

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: P333938

Luminaire Tested: **S123DS-S1000D930-4F0-1E-UDD-A**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P333938
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-20)
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S123DS-S1000D930-4F0-1E-UDD-A
Description: DEFINE 3 DIRECT LED LUMINAIRE, ASYMMETRIC DIFFUSER
PENDANT/SURFACE/WALL MOUNT, 1000 LUMENS PER FOOT
Light Source: 3000K CCT, 90 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3238.4 lumens
Efficiency: N/A
Efficacy: 93.1 lumens/watt
Spacing Criteria (0/90/45): 1.37 / 1.23 / 1.5
Luminous Opening: Rectangular (W 4' x L: 0.5' x H: 0')
CIE Type: Direct

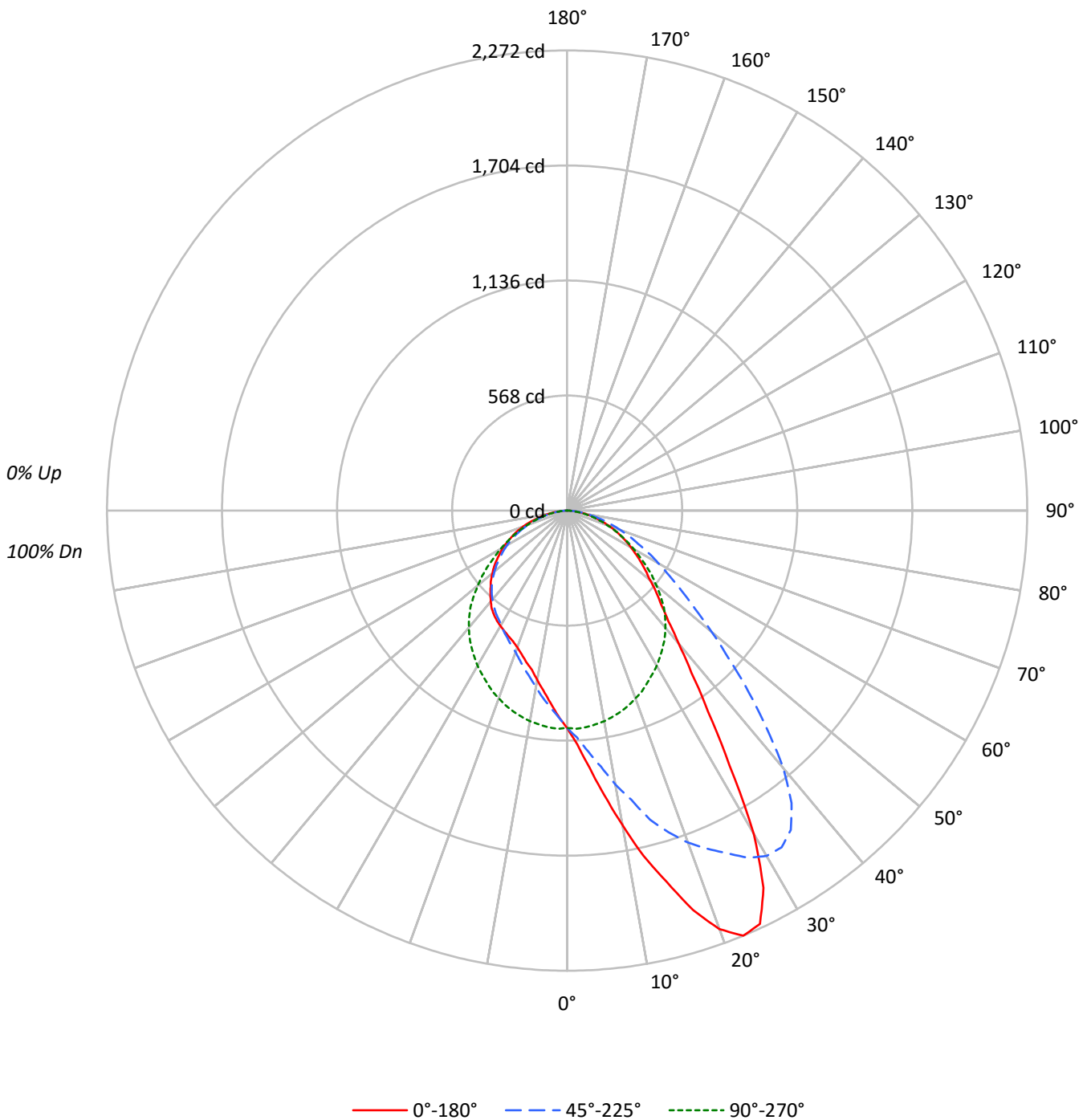
Input Watts (W): 34.8
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P333938

CATALOG NUMBER: S123DS-S1000D930-4F0-1E-UDD-A

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	110	105	101	98	107	103	99	96	99	96	93	95	92	90	91	89	87	85
2	100	93	86	81	98	91	85	80	87	82	78	84	80	76	81	78	74	72
3	92	82	74	68	89	80	73	67	77	71	66	75	69	65	72	68	64	62
4	84	73	65	58	82	72	64	58	69	62	57	67	61	56	65	60	56	53
5	78	66	57	51	76	64	56	50	62	55	50	60	54	49	59	53	49	47
6	72	59	51	44	70	58	50	44	56	49	44	55	48	43	53	48	43	41
7	67	54	45	39	65	53	45	39	52	44	39	50	44	39	49	43	38	36
8	62	49	41	35	61	49	41	35	47	40	35	46	39	35	45	39	35	33
9	58	45	37	32	57	45	37	32	43	36	32	42	36	31	41	36	31	29
10	55	42	34	29	53	41	34	29	40	33	29	39	33	29	38	33	28	27

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	5774	5774	5774
5°	6886	5800	5139
10°	8619	5770	4642
15°	10572	5723	4321
20°	12594	5651	4115
25°	13373	5562	4068
30°	11462	5499	4090
35°	7972	5407	4133
40°	6004	5299	4120
45°	4985	5140	4067
50°	4465	4814	4031
55°	4176	4463	3980
60°	3917	4096	3940
65°	3680	3734	3813
70°	3452	3322	3632
75°	3092	2907	3329
80°	2706	2383	2867
85°	2118	1735	1927



TEST NUMBER: P333938

CATALOG NUMBER: S123DS-S1000D930-4F0-1E-UDD-A

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	105.5	3.3
10°-20°	338.9	10.5
20°-30°	570.3	17.6
30°-40°	644.5	19.9
40°-50°	577.3	17.8
50°-60°	466.0	14.4
60°-70°	324.7	10.0
70°-80°	170.4	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°	1014.7	31.3
0°-40°	1659.2	51.2
0°-60°	2702.5	83.5
0°-90°	3238.4	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3238.4	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1073	1073	1073	1073	1073	
5°	1275	1195	1074	972	951	131
15°	1897	1579	1027	810	776	548
25°	2252	1866	937	696	685	996
35°	1213	1924	823	615	629	783
45°	655	1268	675	526	534	517
55°	445	689	476	406	424	399
65°	289	386	293	276	299	288
75°	149	183	140	139	160	159
85°	34	40	28	28	31	42
90°	0	0	0	0	0	



TEST NUMBER: P333938

CATALOG NUMBER: S123DS-S1000D930-4F0-1E-UDD-A

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1072.9	1072.9	1072.9	1072.9	1072.9	1072.9	1072.9	1072.9	1072.9	1072.9	1072.9
2.5°	1155.1	1154.0	1151.4	1153.5	1149.3	1143.6	1143.1	1137.9	1122.8	1121.8	1117.6
5°	1274.6	1270.5	1270.0	1269.4	1262.2	1252.3	1233.6	1232.0	1207.1	1194.6	1179.5
7.5°	1419.1	1417.6	1413.4	1408.7	1384.3	1372.4	1354.7	1331.8	1302.7	1274.6	1257.0
10°	1577.2	1594.3	1573.0	1558.5	1544.9	1519.5	1489.8	1452.9	1416.0	1372.9	1340.1
12.5°	1746.6	1752.9	1752.9	1739.4	1716.5	1674.4	1616.2	1574.6	1541.3	1462.3	1434.2
15°	1897.4	1929.1	1908.8	1862.0	1863.1	1826.2	1757.6	1682.2	1642.2	1579.3	1493.5
17.5°	2067.9	2073.6	2067.4	2023.7	2002.4	1948.9	1887.0	1816.8	1741.4	1665.0	1576.1
20°	2198.9	2195.8	2177.6	2157.3	2112.6	2073.1	2004.0	1923.4	1819.4	1744.6	1645.3
22.5°	2271.7	2266.0	2259.7	2243.6	2208.2	2165.1	2104.8	2014.9	1917.1	1806.9	1688.4
25°	2251.9	2258.7	2259.7	2255.0	2242.0	2216.6	2167.7	2097.5	1998.8	1866.2	1746.6
27.5°	2099.1	2116.2	2138.1	2152.6	2176.0	2191.6	2176.0	2131.8	2050.7	1932.2	1785.1
30°	1844.4	1823.6	1875.0	1940.0	1984.2	2062.2	2105.8	2108.4	2067.4	1969.1	1826.7
32.5°	1490.9	1524.7	1540.3	1624.0	1733.6	1823.6	1921.3	2008.1	2028.4	1971.2	1851.1
35°	1213.3	1241.9	1283.5	1325.1	1429.0	1518.4	1671.3	1804.3	1910.4	1924.4	1848.0
37.5°	1008.5	1025.1	1050.6	1094.8	1166.0	1276.7	1397.8	1570.9	1717.0	1819.9	1809.5
40°	854.6	858.8	888.4	920.1	975.2	1062.5	1169.1	1317.8	1501.8	1661.4	1727.9
42.5°	739.2	749.6	757.9	788.1	829.1	889.4	986.6	1103.1	1267.9	1457.6	1603.7
45°	655.0	665.4	673.2	693.5	724.6	768.8	838.0	950.3	1078.7	1268.4	1443.6
47.5°	596.8	595.7	602.5	618.6	641.0	676.3	727.2	802.1	925.3	1083.9	1267.4
50°	533.3	541.7	543.7	555.7	572.3	596.8	637.3	698.7	795.3	930.5	1095.8
52.5°	488.6	489.7	496.4	504.2	518.3	535.9	569.7	614.4	685.1	795.3	944.0
55°	445.0	445.0	450.7	457.5	465.8	482.9	506.3	541.7	599.4	688.8	814.6
57.5°	404.4	406.5	411.7	413.3	420.5	432.5	452.8	480.8	525.0	597.3	701.3
60°	363.9	368.6	368.0	372.2	378.4	387.3	403.9	425.7	464.2	519.3	603.5
62.5°	328.5	327.0	327.0	332.2	338.4	346.7	356.1	374.3	405.5	452.8	521.4
65°	289.0	288.0	291.6	294.7	296.8	303.1	311.4	328.0	349.8	386.2	441.9
67.5°	254.7	251.6	254.2	255.2	258.9	264.1	272.4	282.8	300.5	331.1	375.8
70°	219.4	216.8	216.3	217.3	220.4	224.0	229.8	239.6	255.8	279.2	309.8
72.5°	183.0	181.4	181.4	184.0	185.1	187.1	190.8	199.6	211.6	227.7	255.8
75°	148.7	148.7	148.7	149.2	150.8	152.8	155.9	160.6	170.5	183.0	202.2
77.5°	117.5	118.0	117.0	116.4	119.0	120.1	120.6	125.8	131.5	140.9	155.9
80°	87.3	84.7	85.8	87.3	88.4	88.9	90.5	91.5	96.2	100.8	110.7
82.5°	59.3	57.2	57.2	59.8	59.8	60.3	61.9	63.4	64.5	68.6	72.8
85°	34.3	34.3	34.8	34.8	35.3	34.8	36.4	36.9	36.9	39.5	42.6
87.5°	15.6	14.6	15.1	15.6	15.1	15.6	16.1	16.6	17.2	17.7	18.2
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: P333938

CATALOG NUMBER: S123DS-S1000D930-4F0-1E-UDD-A

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	1072.9	1072.9	1072.9	1072.9	1072.9	1072.9	1072.9	1072.9	1072.9	1072.9	1072.9
2.5°	1114.5	1110.4	1106.2	1098.9	1092.7	1083.9	1081.3	1078.1	1068.8	1060.5	1054.2
5°	1173.8	1161.3	1143.1	1126.5	1113.0	1094.8	1084.4	1073.5	1057.9	1043.8	1032.4
7.5°	1230.4	1208.6	1183.1	1155.6	1129.1	1103.6	1083.3	1065.1	1044.9	1025.1	1010.0
10°	1300.6	1265.3	1225.8	1183.1	1146.8	1111.4	1081.8	1055.8	1027.7	1003.3	983.0
12.5°	1380.7	1324.0	1265.8	1211.7	1167.0	1114.5	1077.1	1042.3	1009.5	978.8	955.5
15°	1440.5	1373.9	1309.5	1238.2	1172.7	1111.4	1068.8	1027.2	990.3	960.1	931.0
17.5°	1499.7	1426.9	1344.8	1259.0	1182.1	1111.4	1053.2	1008.5	963.2	926.9	898.8
20°	1548.6	1462.8	1366.6	1276.7	1189.4	1108.3	1042.8	986.6	936.7	897.8	865.0
22.5°	1590.7	1486.7	1386.4	1288.7	1188.9	1100.0	1023.6	965.3	910.2	872.3	836.9
25°	1617.2	1497.1	1397.3	1284.5	1175.9	1085.4	1002.2	936.7	882.7	838.0	802.1
27.5°	1642.2	1495.6	1382.8	1261.1	1160.3	1070.3	980.9	910.7	854.1	805.7	768.8
30°	1667.1	1498.2	1357.3	1237.2	1135.3	1041.7	955.5	884.8	824.5	775.1	740.8
32.5°	1682.7	1496.6	1333.9	1203.9	1095.8	1015.8	927.9	854.1	791.7	743.4	710.6
35°	1686.9	1487.8	1306.3	1155.6	1052.7	972.1	898.8	822.9	757.9	712.7	675.3
37.5°	1678.0	1471.6	1276.2	1111.9	1000.7	920.6	856.7	791.7	729.3	678.9	646.2
40°	1649.4	1456.1	1239.8	1065.1	946.6	870.2	817.7	754.3	692.9	645.6	615.5
42.5°	1594.8	1424.3	1199.8	1013.2	890.5	814.1	766.8	716.3	659.1	615.5	585.3
45°	1499.2	1375.5	1159.7	961.2	835.4	756.4	713.7	675.3	622.8	579.6	553.6
47.5°	1377.0	1309.5	1102.0	906.6	777.7	701.3	656.5	624.8	583.8	548.9	523.5
50°	1248.6	1224.2	1043.3	850.4	720.0	645.6	603.0	574.9	547.4	512.6	489.7
52.5°	1100.5	1125.4	974.7	792.2	661.2	588.5	548.9	528.1	503.7	476.7	457.5
55°	963.2	1017.8	893.6	725.7	603.0	533.3	495.4	475.6	461.1	439.8	422.6
57.5°	830.2	899.8	809.4	658.6	545.8	485.0	447.6	425.2	415.9	403.9	389.9
60°	714.2	782.9	717.9	591.0	488.1	430.9	398.7	380.5	371.2	363.4	351.9
62.5°	610.8	680.5	628.5	522.4	431.5	379.5	352.4	334.8	328.0	324.9	315.5
65°	517.8	577.5	541.1	450.7	377.9	331.1	305.7	293.2	286.4	284.9	278.6
67.5°	437.2	483.4	455.4	387.3	328.0	285.4	263.0	252.1	246.4	245.9	240.7
70°	358.2	400.8	380.5	320.2	270.8	239.1	220.4	211.1	207.9	207.4	204.8
72.5°	296.8	323.3	308.3	260.4	225.1	197.0	184.5	174.7	171.0	172.1	170.5
75°	228.7	251.1	241.7	206.9	176.2	157.5	146.1	139.8	136.7	138.3	136.2
77.5°	174.7	190.3	180.9	154.4	134.6	120.6	111.8	107.6	104.5	104.5	103.4
80°	124.2	132.6	127.9	113.3	97.7	86.3	79.5	76.9	75.4	74.9	74.3
82.5°	79.5	86.3	80.6	71.7	62.4	56.7	53.5	49.9	48.9	49.4	48.9
85°	44.7	47.3	45.2	39.0	34.8	31.7	29.6	28.1	27.0	27.6	26.5
87.5°	19.2	19.8	18.2	16.1	15.1	13.5	13.5	12.5	11.4	11.4	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: P333938

CATALOG NUMBER: S123DS-S1000D930-4F0-1E-UDD-A

CANDELA DISTRIBUTION (continued):

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	1072.9	1072.9	1072.9	1072.9	1072.9	1072.9	1072.9	1072.9	1072.9	1072.9	1072.9
2.5°	1050.6	1046.9	1041.7	1033.9	1027.7	1017.8	1017.8	1019.4	1019.4	1018.9	1017.8
5°	1023.0	1015.2	1005.9	995.0	983.5	972.1	970.0	965.8	962.7	960.7	958.1
7.5°	995.0	982.0	969.0	953.9	940.9	930.0	922.2	915.4	911.3	906.6	902.9
10°	966.4	949.2	933.1	917.0	899.3	885.3	876.4	870.2	865.5	861.4	859.3
12.5°	932.6	912.3	894.1	879.0	859.3	844.7	836.4	834.3	828.6	818.7	813.5
15°	899.8	881.6	860.3	836.9	827.6	809.9	800.0	795.3	792.2	785.5	783.4
17.5°	872.8	848.4	823.9	806.8	789.6	775.6	769.9	763.6	759.5	753.2	751.7
20°	839.0	817.7	795.9	777.1	759.0	743.4	738.7	734.5	730.4	727.8	725.7
22.5°	804.7	783.4	766.2	749.1	729.3	720.5	715.3	710.6	708.0	706.5	704.4
25°	773.0	754.3	734.0	718.4	702.8	696.1	692.9	690.3	688.3	685.7	685.1
27.5°	744.9	724.1	707.0	691.9	680.5	674.7	671.1	669.5	669.5	670.6	671.1
30°	712.7	694.0	680.5	668.0	657.6	652.4	651.9	651.9	653.9	654.5	655.5
32.5°	683.1	668.5	655.0	643.0	635.8	632.6	635.2	635.2	636.8	638.4	640.4
35°	654.5	641.0	630.6	620.2	613.4	615.0	616.0	617.0	619.6	622.8	624.8
37.5°	627.4	615.0	604.0	595.7	591.6	594.7	597.3	599.4	602.5	605.1	607.2
40°	597.8	589.0	578.6	571.3	572.3	573.9	576.0	578.6	581.2	582.7	584.8
42.5°	570.3	560.9	553.6	547.9	549.5	551.5	552.6	553.6	556.7	559.9	560.9
45°	542.2	534.9	527.6	524.0	525.0	526.1	527.1	528.7	531.3	533.3	533.9
47.5°	510.5	505.3	500.6	496.4	498.5	498.0	499.6	502.7	503.7	504.8	507.9
50°	480.3	475.6	469.9	468.9	468.9	468.9	469.4	473.6	473.6	475.6	477.7
52.5°	447.1	444.5	441.3	439.3	438.2	438.2	440.8	442.4	443.4	446.5	448.6
55°	414.3	411.2	408.1	406.5	405.5	406.5	410.7	411.7	414.3	415.9	417.4
57.5°	380.0	377.9	375.3	374.3	374.3	374.8	377.9	380.5	381.0	386.2	388.3
60°	346.2	342.6	340.5	340.5	339.5	344.1	343.1	348.3	349.3	352.4	356.1
62.5°	311.4	306.2	305.7	305.7	307.7	308.3	310.3	311.9	315.0	319.2	321.8
65°	273.4	270.8	274.5	274.0	272.9	276.0	276.0	278.6	281.7	285.4	291.1
67.5°	238.1	236.0	237.0	236.5	238.1	240.2	241.7	243.8	247.4	251.6	255.2
70°	202.2	203.8	201.2	203.3	204.8	205.3	206.4	209.5	213.7	216.3	220.4
72.5°	167.4	166.9	167.9	168.4	170.0	171.0	172.1	175.7	180.4	182.5	185.6
75°	134.1	133.6	135.2	135.2	137.8	138.8	139.8	141.4	145.6	148.7	151.3
77.5°	104.0	104.5	104.0	106.0	105.0	105.5	108.6	110.2	110.7	117.5	118.5
80°	73.8	74.9	75.4	75.9	76.4	75.4	79.0	80.6	80.6	84.2	86.8
82.5°	47.8	48.3	49.9	50.4	50.4	52.0	51.5	52.5	54.1	55.1	58.7
85°	26.5	28.1	28.6	28.1	28.6	27.6	29.1	29.6	30.2	30.2	30.2
87.5°	10.4	10.9	10.4	10.9	10.4	10.9	10.9	9.9	9.9	11.4	9.4
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: P333938

CATALOG NUMBER: S123DS-S1000D930-4F0-1E-UDD-A

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	1072.9	1072.9	1072.9	1072.9
2.5°	1014.2	1013.7	1017.3	1014.7
5°	954.9	956.5	951.3	951.3
7.5°	901.4	899.3	899.8	896.2
10°	853.0	849.9	848.9	849.4
12.5°	813.0	813.0	804.7	804.7
15°	783.4	773.5	772.5	775.6
17.5°	750.6	744.9	745.4	744.4
20°	725.7	722.6	722.0	718.4
22.5°	702.8	702.3	702.8	698.7
25°	684.6	687.2	685.1	685.1
27.5°	672.1	672.1	670.6	670.6
30°	657.6	657.1	658.1	658.1
32.5°	643.0	644.1	644.1	644.6
35°	628.0	628.5	630.0	629.0
37.5°	608.2	610.8	610.3	611.3
40°	585.3	586.9	586.4	586.4
42.5°	561.9	563.0	561.4	560.4
45°	535.9	534.9	536.5	534.4
47.5°	507.4	507.9	508.4	510.5
50°	478.8	481.9	481.9	481.4
52.5°	450.7	451.7	454.3	454.3
55°	421.6	422.6	423.7	424.2
57.5°	392.0	391.4	393.5	394.0
60°	360.2	360.2	364.4	366.0
62.5°	326.5	328.5	332.7	329.6
65°	293.7	297.9	297.3	299.4
67.5°	259.4	262.0	266.2	266.2
70°	224.6	227.2	229.2	230.8
72.5°	190.8	191.8	197.5	194.4
75°	154.9	158.5	161.7	160.1
77.5°	120.6	125.3	126.3	124.8
80°	90.5	89.9	93.1	92.5
82.5°	60.3	59.8	60.8	61.3
85°	32.2	33.8	31.7	31.2
87.5°	9.4	9.4	8.8	8.3
90°	0.0	0.0	0.0	0.0

(END OF REPORT)