

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: P333933

Luminaire Tested: **S123DS-S1000D927-4F0-1E-UDD-A**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P333933
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-S1000D927-4F0-1E-UDD-A
Description: DEFINE 3 DIRECT LED LUMINAIRE, ASYMMETRIC DIFFUSER
PENDANT/SURFACE/WALL MOUNT, 1000 LUMENS PER FOOT
Light Source: 2700K CCT, 90 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3146.6 lumens
Efficiency: N/A
Efficacy: 90.4 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

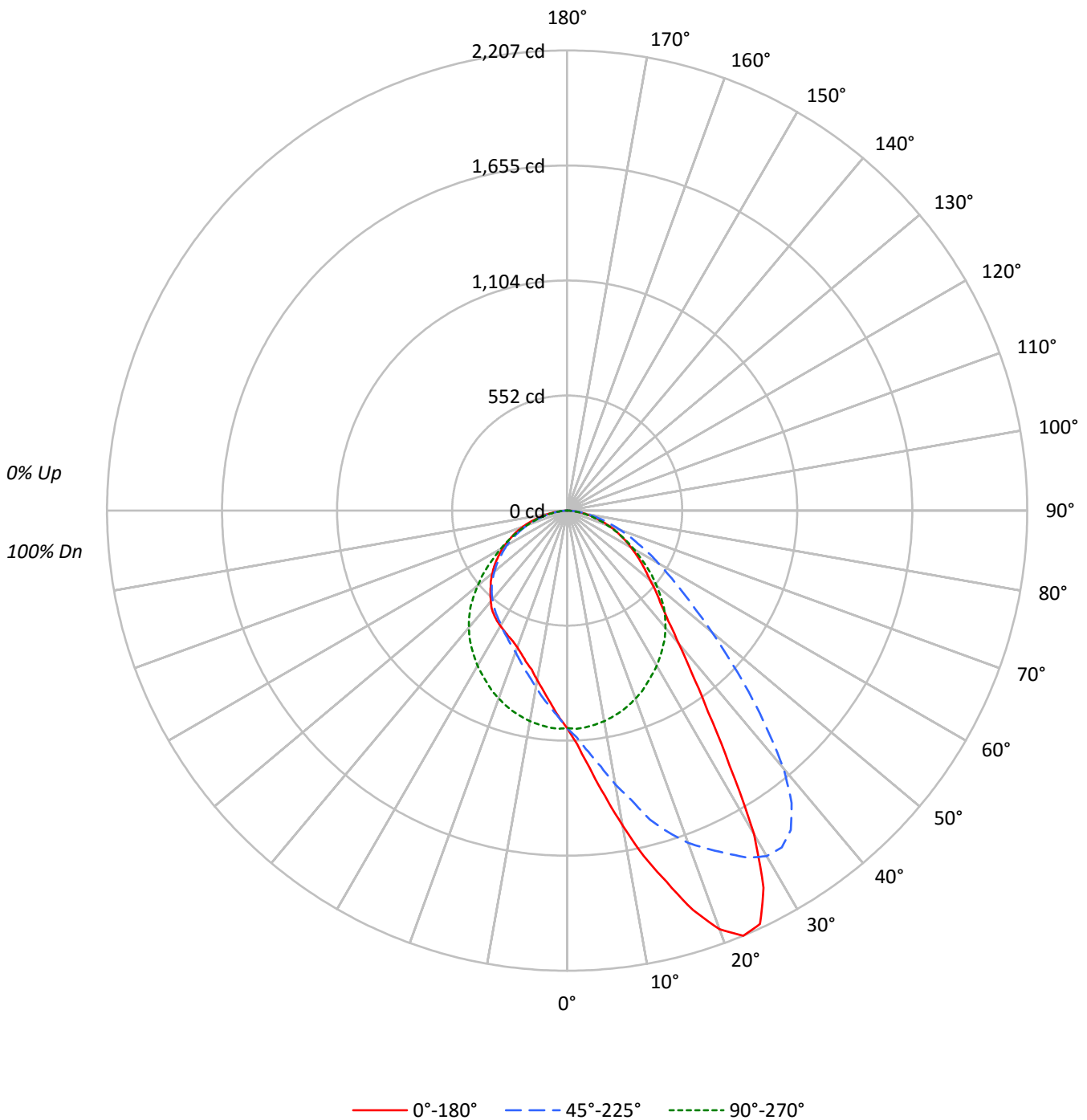
Input Watts (W): 34.8
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P333933

CATALOG NUMBER: S123DS-S1000D927-4F0-1E-UDD-A

Luminous Intensity Polar Plot





TEST NUMBER: P333933

CATALOG NUMBER: S123DS-S1000D927-4F0-1E-UDD-A

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	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°	5611	5611	5611
5°	6691	5635	4994
10°	8375	5606	4510
15°	10272	5561	4199
20°	12237	5491	3998
25°	12994	5405	3953
30°	11137	5343	3974
35°	7746	5253	4016
40°	5834	5149	4003
45°	4844	4994	3952
50°	4339	4677	3916
55°	4057	4337	3868
60°	3806	3979	3828
65°	3576	3628	3705
70°	3353	3227	3530
75°	3005	2826	3236
80°	2631	2318	2786
85°	2056	1686	1871



TEST NUMBER: P333933

CATALOG NUMBER: S123DS-S1000D927-4F0-1E-UDD-A

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	102.5	3.3
10°-20°	329.3	10.5
20°-30°	554.1	17.6
30°-40°	626.2	19.9
40°-50°	560.9	17.8
50°-60°	452.8	14.4
60°-70°	315.5	10.0
70°-80°	165.6	5.3
80°-90°	39.7	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°	985.9	31.3
0°-40°	1612.2	51.2
0°-60°	2625.9	83.5
0°-90°	3146.6	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3146.6	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1042	1042	1042	1042	1042	
5°	1238	1161	1043	944	924	127
15°	1844	1534	998	787	754	532
25°	2188	1813	910	676	666	967
35°	1179	1870	800	598	611	761
45°	636	1232	656	511	519	502
55°	432	669	462	395	412	388
65°	281	375	285	268	291	280
75°	144	178	136	135	156	154
85°	33	38	27	27	30	40
90°	0	0	0	0	0	



TEST NUMBER: P333933

CATALOG NUMBER: S123DS-S1000D927-4F0-1E-UDD-A

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1042.5	1042.5	1042.5	1042.5	1042.5	1042.5	1042.5	1042.5	1042.5	1042.5	1042.5
2.5°	1122.3	1121.3	1118.8	1120.8	1116.8	1111.2	1110.7	1105.6	1091.0	1090.0	1086.0
5°	1238.5	1234.4	1233.9	1233.4	1226.4	1216.8	1198.6	1197.1	1172.8	1160.7	1146.1
7.5°	1378.9	1377.4	1373.3	1368.8	1345.1	1333.4	1316.3	1294.0	1265.8	1238.5	1221.3
10°	1532.5	1549.1	1528.4	1514.3	1501.1	1476.4	1447.6	1411.7	1375.9	1334.0	1302.1
12.5°	1697.1	1703.2	1703.2	1690.0	1667.8	1626.9	1570.3	1529.9	1497.6	1420.8	1393.6
15°	1843.6	1874.4	1854.7	1809.2	1810.3	1774.4	1707.7	1634.5	1595.6	1534.5	1451.1
17.5°	2009.3	2014.8	2008.8	1966.3	1945.6	1893.6	1833.5	1765.3	1692.1	1617.8	1531.4
20°	2136.5	2133.5	2115.8	2096.1	2052.7	2014.3	1947.1	1868.8	1767.8	1695.1	1598.6
22.5°	2207.3	2201.7	2195.6	2180.0	2145.6	2103.7	2045.1	1957.7	1862.8	1755.7	1640.5
25°	2188.1	2194.6	2195.6	2191.1	2178.5	2153.7	2106.2	2038.1	1942.1	1813.3	1697.1
27.5°	2039.6	2056.2	2077.4	2091.6	2114.3	2129.5	2114.3	2071.4	1992.6	1877.4	1734.5
30°	1792.1	1771.9	1821.9	1885.0	1927.9	2003.7	2046.1	2048.7	2008.8	1913.3	1774.9
32.5°	1448.6	1481.4	1496.6	1577.9	1684.5	1771.9	1866.8	1951.2	1970.9	1915.3	1798.6
35°	1178.9	1206.7	1247.1	1287.5	1388.5	1475.4	1623.9	1753.2	1856.2	1869.9	1795.6
37.5°	979.9	996.0	1020.8	1063.7	1132.9	1240.5	1358.2	1526.4	1668.3	1768.3	1758.2
40°	830.4	834.4	863.2	894.0	947.6	1032.4	1136.0	1280.4	1459.2	1614.3	1678.9
42.5°	718.2	728.3	736.4	765.7	805.6	864.2	958.7	1071.8	1231.9	1416.3	1558.2
45°	636.4	646.5	654.1	673.8	704.1	747.0	814.2	923.3	1048.1	1232.4	1402.6
47.5°	579.8	578.8	585.4	601.1	622.8	657.1	706.6	779.4	899.1	1053.1	1231.4
50°	518.2	526.3	528.3	539.9	556.1	579.8	619.2	678.8	772.8	904.1	1064.7
52.5°	474.8	475.8	482.4	489.9	503.6	520.8	553.6	597.0	665.7	772.8	917.2
55°	432.4	432.4	437.9	444.5	452.6	469.2	492.0	526.3	582.4	669.2	791.5
57.5°	393.0	395.0	400.0	401.5	408.6	420.2	439.9	467.2	510.1	580.4	681.4
60°	353.6	358.1	357.6	361.6	367.7	376.3	392.5	413.7	451.0	504.6	586.4
62.5°	319.2	317.7	317.7	322.8	328.8	336.9	346.0	363.7	394.0	439.9	506.6
65°	280.8	279.8	283.4	286.4	288.4	294.5	302.6	318.7	339.9	375.3	429.3
67.5°	247.5	244.5	247.0	248.0	251.5	256.6	264.7	274.8	291.9	321.7	365.2
70°	213.1	210.6	210.1	211.1	214.2	217.7	223.3	232.8	248.5	271.2	301.0
72.5°	177.8	176.3	176.3	178.8	179.8	181.8	185.4	194.0	205.6	221.2	248.5
75°	144.5	144.5	144.5	145.0	146.5	148.5	151.5	156.1	165.7	177.8	196.5
77.5°	114.2	114.7	113.6	113.1	115.7	116.7	117.2	122.2	127.8	136.9	151.5
80°	84.9	82.3	83.3	84.9	85.9	86.4	87.9	88.9	93.4	98.0	107.6
82.5°	57.6	55.6	55.6	58.1	58.1	58.6	60.1	61.6	62.6	66.7	70.7
85°	33.3	33.3	33.8	33.8	34.3	33.8	35.4	35.9	35.9	38.4	41.4
87.5°	15.2	14.1	14.6	15.2	14.6	15.2	15.7	16.2	16.7	17.2	17.7
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: P333933

CATALOG NUMBER: S123DS-S1000D927-4F0-1E-UDD-A

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	1042.5	1042.5	1042.5	1042.5	1042.5	1042.5	1042.5	1042.5	1042.5	1042.5	1042.5
2.5°	1082.9	1078.9	1074.8	1067.8	1061.7	1053.1	1050.6	1047.6	1038.5	1030.4	1024.3
5°	1140.5	1128.4	1110.7	1094.5	1081.4	1063.7	1053.6	1043.0	1027.9	1014.2	1003.1
7.5°	1195.6	1174.3	1149.6	1122.8	1097.1	1072.3	1052.6	1034.9	1015.2	996.0	981.4
10°	1263.7	1229.4	1191.0	1149.6	1114.2	1079.9	1051.1	1025.8	998.6	974.8	955.1
12.5°	1341.5	1286.5	1229.9	1177.4	1133.9	1082.9	1046.6	1012.7	980.9	951.1	928.4
15°	1399.6	1335.0	1272.3	1203.1	1139.5	1079.9	1038.5	998.1	962.2	932.9	904.6
17.5°	1457.2	1386.5	1306.7	1223.3	1148.6	1079.9	1023.3	979.9	935.9	900.6	873.3
20°	1504.7	1421.3	1327.9	1240.5	1155.7	1076.9	1013.2	958.7	910.2	872.3	840.5
22.5°	1545.6	1444.6	1347.1	1252.1	1155.1	1068.8	994.5	938.0	884.4	847.5	813.2
25°	1571.3	1454.7	1357.7	1248.1	1142.5	1054.6	973.8	910.2	857.6	814.2	779.4
27.5°	1595.6	1453.2	1343.5	1225.4	1127.4	1040.0	953.1	884.9	829.9	782.9	747.0
30°	1619.8	1455.7	1318.8	1202.1	1103.1	1012.2	928.4	859.7	801.1	753.1	719.8
32.5°	1635.0	1454.2	1296.1	1169.8	1064.7	987.0	901.6	829.9	769.3	722.3	690.5
35°	1639.0	1445.6	1269.3	1122.8	1022.8	944.5	873.3	799.6	736.4	692.5	656.1
37.5°	1630.4	1429.9	1240.0	1080.4	972.3	894.5	832.4	769.3	708.6	659.7	627.8
40°	1602.7	1414.8	1204.6	1034.9	919.8	845.5	794.5	732.9	673.3	627.3	598.0
42.5°	1549.6	1384.0	1165.8	984.4	865.2	791.0	745.0	696.0	640.5	598.0	568.7
45°	1456.7	1336.5	1126.9	933.9	811.7	734.9	693.5	656.1	605.1	563.2	537.9
47.5°	1338.0	1272.3	1070.8	880.9	755.6	681.4	637.9	607.1	567.2	533.4	508.6
50°	1213.2	1189.5	1013.7	826.3	699.6	627.3	585.9	558.6	531.9	498.0	475.8
52.5°	1069.3	1093.5	947.0	769.8	642.5	571.8	533.4	513.2	489.4	463.2	444.5
55°	935.9	989.0	868.3	705.1	585.9	518.2	481.4	462.2	448.0	427.3	410.6
57.5°	806.6	874.3	786.4	640.0	530.3	471.3	434.9	413.2	404.1	392.5	378.8
60°	694.0	760.7	697.5	574.3	474.3	418.7	387.4	369.7	360.6	353.1	341.9
62.5°	593.5	661.2	610.7	507.6	419.2	368.7	342.5	325.3	318.7	315.7	306.6
65°	503.1	561.2	525.8	437.9	367.2	321.7	297.0	284.9	278.3	276.8	270.7
67.5°	424.8	469.7	442.5	376.3	318.7	277.3	255.6	245.0	239.4	238.9	233.9
70°	348.0	389.4	369.7	311.1	263.2	232.3	214.2	205.1	202.0	201.5	199.0
72.5°	288.4	314.2	299.5	253.1	218.7	191.4	179.3	169.7	166.2	167.2	165.7
75°	222.2	244.0	234.9	201.0	171.2	153.0	141.9	135.9	132.8	134.4	132.3
77.5°	169.7	184.9	175.8	150.0	130.8	117.2	108.6	104.6	101.5	101.5	100.5
80°	120.7	128.8	124.3	110.1	95.0	83.8	77.3	74.8	73.2	72.7	72.2
82.5°	77.3	83.8	78.3	69.7	60.6	55.1	52.0	48.5	47.5	48.0	47.5
85°	43.4	46.0	43.9	37.9	33.8	30.8	28.8	27.3	26.3	26.8	25.8
87.5°	18.7	19.2	17.7	15.7	14.6	13.1	13.1	12.1	11.1	11.1	10.6
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: P333933

CATALOG NUMBER: S123DS-S1000D927-4F0-1E-UDD-A

CANDELA DISTRIBUTION (continued):

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	1042.5	1042.5	1042.5	1042.5	1042.5	1042.5	1042.5	1042.5	1042.5	1042.5	1042.5
2.5°	1020.8	1017.3	1012.2	1004.6	998.6	989.0	989.0	990.5	990.5	990.0	989.0
5°	994.0	986.4	977.4	966.7	955.6	944.5	942.5	938.5	935.4	933.4	930.9
7.5°	966.7	954.1	941.5	926.8	914.2	903.6	896.0	889.5	885.4	880.9	877.3
10°	939.0	922.3	906.6	891.0	873.8	860.2	851.6	845.5	841.0	836.9	834.9
12.5°	906.1	886.4	868.8	854.1	834.9	820.8	812.7	810.7	805.1	795.5	790.5
15°	874.3	856.6	835.9	813.2	804.1	786.9	777.3	772.8	769.8	763.2	761.2
17.5°	848.1	824.3	800.6	783.9	767.2	753.6	748.0	742.0	737.9	731.9	730.4
20°	815.2	794.5	773.3	755.1	737.4	722.3	717.7	713.7	709.7	707.1	705.1
22.5°	781.9	761.2	744.5	727.8	708.6	700.1	695.0	690.5	687.9	686.4	684.4
25°	751.1	732.9	713.2	698.0	682.9	676.3	673.3	670.8	668.7	666.2	665.7
27.5°	723.8	703.6	686.9	672.3	661.2	655.6	652.1	650.6	650.6	651.6	652.1
30°	692.5	674.3	661.2	649.0	638.9	633.9	633.4	633.4	635.4	635.9	636.9
32.5°	663.7	649.5	636.4	624.8	617.7	614.7	617.2	617.2	618.7	620.3	622.3
35°	635.9	622.8	612.7	602.6	596.0	597.5	598.5	599.5	602.1	605.1	607.1
37.5°	609.6	597.5	586.9	578.8	574.8	577.8	580.4	582.4	585.4	587.9	589.9
40°	580.9	572.3	562.2	555.1	556.1	557.6	559.6	562.2	564.7	566.2	568.2
42.5°	554.1	545.0	537.9	532.4	533.9	535.9	536.9	537.9	541.0	544.0	545.0
45°	526.8	519.7	512.7	509.1	510.1	511.2	512.2	513.7	516.2	518.2	518.7
47.5°	496.0	491.0	486.4	482.4	484.4	483.9	485.4	488.4	489.4	490.4	493.5
50°	466.7	462.2	456.6	455.6	455.6	455.6	456.1	460.1	460.1	462.2	464.2
52.5°	434.4	431.9	428.8	426.8	425.8	425.8	428.3	429.8	430.8	433.9	435.9
55°	402.6	399.5	396.5	395.0	394.0	395.0	399.0	400.0	402.6	404.1	405.6
57.5°	369.2	367.2	364.7	363.7	363.7	364.2	367.2	369.7	370.2	375.3	377.3
60°	336.4	332.9	330.8	330.8	329.8	334.4	333.4	338.4	339.4	342.5	346.0
62.5°	302.6	297.5	297.0	297.0	299.0	299.5	301.5	303.1	306.1	310.1	312.7
65°	265.7	263.2	266.7	266.2	265.2	268.2	268.2	270.7	273.8	277.3	282.9
67.5°	231.3	229.3	230.3	229.8	231.3	233.4	234.9	236.9	240.4	244.5	248.0
70°	196.5	198.0	195.5	197.5	199.0	199.5	200.5	203.6	207.6	210.1	214.2
72.5°	162.6	162.1	163.1	163.7	165.2	166.2	167.2	170.7	175.3	177.3	180.3
75°	130.3	129.8	131.3	131.3	133.8	134.9	135.9	137.4	141.4	144.5	147.0
77.5°	101.0	101.5	101.0	103.0	102.0	102.5	105.6	107.1	107.6	114.2	115.2
80°	71.7	72.7	73.2	73.7	74.2	73.2	76.8	78.3	78.3	81.8	84.4
82.5°	46.5	47.0	48.5	49.0	49.0	50.5	50.0	51.0	52.5	53.5	57.1
85°	25.8	27.3	27.8	27.3	27.8	26.8	28.3	28.8	29.3	29.3	29.3
87.5°	10.1	10.6	10.1	10.6	10.1	10.6	10.6	9.6	9.6	11.1	9.1
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: P333933

CATALOG NUMBER: S123DS-S1000D927-4F0-1E-UDD-A

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	1042.5	1042.5	1042.5	1042.5
2.5°	985.4	984.9	988.5	985.9
5°	927.9	929.4	924.3	924.3
7.5°	875.8	873.8	874.3	870.8
10°	828.9	825.8	824.8	825.3
12.5°	790.0	790.0	781.9	781.9
15°	761.2	751.6	750.6	753.6
17.5°	729.4	723.8	724.3	723.3
20°	705.1	702.1	701.6	698.0
22.5°	682.9	682.4	682.9	678.8
25°	665.2	667.7	665.7	665.7
27.5°	653.1	653.1	651.6	651.6
30°	638.9	638.4	639.4	639.4
32.5°	624.8	625.8	625.8	626.3
35°	610.2	610.7	612.2	611.2
37.5°	591.0	593.5	593.0	594.0
40°	568.7	570.3	569.7	569.7
42.5°	546.0	547.0	545.5	544.5
45°	520.8	519.7	521.3	519.2
47.5°	493.0	493.5	494.0	496.0
50°	465.2	468.2	468.2	467.7
52.5°	437.9	438.9	441.5	441.5
55°	409.6	410.6	411.7	412.2
57.5°	380.8	380.3	382.4	382.9
60°	350.0	350.0	354.1	355.6
62.5°	317.2	319.2	323.3	320.2
65°	285.4	289.4	288.9	290.9
67.5°	252.0	254.6	258.6	258.6
70°	218.2	220.7	222.7	224.3
72.5°	185.4	186.4	191.9	188.9
75°	150.5	154.1	157.1	155.6
77.5°	117.2	121.7	122.7	121.2
80°	87.9	87.4	90.4	89.9
82.5°	58.6	58.1	59.1	59.6
85°	31.3	32.8	30.8	30.3
87.5°	9.1	9.1	8.6	8.1
90°	0.0	0.0	0.0	0.0

(END OF REPORT)