

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: P243495

Luminaire Tested: **S124DR-H795D830-X4F0-XX-UDD-A-W**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P243495
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-H795D830-X4F0-XX-UDD-A-W
Description: DEFINE 4 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: 3091.2 lumens
Efficiency: N/A
Efficacy: 131.0 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

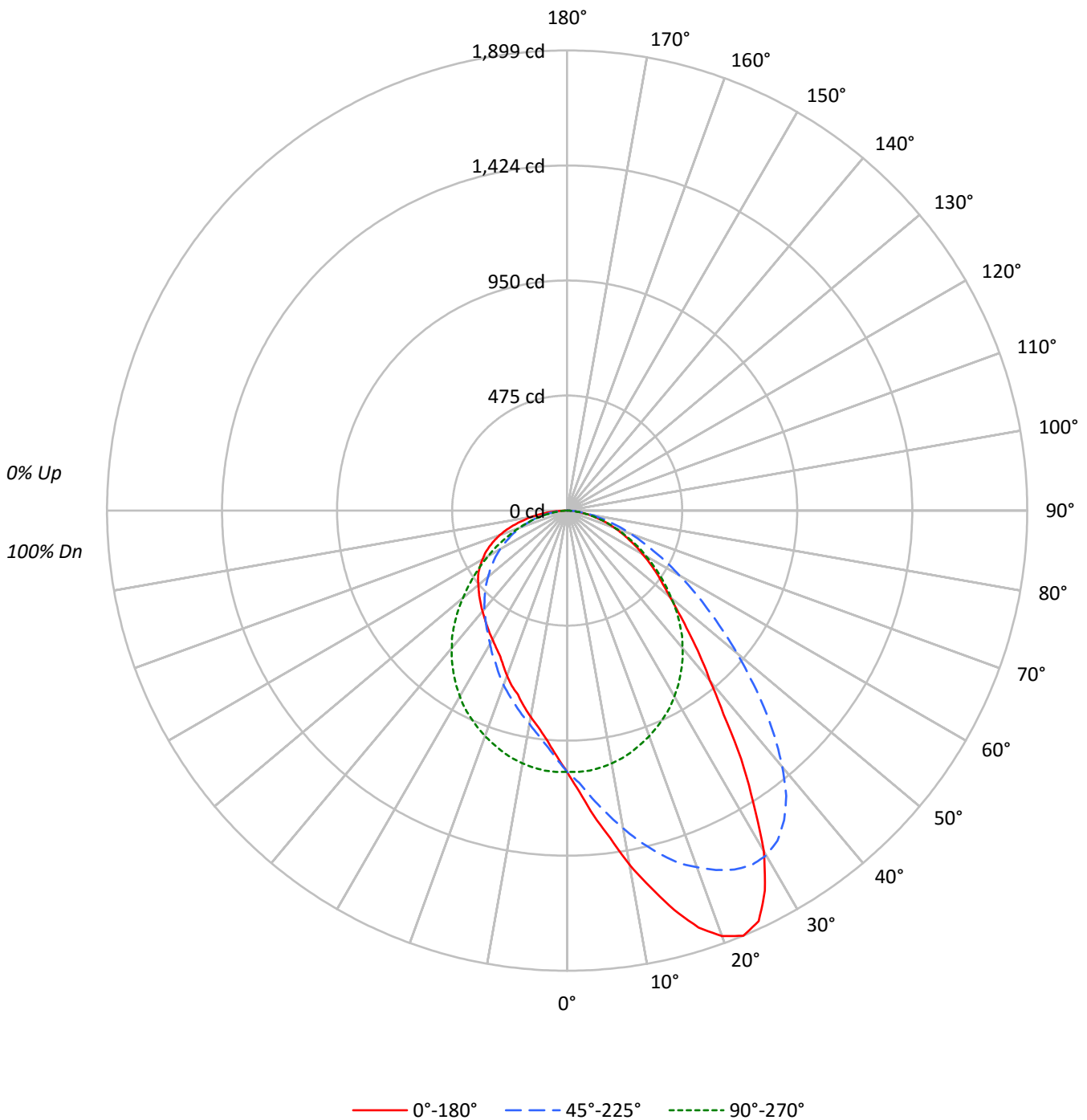
Input Watts (W): 23.6
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	9582	9582	9582
5°	11276	9607	8480
10°	13400	9564	7808
15°	15695	9479	7232
20°	17673	9370	6859
25°	18342	9244	6456
30°	16656	9087	6313
35°	13589	8872	6274
40°	10641	8593	6301
45°	8905	8248	6416
50°	7643	7765	6609
55°	6983	7242	6929
60°	6398	6704	7180
65°	5868	6135	7460
70°	5398	5536	7685
75°	4805	4867	7676
80°	4008	3988	7658
85°	3049	3009	7180



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	104.9	3.4
10°-20°	325.0	10.5
20°-30°	522.1	16.9
30°-40°	596.8	19.3
40°-50°	549.4	17.8
50°-60°	449.4	14.5
60°-70°	320.3	10.4
70°-80°	176.0	5.7
80°-90°	47.3	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°	952.0	30.8
0°-40°	1548.9	50.1
0°-60°	2547.6	82.4
0°-90°	3091.2	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3091.2	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1078	1078	1078	1078	1078	
5°	1264	1192	1077	973	950	127
15°	1706	1465	1030	829	786	486
25°	1870	1635	942	697	658	839
35°	1252	1560	818	582	578	778
45°	708	1150	656	479	510	553
55°	451	707	467	374	447	404
65°	279	392	292	262	355	279
75°	140	181	142	145	224	149
85°	30	37	30	40	70	36
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°	1078.0	1078.0	1078.0	1078.0	1078.0	1078.0	1078.0	1078.0	1078.0	1078.0	1078.0
2.5°	1160.8	1157.2	1155.5	1153.3	1152.8	1150.6	1146.2	1140.1	1132.2	1123.8	1123.8
5°	1263.7	1262.8	1256.2	1256.7	1248.3	1239.1	1232.0	1223.2	1206.1	1191.6	1181.4
7.5°	1362.3	1371.5	1369.3	1362.3	1350.0	1336.8	1322.7	1310.4	1278.7	1261.1	1246.6
10°	1484.6	1488.1	1482.0	1471.9	1460.9	1435.3	1416.9	1396.2	1361.9	1331.9	1305.5
12.5°	1592.0	1600.3	1589.3	1579.7	1553.7	1534.8	1516.3	1474.9	1438.9	1401.0	1362.7
15°	1705.5	1696.7	1702.4	1678.7	1660.2	1642.1	1595.1	1552.8	1511.9	1465.3	1425.2
17.5°	1804.1	1804.1	1793.5	1778.1	1758.7	1724.9	1677.8	1631.1	1585.8	1524.7	1467.9
20°	1868.3	1873.2	1860.8	1844.6	1821.2	1786.0	1748.6	1698.0	1637.7	1566.5	1502.2
22.5°	1899.1	1900.0	1895.6	1882.0	1863.0	1833.1	1794.8	1745.5	1681.7	1605.2	1537.9
25°	1870.1	1874.9	1873.6	1872.7	1863.0	1845.9	1815.1	1769.3	1711.2	1634.7	1562.1
27.5°	1768.0	1779.9	1790.0	1794.4	1804.9	1805.8	1796.6	1768.9	1721.3	1649.2	1568.2
30°	1622.8	1616.6	1643.9	1657.5	1693.6	1715.2	1730.6	1728.8	1701.5	1643.0	1566.0
32.5°	1429.2	1445.9	1465.3	1497.4	1540.1	1590.2	1628.1	1656.2	1653.6	1615.3	1551.1
35°	1252.3	1252.3	1276.9	1316.5	1361.9	1422.1	1485.5	1537.9	1570.0	1560.3	1515.0
37.5°	1060.4	1072.3	1100.5	1131.3	1186.7	1244.8	1328.4	1397.9	1465.3	1485.5	1462.2
40°	917.0	922.3	952.2	978.2	1034.9	1095.2	1165.2	1254.0	1331.5	1381.2	1384.3
42.5°	810.5	810.1	822.4	845.7	891.5	945.2	1020.8	1108.0	1198.6	1269.0	1302.0
45°	708.4	707.5	720.3	744.1	776.6	824.2	889.7	976.8	1069.7	1149.8	1201.7
47.5°	622.2	630.1	635.8	654.3	681.1	721.6	778.0	847.5	936.8	1026.6	1096.5
50°	552.7	556.2	568.5	577.3	607.2	635.4	680.7	743.2	819.8	913.9	989.6
52.5°	497.2	499.4	506.9	518.3	535.5	560.1	596.2	653.9	722.9	804.8	883.1
55°	450.6	449.3	454.1	461.6	476.5	497.2	523.6	567.6	627.9	706.7	778.8
57.5°	404.8	404.8	409.2	414.5	422.9	440.0	466.0	500.7	549.1	619.1	682.9
60°	359.9	363.0	364.8	370.1	377.1	389.9	409.2	436.5	477.4	534.6	598.0
62.5°	320.3	320.3	323.4	325.2	334.4	343.7	357.7	381.1	413.2	464.2	513.5
65°	279.0	281.6	281.6	285.1	293.1	300.1	311.1	328.7	355.1	391.6	437.8
67.5°	243.8	243.8	246.0	247.7	252.1	257.0	266.7	280.3	302.7	331.8	373.6
70°	207.7	209.0	208.1	210.3	213.0	217.8	224.8	236.3	252.6	277.7	308.5
72.5°	175.1	173.4	174.2	176.4	177.8	180.8	185.2	194.0	207.2	227.5	249.9
75°	139.9	139.0	142.1	141.2	143.4	146.1	150.0	156.6	166.8	180.8	198.0
77.5°	109.1	107.8	109.1	110.0	110.9	113.1	116.2	120.1	127.2	136.4	151.8
80°	78.3	77.9	78.8	79.6	80.1	83.6	84.5	88.4	91.5	98.6	106.0
82.5°	51.9	52.8	53.2	54.1	53.7	55.4	56.3	59.0	61.6	65.1	70.8
85°	29.9	28.6	29.9	29.9	29.9	32.1	31.7	33.4	35.2	37.0	40.9
87.5°	10.6	10.6	11.0	11.4	11.4	12.8	12.3	13.2	15.0	15.0	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



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	1078.0	1078.0	1078.0	1078.0	1078.0	1078.0	1078.0	1078.0	1078.0	1078.0	1078.0
2.5°	1121.2	1116.3	1112.8	1102.7	1096.5	1090.8	1085.5	1079.8	1073.6	1065.7	1060.9
5°	1170.9	1160.3	1144.9	1130.8	1115.0	1100.9	1089.5	1076.7	1062.6	1048.1	1035.4
7.5°	1225.9	1206.1	1182.3	1156.4	1131.7	1111.0	1089.5	1069.2	1049.4	1030.1	1012.0
10°	1280.9	1246.6	1215.3	1179.7	1147.1	1115.9	1087.7	1059.6	1034.9	1009.4	986.5
12.5°	1331.9	1290.6	1244.8	1200.4	1156.8	1116.3	1081.6	1047.2	1015.6	985.2	958.4
15°	1371.1	1319.2	1265.0	1212.2	1162.1	1119.8	1074.5	1030.1	997.1	960.1	930.6
17.5°	1416.0	1354.4	1300.7	1237.3	1174.8	1106.6	1058.7	1010.3	970.7	935.0	905.6
20°	1445.9	1378.1	1300.7	1229.0	1164.7	1103.6	1045.9	990.5	948.7	907.3	871.7
22.5°	1469.7	1399.7	1314.3	1239.5	1159.0	1085.1	1022.6	968.0	918.8	879.6	845.7
25°	1482.0	1396.6	1315.2	1224.6	1144.0	1073.2	1002.8	942.5	892.8	849.2	820.2
27.5°	1482.4	1394.9	1298.5	1208.7	1122.5	1045.9	976.4	917.0	861.1	819.3	784.6
30°	1480.2	1383.4	1281.8	1183.6	1097.8	1019.5	946.9	885.3	834.3	789.8	756.8
32.5°	1466.1	1367.6	1256.7	1153.7	1060.4	981.7	914.8	853.6	799.1	758.6	723.8
35°	1434.5	1332.8	1221.5	1115.4	1027.0	945.2	879.2	817.6	768.7	724.7	689.1
37.5°	1394.0	1298.9	1185.8	1075.0	979.5	902.0	840.0	781.9	730.9	690.4	654.7
40°	1342.9	1253.6	1142.3	1027.0	931.5	853.2	794.7	740.5	697.0	655.6	620.9
42.5°	1273.0	1204.3	1089.9	977.7	877.8	803.9	747.1	702.3	657.4	620.0	585.2
45°	1198.2	1135.7	1034.0	922.7	826.8	750.7	697.4	656.1	617.8	579.9	551.8
47.5°	1115.4	1064.4	970.2	861.6	766.9	699.6	647.3	610.3	575.1	546.1	517.9
50°	1016.9	990.0	902.0	803.5	711.5	642.4	599.3	561.5	535.5	507.3	480.9
52.5°	925.4	903.8	832.1	735.3	651.7	590.9	544.7	514.8	489.3	468.6	447.5
55°	825.9	814.9	754.2	670.6	594.9	534.2	494.6	467.3	447.1	427.7	412.3
57.5°	734.4	733.5	679.8	608.1	534.2	482.7	444.9	422.4	404.8	391.2	378.0
60°	640.7	648.1	604.1	538.6	480.1	431.7	397.3	377.1	365.2	352.5	341.5
62.5°	555.7	567.2	527.1	475.7	418.0	378.4	352.0	336.6	323.4	314.2	305.8
65°	474.3	488.9	456.3	410.1	366.1	328.7	306.3	291.7	281.6	276.3	270.6
67.5°	402.6	410.5	388.5	352.5	315.9	283.4	264.9	252.1	243.3	241.1	234.5
70°	330.9	340.1	324.7	291.7	263.6	239.8	223.1	213.0	207.7	204.6	200.2
72.5°	273.3	277.2	261.8	238.9	216.5	196.7	184.4	176.9	170.7	169.4	167.2
75°	213.8	219.6	207.2	189.6	171.2	157.1	147.8	141.7	138.6	136.4	136.4
77.5°	161.5	166.3	159.3	143.9	132.9	120.6	114.4	108.7	107.4	105.2	106.0
80°	114.8	117.0	113.1	102.5	92.8	86.2	81.0	77.9	77.4	75.7	77.4
82.5°	76.1	76.6	72.2	67.3	59.8	56.3	52.8	51.5	51.0	51.0	50.2
85°	42.2	43.1	40.0	37.0	34.3	31.2	30.4	29.5	28.6	29.9	30.8
87.5°	16.3	16.7	16.3	15.0	14.1	13.2	12.8	13.6	12.3	13.2	13.6
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°	1078.0	1078.0	1078.0	1078.0	1078.0	1078.0	1078.0	1078.0	1078.0	1078.0	1078.0
2.5°	1053.4	1049.9	1044.6	1035.8	1029.6	1023.0	1020.4	1021.3	1018.6	1015.1	1016.0
5°	1025.7	1015.6	1006.8	994.4	983.0	973.3	970.2	966.3	962.8	960.6	958.4
7.5°	996.2	982.1	968.9	956.6	943.4	931.1	926.2	922.7	921.0	914.8	912.2
10°	968.0	951.8	935.9	921.4	907.8	894.1	889.3	884.9	878.7	876.1	873.0
12.5°	938.1	921.8	904.7	887.1	873.4	862.4	854.1	851.0	844.8	842.2	840.4
15°	909.1	889.3	875.6	862.0	841.3	829.0	825.5	814.5	811.0	805.7	802.2
17.5°	880.0	861.6	841.3	825.5	812.7	797.3	789.0	784.1	777.5	772.7	766.1
20°	851.4	829.9	814.0	794.2	780.2	766.1	755.5	751.1	745.4	738.8	729.5
22.5°	823.7	800.0	784.6	766.1	748.5	732.2	723.4	717.2	705.8	704.5	696.1
25°	791.2	770.0	749.8	730.4	713.3	697.0	691.3	681.6	677.6	669.7	668.4
27.5°	760.3	737.9	715.9	694.8	679.8	668.4	658.3	652.1	648.1	642.0	642.4
30°	728.2	703.6	682.9	663.5	647.3	636.3	629.7	626.6	620.9	620.0	616.9
32.5°	693.9	671.5	649.9	632.7	616.0	606.3	603.3	600.2	596.7	597.1	596.2
35°	659.6	639.8	616.9	601.1	587.4	581.7	576.9	576.0	574.7	575.5	575.5
37.5°	626.1	604.6	585.7	571.1	563.2	555.3	553.1	552.7	553.1	554.0	556.2
40°	593.6	573.8	555.3	543.4	534.6	531.1	528.0	529.3	531.1	534.2	536.8
42.5°	561.0	542.1	526.7	514.8	506.5	504.7	505.1	507.8	508.2	512.6	517.5
45°	526.7	510.4	495.9	486.7	481.4	479.2	480.1	482.7	485.8	491.9	498.1
47.5°	495.0	480.5	467.7	458.5	454.5	453.7	455.4	458.9	466.0	472.1	479.2
50°	462.9	449.7	437.8	429.5	429.0	425.9	429.9	434.3	442.7	451.0	461.6
52.5°	431.2	418.5	408.3	401.7	400.0	400.0	404.8	412.7	420.2	431.2	440.9
55°	398.2	386.8	377.1	374.9	372.3	373.6	378.9	386.8	397.3	409.7	420.2
57.5°	364.3	354.7	347.6	344.5	343.2	347.6	353.8	362.1	375.8	388.1	399.5
60°	332.2	323.9	316.4	315.5	314.6	320.3	327.8	336.6	350.3	362.6	376.7
62.5°	297.9	291.3	286.5	285.1	285.1	290.9	299.2	310.7	323.4	336.6	351.6
65°	263.1	257.4	256.1	254.3	258.3	261.8	270.2	281.2	294.8	309.3	325.2
67.5°	231.0	227.5	224.8	224.8	227.9	234.5	242.0	253.0	267.1	282.5	296.6
70°	198.9	195.4	193.2	195.4	197.1	205.0	213.0	223.5	236.7	251.7	266.7
72.5°	165.4	165.9	166.3	165.9	167.6	175.1	183.0	193.2	205.9	220.4	234.1
75°	136.0	133.8	134.2	135.1	140.8	144.8	152.7	162.4	176.0	189.2	200.6
77.5°	105.6	104.7	106.9	106.9	112.2	117.0	123.6	133.3	145.2	157.1	166.3
80°	77.4	77.9	79.6	80.1	84.5	89.8	96.8	103.4	114.0	122.3	131.1
82.5°	52.4	53.2	55.4	58.5	60.3	63.4	69.5	76.6	84.0	92.8	98.1
85°	30.4	31.7	33.4	35.6	37.4	40.5	44.9	50.6	55.9	60.7	65.1
87.5°	15.0	15.0	16.3	17.2	18.5	20.2	23.3	25.5	29.0	32.6	34.3
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: P243495

CATALOG NUMBER: S124DR-H795D830-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	1078.0	1078.0	1078.0	1078.0
2.5°	1014.2	1013.8	1012.0	1012.9
5°	957.0	952.6	952.2	950.4
7.5°	907.8	906.4	906.4	902.9
10°	869.9	866.0	866.8	865.1
12.5°	833.8	831.6	829.0	826.4
15°	793.4	793.4	793.4	785.9
17.5°	761.7	761.2	759.0	758.6
20°	728.7	726.9	721.2	725.1
22.5°	695.2	693.9	689.1	689.9
25°	664.0	662.7	661.8	658.3
27.5°	637.1	637.6	638.5	636.3
30°	616.9	615.6	617.3	615.1
32.5°	598.0	598.0	596.2	596.7
35°	576.4	578.2	578.6	578.2
37.5°	557.5	559.7	561.5	559.7
40°	539.9	541.7	543.4	543.0
42.5°	521.4	524.5	525.8	527.1
45°	503.8	507.8	510.0	510.4
47.5°	485.8	490.6	495.0	494.6
50°	468.2	474.3	478.3	477.9
52.5°	450.6	456.7	461.6	463.8
55°	430.8	438.7	443.1	447.1
57.5°	411.0	419.8	424.2	425.9
60°	389.0	396.9	402.6	403.9
62.5°	364.3	372.7	380.2	381.9
65°	338.8	348.1	353.8	354.7
67.5°	309.3	318.1	323.9	326.5
70°	279.0	285.6	291.7	295.7
72.5°	245.1	253.0	258.7	261.4
75°	209.9	218.7	221.8	223.5
77.5°	173.4	178.6	183.5	183.9
80°	136.8	143.4	145.2	149.6
82.5°	100.8	106.9	105.6	107.4
85°	66.4	68.6	70.0	70.4
87.5°	35.2	36.5	37.4	37.8
90°	0.0	0.0	0.0	0.0

(END OF REPORT)