

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: P333923

Luminaire Tested: **S123DS-S1000D835-4F0-1E-UDD-A**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P333923
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-S1000D835-4F0-1E-UDD-A
Description: DEFINE 3 DIRECT LED LUMINAIRE, ASYMMETRIC DIFFUSER
PENDANT/SURFACE/WALL MOUNT, 1000 LUMENS PER FOOT
Light Source: 3500K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3972.1 lumens
Efficiency: N/A
Efficacy: 114.1 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

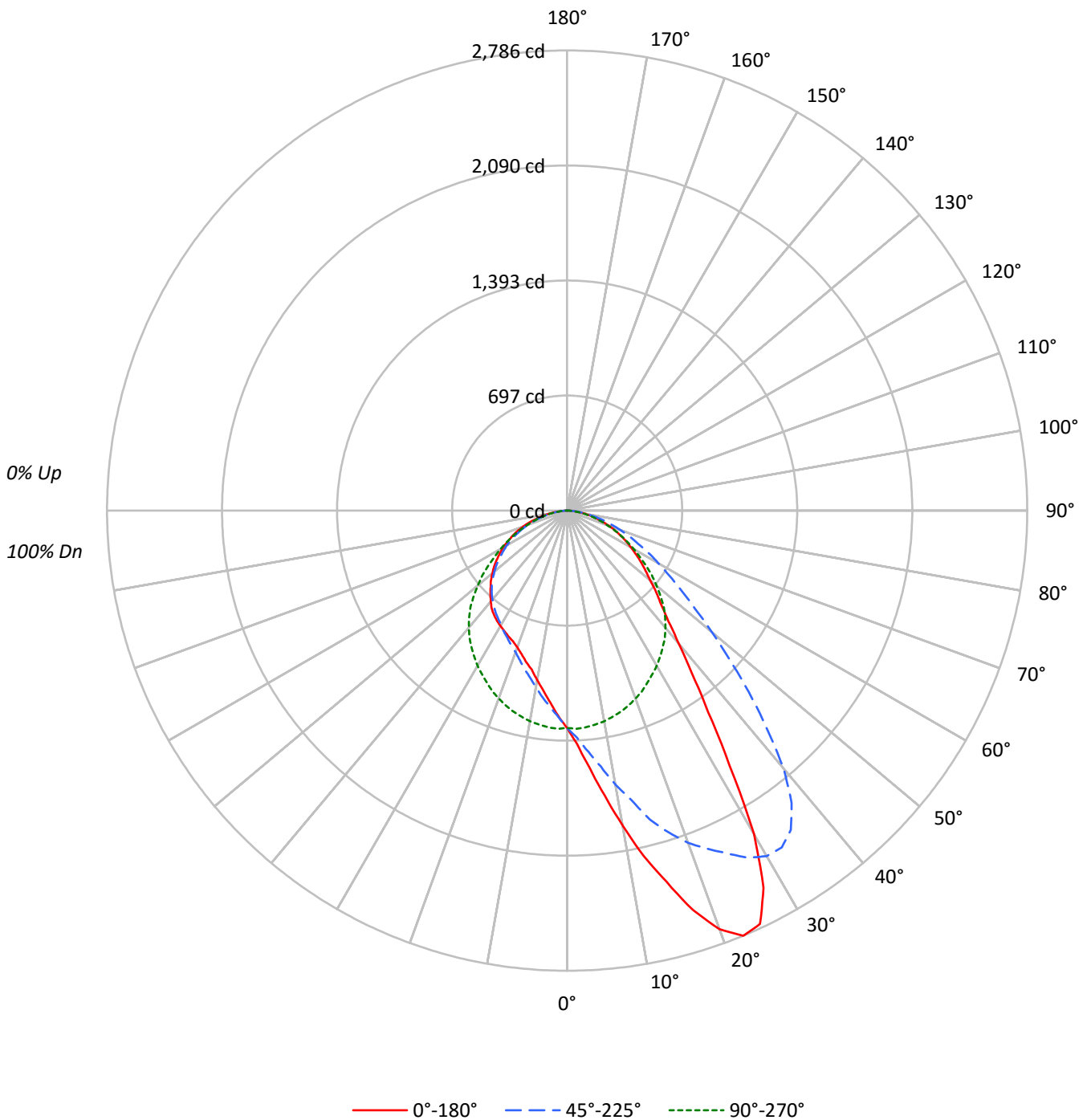
Input Watts (W): 34.8
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	50	30	10	0	
RCR																						
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100				100
1	110	105	101	98	107	103	99	96	99	96	93	95	92	90	91	89	87	85				85
2	100	93	86	81	98	91	85	80	87	82	78	84	80	76	81	78	74	72				72
3	92	82	74	68	89	80	73	67	77	71	66	75	69	65	72	68	64	62				62
4	84	73	65	58	82	72	64	58	69	62	57	67	61	56	65	60	56	53				53
5	78	66	57	51	76	64	56	50	62	55	50	60	54	49	59	53	49	47				47
6	72	59	51	44	70	58	50	44	56	49	44	55	48	43	53	48	43	41				41
7	67	54	45	39	65	53	45	39	52	44	39	50	44	39	49	43	38	36				36
8	62	49	41	35	61	49	41	35	47	40	35	46	39	35	45	39	35	33				33
9	58	45	37	32	57	45	37	32	43	36	32	42	36	31	41	36	31	29				29
10	55	42	34	29	53	41	34	29	40	33	29	39	33	29	38	33	28	27				27

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	7083	7083	7083
5°	8446	7113	6304
10°	10572	7077	5693
15°	12967	7020	5300
20°	15447	6931	5047
25°	16402	6823	4991
30°	14059	6744	5016
35°	9778	6631	5069
40°	7364	6500	5053
45°	6115	6304	4988
50°	5478	5905	4943
55°	5121	5474	4882
60°	4804	5024	4832
65°	4514	4579	4677
70°	4235	4074	4455
75°	3793	3566	4084
80°	3319	2926	3518
85°	2600	2124	2365



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	129.4	3.3
10°-20°	415.7	10.5
20°-30°	699.5	17.6
30°-40°	790.5	19.9
40°-50°	708.1	17.8
50°-60°	571.5	14.4
60°-70°	398.2	10.0
70°-80°	209.0	5.3
80°-90°	50.1	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°	1244.6	31.3
0°-40°	2035.1	51.2
0°-60°	3314.7	83.5
0°-90°	3972.1	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3972.1	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1316	1316	1316	1316	1316	
5°	1563	1465	1317	1192	1167	161
15°	2327	1937	1260	993	951	672
25°	2762	2289	1149	854	840	1221
35°	1488	2360	1009	754	772	960
45°	803	1556	828	645	655	634
55°	546	845	583	499	520	490
65°	354	474	360	339	367	353
75°	182	224	172	170	196	195
85°	42	48	34	34	38	51
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°	1316.0	1316.0	1316.0	1316.0	1316.0	1316.0	1316.0	1316.0	1316.0	1316.0	1316.0
2.5°	1416.7	1415.5	1412.3	1414.8	1409.7	1402.7	1402.1	1395.7	1377.2	1375.9	1370.8
5°	1563.4	1558.3	1557.6	1557.0	1548.1	1536.0	1513.0	1511.1	1480.5	1465.2	1446.7
7.5°	1740.6	1738.7	1733.6	1727.9	1697.9	1683.3	1661.6	1633.5	1597.8	1563.4	1541.7
10°	1934.5	1955.5	1929.4	1911.5	1894.9	1863.7	1827.4	1782.1	1736.8	1683.9	1643.7
12.5°	2142.3	2150.0	2150.0	2133.4	2105.3	2053.7	1982.3	1931.3	1890.5	1793.6	1759.1
15°	2327.2	2366.1	2341.3	2283.9	2285.1	2239.9	2155.7	2063.3	2014.2	1937.0	1831.8
17.5°	2536.4	2543.4	2535.7	2482.2	2456.0	2390.4	2314.5	2228.4	2136.0	2042.2	1933.2
20°	2697.0	2693.2	2670.9	2646.0	2591.2	2542.7	2457.9	2359.1	2231.6	2139.8	2018.0
22.5°	2786.3	2779.3	2771.6	2751.9	2708.5	2655.6	2581.6	2471.3	2351.5	2216.3	2070.9
25°	2762.1	2770.4	2771.6	2765.9	2750.0	2718.7	2658.8	2572.7	2451.6	2289.0	2142.3
27.5°	2574.6	2595.7	2622.4	2640.3	2669.0	2688.1	2669.0	2614.8	2515.3	2369.9	2189.5
30°	2262.2	2236.7	2299.8	2379.5	2433.7	2529.3	2582.9	2586.1	2535.7	2415.2	2240.5
32.5°	1828.6	1870.1	1889.2	1991.9	2126.4	2236.7	2356.6	2463.0	2487.9	2417.8	2270.5
35°	1488.2	1523.2	1574.2	1625.2	1752.8	1862.4	2049.9	2213.1	2343.2	2360.4	2266.7
37.5°	1236.9	1257.3	1288.6	1342.8	1430.1	1565.9	1714.5	1926.8	2106.0	2232.2	2219.5
40°	1048.2	1053.3	1089.7	1128.5	1196.1	1303.2	1434.0	1616.3	1842.0	2037.8	2119.4
42.5°	906.7	919.4	929.6	966.6	1017.0	1090.9	1210.2	1353.0	1555.1	1787.8	1967.0
45°	803.4	816.1	825.7	850.6	888.8	943.0	1027.8	1165.5	1323.0	1555.7	1770.6
47.5°	732.0	730.7	739.0	758.7	786.2	829.5	892.0	983.8	1134.9	1329.4	1554.5
50°	654.2	664.4	666.9	681.6	702.0	732.0	781.7	856.9	975.5	1141.3	1344.1
52.5°	599.3	600.6	608.9	618.5	635.7	657.4	698.8	753.6	840.4	975.5	1157.9
55°	545.8	545.8	552.8	561.1	571.3	592.3	621.0	664.4	735.1	844.8	999.1
57.5°	496.1	498.6	505.0	506.9	515.8	530.5	555.3	589.8	644.0	732.6	860.1
60°	446.3	452.1	451.4	456.5	464.2	475.0	495.4	522.2	569.4	637.0	740.3
62.5°	403.0	401.0	401.0	407.4	415.1	425.3	436.8	459.1	497.3	555.3	639.5
65°	354.5	353.2	357.7	361.5	364.1	371.7	381.9	402.3	429.1	473.7	542.0
67.5°	312.4	308.6	311.8	313.1	317.5	323.9	334.1	346.9	368.5	406.1	461.0
70°	269.1	265.9	265.2	266.5	270.3	274.8	281.8	293.9	313.7	342.4	380.0
72.5°	224.4	222.5	222.5	225.7	227.0	229.5	234.0	244.8	259.5	279.3	313.7
75°	182.4	182.4	182.4	183.0	184.9	187.5	191.3	197.0	209.1	224.4	248.0
77.5°	144.1	144.7	143.5	142.8	146.0	147.3	147.9	154.3	161.3	172.8	191.3
80°	107.1	103.9	105.2	107.1	108.4	109.0	110.9	112.2	118.0	123.7	135.8
82.5°	72.7	70.1	70.1	73.3	73.3	74.0	75.9	77.8	79.1	84.2	89.3
85°	42.1	42.1	42.7	42.7	43.4	42.7	44.6	45.3	45.3	48.5	52.3
87.5°	19.1	17.9	18.5	19.1	18.5	19.1	19.8	20.4	21.0	21.7	22.3
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°	1316.0	1316.0	1316.0	1316.0	1316.0	1316.0	1316.0	1316.0	1316.0	1316.0	1316.0
2.5°	1367.0	1361.9	1356.8	1347.9	1340.2	1329.4	1326.2	1322.4	1310.9	1300.7	1293.0
5°	1439.7	1424.4	1402.1	1381.7	1365.1	1342.8	1330.0	1316.6	1297.5	1280.3	1266.3
7.5°	1509.2	1482.4	1451.2	1417.4	1384.9	1353.6	1328.8	1306.4	1281.6	1257.3	1238.9
10°	1595.3	1551.9	1503.5	1451.2	1406.5	1363.2	1326.8	1295.0	1260.5	1230.6	1205.7
12.5°	1693.5	1624.0	1552.5	1486.2	1431.4	1367.0	1321.1	1278.4	1238.2	1200.6	1171.9
15°	1766.8	1685.2	1606.1	1518.8	1438.4	1363.2	1310.9	1259.9	1214.6	1177.6	1141.9
17.5°	1839.5	1750.2	1649.5	1544.3	1449.9	1363.2	1291.8	1236.9	1181.5	1136.8	1102.4
20°	1899.4	1794.2	1676.2	1565.9	1458.8	1359.4	1279.0	1210.2	1149.0	1101.1	1061.0
22.5°	1951.0	1823.5	1700.5	1580.6	1458.2	1349.2	1255.4	1184.0	1116.4	1069.9	1026.5
25°	1983.6	1836.3	1713.9	1575.5	1442.2	1331.3	1229.3	1149.0	1082.6	1027.8	983.8
27.5°	2014.2	1834.4	1696.0	1546.8	1423.1	1312.8	1203.1	1117.1	1047.6	988.3	943.0
30°	2044.8	1837.6	1664.8	1517.5	1392.5	1277.7	1171.9	1085.2	1011.2	950.7	908.6
32.5°	2063.9	1835.6	1636.1	1476.7	1344.1	1245.9	1138.1	1047.6	971.1	911.8	871.6
35°	2069.0	1824.8	1602.3	1417.4	1291.1	1192.3	1102.4	1009.3	929.6	874.1	828.2
37.5°	2058.2	1805.0	1565.3	1363.8	1227.4	1129.2	1050.8	971.1	894.5	832.7	792.5
40°	2023.1	1785.9	1520.7	1306.4	1161.1	1067.3	1002.9	925.2	849.9	791.9	754.9
42.5°	1956.1	1747.0	1471.6	1242.7	1092.2	998.5	940.5	878.6	808.5	754.9	717.9
45°	1838.8	1687.1	1422.5	1178.9	1024.6	927.7	875.4	828.2	763.8	710.9	679.0
47.5°	1689.0	1606.1	1351.7	1112.0	953.8	860.1	805.3	766.4	716.0	673.3	642.1
50°	1531.5	1501.5	1279.7	1043.1	883.1	791.9	739.6	705.2	671.4	628.7	600.6
52.5°	1349.8	1380.4	1195.5	971.7	811.0	721.8	673.3	647.8	617.8	584.7	561.1
55°	1181.5	1248.4	1096.0	890.1	739.6	654.2	607.6	583.4	565.5	539.4	518.4
57.5°	1018.2	1103.7	992.7	807.8	669.5	594.9	549.0	521.6	510.1	495.4	478.2
60°	876.1	960.2	880.5	724.9	598.7	528.6	489.0	466.7	455.2	445.7	431.7
62.5°	749.2	834.6	770.9	640.8	529.2	465.4	432.3	410.6	402.3	398.5	387.0
65°	635.0	708.4	663.7	552.8	463.5	406.1	374.9	359.6	351.3	349.4	341.8
67.5°	536.2	593.0	558.5	475.0	402.3	350.0	322.6	309.2	302.2	301.6	295.2
70°	439.3	491.6	466.7	392.8	332.2	293.3	270.3	258.9	255.0	254.4	251.2
72.5°	364.1	396.6	378.1	319.4	276.1	241.6	226.3	214.2	209.8	211.0	209.1
75°	280.5	308.0	296.5	253.8	216.1	193.2	179.2	171.5	167.7	169.6	167.1
77.5°	214.2	233.4	221.9	189.4	165.1	147.9	137.1	132.0	128.2	128.2	126.9
80°	152.4	162.6	156.8	139.0	119.9	105.8	97.6	94.4	92.5	91.8	91.2
82.5°	97.6	105.8	98.8	88.0	76.5	69.5	65.7	61.2	59.9	60.6	59.9
85°	54.8	58.0	55.5	47.8	42.7	38.9	36.3	34.4	33.2	33.8	32.5
87.5°	23.6	24.2	22.3	19.8	18.5	16.6	16.6	15.3	14.0	14.0	13.4
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°	1316.0	1316.0	1316.0	1316.0	1316.0	1316.0	1316.0	1316.0	1316.0	1316.0	1316.0
2.5°	1288.6	1284.1	1277.7	1268.2	1260.5	1248.4	1248.4	1250.3	1250.3	1249.7	1248.4
5°	1254.8	1245.2	1233.8	1220.4	1206.3	1192.3	1189.8	1184.7	1180.8	1178.3	1175.1
7.5°	1220.4	1204.4	1188.5	1170.0	1154.1	1140.7	1131.1	1122.8	1117.7	1112.0	1107.5
10°	1185.3	1164.3	1144.5	1124.7	1103.0	1085.8	1075.0	1067.3	1061.6	1056.5	1053.9
12.5°	1143.8	1119.0	1096.7	1078.2	1053.9	1036.1	1025.9	1023.3	1016.3	1004.2	997.8
15°	1103.7	1081.4	1055.2	1026.5	1015.1	993.4	981.3	975.5	971.7	963.4	960.9
17.5°	1070.5	1040.6	1010.6	989.6	968.5	951.3	944.3	936.6	931.5	923.9	922.0
20°	1029.1	1002.9	976.2	953.2	930.9	911.8	906.0	900.9	895.8	892.6	890.1
22.5°	987.0	960.9	939.8	918.8	894.5	883.7	877.3	871.6	868.4	866.5	863.9
25°	948.1	925.2	900.3	881.2	862.0	853.7	849.9	846.7	844.2	841.0	840.4
27.5°	913.7	888.2	867.1	848.6	834.6	827.6	823.1	821.2	821.2	822.5	823.1
30°	874.1	851.2	834.6	819.3	806.6	800.2	799.5	799.5	802.1	802.7	804.0
32.5°	837.8	819.9	803.4	788.7	779.8	776.0	779.1	779.1	781.1	783.0	785.5
35°	802.7	786.2	773.4	760.7	752.4	754.3	755.6	756.8	760.0	763.8	766.4
37.5°	769.6	754.3	740.9	730.7	725.6	729.4	732.6	735.1	739.0	742.2	744.7
40°	733.2	722.4	709.6	700.7	702.0	703.9	706.5	709.6	712.8	714.7	717.3
42.5°	699.4	688.0	679.0	672.0	673.9	676.5	677.8	679.0	682.9	686.7	688.0
45°	665.0	656.1	647.2	642.7	644.0	645.2	646.5	648.4	651.6	654.2	654.8
47.5°	626.1	619.7	614.0	608.9	611.5	610.8	612.7	616.6	617.8	619.1	622.9
50°	589.1	583.4	576.4	575.1	575.1	575.1	575.8	580.9	580.9	583.4	586.0
52.5°	548.3	545.1	541.3	538.8	537.5	537.5	540.7	542.6	543.9	547.7	550.2
55°	508.2	504.3	500.5	498.6	497.3	498.6	503.7	505.0	508.2	510.1	512.0
57.5°	466.1	463.5	460.3	459.1	459.1	459.7	463.5	466.7	467.4	473.7	476.3
60°	424.6	420.2	417.6	417.6	416.4	422.1	420.8	427.2	428.5	432.3	436.8
62.5°	381.9	375.5	374.9	374.9	377.5	378.1	380.6	382.6	386.4	391.5	394.7
65°	335.4	332.2	336.7	336.0	334.7	338.6	338.6	341.8	345.6	350.0	357.1
67.5°	292.0	289.5	290.7	290.1	292.0	294.6	296.5	299.0	303.5	308.6	313.1
70°	248.0	249.9	246.8	249.3	251.2	251.9	253.1	257.0	262.1	265.2	270.3
72.5°	205.3	204.7	205.9	206.6	208.5	209.8	211.0	215.5	221.2	223.8	227.6
75°	164.5	163.9	165.8	165.8	169.0	170.2	171.5	173.4	178.5	182.4	185.5
77.5°	127.5	128.2	127.5	130.1	128.8	129.4	133.3	135.2	135.8	144.1	145.4
80°	90.5	91.8	92.5	93.1	93.7	92.5	96.9	98.8	98.8	103.3	106.5
82.5°	58.7	59.3	61.2	61.8	61.8	63.8	63.1	64.4	66.3	67.6	72.0
85°	32.5	34.4	35.1	34.4	35.1	33.8	35.7	36.3	37.0	37.0	37.0
87.5°	12.8	13.4	12.8	13.4	12.8	13.4	13.4	12.1	12.1	14.0	11.5
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: P333923

CATALOG NUMBER: S123DS-S1000D835-4F0-1E-UDD-A

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	1316.0	1316.0	1316.0	1316.0
2.5°	1244.0	1243.3	1247.8	1244.6
5°	1171.3	1173.2	1166.8	1166.8
7.5°	1105.6	1103.0	1103.7	1099.2
10°	1046.3	1042.5	1041.2	1041.8
12.5°	997.2	997.2	987.0	987.0
15°	960.9	948.7	947.5	951.3
17.5°	920.7	913.7	914.3	913.0
20°	890.1	886.3	885.6	881.2
22.5°	862.0	861.4	862.0	856.9
25°	839.7	842.9	840.4	840.4
27.5°	824.4	824.4	822.5	822.5
30°	806.6	805.9	807.2	807.2
32.5°	788.7	790.0	790.0	790.6
35°	770.2	770.9	772.8	771.5
37.5°	746.0	749.2	748.5	749.8
40°	717.9	719.8	719.2	719.2
42.5°	689.2	690.5	688.6	687.3
45°	657.4	656.1	658.0	655.4
47.5°	622.3	622.9	623.6	626.1
50°	587.2	591.1	591.1	590.4
52.5°	552.8	554.1	557.3	557.3
55°	517.1	518.4	519.6	520.3
57.5°	480.7	480.1	482.7	483.3
60°	441.9	441.9	447.0	448.9
62.5°	400.4	403.0	408.1	404.2
65°	360.2	365.3	364.7	367.3
67.5°	318.2	321.3	326.4	326.4
70°	275.4	278.6	281.2	283.1
72.5°	234.0	235.3	242.3	238.5
75°	190.0	194.5	198.3	196.4
77.5°	147.9	153.7	154.9	153.0
80°	110.9	110.3	114.1	113.5
82.5°	74.0	73.3	74.6	75.2
85°	39.5	41.4	38.9	38.3
87.5°	11.5	11.5	10.8	10.2
90°	0.0	0.0	0.0	0.0

(END OF REPORT)