

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: P332429-935

Luminaire Tested: **S123RDIW-S560D1535U935-4F0-1E-UDD-F1**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332429-935
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-S560D1535U935-4F0-1E-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: 6421.3 lumens
Efficiency: N/A
Efficacy: 106.0 lumens/watt
Spacing Criteria (0/90/45): 1.21 / 1.06 / 1.23
Luminous Opening: Rectangular (W 0.25' x L: 4' x H: 0')
CIE Type: Semi-Indirect

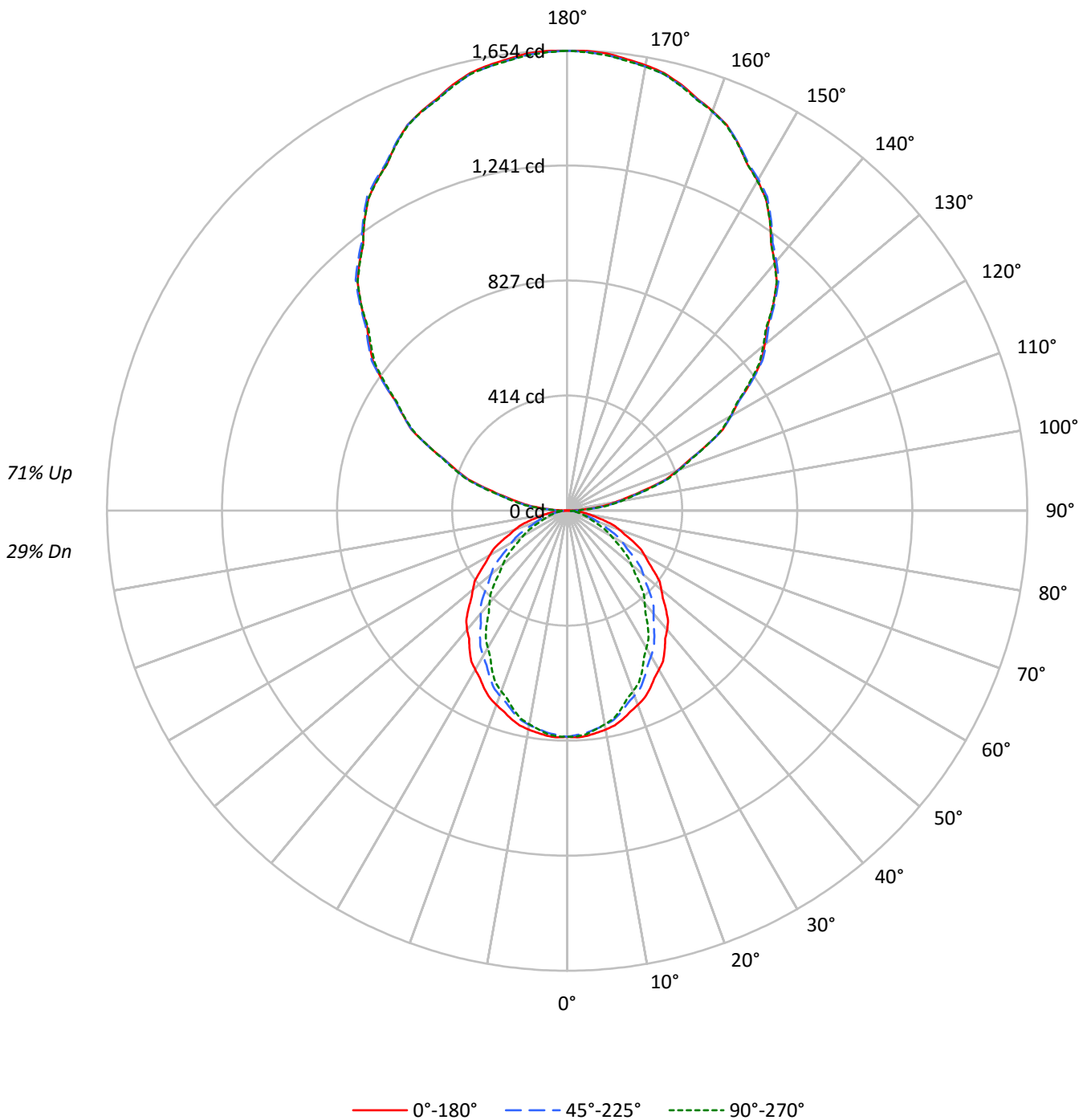
Input Watts (W): 60.6
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	8753	8753	8753
5°	8787	8666	8715
10°	8737	8557	8528
15°	8643	8357	8269
20°	8514	8107	7918
25°	8381	7826	7574
30°	8206	7501	7091
35°	8025	7176	6646
40°	7859	6794	6097
45°	7640	6416	5602
50°	7400	5987	5047
55°	7156	5495	4530
60°	6928	4969	3961
65°	6635	4401	3393
70°	6266	3695	2738
75°	5731	2907	2578
80°	5114	2579	2368
85°	4323	2272	2112



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	76.4	1.2
10°-20°	212.5	3.3
20°-30°	305.9	4.8
30°-40°	344.6	5.4
40°-50°	329.7	5.1
50°-60°	270.0	4.2
60°-70°	182.2	2.8
70°-80°	91.6	1.4
80°-90°	29.1	0.5
90°-100°	107.7	1.7
100°-110°	322.3	5.0
110°-120°	548.1	8.5
120°-130°	721.0	11.2
130°-140°	810.4	12.6
140°-150°	796.6	12.4
150°-160°	670.6	10.4
160°-170°	446.4	7.0
170°-180°	156.3	2.4
0°-30°	594.8	9.3
0°-40°	939.4	14.6
0°-60°	1539.1	24.0
0°-90°	1842.0	28.7
90°-120°	978.1	15.2
90°-150°	3306.0	51.5
90°-180°	4579.0	71.3
0°-180°	6421.3	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	813	813	813	813	813	
5°	813	810	802	808	807	77
15°	776	768	750	747	742	218
25°	706	688	659	645	638	324
35°	611	586	546	519	506	382
45°	502	471	422	385	368	387
55°	381	348	293	256	241	342
65°	260	223	173	142	133	258
75°	138	106	70	64	62	147
85°	35	21	18	17	17	39
90°	1	14	31	36	39	6
95°	77	86	96	101	101	86
105°	292	295	306	307	309	313
115°	552	555	553	554	553	546
125°	808	811	809	804	798	720
135°	1048	1055	1054	1049	1046	807
145°	1271	1274	1278	1276	1271	794
155°	1455	1456	1457	1461	1453	670
165°	1585	1582	1581	1588	1580	447
175°	1649	1644	1644	1651	1642	157
180°	1653	1653	1653	1653	1653	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	813.2	813.2	813.2	813.2	813.2	813.2	813.2	813.2	813.2	813.2	813.2
2.5°	815.9	815.4	814.9	814.4	814.0	813.0	811.7	810.2	808.8	807.4	808.7
5°	813.2	812.5	811.8	811.1	810.3	809.1	807.3	805.6	803.7	802.0	803.3
7.5°	805.7	804.9	804.1	803.3	802.5	801.0	798.7	796.4	794.1	791.9	792.6
10°	799.4	798.3	797.3	796.3	795.3	793.4	790.8	788.2	785.5	782.9	783.0
12.5°	790.4	789.3	788.1	787.0	785.8	783.7	780.4	777.2	774.0	770.8	770.7
15°	775.6	774.0	772.4	770.8	769.2	766.3	762.2	758.1	754.0	749.9	749.2
17.5°	757.0	755.2	753.3	751.4	749.5	746.0	740.7	735.6	730.3	725.1	723.6
20°	743.3	741.0	738.7	736.2	733.9	730.0	724.4	718.8	713.3	707.7	705.8
22.5°	728.0	725.3	722.6	719.9	717.2	712.9	707.0	701.0	695.2	689.2	686.8
25°	705.7	702.1	698.4	694.7	691.0	685.9	679.1	672.4	665.6	658.9	655.8
27.5°	678.6	674.6	670.5	666.5	662.5	656.7	649.2	641.7	634.2	626.7	622.4
30°	660.2	655.8	651.4	647.0	642.7	636.3	628.1	619.9	611.7	603.5	598.5
32.5°	641.7	636.8	631.8	626.8	621.8	615.0	606.3	597.6	588.9	580.2	574.8
35°	610.7	605.5	600.2	595.0	589.6	582.5	573.3	564.3	555.2	546.1	539.8
37.5°	579.4	573.5	567.7	561.7	555.9	548.1	538.4	528.7	519.0	509.3	502.1
40°	559.3	552.8	546.4	539.9	533.5	525.0	514.7	504.3	493.9	483.5	475.8
42.5°	536.6	530.1	523.7	517.3	510.8	502.2	491.5	480.7	469.9	459.2	450.8
45°	501.9	495.3	488.7	482.2	475.5	466.6	455.3	444.0	432.7	421.5	413.1
47.5°	467.2	459.9	452.7	445.5	438.2	429.0	417.7	406.4	395.1	383.8	374.8
50°	441.9	435.0	428.1	421.2	414.3	404.9	393.0	381.3	369.4	357.5	348.4
52.5°	419.2	411.7	404.2	396.7	389.3	379.7	367.9	356.2	344.4	332.7	323.2
55°	381.3	374.0	366.9	359.6	352.5	342.7	330.2	317.8	305.3	292.8	284.3
57.5°	346.1	338.3	330.5	322.6	314.8	304.6	292.1	279.7	267.1	254.6	246.6
60°	321.8	313.8	305.7	297.6	289.6	279.5	267.3	255.2	243.0	230.8	222.9
62.5°	297.6	289.6	281.5	273.4	265.4	255.2	243.1	230.9	218.7	206.6	199.1
65°	260.5	252.4	244.4	236.3	228.3	218.5	207.1	195.7	184.3	172.8	165.7
67.5°	223.4	215.3	207.2	199.0	190.9	181.3	170.3	159.4	148.4	137.4	132.1
70°	199.1	191.2	183.4	175.5	167.6	158.4	148.2	137.9	127.7	117.4	112.3
72.5°	174.9	167.1	159.3	151.5	143.7	135.2	125.9	116.5	107.2	97.9	93.7
75°	137.8	130.8	123.8	116.8	109.7	102.1	94.1	86.0	78.0	69.9	68.4
77.5°	104.1	97.7	91.4	85.0	78.6	72.8	67.7	62.5	57.3	52.1	51.3
80°	82.5	76.5	70.4	64.4	58.4	53.9	50.8	47.7	44.6	41.6	41.1
82.5°	61.9	56.7	51.5	46.3	41.1	37.8	36.3	35.0	33.5	32.0	31.6
85°	35.0	31.8	28.5	25.3	22.0	20.2	19.8	19.4	18.9	18.4	18.2
87.5°	12.9	12.2	11.5	10.8	10.1	10.1	10.8	11.6	12.3	13.1	13.2
90°	1.3	4.2	7.1	10.0	12.8	16.2	19.9	23.7	27.4	31.2	32.3
92.5°	31.4	33.4	35.3	37.3	39.3	41.3	43.5	45.5	47.7	49.9	50.8
95°	76.6	78.6	80.7	82.7	84.7	86.9	89.1	91.4	93.8	96.1	97.2
97.5°	136.0	137.6	139.1	140.6	142.1	143.6	145.3	147.0	148.7	150.3	151.7
100°	176.6	178.3	180.0	181.8	183.5	185.1	186.5	188.0	189.4	190.9	191.7
102.5°	223.3	224.4	225.4	226.4	227.5	228.9	230.8	232.7	234.6	236.5	237.5
105°	292.1	292.7	293.3	293.9	294.5	296.0	298.6	301.2	303.8	306.4	306.4
107.5°	372.1	372.5	372.8	373.2	373.5	374.2	375.2	376.3	377.3	378.3	379.3
110°	422.0	422.6	423.1	423.7	424.3	424.8	425.4	426.0	426.5	427.1	428.3



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	473.9	474.2	474.6	474.9	475.3	475.5	475.6	475.7	475.9	476.0	477.3
115°	551.8	552.7	553.5	554.4	555.3	555.4	554.8	554.2	553.7	553.1	553.4
117.5°	630.3	630.8	631.4	632.0	632.5	632.4	631.7	630.9	630.2	629.5	629.4
120°	679.1	680.8	682.5	684.2	686.0	686.1	684.7	683.2	681.7	680.4	680.0
122.5°	730.0	731.2	732.5	733.7	735.0	735.3	734.5	733.7	733.1	732.3	731.5
125°	807.5	808.4	809.3	810.2	811.1	811.1	810.6	810.0	809.4	808.9	807.7
127.5°	879.3	881.1	883.0	884.8	886.7	887.3	886.6	886.0	885.4	884.7	883.0
130°	927.0	929.4	931.6	933.9	936.3	936.9	936.1	935.2	934.4	933.5	932.4
132.5°	974.8	977.1	979.4	981.7	984.0	984.9	984.2	983.6	982.9	982.3	980.9
135°	1047.8	1049.5	1051.2	1052.9	1054.7	1055.4	1055.2	1054.8	1054.6	1054.3	1053.1
137.5°	1115.3	1116.7	1118.2	1119.6	1121.0	1122.1	1122.9	1123.6	1124.4	1125.2	1123.9
140°	1162.0	1163.5	1164.9	1166.3	1167.8	1168.6	1169.0	1169.2	1169.5	1169.8	1169.5
142.5°	1204.6	1206.0	1207.5	1208.9	1210.4	1211.3	1211.9	1212.4	1212.9	1213.4	1213.1
145°	1271.1	1271.7	1272.2	1272.8	1273.4	1274.1	1275.0	1275.8	1276.7	1277.6	1277.3
147.5°	1329.2	1330.2	1331.3	1332.4	1333.4	1334.3	1335.2	1335.9	1336.7	1337.6	1337.6
150°	1369.8	1370.4	1370.9	1371.5	1372.1	1372.6	1373.2	1373.8	1374.3	1374.9	1374.9
152.5°	1403.0	1403.8	1404.6	1405.4	1406.2	1406.8	1407.1	1407.5	1407.8	1408.2	1408.7
155°	1455.4	1455.4	1455.4	1455.4	1455.4	1455.6	1455.9	1456.1	1456.5	1456.7	1457.9
157.5°	1500.1	1499.8	1499.4	1499.1	1498.7	1498.7	1498.9	1499.1	1499.3	1499.6	1500.8
160°	1528.2	1527.6	1527.0	1526.4	1525.9	1525.5	1525.5	1525.5	1525.5	1525.5	1527.0
162.5°	1553.1	1552.3	1551.4	1550.7	1549.9	1549.5	1549.8	1550.1	1550.2	1550.5	1552.0
165°	1585.3	1584.4	1583.6	1582.7	1581.8	1581.4	1581.4	1581.4	1581.4	1581.4	1583.1
167.5°	1611.0	1609.8	1608.7	1607.5	1606.4	1605.9	1606.1	1606.4	1606.6	1606.8	1608.6
170°	1625.5	1624.4	1623.2	1622.0	1620.9	1620.3	1620.3	1620.3	1620.3	1620.3	1622.4
172.5°	1636.9	1635.8	1634.6	1633.5	1632.4	1631.8	1631.8	1631.8	1631.8	1631.8	1633.6
175°	1648.9	1647.8	1646.6	1645.5	1644.3	1643.7	1643.7	1643.7	1643.7	1643.7	1645.5
177.5°	1653.8	1652.9	1652.0	1651.1	1650.1	1649.7	1649.7	1649.7	1649.7	1649.7	1651.1
180°	1652.8	1652.8	1652.8	1652.8	1652.8	1652.8	1652.8	1652.8	1652.8	1652.8	1652.8



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	813.2	813.2	813.2	813.2	813.2	813.2	813.2	813.2
2.5°	810.0	811.3	812.6	813.1	812.9	812.6	812.4	812.2
5°	804.6	806.0	807.3	807.8	807.5	807.2	806.9	806.6
7.5°	793.3	794.0	794.8	794.9	794.4	793.9	793.4	792.9
10°	783.2	783.3	783.4	783.2	782.5	781.7	781.0	780.2
12.5°	770.6	770.5	770.4	769.9	769.0	768.2	767.4	766.5
15°	748.5	747.7	747.0	746.1	745.0	744.1	743.0	742.0
17.5°	722.0	720.5	718.8	717.4	715.8	714.3	712.7	711.3
20°	703.9	702.0	700.1	698.3	696.5	694.7	692.9	691.2
22.5°	684.5	682.1	679.8	677.7	676.1	674.4	672.8	671.1
25°	652.7	649.6	646.6	644.2	642.7	641.0	639.4	637.7
27.5°	618.1	613.9	609.6	606.2	603.7	601.3	598.8	596.3
30°	593.5	588.5	583.6	579.9	577.6	575.2	572.8	570.5
32.5°	569.4	563.9	558.4	554.5	552.1	549.6	547.1	544.7
35°	533.5	527.2	520.9	516.4	513.8	511.2	508.5	505.8
37.5°	495.0	487.8	480.7	475.5	472.3	469.0	465.7	462.4
40°	468.2	460.5	453.0	447.5	444.1	440.7	437.4	433.9
42.5°	442.6	434.2	425.9	420.2	417.2	414.1	411.1	408.1
45°	404.8	396.4	388.1	382.1	378.6	375.1	371.5	368.0
47.5°	365.7	356.6	347.5	341.4	338.3	335.1	332.0	328.8
50°	339.3	330.2	321.2	314.9	311.5	308.2	304.8	301.4
52.5°	313.8	304.4	294.9	288.7	285.7	282.7	279.7	276.6
55°	275.9	267.3	258.8	253.1	250.2	247.3	244.4	241.4
57.5°	238.5	230.5	222.5	217.2	214.7	212.2	209.7	207.2
60°	215.0	207.1	199.1	194.0	191.5	189.0	186.5	184.0
62.5°	191.7	184.3	176.8	171.8	169.2	166.5	163.9	161.4
65°	158.4	151.3	144.0	139.7	138.1	136.5	134.8	133.2
67.5°	126.7	121.3	116.0	112.4	110.7	109.0	107.3	105.6
70°	107.1	102.0	96.9	93.5	91.9	90.3	88.7	87.0
72.5°	89.5	85.3	81.1	78.7	78.0	77.3	76.6	75.9
75°	67.0	65.5	64.1	63.2	62.9	62.6	62.3	62.0
77.5°	50.5	49.8	48.9	48.4	48.1	47.8	47.5	47.2
80°	40.6	40.2	39.8	39.4	39.2	38.8	38.6	38.2
82.5°	31.2	30.7	30.3	30.0	30.0	30.0	29.9	29.8
85°	17.9	17.6	17.3	17.1	17.1	17.1	17.1	17.1
87.5°	13.3	13.4	13.5	13.6	13.6	13.6	13.6	13.6
90°	33.5	34.6	35.8	36.7	37.2	37.8	38.4	38.9
92.5°	51.7	52.6	53.6	53.8	53.5	53.1	52.8	52.4
95°	98.4	99.5	100.7	101.3	101.3	101.3	101.3	101.3
97.5°	153.0	154.3	155.7	156.3	156.2	156.0	155.9	155.8
100°	192.6	193.5	194.3	195.0	195.6	196.2	196.7	197.3
102.5°	238.3	239.2	240.0	240.4	240.3	240.1	240.0	240.0
105°	306.4	306.4	306.4	306.7	307.3	307.9	308.4	309.0
107.5°	380.2	381.1	382.0	382.3	381.9	381.6	381.3	380.9
110°	429.5	430.6	431.8	432.0	431.4	430.9	430.3	429.7



TEST NUMBER: P332429-935

CATALOG NUMBER: S123RDIW-S560D1535U935-4F0-1E-UDD-F1

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	478.7	480.1	481.5	482.2	482.1	481.9	481.8	481.6
115°	553.7	554.0	554.2	554.2	554.0	553.7	553.4	553.1
117.5°	629.3	629.3	629.2	628.8	627.9	627.2	626.4	625.5
120°	679.8	679.5	679.2	678.7	678.2	677.6	677.0	676.4
122.5°	730.7	730.0	729.3	728.5	727.7	726.9	726.1	725.2
125°	806.6	805.4	804.3	803.1	801.9	800.8	799.6	798.5
127.5°	881.5	879.9	878.2	876.8	875.5	874.1	872.8	871.4
130°	931.2	930.1	928.9	927.3	925.3	923.3	921.3	919.2
132.5°	979.6	978.2	976.8	975.3	973.8	972.2	970.6	969.1
135°	1052.0	1050.8	1049.6	1048.8	1048.2	1047.6	1047.1	1046.5
137.5°	1122.7	1121.5	1120.3	1119.1	1118.0	1117.0	1115.9	1114.7
140°	1169.2	1169.0	1168.6	1167.5	1165.4	1163.5	1161.4	1159.4
142.5°	1212.9	1212.5	1212.3	1211.3	1209.8	1208.2	1206.7	1205.1
145°	1276.9	1276.7	1276.4	1275.7	1274.5	1273.4	1272.2	1271.1
147.5°	1337.6	1337.6	1337.6	1336.7	1335.0	1333.3	1331.5	1329.7
150°	1374.9	1374.9	1374.9	1374.1	1372.3	1370.6	1368.9	1367.2
152.5°	1409.1	1409.5	1410.1	1409.5	1408.0	1406.5	1405.0	1403.5
155°	1459.1	1460.2	1461.4	1460.9	1458.9	1456.9	1454.8	1452.9
157.5°	1502.0	1503.2	1504.4	1504.3	1502.6	1501.0	1499.3	1497.8
160°	1528.4	1529.9	1531.3	1531.5	1530.3	1529.1	1528.0	1526.8
162.5°	1553.3	1554.8	1556.3	1556.1	1554.2	1552.4	1550.5	1548.7
165°	1584.8	1586.6	1588.3	1588.2	1586.1	1584.2	1582.1	1580.1
167.5°	1610.4	1612.2	1613.9	1613.9	1612.2	1610.4	1608.6	1606.8
170°	1624.4	1626.4	1628.4	1628.4	1626.4	1624.4	1622.4	1620.3
172.5°	1635.3	1637.1	1638.9	1638.8	1636.8	1634.8	1632.7	1630.7
175°	1647.2	1648.9	1650.6	1650.5	1648.5	1646.4	1644.4	1642.4
177.5°	1652.4	1653.8	1655.2	1655.1	1653.5	1651.8	1650.3	1648.6
180°	1652.8	1652.8	1652.8	1652.8	1652.8	1652.8	1652.8	1652.8

(END OF REPORT)