

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: P332420-935

Luminaire Tested: **S123RDIW-S560D1030U935-4F0-1E-UDD-F**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332420-935
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-5,
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S123RDIW-S560D1030U935-4F0-1E-UDD-F
Description: DEFINE 3 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 560 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER, REGRESSED
HOUSING
UPLIGHT 1030 LUMENS PER FOOT, NO LENS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 5390.1 lumens
Efficiency: N/A
Efficacy: 119.2 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

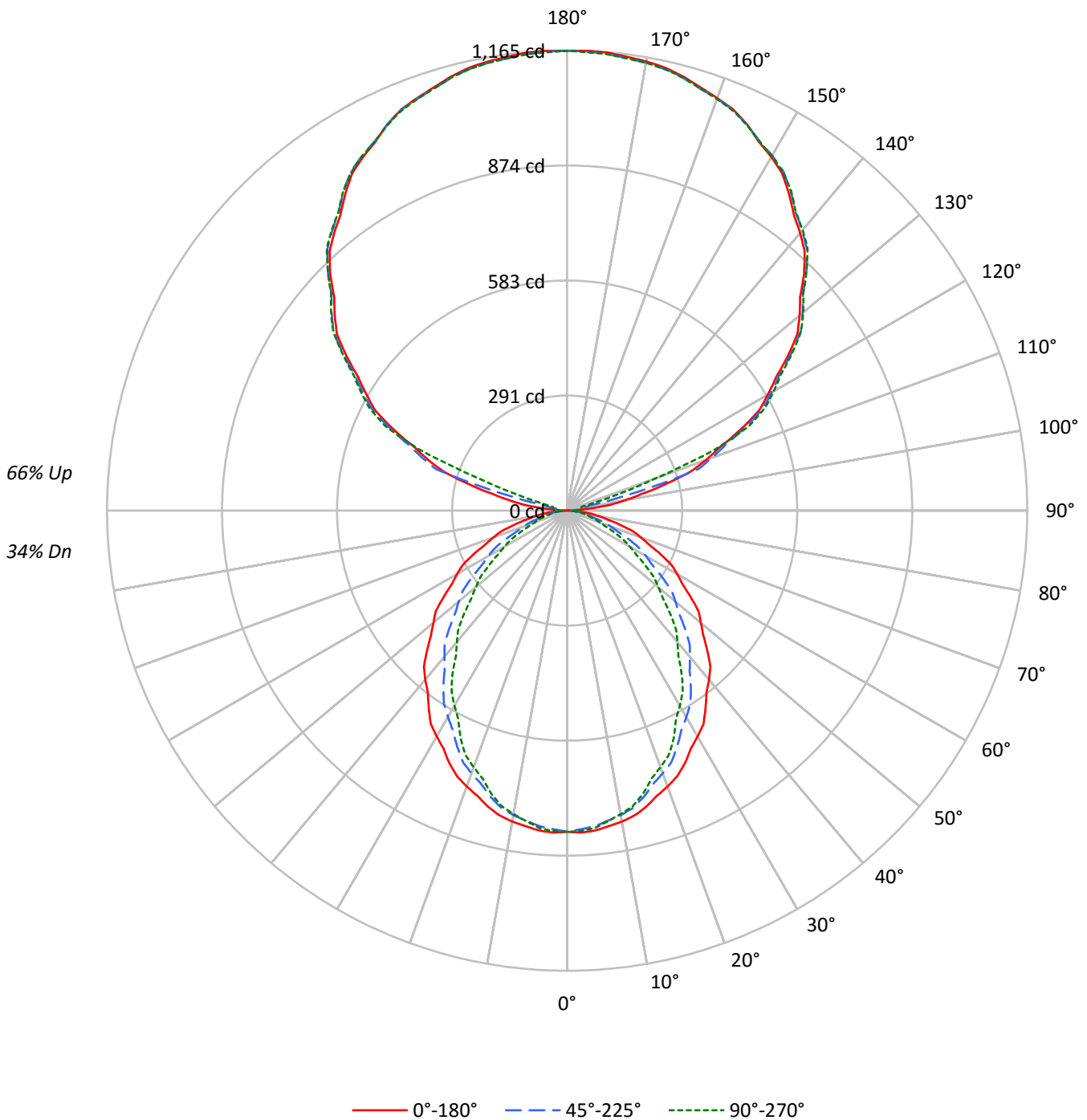
Input Watts (W): 45.2
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20				20				20			20			20			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	75	75	75	57	57	57	42	42	42	34
1	94	90	87	83	85	82	79	76	66	63	61	51	49	48	37	36	35	29
2	86	79	73	68	78	72	67	62	58	54	51	45	42	40	33	31	30	25
3	79	70	63	57	71	63	57	52	51	47	43	40	37	34	29	27	26	21
4	72	62	54	48	65	56	50	44	45	41	37	35	32	30	26	24	22	18
5	66	55	47	41	59	50	43	38	41	36	32	32	28	26	24	21	20	16
6	61	49	41	36	55	45	38	33	37	32	28	29	25	23	22	19	17	14
7	56	44	37	31	51	41	34	29	33	28	24	26	23	20	20	17	15	13
8	52	40	33	28	47	37	30	26	30	25	22	24	20	18	18	16	14	11
9	48	37	29	25	44	34	27	23	28	23	19	22	19	16	17	14	13	10
10	45	34	27	22	41	31	25	20	25	21	17	20	17	14	16	13	11	9

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	1.4
10°-20°	212.5	3.9
20°-30°	305.9	5.7
30°-40°	344.6	6.4
40°-50°	329.7	6.1
50°-60°	270.0	5.0
60°-70°	182.2	3.4
70°-80°	91.6	1.7
80°-90°	27.5	0.5
90°-100°	42.3	0.8
100°-110°	201.7	3.7
110°-120°	484.5	9.0
120°-130°	616.9	11.4
130°-140°	659.2	12.2
140°-150°	616.4	11.4
150°-160°	497.2	9.2
160°-170°	320.9	6.0
170°-180°	110.6	2.1
0°-30°	594.8	11.0
0°-40°	939.4	17.4
0°-60°	1539.1	28.6
0°-90°	1840.4	34.1
90°-120°	728.5	13.5
90°-150°	2621.0	48.6
90°-180°	3550.0	65.9
0°-180°	5390.1	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	10	21	24	26	4
95°	53	20	27	33	33	65
105°	258	262	189	45	38	273
115°	484	489	496	505	508	477
125°	682	688	692	694	695	608
135°	848	853	857	859	857	653
145°	979	985	987	988	988	613
155°	1078	1077	1078	1081	1077	497
165°	1137	1135	1134	1140	1135	321
175°	1164	1160	1160	1166	1160	111
180°	1164	1164	1164	1164	1164	



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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°	12.8	12.0	11.0	10.2	9.2	9.0	9.5	10.0	10.5	11.0	11.0
90°	0.9	2.8	4.7	6.6	8.5	10.8	13.3	15.8	18.3	20.8	21.5
92.5°	16.1	15.6	15.0	14.5	13.9	14.6	16.5	18.3	20.2	22.1	23.3
95°	52.8	44.9	37.0	29.1	21.3	18.3	20.5	22.6	24.7	26.8	28.2
97.5°	106.0	102.5	98.9	95.4	91.9	83.2	69.4	55.5	41.7	27.8	29.4
100°	146.1	150.0	153.9	157.6	161.5	148.4	118.5	88.5	58.5	28.5	30.0
102.5°	191.8	194.6	197.3	200.1	202.9	187.9	155.2	122.4	89.6	56.9	52.2
105°	257.7	259.8	261.9	264.1	266.1	258.6	241.3	223.9	206.7	189.4	155.4
107.5°	327.3	328.9	330.6	332.3	334.0	336.2	339.0	341.6	344.4	347.2	322.2
110°	373.6	375.1	376.7	378.2	379.7	381.6	383.7	385.8	387.9	390.0	383.7



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	417.8	419.2	420.6	422.1	423.4	425.2	427.2	429.4	431.5	433.6	433.7
115°	483.5	484.6	485.7	486.9	488.0	489.5	491.2	492.9	494.6	496.4	498.3
117.5°	546.9	548.3	549.7	551.1	552.6	553.7	554.7	555.5	556.4	557.2	558.8
120°	586.3	588.1	589.8	591.5	593.2	594.4	595.0	595.6	596.2	596.7	598.2
122.5°	626.5	627.8	629.3	630.7	632.1	633.2	634.0	634.6	635.4	636.1	637.2
125°	681.5	683.0	684.5	686.0	687.6	688.8	689.5	690.3	691.0	691.8	692.2
127.5°	734.7	736.2	737.8	739.3	740.9	742.1	743.0	744.0	744.9	745.8	746.4
130°	767.9	769.5	771.0	772.6	774.1	775.2	776.0	776.8	777.6	778.3	779.1
132.5°	799.8	801.3	802.8	804.3	805.9	807.0	807.6	808.2	808.8	809.4	810.2
135°	848.3	849.5	850.7	851.8	853.0	853.9	854.7	855.5	856.3	857.0	857.6
137.5°	889.8	891.3	892.8	894.2	895.7	896.6	897.1	897.5	897.9	898.4	899.2
140°	917.6	918.7	919.9	921.0	922.1	923.0	923.6	924.2	924.7	925.3	926.1
142.5°	943.1	944.3	945.5	946.6	947.8	948.6	949.2	949.8	950.4	950.9	951.6
145°	979.0	980.2	981.6	983.0	984.3	985.2	985.6	985.9	986.4	986.7	987.1
147.5°	1012.7	1013.6	1014.4	1015.3	1016.2	1016.8	1017.2	1017.6	1018.0	1018.4	1018.7
150°	1033.5	1034.0	1034.6	1035.2	1035.7	1036.2	1036.6	1037.0	1037.3	1037.8	1038.1
152.5°	1052.1	1052.4	1052.7	1052.9	1053.2	1053.4	1053.7	1053.9	1054.1	1054.4	1055.1
155°	1078.4	1078.0	1077.6	1077.3	1076.9	1076.8	1076.9	1077.1	1077.4	1077.5	1078.5
157.5°	1098.8	1098.8	1098.7	1098.7	1098.6	1098.5	1098.4	1098.1	1097.9	1097.8	1098.9
160°	1111.3	1111.0	1110.9	1110.7	1110.5	1110.3	1110.1	1109.9	1109.7	1109.6	1110.7
162.5°	1123.0	1122.5	1122.1	1121.5	1121.0	1120.7	1120.5	1120.3	1120.1	1119.9	1121.2
165°	1137.2	1136.6	1136.1	1135.5	1134.9	1134.5	1134.3	1134.1	1133.9	1133.8	1135.3
167.5°	1148.2	1147.5	1146.8	1146.0	1145.2	1144.8	1144.8	1144.8	1144.8	1144.8	1146.3
170°	1154.5	1153.7	1153.0	1152.2	1151.4	1151.1	1151.1	1151.1	1151.1	1151.1	1152.5
172.5°	1158.6	1157.7	1156.8	1155.9	1154.9	1154.6	1154.7	1154.9	1155.0	1155.2	1156.8
175°	1164.0	1163.0	1162.1	1161.1	1160.2	1159.8	1159.9	1160.2	1160.4	1160.5	1161.9
177.5°	1165.4	1164.6	1163.9	1163.1	1162.4	1162.0	1162.2	1162.4	1162.4	1162.6	1163.9
180°	1164.0	1164.0	1164.0	1164.0	1164.0	1164.0	1164.0	1164.0	1164.0	1164.0	1164.0



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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°	11.1	11.1	11.2	11.2	11.1	11.1	11.0	11.0
90°	22.3	23.1	23.8	24.4	24.8	25.1	25.6	25.9
92.5°	24.6	25.8	27.0	27.8	28.0	28.2	28.5	28.7
95°	29.5	30.8	32.2	32.9	32.9	32.9	32.9	32.9
97.5°	30.9	32.5	34.0	34.9	35.0	35.2	35.5	35.6
100°	31.6	33.1	34.7	35.6	35.7	35.9	36.2	36.3
102.5°	47.4	42.6	37.8	35.6	36.0	36.3	36.7	37.0
105°	121.4	87.3	53.3	36.5	36.9	37.3	37.6	38.1
107.5°	297.2	272.3	247.4	222.1	196.4	170.8	145.2	119.5
110°	377.4	371.0	364.6	347.8	320.3	292.7	265.3	237.8



TEST NUMBER: P332420-935

CATALOG NUMBER: S123RDIW-S560D1030U935-4F0-1E-UDD-F

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	433.9	433.9	434.0	431.2	425.4	419.7	413.8	408.0
115°	500.2	502.1	504.1	505.4	506.2	507.0	507.7	508.5
117.5°	560.3	561.9	563.4	564.3	564.4	564.6	564.7	564.9
120°	599.8	601.3	602.9	603.6	603.6	603.6	603.6	603.6
122.5°	638.3	639.4	640.4	641.1	641.2	641.4	641.5	641.7
125°	692.6	693.0	693.4	693.8	694.1	694.5	694.9	695.3
127.5°	747.0	747.6	748.3	748.4	748.0	747.6	747.3	746.8
130°	779.9	780.6	781.4	781.6	781.2	780.8	780.4	780.1
132.5°	811.0	811.8	812.5	812.6	812.1	811.6	811.1	810.5
135°	858.2	858.8	859.3	859.3	858.8	858.2	857.6	857.0
137.5°	900.2	901.1	902.1	902.3	901.9	901.6	901.1	900.8
140°	926.9	927.6	928.4	928.6	928.2	927.8	927.5	927.0
142.5°	952.2	952.8	953.4	953.4	952.9	952.4	951.8	951.2
145°	987.5	987.9	988.3	988.4	988.4	988.4	988.4	988.4
147.5°	1019.2	1019.5	1019.9	1019.7	1018.8	1017.9	1017.0	1016.2
150°	1038.5	1038.9	1039.3	1039.2	1038.6	1038.0	1037.5	1036.9
152.5°	1055.8	1056.4	1057.1	1057.0	1056.1	1055.2	1054.4	1053.5
155°	1079.4	1080.4	1081.4	1081.2	1080.1	1079.0	1077.8	1076.7
157.5°	1100.1	1101.2	1102.3	1102.2	1100.7	1099.2	1097.7	1096.2
160°	1111.8	1113.0	1114.1	1114.0	1112.7	1111.4	1110.0	1108.6
162.5°	1122.5	1123.9	1125.2	1125.2	1124.0	1122.8	1121.6	1120.4
165°	1136.8	1138.3	1139.9	1140.0	1138.7	1137.3	1135.9	1134.6
167.5°	1147.9	1149.4	1151.0	1151.0	1149.4	1147.9	1146.3	1144.8
170°	1154.1	1155.6	1157.2	1157.2	1155.6	1154.1	1152.5	1151.1
172.5°	1158.3	1159.8	1161.3	1161.2	1159.6	1157.9	1156.2	1154.5
175°	1163.2	1164.6	1166.0	1165.9	1164.3	1162.8	1161.2	1159.7
177.5°	1165.1	1166.3	1167.5	1167.4	1165.9	1164.3	1162.8	1161.2
180°	1164.0	1164.0	1164.0	1164.0	1164.0	1164.0	1164.0	1164.0

(END OF REPORT)