

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: P242563

Luminaire Tested: **S123RDR-S1165D927-X4F0-XX-UDD-A-W**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P242563
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-30)
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S123RDR-S1165D927-X4F0-XX-UDD-A-W
Description: DEFINE 3 REGRESSED DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER
STANDARD LIGHT ENGINE
Light Source: (92) 2700K CCT, 90 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3414.7 lumens
Efficiency: N/A
Efficacy: 83.1 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.22 / 1.35
Luminous Opening: Rectangular (W 3.88' x L: 0.23' x H: 0')
CIE Type: Direct

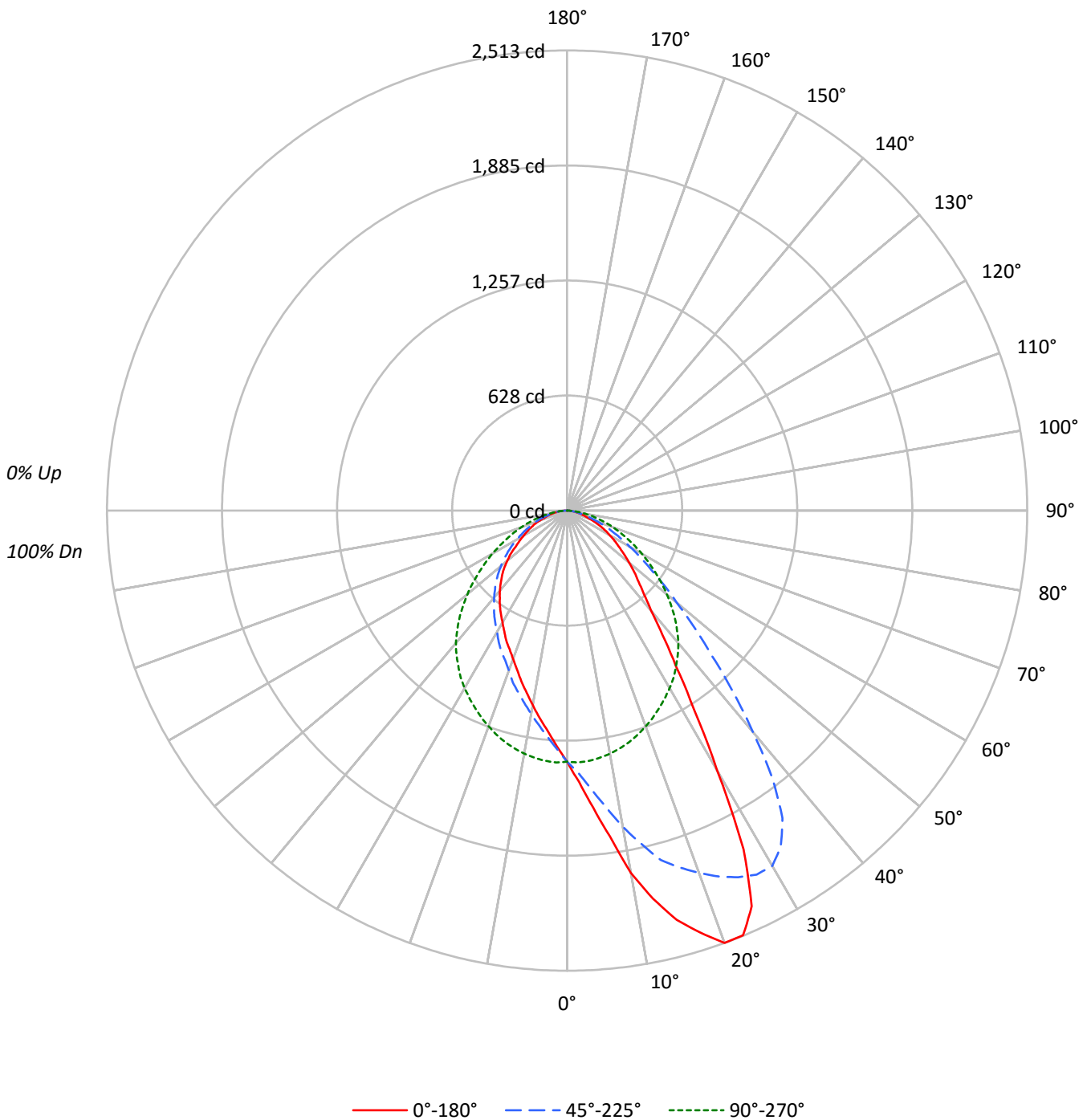
Input Watts (W): 41.1
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	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	100	100	100	100	100		
1	110	106	102	99	108	104	100	97	100	97	94	96	93	91	92	90	89	87	87	87	87	87	87	87		
2	101	94	88	83	99	92	87	82	89	84	80	86	82	78	83	79	77	74	74	74	74	74	74	74		
3	93	84	76	71	91	82	75	70	79	74	69	77	72	68	74	70	66	64	64	64	64	64	64	64		
4	86	75	67	61	84	74	66	61	71	65	60	69	64	59	67	62	58	56	56	56	56	56	56	56		
5	80	68	60	53	78	67	59	53	65	58	53	63	57	52	61	56	52	50	50	50	50	50	50	50		
6	74	62	53	47	72	61	53	47	59	52	47	57	51	46	56	50	46	44	44	44	44	44	44	44		
7	69	56	48	42	67	55	48	42	54	47	42	53	46	42	51	46	41	39	39	39	39	39	39	39		
8	64	52	44	38	63	51	43	38	50	43	38	48	42	38	47	42	37	36	36	36	36	36	36	36		
9	60	48	40	35	59	47	40	35	46	39	34	45	39	34	44	38	34	32	32	32	32	32	32	32		
10	57	44	37	32	55	44	36	32	43	36	31	42	36	31	41	35	31	29	29	29	29	29	29	29		

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	16622	16622	16622
5°	19815	16693	14700
10°	24741	16598	13281
15°	29039	16428	12111
20°	32410	16174	11116
25°	31892	15907	10506
30°	22925	15661	9876
35°	15306	15340	9469
40°	11277	14954	9048
45°	9459	14279	8634
50°	8346	13394	8060
55°	7320	12382	7270
60°	6519	11413	6659
65°	5725	10371	6195
70°	4494	9445	5660
75°	3957	8247	5170
80°	3441	7008	5082
85°	2782	5633	5382



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	134.7	3.9
10°-20°	421.6	12.3
20°-30°	664.0	19.4
30°-40°	690.5	20.2
40°-50°	590.7	17.3
50°-60°	450.2	13.2
60°-70°	288.5	8.4
70°-80°	138.2	4.0
80°-90°	36.3	1.1
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°	1220.2	35.7
0°-40°	1910.7	56.0
0°-60°	2951.7	86.4
0°-90°	3414.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3414.7	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1371	1371	1371	1371	1371	
5°	1628	1528	1372	1239	1208	167
15°	2314	1976	1309	1029	965	657
25°	2385	2210	1189	850	786	1036
35°	1034	2050	1037	694	640	673
45°	552	1113	833	548	504	433
55°	346	555	586	396	344	313
65°	200	274	362	247	216	197
75°	84	99	176	126	110	90
85°	20	22	40	38	39	23
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°	1371.3	1371.3	1371.3	1371.3	1371.3	1371.3	1371.3	1371.3	1371.3	1371.3	1371.3
2.5°	1482.9	1485.2	1477.6	1476.4	1467.6	1465.3	1465.3	1452.9	1445.3	1435.3	1429.5
5°	1628.5	1637.9	1633.2	1622.6	1605.0	1600.9	1589.7	1572.1	1552.2	1527.5	1515.8
7.5°	1795.2	1814.6	1811.0	1794.6	1775.8	1764.1	1733.0	1707.7	1669.6	1634.9	1607.9
10°	2010.1	1996.6	1986.0	1970.1	1953.1	1925.5	1892.6	1847.4	1795.2	1754.1	1708.3
12.5°	2170.9	2171.5	2157.4	2141.0	2115.1	2089.3	2047.0	1989.5	1926.7	1862.7	1808.7
15°	2314.1	2317.7	2308.9	2291.8	2257.8	2211.4	2150.4	2127.5	2040.6	1976.0	1911.4
17.5°	2416.3	2416.9	2415.1	2392.2	2355.2	2323.5	2266.6	2213.2	2131.0	2043.5	1957.2
20°	2512.6	2506.7	2507.9	2481.5	2455.6	2417.5	2362.3	2274.8	2210.2	2105.2	2015.3
22.5°	2510.2	2510.2	2515.5	2510.8	2493.8	2466.8	2426.3	2355.8	2268.9	2162.7	2058.8
25°	2384.6	2379.9	2407.5	2415.1	2445.1	2450.3	2437.4	2396.9	2318.8	2209.7	2084.6
27.5°	2085.2	2068.2	2125.7	2182.7	2258.4	2306.5	2355.8	2367.0	2330.0	2240.8	2109.9
30°	1637.9	1693.1	1718.9	1811.6	1915.0	2038.2	2146.3	2249.0	2274.2	2240.2	2137.4
32.5°	1290.3	1336.7	1357.3	1433.6	1528.1	1677.8	1853.3	2009.5	2131.6	2172.7	2121.0
35°	1034.4	1035.0	1084.3	1119.5	1208.7	1357.3	1514.6	1709.5	1903.2	2050.0	2065.2
37.5°	853.6	855.9	887.6	922.8	994.5	1077.8	1224.0	1388.4	1621.4	1840.4	1954.3
40°	712.7	718.0	740.3	774.9	823.0	882.3	990.4	1143.0	1329.7	1580.3	1785.2
42.5°	622.3	631.7	640.5	665.1	690.4	745.0	827.2	936.3	1101.9	1335.5	1579.8
45°	551.8	556.5	565.3	577.7	604.7	643.4	702.1	781.4	922.3	1113.0	1349.6
47.5°	497.8	494.9	504.9	515.4	533.6	561.8	602.9	671.6	777.3	936.9	1141.8
50°	442.6	442.0	448.5	456.1	473.2	492.5	524.8	573.5	653.4	780.2	963.9
52.5°	391.0	393.9	398.0	408.0	419.2	433.8	462.0	493.7	559.5	664.5	810.1
55°	346.4	348.1	354.6	359.9	368.7	384.5	402.7	432.1	479.0	555.3	681.6
57.5°	307.6	307.0	313.5	314.1	325.2	338.7	353.4	376.3	412.1	472.6	560.6
60°	268.9	267.1	272.4	276.5	281.8	292.4	304.1	326.4	353.4	395.1	467.9
62.5°	233.6	233.1	236.6	240.7	244.8	254.2	263.6	279.4	299.4	332.9	386.9
65°	199.6	201.4	203.1	204.9	207.2	213.1	222.5	234.2	248.9	273.6	315.2
67.5°	164.4	166.7	167.3	171.4	176.1	179.1	184.3	195.5	206.6	228.9	253.6
70°	126.8	126.2	126.8	128.6	135.0	141.5	149.1	156.7	163.2	177.9	197.8
72.5°	104.5	103.3	105.1	105.1	107.4	108.0	112.1	119.2	128.0	136.8	149.7
75°	84.5	84.5	84.5	84.5	86.9	88.1	89.8	91.6	94.5	99.2	109.8
77.5°	65.7	65.7	66.9	67.5	68.1	68.7	69.9	71.6	72.8	75.1	80.4
80°	49.3	49.9	49.3	49.9	49.9	51.1	51.7	53.4	54.0	56.9	58.7
82.5°	34.0	33.5	34.0	34.6	34.6	35.8	35.8	37.0	37.0	38.2	39.9
85°	20.0	18.8	20.0	19.4	20.5	19.4	20.0	21.1	21.1	21.7	24.1
87.5°	5.9	7.0	5.9	6.5	6.5	7.0	7.0	7.0	8.2	7.6	8.2
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°	1371.3	1371.3	1371.3	1371.3	1371.3	1371.3	1371.3	1371.3	1371.3	1371.3	1371.3
2.5°	1427.1	1425.4	1417.1	1407.7	1395.4	1387.2	1380.7	1377.2	1366.7	1353.7	1344.9
5°	1503.4	1485.8	1467.0	1444.1	1423.0	1401.3	1387.8	1371.9	1352.6	1330.8	1315.6
7.5°	1579.2	1548.6	1515.2	1480.5	1445.3	1414.2	1385.4	1362.0	1332.6	1302.7	1282.1
10°	1669.0	1618.5	1566.2	1512.8	1464.1	1418.3	1383.1	1348.5	1311.5	1275.7	1248.7
12.5°	1750.6	1680.1	1617.9	1549.2	1483.5	1426.5	1371.9	1329.7	1283.3	1244.5	1212.8
15°	1816.9	1748.8	1676.0	1576.2	1493.5	1424.2	1362.5	1309.1	1255.1	1208.1	1178.2
17.5°	1886.2	1782.9	1687.2	1609.7	1501.7	1417.7	1345.5	1283.3	1224.6	1176.4	1138.9
20°	1926.1	1826.9	1720.6	1614.4	1508.7	1411.9	1324.4	1253.9	1192.3	1135.9	1101.9
22.5°	1950.2	1834.5	1721.2	1605.0	1491.1	1389.5	1303.2	1224.0	1155.9	1103.1	1059.0
25°	1967.8	1833.9	1710.7	1597.9	1483.5	1374.3	1271.5	1189.4	1117.2	1060.2	1015.6
27.5°	1981.9	1826.9	1685.4	1562.7	1447.1	1336.1	1243.4	1155.3	1083.1	1023.8	975.1
30°	1985.4	1818.1	1655.5	1519.9	1401.9	1302.1	1202.3	1118.9	1041.4	977.4	932.8
32.5°	1990.1	1796.4	1615.0	1468.8	1347.3	1248.7	1160.6	1081.9	1002.1	939.3	893.5
35°	1973.7	1791.1	1573.9	1408.3	1287.4	1191.7	1110.1	1036.7	958.7	897.6	851.2
37.5°	1923.8	1762.3	1532.8	1340.8	1215.8	1127.7	1059.6	992.7	920.5	853.6	810.7
40°	1839.8	1715.4	1483.5	1280.4	1148.3	1057.3	997.4	945.1	875.9	814.2	767.3
42.5°	1714.8	1651.4	1436.5	1217.0	1072.0	985.1	936.9	888.8	830.1	767.3	723.8
45°	1556.3	1566.2	1369.0	1148.9	1002.7	914.6	867.1	833.0	779.0	727.4	682.2
47.5°	1363.7	1447.1	1296.8	1077.2	927.5	844.8	803.1	772.0	734.4	681.0	639.3
50°	1175.9	1309.1	1206.4	1005.0	857.7	775.5	734.4	710.3	678.6	638.7	599.4
52.5°	1002.7	1148.3	1097.2	924.6	781.9	708.6	668.6	649.9	626.4	589.4	554.8
55°	845.9	990.9	976.9	843.6	706.2	638.7	608.2	585.9	568.9	540.7	512.5
57.5°	709.7	850.0	853.0	753.8	640.5	571.8	545.4	527.8	516.0	493.7	466.1
60°	582.4	708.6	733.2	662.8	568.9	510.1	484.3	470.8	462.0	445.0	425.0
62.5°	476.7	579.4	608.2	562.4	500.2	446.2	427.4	414.5	409.2	395.1	378.1
65°	381.0	470.2	497.2	469.1	433.2	389.2	372.8	361.6	356.3	348.1	335.2
67.5°	300.6	369.8	399.2	375.7	362.2	331.1	319.9	313.5	308.8	302.9	291.8
70°	230.1	278.3	308.8	303.5	292.9	278.3	270.6	266.5	261.8	257.1	247.7
72.5°	173.8	203.1	231.3	236.0	227.8	227.8	221.3	220.1	217.8	211.9	207.8
75°	122.7	145.6	165.5	173.2	176.7	179.6	176.7	176.1	175.5	170.8	167.9
77.5°	85.1	99.8	113.3	126.8	131.5	135.6	136.2	138.5	136.8	133.8	132.7
80°	61.6	64.6	73.4	84.5	93.3	96.9	99.2	100.4	99.8	99.2	96.9
82.5°	40.5	42.9	45.8	52.8	59.9	66.3	67.5	66.9	68.7	69.3	67.5
85°	24.1	24.7	25.8	27.0	31.1	37.6	39.3	40.5	41.7	41.7	38.2
87.5°	9.4	8.8	10.0	10.0	11.7	12.3	15.9	18.8	19.4	17.0	17.0
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°	1371.3	1371.3	1371.3	1371.3	1371.3	1371.3	1371.3	1371.3	1371.3	1371.3	1371.3
2.5°	1342.0	1334.4	1329.1	1317.3	1309.7	1301.5	1293.3	1298.6	1298.0	1297.4	1297.4
5°	1302.7	1289.2	1276.8	1261.0	1251.0	1238.7	1229.3	1228.1	1230.5	1222.2	1217.5
7.5°	1265.7	1248.1	1230.5	1214.0	1195.8	1181.7	1172.9	1169.4	1162.9	1157.7	1153.0
10°	1226.3	1204.6	1187.6	1165.9	1145.9	1128.3	1117.2	1109.5	1105.4	1101.3	1093.7
12.5°	1185.8	1164.7	1141.8	1116.6	1097.8	1076.6	1069.0	1060.2	1051.4	1046.7	1035.6
15°	1146.5	1118.9	1096.0	1070.2	1049.1	1029.1	1017.4	1000.3	998.0	992.1	981.5
17.5°	1108.3	1077.8	1044.4	1026.7	1005.6	984.5	965.7	960.4	942.8	936.9	927.0
20°	1061.4	1033.8	1009.7	984.5	949.8	930.5	916.4	908.8	895.3	887.0	881.2
22.5°	1020.9	992.7	963.9	933.4	906.4	884.1	874.7	861.8	855.9	843.6	837.1
25°	982.7	952.2	918.7	887.0	866.5	850.0	833.6	823.0	812.5	807.2	795.5
27.5°	936.3	905.8	873.5	848.9	825.4	809.0	793.1	784.3	770.8	762.0	755.5
30°	899.4	861.8	834.8	813.1	780.8	765.5	754.4	742.6	733.2	723.8	717.4
32.5°	856.5	823.0	797.8	769.6	746.7	729.7	714.4	704.5	696.8	688.0	681.6
35°	811.3	782.5	756.1	729.1	710.9	693.9	676.9	668.1	660.4	652.2	646.3
37.5°	770.2	743.2	718.5	692.7	670.4	655.7	641.6	635.8	625.2	619.3	613.5
40°	732.6	706.2	679.2	654.6	631.1	620.5	608.2	598.2	588.8	584.7	578.2
42.5°	691.5	665.1	643.4	616.4	598.2	582.9	571.8	560.6	554.2	547.7	544.8
45°	651.0	627.6	605.2	578.8	560.6	548.3	535.4	525.4	519.0	514.8	508.4
47.5°	612.3	588.2	565.9	542.4	524.8	510.7	497.2	490.8	482.0	477.3	472.6
50°	569.4	548.3	524.2	503.1	485.5	471.4	460.8	452.0	444.4	437.9	435.0
52.5°	530.1	507.2	487.3	467.9	449.1	432.7	423.3	413.9	408.6	401.0	397.4
55°	486.1	464.4	446.7	427.4	409.2	395.7	383.9	375.7	369.8	361.6	356.9
57.5°	445.6	426.8	405.1	388.0	368.7	358.1	348.1	336.4	329.3	322.9	318.2
60°	404.5	382.2	364.0	348.1	331.7	317.0	308.2	299.4	291.8	285.3	281.2
62.5°	361.6	342.8	325.8	308.2	293.5	281.2	270.6	263.6	257.1	253.6	249.5
65°	317.6	302.3	284.7	270.6	256.5	247.1	238.9	232.5	227.8	224.8	221.3
67.5°	277.1	262.4	246.6	231.9	222.5	214.9	209.0	203.1	200.8	197.2	194.9
70°	237.8	222.5	209.0	198.4	189.0	183.7	180.2	176.1	173.8	169.1	166.7
72.5°	194.9	184.9	176.1	167.9	160.9	156.2	151.5	146.2	142.1	136.8	134.4
75°	160.3	150.3	142.7	136.8	132.1	125.6	119.2	113.9	112.1	110.4	109.8
77.5°	125.0	118.6	112.7	108.0	101.6	95.7	93.9	92.8	92.2	91.0	91.0
80°	93.3	87.5	83.4	77.5	74.0	74.0	74.0	72.8	73.4	73.4	73.4
82.5°	63.4	58.1	56.4	55.2	55.2	55.8	55.8	56.4	55.8	56.9	56.4
85°	35.8	36.4	37.6	37.0	37.6	37.6	38.7	38.2	38.7	37.6	38.7
87.5°	16.4	18.2	18.8	19.4	20.0	19.4	20.0	20.0	20.5	20.5	20.5
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: P242563

CATALOG NUMBER: S123RDR-S1165D927-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	1371.3	1371.3	1371.3	1371.3
2.5°	1290.3	1289.7	1290.3	1288.0
5°	1215.8	1215.2	1213.4	1208.1
7.5°	1148.3	1147.1	1142.4	1143.6
10°	1089.6	1090.2	1083.1	1079.0
12.5°	1032.6	1029.1	1023.8	1019.1
15°	983.9	978.0	963.9	965.1
17.5°	923.4	918.7	918.1	909.9
20°	871.8	868.8	870.0	861.8
22.5°	831.3	828.3	821.9	820.7
25°	791.9	787.2	782.5	785.5
27.5°	752.0	748.5	743.2	743.2
30°	714.4	710.9	708.6	705.6
32.5°	676.3	676.3	671.6	671.6
35°	644.0	640.5	639.3	639.9
37.5°	612.9	608.2	605.8	603.5
40°	578.8	574.1	573.0	571.8
42.5°	540.7	539.5	538.9	536.6
45°	506.6	506.0	502.5	503.7
47.5°	470.2	467.3	465.5	467.3
50°	432.7	431.5	426.2	427.4
52.5°	395.1	389.8	388.6	387.5
55°	352.8	347.5	345.2	344.0
57.5°	311.1	309.4	307.0	308.8
60°	275.3	275.3	275.3	274.7
62.5°	247.7	246.0	245.4	246.6
65°	219.6	219.0	216.6	216.0
67.5°	193.7	191.4	191.4	190.2
70°	163.8	162.6	159.1	159.7
72.5°	131.5	130.3	130.3	129.2
75°	109.2	108.6	108.0	110.4
77.5°	91.0	91.0	91.6	90.4
80°	73.4	73.4	72.8	72.8
82.5°	55.2	55.8	56.4	55.2
85°	38.7	38.2	39.3	38.7
87.5°	21.7	20.5	20.5	21.1
90°	0.0	0.0	0.0	0.0

(END OF REPORT)