

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: P333948

Luminaire Tested: **S123DS-S1000D940-4F0-1E-UDD-A**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P333948
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-S1000D940-4F0-1E-UDD-A
Description: DEFINE 3 DIRECT LED LUMINAIRE, ASYMMETRIC DIFFUSER
PENDANT/SURFACE/WALL MOUNT, 1000 LUMENS PER FOOT
Light Source: 4000K CCT, 90 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3541.9 lumens
Efficiency: N/A
Efficacy: 101.8 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

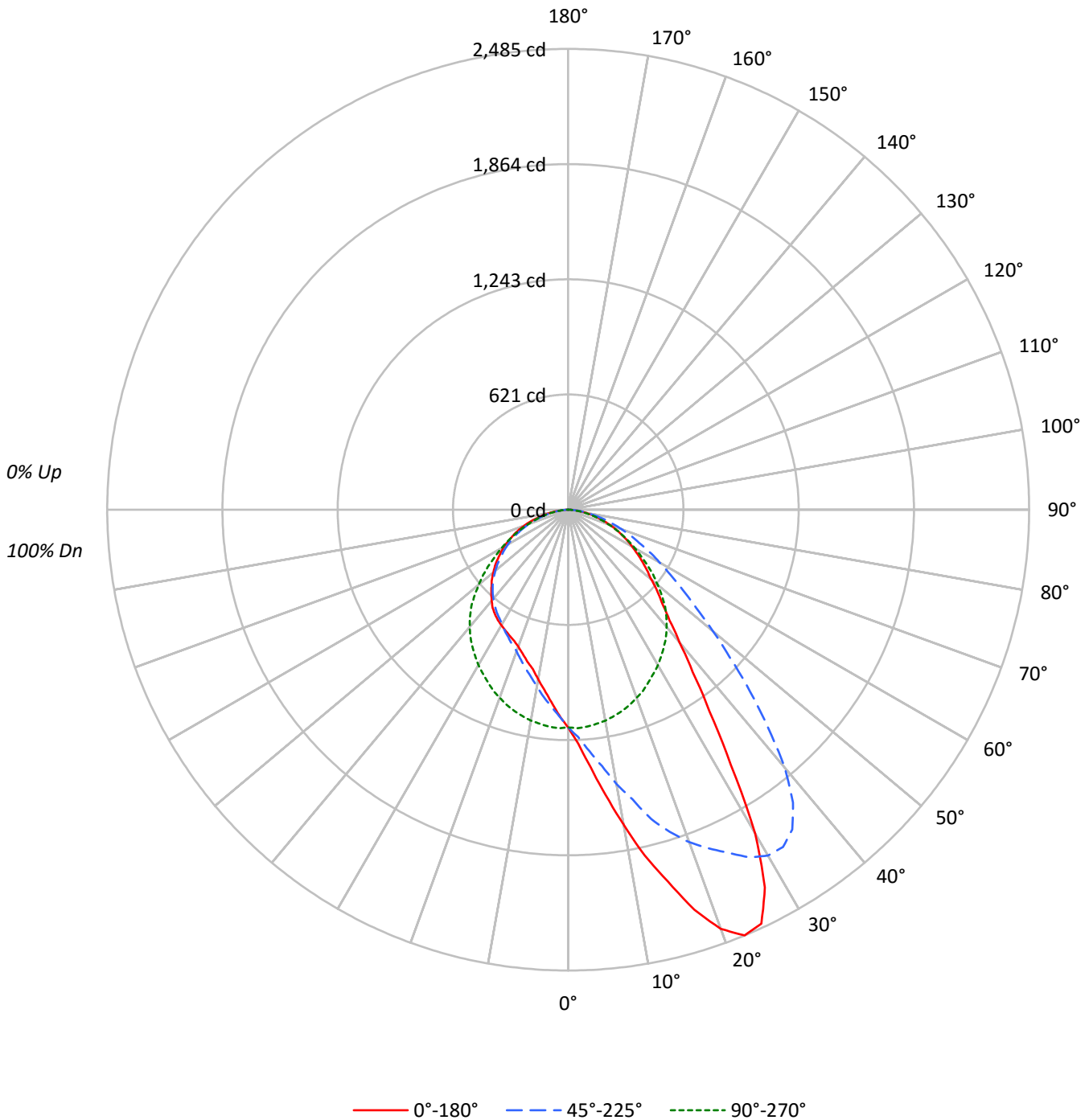
Input Watts (W): 34.8
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	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°	6316	6316	6316
5°	7532	6343	5621
10°	9427	6310	5077
15°	11563	6260	4727
20°	13774	6180	4500
25°	14626	6084	4450
30°	12536	6014	4473
35°	8719	5913	4520
40°	6567	5796	4506
45°	5453	5621	4449
50°	4884	5265	4408
55°	4567	4881	4353
60°	4284	4480	4309
65°	4025	4084	4171
70°	3775	3632	3972
75°	3381	3179	3641
80°	2960	2607	3137
85°	2316	1896	2106



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	115.4	3.3
10°-20°	370.7	10.5
20°-30°	623.7	17.6
30°-40°	704.9	19.9
40°-50°	631.4	17.8
50°-60°	509.6	14.4
60°-70°	355.1	10.0
70°-80°	186.4	5.3
80°-90°	44.7	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°	1109.8	31.3
0°-40°	1814.7	51.2
0°-60°	2955.8	83.5
0°-90°	3541.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3541.9	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1174	1174	1174	1174	1174	
5°	1394	1306	1174	1063	1040	143
15°	2075	1727	1124	886	848	599
25°	2463	2041	1024	761	749	1089
35°	1327	2105	900	673	688	856
45°	716	1387	738	575	584	565
55°	487	753	520	445	464	437
65°	316	422	321	302	328	315
75°	163	200	153	152	175	174
85°	38	43	31	30	34	45
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°	1173.5	1173.5	1173.5	1173.5	1173.5	1173.5	1173.5	1173.5	1173.5	1173.5	1173.5
2.5°	1263.3	1262.2	1259.3	1261.6	1257.1	1250.8	1250.2	1244.6	1228.1	1226.9	1222.4
5°	1394.1	1389.5	1389.0	1388.4	1380.4	1369.6	1349.2	1347.5	1320.2	1306.5	1290.0
7.5°	1552.1	1550.4	1545.9	1540.8	1514.1	1501.0	1481.6	1456.6	1424.8	1394.1	1374.8
10°	1725.0	1743.7	1720.4	1704.5	1689.7	1661.9	1629.5	1589.1	1548.7	1501.5	1465.7
12.5°	1910.3	1917.2	1917.2	1902.4	1877.4	1831.3	1767.6	1722.1	1685.8	1599.3	1568.6
15°	2075.2	2109.9	2087.7	2036.6	2037.7	1997.3	1922.3	1839.8	1796.1	1727.3	1633.5
17.5°	2261.7	2268.0	2261.1	2213.4	2190.1	2131.5	2063.8	1987.1	1904.7	1821.1	1723.9
20°	2405.0	2401.6	2381.7	2359.5	2310.6	2267.4	2191.8	2103.6	1989.9	1908.1	1799.5
22.5°	2484.6	2478.3	2471.5	2453.9	2415.2	2368.0	2302.1	2203.7	2096.8	1976.3	1846.7
25°	2463.0	2470.4	2471.5	2466.4	2452.2	2424.3	2370.9	2294.1	2186.1	2041.1	1910.3
27.5°	2295.8	2314.6	2338.5	2354.4	2380.0	2397.0	2380.0	2331.6	2242.9	2113.3	1952.4
30°	2017.2	1994.5	2050.8	2121.8	2170.2	2255.4	2303.2	2306.0	2261.1	2153.7	1997.9
32.5°	1630.6	1667.6	1684.6	1776.2	1896.1	1994.5	2101.4	2196.3	2218.5	2156.0	2024.6
35°	1327.0	1358.3	1403.8	1449.2	1563.0	1660.7	1827.9	1973.4	2089.4	2104.8	2021.2
37.5°	1103.0	1121.2	1149.0	1197.4	1275.3	1396.4	1528.8	1718.2	1877.9	1990.5	1979.1
40°	934.7	939.2	971.7	1006.3	1066.6	1162.1	1278.7	1441.3	1642.5	1817.1	1889.9
42.5°	808.5	819.9	828.9	861.9	906.8	972.8	1079.1	1206.5	1386.7	1594.2	1754.0
45°	716.4	727.7	736.3	758.4	792.6	840.9	916.5	1039.3	1179.7	1387.3	1578.9
47.5°	652.7	651.6	659.0	676.6	701.0	739.7	795.4	877.3	1012.0	1185.4	1386.1
50°	583.3	592.4	594.7	607.8	626.0	652.7	697.0	764.1	869.9	1017.7	1198.5
52.5°	534.4	535.6	543.0	551.5	566.8	586.2	623.1	672.0	749.4	869.9	1032.5
55°	486.7	486.7	492.9	500.3	509.4	528.2	553.8	592.4	655.5	753.3	890.9
57.5°	442.3	444.6	450.3	452.0	460.0	473.0	495.2	525.9	574.2	653.3	767.0
60°	398.0	403.1	402.5	407.1	413.9	423.6	441.8	465.6	507.7	568.0	660.1
62.5°	359.3	357.6	357.6	363.3	370.1	379.2	389.5	409.4	443.5	495.2	570.3
65°	316.1	315.0	319.0	322.4	324.6	331.5	340.6	358.8	382.6	422.4	483.3
67.5°	278.6	275.2	278.0	279.2	283.1	288.8	297.9	309.3	328.6	362.2	411.1
70°	239.9	237.1	236.5	237.7	241.1	245.0	251.3	262.1	279.7	305.3	338.9
72.5°	200.1	198.4	198.4	201.3	202.4	204.7	208.7	218.3	231.4	249.0	279.7
75°	162.6	162.6	162.6	163.2	164.9	167.2	170.6	175.7	186.5	200.1	221.2
77.5°	128.5	129.1	127.9	127.4	130.2	131.3	131.9	137.6	143.8	154.1	170.6
80°	95.5	92.7	93.8	95.5	96.7	97.2	98.9	100.1	105.2	110.3	121.1
82.5°	64.8	62.5	62.5	65.4	65.4	66.0	67.7	69.4	70.5	75.0	79.6
85°	37.5	37.5	38.1	38.1	38.7	38.1	39.8	40.4	40.4	43.2	46.6
87.5°	17.1	15.9	16.5	17.1	16.5	17.1	17.6	18.2	18.8	19.3	19.9
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°	1173.5	1173.5	1173.5	1173.5	1173.5	1173.5	1173.5	1173.5	1173.5	1173.5	1173.5
2.5°	1219.0	1214.4	1209.9	1201.9	1195.1	1185.4	1182.6	1179.2	1168.9	1159.8	1153.0
5°	1283.8	1270.1	1250.2	1232.1	1217.3	1197.4	1186.0	1174.1	1157.0	1141.7	1129.1
7.5°	1345.8	1321.9	1294.0	1263.9	1234.9	1207.0	1184.9	1165.0	1142.8	1121.2	1104.7
10°	1422.5	1383.9	1340.6	1294.0	1254.2	1215.6	1183.2	1154.7	1124.0	1097.3	1075.1
12.5°	1510.1	1448.1	1384.4	1325.3	1276.4	1219.0	1178.0	1139.9	1104.1	1070.6	1045.0
15°	1575.5	1502.7	1432.2	1354.3	1282.7	1215.6	1168.9	1123.5	1083.1	1050.1	1018.3
17.5°	1640.3	1560.7	1470.8	1377.0	1292.9	1215.6	1151.9	1103.0	1053.5	1013.7	983.0
20°	1693.7	1599.9	1494.7	1396.4	1300.8	1212.2	1140.5	1079.1	1024.5	981.9	946.1
22.5°	1739.8	1626.1	1516.3	1409.4	1300.3	1203.1	1119.5	1055.8	995.5	954.0	915.4
25°	1768.8	1637.4	1528.3	1404.9	1286.1	1187.1	1096.2	1024.5	965.4	916.5	877.3
27.5°	1796.1	1635.7	1512.3	1379.3	1269.0	1170.6	1072.9	996.1	934.1	881.3	840.9
30°	1823.3	1638.6	1484.5	1353.2	1241.7	1139.4	1045.0	967.7	901.7	847.7	810.2
32.5°	1840.4	1636.9	1458.9	1316.8	1198.5	1111.0	1014.9	934.1	865.9	813.0	777.2
35°	1845.0	1627.2	1428.8	1263.9	1151.3	1063.2	983.0	900.0	828.9	779.5	738.5
37.5°	1835.3	1609.6	1395.8	1216.1	1094.5	1006.9	937.0	865.9	797.7	742.5	706.7
40°	1804.0	1592.5	1356.0	1165.0	1035.3	951.8	894.3	825.0	757.9	706.1	673.2
42.5°	1744.3	1557.8	1312.2	1108.1	973.9	890.4	838.6	783.5	720.9	673.2	640.2
45°	1639.7	1504.4	1268.4	1051.3	913.7	827.2	780.6	738.5	681.1	633.9	605.5
47.5°	1506.1	1432.2	1205.3	991.6	850.6	767.0	718.1	683.4	638.5	600.4	572.5
50°	1365.7	1338.9	1141.1	930.2	787.4	706.1	659.5	628.8	598.7	560.6	535.6
52.5°	1203.6	1230.9	1066.0	866.5	723.2	643.6	600.4	577.6	550.9	521.4	500.3
55°	1053.5	1113.2	977.3	793.7	659.5	583.3	541.8	520.2	504.3	481.0	462.2
57.5°	908.0	984.2	885.2	720.4	597.0	530.5	489.5	465.1	454.8	441.8	426.4
60°	781.2	856.2	785.2	646.4	533.9	471.3	436.1	416.2	405.9	397.4	384.9
62.5°	668.0	744.2	687.4	571.4	471.9	415.0	385.5	366.1	358.8	355.3	345.1
65°	566.3	631.7	591.9	492.9	413.3	362.2	334.3	320.7	313.3	311.6	304.7
67.5°	478.2	528.8	498.1	423.6	358.8	312.1	287.7	275.7	269.5	268.9	263.2
70°	391.7	438.4	416.2	350.2	296.2	261.5	241.1	230.8	227.4	226.9	224.0
72.5°	324.6	353.6	337.2	284.8	246.2	215.5	201.8	191.0	187.1	188.2	186.5
75°	250.2	274.6	264.4	226.3	192.7	172.3	159.8	152.9	149.5	151.2	149.0
77.5°	191.0	208.1	197.9	168.9	147.3	131.9	122.2	117.7	114.3	114.3	113.1
80°	135.9	145.0	139.9	123.9	106.9	94.4	87.0	84.1	82.4	81.9	81.3
82.5°	87.0	94.4	88.1	78.5	68.2	62.0	58.6	54.6	53.4	54.0	53.4
85°	48.9	51.7	49.5	42.6	38.1	34.7	32.4	30.7	29.6	30.1	29.0
87.5°	21.0	21.6	19.9	17.6	16.5	14.8	14.8	13.6	12.5	12.5	11.9
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):

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	1173.5	1173.5	1173.5	1173.5	1173.5	1173.5	1173.5	1173.5	1173.5	1173.5	1173.5
2.5°	1149.0	1145.1	1139.4	1130.9	1124.0	1113.2	1113.2	1114.9	1114.9	1114.4	1113.2
5°	1118.9	1110.4	1100.1	1088.2	1075.7	1063.2	1060.9	1056.4	1053.0	1050.7	1047.8
7.5°	1088.2	1074.0	1059.8	1043.3	1029.1	1017.1	1008.6	1001.2	996.7	991.6	987.6
10°	1056.9	1038.2	1020.6	1002.9	983.6	968.2	958.6	951.8	946.6	942.1	939.8
12.5°	1020.0	997.8	977.9	961.4	939.8	923.9	914.8	912.5	906.3	895.5	889.8
15°	984.2	964.3	941.0	915.4	905.1	885.8	875.0	869.9	866.5	859.1	856.8
17.5°	954.6	927.9	901.2	882.4	863.6	848.3	842.0	835.2	830.7	823.8	822.1
20°	917.6	894.3	870.5	850.0	830.1	813.0	807.9	803.4	798.8	796.0	793.7
22.5°	880.1	856.8	838.0	819.3	797.7	788.0	782.3	777.2	774.4	772.7	770.4
25°	845.4	825.0	802.8	785.7	768.7	761.3	757.9	755.0	752.8	749.9	749.4
27.5°	814.7	792.0	773.2	756.7	744.2	738.0	734.0	732.3	732.3	733.4	734.0
30°	779.5	759.0	744.2	730.6	719.2	713.5	713.0	713.0	715.2	715.8	716.9
32.5°	747.1	731.2	716.4	703.3	695.3	691.9	694.8	694.8	696.5	698.2	700.5
35°	715.8	701.0	689.7	678.3	670.9	672.6	673.7	674.9	677.7	681.1	683.4
37.5°	686.2	672.6	660.7	651.6	647.0	650.4	653.3	655.5	659.0	661.8	664.1
40°	653.8	644.2	632.8	624.8	626.0	627.7	630.0	632.8	635.6	637.3	639.6
42.5°	623.7	613.5	605.5	599.3	601.0	603.2	604.4	605.5	608.9	612.3	613.5
45°	593.0	585.0	577.1	573.1	574.2	575.4	576.5	578.2	581.1	583.3	583.9
47.5°	558.3	552.6	547.5	543.0	545.2	544.7	546.4	549.8	550.9	552.1	555.5
50°	525.3	520.2	514.0	512.8	512.8	512.8	513.4	518.0	518.0	520.2	522.5
52.5°	489.0	486.1	482.7	480.4	479.3	479.3	482.1	483.8	485.0	488.4	490.7
55°	453.1	449.7	446.3	444.6	443.5	444.6	449.2	450.3	453.1	454.8	456.5
57.5°	415.6	413.3	410.5	409.4	409.4	409.9	413.3	416.2	416.7	422.4	424.7
60°	378.7	374.7	372.4	372.4	371.3	376.4	375.2	380.9	382.1	385.5	389.5
62.5°	340.6	334.9	334.3	334.3	336.6	337.2	339.4	341.1	344.5	349.1	351.9
65°	299.1	296.2	300.2	299.6	298.5	301.9	301.9	304.7	308.2	312.1	318.4
67.5°	260.4	258.1	259.3	258.7	260.4	262.7	264.4	266.7	270.6	275.2	279.2
70°	221.2	222.9	220.0	222.3	224.0	224.6	225.7	229.1	233.7	236.5	241.1
72.5°	183.1	182.5	183.6	184.2	185.9	187.1	188.2	192.2	197.3	199.6	203.0
75°	146.7	146.1	147.8	147.8	150.7	151.8	152.9	154.6	159.2	162.6	165.4
77.5°	113.7	114.3	113.7	116.0	114.8	115.4	118.8	120.5	121.1	128.5	129.6
80°	80.7	81.9	82.4	83.0	83.6	82.4	86.4	88.1	88.1	92.1	94.9
82.5°	52.3	52.9	54.6	55.1	55.1	56.9	56.3	57.4	59.1	60.3	64.2
85°	29.0	30.7	31.3	30.7	31.3	30.1	31.8	32.4	33.0	33.0	33.0
87.5°	11.4	11.9	11.4	11.9	11.4	11.9	11.9	10.8	10.8	12.5	10.2
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: P333948

CATALOG NUMBER: S123DS-S1000D940-4F0-1E-UDD-A

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	1173.5	1173.5	1173.5	1173.5
2.5°	1109.2	1108.7	1112.7	1109.8
5°	1044.4	1046.1	1040.5	1040.5
7.5°	985.9	983.6	984.2	980.2
10°	933.0	929.6	928.4	929.0
12.5°	889.2	889.2	880.1	880.1
15°	856.8	846.0	844.9	848.3
17.5°	821.0	814.7	815.3	814.2
20°	793.7	790.3	789.7	785.7
22.5°	768.7	768.1	768.7	764.1
25°	748.8	751.6	749.4	749.4
27.5°	735.1	735.1	733.4	733.4
30°	719.2	718.7	719.8	719.8
32.5°	703.3	704.4	704.4	705.0
35°	686.8	687.4	689.1	687.9
37.5°	665.2	668.0	667.5	668.6
40°	640.2	641.9	641.3	641.3
42.5°	614.6	615.7	614.0	612.9
45°	586.2	585.0	586.7	584.5
47.5°	554.9	555.5	556.0	558.3
50°	523.6	527.0	527.0	526.5
52.5°	492.9	494.1	496.9	496.9
55°	461.1	462.2	463.4	463.9
57.5°	428.7	428.1	430.4	431.0
60°	394.0	394.0	398.6	400.3
62.5°	357.1	359.3	363.9	360.5
65°	321.2	325.8	325.2	327.5
67.5°	283.7	286.6	291.1	291.1
70°	245.6	248.5	250.7	252.4
72.5°	208.7	209.8	216.0	212.6
75°	169.4	173.4	176.8	175.1
77.5°	131.9	137.0	138.2	136.5
80°	98.9	98.4	101.8	101.2
82.5°	66.0	65.4	66.5	67.1
85°	35.3	37.0	34.7	34.1
87.5°	10.2	10.2	9.7	9.1
90°	0.0	0.0	0.0	0.0

(END OF REPORT)