

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: P243343

Luminaire Tested: **S123DR-H775D935-X4F0-XX-UDD-A-W**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P243343
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-59)
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S123DR-H775D935-X4F0-XX-UDD-A-W
Description: DEFINE 3 DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER.
HIGH PERFORMANCE LIGHT ENGINE
Light Source: (184) 3500K CCT, 90 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2645.5 lumens
Efficiency: N/A
Efficacy: 112.1 lumens/watt
Spacing Criteria (0/90/45): 1.39 / 1.21 / 1.5
Luminous Opening: Rectangular (W 3.88' x L: 0.23' x H: 0')
CIE Type: Direct

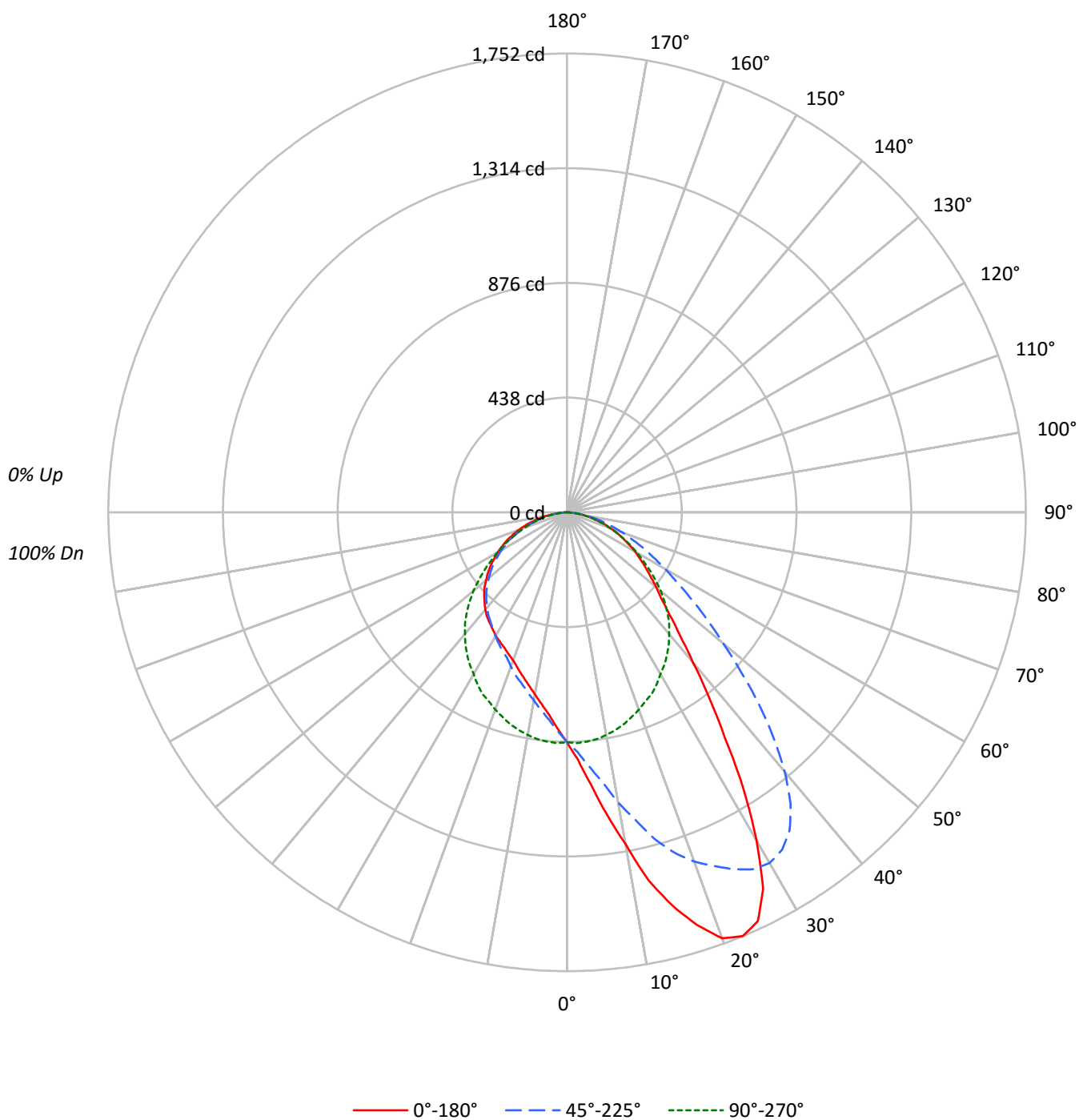
Input Watts (W): 23.6
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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					0
RW	70	50	30	10	70	50	30	10		50	30	10		50	30	10		50	30	10
RCR																				
0	119	119	119	119	116	116	116	116		111	111	111		106	106	106		102	102	102
1	110	105	101	98	107	103	99	96		99	96	93		95	92	90		91	89	87
2	100	92	86	81	98	91	85	80		87	82	78		84	80	76		81	77	74
3	92	82	74	68	89	80	73	67		77	71	66		75	69	65		72	68	64
4	84	73	64	58	82	72	64	58		69	62	57		67	61	56		65	60	55
5	78	65	57	50	76	64	56	50		62	55	50		60	54	49		58	53	49
6	72	59	50	44	70	58	50	44		56	49	44		55	48	43		53	47	43
7	67	54	45	39	65	53	45	39		51	44	39		50	43	39		49	43	38
8	62	49	41	35	61	48	41	35		47	40	35		46	39	35		45	39	34
9	58	45	37	32	57	45	37	32		43	36	31		42	36	31		41	35	31
10	55	42	34	29	53	41	34	29		40	33	29		39	33	28		38	33	28

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	10640	10640	10640
5°	12676	10690	9448
10°	15830	10626	8687
15°	19508	10511	8150
20°	22325	10343	7756
25°	23039	10230	7611
30°	20240	9985	7617
35°	15534	9837	7625
40°	11817	9597	7682
45°	9509	9288	7674
50°	8367	8791	7609
55°	7711	8145	7559
60°	7268	7455	7406
65°	6754	6812	7262
70°	6181	6110	6950
75°	5498	5325	6477
80°	4600	4405	5668
85°	3240	3185	4242

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	86.4	3.3
10°-20°	277.3	10.5
20°-30°	457.9	17.3
30°-40°	524.1	19.8
40°-50°	475.0	18.0
50°-60°	383.8	14.5
60°-70°	267.4	10.1
70°-80°	140.2	5.3
80°-90°	33.4	1.3
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°	821.6	31.1
0°-40°	1345.7	50.9
0°-60°	2204.4	83.3
0°-90°	2645.5	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2645.5	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	878	878	878	878	878	
5°	1042	974	879	795	776	107
15°	1555	1291	838	675	650	442
25°	1723	1504	765	583	569	770
35°	1050	1482	665	510	515	665
45°	555	1035	542	436	448	437
55°	365	581	385	342	358	328
65°	236	318	238	234	253	233
75°	117	145	114	118	138	125
85°	23	30	23	26	30	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°	877.8	877.8	877.8	877.8	877.8	877.8	877.8	877.8	877.8	877.8	877.8
2.5°	945.3	947.3	944.1	946.1	941.3	938.5	934.1	932.1	922.4	915.6	913.2
5°	1041.8	1041.8	1042.6	1037.8	1032.1	1022.1	1008.8	1000.4	990.7	974.3	965.8
7.5°	1163.2	1157.1	1153.1	1144.3	1136.6	1120.2	1105.7	1088.4	1065.9	1038.6	1024.1
10°	1286.1	1292.6	1288.6	1279.3	1259.6	1232.7	1211.4	1186.5	1151.5	1125.0	1087.2
12.5°	1439.7	1431.2	1424.8	1410.7	1389.0	1360.5	1327.5	1290.6	1245.6	1201.7	1159.5
15°	1554.6	1555.8	1555.4	1536.9	1515.6	1477.1	1446.5	1385.0	1327.9	1291.0	1221.0
17.5°	1651.9	1657.1	1651.1	1623.4	1604.5	1581.6	1542.6	1474.2	1422.4	1362.5	1285.3
20°	1730.7	1731.5	1721.8	1701.3	1679.6	1653.9	1602.5	1550.2	1499.6	1419.2	1345.6
22.5°	1751.6	1753.6	1751.6	1742.7	1725.0	1697.7	1659.1	1610.9	1547.0	1461.4	1393.1
25°	1722.6	1721.4	1728.3	1723.0	1722.2	1713.4	1688.1	1649.1	1586.0	1503.6	1416.8
27.5°	1621.3	1612.9	1630.2	1652.7	1655.9	1670.0	1670.4	1652.3	1606.9	1536.5	1442.1
30°	1446.1	1454.1	1462.6	1509.6	1535.7	1572.3	1604.1	1615.7	1598.4	1546.6	1458.2
32.5°	1255.6	1281.3	1305.0	1337.6	1375.8	1437.7	1487.9	1532.1	1551.0	1528.1	1458.2
35°	1049.8	1063.5	1100.9	1142.3	1197.3	1245.6	1345.2	1409.5	1467.0	1481.9	1439.7
37.5°	889.0	901.5	914.4	946.5	1008.4	1088.8	1171.2	1255.6	1340.8	1401.9	1399.5
40°	746.8	749.6	760.8	788.6	840.0	911.6	998.0	1099.7	1210.2	1293.4	1328.3
42.5°	637.4	637.4	651.5	683.7	713.4	765.7	849.3	938.9	1059.9	1166.8	1241.5
45°	554.7	555.5	566.7	589.6	612.9	653.9	715.8	800.2	924.8	1035.3	1139.4
47.5°	487.1	494.8	501.2	513.3	536.6	572.7	617.8	689.7	778.5	899.1	1020.5
50°	443.7	445.3	450.2	457.4	475.5	499.2	538.2	592.8	671.6	778.5	901.1
52.5°	401.1	401.1	405.9	414.8	425.2	444.5	472.7	518.1	577.2	674.0	784.1
55°	364.9	366.1	367.0	374.2	383.0	397.5	419.6	449.3	503.6	581.2	677.2
57.5°	329.6	334.0	332.8	338.4	344.8	355.3	371.0	396.7	438.1	497.2	583.6
60°	299.8	299.0	301.0	303.5	307.9	315.1	329.6	348.5	383.0	432.5	503.2
62.5°	266.1	265.3	267.7	270.5	274.5	280.5	291.0	305.5	332.8	369.8	431.3
65°	235.5	234.7	235.9	237.5	242.0	246.8	254.8	266.9	285.0	317.5	364.5
67.5°	205.0	205.0	205.8	207.4	210.2	213.8	220.3	227.5	245.6	267.3	304.3
70°	174.4	174.8	174.8	176.4	178.9	181.7	186.9	193.3	204.6	223.9	253.6
72.5°	147.9	147.9	147.1	147.9	149.5	150.7	153.9	160.0	168.4	182.5	205.0
75°	117.4	119.4	119.0	118.6	119.8	121.8	124.6	129.4	134.6	144.7	161.6
77.5°	90.0	91.2	91.2	91.6	92.8	94.5	95.3	100.1	104.9	110.9	123.4
80°	65.9	66.7	65.9	66.3	67.1	68.7	70.3	71.1	74.8	80.0	86.0
82.5°	44.2	43.0	44.6	44.2	45.0	45.4	46.2	46.6	49.0	52.2	56.3
85°	23.3	25.3	24.9	25.7	24.9	25.3	25.7	27.3	27.7	29.7	32.2
87.5°	8.8	9.6	9.6	9.6	9.6	9.6	10.4	10.9	11.7	12.1	12.9
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°	877.8	877.8	877.8	877.8	877.8	877.8	877.8	877.8	877.8	877.8	877.8
2.5°	914.8	911.2	905.9	900.3	894.3	888.2	885.4	881.8	874.6	867.3	861.7
5°	959.0	948.9	935.3	925.2	910.8	897.1	886.2	878.6	866.9	852.9	843.6
7.5°	1008.4	990.3	968.6	946.5	924.8	904.3	887.4	873.0	854.9	837.6	823.5
10°	1066.7	1031.7	1001.6	969.4	937.3	908.3	884.2	863.3	840.0	819.1	801.8
12.5°	1118.1	1077.5	1035.7	990.3	946.9	909.5	878.6	851.3	823.1	799.0	781.3
15°	1174.8	1117.7	1059.9	1008.4	955.8	909.9	869.4	837.6	805.4	778.1	757.6
17.5°	1239.9	1163.6	1090.8	1016.9	970.2	911.2	861.3	819.5	786.6	759.2	732.7
20°	1278.5	1202.5	1113.3	1037.4	960.2	899.5	844.0	801.8	763.2	731.9	710.2
22.5°	1299.4	1219.4	1126.2	1048.2	958.2	890.3	831.2	781.3	739.9	708.6	684.1
25°	1328.8	1219.4	1133.0	1039.4	961.4	879.4	812.7	764.9	721.4	685.3	659.6
27.5°	1342.0	1230.3	1133.8	1022.5	942.1	858.9	791.4	740.7	692.5	657.1	635.0
30°	1352.9	1232.3	1117.7	1009.2	919.6	836.0	770.1	713.4	668.4	634.6	611.3
32.5°	1353.7	1227.1	1096.0	984.3	889.5	809.1	744.8	691.3	644.3	608.5	585.6
35°	1346.4	1214.2	1071.1	946.1	854.5	781.3	717.0	664.8	616.9	582.8	559.5
37.5°	1327.9	1199.7	1047.8	910.4	813.1	741.9	687.3	637.4	590.0	555.9	536.6
40°	1288.6	1176.4	1017.3	872.2	771.3	700.1	652.3	606.5	564.3	528.9	509.6
42.5°	1236.3	1141.5	980.3	831.6	724.7	655.9	613.7	576.8	533.8	503.2	483.5
45°	1162.4	1094.0	943.3	789.0	678.4	610.9	572.3	541.8	504.8	474.3	457.0
47.5°	1078.8	1037.0	895.5	741.1	629.8	566.3	529.7	505.2	473.9	447.7	430.5
50°	984.7	969.0	842.8	692.9	584.4	519.3	485.5	466.2	439.7	418.8	403.9
52.5°	882.6	892.3	787.4	643.9	540.6	474.7	442.5	424.8	407.9	390.3	376.2
55°	778.9	801.8	720.2	590.4	490.3	432.9	401.5	385.4	373.0	358.1	348.1
57.5°	681.7	717.4	650.7	533.3	444.1	389.1	359.3	345.2	336.0	328.0	318.7
60°	587.2	628.6	579.2	479.9	397.9	347.7	321.1	307.5	303.0	297.0	288.2
62.5°	503.6	545.8	508.8	424.8	351.3	308.3	284.2	272.9	266.5	264.5	259.2
65°	425.2	464.6	436.5	367.4	307.1	268.9	247.6	237.5	233.9	233.5	229.5
67.5°	357.3	395.5	369.8	311.5	260.4	229.5	213.4	205.4	201.8	202.2	199.4
70°	294.6	321.5	306.3	260.4	221.1	193.7	181.3	172.4	169.6	169.6	168.8
72.5°	236.3	257.6	246.0	211.0	180.1	159.2	148.3	143.1	140.7	140.3	140.7
75°	184.9	203.4	192.9	165.6	142.3	126.6	117.4	113.7	112.5	111.7	112.1
77.5°	138.3	149.9	143.5	125.8	106.5	95.7	91.2	87.6	86.4	86.8	87.6
80°	97.7	104.1	100.5	89.2	76.4	69.1	65.9	63.1	61.9	63.1	63.1
82.5°	61.9	66.7	63.5	56.3	49.8	45.0	41.8	41.0	40.6	39.8	41.0
85°	33.8	36.2	34.6	32.2	27.7	25.7	23.3	22.9	22.9	22.9	22.9
87.5°	13.3	14.9	12.9	12.9	12.1	10.0	10.0	9.6	9.2	9.6	9.6
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°	877.8	877.8	877.8	877.8	877.8	877.8	877.8	877.8	877.8	877.8	877.8
2.5°	859.3	854.1	850.9	846.4	841.2	834.4	831.6	834.4	832.8	830.0	831.2
5°	835.6	828.8	819.9	812.7	804.6	794.6	791.4	789.8	787.4	786.2	784.1
7.5°	812.3	802.2	791.4	781.3	769.7	760.8	756.8	754.0	753.2	747.2	744.8
10°	788.2	775.7	764.9	751.2	741.1	729.5	724.7	721.4	717.8	713.8	711.0
12.5°	762.8	750.4	736.7	723.9	713.8	700.9	694.5	690.9	688.1	685.3	682.1
15°	740.7	728.3	709.4	699.7	687.7	674.8	670.8	662.8	663.6	658.7	655.5
17.5°	717.4	698.9	685.7	671.2	662.4	653.1	645.5	637.0	635.8	632.2	631.0
20°	691.3	672.0	662.8	647.9	635.8	626.6	619.8	619.0	616.5	611.3	609.3
22.5°	665.6	649.9	637.0	623.4	612.5	600.5	597.3	598.5	594.0	592.8	588.4
25°	642.3	628.6	612.5	599.7	590.8	583.2	578.8	577.2	575.6	574.3	572.3
27.5°	617.4	602.9	589.2	578.8	570.3	565.1	562.3	558.7	558.3	558.3	557.5
30°	592.4	579.6	570.3	557.1	549.4	546.2	543.8	542.6	543.8	543.8	544.2
32.5°	569.5	557.1	546.2	537.0	529.3	526.9	526.5	526.5	528.1	528.1	529.3
35°	545.8	533.3	523.3	516.9	510.4	510.0	510.4	511.2	513.3	513.7	515.3
37.5°	520.1	510.4	502.8	494.8	493.2	494.0	494.8	495.6	496.4	499.6	499.6
40°	496.4	489.1	481.5	476.3	473.5	475.5	476.7	477.1	479.5	481.5	483.1
42.5°	473.1	466.2	460.2	455.8	454.6	456.2	457.4	458.6	461.0	462.6	465.4
45°	446.9	442.5	437.3	433.7	434.1	436.5	436.5	440.5	442.1	442.9	444.9
47.5°	422.8	418.0	414.4	412.8	412.4	414.4	415.6	418.8	419.6	422.4	424.0
50°	397.1	393.5	390.7	388.7	389.1	389.9	392.7	395.9	396.7	399.9	402.7
52.5°	370.2	367.0	364.5	365.3	366.6	366.6	369.4	371.4	373.4	375.8	378.6
55°	343.6	339.2	339.6	338.4	339.6	342.4	343.6	346.9	348.5	349.7	353.7
57.5°	314.7	313.9	312.7	311.5	313.9	315.1	317.1	319.1	321.9	323.5	326.4
60°	285.0	283.8	283.8	285.4	286.2	288.6	291.8	293.0	293.8	297.0	300.6
62.5°	257.6	256.4	256.0	258.4	258.4	260.8	262.1	264.1	267.3	268.5	273.3
65°	228.3	227.5	227.5	229.5	229.9	234.3	234.3	234.3	236.3	240.8	243.2
67.5°	197.7	198.1	199.4	200.6	202.2	203.4	203.8	206.2	209.4	212.2	217.0
70°	167.2	169.2	171.6	171.2	172.4	174.4	174.8	177.2	180.1	183.7	189.3
72.5°	139.9	141.1	143.5	143.5	145.1	146.3	148.3	149.9	153.5	156.7	159.2
75°	112.5	112.9	114.9	116.2	117.4	118.2	120.2	123.0	125.0	127.8	131.4
77.5°	88.4	87.6	89.2	89.6	90.4	92.0	93.6	96.5	98.1	101.3	102.5
80°	62.7	64.3	64.7	65.1	65.9	67.9	69.1	70.3	71.9	74.8	76.0
82.5°	41.4	42.2	43.4	43.8	44.6	45.0	45.4	47.4	48.6	49.4	53.5
85°	24.1	25.3	24.5	24.5	25.3	25.7	27.3	27.3	28.9	28.1	30.1
87.5°	10.4	10.0	10.0	10.4	10.0	9.6	10.9	10.9	10.4	10.9	10.9
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: P243343

CATALOG NUMBER: S123DR-H775D935-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	877.8	877.8	877.8	877.8
2.5°	829.2	829.2	825.9	827.2
5°	780.1	781.7	777.7	776.5
7.5°	744.0	742.3	739.5	739.5
10°	708.6	707.0	705.8	705.8
12.5°	678.0	676.4	674.0	676.0
15°	650.7	651.1	649.5	649.5
17.5°	629.8	626.2	625.0	624.6
20°	604.9	605.7	604.1	601.3
22.5°	589.2	587.2	585.6	585.2
25°	573.1	571.1	570.7	569.1
27.5°	557.1	557.5	556.3	556.3
30°	543.8	545.0	543.8	544.2
32.5°	530.5	530.5	530.5	528.9
35°	516.1	516.5	516.1	515.3
37.5°	501.2	501.2	501.6	502.4
40°	484.7	484.7	485.5	485.5
42.5°	465.0	467.0	468.2	466.2
45°	447.3	447.7	448.1	447.7
47.5°	427.6	426.4	426.8	427.6
50°	403.1	405.9	405.9	403.5
52.5°	379.4	380.2	381.8	381.8
55°	356.1	356.5	356.9	357.7
57.5°	329.6	330.0	330.0	329.6
60°	303.0	305.5	305.1	305.5
62.5°	274.5	278.1	279.3	278.9
65°	247.6	248.4	250.4	253.2
67.5°	219.0	221.1	224.3	223.5
70°	190.9	193.7	194.5	196.1
72.5°	162.8	166.4	167.2	168.0
75°	135.4	137.1	138.7	138.3
77.5°	105.7	108.1	110.9	109.3
80°	79.2	79.6	82.0	81.2
82.5°	52.2	55.5	55.5	53.9
85°	30.5	30.5	30.5	30.5
87.5°	10.4	10.0	10.9	10.4
90°	0.0	0.0	0.0	0.0

(END OF REPORT)