

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: P332429

Luminaire Tested: **S123RDIW-S560D1535U835-4F0-1E-UDD-F1**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332429
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-9,
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S123RDIW-S560D1535U835-4F0-1E-UDD-F1
Description: DEFINE 3 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 560 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER, REGRESSED
HOUSING
UPLIGHT 1535 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 7458.0 lumens
Efficiency: N/A
Efficacy: 123.1 lumens/watt
Spacing Criteria (0/90/45): 1.21 / 1.06 / 1.22
Luminous Opening: Rectangular (W 0.25' x L: 4' x H: 0')
CIE Type: Semi-Indirect

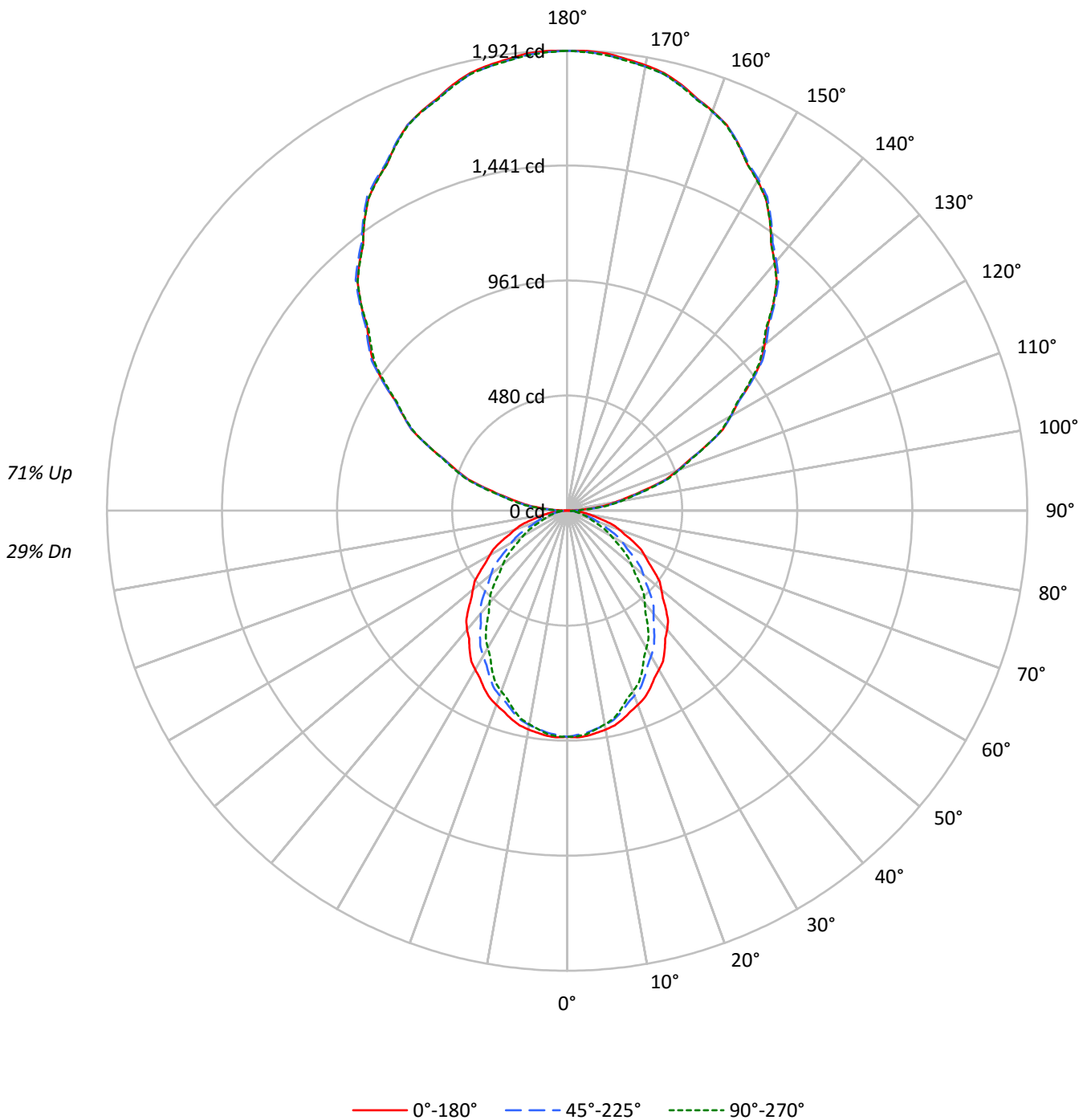
Input Watts (W): 60.6
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	0
RCR																		
0	102	102	102	102	91	91	91	91	71	71	71	53	53	53	37	37	37	29
1	93	89	85	82	83	80	77	74	63	61	59	47	46	45	33	32	31	25
2	85	78	72	67	76	70	65	61	55	52	49	41	39	37	29	28	26	21
3	78	69	62	56	69	62	56	51	49	45	41	37	34	32	26	24	23	18
4	71	61	53	47	63	55	48	43	43	39	35	33	30	27	23	21	20	15
5	65	54	46	41	58	49	42	37	39	34	30	29	26	24	21	19	17	14
6	60	48	41	35	53	44	37	32	35	30	26	27	23	21	19	17	15	12
7	55	44	36	31	49	39	33	28	32	27	23	24	21	18	17	15	14	11
8	51	39	32	27	46	36	29	25	29	24	21	22	19	16	16	14	12	10
9	48	36	29	24	43	33	26	22	26	22	18	20	17	15	15	13	11	9
10	44	33	26	21	40	30	24	20	24	20	16	19	15	13	14	11	10	8

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	10167	10167	10167
5°	10205	10065	10122
10°	10147	9939	9905
15°	10038	9706	9604
20°	9889	9415	9196
25°	9734	9089	8797
30°	9531	8712	8236
35°	9320	8335	7720
40°	9128	7890	7082
45°	8873	7451	6506
50°	8594	6953	5863
55°	8310	6382	5262
60°	8047	5772	4600
65°	7707	5112	3940
70°	7279	4293	3182
75°	6658	3377	2994
80°	5938	2994	2752
85°	5014	2643	2458



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	88.7	1.2
10°-20°	246.8	3.3
20°-30°	355.3	4.8
30°-40°	400.3	5.4
40°-50°	382.9	5.1
50°-60°	313.6	4.2
60°-70°	211.6	2.8
70°-80°	106.4	1.4
80°-90°	33.8	0.5
90°-100°	125.1	1.7
100°-110°	374.3	5.0
110°-120°	636.6	8.5
120°-130°	837.4	11.2
130°-140°	941.2	12.6
140°-150°	925.2	12.4
150°-160°	778.9	10.4
160°-170°	518.5	7.0
170°-180°	181.6	2.4
0°-30°	690.8	9.3
0°-40°	1091.1	14.6
0°-60°	1787.6	24.0
0°-90°	2139.4	28.7
90°-120°	1136.0	15.2
90°-150°	3839.7	51.5
90°-180°	5319.0	71.3
0°-180°	7458.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	944	944	944	944	944	
5°	944	940	932	938	937	90
15°	901	892	871	867	862	254
25°	820	800	765	750	741	377
35°	709	681	634	602	588	444
45°	583	547	490	447	427	450
55°	443	404	340	297	280	397
65°	303	259	201	165	155	299
75°	160	123	81	74	72	171
85°	41	25	21	20	20	46
90°	2	17	36	42	45	7
95°	89	100	112	117	118	100
105°	339	343	356	356	359	363
115°	641	645	642	644	642	634
125°	938	942	940	933	927	836
135°	1217	1225	1224	1219	1215	937
145°	1476	1479	1484	1482	1476	922
155°	1690	1690	1692	1697	1687	778
165°	1841	1837	1837	1845	1835	519
175°	1915	1909	1909	1917	1908	182
180°	1920	1920	1920	1920	1920	



TEST NUMBER: P332429

CATALOG NUMBER: S123RDIW-S560D1535U835-4F0-1E-UDD-F1

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	944.5	944.5	944.5	944.5	944.5	944.5	944.5	944.5	944.5	944.5	944.5
2.5°	947.6	947.0	946.5	945.9	945.4	944.3	942.7	941.0	939.4	937.8	939.3
5°	944.5	943.7	942.8	942.0	941.1	939.7	937.6	935.6	933.5	931.5	933.0
7.5°	935.8	934.9	933.9	933.0	932.1	930.3	927.7	925.0	922.3	919.7	920.5
10°	928.4	927.2	926.0	924.8	923.7	921.5	918.5	915.4	912.3	909.3	909.4
12.5°	918.0	916.7	915.3	914.0	912.7	910.2	906.4	902.7	898.9	895.2	895.1
15°	900.8	899.0	897.1	895.2	893.4	890.0	885.3	880.5	875.7	871.0	870.1
17.5°	879.2	877.1	874.9	872.7	870.5	866.4	860.3	854.3	848.2	842.2	840.4
20°	863.3	860.6	857.9	855.1	852.4	847.8	841.3	834.9	828.4	821.9	819.7
22.5°	845.5	842.4	839.3	836.1	833.0	828.0	821.1	814.2	807.4	800.5	797.7
25°	819.6	815.4	811.1	806.9	802.6	796.6	788.7	780.9	773.1	765.3	761.7
27.5°	788.2	783.5	778.8	774.1	769.4	762.7	754.0	745.3	736.6	727.9	722.9
30°	766.8	761.7	756.6	751.5	746.4	739.0	729.5	720.0	710.4	700.9	695.1
32.5°	745.3	739.6	733.8	728.0	722.2	714.3	704.2	694.1	684.0	673.9	667.6
35°	709.3	703.2	697.1	691.0	684.8	676.5	665.9	655.4	644.8	634.3	626.9
37.5°	672.9	666.1	659.3	652.4	645.6	636.6	625.3	614.1	602.8	591.5	583.2
40°	649.6	642.1	634.6	627.1	619.6	609.8	597.8	585.7	573.6	561.5	552.6
42.5°	623.2	615.7	608.3	600.8	593.3	583.3	570.8	558.3	545.8	533.3	523.6
45°	582.9	575.3	567.6	560.0	552.3	541.9	528.8	515.7	502.6	489.5	479.8
47.5°	542.6	534.2	525.8	517.4	509.0	498.3	485.1	472.0	458.9	445.8	435.3
50°	513.2	505.2	497.2	489.2	481.2	470.3	456.5	442.8	429.0	415.2	404.6
52.5°	486.9	478.2	469.5	460.8	452.2	441.0	427.3	413.7	400.0	386.4	375.4
55°	442.8	434.4	426.1	417.7	409.4	398.0	383.5	369.1	354.6	340.1	330.2
57.5°	402.0	392.9	383.8	374.7	365.6	353.8	339.3	324.8	310.2	295.7	286.4
60°	373.8	364.5	355.1	345.7	336.4	324.6	310.5	296.4	282.2	268.1	258.9
62.5°	345.6	336.3	326.9	317.5	308.2	296.4	282.3	268.2	254.0	239.9	231.3
65°	302.6	293.2	283.9	274.5	265.1	253.8	240.5	227.3	214.0	200.7	192.4
67.5°	259.5	250.1	240.6	231.1	221.7	210.6	197.8	185.1	172.4	159.6	153.4
70°	231.3	222.1	213.0	203.8	194.6	184.0	172.1	160.2	148.3	136.4	130.4
72.5°	203.1	194.1	185.0	176.0	166.9	157.0	146.2	135.3	124.5	113.7	108.8
75°	160.1	151.9	143.8	135.6	127.4	118.6	109.3	99.9	90.6	81.2	79.5
77.5°	120.9	113.5	106.1	98.7	91.3	84.6	78.6	72.6	66.5	60.5	59.6
80°	95.8	88.8	81.8	74.8	67.8	62.6	59.0	55.4	51.8	48.3	47.7
82.5°	71.9	65.8	59.8	53.8	47.7	43.9	42.2	40.6	38.9	37.2	36.7
85°	40.6	36.9	33.1	29.4	25.6	23.5	23.0	22.5	22.0	21.4	21.1
87.5°	15.0	14.2	13.4	12.5	11.7	11.7	12.6	13.5	14.3	15.2	15.3
90°	1.5	4.9	8.2	11.6	14.9	18.8	23.1	27.5	31.8	36.2	37.5
92.5°	36.5	38.8	41.0	43.3	45.6	48.0	50.5	52.9	55.4	57.9	59.0
95°	89.0	91.3	93.7	96.0	98.4	100.9	103.5	106.2	108.9	111.6	112.9
97.5°	158.0	159.8	161.5	163.3	165.0	166.8	168.8	170.7	172.7	174.6	176.2
100°	205.1	207.1	209.1	211.1	213.1	215.0	216.6	218.3	220.0	221.7	222.7
102.5°	259.4	260.6	261.8	263.0	264.2	265.9	268.1	270.3	272.5	274.7	275.8
105°	339.3	340.0	340.6	341.3	342.0	343.8	346.8	349.8	352.9	355.9	355.9
107.5°	432.2	432.6	433.0	433.4	433.8	434.6	435.8	437.0	438.2	439.4	440.5
110°	490.1	490.8	491.4	492.1	492.8	493.4	494.1	494.8	495.4	496.1	497.5



TEST NUMBER: P332429

CATALOG NUMBER: S123RDIW-S560D1535U835-4F0-1E-UDD-F1

CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	550.4	550.8	551.2	551.6	552.0	552.3	552.4	552.5	552.7	552.8	554.4
115°	640.9	641.9	642.9	643.9	644.9	645.1	644.4	643.7	643.1	642.4	642.7
117.5°	732.0	732.6	733.3	734.0	734.6	734.5	733.7	732.8	731.9	731.1	731.0
120°	788.7	790.7	792.7	794.7	796.7	796.9	795.2	793.5	791.8	790.2	789.8
122.5°	847.8	849.2	850.7	852.2	853.7	854.0	853.1	852.2	851.4	850.5	849.6
125°	937.9	938.9	940.0	941.0	942.0	942.1	941.5	940.8	940.1	939.5	938.1
127.5°	1021.2	1023.3	1025.5	1027.6	1029.8	1030.5	1029.7	1029.0	1028.3	1027.5	1025.6
130°	1076.7	1079.4	1082.0	1084.7	1087.4	1088.2	1087.2	1086.2	1085.2	1084.2	1082.9
132.5°	1132.2	1134.8	1137.5	1140.2	1142.9	1143.9	1143.1	1142.4	1141.6	1140.9	1139.3
135°	1216.9	1218.9	1220.9	1222.9	1225.0	1225.8	1225.5	1225.1	1224.8	1224.5	1223.1
137.5°	1295.3	1297.0	1298.7	1300.4	1302.0	1303.3	1304.2	1305.0	1305.9	1306.8	1305.4
140°	1349.6	1351.3	1353.0	1354.6	1356.3	1357.3	1357.7	1358.0	1358.3	1358.7	1358.3
142.5°	1399.1	1400.7	1402.4	1404.1	1405.8	1406.9	1407.5	1408.1	1408.7	1409.3	1409.0
145°	1476.3	1477.0	1477.6	1478.3	1479.0	1479.8	1480.8	1481.8	1482.8	1483.8	1483.5
147.5°	1543.8	1545.0	1546.2	1547.5	1548.7	1549.7	1550.7	1551.6	1552.5	1553.5	1553.5
150°	1590.9	1591.6	1592.2	1592.9	1593.6	1594.2	1594.9	1595.6	1596.2	1596.9	1596.9
152.5°	1629.5	1630.4	1631.4	1632.3	1633.2	1633.9	1634.3	1634.7	1635.1	1635.5	1636.1
155°	1690.4	1690.4	1690.4	1690.4	1690.4	1690.6	1690.9	1691.2	1691.6	1691.9	1693.3
157.5°	1742.3	1741.9	1741.5	1741.1	1740.7	1740.6	1740.9	1741.1	1741.4	1741.7	1743.1
160°	1774.9	1774.2	1773.5	1772.8	1772.2	1771.8	1771.8	1771.8	1771.8	1771.8	1773.5
162.5°	1803.8	1802.9	1801.9	1801.0	1800.1	1799.7	1800.0	1800.3	1800.5	1800.8	1802.5
165°	1841.2	1840.2	1839.2	1838.2	1837.2	1836.7	1836.7	1836.7	1836.7	1836.7	1838.7
167.5°	1871.1	1869.7	1868.4	1867.0	1865.7	1865.2	1865.4	1865.7	1866.0	1866.2	1868.3
170°	1887.9	1886.6	1885.3	1883.9	1882.6	1881.9	1881.9	1881.9	1881.9	1881.9	1884.3
172.5°	1901.2	1899.9	1898.5	1897.2	1895.9	1895.2	1895.2	1895.2	1895.2	1895.2	1897.3
175°	1915.1	1913.8	1912.4	1911.1	1909.7	1909.1	1909.1	1909.1	1909.1	1909.1	1911.1
177.5°	1920.8	1919.8	1918.7	1917.6	1916.5	1916.0	1916.0	1916.0	1916.0	1916.0	1917.6
180°	1919.6	1919.6	1919.6	1919.6	1919.6	1919.6	1919.6	1919.6	1919.6	1919.6	1919.6



TEST NUMBER: P332429

CATALOG NUMBER: S123RDIW-S560D1535U835-4F0-1E-UDD-F1

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	944.5	944.5	944.5	944.5	944.5	944.5	944.5	944.5
2.5°	940.8	942.3	943.8	944.4	944.1	943.8	943.6	943.3
5°	934.5	936.1	937.6	938.2	937.9	937.5	937.2	936.8
7.5°	921.4	922.2	923.1	923.2	922.6	922.1	921.5	920.9
10°	909.6	909.8	909.9	909.6	908.8	907.9	907.1	906.2
12.5°	895.0	894.9	894.8	894.2	893.2	892.2	891.3	890.3
15°	869.3	868.4	867.6	866.5	865.3	864.2	863.0	861.8
17.5°	838.6	836.8	834.9	833.2	831.4	829.6	827.8	826.1
20°	817.5	815.3	813.1	811.0	808.9	806.9	804.8	802.8
22.5°	795.0	792.2	789.5	787.1	785.2	783.3	781.4	779.5
25°	758.1	754.5	751.0	748.2	746.4	744.5	742.6	740.7
27.5°	717.9	713.0	708.0	704.1	701.2	698.4	695.5	692.6
30°	689.3	683.5	677.8	673.5	670.8	668.1	665.3	662.6
32.5°	661.3	654.9	648.6	644.0	641.2	638.3	635.4	632.6
35°	619.6	612.3	605.0	599.8	596.7	593.7	590.6	587.5
37.5°	574.9	566.6	558.3	552.3	548.5	544.7	540.9	537.1
40°	543.8	534.9	526.1	519.7	515.8	511.9	508.0	504.0
42.5°	514.0	504.3	494.6	488.0	484.5	481.0	477.5	474.0
45°	470.1	460.4	450.7	443.8	439.7	435.6	431.5	427.4
47.5°	424.7	414.2	403.6	396.5	392.9	389.2	385.6	381.9
50°	394.1	383.5	373.0	365.7	361.8	357.9	354.0	350.1
52.5°	364.5	353.5	342.5	335.3	331.8	328.3	324.8	321.3
55°	320.4	310.5	300.6	294.0	290.6	287.2	283.8	280.4
57.5°	277.0	267.7	258.4	252.3	249.4	246.5	243.6	240.7
60°	249.7	240.5	231.3	225.3	222.4	219.5	216.6	213.7
62.5°	222.6	214.0	205.3	199.5	196.5	193.4	190.4	187.4
65°	184.0	175.7	167.3	162.2	160.4	158.5	156.6	154.7
67.5°	147.2	140.9	134.7	130.6	128.6	126.6	124.6	122.6
70°	124.4	118.5	112.5	108.6	106.7	104.9	103.0	101.1
72.5°	103.9	99.1	94.2	91.4	90.6	89.8	89.0	88.2
75°	77.8	76.1	74.4	73.4	73.0	72.7	72.3	72.0
77.5°	58.7	57.8	56.8	56.2	55.9	55.5	55.2	54.8
80°	47.2	46.7	46.2	45.8	45.5	45.1	44.8	44.4
82.5°	36.2	35.7	35.2	34.9	34.8	34.8	34.7	34.6
85°	20.8	20.4	20.1	19.9	19.9	19.9	19.9	19.9
87.5°	15.5	15.6	15.7	15.8	15.8	15.8	15.8	15.8
90°	38.9	40.2	41.6	42.6	43.2	43.9	44.6	45.2
92.5°	60.0	61.1	62.2	62.5	62.1	61.7	61.3	60.9
95°	114.3	115.6	116.9	117.6	117.6	117.6	117.6	117.6
97.5°	177.7	179.2	180.8	181.5	181.4	181.2	181.1	181.0
100°	223.7	224.7	225.7	226.5	227.2	227.9	228.5	229.2
102.5°	276.8	277.8	278.8	279.2	279.1	278.9	278.8	278.7
105°	355.9	355.9	355.9	356.2	356.9	357.6	358.2	358.9
107.5°	441.6	442.6	443.7	444.0	443.6	443.2	442.8	442.4
110°	498.8	500.1	501.5	501.8	501.1	500.5	499.8	499.1



TEST NUMBER: P332429

CATALOG NUMBER: S123RDIW-S560D1535U835-4F0-1E-UDD-F1

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	556.0	557.6	559.2	560.0	559.9	559.7	559.6	559.4
115°	643.1	643.4	643.7	643.7	643.4	643.1	642.7	642.4
117.5°	730.9	730.9	730.8	730.3	729.3	728.4	727.5	726.5
120°	789.5	789.2	788.8	788.3	787.7	787.0	786.3	785.6
122.5°	848.7	847.9	847.0	846.1	845.2	844.2	843.3	842.3
125°	936.8	935.4	934.1	932.7	931.4	930.1	928.7	927.4
127.5°	1023.8	1021.9	1020.0	1018.3	1016.8	1015.2	1013.7	1012.1
130°	1081.5	1080.2	1078.9	1077.0	1074.7	1072.3	1070.0	1067.6
132.5°	1137.7	1136.1	1134.5	1132.8	1131.0	1129.2	1127.3	1125.5
135°	1221.8	1220.4	1219.1	1218.1	1217.4	1216.7	1216.1	1215.4
137.5°	1304.0	1302.6	1301.2	1299.8	1298.5	1297.3	1296.0	1294.7
140°	1358.0	1357.7	1357.3	1356.0	1353.6	1351.3	1348.9	1346.6
142.5°	1408.7	1408.3	1408.0	1406.9	1405.1	1403.3	1401.5	1399.7
145°	1483.1	1482.8	1482.5	1481.6	1480.3	1479.0	1477.6	1476.3
147.5°	1553.5	1553.5	1553.5	1552.5	1550.5	1548.5	1546.4	1544.4
150°	1596.9	1596.9	1596.9	1595.9	1593.9	1591.9	1589.9	1587.9
152.5°	1636.6	1637.1	1637.7	1637.1	1635.3	1633.6	1631.8	1630.1
155°	1694.6	1695.9	1697.3	1696.8	1694.4	1692.1	1689.7	1687.4
157.5°	1744.5	1745.9	1747.3	1747.1	1745.2	1743.3	1741.4	1739.6
160°	1775.2	1776.9	1778.5	1778.7	1777.4	1776.0	1774.7	1773.3
162.5°	1804.1	1805.8	1807.5	1807.3	1805.1	1803.0	1800.8	1798.7
165°	1840.7	1842.7	1844.7	1844.6	1842.2	1839.9	1837.5	1835.2
167.5°	1870.4	1872.5	1874.5	1874.5	1872.5	1870.4	1868.3	1866.2
170°	1886.6	1889.0	1891.3	1891.3	1889.0	1886.6	1884.3	1881.9
172.5°	1899.3	1901.4	1903.5	1903.4	1901.0	1898.7	1896.3	1894.0
175°	1913.1	1915.1	1917.1	1916.9	1914.6	1912.2	1909.9	1907.6
177.5°	1919.2	1920.8	1922.4	1922.3	1920.4	1918.5	1916.7	1914.8
180°	1919.6	1919.6	1919.6	1919.6	1919.6	1919.6	1919.6	1919.6

(END OF REPORT)