

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: P243510

Luminaire Tested: **S124DR-H795D930-X4F0-XX-UDD-A-W**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P243510  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-60)  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: S124DR-H795D930-X4F0-XX-UDD-A-W  
Description: DEFINE 4 DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER.  
HIGH PERFORMANCE LIGHT ENGINE  
Light Source: (184) 3000K CCT, 90 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

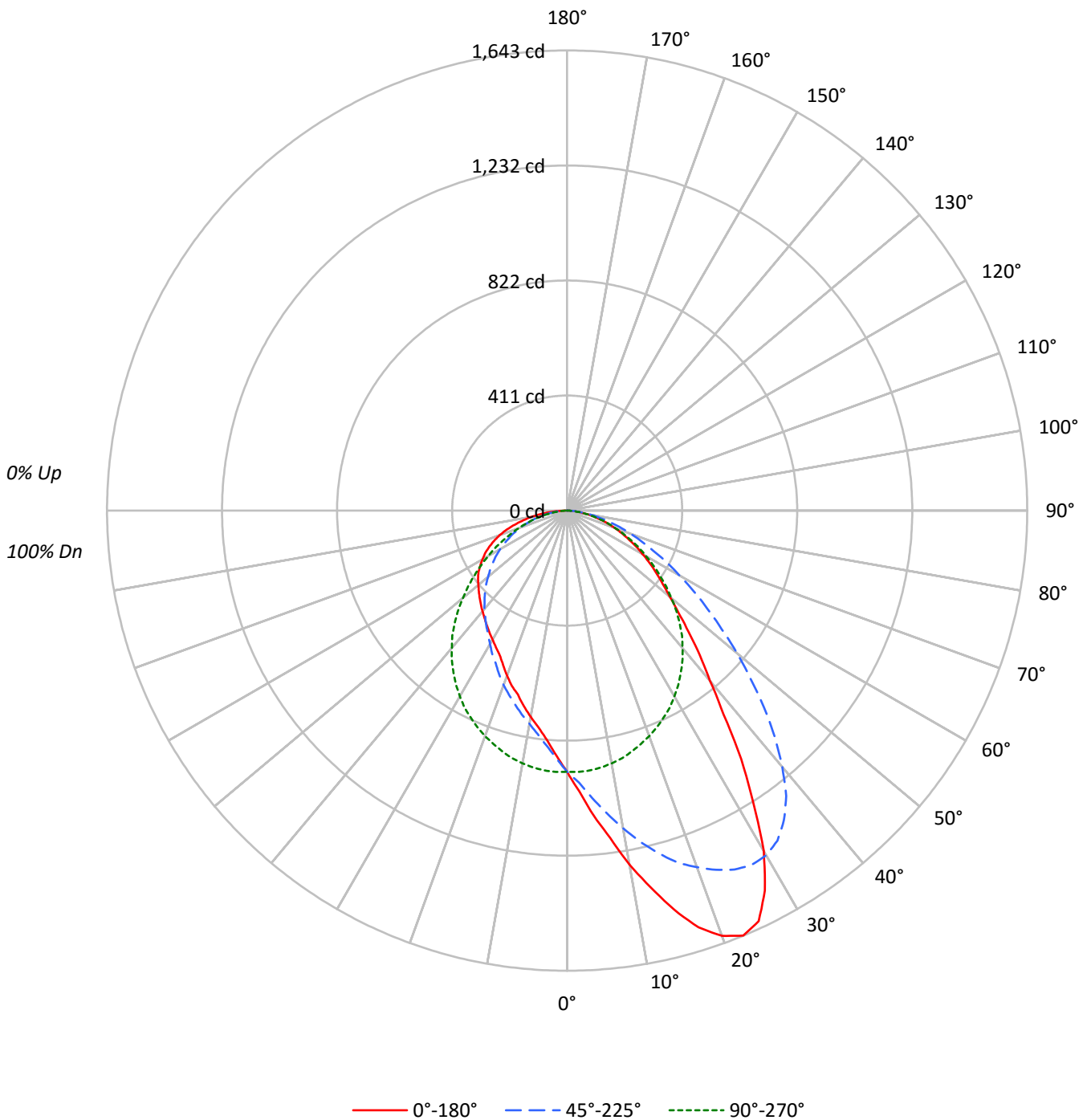
Lumens per Lamp: N/A  
Luminaire Lumens: 2673.9 lumens  
Efficiency: N/A  
Efficacy: 113.3 lumens/watt  
Spacing Criteria (0/90/45): 1.35 / 1.22 / 1.45  
Luminous Opening: Rectangular (W 3.88' x L: 0.31' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 23.6  
Input Voltage (V): 120  
Input Current (Ain): 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				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	109	105	101	97	107	103	99	96	98	95	93	94	92	90	91	89	87	85
2	100	92	86	80	97	90	84	79	87	82	77	83	79	76	80	77	74	72
3	92	81	74	67	89	80	73	67	77	71	66	74	69	64	72	67	63	61
4	84	73	64	58	82	71	63	57	69	62	56	66	60	56	64	59	55	53
5	78	65	56	50	75	64	56	50	62	55	49	60	54	49	58	53	48	46
6	72	59	50	44	70	58	50	44	56	49	43	54	48	43	53	47	43	41
7	67	53	45	39	65	53	45	39	51	44	38	50	43	38	48	42	38	36
8	62	49	41	35	61	48	40	35	47	40	35	46	39	34	44	39	34	32
9	58	45	37	31	57	44	37	31	43	36	31	42	36	31	41	35	31	29
10	54	41	34	29	53	41	34	28	40	33	28	39	33	28	38	32	28	26

**AVERAGE LUMINANCE (cd/sqm):**

	0°	90°	180°
0°	8289	8289	8289
5°	9754	8311	7335
10°	11591	8272	6754
15°	13576	8199	6256
20°	15287	8105	5934
25°	15865	7996	5585
30°	14408	7860	5461
35°	11754	7674	5427
40°	9204	7433	5450
45°	7703	7134	5550
50°	6611	6717	5715
55°	6039	6264	5993
60°	5534	5799	6212
65°	5075	5307	6453
70°	4670	4787	6648
75°	4156	4211	6642
80°	3466	3450	6624
85°	2642	2601	6211



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	90.8	3.4
10°-20°	281.1	10.5
20°-30°	451.6	16.9
30°-40°	516.3	19.3
40°-50°	475.2	17.8
50°-60°	388.7	14.5
60°-70°	277.0	10.4
70°-80°	152.2	5.7
80°-90°	40.9	1.5
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°	823.5	30.8
0°-40°	1339.8	50.1
0°-60°	2203.7	82.4
0°-90°	2673.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2673.9	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	932	932	932	932	932	
5°	1093	1031	931	842	822	110
15°	1475	1267	891	717	680	420
25°	1618	1414	815	603	569	726
35°	1083	1350	707	503	500	673
45°	613	994	568	414	442	478
55°	390	611	404	323	387	350
65°	241	339	252	226	307	241
75°	121	156	123	125	193	129
85°	26	32	26	35	61	31
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°	932.5	932.5	932.5	932.5	932.5	932.5	932.5	932.5	932.5	932.5	932.5
2.5°	1004.1	1001.0	999.5	997.6	997.2	995.3	991.5	986.2	979.3	972.1	972.1
5°	1093.1	1092.4	1086.7	1087.0	1079.8	1071.8	1065.7	1058.1	1043.3	1030.7	1022.0
7.5°	1178.4	1186.4	1184.5	1178.4	1167.7	1156.3	1144.1	1133.5	1106.1	1090.8	1078.3
10°	1284.2	1287.2	1281.9	1273.2	1263.6	1241.6	1225.6	1207.7	1178.0	1152.1	1129.3
12.5°	1377.1	1384.3	1374.8	1366.4	1344.0	1327.6	1311.6	1275.8	1244.6	1211.9	1178.8
15°	1475.3	1467.7	1472.6	1452.0	1436.1	1420.5	1379.7	1343.2	1307.8	1267.4	1232.8
17.5°	1560.5	1560.5	1551.4	1538.1	1521.3	1492.0	1451.3	1410.9	1371.7	1318.8	1269.7
20°	1616.1	1620.3	1609.6	1595.5	1575.4	1544.9	1512.6	1468.8	1416.6	1355.0	1299.4
22.5°	1642.7	1643.5	1639.7	1627.9	1611.5	1585.6	1552.5	1509.9	1454.7	1388.5	1330.2
25°	1617.6	1621.8	1620.7	1619.9	1611.5	1596.7	1570.0	1530.5	1480.2	1414.0	1351.2
27.5°	1529.3	1539.6	1548.3	1552.1	1561.3	1562.0	1554.1	1530.1	1489.0	1426.5	1356.5
30°	1403.7	1398.4	1422.0	1433.8	1465.0	1483.6	1497.0	1495.4	1471.8	1421.2	1354.6
32.5°	1236.2	1250.7	1267.4	1295.2	1332.2	1375.5	1408.3	1432.6	1430.4	1397.2	1341.7
35°	1083.2	1083.2	1104.5	1138.8	1178.0	1230.1	1285.0	1330.2	1358.0	1349.7	1310.5
37.5°	917.3	927.6	951.9	978.6	1026.5	1076.8	1149.1	1209.2	1267.4	1285.0	1264.8
40°	793.2	797.8	823.7	846.1	895.2	947.4	1007.9	1084.8	1151.7	1194.7	1197.4
42.5°	701.1	700.7	711.4	731.5	771.1	817.6	883.0	958.4	1036.8	1097.7	1126.2
45°	612.8	612.0	623.1	643.6	671.8	712.9	769.6	845.0	925.3	994.5	1039.5
47.5°	538.2	545.0	550.0	566.0	589.2	624.2	672.9	733.1	810.3	888.0	948.5
50°	478.1	481.1	491.8	499.4	525.2	549.6	588.8	642.9	709.1	790.5	856.0
52.5°	430.1	432.0	438.5	448.4	463.2	484.5	515.7	565.6	625.4	696.1	763.9
55°	389.7	388.6	392.8	399.3	412.2	430.1	452.9	491.0	543.1	611.3	673.7
57.5°	350.2	350.2	354.0	358.5	365.8	380.6	403.1	433.1	475.0	535.5	590.7
60°	311.3	314.0	315.5	320.1	326.2	337.2	354.0	377.6	413.0	462.4	517.3
62.5°	277.1	277.1	279.8	281.3	289.3	297.3	309.4	329.6	357.4	401.5	444.2
65°	241.3	243.6	243.6	246.6	253.5	259.6	269.1	284.3	307.2	338.7	378.7
67.5°	210.9	210.9	212.8	214.3	218.1	222.3	230.7	242.5	261.9	287.0	323.1
70°	179.7	180.8	180.0	181.9	184.2	188.4	194.5	204.4	218.5	240.2	266.8
72.5°	151.5	150.0	150.7	152.6	153.8	156.4	160.2	167.9	179.3	196.8	216.2
75°	121.0	120.3	122.9	122.2	124.1	126.4	129.8	135.5	144.3	156.4	171.3
77.5°	94.4	93.3	94.4	95.2	95.9	97.8	100.5	103.9	110.0	118.0	131.3
80°	67.7	67.4	68.1	68.9	69.3	72.3	73.1	76.5	79.2	85.3	91.7
82.5°	44.9	45.7	46.1	46.8	46.4	48.0	48.7	51.0	53.3	56.3	61.3
85°	25.9	24.7	25.9	25.9	25.9	27.8	27.4	28.9	30.4	32.0	35.4
87.5°	9.1	9.1	9.5	9.9	9.9	11.0	10.7	11.4	12.9	12.9	14.1
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°	932.5	932.5	932.5	932.5	932.5	932.5	932.5	932.5	932.5	932.5	932.5
2.5°	969.8	965.6	962.6	953.8	948.5	943.5	939.0	934.0	928.7	921.8	917.7
5°	1012.8	1003.7	990.4	978.2	964.5	952.3	942.4	931.4	919.2	906.6	895.6
7.5°	1060.4	1043.3	1022.7	1000.3	978.9	961.1	942.4	924.9	907.8	891.0	875.4
10°	1108.0	1078.3	1051.3	1020.4	992.3	965.2	940.9	916.5	895.2	873.1	853.3
12.5°	1152.1	1116.3	1076.8	1038.3	1000.6	965.6	935.6	905.9	878.5	852.2	829.0
15°	1186.0	1141.1	1094.3	1048.6	1005.2	968.7	929.5	891.0	862.5	830.5	805.0
17.5°	1224.8	1171.5	1125.1	1070.3	1016.2	957.2	915.8	873.9	839.6	808.8	783.3
20°	1250.7	1192.1	1125.1	1063.1	1007.5	954.6	904.7	856.8	820.6	784.8	754.0
22.5°	1271.3	1210.7	1136.9	1072.2	1002.5	938.6	884.5	837.4	794.7	760.8	731.5
25°	1281.9	1208.1	1137.7	1059.3	989.6	928.3	867.4	815.3	772.3	734.6	709.5
27.5°	1282.3	1206.5	1123.2	1045.5	970.9	904.7	844.6	793.2	744.9	708.7	678.6
30°	1280.4	1196.7	1108.7	1023.9	949.6	881.9	819.1	765.8	721.6	683.2	654.7
32.5°	1268.2	1183.0	1087.0	998.0	917.3	849.2	791.3	738.4	691.2	656.2	626.1
35°	1240.8	1152.9	1056.6	964.9	888.4	817.6	760.5	707.2	664.9	626.9	596.0
37.5°	1205.8	1123.6	1025.8	929.8	847.2	780.3	726.6	676.4	632.2	597.2	566.4
40°	1161.6	1084.4	988.1	888.4	805.8	738.0	687.4	640.6	602.9	567.1	537.0
42.5°	1101.1	1041.7	942.8	845.7	759.3	695.4	646.3	607.5	568.6	536.3	506.2
45°	1036.4	982.4	894.4	798.1	715.2	649.3	603.3	567.5	534.4	501.7	477.3
47.5°	964.9	920.7	839.3	745.2	663.4	605.2	559.9	527.9	497.5	472.3	448.0
50°	879.6	856.4	780.3	695.0	615.5	555.7	518.4	485.7	463.2	438.8	416.0
52.5°	800.4	781.8	719.7	636.0	563.7	511.2	471.2	445.3	423.2	405.4	387.1
55°	714.4	704.9	652.4	580.1	514.6	462.1	427.8	404.2	386.7	370.0	356.6
57.5°	635.2	634.5	588.0	526.0	462.1	417.5	384.8	365.4	350.2	338.4	326.9
60°	554.2	560.6	522.6	465.9	415.3	373.4	343.7	326.2	315.9	304.9	295.4
62.5°	480.7	490.6	456.0	411.4	361.6	327.3	304.5	291.2	279.8	271.8	264.5
65°	410.3	422.9	394.7	354.7	316.7	284.3	264.9	252.3	243.6	239.0	234.1
67.5°	348.3	355.1	336.1	304.9	273.3	245.1	229.1	218.1	210.5	208.6	202.9
70°	286.2	294.2	280.9	252.3	228.0	207.4	193.0	184.2	179.7	177.0	173.2
72.5°	236.4	239.8	226.5	206.7	187.3	170.1	159.5	153.0	147.7	146.5	144.6
75°	185.0	189.9	179.3	164.0	148.1	135.9	127.9	122.6	119.9	118.0	118.0
77.5°	139.7	143.9	137.8	124.5	114.9	104.3	99.0	94.0	92.9	91.0	91.7
80°	99.3	101.2	97.8	88.7	80.3	74.6	70.0	67.4	67.0	65.5	67.0
82.5°	65.8	66.2	62.4	58.2	51.8	48.7	45.7	44.5	44.2	44.2	43.4
85°	36.5	37.3	34.6	32.0	29.7	27.0	26.3	25.5	24.7	25.9	26.6
87.5°	14.1	14.5	14.1	12.9	12.2	11.4	11.0	11.8	10.7	11.4	11.8
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°	932.5	932.5	932.5	932.5	932.5	932.5	932.5	932.5	932.5	932.5	932.5
2.5°	911.2	908.1	903.6	896.0	890.6	884.9	882.6	883.4	881.1	878.1	878.8
5°	887.2	878.5	870.8	860.2	850.3	841.9	839.3	835.8	832.8	830.9	829.0
7.5°	861.7	849.5	838.1	827.5	816.0	805.4	801.2	798.1	796.6	791.3	789.0
10°	837.4	823.3	809.6	797.0	785.2	773.4	769.2	765.4	760.1	757.8	755.1
12.5°	811.5	797.4	782.5	767.3	755.5	746.0	738.8	736.1	730.8	728.5	727.0
15°	786.4	769.2	757.4	745.6	727.7	717.1	714.0	704.5	701.5	696.9	693.9
17.5°	761.2	745.2	727.7	714.0	703.0	689.7	682.4	678.3	672.5	668.4	662.7
20°	736.5	717.8	704.1	687.0	674.8	662.7	653.5	649.7	644.8	639.1	631.1
22.5°	712.5	692.0	678.6	662.7	647.4	633.3	625.7	620.4	610.5	609.4	602.1
25°	684.3	666.1	648.6	631.8	617.0	602.9	597.9	589.6	586.1	579.3	578.2
27.5°	657.7	638.3	619.3	601.0	588.0	578.2	569.4	564.1	560.6	555.3	555.7
30°	629.9	608.6	590.7	574.0	559.9	550.4	544.7	542.0	537.0	536.3	533.6
32.5°	600.2	580.8	562.2	547.3	532.9	524.5	521.8	519.2	516.1	516.5	515.7
35°	570.5	553.4	533.6	519.9	508.1	503.2	499.0	498.2	497.1	497.8	497.8
37.5°	541.6	523.0	506.6	494.0	487.2	480.3	478.4	478.1	478.4	479.2	481.1
40°	513.4	496.3	480.3	470.1	462.4	459.4	456.7	457.9	459.4	462.1	464.3
42.5°	485.3	468.9	455.6	445.3	438.1	436.6	436.9	439.2	439.6	443.4	447.6
45°	455.6	441.5	429.0	421.0	416.4	414.5	415.3	417.5	420.2	425.5	430.9
47.5°	428.2	415.6	404.6	396.6	393.2	392.4	393.9	397.0	403.1	408.4	414.5
50°	400.4	389.0	378.7	371.5	371.1	368.4	371.9	375.7	382.9	390.1	399.3
52.5°	373.0	362.0	353.2	347.5	346.0	346.0	350.2	357.0	363.5	373.0	381.4
55°	344.5	334.6	326.2	324.3	322.0	323.1	327.7	334.6	343.7	354.4	363.5
57.5°	315.1	306.8	300.7	298.0	296.9	300.7	306.0	313.2	325.0	335.7	345.6
60°	287.4	280.1	273.7	272.9	272.1	277.1	283.6	291.2	303.0	313.6	325.8
62.5°	257.7	252.0	247.8	246.6	246.6	251.6	258.8	268.7	279.8	291.2	304.1
65°	227.6	222.7	221.5	220.0	223.4	226.5	233.7	243.2	255.0	267.6	281.3
67.5°	199.8	196.8	194.5	194.5	197.2	202.9	209.3	218.9	231.0	244.4	256.5
70°	172.0	169.0	167.1	169.0	170.5	177.4	184.2	193.4	204.8	217.7	230.7
72.5°	143.1	143.5	143.9	143.5	145.0	151.5	158.3	167.1	178.1	190.7	202.5
75°	117.6	115.7	116.1	116.8	121.8	125.2	132.1	140.4	152.2	163.7	173.6
77.5°	91.3	90.6	92.5	92.5	97.1	101.2	107.0	115.3	125.6	135.9	143.9
80°	67.0	67.4	68.9	69.3	73.1	77.6	83.7	89.4	98.6	105.8	113.4
82.5°	45.3	46.1	48.0	50.6	52.1	54.8	60.1	66.2	72.7	80.3	84.9
85°	26.3	27.4	28.9	30.8	32.4	35.0	38.8	43.8	48.3	52.5	56.3
87.5°	12.9	12.9	14.1	14.8	16.0	17.5	20.2	22.1	25.1	28.2	29.7
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: P243510

CATALOG NUMBER: S124DR-H795D930-X4F0-XX-UDD-A-W

**CANDELA DISTRIBUTION (continued):**

	165°	170°	175°	180°
0°	932.5	932.5	932.5	932.5
2.5°	877.3	876.9	875.4	876.2
5°	827.8	824.0	823.7	822.1
7.5°	785.2	784.1	784.1	781.0
10°	752.5	749.0	749.8	748.3
12.5°	721.3	719.4	717.1	714.8
15°	686.2	686.2	686.2	679.8
17.5°	658.8	658.5	656.6	656.2
20°	630.3	628.8	623.8	627.3
22.5°	601.4	600.2	596.0	596.8
25°	574.3	573.2	572.4	569.4
27.5°	551.1	551.5	552.3	550.4
30°	533.6	532.5	534.0	532.1
32.5°	517.3	517.3	515.7	516.1
35°	498.6	500.1	500.5	500.1
37.5°	482.2	484.1	485.7	484.1
40°	467.0	468.5	470.1	469.7
42.5°	451.0	453.7	454.8	456.0
45°	435.8	439.2	441.1	441.5
47.5°	420.2	424.4	428.2	427.8
50°	405.0	410.3	413.7	413.3
52.5°	389.7	395.1	399.3	401.2
55°	372.6	379.5	383.3	386.7
57.5°	355.5	363.1	366.9	368.4
60°	336.5	343.3	348.3	349.4
62.5°	315.1	322.4	328.9	330.4
65°	293.1	301.1	306.0	306.8
67.5°	267.6	275.2	280.1	282.4
70°	241.3	247.0	252.3	255.8
72.5°	212.0	218.9	223.8	226.1
75°	181.6	189.2	191.8	193.4
77.5°	150.0	154.5	158.7	159.1
80°	118.4	124.1	125.6	129.4
82.5°	87.2	92.5	91.3	92.9
85°	57.5	59.4	60.5	60.9
87.5°	30.4	31.6	32.4	32.7
90°	0.0	0.0	0.0	0.0

(END OF REPORT)