

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: P332425

Luminaire Tested: **S123RDIW-S560D1320U835-4F0-1E-UDD-F1**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332425
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-S560D1320U835-4F0-1E-UDD-F1
Description: DEFINE 3 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 560 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER, REGRESSED
HOUSING
UPLIGHT 1320 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 6713.1 lumens
Efficiency: N/A
Efficacy: 124.8 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

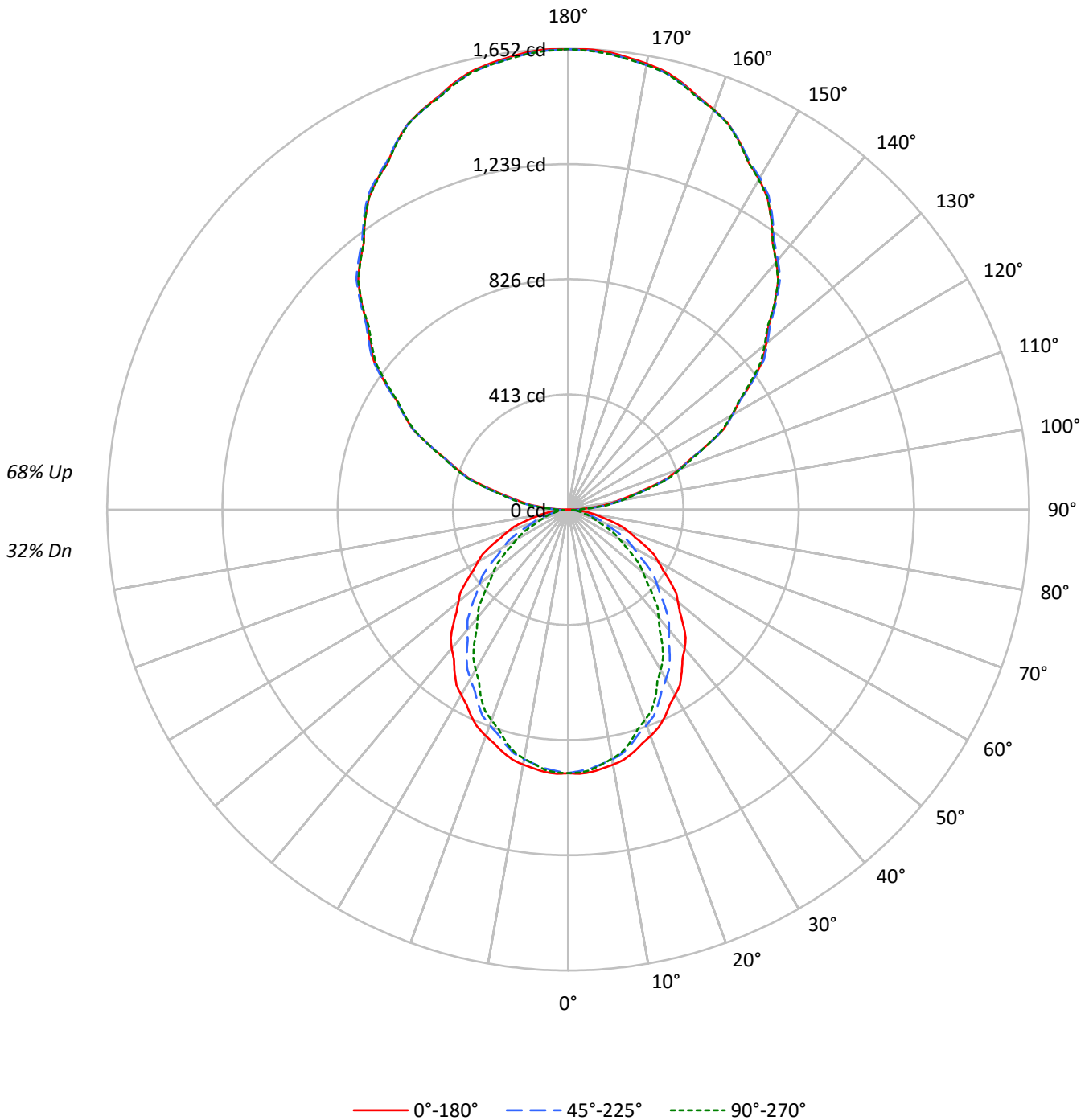
Input Watts (W): 53.8
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	103	103	103	103	93	93	93	93	73	73	73	56	56	56	39	39	39	32
1	94	90	86	83	84	81	78	75	64	62	60	49	48	47	35	34	34	27
2	86	79	73	68	77	71	66	62	57	53	50	43	41	39	31	30	29	23
3	78	69	62	57	70	63	57	52	50	46	42	38	36	33	28	26	25	20
4	72	61	54	48	64	55	49	44	45	40	36	34	31	29	25	23	21	17
5	66	55	47	41	59	49	43	38	40	35	31	31	28	25	23	20	19	15
6	60	49	41	36	54	44	38	33	36	31	27	28	24	22	20	18	16	13
7	56	44	36	31	50	40	33	29	32	28	24	25	22	19	19	16	15	12
8	52	40	32	27	47	36	30	25	30	25	21	23	20	17	17	15	13	11
9	48	36	29	24	43	33	27	23	27	22	19	21	18	15	16	14	12	10
10	45	33	26	22	40	30	24	20	25	20	17	20	16	14	15	12	11	9

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	1.3
10°-20°	246.8	3.7
20°-30°	355.3	5.3
30°-40°	400.3	6.0
40°-50°	382.9	5.7
50°-60°	313.6	4.7
60°-70°	211.6	3.2
70°-80°	106.4	1.6
80°-90°	33.0	0.5
90°-100°	107.6	1.6
100°-110°	321.9	4.8
110°-120°	547.5	8.2
120°-130°	720.2	10.7
130°-140°	809.5	12.1
140°-150°	795.7	11.9
150°-160°	669.9	10.0
160°-170°	445.9	6.6
170°-180°	156.2	2.3
0°-30°	690.8	10.3
0°-40°	1091.1	16.3
0°-60°	1787.6	26.6
0°-90°	2138.6	31.9
90°-120°	977.1	14.6
90°-150°	3302.5	49.2
90°-180°	4574.0	68.1
0°-180°	6713.1	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°	1	14	31	36	39	7
95°	76	86	96	101	101	86
105°	292	295	306	306	309	313
115°	551	555	552	554	552	545
125°	807	810	808	803	798	719
135°	1047	1054	1053	1048	1045	806
145°	1270	1272	1276	1275	1270	793
155°	1454	1454	1455	1460	1451	669
165°	1584	1580	1580	1587	1578	446
175°	1647	1642	1642	1649	1641	156
180°	1651	1651	1651	1651	1651	



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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	14.0	13.1	12.2	11.3	11.2	11.9	12.7	13.4	14.2	14.3
90°	1.3	4.2	7.1	9.9	12.8	16.1	19.9	23.6	27.4	31.1	32.3
92.5°	31.4	33.3	35.3	37.3	39.2	41.3	43.4	45.5	47.7	49.8	50.7
95°	76.5	78.5	80.6	82.6	84.6	86.8	89.1	91.4	93.7	96.0	97.1
97.5°	135.9	137.4	138.9	140.4	141.9	143.5	145.2	146.8	148.5	150.2	151.5
100°	176.4	178.1	179.8	181.6	183.3	184.9	186.3	187.8	189.2	190.7	191.5
102.5°	223.1	224.1	225.2	226.2	227.2	228.7	230.6	232.5	234.4	236.3	237.2
105°	291.8	292.4	293.0	293.5	294.1	295.7	298.3	300.9	303.5	306.1	306.1
107.5°	371.7	372.1	372.4	372.8	373.1	373.8	374.8	375.9	376.9	377.9	378.9
110°	421.5	422.1	422.7	423.2	423.8	424.4	425.0	425.6	426.1	426.7	427.9



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	473.4	473.7	474.1	474.4	474.8	475.0	475.1	475.2	475.4	475.5	476.9
115°	551.2	552.1	552.9	553.8	554.7	554.8	554.2	553.7	553.1	552.5	552.8
117.5°	629.6	630.1	630.7	631.3	631.9	631.8	631.0	630.3	629.5	628.8	628.7
120°	678.3	680.0	681.8	683.5	685.2	685.4	683.9	682.5	681.1	679.6	679.3
122.5°	729.2	730.4	731.7	733.0	734.2	734.5	733.7	733.0	732.2	731.5	730.7
125°	806.7	807.6	808.4	809.3	810.2	810.3	809.7	809.2	808.6	808.0	806.9
127.5°	878.3	880.2	882.0	883.8	885.7	886.3	885.7	885.0	884.4	883.8	882.1
130°	926.0	928.3	930.7	933.0	935.3	936.0	935.1	934.3	933.4	932.5	931.4
132.5°	973.8	976.1	978.4	980.7	983.0	983.8	983.2	982.6	981.9	981.3	979.9
135°	1046.7	1048.4	1050.1	1051.8	1053.6	1054.3	1054.0	1053.7	1053.4	1053.1	1052.0
137.5°	1114.1	1115.5	1117.0	1118.4	1119.9	1121.0	1121.7	1122.5	1123.2	1124.0	1122.7
140°	1160.8	1162.2	1163.7	1165.1	1166.6	1167.4	1167.7	1168.0	1168.3	1168.6	1168.3
142.5°	1203.3	1204.8	1206.2	1207.7	1209.1	1210.1	1210.6	1211.1	1211.6	1212.2	1211.9
145°	1269.7	1270.3	1270.9	1271.5	1272.0	1272.8	1273.6	1274.5	1275.4	1276.2	1275.9
147.5°	1327.8	1328.9	1329.9	1331.0	1332.0	1332.9	1333.7	1334.5	1335.3	1336.1	1336.1
150°	1368.3	1368.9	1369.5	1370.0	1370.6	1371.2	1371.8	1372.3	1372.9	1373.5	1373.5
152.5°	1401.5	1402.3	1403.1	1403.9	1404.7	1405.3	1405.7	1406.0	1406.4	1406.7	1407.2
155°	1453.9	1453.9	1453.9	1453.9	1453.9	1454.1	1454.3	1454.6	1454.9	1455.2	1456.4
157.5°	1498.5	1498.2	1497.8	1497.5	1497.1	1497.1	1497.3	1497.5	1497.8	1498.0	1499.2
160°	1526.5	1526.0	1525.4	1524.8	1524.2	1523.9	1523.9	1523.9	1523.9	1523.9	1525.4
162.5°	1551.4	1550.6	1549.8	1549.0	1548.2	1547.9	1548.2	1548.4	1548.6	1548.8	1550.3
165°	1583.6	1582.7	1581.9	1581.0	1580.2	1579.7	1579.7	1579.7	1579.7	1579.7	1581.4
167.5°	1609.3	1608.1	1607.0	1605.8	1604.7	1604.2	1604.4	1604.7	1604.9	1605.1	1606.9
170°	1623.8	1622.7	1621.5	1620.4	1619.2	1618.6	1618.6	1618.6	1618.6	1618.6	1620.6
172.5°	1635.2	1634.1	1632.9	1631.8	1630.6	1630.0	1630.0	1630.0	1630.0	1630.0	1631.8
175°	1647.2	1646.0	1644.9	1643.7	1642.5	1642.0	1642.0	1642.0	1642.0	1642.0	1643.7
177.5°	1652.1	1651.2	1650.2	1649.3	1648.4	1647.9	1647.9	1647.9	1647.9	1647.9	1649.3
180°	1651.1	1651.1	1651.1	1651.1	1651.1	1651.1	1651.1	1651.1	1651.1	1651.1	1651.1



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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°	14.4	14.5	14.6	14.6	14.6	14.6	14.5	14.5
90°	33.4	34.6	35.7	36.6	37.2	37.8	38.3	38.9
92.5°	51.6	52.6	53.5	53.8	53.4	53.1	52.7	52.4
95°	98.3	99.4	100.6	101.2	101.2	101.2	101.2	101.2
97.5°	152.8	154.2	155.5	156.1	156.0	155.9	155.8	155.6
100°	192.4	193.2	194.1	194.8	195.4	196.0	196.6	197.1
102.5°	238.0	238.9	239.8	240.1	240.0	239.9	239.8	239.7
105°	306.1	306.1	306.1	306.4	307.0	307.5	308.1	308.7
107.5°	379.8	380.7	381.6	381.9	381.6	381.2	380.9	380.5
110°	429.0	430.2	431.3	431.6	431.0	430.5	429.9	429.3



TEST NUMBER: P332425

CATALOG NUMBER: S123RDIW-S560D1320U835-4F0-1E-UDD-F1

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	478.2	479.6	481.0	481.6	481.5	481.4	481.3	481.2
115°	553.1	553.4	553.7	553.7	553.4	553.1	552.8	552.5
117.5°	628.7	628.6	628.5	628.1	627.3	626.5	625.7	624.9
120°	679.0	678.8	678.5	678.0	677.5	676.9	676.3	675.7
122.5°	730.0	729.2	728.5	727.7	726.9	726.1	725.3	724.5
125°	805.7	804.6	803.4	802.3	801.1	799.9	798.8	797.6
127.5°	880.5	878.9	877.3	875.8	874.5	873.2	871.9	870.5
130°	930.2	929.1	927.9	926.3	924.3	922.3	920.3	918.3
132.5°	978.5	977.1	975.8	974.3	972.7	971.2	969.6	968.1
135°	1050.8	1049.7	1048.5	1047.7	1047.1	1046.5	1045.9	1045.4
137.5°	1121.5	1120.3	1119.1	1118.0	1116.9	1115.8	1114.7	1113.6
140°	1168.0	1167.7	1167.4	1166.3	1164.3	1162.2	1160.2	1158.2
142.5°	1211.6	1211.3	1211.0	1210.1	1208.5	1207.0	1205.4	1203.9
145°	1275.6	1275.4	1275.1	1274.4	1273.2	1272.0	1270.9	1269.7
147.5°	1336.1	1336.1	1336.1	1335.3	1333.6	1331.8	1330.1	1328.4
150°	1373.5	1373.5	1373.5	1372.6	1370.9	1369.2	1367.4	1365.7
152.5°	1407.6	1408.1	1408.5	1408.0	1406.5	1405.0	1403.5	1402.0
155°	1457.5	1458.7	1459.8	1459.4	1457.4	1455.4	1453.3	1451.3
157.5°	1500.4	1501.6	1502.9	1502.6	1501.0	1499.4	1497.8	1496.2
160°	1526.8	1528.3	1529.7	1529.9	1528.7	1527.6	1526.4	1525.2
162.5°	1551.7	1553.2	1554.6	1554.4	1552.6	1550.7	1548.9	1547.0
165°	1583.2	1584.9	1586.6	1586.5	1584.5	1582.5	1580.4	1578.4
167.5°	1608.7	1610.5	1612.3	1612.3	1610.5	1608.7	1606.9	1605.1
170°	1622.7	1624.7	1626.7	1626.7	1624.7	1622.7	1620.6	1618.6
172.5°	1633.6	1635.4	1637.2	1637.1	1635.1	1633.0	1631.0	1629.0
175°	1645.4	1647.2	1648.9	1648.7	1646.7	1644.7	1642.7	1640.7
177.5°	1650.7	1652.1	1653.5	1653.4	1651.7	1650.1	1648.5	1646.9
180°	1651.1	1651.1	1651.1	1651.1	1651.1	1651.1	1651.1	1651.1

(END OF REPORT)