

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: P243431

Luminaire Tested: **S123RDR-H775D835-X4F0-XX-UDD-A-W**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P243431
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-H775D835-X4F0-XX-UDD-A-W
Description: DEFINE 3 REGRESSED DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER.
HIGH PERFORMANCE LIGHT ENGINE
Light Source: (184) 3500K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2817.1 lumens
Efficiency: N/A
Efficacy: 119.4 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

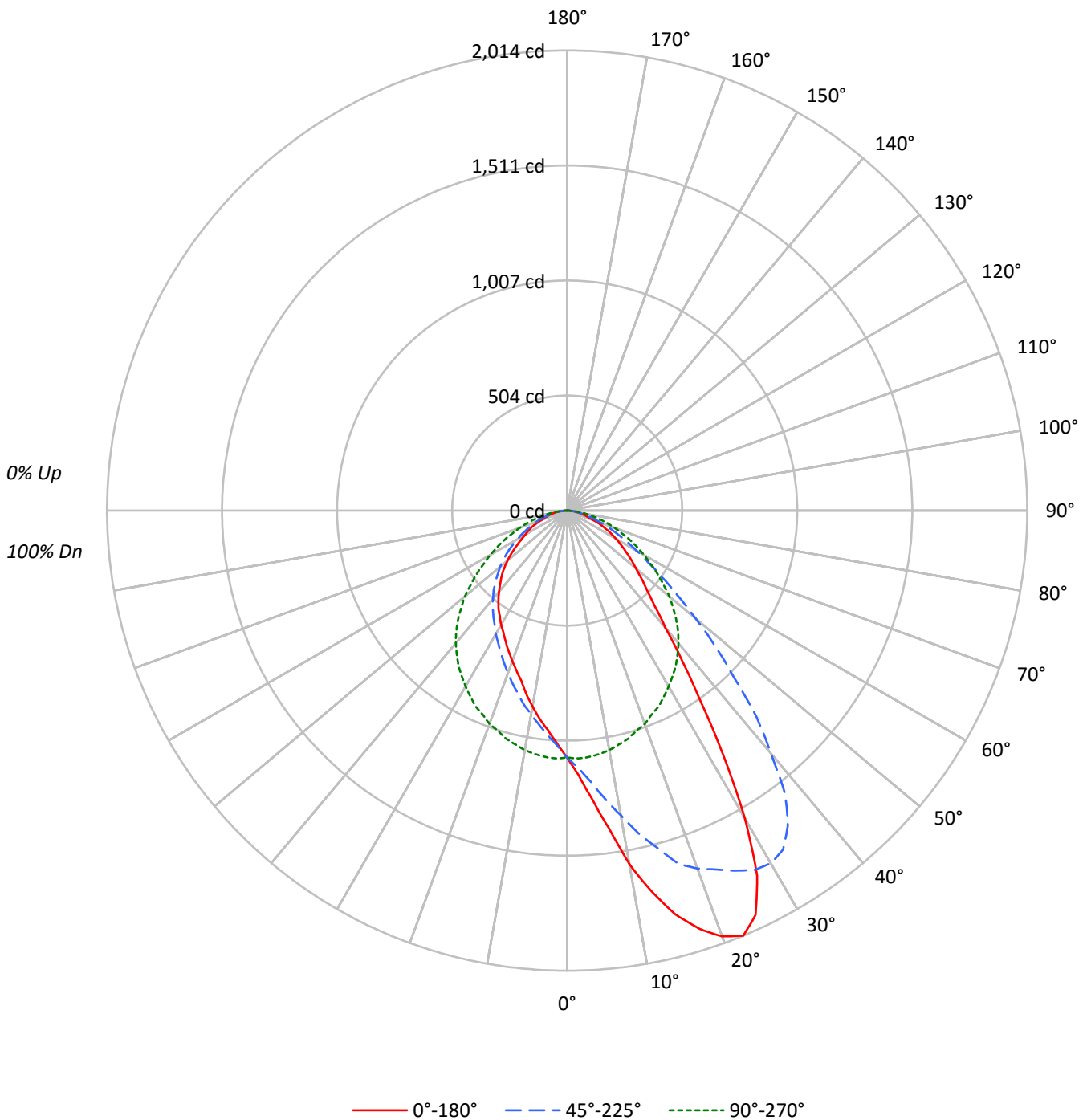
Input Watts (W): 23.6
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P243431

CATALOG NUMBER: S123RDR-H775D835-X4F0-XX-UDD-A-W

Luminous Intensity Polar Plot





TEST NUMBER: P243431

CATALOG NUMBER: S123RDR-H775D835-X4F0-XX-UDD-A-W

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

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	13105	13105	13105
5°	15450	13177	11736
10°	19340	13101	10711
15°	22952	12969	9701
20°	25580	12814	9032
25°	26111	12656	8503
30°	21757	12440	8089
35°	15031	12268	7751
40°	10564	11989	7342
45°	8482	11564	6946
50°	7394	11013	6427
55°	6629	10190	5723
60°	5998	9416	5183
65°	5249	8676	4847
70°	4235	7807	4104
75°	3672	6800	4023
80°	3385	5801	4042
85°	2990	4673	3505



TEST NUMBER: P243431

CATALOG NUMBER: S123RDR-H775D835-X4F0-XX-UDD-A-W

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	106.0	3.8
10°-20°	333.9	11.9
20°-30°	535.0	19.0
30°-40°	580.8	20.6
40°-50°	497.6	17.7
50°-60°	377.2	13.4
60°-70°	241.0	8.6
70°-80°	115.3	4.1
80°-90°	30.3	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°	974.9	34.6
0°-40°	1555.8	55.2
0°-60°	2430.6	86.3
0°-90°	2817.1	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2817.1	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1081	1081	1081	1081	1081	
5°	1270	1192	1083	984	964	130
15°	1829	1529	1034	830	773	518
25°	1952	1739	946	687	636	866
35°	1016	1684	829	563	524	652
45°	495	1031	675	445	405	391
55°	314	505	482	319	271	283
65°	183	243	302	193	169	182
75°	78	95	145	92	86	85
85°	22	22	34	27	25	24
90°	0	0	0	0	0	



TEST NUMBER: P243431

CATALOG NUMBER: S123RDR-H775D835-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1081.2	1081.2	1081.2	1081.2	1081.2	1081.2	1081.2	1081.2	1081.2	1081.2	1081.2
2.5°	1158.7	1160.1	1157.7	1157.3	1156.8	1149.3	1147.0	1143.2	1130.2	1126.9	1124.6
5°	1269.8	1266.0	1270.2	1262.3	1253.4	1248.3	1239.9	1221.2	1204.9	1191.8	1183.4
7.5°	1401.4	1402.8	1398.6	1391.1	1373.4	1365.9	1343.0	1320.6	1299.2	1272.1	1252.0
10°	1571.3	1560.1	1562.5	1539.1	1520.4	1498.0	1466.8	1430.8	1393.0	1354.7	1326.2
12.5°	1706.7	1714.6	1709.0	1697.8	1661.9	1639.9	1611.5	1559.2	1499.4	1448.1	1404.7
15°	1829.0	1818.3	1819.7	1792.6	1779.5	1759.5	1712.3	1660.5	1621.7	1528.8	1477.5
17.5°	1918.6	1917.7	1916.3	1893.4	1877.6	1835.5	1787.5	1734.2	1685.7	1621.3	1556.9
20°	1983.1	1990.1	1988.2	1969.5	1941.5	1900.9	1872.0	1805.7	1725.8	1667.0	1588.1
22.5°	2013.9	2014.3	2015.3	2006.4	1987.7	1961.6	1920.5	1867.3	1796.3	1700.2	1612.4
25°	1952.3	1954.6	1966.7	1974.2	1979.3	1967.7	1946.2	1898.1	1836.9	1738.9	1647.9
27.5°	1801.0	1808.5	1822.0	1866.8	1885.0	1910.2	1919.1	1900.0	1854.7	1773.0	1669.4
30°	1554.5	1575.5	1588.6	1639.5	1710.9	1778.1	1809.9	1841.1	1836.9	1782.8	1677.8
32.5°	1272.6	1286.1	1323.9	1378.5	1435.0	1533.5	1643.7	1719.3	1761.8	1759.0	1684.8
35°	1015.8	1035.4	1067.6	1109.2	1187.1	1289.4	1414.0	1533.0	1639.5	1683.8	1657.2
37.5°	824.4	826.3	856.6	915.4	964.0	1054.1	1166.6	1313.6	1453.2	1569.0	1594.7
40°	667.6	680.6	696.5	733.4	790.8	877.2	951.9	1096.6	1241.3	1386.5	1490.1
42.5°	568.6	568.6	586.3	609.7	648.0	699.8	788.9	920.1	1050.4	1228.7	1345.4
45°	494.8	499.5	507.4	522.4	549.5	589.6	658.7	747.9	880.9	1030.7	1206.3
47.5°	441.6	441.1	448.2	457.0	478.0	508.4	549.0	621.3	719.8	881.4	1036.3
50°	392.1	394.0	399.1	406.6	420.6	442.1	467.8	522.4	605.5	733.4	895.8
52.5°	353.9	353.4	357.6	362.3	373.0	385.1	408.0	448.6	506.0	607.8	742.7
55°	313.7	315.6	320.7	323.5	332.4	340.3	359.5	382.3	428.5	505.1	627.9
57.5°	279.2	281.5	284.3	287.1	293.2	301.1	317.0	331.0	364.6	419.7	517.7
60°	247.4	246.5	249.8	254.4	257.7	264.7	273.6	288.0	311.4	350.6	422.5
62.5°	215.7	216.1	216.6	219.4	225.5	231.5	239.5	250.2	264.2	293.2	344.0
65°	183.0	183.5	184.4	187.2	193.3	197.0	205.4	214.7	225.9	243.2	278.7
67.5°	154.1	155.9	155.9	158.3	160.6	164.3	170.4	177.4	186.7	199.3	222.2
70°	119.5	119.0	121.4	126.0	128.4	134.9	139.1	143.8	152.2	160.1	179.7
72.5°	96.2	96.2	96.2	98.0	98.5	99.9	102.7	112.5	119.0	127.0	137.7
75°	78.4	78.9	78.9	79.4	79.8	81.2	82.2	85.0	86.8	95.2	101.8
77.5°	62.6	63.0	63.0	63.5	64.0	64.4	66.3	66.3	67.7	69.6	72.4
80°	48.5	48.1	48.1	48.5	48.5	50.0	50.0	50.9	51.4	52.3	53.7
82.5°	34.5	34.1	34.5	34.1	34.5	35.0	35.9	35.5	36.4	37.3	37.8
85°	21.5	21.9	21.9	22.9	22.4	21.9	22.4	22.4	22.4	22.4	23.3
87.5°	9.3	10.3	10.3	9.8	10.3	10.3	9.3	10.3	10.3	10.3	10.7
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: P243431

CATALOG NUMBER: S123RDR-H775D835-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	1081.2	1081.2	1081.2	1081.2	1081.2	1081.2	1081.2	1081.2	1081.2	1081.2	1081.2
2.5°	1123.2	1121.3	1114.3	1107.8	1098.0	1093.8	1088.2	1085.8	1078.4	1068.1	1063.4
5°	1175.5	1161.5	1147.9	1131.6	1118.0	1102.2	1093.3	1083.0	1067.2	1052.7	1042.4
7.5°	1231.0	1210.5	1185.3	1158.2	1133.9	1111.0	1091.4	1075.1	1054.6	1034.5	1018.6
10°	1292.2	1257.2	1216.5	1182.0	1147.0	1113.8	1089.1	1064.4	1037.7	1012.5	993.4
12.5°	1358.0	1308.5	1259.5	1207.7	1155.4	1117.1	1080.2	1048.5	1018.6	992.0	969.1
15°	1426.1	1358.5	1295.9	1237.5	1164.7	1113.4	1072.8	1033.5	996.2	963.5	941.1
17.5°	1474.7	1397.2	1318.3	1235.7	1173.1	1109.6	1059.2	1009.7	975.2	941.6	911.2
20°	1519.5	1431.7	1337.9	1260.9	1173.6	1096.1	1041.0	993.4	945.3	909.4	883.7
22.5°	1538.6	1459.3	1364.5	1257.6	1170.3	1091.0	1020.0	966.3	923.4	884.2	850.6
25°	1542.4	1453.7	1356.6	1253.4	1157.7	1071.8	999.9	946.3	890.2	849.6	823.5
27.5°	1558.7	1437.3	1342.1	1239.4	1142.3	1052.7	977.1	917.3	865.0	821.6	788.0
30°	1562.9	1430.3	1311.3	1213.3	1113.4	1025.6	949.1	888.8	831.9	787.5	757.2
32.5°	1564.8	1421.0	1279.1	1171.7	1076.5	993.9	923.8	858.5	804.3	757.7	726.4
35°	1558.3	1407.9	1240.3	1124.6	1033.1	951.9	887.0	829.1	768.9	725.0	691.8
37.5°	1532.6	1387.4	1218.4	1069.5	982.2	905.6	850.6	793.6	738.0	690.4	656.4
40°	1484.0	1357.5	1177.3	1023.3	924.3	855.7	804.3	757.7	701.6	655.9	622.3
42.5°	1406.5	1316.9	1139.5	971.0	866.9	802.0	759.1	718.9	668.5	625.1	588.2
45°	1291.7	1260.0	1089.1	917.8	804.3	743.2	705.8	674.6	628.8	589.1	555.1
47.5°	1167.5	1174.5	1038.2	863.6	747.4	689.0	656.4	628.8	594.3	551.8	520.5
50°	1024.2	1062.5	966.8	809.0	690.4	633.0	600.8	584.0	551.8	516.3	486.9
52.5°	893.0	953.7	894.4	749.3	634.4	577.9	548.1	531.2	509.8	480.4	450.5
55°	757.2	834.2	791.3	684.8	577.5	520.5	495.3	482.2	464.5	441.6	414.5
57.5°	644.7	726.8	699.8	617.1	521.9	470.6	448.2	433.2	422.5	401.5	379.5
60°	534.5	610.6	599.9	539.2	466.8	417.8	400.5	388.4	379.5	364.1	342.6
62.5°	431.3	505.1	511.6	464.0	413.1	368.8	352.9	344.5	337.5	325.4	305.8
65°	342.2	407.1	420.6	384.2	356.7	323.0	307.6	302.5	297.4	283.4	268.4
67.5°	268.0	318.8	336.6	316.0	296.4	276.8	264.7	257.7	254.0	245.5	235.3
70°	204.9	248.8	263.8	254.9	241.8	234.3	225.0	220.3	216.6	205.9	200.3
72.5°	153.6	183.5	202.1	199.3	196.5	191.4	185.8	184.4	178.8	171.8	166.7
75°	112.5	129.8	146.6	152.7	151.7	153.6	147.5	145.2	141.9	136.8	132.6
77.5°	80.8	91.0	102.7	110.2	113.9	114.4	114.4	113.0	110.6	106.9	103.6
80°	56.0	58.4	69.1	76.1	79.8	82.6	82.6	83.1	80.8	79.4	77.0
82.5°	38.7	40.1	42.5	48.1	52.8	56.0	56.5	56.0	55.1	54.6	51.4
85°	24.3	23.8	23.8	25.2	28.9	32.2	32.7	33.6	33.1	32.7	29.4
87.5°	10.3	10.3	10.7	10.3	11.7	12.1	13.1	15.4	14.9	12.6	11.7
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: P243431

CATALOG NUMBER: S123RDR-H775D835-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	1081.2	1081.2	1081.2	1081.2	1081.2	1081.2	1081.2	1081.2	1081.2	1081.2	1081.2
2.5°	1060.6	1054.6	1049.0	1042.9	1035.4	1028.4	1027.5	1026.5	1028.9	1024.2	1022.3
5°	1034.5	1022.8	1013.9	1002.7	994.8	984.5	978.9	977.5	977.1	974.3	970.5
7.5°	1006.0	993.4	980.8	968.2	955.1	944.4	938.3	935.0	932.2	927.6	923.8
10°	979.4	963.5	950.0	932.7	918.7	904.7	899.1	894.4	891.6	885.1	880.0
12.5°	949.5	929.4	914.5	895.8	883.2	871.1	862.2	853.4	846.8	837.0	832.8
15°	923.4	902.4	877.2	866.0	848.2	830.0	820.2	820.2	806.7	798.7	793.6
17.5°	888.4	870.2	852.4	829.5	804.3	793.6	782.4	772.6	763.3	760.9	751.6
20°	857.6	836.1	817.9	793.1	770.3	757.7	744.6	733.8	726.8	720.3	715.2
22.5°	827.2	805.7	777.7	753.5	738.0	721.2	707.2	697.9	691.8	682.0	677.4
25°	795.5	769.8	744.6	720.8	701.6	687.2	672.7	667.6	656.8	651.7	645.1
27.5°	763.7	732.9	709.1	688.6	667.1	653.1	643.3	633.9	624.6	621.8	618.1
30°	728.2	699.8	676.9	656.8	636.3	624.1	612.5	604.1	596.1	590.1	585.9
32.5°	692.8	669.0	647.0	623.7	605.0	591.9	582.1	574.7	570.9	560.7	556.9
35°	660.1	635.8	612.5	590.5	575.6	563.0	554.1	547.1	539.2	532.6	528.9
37.5°	626.5	604.5	580.7	562.1	545.2	535.0	525.2	515.8	509.8	506.0	501.4
40°	593.8	570.5	552.3	531.7	516.8	505.1	494.8	487.8	480.4	477.1	471.0
42.5°	563.0	540.6	519.6	500.9	487.4	476.2	466.4	458.4	452.4	446.3	443.0
45°	527.5	507.9	488.8	470.1	457.5	445.3	434.6	427.6	419.2	414.1	412.2
47.5°	497.6	477.1	456.6	439.3	426.2	413.1	404.3	395.9	388.9	383.7	380.9
50°	462.2	443.0	426.2	408.9	396.3	382.3	371.6	363.7	355.7	352.0	347.3
52.5°	431.8	413.1	392.6	377.2	362.7	350.6	340.8	334.2	327.2	321.6	318.4
55°	394.0	375.8	359.5	343.1	328.6	318.8	310.9	299.7	293.6	288.0	279.2
57.5°	360.9	343.6	326.3	310.4	296.9	285.2	275.4	268.0	260.0	255.8	249.8
60°	325.8	307.6	291.8	279.6	264.7	252.1	245.5	236.7	230.1	223.6	221.7
62.5°	291.3	274.5	258.6	246.0	232.5	222.7	214.3	210.1	203.5	198.4	196.5
65°	255.4	241.3	226.4	212.4	204.0	192.8	188.1	181.1	177.4	175.1	174.6
67.5°	219.9	207.3	193.7	183.0	175.1	167.6	162.0	159.2	155.5	152.7	150.3
70°	187.7	175.5	163.9	155.0	148.9	143.3	139.6	134.4	130.7	127.0	121.8
72.5°	155.9	146.1	136.3	129.3	123.2	120.0	114.8	106.9	103.2	102.2	101.8
75°	126.5	115.8	108.8	105.0	99.4	91.5	88.2	87.3	86.8	85.9	85.9
77.5°	97.6	91.0	86.4	78.4	75.6	75.2	72.8	72.4	71.4	71.9	71.9
80°	71.0	67.2	61.6	59.3	58.4	58.8	57.9	58.4	57.4	57.9	57.0
82.5°	47.1	43.9	44.8	43.4	43.4	44.3	43.9	42.5	42.5	42.0	42.0
85°	28.0	27.5	28.5	28.5	28.0	26.6	27.5	27.1	25.7	26.1	26.1
87.5°	12.1	12.1	12.1	11.7	12.1	11.7	11.7	11.7	10.3	10.3	10.3
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: P243431

CATALOG NUMBER: S123RDR-H775D835-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	1081.2	1081.2	1081.2	1081.2
2.5°	1023.3	1022.3	1020.9	1019.5
5°	970.5	966.3	965.9	964.5
7.5°	921.0	919.2	915.9	919.6
10°	875.8	877.2	873.9	870.2
12.5°	828.6	825.8	820.7	823.5
15°	787.1	782.4	779.6	773.1
17.5°	743.6	739.9	739.9	735.7
20°	705.8	702.1	703.0	700.2
22.5°	674.1	671.3	667.1	667.6
25°	644.2	640.0	635.3	635.8
27.5°	611.1	607.3	606.4	603.1
30°	581.7	578.4	577.9	577.9
32.5°	553.2	551.8	549.5	548.1
35°	528.4	526.6	522.8	523.8
37.5°	497.6	495.8	495.3	494.8
40°	468.7	467.3	463.6	464.0
42.5°	439.7	437.4	435.1	434.1
45°	408.5	408.0	404.3	405.2
47.5°	378.6	377.7	375.8	373.5
50°	345.4	345.0	343.6	340.8
52.5°	313.2	311.8	309.0	306.2
55°	276.8	272.6	273.1	270.8
57.5°	246.9	245.1	241.3	239.9
60°	218.0	216.1	215.7	213.8
62.5°	193.7	191.9	190.5	190.5
65°	171.8	169.5	169.0	169.0
67.5°	147.5	145.2	144.7	143.8
70°	117.2	116.7	115.8	115.8
72.5°	100.8	100.4	100.8	99.0
75°	85.9	85.4	85.4	85.9
77.5°	71.4	71.4	71.0	71.0
80°	56.5	57.0	56.5	57.9
82.5°	42.5	41.5	42.0	41.1
85°	26.1	26.1	25.2	25.2
87.5°	10.3	10.3	10.3	10.3
90°	0.0	0.0	0.0	0.0

(END OF REPORT)