

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: P243598

Luminaire Tested: **S124RDR-H795D830-X4F0-XX-UDD-A-W**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P243598  
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-H795D830-X4F0-XX-UDD-A-W  
Description: DEFINE 4 REGRESSED DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER.  
HIGH PERFORMANCE LIGHT ENGINE  
Light Source: (184) 3000K CCT, 80 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

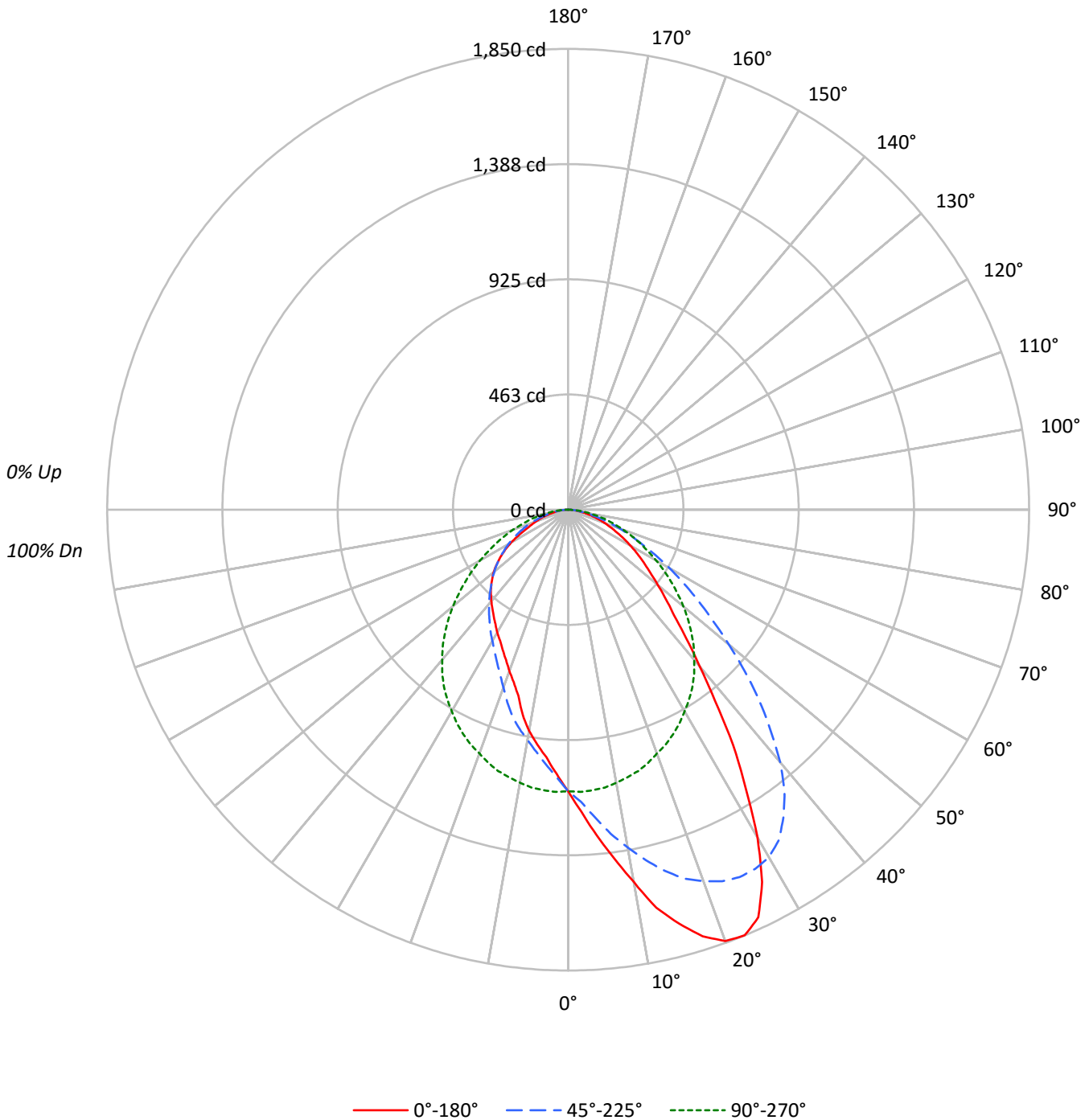
Lumens per Lamp: N/A  
Luminaire Lumens: 2916.3 lumens  
Efficiency: N/A  
Efficacy: 123.6 lumens/watt  
Spacing Criteria (0/90/45): 1.27 / 1.23 / 1.39  
Luminous Opening: Rectangular (W 3.88' x L: 0.31' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 23.6  
Input Voltage (V): 120  
Input Current (A<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	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°	10044	10044	10044
5°	11700	10086	8905
10°	13702	10044	8141
15°	15833	9994	7111
20°	17432	9852	6518
25°	17711	9762	6094
30°	15590	9589	5844
35°	12509	9425	5654
40°	9517	9124	5565
45°	7556	8790	5498
50°	6487	8354	5403
55°	5728	7815	5142
60°	5132	7252	4709
65°	4516	6701	3961
70°	4026	6084	3568
75°	3507	5529	3173
80°	2974	4750	2928
85°	2601	4080	2958



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	109.6	3.8
10°-20°	332.5	11.4
20°-30°	518.9	17.8
30°-40°	578.6	19.8
40°-50°	520.2	17.8
50°-60°	411.0	14.1
60°-70°	273.0	9.4
70°-80°	136.9	4.7
80°-90°	35.6	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°	961.0	33.0
0°-40°	1539.7	52.8
0°-60°	2470.9	84.7
0°-90°	2916.3	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2916.3	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	1130	1130	1130	1130	1130	
5°	1311	1240	1130	1026	998	131
15°	1720	1501	1086	860	773	489
25°	1806	1628	995	676	621	808
35°	1153	1506	869	550	521	716
45°	601	1085	699	440	437	476
55°	370	637	504	333	332	333
65°	215	326	319	218	188	215
75°	102	129	161	108	92	109
85°	26	27	40	30	29	29
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°	1130.0	1130.0	1130.0	1130.0	1130.0	1130.0	1130.0	1130.0	1130.0	1130.0	1130.0
2.5°	1213.6	1209.2	1208.7	1203.0	1202.6	1196.8	1195.1	1190.2	1180.6	1173.1	1173.5
5°	1311.2	1307.7	1307.3	1301.6	1299.8	1292.8	1281.8	1268.6	1253.2	1240.4	1232.0
7.5°	1411.6	1417.7	1411.1	1411.1	1398.4	1390.0	1368.5	1357.5	1331.0	1312.6	1293.2
10°	1518.1	1523.8	1521.1	1515.9	1499.1	1482.0	1459.5	1438.0	1405.9	1376.8	1357.5
12.5°	1636.9	1619.7	1630.7	1614.4	1600.8	1573.5	1551.9	1508.8	1483.3	1441.1	1403.2
15°	1720.5	1713.9	1713.4	1702.4	1687.5	1657.5	1634.2	1589.3	1545.8	1501.3	1458.7
17.5°	1795.3	1796.1	1790.0	1772.4	1753.0	1724.0	1692.3	1652.3	1602.5	1553.3	1502.7
20°	1842.8	1843.2	1838.8	1829.6	1808.5	1782.1	1749.5	1697.1	1640.8	1586.3	1535.7
22.5°	1849.8	1851.1	1849.8	1844.1	1829.6	1808.0	1778.1	1733.7	1676.9	1614.4	1554.1
25°	1805.8	1810.2	1810.7	1818.6	1811.1	1802.7	1780.7	1743.3	1691.0	1627.6	1562.1
27.5°	1685.3	1697.6	1709.0	1723.1	1735.9	1747.3	1749.1	1729.3	1684.4	1625.4	1562.9
30°	1518.9	1533.5	1556.3	1571.3	1610.9	1636.0	1669.9	1677.3	1655.8	1610.5	1550.2
32.5°	1325.3	1340.7	1349.5	1398.8	1455.6	1496.5	1552.8	1586.3	1594.6	1573.1	1523.8
35°	1152.8	1155.5	1162.1	1218.0	1274.3	1336.3	1406.3	1464.4	1504.0	1506.2	1482.0
37.5°	968.0	971.1	997.1	1039.8	1088.6	1156.8	1237.3	1320.0	1392.7	1426.1	1419.1
40°	820.2	819.3	847.0	884.0	931.5	1002.4	1085.5	1175.7	1253.2	1323.1	1339.9
42.5°	700.5	703.6	727.3	748.9	794.7	844.4	933.3	1027.0	1126.4	1203.0	1254.0
45°	601.1	609.0	625.3	645.5	679.8	725.6	798.2	891.5	993.1	1085.1	1146.2
47.5°	532.4	534.6	543.0	568.1	590.9	627.9	689.9	769.1	859.4	962.3	1042.8
50°	469.1	474.3	477.4	492.4	514.8	550.0	598.0	656.9	746.3	840.9	941.6
52.5°	414.5	417.6	423.3	436.9	454.5	479.2	517.0	568.9	643.3	730.9	825.9
55°	369.6	370.1	375.8	385.5	399.1	418.0	454.1	491.5	557.5	637.1	723.4
57.5°	329.1	326.5	331.8	337.5	350.7	367.0	390.3	428.6	480.1	547.8	625.7
60°	288.7	290.9	290.4	297.0	304.1	320.3	340.1	365.2	407.5	469.5	535.5
62.5°	250.8	250.4	254.8	258.7	263.6	276.8	293.1	313.7	346.7	392.5	456.3
65°	214.7	215.6	219.1	222.2	227.5	235.8	248.2	264.9	291.3	326.5	380.2
67.5°	182.2	185.2	187.0	187.9	192.7	198.9	209.4	223.1	241.1	269.3	314.2
70°	154.9	155.8	156.6	159.7	161.9	165.4	173.4	180.8	197.1	217.8	250.4
72.5°	129.4	128.5	131.1	132.0	132.9	136.4	141.2	145.2	155.8	173.4	193.6
75°	102.1	102.5	103.0	104.3	107.8	108.2	110.4	114.8	122.3	129.4	143.0
77.5°	76.6	77.9	77.4	78.8	80.1	81.4	82.3	86.2	91.5	97.2	103.8
80°	58.1	58.1	58.1	59.0	58.1	61.2	61.2	62.5	63.8	66.4	71.3
82.5°	39.6	40.5	40.9	41.4	41.8	41.8	42.2	43.1	44.9	45.8	47.1
85°	25.5	24.6	25.1	25.1	25.1	25.1	26.0	26.8	26.8	27.3	28.6
87.5°	11.4	11.4	11.4	11.4	11.0	11.4	11.9	11.9	12.3	12.3	13.2
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°	1130.0	1130.0	1130.0	1130.0	1130.0	1130.0	1130.0	1130.0	1130.0	1130.0	1130.0
2.5°	1170.9	1169.6	1163.0	1155.9	1149.3	1142.7	1140.5	1133.9	1126.0	1119.0	1111.0
5°	1223.2	1212.7	1198.2	1183.2	1167.8	1153.7	1142.7	1130.4	1116.3	1099.6	1086.4
7.5°	1276.0	1256.7	1232.9	1210.9	1184.5	1163.4	1142.3	1124.7	1104.4	1080.7	1062.6
10°	1327.5	1295.4	1266.4	1231.6	1198.2	1169.1	1142.3	1112.8	1086.0	1060.4	1035.4
12.5°	1368.5	1336.3	1294.5	1251.8	1208.7	1170.9	1134.8	1100.0	1066.6	1035.8	1008.1
15°	1415.1	1368.9	1317.4	1270.3	1211.4	1164.7	1123.4	1086.0	1047.7	1010.3	979.9
17.5°	1449.4	1394.9	1331.0	1276.9	1220.2	1162.1	1112.4	1065.3	1021.3	982.1	950.9
20°	1475.8	1411.1	1347.3	1278.7	1210.9	1151.5	1095.6	1041.5	997.1	954.4	921.4
22.5°	1487.3	1419.1	1348.2	1273.8	1201.7	1134.4	1076.3	1020.4	970.2	926.2	888.0
25°	1492.1	1417.3	1343.8	1259.3	1186.3	1117.6	1053.0	995.3	943.8	894.1	856.3
27.5°	1488.1	1408.1	1323.6	1243.9	1161.2	1093.9	1025.2	966.7	913.0	865.1	822.8
30°	1477.6	1386.9	1302.9	1213.6	1133.9	1063.1	996.2	934.2	880.0	831.2	789.4
32.5°	1450.3	1363.2	1267.7	1180.6	1094.8	1024.8	964.1	902.9	847.9	796.9	756.4
35°	1416.4	1331.0	1231.2	1140.1	1055.2	984.3	923.2	868.6	814.5	760.3	719.0
37.5°	1373.7	1287.0	1190.7	1092.6	1009.4	940.8	884.9	829.9	776.2	726.5	680.3
40°	1316.1	1236.9	1140.1	1041.5	957.9	891.9	836.9	786.3	738.8	689.9	640.2
42.5°	1244.4	1184.1	1084.2	987.0	905.1	839.6	790.7	745.4	699.6	649.5	604.6
45°	1167.8	1116.3	1025.7	927.6	849.7	785.9	739.2	699.2	656.1	611.6	564.5
47.5°	1081.6	1043.3	965.0	867.7	785.9	731.3	688.2	651.7	612.5	572.9	527.1
50°	984.3	961.0	894.1	805.7	727.8	672.3	636.7	604.1	570.7	531.1	491.9
52.5°	887.1	882.7	820.2	742.3	668.8	617.3	582.6	552.7	525.4	488.0	455.0
55°	785.0	798.2	746.3	674.5	609.0	559.3	528.5	504.3	480.5	448.8	417.1
57.5°	694.3	709.3	673.7	607.7	546.5	504.3	477.9	455.9	435.2	406.1	385.0
60°	594.0	621.3	602.4	542.1	488.0	450.1	425.5	407.9	390.7	365.7	347.2
62.5°	514.8	533.7	522.7	477.9	429.9	399.1	377.1	360.8	347.2	327.8	309.8
65°	429.9	453.7	447.9	418.5	376.2	348.1	331.3	318.6	304.5	289.1	274.1
67.5°	353.3	378.0	376.7	356.4	325.2	301.9	286.0	276.8	265.3	250.4	241.1
70°	284.3	307.1	308.0	297.9	275.9	253.9	242.4	234.1	225.3	214.3	207.7
72.5°	220.9	241.6	245.1	240.2	226.2	211.6	201.5	195.8	188.3	179.1	173.4
75°	165.0	180.0	188.3	186.1	180.4	170.7	165.0	161.0	153.6	147.0	142.1
77.5°	117.5	129.4	137.7	141.2	138.6	134.6	129.4	126.3	118.4	115.3	112.6
80°	78.8	89.3	96.8	99.0	100.3	99.4	94.6	92.8	88.9	87.6	84.9
82.5°	48.4	54.1	59.4	65.1	67.8	67.8	65.1	65.6	62.0	60.3	59.4
85°	29.5	30.8	31.7	36.1	39.6	40.9	39.6	40.0	38.7	37.4	36.1
87.5°	13.6	13.6	14.1	15.0	15.8	18.5	19.4	20.7	18.9	18.9	15.8
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°	1130.0	1130.0	1130.0	1130.0	1130.0	1130.0	1130.0	1130.0	1130.0	1130.0	1130.0
2.5°	1106.2	1100.5	1096.1	1089.0	1083.3	1074.1	1071.0	1071.0	1072.8	1070.6	1072.8
5°	1077.2	1066.6	1055.2	1045.0	1034.0	1026.1	1018.2	1016.4	1015.6	1010.3	1010.7
7.5°	1048.1	1034.0	1019.5	1006.3	992.7	980.4	972.0	968.5	965.4	961.9	957.9
10°	1016.9	1000.6	983.4	968.5	955.3	938.6	930.2	927.6	918.8	917.0	910.8
12.5°	983.9	967.2	950.0	930.6	917.9	901.6	889.3	883.6	875.2	869.0	859.8
15°	957.9	936.8	913.9	895.0	878.3	860.2	843.5	832.5	821.5	804.4	796.0
17.5°	925.8	901.6	881.8	861.6	837.4	811.0	791.1	774.9	763.0	748.9	740.5
20°	891.0	868.6	844.0	815.4	789.8	759.9	741.9	728.2	719.0	710.6	706.2
22.5°	860.2	834.3	800.4	773.1	737.5	713.7	699.2	690.4	681.6	672.8	668.4
25°	826.8	796.4	755.1	721.6	694.8	676.3	662.2	653.9	644.6	639.3	632.7
27.5°	793.8	754.6	713.3	682.9	661.8	640.2	628.3	621.7	614.7	607.2	601.9
30°	753.7	709.3	675.0	647.3	626.1	608.1	599.3	589.6	583.5	579.1	576.0
32.5°	711.9	669.3	638.0	614.3	593.6	579.9	568.9	562.8	557.5	552.7	549.1
35°	672.8	631.4	605.0	582.1	565.0	549.6	541.2	535.5	531.1	527.1	525.4
37.5°	634.1	598.9	570.3	552.2	534.2	521.9	513.9	508.7	506.0	502.1	502.5
40°	595.8	564.1	541.2	520.5	503.8	493.3	487.1	484.9	480.9	479.6	480.9
42.5°	561.5	532.4	510.4	491.1	476.5	466.4	461.6	458.5	457.2	456.7	457.2
45°	528.0	500.7	479.6	463.8	448.8	439.6	435.6	433.4	432.1	434.3	434.7
47.5°	494.6	469.9	451.0	432.5	420.2	413.6	409.7	407.9	409.2	410.1	413.2
50°	461.6	438.7	418.9	402.6	392.9	386.8	385.5	382.4	384.6	385.9	388.1
52.5°	428.1	407.5	389.9	374.5	364.3	360.4	357.3	356.0	359.1	359.1	361.3
55°	394.3	376.2	359.9	345.9	337.9	333.1	330.9	329.1	330.9	331.3	330.9
57.5°	362.6	345.4	328.3	316.4	309.8	304.5	302.3	301.4	301.0	302.7	302.3
60°	329.1	312.9	299.2	286.9	280.3	277.2	272.4	273.3	273.3	273.3	268.9
62.5°	295.7	279.4	267.5	259.2	251.2	246.0	245.1	243.8	241.1	240.7	235.0
65°	261.4	249.0	238.9	230.6	222.6	218.2	216.9	213.0	209.9	204.2	200.2
67.5°	229.7	220.9	209.0	202.0	195.4	190.1	185.2	182.2	176.0	170.3	166.8
70°	198.0	188.8	180.8	173.4	166.8	161.9	156.2	150.5	146.5	143.0	140.4
72.5°	166.3	158.4	151.8	144.8	137.7	132.9	128.5	124.1	122.3	120.6	119.2
75°	136.8	129.4	123.2	117.5	113.5	107.8	105.6	103.8	102.1	99.9	97.2
77.5°	108.2	102.5	97.7	92.8	89.3	86.2	84.5	79.2	74.8	73.9	73.0
80°	80.5	76.1	73.0	69.5	65.6	61.2	59.8	58.1	57.2	57.2	57.6
82.5°	56.3	53.7	50.2	47.1	45.8	44.0	44.0	43.6	43.1	43.6	43.6
85°	34.3	30.8	29.9	29.5	29.9	29.9	29.9	29.9	29.5	29.9	29.0
87.5°	15.0	16.3	16.7	15.4	15.8	15.0	15.4	15.4	15.4	15.8	15.4
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: P243598

CATALOG NUMBER: S124RDR-H795D830-X4F0-XX-UDD-A-W

**CANDELA DISTRIBUTION (continued):**

	165°	170°	175°	180°
0°	1130.0	1130.0	1130.0	1130.0
2.5°	1070.1	1070.1	1065.7	1062.2
5°	1009.8	1004.1	1003.2	998.0
7.5°	953.5	952.6	950.4	950.4
10°	908.6	905.6	902.5	902.0
12.5°	845.3	849.7	844.4	843.1
15°	789.8	786.3	781.9	772.7
17.5°	738.3	731.7	730.0	726.0
20°	697.9	693.0	691.3	689.1
22.5°	659.6	658.7	653.4	652.1
25°	631.4	627.0	623.5	621.3
27.5°	600.6	597.5	595.8	592.3
30°	572.5	571.6	569.4	569.4
32.5°	546.9	544.3	544.3	543.9
35°	523.6	524.5	521.9	521.0
37.5°	501.6	500.3	500.7	499.9
40°	480.1	479.2	479.2	479.6
42.5°	458.1	458.5	459.4	459.4
45°	436.1	436.5	437.4	437.4
47.5°	415.4	414.5	415.4	414.5
50°	389.0	391.6	391.2	390.7
52.5°	362.1	361.3	363.0	362.6
55°	333.1	331.8	333.5	331.8
57.5°	300.5	301.0	301.0	300.1
60°	268.0	266.6	264.9	264.9
62.5°	230.1	226.2	223.5	225.3
65°	193.6	190.5	189.6	188.3
67.5°	164.6	161.0	159.7	159.3
70°	139.5	137.7	137.3	137.3
72.5°	118.4	118.4	117.0	116.2
75°	96.4	94.6	92.4	92.4
77.5°	72.2	71.7	71.3	71.3
80°	56.3	56.3	56.8	57.2
82.5°	42.2	42.7	43.1	43.1
85°	28.6	28.6	29.0	29.0
87.5°	15.4	15.4	15.4	15.0
90°	0.0	0.0	0.0	0.0

(END OF REPORT)