

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: P243339

Luminaire Tested: **S123DR-H1000D930-X4F0-XX-UDD-A-W**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P243339
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-H1000D930-X4F0-XX-UDD-A-W
Description: DEFINE 3 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: 3230.6 lumens
Efficiency: N/A
Efficacy: 102.6 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

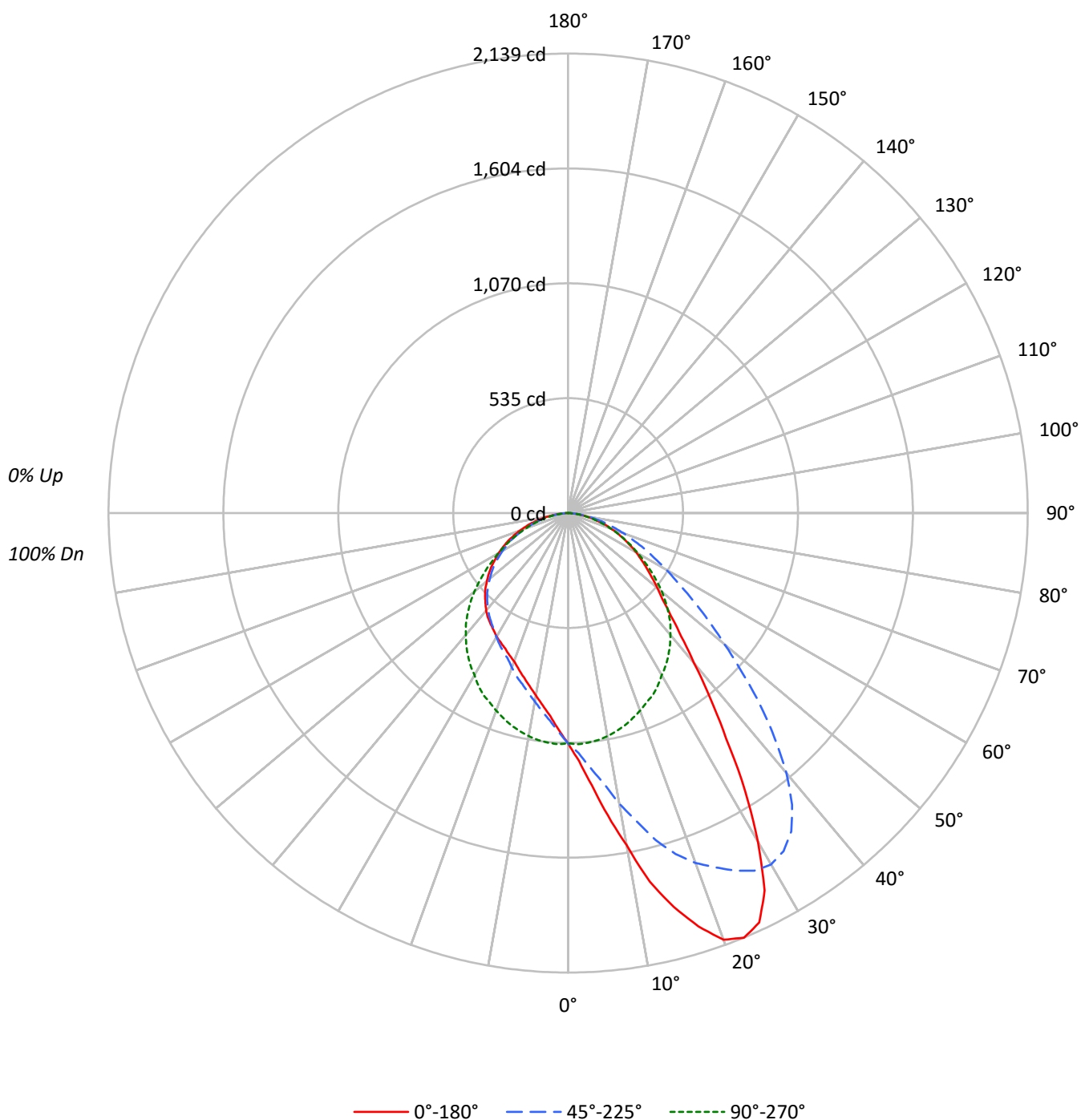
Input Watts (W): 31.5
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	12993	12993	12993
5°	15480	13055	11538
10°	19331	12977	10608
15°	23824	12836	9954
20°	27262	12631	9472
25°	28134	12492	9295
30°	24718	12194	9302
35°	18970	12012	9310
40°	14429	11719	9382
45°	11610	11341	9373
50°	10219	10735	9293
55°	9419	9947	9231
60°	8875	9103	9042
65°	8249	8320	8868
70°	7549	7464	8488
75°	6711	6505	7905
80°	5619	5382	6918
85°	3964	3894	5188

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	105.5	3.3
10°-20°	338.6	10.5
20°-30°	559.2	17.3
30°-40°	640.1	19.8
40°-50°	580.0	18.0
50°-60°	468.6	14.5
60°-70°	326.5	10.1
70°-80°	171.2	5.3
80°-90°	40.8	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°	1003.3	31.1
0°-40°	1643.3	50.9
0°-60°	2692.0	83.3
0°-90°	3230.6	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3230.6	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1072	1072	1072	1072	1072	
5°	1272	1190	1073	970	948	131
15°	1898	1576	1023	824	793	540
25°	2104	1836	934	712	695	940
35°	1282	1810	812	623	629	812
45°	677	1264	662	533	547	534
55°	446	710	471	418	437	400
65°	288	388	290	286	309	285
75°	143	177	139	144	169	153
85°	28	36	28	31	37	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°	1071.9	1071.9	1071.9	1071.9	1071.9	1071.9	1071.9	1071.9	1071.9	1071.9	1071.9
2.5°	1154.4	1156.9	1152.9	1155.4	1149.5	1146.1	1140.7	1138.2	1126.4	1118.1	1115.1
5°	1272.2	1272.2	1273.2	1267.3	1260.4	1248.1	1231.9	1221.6	1209.9	1189.7	1179.4
7.5°	1420.4	1413.1	1408.2	1397.4	1388.0	1367.9	1350.2	1329.1	1301.6	1268.3	1250.6
10°	1570.6	1578.5	1573.6	1562.3	1538.2	1505.3	1479.3	1448.9	1406.2	1373.8	1327.7
12.5°	1758.1	1747.8	1739.9	1722.8	1696.3	1661.4	1621.2	1576.0	1521.0	1467.5	1416.0
15°	1898.5	1899.9	1899.5	1876.9	1850.9	1803.7	1766.4	1691.4	1621.7	1576.5	1491.1
17.5°	2017.3	2023.6	2016.3	1982.4	1959.3	1931.4	1883.8	1800.3	1737.0	1663.9	1569.6
20°	2113.5	2114.4	2102.7	2077.6	2051.1	2019.7	1956.9	1893.1	1831.2	1733.1	1643.3
22.5°	2139.0	2141.4	2139.0	2128.2	2106.6	2073.2	2026.1	1967.2	1889.2	1784.6	1701.2
25°	2103.6	2102.2	2110.5	2104.1	2103.1	2092.3	2061.4	2013.8	1936.8	1836.1	1730.1
27.5°	1980.0	1969.6	1990.7	2018.2	2022.2	2039.3	2039.8	2017.7	1962.3	1876.4	1761.0
30°	1766.0	1775.8	1786.1	1843.5	1875.4	1920.1	1958.8	1973.1	1952.0	1888.7	1780.7
32.5°	1533.3	1564.7	1593.7	1633.4	1680.1	1755.6	1817.0	1871.0	1894.1	1866.1	1780.7
35°	1282.0	1298.7	1344.3	1394.9	1462.1	1521.0	1642.8	1721.3	1791.5	1809.6	1758.1
37.5°	1085.7	1100.9	1116.6	1155.9	1231.5	1329.6	1430.2	1533.3	1637.4	1712.0	1709.0
40°	911.9	915.4	929.1	963.0	1025.8	1113.2	1218.7	1342.9	1477.8	1579.4	1622.1
42.5°	778.4	778.4	795.6	834.9	871.2	935.0	1037.1	1146.5	1294.3	1424.8	1516.1
45°	677.3	678.3	692.1	720.0	748.5	798.6	874.1	977.2	1129.4	1264.3	1391.5
47.5°	594.9	604.2	612.0	626.8	655.2	699.4	754.4	842.2	950.7	1098.0	1246.2
50°	541.9	543.8	549.7	558.5	580.6	609.6	657.2	724.0	820.2	950.7	1100.4
52.5°	489.8	489.8	495.7	506.5	519.3	542.8	577.2	632.7	704.8	823.1	957.6
55°	445.7	447.1	448.1	456.9	467.7	485.4	512.4	548.7	615.0	709.7	827.0
57.5°	402.5	407.9	406.4	413.3	421.1	433.9	453.0	484.4	535.0	607.1	712.7
60°	366.1	365.2	367.6	370.6	376.0	384.8	402.5	425.5	467.7	528.1	614.5
62.5°	324.9	323.9	326.9	330.3	335.2	342.6	355.4	373.0	406.4	451.6	526.6
65°	287.6	286.6	288.1	290.1	295.5	301.4	311.2	325.9	348.0	387.7	445.2
67.5°	250.3	250.3	251.3	253.3	256.7	261.1	269.0	277.8	299.9	326.4	371.5
70°	213.0	213.5	213.5	215.5	218.4	221.8	228.2	236.1	249.8	273.4	309.7
72.5°	180.6	180.6	179.6	180.6	182.6	184.1	188.0	195.3	205.7	222.8	250.3
75°	143.3	145.8	145.3	144.8	146.3	148.7	152.2	158.0	164.4	176.7	197.3
77.5°	109.9	111.4	111.4	111.9	113.4	115.3	116.3	122.2	128.1	135.5	150.7
80°	80.5	81.5	80.5	81.0	82.0	83.9	85.9	86.9	91.3	97.7	105.0
82.5°	54.0	52.5	54.5	54.0	55.0	55.5	56.4	56.9	59.9	63.8	68.7
85°	28.5	30.9	30.4	31.4	30.4	30.9	31.4	33.4	33.9	36.3	39.3
87.5°	10.8	11.8	11.8	11.8	11.8	11.8	12.8	13.3	14.2	14.7	15.7
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°	1071.9	1071.9	1071.9	1071.9	1071.9	1071.9	1071.9	1071.9	1071.9	1071.9	1071.9
2.5°	1117.1	1112.7	1106.3	1099.4	1092.1	1084.7	1081.3	1076.8	1068.0	1059.2	1052.3
5°	1171.1	1158.8	1142.1	1129.9	1112.2	1095.5	1082.2	1072.9	1058.7	1041.5	1030.2
7.5°	1231.5	1209.4	1182.9	1155.9	1129.4	1104.3	1083.7	1066.1	1044.0	1022.9	1005.7
10°	1302.6	1259.9	1223.1	1183.8	1144.6	1109.2	1079.8	1054.3	1025.8	1000.3	979.2
12.5°	1365.4	1315.9	1264.8	1209.4	1156.4	1110.7	1072.9	1039.5	1005.2	975.7	954.1
15°	1434.7	1365.0	1294.3	1231.5	1167.2	1111.2	1061.6	1022.9	983.6	950.2	925.2
17.5°	1514.2	1420.9	1332.1	1241.8	1184.8	1112.7	1051.8	1000.8	960.5	927.2	894.8
20°	1561.3	1468.5	1359.6	1266.8	1172.6	1098.4	1030.7	979.2	932.1	893.8	867.3
22.5°	1586.8	1489.1	1375.3	1280.0	1170.1	1087.2	1015.0	954.1	903.6	865.3	835.4
25°	1622.6	1489.1	1383.6	1269.2	1174.0	1073.9	992.4	934.0	881.0	836.8	805.4
27.5°	1638.8	1502.4	1384.6	1248.6	1150.5	1048.9	966.4	904.6	845.7	802.5	775.5
30°	1652.1	1504.8	1365.0	1232.4	1123.0	1020.9	940.4	871.2	816.2	775.0	746.5
32.5°	1653.1	1498.5	1338.5	1202.0	1086.2	988.0	909.5	844.2	786.8	743.1	715.1
35°	1644.2	1482.8	1308.0	1155.4	1043.5	954.1	875.6	811.8	753.4	711.7	683.2
37.5°	1621.7	1465.1	1279.6	1111.7	992.9	906.0	839.3	778.4	720.5	678.8	655.2
40°	1573.6	1436.6	1242.3	1065.1	941.9	855.0	796.6	740.6	689.1	645.9	622.4
42.5°	1509.7	1393.9	1197.1	1015.5	884.9	801.0	749.5	704.3	651.8	614.5	590.5
45°	1419.4	1336.0	1151.9	963.5	828.5	746.0	698.9	661.6	616.5	579.2	558.1
47.5°	1317.3	1266.3	1093.5	905.1	769.1	691.6	646.9	617.0	578.7	546.8	525.7
50°	1202.5	1183.4	1029.2	846.2	713.6	634.1	592.9	569.3	537.0	511.4	493.3
52.5°	1077.8	1089.6	961.5	786.3	660.1	579.7	540.4	518.8	498.2	476.6	459.4
55°	951.2	979.2	879.5	721.0	598.8	528.6	490.3	470.7	455.5	437.3	425.0
57.5°	832.4	876.1	794.6	651.3	542.4	475.1	438.8	421.6	410.3	400.5	389.2
60°	717.1	767.6	707.3	586.0	485.9	424.6	392.2	375.5	370.1	362.7	351.9
62.5°	615.0	666.5	621.4	518.8	429.0	376.5	347.0	333.3	325.4	323.0	316.6
65°	519.3	567.4	533.0	448.6	375.0	328.4	302.3	290.1	285.7	285.2	280.3
67.5°	436.3	483.0	451.6	380.4	318.0	280.3	260.6	250.8	246.4	246.9	243.4
70°	359.8	392.7	374.0	318.0	269.9	236.6	221.4	210.6	207.1	207.1	206.1
72.5°	288.6	314.6	300.4	257.7	219.9	194.4	181.1	174.7	171.8	171.3	171.8
75°	225.8	248.4	235.6	202.2	173.7	154.6	143.3	138.9	137.4	136.4	136.9
77.5°	168.8	183.1	175.2	153.6	130.1	116.8	111.4	107.0	105.5	106.0	107.0
80°	119.3	127.1	122.7	109.0	93.3	84.4	80.5	77.1	75.6	77.1	77.1
82.5°	75.6	81.5	77.5	68.7	60.9	55.0	51.0	50.1	49.6	48.6	50.1
85°	41.2	44.2	42.2	39.3	33.9	31.4	28.5	28.0	28.0	28.0	28.0
87.5°	16.2	18.2	15.7	15.7	14.7	12.3	12.3	11.8	11.3	11.8	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°	1071.9	1071.9	1071.9	1071.9	1071.9	1071.9	1071.9	1071.9	1071.9	1071.9	1071.9
2.5°	1049.4	1043.0	1039.1	1033.7	1027.3	1018.9	1015.5	1018.9	1017.0	1013.5	1015.0
5°	1020.4	1012.1	1001.3	992.4	982.6	970.3	966.4	964.5	961.5	960.0	957.6
7.5°	991.9	979.7	966.4	954.1	939.9	929.1	924.2	920.8	919.8	912.4	909.5
10°	962.5	947.3	934.0	917.3	905.1	890.8	884.9	881.0	876.6	871.7	868.3
12.5°	931.6	916.4	899.7	884.0	871.7	856.0	848.1	843.7	840.3	836.8	832.9
15°	904.6	889.4	866.3	854.5	839.8	824.1	819.2	809.4	810.3	804.4	800.5
17.5°	876.1	853.5	837.3	819.7	808.9	797.6	788.3	777.9	776.5	772.1	770.6
20°	844.2	820.6	809.4	791.2	776.5	765.2	756.8	755.9	752.9	746.5	744.1
22.5°	812.8	793.6	777.9	761.3	748.0	733.3	729.4	730.8	725.4	724.0	718.6
25°	784.3	767.6	748.0	732.3	721.5	712.2	706.8	704.8	702.8	701.4	698.9
27.5°	753.9	736.2	719.5	706.8	696.5	690.1	686.7	682.2	681.7	681.7	680.8
30°	723.5	707.8	696.5	680.3	670.9	667.0	664.1	662.6	664.1	664.1	664.6
32.5°	695.5	680.3	667.0	655.7	646.4	643.5	643.0	643.0	644.9	644.9	646.4
35°	666.5	651.3	639.0	631.2	623.3	622.8	623.3	624.3	626.8	627.3	629.2
37.5°	635.1	623.3	614.0	604.2	602.2	603.2	604.2	605.2	606.2	610.1	610.1
40°	606.2	597.3	588.0	581.6	578.2	580.6	582.1	582.6	585.5	588.0	590.0
42.5°	577.7	569.3	562.0	556.6	555.1	557.1	558.5	560.0	563.0	564.9	568.4
45°	545.8	540.4	534.0	529.6	530.1	533.0	533.0	537.9	539.9	540.9	543.3
47.5°	516.3	510.4	506.0	504.1	503.6	506.0	507.5	511.4	512.4	515.8	517.8
50°	484.9	480.5	477.1	474.6	475.1	476.1	479.5	483.5	484.4	488.4	491.8
52.5°	452.0	448.1	445.2	446.2	447.6	447.6	451.1	453.5	456.0	458.9	462.3
55°	419.6	414.2	414.7	413.3	414.7	418.2	419.6	423.6	425.5	427.0	431.9
57.5°	384.3	383.3	381.9	380.4	383.3	384.8	387.3	389.7	393.1	395.1	398.5
60°	348.0	346.5	346.5	348.5	349.5	352.4	356.3	357.8	358.8	362.7	367.1
62.5°	314.6	313.1	312.6	315.6	315.6	318.5	320.0	322.5	326.4	327.9	333.8
65°	278.8	277.8	277.8	280.3	280.7	286.1	286.1	286.1	288.6	294.0	296.9
67.5°	241.5	242.0	243.4	244.9	246.9	248.4	248.8	251.8	255.7	259.2	265.0
70°	204.2	206.6	209.6	209.1	210.6	213.0	213.5	216.4	219.9	224.3	231.2
72.5°	170.8	172.3	175.2	175.2	177.2	178.7	181.1	183.1	187.5	191.4	194.4
75°	137.4	137.9	140.4	141.8	143.3	144.3	146.8	150.2	152.6	156.1	160.5
77.5°	108.0	107.0	109.0	109.5	110.4	112.4	114.4	117.8	119.8	123.7	125.2
80°	76.6	78.5	79.0	79.5	80.5	82.9	84.4	85.9	87.9	91.3	92.8
82.5°	50.6	51.5	53.0	53.5	54.5	55.0	55.5	57.9	59.4	60.4	65.3
85°	29.4	30.9	29.9	29.9	30.9	31.4	33.4	33.4	35.3	34.4	36.8
87.5°	12.8	12.3	12.3	12.8	12.3	11.8	13.3	13.3	12.8	13.3	13.3
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: P243339

CATALOG NUMBER: S123DR-H1000D930-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	1071.9	1071.9	1071.9	1071.9
2.5°	1012.6	1012.6	1008.6	1010.1
5°	952.7	954.6	949.7	948.3
7.5°	908.5	906.5	903.1	903.1
10°	865.3	863.3	861.9	861.9
12.5°	828.0	826.0	823.1	825.6
15°	794.6	795.1	793.2	793.2
17.5°	769.1	764.7	763.2	762.7
20°	738.7	739.7	737.7	734.3
22.5°	719.5	717.1	715.1	714.6
25°	699.9	697.4	697.0	695.0
27.5°	680.3	680.8	679.3	679.3
30°	664.1	665.5	664.1	664.6
32.5°	647.9	647.9	647.9	645.9
35°	630.2	630.7	630.2	629.2
37.5°	612.0	612.0	612.5	613.5
40°	591.9	591.9	592.9	592.9
42.5°	567.9	570.3	571.8	569.3
45°	546.3	546.8	547.3	546.8
47.5°	522.2	520.8	521.2	522.2
50°	492.3	495.7	495.7	492.8
52.5°	463.3	464.3	466.3	466.3
55°	434.9	435.4	435.8	436.8
57.5°	402.5	403.0	403.0	402.5
60°	370.1	373.0	372.5	373.0
62.5°	335.2	339.6	341.1	340.6
65°	302.3	303.3	305.8	309.2
67.5°	267.5	269.9	273.9	272.9
70°	233.1	236.6	237.6	239.5
72.5°	198.8	203.2	204.2	205.2
75°	165.4	167.4	169.3	168.8
77.5°	129.1	132.0	135.5	133.5
80°	96.7	97.2	100.1	99.1
82.5°	63.8	67.7	67.7	65.8
85°	37.3	37.3	37.3	37.3
87.5°	12.8	12.3	13.3	12.8
90°	0.0	0.0	0.0	0.0

(END OF REPORT)