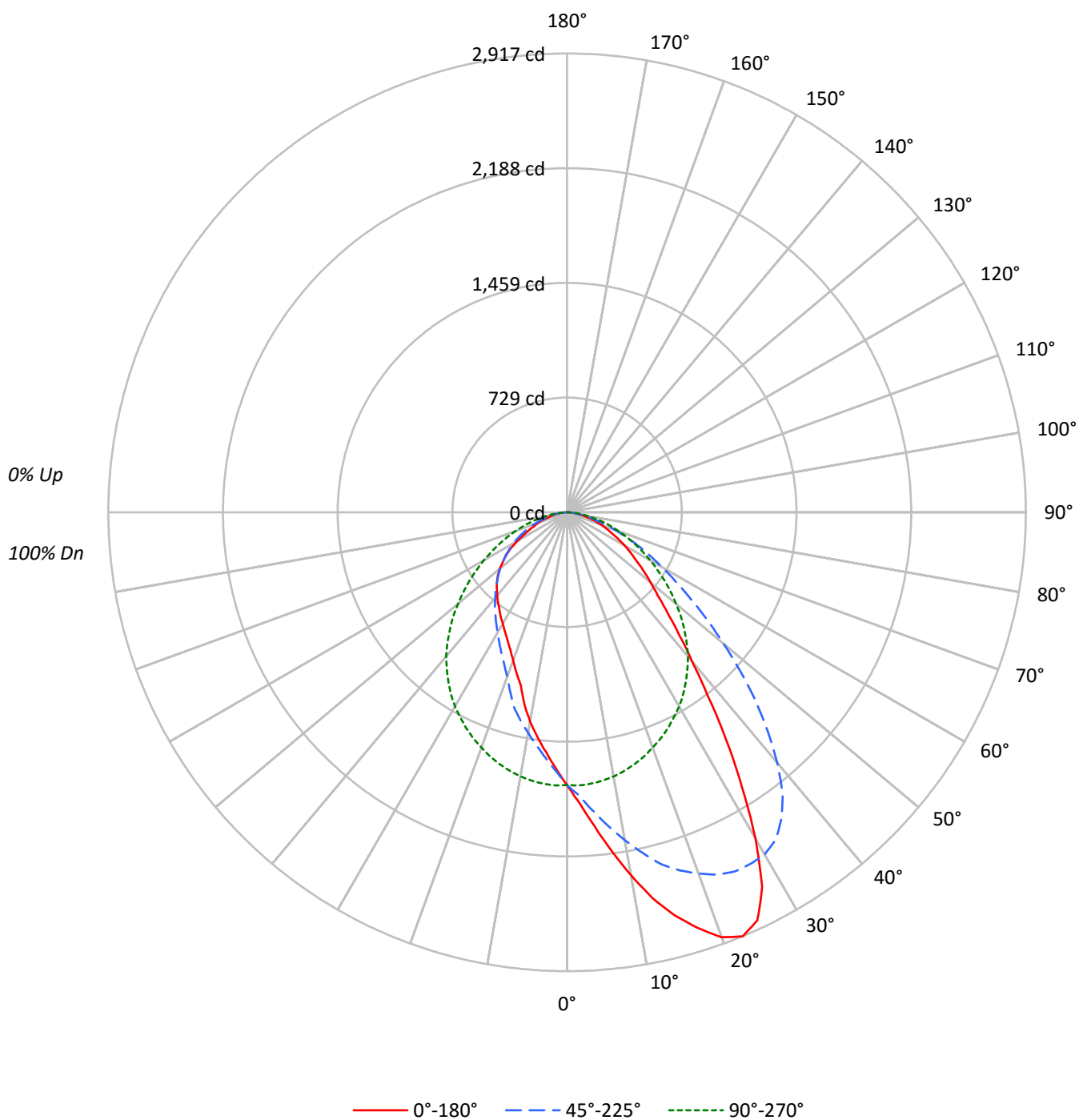
Input Watts (W): 41.1
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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					0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	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°	15410	15410	15410
5°	17874	15456	13661
10°	21144	15388	12192
15°	24425	15247	10477
20°	27195	15051	9475
25°	28073	14859	8796
30°	24575	14625	8388
35°	19130	14279	8140
40°	14346	13884	8008
45°	11326	13250	7937
50°	9563	12518	7708
55°	8334	11711	7296
60°	7500	10878	6457
65°	6611	9976	5553
70°	5954	9039	5011
75°	4990	8012	4269
80°	4218	6829	4003
85°	3559	5344	3559

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	167.9	3.8
10°-20°	506.9	11.6
20°-30°	794.0	18.1
30°-40°	881.8	20.1
40°-50°	781.4	17.8
50°-60°	608.9	13.9
60°-70°	398.3	9.1
70°-80°	195.4	4.5
80°-90°	47.6	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°	1468.8	33.5
0°-40°	2350.6	53.6
0°-60°	3741.0	85.4
0°-90°	4382.3	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4382.3	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1734	1734	1734	1734	1734	
5°	2003	1907	1732	1567	1531	202
15°	2654	2318	1657	1291	1138	755
25°	2862	2520	1515	987	897	1278
35°	1763	2377	1316	794	750	1103
45°	901	1694	1054	631	631	710
55°	538	958	756	476	471	488
65°	314	492	474	308	264	316
75°	145	187	233	150	124	160
85°	35	38	52	37	35	40
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°	1733.6	1733.6	1733.6	1733.6	1733.6	1733.6	1733.6	1733.6	1733.6	1733.6	1733.6
2.5°	1852.3	1858.6	1852.3	1851.6	1844.6	1842.5	1839.8	1830.7	1813.9	1804.1	1806.2
5°	2003.2	2020.7	2010.9	2009.5	1994.1	1978.7	1969.0	1946.6	1922.9	1906.8	1893.5
7.5°	2170.8	2181.3	2174.3	2166.6	2140.1	2131.7	2108.7	2082.1	2042.3	2012.3	1985.0
10°	2342.6	2351.0	2348.2	2330.1	2311.9	2274.9	2253.9	2212.7	2158.9	2116.3	2076.5
12.5°	2511.7	2520.8	2490.7	2496.3	2457.9	2430.7	2394.3	2339.9	2275.6	2217.6	2165.2
15°	2654.2	2643.0	2643.0	2629.0	2590.6	2550.1	2515.9	2461.4	2383.2	2317.5	2248.4
17.5°	2771.5	2776.4	2770.8	2735.2	2707.2	2666.0	2604.6	2542.4	2474.7	2386.6	2318.2
20°	2874.9	2874.9	2868.6	2846.2	2807.1	2762.4	2694.7	2625.5	2533.3	2444.6	2365.0
22.5°	2916.8	2919.6	2911.9	2894.4	2860.2	2816.9	2761.7	2691.2	2595.5	2492.8	2389.4
25°	2862.3	2875.6	2877.0	2872.1	2861.6	2835.1	2785.5	2713.5	2628.3	2520.1	2413.9
27.5°	2686.3	2703.7	2710.7	2726.1	2754.7	2765.2	2758.9	2710.7	2628.3	2521.5	2416.0
30°	2394.3	2408.3	2453.7	2513.1	2559.2	2601.1	2637.4	2647.2	2605.3	2511.7	2399.2
32.5°	2070.2	2090.5	2135.9	2200.9	2285.4	2363.6	2456.5	2506.1	2515.2	2468.4	2366.4
35°	1762.9	1776.9	1818.8	1885.8	1978.0	2083.5	2212.7	2313.3	2381.8	2376.9	2313.3
37.5°	1468.2	1487.7	1530.3	1585.5	1676.3	1811.1	1933.3	2068.1	2191.1	2251.1	2219.0
40°	1236.3	1237.0	1278.2	1335.5	1419.3	1533.1	1669.3	1823.0	1964.1	2079.3	2101.7
42.5°	1053.3	1053.3	1077.0	1139.9	1194.4	1299.8	1428.4	1580.6	1751.7	1889.3	1957.8
45°	901.0	907.3	929.7	966.7	1014.2	1105.0	1209.0	1350.8	1535.9	1693.8	1792.3
47.5°	780.9	792.1	805.3	838.9	878.0	941.5	1030.2	1162.9	1316.6	1491.9	1628.1
50°	691.5	692.9	711.0	727.8	760.6	808.8	884.3	990.4	1128.7	1295.6	1451.4
52.5°	614.6	613.9	623.0	645.4	670.5	705.4	762.7	857.0	975.8	1121.0	1283.1
55°	537.8	541.3	549.7	566.5	586.7	613.3	661.4	734.1	830.5	958.3	1104.3
57.5°	479.1	481.2	488.9	495.2	514.8	534.3	573.4	625.8	710.3	817.2	960.4
60°	421.9	422.6	424.7	435.1	449.8	468.0	492.4	535.0	603.5	699.2	806.7
62.5°	366.0	367.4	370.9	377.9	388.3	399.5	425.4	457.5	511.3	589.5	683.8
65°	314.3	315.0	319.9	322.7	331.8	342.9	361.8	384.9	424.0	492.4	565.8
67.5°	271.0	271.0	271.0	275.2	282.2	289.9	302.4	322.0	353.4	397.4	465.9
70°	229.1	229.1	230.5	232.6	236.1	242.4	248.7	262.6	284.3	318.5	368.1
72.5°	190.0	190.7	192.1	192.1	193.5	198.4	202.6	210.2	224.9	248.7	286.4
75°	145.3	147.4	150.9	153.7	157.2	156.5	161.3	166.9	171.8	187.2	210.2
77.5°	114.5	113.2	113.2	115.9	116.6	117.3	120.8	125.7	129.9	138.3	146.7
80°	82.4	82.4	84.5	85.2	84.5	85.2	88.7	90.8	92.2	95.0	102.7
82.5°	57.3	58.7	57.3	58.0	58.7	59.4	62.2	62.2	63.6	64.3	66.4
85°	34.9	35.6	36.3	34.9	34.9	34.9	36.3	37.0	38.4	37.7	39.1
87.5°	15.4	14.7	15.4	15.4	16.1	15.4	16.1	17.5	16.1	16.8	16.8
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):

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	1733.6	1733.6	1733.6	1733.6	1733.6	1733.6	1733.6	1733.6	1733.6	1733.6	1733.6
2.5°	1799.2	1789.5	1784.6	1773.4	1760.1	1753.1	1746.9	1737.8	1725.9	1713.3	1704.2
5°	1876.8	1860.0	1839.1	1813.9	1791.6	1769.9	1751.0	1732.2	1710.5	1688.2	1665.8
7.5°	1953.6	1923.6	1891.4	1853.0	1816.0	1781.8	1751.0	1721.0	1686.8	1656.1	1627.4
10°	2034.6	1989.9	1940.3	1887.9	1835.6	1790.2	1745.5	1704.9	1660.2	1620.4	1586.9
12.5°	2100.3	2045.8	1983.6	1915.2	1849.5	1792.3	1739.2	1683.3	1630.9	1586.9	1539.4
15°	2174.3	2102.4	2022.1	1943.8	1862.1	1787.4	1718.2	1656.8	1598.8	1538.0	1495.4
17.5°	2225.3	2142.2	2047.2	1956.4	1862.8	1776.2	1698.0	1626.7	1560.4	1499.6	1449.3
20°	2270.0	2175.7	2067.5	1960.6	1852.3	1758.0	1672.1	1591.1	1522.0	1454.9	1402.5
22.5°	2295.1	2188.3	2067.5	1954.3	1841.1	1737.1	1640.7	1555.5	1478.6	1411.6	1352.2
25°	2296.5	2184.8	2064.0	1935.4	1812.5	1704.2	1606.5	1515.0	1431.2	1364.1	1302.6
27.5°	2291.0	2161.7	2040.2	1909.6	1783.2	1667.9	1566.7	1469.6	1386.4	1315.2	1252.3
30°	2274.2	2133.1	2000.4	1863.5	1735.0	1625.3	1517.1	1424.9	1337.6	1262.8	1199.3
32.5°	2237.9	2098.2	1952.9	1811.8	1681.2	1567.4	1466.1	1373.2	1288.0	1211.1	1142.7
35°	2187.6	2045.8	1890.7	1746.9	1619.0	1501.7	1405.3	1315.9	1234.2	1152.5	1081.2
37.5°	2129.6	1981.5	1828.6	1670.7	1543.6	1431.8	1341.7	1255.8	1176.2	1101.5	1022.5
40°	2040.2	1908.2	1749.0	1592.5	1461.2	1354.3	1272.6	1196.5	1116.1	1042.1	963.2
42.5°	1931.9	1824.4	1663.0	1505.9	1376.7	1274.7	1200.0	1125.9	1054.7	983.4	900.3
45°	1809.0	1723.8	1572.9	1422.1	1291.5	1189.5	1119.6	1054.0	989.7	921.3	843.7
47.5°	1672.1	1609.3	1477.9	1320.1	1197.9	1104.3	1037.2	982.7	926.2	857.0	787.2
50°	1528.2	1491.2	1365.5	1224.4	1109.2	1024.6	955.5	905.2	859.8	794.2	733.4
52.5°	1374.6	1359.2	1257.9	1124.5	1014.2	931.7	875.2	831.2	785.1	733.4	677.5
55°	1218.1	1228.6	1138.5	1021.9	917.1	847.2	793.5	755.7	716.6	670.5	626.5
57.5°	1055.4	1095.2	1028.1	922.7	821.4	755.7	714.5	681.0	648.2	609.1	569.2
60°	912.2	944.3	910.1	820.0	734.1	674.0	636.3	611.9	579.0	544.1	515.5
62.5°	772.5	807.4	790.7	722.2	644.0	594.4	562.3	539.9	517.6	488.2	458.2
65°	660.0	682.4	672.6	622.3	565.8	521.8	491.0	474.3	451.9	429.6	403.0
67.5°	528.0	572.0	565.1	537.1	482.6	447.7	426.1	410.7	389.7	373.0	354.1
70°	415.6	455.4	454.7	433.0	406.5	374.4	360.4	347.8	329.7	313.6	298.9
72.5°	321.3	356.9	363.9	348.5	332.5	310.1	296.8	289.2	271.7	261.9	250.7
75°	238.2	264.7	271.7	271.7	263.3	250.7	238.9	233.3	220.7	210.9	204.0
77.5°	167.6	185.8	196.3	198.4	199.1	194.2	183.0	178.8	169.0	165.5	157.9
80°	110.4	121.5	134.1	138.3	141.8	140.4	136.2	133.4	124.3	120.8	118.0
82.5°	67.8	72.6	82.4	92.9	90.8	95.7	92.2	90.1	83.8	83.1	80.3
85°	39.8	40.5	41.9	48.2	51.7	53.1	53.8	52.4	50.3	50.3	45.4
87.5°	16.8	16.1	17.5	17.5	18.2	21.0	23.0	23.7	21.7	19.6	17.5
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°	1733.6	1733.6	1733.6	1733.6	1733.6	1733.6	1733.6	1733.6	1733.6	1733.6	1733.6
2.5°	1694.5	1687.5	1678.4	1667.9	1655.4	1644.2	1639.3	1643.5	1645.6	1640.0	1639.3
5°	1650.5	1633.0	1619.0	1598.1	1581.3	1567.4	1557.6	1553.4	1554.8	1543.6	1540.8
7.5°	1601.6	1582.7	1559.7	1535.9	1513.6	1494.0	1483.5	1478.6	1466.8	1461.9	1454.2
10°	1554.8	1526.8	1504.5	1475.2	1448.6	1424.2	1412.3	1402.5	1390.6	1385.1	1373.2
12.5°	1506.6	1473.1	1447.9	1417.2	1389.9	1359.2	1348.0	1327.8	1307.5	1294.3	1278.2
15°	1461.9	1422.8	1392.7	1356.4	1324.3	1290.8	1260.7	1227.2	1214.6	1188.1	1172.7
17.5°	1408.8	1368.3	1334.8	1288.0	1239.8	1199.3	1165.7	1130.8	1112.0	1093.8	1086.1
20°	1356.4	1320.1	1268.4	1211.8	1156.7	1110.6	1084.7	1063.8	1042.8	1030.9	1022.5
22.5°	1306.8	1257.9	1195.8	1133.6	1078.4	1044.9	1023.9	1002.3	986.2	975.1	963.2
25°	1250.2	1189.5	1125.9	1056.1	1018.4	986.9	963.2	945.7	935.2	920.6	915.0
27.5°	1195.1	1121.7	1049.8	1002.3	963.2	933.1	911.5	898.9	885.0	875.2	867.5
30°	1129.4	1054.7	991.8	947.1	907.3	883.6	866.8	851.4	840.9	833.3	827.7
32.5°	1064.5	989.7	939.4	890.5	861.2	838.2	820.0	809.5	801.8	791.4	788.6
35°	1002.3	935.9	889.8	846.5	814.4	793.5	779.5	767.6	760.6	757.8	755.7
37.5°	941.5	886.3	835.4	800.4	770.4	754.3	736.2	730.6	725.7	719.4	722.2
40°	884.3	833.3	789.3	751.5	728.5	710.3	700.6	693.6	689.4	689.4	689.4
42.5°	834.7	785.1	742.5	709.6	686.6	671.9	660.7	655.2	654.5	653.8	658.0
45°	783.0	736.9	693.6	665.6	646.1	630.7	624.4	619.5	619.5	622.3	623.0
47.5°	731.3	688.0	653.1	620.9	602.8	593.0	587.4	584.6	584.6	588.1	590.9
50°	684.5	641.9	607.7	579.7	563.0	553.9	549.0	547.6	549.0	549.0	553.9
52.5°	633.5	596.5	563.0	540.6	521.1	512.7	510.6	508.5	509.2	512.0	513.4
55°	583.9	549.7	517.6	495.2	481.2	475.7	469.4	470.1	468.7	470.1	470.1
57.5°	533.6	503.6	472.2	454.0	442.1	433.7	426.8	428.9	426.8	426.8	426.1
60°	485.4	451.9	428.2	412.1	398.1	391.1	384.9	386.2	384.2	382.8	380.0
62.5°	433.0	406.5	384.2	368.8	358.3	349.9	343.6	341.5	336.0	330.4	323.4
65°	382.8	359.7	339.5	324.8	314.3	308.0	303.1	298.9	288.5	277.3	271.7
67.5°	333.2	316.4	296.8	284.3	275.9	267.5	258.4	250.7	240.3	233.3	229.8
70°	285.7	269.6	253.5	241.7	232.6	224.9	214.4	209.5	202.6	199.8	196.3
72.5°	240.3	225.6	210.9	200.5	190.7	185.1	177.4	172.5	170.4	169.7	166.2
75°	194.2	182.3	171.1	161.3	153.7	149.5	146.0	142.5	141.1	134.8	131.3
77.5°	149.5	141.1	134.1	126.4	121.5	118.7	111.1	106.2	103.4	99.9	99.2
80°	110.4	104.8	97.8	93.6	85.9	83.1	80.3	79.6	78.9	78.2	77.5
82.5°	76.1	70.5	63.6	61.5	60.8	59.4	58.0	57.3	56.6	57.3	57.3
85°	41.9	39.1	39.1	38.4	37.7	37.0	36.3	36.3	35.6	36.3	35.6
87.5°	17.5	16.8	16.8	15.4	16.1	16.1	15.4	15.4	16.1	14.7	14.7
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: P242740

CATALOG NUMBER: S124RDR-S1195D830-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	1733.6	1733.6	1733.6	1733.6
2.5°	1635.1	1636.5	1631.6	1630.2
5°	1535.2	1533.8	1530.3	1531.0
7.5°	1448.6	1443.7	1447.2	1441.6
10°	1370.4	1362.7	1356.4	1350.8
12.5°	1263.5	1257.2	1248.2	1251.6
15°	1163.6	1153.2	1136.4	1138.5
17.5°	1074.2	1075.6	1065.9	1068.6
20°	1007.9	1003.0	1003.7	1001.6
22.5°	961.8	955.5	949.2	944.3
25°	908.7	904.5	898.2	896.8
27.5°	861.9	861.2	858.4	854.9
30°	822.1	820.7	819.3	817.2
32.5°	786.5	785.8	784.4	785.1
35°	752.9	752.2	750.8	750.1
37.5°	721.5	723.6	722.2	722.2
40°	688.7	689.4	690.8	690.1
42.5°	661.4	661.4	663.5	660.7
45°	627.9	632.1	631.4	631.4
47.5°	592.3	597.2	597.9	597.9
50°	557.4	556.0	558.1	557.4
52.5°	514.8	515.5	514.8	514.1
55°	470.8	471.5	470.1	470.8
57.5°	424.0	421.2	423.3	421.9
60°	373.0	367.4	366.0	363.2
62.5°	315.7	312.2	306.6	310.1
65°	266.1	263.3	261.2	264.0
67.5°	226.3	224.9	224.9	223.5
70°	196.3	194.2	194.2	192.8
72.5°	165.5	163.4	164.1	163.4
75°	127.1	123.6	123.6	124.3
77.5°	99.2	98.5	99.9	97.8
80°	77.5	76.8	76.1	78.2
82.5°	55.9	55.9	55.9	58.7
85°	36.3	34.9	36.3	34.9
87.5°	16.1	15.4	14.7	15.4
90°	0.0	0.0	0.0	0.0

(END OF REPORT)