

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: P242591

Luminaire Tested: **S123RDR-S775D940-X4F0-XX-UDD-A-W**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P242591  
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-S775D940-X4F0-XX-UDD-A-W  
Description: DEFINE 3 REGRESSED DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER  
STANDARD LIGHT ENGINE  
Light Source: (92) 4000K CCT, 90 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 2593.4 lumens  
Efficiency: N/A  
Efficacy: 98.2 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

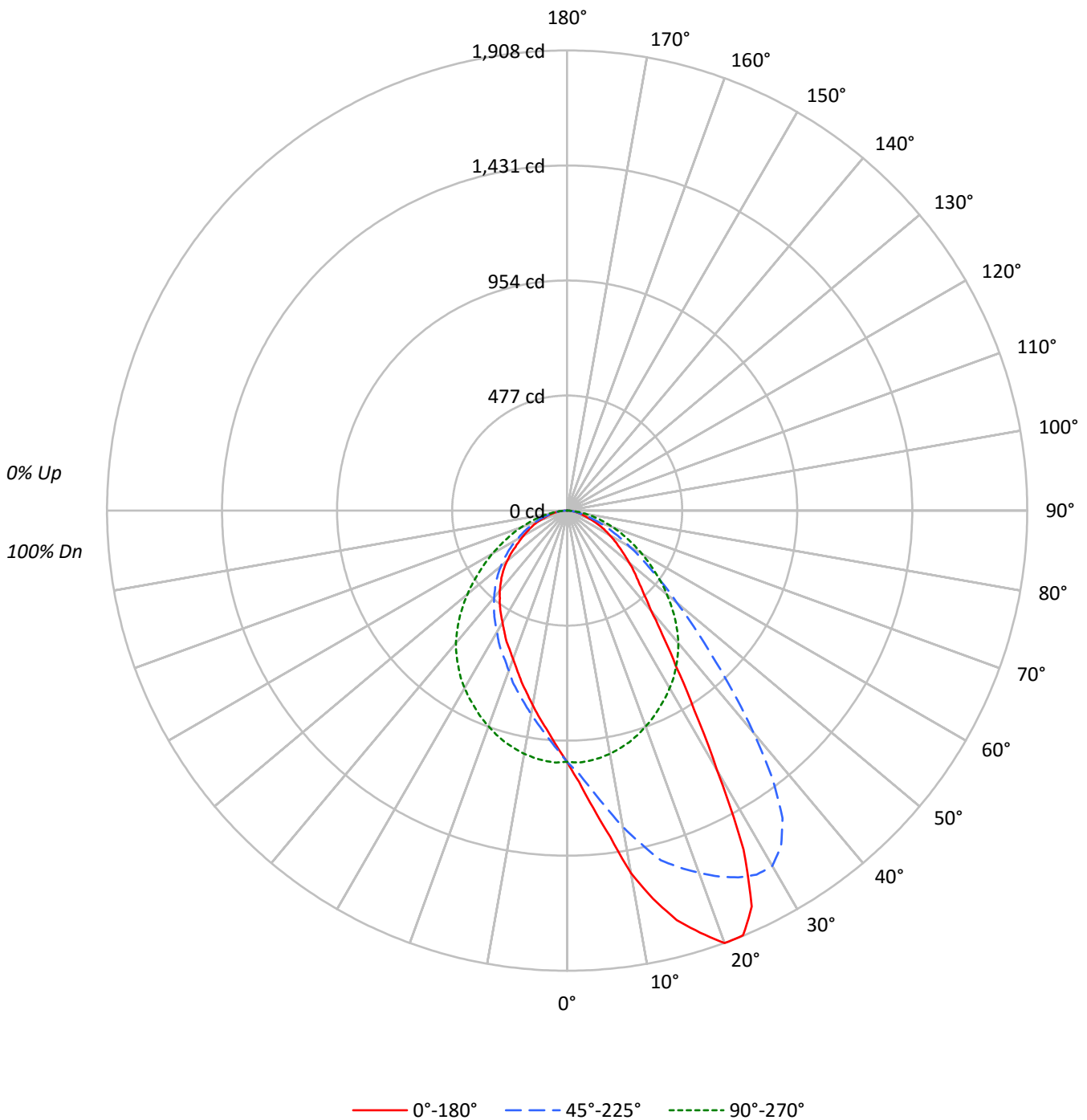
Input Watts (W): 26.4  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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°	12624	12624	12624
5°	15049	12679	11165
10°	18790	12606	10087
15°	22056	12477	9198
20°	24615	12285	8442
25°	24222	12081	7979
30°	17412	11894	7501
35°	11625	11651	7191
40°	8565	11358	6872
45°	7184	10846	6559
50°	6340	10174	6121
55°	5560	9404	5522
60°	4950	8669	5059
65°	4348	7879	4707
70°	3413	7173	4299
75°	3007	6266	3925
80°	2618	5319	3860
85°	2114	4284	4089



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	102.3	3.9
10°-20°	320.2	12.3
20°-30°	504.3	19.4
30°-40°	524.4	20.2
40°-50°	448.7	17.3
50°-60°	341.9	13.2
60°-70°	219.1	8.4
70°-80°	105.0	4.0
80°-90°	27.6	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°	926.8	35.7
0°-40°	1451.2	56.0
0°-60°	2241.8	86.4
0°-90°	2593.4	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2593.4	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	1042	1042	1042	1042	1042	
5°	1237	1160	1042	941	918	127
15°	1758	1501	994	782	733	499
25°	1811	1678	903	646	597	787
35°	786	1557	787	527	486	511
45°	419	845	633	416	383	329
55°	263	422	445	300	261	237
65°	152	208	275	188	164	149
75°	64	75	134	95	84	69
85°	15	16	31	28	29	17
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°	1041.5	1041.5	1041.5	1041.5	1041.5	1041.5	1041.5	1041.5	1041.5	1041.5	1041.5
2.5°	1126.3	1128.0	1122.2	1121.3	1114.7	1112.9	1112.9	1103.5	1097.7	1090.1	1085.7
5°	1236.8	1244.0	1240.4	1232.4	1219.0	1215.9	1207.4	1194.0	1178.9	1160.1	1151.2
7.5°	1363.5	1378.2	1375.5	1363.0	1348.7	1339.8	1316.2	1297.0	1268.0	1241.7	1221.2
10°	1526.6	1516.4	1508.4	1496.3	1483.4	1462.4	1437.5	1403.1	1363.5	1332.2	1297.5
12.5°	1648.8	1649.3	1638.6	1626.1	1606.4	1586.8	1554.7	1511.0	1463.3	1414.7	1373.7
15°	1757.6	1760.3	1753.6	1740.7	1714.8	1679.6	1633.2	1615.8	1549.8	1500.8	1451.7
17.5°	1835.2	1835.6	1834.3	1816.9	1788.8	1764.7	1721.5	1680.9	1618.5	1552.1	1486.5
20°	1908.3	1903.8	1904.7	1884.7	1865.1	1836.1	1794.2	1727.7	1678.7	1598.9	1530.7
22.5°	1906.5	1906.5	1910.5	1907.0	1894.0	1873.5	1842.8	1789.3	1723.3	1642.6	1563.6
25°	1811.1	1807.5	1828.5	1834.3	1857.0	1861.0	1851.2	1820.5	1761.2	1678.2	1583.3
27.5°	1583.7	1570.8	1614.5	1657.7	1715.2	1751.8	1789.3	1797.7	1769.6	1701.9	1602.4
30°	1244.0	1285.9	1305.5	1375.9	1454.4	1548.0	1630.1	1708.1	1727.3	1701.4	1623.4
32.5°	980.0	1015.2	1030.8	1088.8	1160.6	1274.3	1407.6	1526.2	1618.9	1650.1	1610.9
35°	785.6	786.1	823.5	850.3	918.0	1030.8	1150.3	1298.4	1445.5	1557.0	1568.6
37.5°	648.3	650.1	674.1	700.9	755.3	818.6	929.6	1054.5	1231.5	1397.8	1484.3
40°	541.3	545.3	562.2	588.5	625.1	670.1	752.2	868.1	1009.9	1200.3	1355.9
42.5°	472.6	479.8	486.4	505.2	524.3	565.8	628.2	711.2	836.9	1014.3	1199.8
45°	419.1	422.7	429.4	438.7	459.2	488.7	533.3	593.4	700.5	845.4	1025.0
47.5°	378.1	375.9	383.4	391.5	405.3	426.7	457.9	510.1	590.3	711.6	867.2
50°	336.2	335.7	340.6	346.4	359.4	374.1	398.6	435.6	496.2	592.6	732.1
52.5°	296.9	299.2	302.3	309.9	318.3	329.5	350.9	375.0	424.9	504.7	615.3
55°	263.1	264.4	269.3	273.3	280.0	292.0	305.9	328.2	363.8	421.8	517.6
57.5°	233.6	233.2	238.1	238.5	247.0	257.3	268.4	285.8	313.0	358.9	425.8
60°	204.2	202.9	206.9	210.0	214.0	222.0	231.0	247.9	268.4	300.1	355.4
62.5°	177.5	177.0	179.7	182.8	185.9	193.1	200.2	212.2	227.4	252.8	293.8
65°	151.6	152.9	154.3	155.6	157.4	161.8	169.0	177.9	189.0	207.8	239.4
67.5°	124.8	126.6	127.1	130.2	133.8	136.0	140.0	148.5	156.9	173.9	192.6
70°	96.3	95.9	96.3	97.6	102.5	107.5	113.2	119.0	124.0	135.1	150.3
72.5°	79.4	78.5	79.8	79.8	81.6	82.0	85.2	90.5	97.2	103.9	113.7
75°	64.2	64.2	64.2	64.2	66.0	66.9	68.2	69.6	71.8	75.4	83.4
77.5°	49.9	49.9	50.8	51.3	51.7	52.2	53.1	54.4	55.3	57.1	61.1
80°	37.5	37.9	37.5	37.9	37.9	38.8	39.2	40.6	41.0	43.2	44.6
82.5°	25.9	25.4	25.9	26.3	26.3	27.2	27.2	28.1	28.1	29.0	30.3
85°	15.2	14.3	15.2	14.7	15.6	14.7	15.2	16.1	16.1	16.5	18.3
87.5°	4.5	5.4	4.5	4.9	4.9	5.4	5.4	5.4	6.2	5.8	6.2
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°	1041.5	1041.5	1041.5	1041.5	1041.5	1041.5	1041.5	1041.5	1041.5	1041.5	1041.5
2.5°	1083.9	1082.6	1076.3	1069.2	1059.8	1053.6	1048.7	1046.0	1038.0	1028.2	1021.5
5°	1141.9	1128.5	1114.2	1096.8	1080.8	1064.3	1054.0	1042.0	1027.3	1010.8	999.2
7.5°	1199.4	1176.2	1150.8	1124.5	1097.7	1074.1	1052.2	1034.4	1012.1	989.4	973.8
10°	1267.6	1229.2	1189.6	1149.0	1112.0	1077.2	1050.5	1024.2	996.1	968.9	948.4
12.5°	1329.6	1276.1	1228.8	1176.6	1126.7	1083.5	1042.0	1009.9	974.7	945.2	921.2
15°	1380.0	1328.2	1272.9	1197.1	1134.3	1081.7	1034.9	994.3	953.3	917.6	894.8
17.5°	1432.6	1354.1	1281.4	1222.6	1140.5	1076.8	1021.9	974.7	930.1	893.5	865.0
20°	1462.9	1387.5	1306.8	1226.1	1145.9	1072.3	1005.9	952.4	905.6	862.7	836.9
22.5°	1481.2	1393.3	1307.3	1219.0	1132.5	1055.4	989.8	929.6	877.9	837.8	804.3
25°	1494.5	1392.9	1299.2	1213.6	1126.7	1043.8	965.7	903.3	848.5	805.2	771.3
27.5°	1505.2	1387.5	1280.1	1186.9	1099.1	1014.8	944.3	877.5	822.6	777.6	740.6
30°	1507.9	1380.8	1257.3	1154.3	1064.7	988.9	913.1	849.8	791.0	742.4	708.5
32.5°	1511.5	1364.3	1226.6	1115.6	1023.3	948.4	881.5	821.7	761.1	713.4	678.6
35°	1499.0	1360.3	1195.4	1069.6	977.8	905.1	843.1	787.4	728.1	681.7	646.5
37.5°	1461.1	1338.5	1164.2	1018.4	923.4	856.5	804.8	754.0	699.1	648.3	615.7
40°	1397.3	1302.8	1126.7	972.4	872.1	803.0	757.5	717.8	665.2	618.4	582.7
42.5°	1302.4	1254.2	1091.0	924.3	814.1	748.2	711.6	675.0	630.5	582.7	549.8
45°	1182.0	1189.6	1039.8	872.6	761.5	694.7	658.5	632.7	591.7	552.4	518.1
47.5°	1035.7	1099.1	984.9	818.2	704.5	641.6	609.9	586.3	557.8	517.2	485.5
50°	893.1	994.3	916.3	763.3	651.4	589.0	557.8	539.5	515.4	485.1	455.2
52.5°	761.5	872.1	833.3	702.2	593.9	538.2	507.8	493.6	475.7	447.6	421.3
55°	642.5	752.6	741.9	640.7	536.4	485.1	461.9	445.0	432.0	410.6	389.2
57.5°	539.0	645.6	647.8	572.5	486.4	434.3	414.2	400.8	391.9	375.0	354.0
60°	442.3	538.2	556.9	503.4	432.0	387.5	367.8	357.6	350.9	338.0	322.8
62.5°	362.0	440.1	461.9	427.1	379.9	338.9	324.6	314.8	310.8	300.1	287.1
65°	289.4	357.1	377.6	356.2	329.0	295.6	283.1	274.7	270.6	264.4	254.6
67.5°	228.3	280.9	303.2	285.4	275.1	251.5	243.0	238.1	234.5	230.1	221.6
70°	174.8	211.3	234.5	230.5	222.5	211.3	205.5	202.4	198.9	195.3	188.2
72.5°	132.0	154.3	175.7	179.2	173.0	173.0	168.1	167.2	165.4	161.0	157.8
75°	93.2	110.6	125.7	131.5	134.2	136.4	134.2	133.8	133.3	129.7	127.5
77.5°	64.7	75.8	86.1	96.3	99.9	103.0	103.4	105.2	103.9	101.7	100.8
80°	46.8	49.0	55.7	64.2	70.9	73.6	75.4	76.2	75.8	75.4	73.6
82.5°	30.8	32.5	34.8	40.1	45.5	50.4	51.3	50.8	52.2	52.6	51.3
85°	18.3	18.7	19.6	20.5	23.6	28.5	29.9	30.8	31.7	31.7	29.0
87.5°	7.1	6.7	7.6	7.6	8.9	9.4	12.0	14.3	14.7	12.9	12.9
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°	1041.5	1041.5	1041.5	1041.5	1041.5	1041.5	1041.5	1041.5	1041.5	1041.5	1041.5
2.5°	1019.2	1013.4	1009.4	1000.5	994.7	988.5	982.2	986.3	985.8	985.4	985.4
5°	989.4	979.1	969.8	957.7	950.1	940.8	933.6	932.7	934.5	928.3	924.7
7.5°	961.3	947.9	934.5	922.0	908.2	897.5	890.8	888.2	883.3	879.2	875.7
10°	931.4	914.9	902.0	885.5	870.3	857.0	848.5	842.7	839.6	836.4	830.6
12.5°	900.6	884.6	867.2	848.0	833.8	817.7	811.9	805.2	798.5	795.0	786.5
15°	870.8	849.8	832.4	812.8	796.8	781.6	772.7	759.8	758.0	753.5	745.5
17.5°	841.8	818.6	793.2	779.8	763.8	747.7	733.4	729.4	716.1	711.6	704.0
20°	806.1	785.2	766.9	747.7	721.4	706.7	696.0	690.2	679.9	673.7	669.2
22.5°	775.4	754.0	732.1	708.9	688.4	671.5	664.3	654.5	650.1	640.7	635.8
25°	746.4	723.2	697.8	673.7	658.1	645.6	633.1	625.1	617.1	613.1	604.1
27.5°	711.2	688.0	663.4	644.7	626.9	614.4	602.4	595.7	585.4	578.7	573.8
30°	683.1	654.5	634.0	617.5	593.0	581.4	572.9	564.0	556.9	549.8	544.8
32.5°	650.5	625.1	605.9	584.5	567.1	554.2	542.6	535.0	529.2	522.6	517.6
35°	616.2	594.3	574.3	553.8	539.9	527.0	514.1	507.4	501.6	495.4	490.9
37.5°	585.0	564.5	545.7	526.1	509.2	498.0	487.3	482.9	474.8	470.4	465.9
40°	556.4	536.4	515.9	497.1	479.3	471.3	461.9	454.3	447.2	444.1	439.2
42.5°	525.2	505.2	488.7	468.2	454.3	442.7	434.3	425.8	420.9	416.0	413.8
45°	494.5	476.6	459.7	439.6	425.8	416.4	406.6	399.0	394.1	391.0	386.1
47.5°	465.0	446.8	429.8	412.0	398.6	387.9	377.6	372.7	366.1	362.5	358.9
50°	432.5	416.4	398.2	382.1	368.7	358.0	350.0	343.3	337.5	332.6	330.4
52.5°	402.6	385.2	370.1	355.4	341.1	328.6	321.5	314.3	310.3	304.5	301.9
55°	369.2	352.7	339.3	324.6	310.8	300.5	291.6	285.4	280.9	274.7	271.1
57.5°	338.4	324.1	307.6	294.7	280.0	272.0	264.4	255.5	250.1	245.2	241.7
60°	307.2	290.3	276.4	264.4	251.9	240.8	234.1	227.4	221.6	216.7	213.6
62.5°	274.7	260.4	247.5	234.1	222.9	213.6	205.5	200.2	195.3	192.6	189.5
65°	241.2	229.6	216.2	205.5	194.8	187.7	181.5	176.6	173.0	170.8	168.1
67.5°	210.4	199.3	187.3	176.1	169.0	163.2	158.7	154.3	152.5	149.8	148.0
70°	180.6	169.0	158.7	150.7	143.6	139.6	136.9	133.8	132.0	128.4	126.6
72.5°	148.0	140.4	133.8	127.5	122.2	118.6	115.0	111.0	107.9	103.9	102.1
75°	121.7	114.1	108.3	103.9	100.3	95.4	90.5	86.5	85.2	83.8	83.4
77.5°	95.0	90.1	85.6	82.0	77.1	72.7	71.3	70.4	70.0	69.1	69.1
80°	70.9	66.4	63.3	58.9	56.2	56.2	56.2	55.3	55.7	55.7	55.7
82.5°	48.2	44.1	42.8	41.9	41.9	42.4	42.4	42.8	42.4	43.2	42.8
85°	27.2	27.6	28.5	28.1	28.5	28.5	29.4	29.0	29.4	28.5	29.4
87.5°	12.5	13.8	14.3	14.7	15.2	14.7	15.2	15.2	15.6	15.6	15.6
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: P242591

CATALOG NUMBER: S123RDR-S775D940-X4F0-XX-UDD-A-W

**CANDELA DISTRIBUTION (continued):**

	165°	170°	175°	180°
0°	1041.5	1041.5	1041.5	1041.5
2.5°	980.0	979.6	980.0	978.2
5°	923.4	922.9	921.6	917.6
7.5°	872.1	871.2	867.7	868.5
10°	827.5	828.0	822.6	819.5
12.5°	784.3	781.6	777.6	774.0
15°	747.3	742.8	732.1	733.0
17.5°	701.3	697.8	697.3	691.1
20°	662.1	659.9	660.8	654.5
22.5°	631.3	629.1	624.2	623.3
25°	601.5	597.9	594.3	596.6
27.5°	571.2	568.5	564.5	564.5
30°	542.6	539.9	538.2	535.9
32.5°	513.6	513.6	510.1	510.1
35°	489.1	486.4	485.5	486.0
37.5°	465.5	461.9	460.1	458.3
40°	439.6	436.1	435.2	434.3
42.5°	410.6	409.7	409.3	407.5
45°	384.8	384.3	381.7	382.6
47.5°	357.1	354.9	353.6	354.9
50°	328.6	327.7	323.7	324.6
52.5°	300.1	296.1	295.2	294.3
55°	268.0	264.0	262.2	261.3
57.5°	236.3	235.0	233.2	234.5
60°	209.1	209.1	209.1	208.7
62.5°	188.2	186.8	186.4	187.3
65°	166.8	166.3	164.5	164.1
67.5°	147.1	145.4	145.4	144.5
70°	124.4	123.5	120.8	121.3
72.5°	99.9	99.0	99.0	98.1
75°	82.9	82.5	82.0	83.8
77.5°	69.1	69.1	69.6	68.7
80°	55.7	55.7	55.3	55.3
82.5°	41.9	42.4	42.8	41.9
85°	29.4	29.0	29.9	29.4
87.5°	16.5	15.6	15.6	16.1
90°	0.0	0.0	0.0	0.0

(END OF REPORT)