

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: P243603

Luminaire Tested: **S124RDR-H795D835-X4F0-XX-UDD-A-W**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P243603  
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-H795D835-X4F0-XX-UDD-A-W  
Description: DEFINE 4 REGRESSED DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER.  
HIGH PERFORMANCE LIGHT ENGINE  
Light Source: (184) 3500K CCT, 80 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

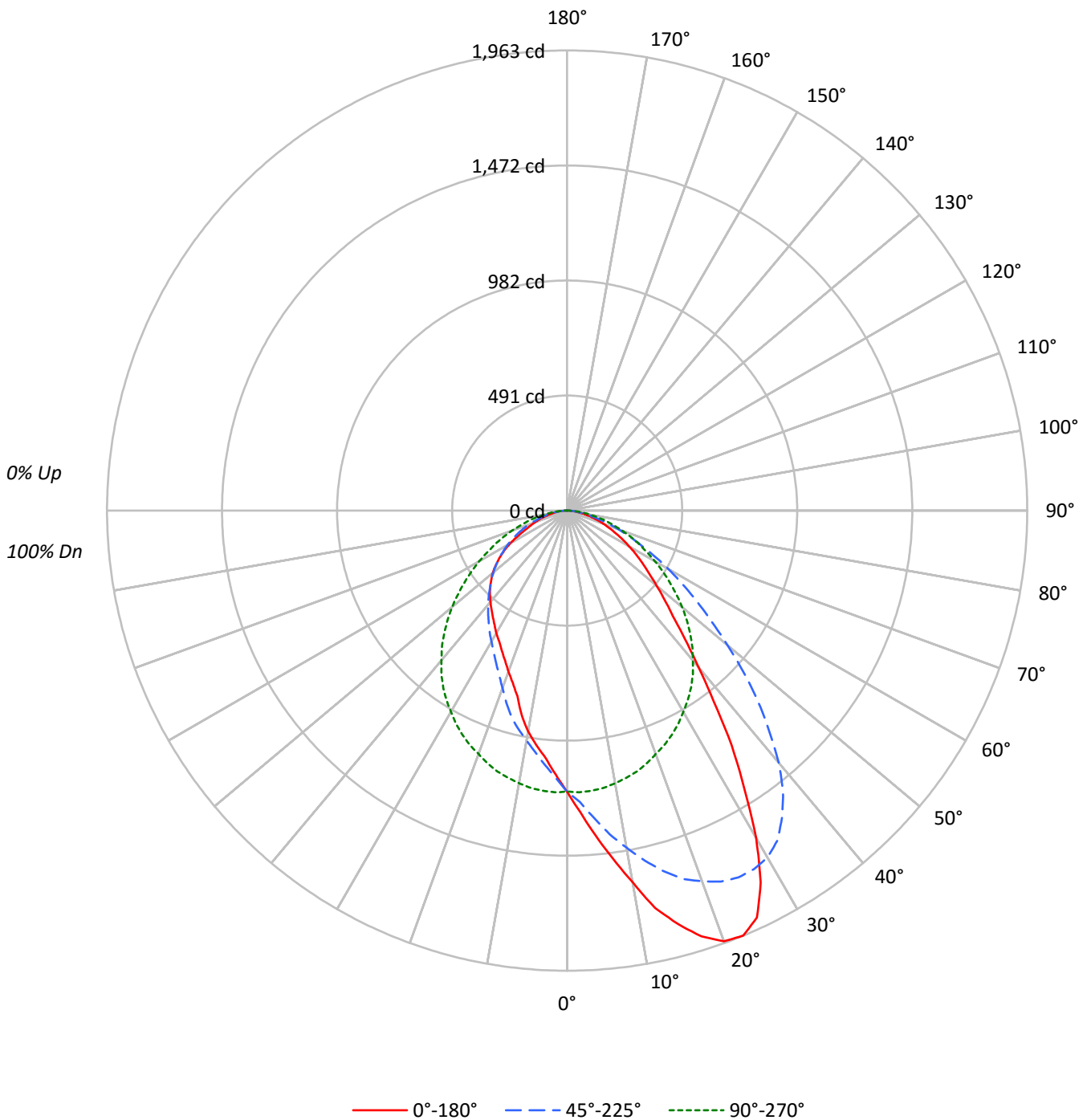
Lumens per Lamp: N/A  
Luminaire Lumens: 3094.1 lumens  
Efficiency: N/A  
Efficacy: 131.1 lumens/watt  
Spacing Criteria (0/90/45): 1.27 / 1.23 / 1.39  
Luminous Opening: Rectangular (W 3.88' x L: 0.31' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 23.6  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): 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°	10656	10656	10656
5°	12413	10701	9448
10°	14537	10656	8638
15°	16797	10603	7544
20°	18494	10453	6916
25°	18791	10357	6465
30°	16540	10173	6201
35°	13272	10000	5998
40°	10097	9680	5905
45°	8016	9325	5833
50°	6883	8864	5733
55°	6077	8291	5455
60°	5444	7694	4996
65°	4791	7109	4202
70°	4270	6456	3787
75°	3719	5869	3366
80°	3153	5042	3107
85°	2764	4335	3141



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	116.3	3.8
10°-20°	352.8	11.4
20°-30°	550.5	17.8
30°-40°	613.9	19.8
40°-50°	551.9	17.8
50°-60°	436.1	14.1
60°-70°	289.6	9.4
70°-80°	145.2	4.7
80°-90°	37.8	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°	1019.6	33.0
0°-40°	1633.5	52.8
0°-60°	2621.5	84.7
0°-90°	3094.1	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3094.1	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	1199	1199	1199	1199	1199	
5°	1391	1316	1199	1089	1059	139
15°	1825	1593	1152	913	820	519
25°	1916	1727	1056	718	659	857
35°	1223	1598	922	583	553	760
45°	638	1151	742	466	464	505
55°	392	676	535	353	352	353
65°	228	346	338	232	200	228
75°	108	137	171	114	98	116
85°	27	29	42	32	31	30
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°	1198.8	1198.8	1198.8	1198.8	1198.8	1198.8	1198.8	1198.8	1198.8	1198.8	1198.8
2.5°	1287.5	1282.9	1282.4	1276.3	1275.9	1269.8	1267.9	1262.8	1252.5	1244.6	1245.1
5°	1391.2	1387.4	1387.0	1380.9	1379.0	1371.6	1359.9	1345.9	1329.6	1316.0	1307.2
7.5°	1497.6	1504.2	1497.2	1497.2	1483.6	1474.7	1451.9	1440.2	1412.2	1392.6	1372.0
10°	1610.6	1616.7	1613.9	1608.3	1590.5	1572.3	1548.5	1525.6	1491.6	1460.7	1440.2
12.5°	1736.6	1718.4	1730.1	1712.8	1698.4	1669.4	1646.5	1600.8	1573.7	1528.9	1488.8
15°	1825.3	1818.3	1817.9	1806.2	1790.3	1758.6	1733.8	1686.2	1640.0	1592.9	1547.6
17.5°	1904.7	1905.6	1899.1	1880.4	1859.9	1829.1	1795.5	1753.0	1700.2	1647.9	1594.3
20°	1955.1	1955.6	1950.9	1941.1	1918.7	1890.7	1856.2	1800.6	1740.8	1683.0	1629.3
22.5°	1962.6	1964.0	1962.6	1956.5	1941.1	1918.2	1886.5	1839.3	1779.1	1712.8	1648.9
25°	1915.9	1920.6	1921.0	1929.4	1921.5	1912.6	1889.3	1849.6	1794.1	1726.8	1657.3
27.5°	1788.0	1801.1	1813.2	1828.1	1841.7	1853.8	1855.7	1834.7	1787.1	1724.5	1658.2
30°	1611.5	1626.9	1651.2	1667.1	1709.1	1735.7	1771.7	1779.6	1756.7	1708.6	1644.7
32.5°	1406.1	1422.5	1431.8	1484.1	1544.3	1587.7	1647.5	1683.0	1691.8	1669.0	1616.7
35°	1223.1	1225.9	1232.9	1292.2	1352.0	1417.8	1492.0	1553.6	1595.7	1598.0	1572.3
37.5°	1027.0	1030.3	1057.9	1103.1	1155.0	1227.3	1312.8	1400.5	1477.5	1513.0	1505.6
40°	870.2	869.3	898.7	937.9	988.3	1063.5	1151.7	1247.4	1329.6	1403.8	1421.5
42.5°	743.2	746.5	771.7	794.6	843.1	895.9	990.2	1089.6	1195.1	1276.3	1330.5
45°	637.7	646.1	663.4	684.9	721.3	769.8	846.8	945.8	1053.7	1151.2	1216.1
47.5°	564.9	567.2	576.1	602.7	627.0	666.2	732.0	816.0	911.7	1021.0	1106.4
50°	497.7	503.3	506.5	522.4	546.2	583.5	634.4	697.0	791.8	892.1	999.0
52.5°	439.8	443.0	449.1	463.6	482.2	508.4	548.5	603.6	682.5	775.4	876.3
55°	392.1	392.6	398.7	409.0	423.4	443.5	481.8	521.5	591.5	676.0	767.5
57.5°	349.2	346.4	352.0	358.1	372.1	389.3	414.1	454.7	509.3	581.2	663.8
60°	306.2	308.6	308.1	315.1	322.6	339.9	360.9	387.5	432.3	498.1	568.1
62.5°	266.1	265.6	270.3	274.5	279.6	293.6	310.9	332.9	367.9	416.4	484.1
65°	227.8	228.8	232.5	235.8	241.4	250.2	263.3	281.0	309.0	346.4	403.3
67.5°	193.3	196.5	198.4	199.3	204.5	211.0	222.2	236.7	255.8	285.7	333.3
70°	164.3	165.3	166.2	169.5	171.8	175.5	183.9	191.9	209.1	231.1	265.6
72.5°	137.3	136.3	139.1	140.1	141.0	144.7	149.9	154.1	165.3	183.9	205.4
75°	108.3	108.8	109.2	110.6	114.4	114.8	117.2	121.8	129.8	137.3	151.7
77.5°	81.2	82.6	82.2	83.6	85.0	86.4	87.3	91.5	97.1	103.2	110.2
80°	61.6	61.6	61.6	62.6	61.6	64.9	64.9	66.3	67.7	70.5	75.6
82.5°	42.0	42.9	43.4	43.9	44.3	44.3	44.8	45.8	47.6	48.6	50.0
85°	27.1	26.1	26.6	26.6	26.6	26.6	27.5	28.5	28.5	28.9	30.3
87.5°	12.1	12.1	12.1	12.1	11.7	12.1	12.6	12.6	13.1	13.1	14.0
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):**

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	1198.8	1198.8	1198.8	1198.8	1198.8	1198.8	1198.8	1198.8	1198.8	1198.8	1198.8
2.5°	1242.3	1240.9	1233.9	1226.4	1219.4	1212.4	1210.0	1203.0	1194.6	1187.2	1178.8
5°	1297.8	1286.6	1271.2	1255.3	1239.0	1224.1	1212.4	1199.3	1184.4	1166.6	1152.6
7.5°	1353.8	1333.3	1308.1	1284.7	1256.7	1234.3	1211.9	1193.2	1171.8	1146.6	1127.4
10°	1408.5	1374.4	1343.6	1306.7	1271.2	1240.4	1211.9	1180.6	1152.2	1125.1	1098.5
12.5°	1451.9	1417.8	1373.4	1328.2	1282.4	1242.3	1204.0	1167.1	1131.6	1098.9	1069.5
15°	1501.4	1452.3	1397.7	1347.8	1285.2	1235.7	1191.8	1152.2	1111.5	1071.9	1039.7
17.5°	1537.8	1479.9	1412.2	1354.8	1294.5	1232.9	1180.2	1130.2	1083.5	1042.0	1008.8
20°	1565.8	1497.2	1429.5	1356.6	1284.7	1221.7	1162.4	1105.0	1057.9	1012.6	977.6
22.5°	1577.9	1505.6	1430.4	1351.5	1274.9	1203.5	1141.9	1082.6	1029.4	982.7	942.1
25°	1583.1	1503.7	1425.7	1336.1	1258.6	1185.8	1117.1	1056.0	1001.4	948.6	908.5
27.5°	1578.9	1493.9	1404.3	1319.8	1232.0	1160.6	1087.7	1025.6	968.7	917.8	873.0
30°	1567.6	1471.5	1382.3	1287.5	1203.0	1127.9	1056.9	991.1	933.7	881.9	837.5
32.5°	1538.7	1446.3	1345.0	1252.5	1161.5	1087.3	1022.8	958.0	899.6	845.4	802.5
35°	1502.8	1412.2	1306.2	1209.6	1119.5	1044.3	979.4	921.5	864.1	806.7	762.8
37.5°	1457.5	1365.5	1263.3	1159.2	1070.9	998.1	938.8	880.5	823.5	770.8	721.7
40°	1396.3	1312.3	1209.6	1105.0	1016.3	946.3	887.9	834.2	783.8	732.0	679.3
42.5°	1320.2	1256.3	1150.3	1047.1	960.3	890.7	838.9	790.8	742.3	689.1	641.4
45°	1239.0	1184.4	1088.2	984.1	901.5	833.8	784.3	741.8	696.1	648.9	599.0
47.5°	1147.5	1106.9	1023.8	920.6	833.8	775.9	730.1	691.4	649.8	607.8	559.3
50°	1044.3	1019.6	948.6	854.8	772.2	713.3	675.5	641.0	605.5	563.5	521.9
52.5°	941.1	936.5	870.2	787.6	709.6	655.0	618.1	586.4	557.4	517.7	482.7
55°	832.8	846.8	791.8	715.7	646.1	593.4	560.7	535.0	509.8	476.2	442.6
57.5°	736.7	752.5	714.7	644.7	579.8	535.0	507.0	483.6	461.7	430.9	408.5
60°	630.2	659.2	639.1	575.1	517.7	477.6	451.4	432.8	414.6	387.9	368.3
62.5°	546.2	566.3	554.6	507.0	456.1	423.4	400.1	382.8	368.3	347.8	328.7
65°	456.1	481.3	475.2	444.0	399.1	369.3	351.5	338.0	323.1	306.7	290.8
67.5°	374.9	401.0	399.6	378.1	345.0	320.3	303.4	293.6	281.5	265.6	255.8
70°	301.6	325.9	326.8	316.1	292.7	269.4	257.2	248.4	239.0	227.4	220.3
72.5°	234.4	256.3	260.0	254.9	240.0	224.5	213.8	207.7	199.8	190.0	183.9
75°	175.1	190.9	199.8	197.5	191.4	181.1	175.1	170.9	162.9	155.9	150.8
77.5°	124.6	137.3	146.1	149.9	147.1	142.9	137.3	134.0	125.6	122.3	119.5
80°	83.6	94.8	102.7	105.0	106.4	105.5	100.4	98.5	94.3	92.9	90.1
82.5°	51.4	57.4	63.0	69.1	71.9	71.9	69.1	69.6	65.8	64.0	63.0
85°	31.3	32.7	33.6	38.3	42.0	43.4	42.0	42.5	41.1	39.7	38.3
87.5°	14.5	14.5	14.9	15.9	16.8	19.6	20.5	21.9	20.1	20.1	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):**

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	1198.8	1198.8	1198.8	1198.8	1198.8	1198.8	1198.8	1198.8	1198.8	1198.8	1198.8
2.5°	1173.6	1167.6	1162.9	1155.4	1149.4	1139.6	1136.3	1136.3	1138.2	1135.8	1138.2
5°	1142.8	1131.6	1119.5	1108.7	1097.1	1088.7	1080.3	1078.4	1077.5	1071.9	1072.3
7.5°	1112.0	1097.1	1081.7	1067.7	1053.2	1040.1	1031.2	1027.5	1024.2	1020.5	1016.3
10°	1078.9	1061.6	1043.4	1027.5	1013.5	995.8	986.9	984.1	974.8	972.9	966.4
12.5°	1043.9	1026.1	1007.9	987.4	973.8	956.6	943.5	937.4	928.5	922.0	912.2
15°	1016.3	993.9	969.6	949.6	931.8	912.7	894.9	883.3	871.6	853.4	844.5
17.5°	982.2	956.6	935.5	914.1	888.4	860.4	839.4	822.1	809.5	794.6	785.7
20°	945.4	921.5	895.4	865.1	838.0	806.2	787.1	772.6	762.8	753.9	749.3
22.5°	912.7	885.1	849.2	820.2	782.4	757.2	741.8	732.5	723.1	713.8	709.1
25°	877.2	845.0	801.1	765.6	737.1	717.5	702.6	693.7	683.9	678.3	671.3
27.5°	842.2	800.6	756.7	724.5	702.1	679.3	666.6	659.6	652.2	644.2	638.6
30°	799.7	752.5	716.1	686.7	664.3	645.2	635.8	625.6	619.0	614.4	611.1
32.5°	755.3	710.1	676.9	651.7	629.8	615.3	603.6	597.1	591.5	586.4	582.6
35°	713.8	669.9	641.9	617.6	599.4	583.1	574.2	568.1	563.5	559.3	557.4
37.5°	672.7	635.4	605.0	585.9	566.7	553.7	545.3	539.7	536.9	532.7	533.1
40°	632.1	598.5	574.2	552.3	534.5	523.3	516.8	514.5	510.3	508.9	510.3
42.5°	595.7	564.9	541.5	521.0	505.6	494.9	489.7	486.4	485.0	484.6	485.0
45°	560.2	531.3	508.9	492.0	476.2	466.4	462.2	459.8	458.4	460.8	461.2
47.5°	524.7	498.6	478.5	458.9	445.8	438.8	434.6	432.8	434.2	435.1	438.4
50°	489.7	465.4	444.4	427.2	416.9	410.4	409.0	405.7	408.0	409.4	411.8
52.5°	454.2	432.3	413.6	397.3	386.5	382.3	379.1	377.7	380.9	380.9	383.3
55°	418.3	399.1	381.9	366.9	358.5	353.4	351.1	349.2	351.1	351.5	351.1
57.5°	384.7	366.5	348.3	335.7	328.7	323.1	320.7	319.8	319.3	321.2	320.7
60°	349.2	331.9	317.5	304.4	297.4	294.1	289.0	289.9	289.9	289.9	285.2
62.5°	313.7	296.4	283.8	275.0	266.6	261.0	260.0	258.6	255.8	255.4	249.3
65°	277.3	264.2	253.5	244.6	236.2	231.6	230.2	226.0	222.7	216.6	212.4
67.5°	243.7	234.4	221.7	214.3	207.3	201.7	196.5	193.3	186.7	180.7	176.9
70°	210.1	200.3	191.9	183.9	176.9	171.8	165.7	159.7	155.5	151.7	148.9
72.5°	176.5	168.1	161.1	153.6	146.1	141.0	136.3	131.6	129.8	127.9	126.5
75°	145.2	137.3	130.7	124.6	120.4	114.4	112.0	110.2	108.3	106.0	103.2
77.5°	114.8	108.8	103.6	98.5	94.8	91.5	89.6	84.0	79.4	78.4	77.5
80°	85.4	80.8	77.5	73.8	69.6	64.9	63.5	61.6	60.7	60.7	61.2
82.5°	59.8	57.0	53.2	50.0	48.6	46.7	46.7	46.2	45.8	46.2	46.2
85°	36.4	32.7	31.7	31.3	31.7	31.7	31.7	31.7	31.3	31.7	30.8
87.5°	15.9	17.3	17.7	16.3	16.8	15.9	16.3	16.3	16.3	16.8	16.3
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: P243603

CATALOG NUMBER: S124RDR-H795D835-X4F0-XX-UDD-A-W

**CANDELA DISTRIBUTION (continued):**

	165°	170°	175°	180°
0°	1198.8	1198.8	1198.8	1198.8
2.5°	1135.4	1135.4	1130.7	1127.0
5°	1071.4	1065.3	1064.4	1058.8
7.5°	1011.6	1010.7	1008.4	1008.4
10°	964.0	960.8	957.5	957.0
12.5°	896.8	901.5	895.9	894.5
15°	838.0	834.2	829.6	819.8
17.5°	783.4	776.4	774.5	770.3
20°	740.4	735.3	733.4	731.1
22.5°	699.8	698.9	693.3	691.9
25°	669.9	665.2	661.5	659.2
27.5°	637.2	634.0	632.1	628.4
30°	607.4	606.4	604.1	604.1
32.5°	580.3	577.5	577.5	577.0
35°	555.5	556.5	553.7	552.7
37.5°	532.2	530.8	531.3	530.3
40°	509.3	508.4	508.4	508.9
42.5°	486.0	486.4	487.4	487.4
45°	462.6	463.1	464.0	464.0
47.5°	440.7	439.8	440.7	439.8
50°	412.7	415.5	415.0	414.6
52.5°	384.2	383.3	385.1	384.7
55°	353.4	352.0	353.9	352.0
57.5°	318.9	319.3	319.3	318.4
60°	284.3	282.9	281.0	281.0
62.5°	244.2	240.0	237.2	239.0
65°	205.4	202.1	201.2	199.8
67.5°	174.6	170.9	169.5	169.0
70°	148.0	146.1	145.7	145.7
72.5°	125.6	125.6	124.2	123.2
75°	102.2	100.4	98.0	98.0
77.5°	76.6	76.1	75.6	75.6
80°	59.8	59.8	60.2	60.7
82.5°	44.8	45.3	45.8	45.8
85°	30.3	30.3	30.8	30.8
87.5°	16.3	16.3	16.3	15.9
90°	0.0	0.0	0.0	0.0

(END OF REPORT)