

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: P243423

Luminaire Tested: **S123RDR-H1165D927-X4F0-XX-UDD-A-W**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P243423
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-69)
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S123RDR-H1165D927-X4F0-XX-UDD-A-W
Description: DEFINE 3 REGRESSED DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER.
HIGH PERFORMANCE LIGHT ENGINE
Light Source: (184) 2700K CCT, 90 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3362.1 lumens
Efficiency: N/A
Efficacy: 89.2 lumens/watt
Spacing Criteria (0/90/45): 1.28 / 1.22 / 1.4
Luminous Opening: Rectangular (W 3.88' x L: 0.23' x H: 0')
CIE Type: Direct

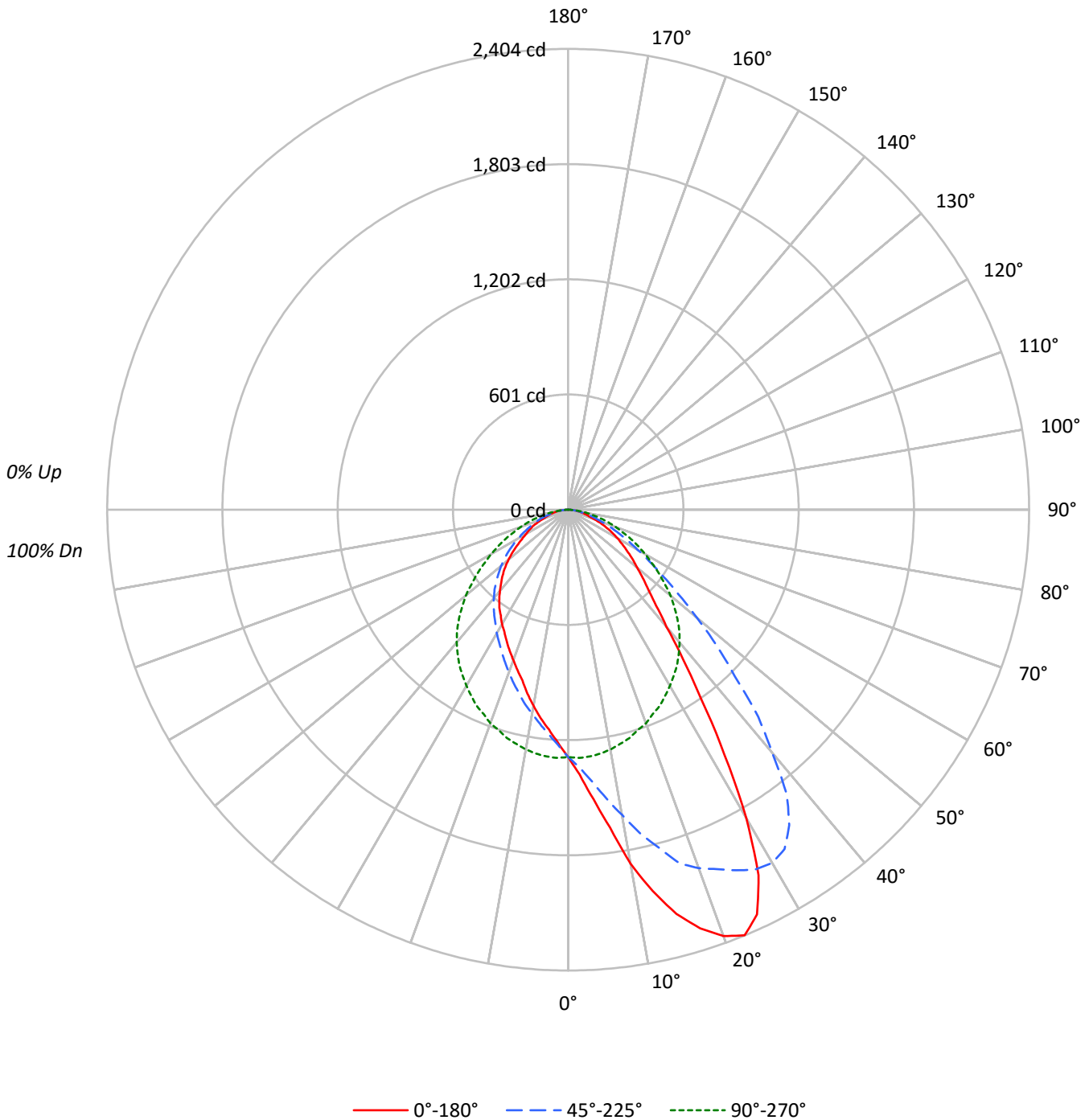
Input Watts (W): 37.7
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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			
1	110	106	102	99	107	104	100	97	99	97	94	96	93	91	92	90	89					87				
2	101	94	88	83	99	92	86	82	89	84	80	85	81	78	82	79	76					74				
3	93	84	76	70	91	82	75	70	79	73	68	76	71	67	74	70	66					64				
4	86	75	67	61	84	74	66	60	71	65	59	69	63	59	67	62	58					56				
5	79	68	59	53	77	66	59	53	64	57	52	62	56	52	61	55	51					49				
6	74	61	53	47	72	60	52	47	59	52	46	57	51	46	55	50	46					44				
7	69	56	48	42	67	55	47	42	54	47	41	52	46	41	51	45	41					39				
8	64	51	43	38	62	51	43	37	49	42	37	48	42	37	47	41	37					35				
9	60	47	39	34	59	47	39	34	45	39	34	44	38	34	43	38	33					32				
10	56	44	36	31	55	43	36	31	42	35	31	41	35	31	40	35	31					29				

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	15640	15640	15640
5°	18439	15727	14005
10°	23082	15635	12782
15°	27392	15479	11578
20°	30528	15293	10780
25°	31161	15104	10148
30°	25966	14847	9653
35°	17939	14642	9250
40°	12606	14307	8763
45°	10124	13801	8290
50°	8825	13144	7669
55°	7912	12162	6828
60°	7159	11236	6187
65°	6264	10354	5785
70°	5054	9321	4898
75°	4384	8116	4800
80°	4042	6924	4823
85°	3560	5577	4186



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	126.5	3.8
10°-20°	398.5	11.9
20°-30°	638.5	19.0
30°-40°	693.2	20.6
40°-50°	593.9	17.7
50°-60°	450.2	13.4
60°-70°	287.7	8.6
70°-80°	137.5	4.1
80°-90°	36.1	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°	1163.5	34.6
0°-40°	1856.7	55.2
0°-60°	2900.7	86.3
0°-90°	3362.1	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3362.1	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1290	1290	1290	1290	1290	
5°	1515	1422	1292	1175	1151	156
15°	2183	1825	1234	991	923	619
25°	2330	2075	1129	820	759	1034
35°	1212	2010	990	672	625	779
45°	591	1230	805	532	484	467
55°	374	603	576	380	323	338
65°	218	290	361	230	202	217
75°	94	114	173	109	102	101
85°	26	27	40	32	30	29
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°	1290.3	1290.3	1290.3	1290.3	1290.3	1290.3	1290.3	1290.3	1290.3	1290.3	1290.3
2.5°	1382.8	1384.5	1381.7	1381.1	1380.6	1371.6	1368.9	1364.4	1348.8	1344.9	1342.1
5°	1515.4	1510.9	1515.9	1506.5	1495.9	1489.8	1479.7	1457.4	1437.9	1422.3	1412.3
7.5°	1672.5	1674.2	1669.2	1660.2	1639.1	1630.2	1602.9	1576.1	1550.5	1518.2	1494.2
10°	1875.3	1861.9	1864.7	1836.9	1814.6	1787.8	1750.5	1707.6	1662.5	1616.8	1582.8
12.5°	2036.9	2046.3	2039.6	2026.3	1983.4	1957.2	1923.2	1860.8	1789.5	1728.2	1676.4
15°	2182.8	2170.0	2171.7	2139.4	2123.8	2099.8	2043.5	1981.7	1935.5	1824.6	1763.3
17.5°	2289.8	2288.7	2287.0	2259.7	2240.8	2190.6	2133.2	2069.7	2011.8	1934.9	1858.0
20°	2366.7	2375.0	2372.8	2350.5	2317.1	2268.6	2234.1	2155.0	2059.7	1989.5	1895.3
22.5°	2403.5	2404.0	2405.1	2394.5	2372.3	2341.1	2292.0	2228.5	2143.8	2029.1	1924.3
25°	2329.9	2332.7	2347.2	2356.1	2362.2	2348.3	2322.7	2265.3	2192.3	2075.3	1966.7
27.5°	2149.4	2158.3	2174.5	2228.0	2249.7	2279.8	2290.4	2267.5	2213.5	2116.0	1992.3
30°	1855.2	1880.3	1895.9	1956.6	2041.9	2122.1	2160.0	2197.3	2192.3	2127.7	2002.3
32.5°	1518.7	1534.9	1580.0	1645.2	1712.6	1830.2	1961.6	2051.9	2102.6	2099.3	2010.7
35°	1212.3	1235.7	1274.2	1323.7	1416.8	1538.8	1687.5	1829.6	1956.6	2009.6	1977.8
37.5°	983.9	986.1	1022.3	1092.5	1150.5	1258.0	1392.3	1567.8	1734.3	1872.5	1903.1
40°	796.7	812.3	831.2	875.2	943.8	1046.8	1136.0	1308.7	1481.4	1654.7	1778.4
42.5°	678.6	678.6	699.8	727.6	773.3	835.1	941.5	1098.1	1253.5	1466.4	1605.6
45°	590.6	596.1	605.6	623.4	655.7	703.7	786.1	892.5	1051.3	1230.1	1439.6
47.5°	527.0	526.5	534.8	545.4	570.5	606.7	655.2	741.5	859.1	1051.9	1236.8
50°	468.0	470.2	476.3	485.3	502.0	527.6	558.2	623.4	722.6	875.2	1069.1
52.5°	422.3	421.7	426.8	432.3	445.1	459.6	486.9	535.4	603.9	725.4	886.4
55°	374.4	376.6	382.7	386.1	396.7	406.1	429.0	456.3	511.4	602.8	749.3
57.5°	333.2	335.9	339.3	342.6	349.9	359.3	378.3	395.0	435.1	500.9	617.9
60°	295.3	294.2	298.1	303.6	307.5	315.9	326.5	343.7	371.6	418.4	504.2
62.5°	257.4	258.0	258.5	261.9	269.1	276.3	285.8	298.6	315.3	349.9	410.6
65°	218.4	219.0	220.1	223.4	230.7	235.1	245.1	256.3	269.7	290.3	332.6
67.5°	183.9	186.1	186.1	188.9	191.7	196.1	203.4	211.7	222.9	237.9	265.2
70°	142.6	142.1	144.9	150.4	153.2	161.0	166.0	171.6	181.6	191.1	214.5
72.5°	114.8	114.8	114.8	117.0	117.6	119.2	122.6	134.3	142.1	151.5	164.4
75°	93.6	94.2	94.2	94.7	95.3	96.9	98.1	101.4	103.6	113.7	121.5
77.5°	74.7	75.2	75.2	75.8	76.3	76.9	79.1	79.1	80.8	83.0	86.4
80°	57.9	57.4	57.4	57.9	57.9	59.6	59.6	60.7	61.3	62.4	64.1
82.5°	41.2	40.7	41.2	40.7	41.2	41.8	42.9	42.3	43.5	44.6	45.1
85°	25.6	26.2	26.2	27.3	26.7	26.2	26.7	26.7	26.7	26.7	27.9
87.5°	11.1	12.3	12.3	11.7	12.3	12.3	11.1	12.3	12.3	12.3	12.8
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°	1290.3	1290.3	1290.3	1290.3	1290.3	1290.3	1290.3	1290.3	1290.3	1290.3	1290.3
2.5°	1340.5	1338.2	1329.9	1322.1	1310.4	1305.4	1298.7	1295.9	1287.0	1274.7	1269.1
5°	1402.8	1386.1	1370.0	1350.5	1334.3	1315.4	1304.8	1292.5	1273.6	1256.3	1244.1
7.5°	1469.1	1444.6	1414.5	1382.2	1353.3	1326.0	1302.6	1283.1	1258.6	1234.6	1215.7
10°	1542.1	1500.3	1451.9	1410.6	1368.9	1329.3	1299.8	1270.3	1238.5	1208.4	1185.6
12.5°	1620.7	1561.6	1503.1	1441.3	1378.9	1333.2	1289.2	1251.3	1215.7	1183.9	1156.6
15°	1702.0	1621.2	1546.6	1476.9	1390.0	1328.8	1280.3	1233.5	1188.9	1149.9	1123.2
17.5°	1760.0	1667.5	1573.3	1474.7	1400.1	1324.3	1264.1	1205.1	1163.8	1123.7	1087.5
20°	1813.5	1708.7	1596.7	1504.8	1400.6	1308.1	1242.4	1185.6	1128.2	1085.3	1054.6
22.5°	1836.3	1741.6	1628.5	1500.9	1396.7	1302.0	1217.3	1153.3	1102.0	1055.2	1015.1
25°	1840.8	1734.9	1619.0	1495.9	1381.7	1279.2	1193.4	1129.3	1062.4	1014.0	982.8
27.5°	1860.3	1715.4	1601.7	1479.2	1363.3	1256.3	1166.1	1094.8	1032.4	980.5	940.4
30°	1865.3	1707.0	1565.0	1448.0	1328.8	1224.0	1132.6	1060.8	992.8	939.9	903.7
32.5°	1867.5	1695.9	1526.5	1398.4	1284.7	1186.1	1102.6	1024.6	959.9	904.2	866.9
35°	1859.7	1680.3	1480.3	1342.1	1232.9	1136.0	1058.5	989.5	917.6	865.2	825.7
37.5°	1829.1	1655.8	1454.1	1276.4	1172.2	1080.8	1015.1	947.1	880.8	824.0	783.3
40°	1771.1	1620.1	1405.1	1221.2	1103.1	1021.2	959.9	904.2	837.4	782.8	742.7
42.5°	1678.6	1571.7	1359.9	1158.8	1034.6	957.1	905.9	858.0	797.8	746.0	702.0
45°	1541.6	1503.7	1299.8	1095.3	959.9	886.9	842.4	805.1	750.5	703.1	662.4
47.5°	1393.4	1401.7	1239.1	1030.7	892.0	822.3	783.3	750.5	709.2	658.5	621.2
50°	1222.3	1268.0	1153.8	965.5	824.0	755.5	717.0	697.0	658.5	616.2	581.1
52.5°	1065.8	1138.2	1067.5	894.2	757.1	689.7	654.1	634.0	608.4	573.3	537.6
55°	903.7	995.6	944.3	817.3	689.2	621.2	591.1	575.5	554.3	527.0	494.7
57.5°	769.4	867.4	835.1	736.5	622.9	561.6	534.8	517.0	504.2	479.1	452.9
60°	637.9	728.7	715.9	643.5	557.1	498.6	478.0	463.5	452.9	434.6	408.9
62.5°	514.8	602.8	610.6	553.8	493.1	440.1	421.2	411.2	402.8	388.3	364.9
65°	408.4	485.8	502.0	458.5	425.6	385.5	367.1	361.0	354.9	338.2	320.3
67.5°	319.8	380.5	401.7	377.2	353.8	330.4	315.9	307.5	303.1	293.0	280.8
70°	244.6	296.9	314.8	304.2	288.6	279.7	268.5	263.0	258.5	245.7	239.0
72.5°	183.3	219.0	241.2	237.9	234.6	228.4	221.7	220.1	213.4	205.0	198.9
75°	134.3	154.9	174.9	182.2	181.1	183.3	176.1	173.3	169.4	163.2	158.2
77.5°	96.4	108.6	122.6	131.5	135.9	136.5	136.5	134.8	132.0	127.6	123.7
80°	66.9	69.6	82.5	90.8	95.3	98.6	98.6	99.2	96.4	94.7	91.9
82.5°	46.2	47.9	50.7	57.4	63.0	66.9	67.4	66.9	65.7	65.2	61.3
85°	29.0	28.4	28.4	30.1	34.5	38.4	39.0	40.1	39.6	39.0	35.1
87.5°	12.3	12.3	12.8	12.3	13.9	14.5	15.6	18.4	17.8	15.0	13.9
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°	1290.3	1290.3	1290.3	1290.3	1290.3	1290.3	1290.3	1290.3	1290.3	1290.3	1290.3
2.5°	1265.8	1258.6	1251.9	1244.6	1235.7	1227.4	1226.2	1225.1	1227.9	1222.3	1220.1
5°	1234.6	1220.7	1210.1	1196.7	1187.2	1175.0	1168.3	1166.6	1166.1	1162.7	1158.3
7.5°	1200.6	1185.6	1170.5	1155.5	1139.9	1127.1	1119.8	1115.9	1112.6	1107.0	1102.6
10°	1168.9	1149.9	1133.8	1113.1	1096.4	1079.7	1073.0	1067.5	1064.1	1056.3	1050.2
12.5°	1133.2	1109.2	1091.4	1069.1	1054.1	1039.6	1029.0	1018.4	1010.6	998.9	993.9
15°	1102.0	1076.9	1046.8	1033.5	1012.3	990.6	978.9	978.9	962.7	953.2	947.1
17.5°	1060.2	1038.5	1017.3	990.0	959.9	947.1	933.7	922.0	910.9	908.1	897.0
20°	1023.4	997.8	976.1	946.6	919.3	904.2	888.6	875.8	867.4	859.6	853.5
22.5°	987.2	961.6	928.2	899.2	880.8	860.8	844.0	832.9	825.7	814.0	808.4
25°	949.3	918.7	888.6	860.2	837.4	820.1	802.8	796.7	783.9	777.8	770.0
27.5°	911.5	874.7	846.3	821.8	796.1	779.4	767.7	756.6	745.4	742.1	737.6
30°	869.1	835.1	807.8	783.9	759.4	744.9	731.0	720.9	711.5	704.2	699.2
32.5°	826.8	798.4	772.2	744.3	722.0	706.4	694.7	685.8	681.4	669.1	664.7
35°	787.8	758.8	731.0	704.8	686.9	671.9	661.3	653.0	643.5	635.7	631.2
37.5°	747.7	721.5	693.1	670.8	650.7	638.5	626.8	615.6	608.4	603.9	598.4
40°	708.7	680.8	659.1	634.6	616.7	602.8	590.6	582.2	573.3	569.4	562.1
42.5°	671.9	645.2	620.1	597.8	581.6	568.3	556.6	547.1	539.9	532.6	528.7
45°	629.6	606.2	583.3	561.0	546.0	531.5	518.7	510.3	500.3	494.2	491.9
47.5°	593.9	569.4	544.9	524.3	508.7	493.1	482.5	472.4	464.1	458.0	454.6
50°	551.6	528.7	508.7	488.0	473.0	456.3	443.5	434.0	424.5	420.1	414.5
52.5°	515.3	493.1	468.5	450.2	432.9	418.4	406.7	398.9	390.5	383.9	380.0
55°	470.2	448.5	429.0	409.5	392.2	380.5	371.0	357.7	350.4	343.7	333.2
57.5°	430.7	410.0	389.4	370.5	354.3	340.4	328.7	319.8	310.3	305.3	298.1
60°	388.9	367.1	348.2	333.7	315.9	300.8	293.0	282.5	274.7	266.9	264.6
62.5°	347.6	327.6	308.6	293.6	277.4	265.8	255.7	250.7	242.9	236.8	234.6
65°	304.7	288.0	270.2	253.5	243.5	230.1	224.5	216.2	211.7	208.9	208.4
67.5°	262.4	247.4	231.2	218.4	208.9	200.0	193.3	190.0	185.5	182.2	179.4
70°	224.0	209.5	195.6	185.0	177.7	171.0	166.6	160.5	156.0	151.5	145.4
72.5°	186.1	174.4	162.7	154.3	147.1	143.2	137.1	127.6	123.1	122.0	121.5
75°	151.0	138.2	129.8	125.4	118.7	109.2	105.3	104.2	103.6	102.5	102.5
77.5°	116.4	108.6	103.1	93.6	90.3	89.7	86.9	86.4	85.2	85.8	85.8
80°	84.7	80.2	73.5	70.8	69.6	70.2	69.1	69.6	68.5	69.1	68.0
82.5°	56.3	52.4	53.5	51.8	51.8	52.9	52.4	50.7	50.7	50.1	50.1
85°	33.4	32.9	34.0	34.0	33.4	31.8	32.9	32.3	30.6	31.2	31.2
87.5°	14.5	14.5	14.5	13.9	14.5	13.9	13.9	13.9	12.3	12.3	12.3
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: P243423

CATALOG NUMBER: S123RDR-H1165D927-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	1290.3	1290.3	1290.3	1290.3
2.5°	1221.2	1220.1	1218.4	1216.8
5°	1158.3	1153.3	1152.7	1151.0
7.5°	1099.2	1097.0	1093.1	1097.5
10°	1045.2	1046.8	1042.9	1038.5
12.5°	988.9	985.6	979.4	982.8
15°	939.3	933.7	930.4	922.6
17.5°	887.5	883.0	883.0	878.0
20°	842.4	837.9	839.0	835.7
22.5°	804.5	801.2	796.1	796.7
25°	768.8	763.8	758.3	758.8
27.5°	729.3	724.8	723.7	719.8
30°	694.2	690.3	689.7	689.7
32.5°	660.2	658.5	655.7	654.1
35°	630.7	628.4	624.0	625.1
37.5°	593.9	591.7	591.1	590.6
40°	559.4	557.7	553.2	553.8
42.5°	524.8	522.0	519.2	518.1
45°	487.5	486.9	482.5	483.6
47.5°	451.8	450.7	448.5	445.7
50°	412.3	411.7	410.0	406.7
52.5°	373.8	372.2	368.8	365.5
55°	330.4	325.4	325.9	323.1
57.5°	294.7	292.5	288.0	286.4
60°	260.2	258.0	257.4	255.2
62.5°	231.2	229.0	227.3	227.3
65°	205.0	202.2	201.7	201.7
67.5°	176.1	173.3	172.7	171.6
70°	139.8	139.3	138.2	138.2
72.5°	120.3	119.8	120.3	118.1
75°	102.5	102.0	102.0	102.5
77.5°	85.2	85.2	84.7	84.7
80°	67.4	68.0	67.4	69.1
82.5°	50.7	49.6	50.1	49.0
85°	31.2	31.2	30.1	30.1
87.5°	12.3	12.3	12.3	12.3
90°	0.0	0.0	0.0	0.0

(END OF REPORT)