

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: P332424-927

Luminaire Tested: **S123RDIW-S560D1320U927-4F0-1E-UDD-F**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332424-927
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-S560D1320U927-4F0-1E-UDD-F
Description: DEFINE 3 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 560 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER, REGRESSED
HOUSING
UPLIGHT 1320 LUMENS PER FOOT, NO LENS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 5875.2 lumens
Efficiency: N/A
Efficacy: 109.2 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

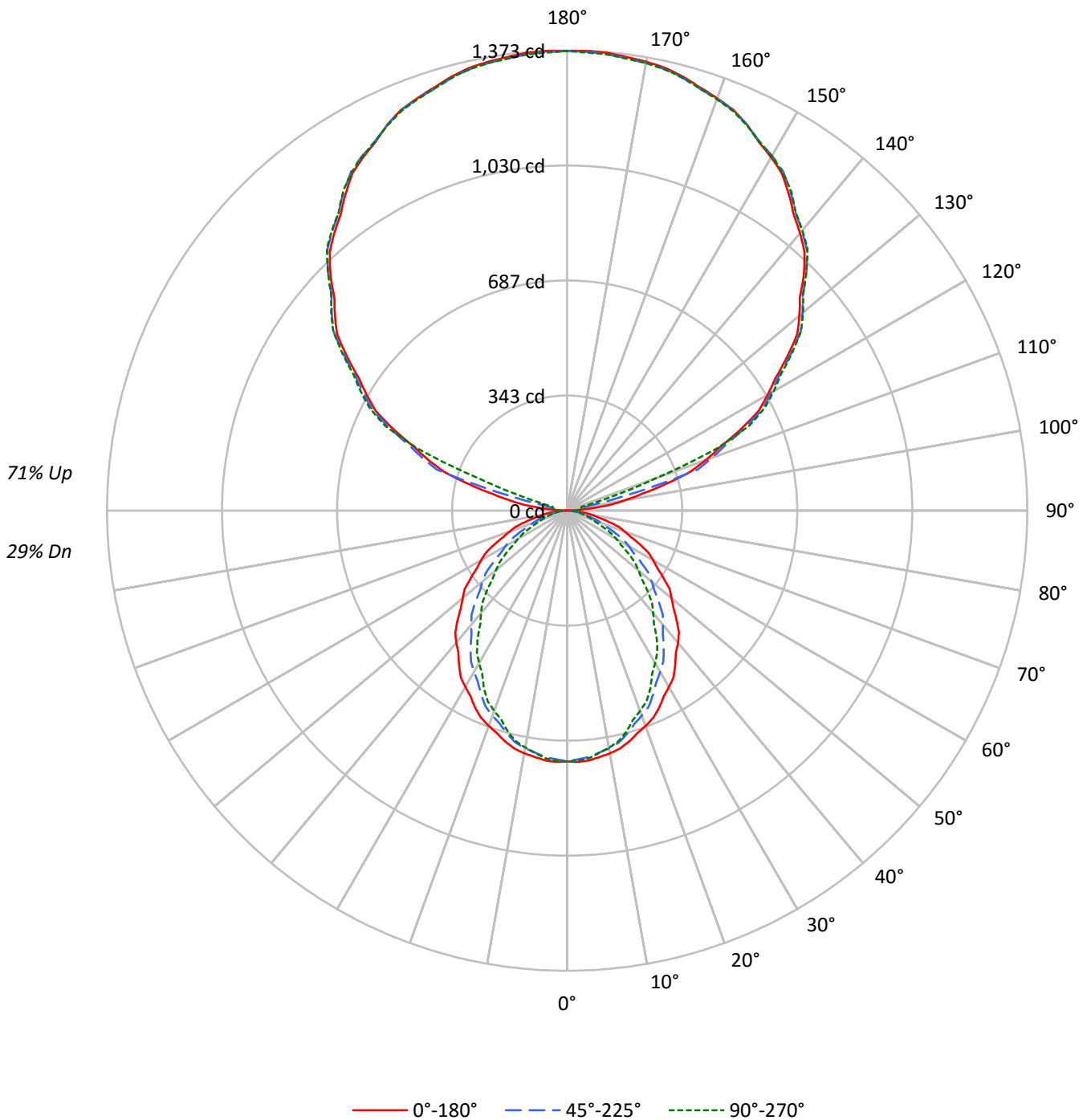
Input Watts (W): 53.8
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	102	102	102	102	91	91	91	91	72	72	72	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	42	39	38	29	28	27	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	16
5	65	54	46	41	58	49	42	37	39	34	30	30	26	24	21	19	17	14
6	60	48	41	35	54	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	12	10	8

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	8054	8054	8054
5°	8084	7973	8018
10°	8039	7873	7847
15°	7952	7689	7608
20°	7834	7458	7285
25°	7712	7201	6969
30°	7549	6901	6524
35°	7384	6603	6116
40°	7231	6250	5611
45°	7030	5903	5154
50°	6807	5508	4644
55°	6583	5056	4168
60°	6374	4573	3645
65°	6105	4050	3123
70°	5766	3402	2521
75°	5273	2674	2371
80°	4705	2374	2182
85°	3977	2100	1951



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	70.3	1.2
10°-20°	195.5	3.3
20°-30°	281.5	4.8
30°-40°	317.1	5.4
40°-50°	303.3	5.2
50°-60°	248.4	4.2
60°-70°	167.6	2.9
70°-80°	84.3	1.4
80°-90°	26.1	0.4
90°-100°	49.8	0.8
100°-110°	237.6	4.0
110°-120°	570.6	9.7
120°-130°	726.7	12.4
130°-140°	776.4	13.2
140°-150°	726.0	12.4
150°-160°	585.6	10.0
160°-170°	378.0	6.4
170°-180°	130.3	2.2
0°-30°	547.2	9.3
0°-40°	864.3	14.7
0°-60°	1416.1	24.1
0°-90°	1694.1	28.8
90°-120°	858.1	14.6
90°-150°	3087.2	52.5
90°-180°	4181.0	71.2
0°-180°	5875.2	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	748	748	748	748	748	
5°	748	745	738	743	742	71
15°	714	706	690	687	683	201
25°	649	633	606	594	587	298
35°	562	539	502	477	465	352
45°	462	433	388	354	339	356
55°	351	320	269	236	222	314
65°	240	206	159	130	123	237
75°	127	97	64	58	57	135
85°	32	19	17	16	16	36
90°	1	11	24	28	31	4
95°	62	23	32	38	39	77
105°	304	309	223	53	45	322
115°	569	576	585	594	599	562
125°	803	811	815	817	819	717
135°	999	1005	1010	1012	1010	769
145°	1153	1160	1162	1164	1164	722
155°	1270	1268	1269	1274	1268	585
165°	1340	1336	1335	1343	1336	378
175°	1371	1366	1367	1373	1366	130
180°	1371	1371	1371	1371	1371	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	748.2	748.2	748.2	748.2	748.2	748.2	748.2	748.2	748.2	748.2	748.2
2.5°	750.7	750.2	749.8	749.3	748.9	748.1	746.8	745.4	744.2	742.9	744.1
5°	748.2	747.6	746.9	746.2	745.5	744.4	742.8	741.2	739.5	737.9	739.1
7.5°	741.3	740.6	739.8	739.1	738.4	737.0	734.9	732.8	730.6	728.6	729.2
10°	735.5	734.5	733.6	732.6	731.7	730.0	727.6	725.2	722.7	720.3	720.4
12.5°	727.2	726.2	725.1	724.1	723.0	721.0	718.0	715.1	712.1	709.2	709.1
15°	713.6	712.2	710.7	709.2	707.7	705.0	701.3	697.5	693.7	690.0	689.3
17.5°	696.5	694.8	693.1	691.3	689.6	686.3	681.5	676.8	671.9	667.2	665.7
20°	683.9	681.8	679.6	677.4	675.3	671.6	666.5	661.4	656.2	651.1	649.4
22.5°	669.8	667.3	664.9	662.3	659.9	655.9	650.5	645.0	639.6	634.1	631.9
25°	649.3	645.9	642.5	639.2	635.8	631.1	624.8	618.6	612.4	606.3	603.4
27.5°	624.4	620.7	617.0	613.2	609.5	604.2	597.3	590.4	583.5	576.6	572.7
30°	607.4	603.4	599.4	595.3	591.3	585.4	577.9	570.4	562.8	555.2	550.6
32.5°	590.4	585.9	581.3	576.7	572.1	565.9	557.9	549.9	541.9	533.9	528.9
35°	561.9	557.1	552.2	547.4	542.5	535.9	527.5	519.2	510.8	502.5	496.6
37.5°	533.1	527.7	522.3	516.8	511.4	504.3	495.4	486.5	477.5	468.6	462.0
40°	514.6	508.7	502.7	496.8	490.8	483.1	473.6	464.0	454.4	444.8	437.8
42.5°	493.7	487.7	481.9	475.9	470.0	462.1	452.2	442.3	432.4	422.5	414.8
45°	461.8	455.7	449.6	443.6	437.5	429.3	418.9	408.5	398.2	387.8	380.1
47.5°	429.8	423.2	416.5	409.9	403.2	394.7	384.3	373.9	363.5	353.2	344.8
50°	406.5	400.2	393.9	387.5	381.2	372.6	361.6	350.8	339.8	328.9	320.5
52.5°	385.7	378.8	371.9	365.0	358.2	349.4	338.5	327.7	316.9	306.1	297.4
55°	350.8	344.1	337.5	330.9	324.3	315.3	303.8	292.4	280.9	269.4	261.6
57.5°	318.5	311.2	304.0	296.8	289.6	280.3	268.8	257.3	245.7	234.2	226.9
60°	296.1	288.8	281.3	273.9	266.5	257.1	246.0	234.8	223.6	212.4	205.1
62.5°	273.8	266.4	259.0	251.5	244.2	234.8	223.6	212.5	201.2	190.0	183.2
65°	239.7	232.3	224.9	217.5	210.0	201.1	190.5	180.1	169.5	159.0	152.4
67.5°	205.6	198.1	190.6	183.1	175.6	166.8	156.7	146.6	136.6	126.4	121.5
70°	183.2	175.9	168.7	161.4	154.2	145.8	136.3	126.9	117.5	108.1	103.3
72.5°	160.9	153.8	146.6	139.4	132.2	124.4	115.8	107.2	98.6	90.1	86.2
75°	126.8	120.3	113.9	107.4	100.9	94.0	86.6	79.1	71.8	64.3	63.0
77.5°	95.8	89.9	84.1	78.2	72.3	67.0	62.3	57.5	52.7	47.9	47.2
80°	75.9	70.3	64.8	59.3	53.7	49.6	46.7	43.9	41.0	38.3	37.8
82.5°	57.0	52.1	47.4	42.6	37.8	34.8	33.4	32.2	30.8	29.5	29.1
85°	32.2	29.2	26.2	23.3	20.3	18.6	18.2	17.8	17.4	17.0	16.7
87.5°	11.9	11.1	10.4	9.7	9.0	8.9	9.4	10.1	10.6	11.2	11.2
90°	1.0	3.2	5.5	7.8	10.1	12.7	15.6	18.5	21.5	24.5	25.3
92.5°	18.9	18.3	17.7	17.0	16.4	17.2	19.4	21.6	23.8	26.1	27.5
95°	62.1	52.8	43.6	34.3	25.0	21.6	24.1	26.6	29.1	31.6	33.2
97.5°	124.8	120.7	116.5	112.4	108.2	98.0	81.7	65.4	49.1	32.8	34.6
100°	172.1	176.7	181.2	185.7	190.3	174.8	139.6	104.3	68.9	33.6	35.4
102.5°	225.9	229.2	232.4	235.7	239.0	221.3	182.8	144.2	105.6	67.0	61.4
105°	303.6	306.0	308.6	311.0	313.5	304.6	284.2	263.8	243.4	223.1	183.0
107.5°	385.5	387.5	389.4	391.4	393.4	396.0	399.3	402.4	405.7	408.8	379.5
110°	440.1	441.9	443.6	445.4	447.3	449.4	451.9	454.4	456.9	459.4	451.9



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	492.2	493.8	495.4	497.1	498.7	500.7	503.3	505.7	508.3	510.7	510.9
115°	569.4	570.8	572.1	573.5	574.8	576.6	578.5	580.6	582.7	584.7	586.9
117.5°	644.2	645.9	647.5	649.2	650.9	652.2	653.2	654.3	655.4	656.4	658.2
120°	690.6	692.7	694.7	696.7	698.8	700.1	700.8	701.5	702.2	702.8	704.6
122.5°	737.9	739.6	741.2	742.9	744.6	745.8	746.7	747.6	748.5	749.3	750.6
125°	802.6	804.5	806.3	808.1	809.9	811.3	812.1	813.1	814.0	814.9	815.3
127.5°	865.4	867.2	869.0	870.8	872.7	874.1	875.2	876.3	877.3	878.5	879.2
130°	904.5	906.3	908.2	910.0	911.8	913.1	914.0	915.0	915.8	916.7	917.7
132.5°	942.0	943.8	945.6	947.5	949.3	950.5	951.3	952.0	952.7	953.4	954.3
135°	999.3	1000.6	1002.0	1003.3	1004.7	1005.8	1006.7	1007.7	1008.5	1009.5	1010.1
137.5°	1048.1	1049.9	1051.6	1053.3	1055.0	1056.1	1056.6	1057.2	1057.6	1058.1	1059.2
140°	1080.8	1082.1	1083.5	1084.8	1086.2	1087.2	1087.9	1088.5	1089.3	1089.9	1090.8
142.5°	1110.9	1112.2	1113.6	1115.0	1116.3	1117.4	1118.0	1118.7	1119.4	1120.1	1120.8
145°	1153.1	1154.7	1156.3	1157.9	1159.4	1160.4	1160.9	1161.3	1161.8	1162.2	1162.7
147.5°	1192.8	1193.8	1194.8	1195.9	1197.0	1197.7	1198.2	1198.6	1199.0	1199.5	1200.0
150°	1217.3	1217.9	1218.6	1219.2	1220.0	1220.5	1221.0	1221.4	1221.9	1222.3	1222.8
152.5°	1239.2	1239.5	1239.8	1240.2	1240.5	1240.8	1241.1	1241.3	1241.6	1241.9	1242.7
155°	1270.2	1269.8	1269.3	1268.8	1268.4	1268.3	1268.5	1268.8	1269.0	1269.2	1270.3
157.5°	1294.3	1294.2	1294.2	1294.1	1294.0	1294.0	1293.7	1293.5	1293.2	1293.0	1294.3
160°	1308.9	1308.7	1308.4	1308.2	1308.0	1307.8	1307.6	1307.3	1307.1	1306.9	1308.2
162.5°	1322.8	1322.2	1321.6	1321.0	1320.4	1320.0	1319.8	1319.5	1319.3	1319.1	1320.6
165°	1339.5	1338.8	1338.1	1337.4	1336.7	1336.3	1336.1	1335.9	1335.6	1335.4	1337.2
167.5°	1352.5	1351.6	1350.7	1349.8	1348.8	1348.5	1348.5	1348.5	1348.5	1348.5	1350.3
170°	1359.9	1358.9	1358.0	1357.2	1356.2	1355.7	1355.7	1355.7	1355.7	1355.7	1357.6
172.5°	1364.8	1363.7	1362.6	1361.4	1360.4	1359.9	1360.1	1360.3	1360.5	1360.7	1362.5
175°	1371.0	1369.9	1368.8	1367.6	1366.5	1366.0	1366.3	1366.5	1366.8	1367.0	1368.6
177.5°	1372.7	1371.7	1370.9	1370.0	1369.0	1368.7	1368.9	1369.0	1369.2	1369.4	1370.9
180°	1371.0	1371.0	1371.0	1371.0	1371.0	1371.0	1371.0	1371.0	1371.0	1371.0	1371.0



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	748.2	748.2	748.2	748.2	748.2	748.2	748.2	748.2
2.5°	745.3	746.5	747.7	748.1	747.9	747.7	747.5	747.3
5°	740.3	741.6	742.8	743.2	743.0	742.7	742.4	742.1
7.5°	729.9	730.6	731.3	731.3	730.9	730.5	730.0	729.5
10°	720.6	720.7	720.8	720.6	719.9	719.2	718.6	717.9
12.5°	709.0	708.9	708.8	708.4	707.6	706.8	706.1	705.3
15°	688.6	687.9	687.3	686.4	685.5	684.6	683.7	682.7
17.5°	664.3	662.9	661.4	660.0	658.6	657.2	655.8	654.4
20°	647.6	645.9	644.1	642.5	640.8	639.2	637.5	636.0
22.5°	629.8	627.6	625.4	623.5	622.0	620.5	619.0	617.5
25°	600.6	597.7	594.9	592.7	591.3	589.8	588.3	586.8
27.5°	568.7	564.8	560.9	557.8	555.5	553.3	551.0	548.7
30°	546.1	541.5	536.9	533.5	531.4	529.3	527.0	524.9
32.5°	523.9	518.8	513.8	510.2	507.9	505.6	503.4	501.1
35°	490.8	485.1	479.3	475.2	472.7	470.3	467.9	465.4
37.5°	455.4	448.9	442.3	437.5	434.5	431.5	428.5	425.5
40°	430.8	423.7	416.8	411.7	408.6	405.5	402.4	399.3
42.5°	407.2	399.5	391.8	386.6	383.8	381.0	378.3	375.5
45°	372.4	364.7	357.0	351.6	348.3	345.1	341.8	338.6
47.5°	336.4	328.1	319.7	314.1	311.2	308.3	305.5	302.5
50°	312.2	303.8	295.5	289.7	286.6	283.5	280.4	277.3
52.5°	288.8	280.0	271.3	265.6	262.8	260.1	257.3	254.5
55°	253.8	246.0	238.1	232.9	230.2	227.5	224.8	222.1
57.5°	219.4	212.1	204.7	199.9	197.6	195.3	193.0	190.7
60°	197.8	190.5	183.2	178.5	176.2	173.9	171.6	169.3
62.5°	176.3	169.5	162.6	158.0	155.7	153.2	150.8	148.5
65°	145.8	139.2	132.5	128.5	127.1	125.6	124.1	122.6
67.5°	116.6	111.6	106.7	103.5	101.9	100.3	98.7	97.1
70°	98.5	93.9	89.1	86.0	84.5	83.1	81.6	80.1
72.5°	82.3	78.5	74.6	72.4	71.8	71.1	70.5	69.9
75°	61.6	60.3	58.9	58.1	57.8	57.6	57.3	57.0
77.5°	46.5	45.8	45.0	44.5	44.3	44.0	43.7	43.4
80°	37.4	37.0	36.6	36.3	36.0	35.7	35.5	35.2
82.5°	28.7	28.3	27.9	27.6	27.6	27.6	27.5	27.4
85°	16.5	16.2	15.9	15.8	15.8	15.8	15.8	15.8
87.5°	11.3	11.4	11.5	11.5	11.5	11.5	11.5	11.5
90°	26.2	27.2	28.0	28.8	29.2	29.6	30.1	30.6
92.5°	29.0	30.4	31.8	32.7	33.0	33.3	33.5	33.8
95°	34.8	36.4	37.9	38.7	38.7	38.7	38.7	38.7
97.5°	36.4	38.3	40.0	41.0	41.3	41.5	41.7	42.0
100°	37.2	39.1	40.9	41.9	42.1	42.3	42.5	42.8
102.5°	55.8	50.1	44.6	42.0	42.4	42.8	43.2	43.6
105°	142.9	102.9	62.8	43.0	43.5	43.9	44.4	44.8
107.5°	350.1	320.8	291.4	261.6	231.4	201.1	171.0	140.8
110°	444.4	437.0	429.5	409.6	377.2	344.8	312.5	280.1



TEST NUMBER: P332424-927

CATALOG NUMBER: S123RDIW-S560D1320U927-4F0-1E-UDD-F

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	511.0	511.1	511.3	507.9	501.1	494.2	487.4	480.6
115°	589.2	591.4	593.7	595.3	596.2	597.1	598.0	599.0
117.5°	660.0	661.8	663.6	664.6	664.8	665.0	665.2	665.4
120°	706.5	708.3	710.1	711.0	711.0	711.0	711.0	711.0
122.5°	751.9	753.1	754.4	755.1	755.3	755.4	755.7	755.8
125°	815.8	816.3	816.7	817.1	817.6	818.1	818.5	819.0
127.5°	879.9	880.6	881.4	881.5	881.1	880.6	880.1	879.6
130°	918.5	919.5	920.4	920.6	920.1	919.7	919.2	918.8
132.5°	955.2	956.2	957.0	957.2	956.6	955.9	955.3	954.7
135°	1010.8	1011.5	1012.2	1012.2	1011.5	1010.8	1010.1	1009.5
137.5°	1060.3	1061.4	1062.5	1062.8	1062.3	1061.9	1061.4	1061.0
140°	1091.7	1092.7	1093.5	1093.8	1093.3	1092.8	1092.4	1091.9
142.5°	1121.5	1122.2	1123.0	1123.0	1122.4	1121.7	1121.1	1120.5
145°	1163.2	1163.6	1164.0	1164.3	1164.3	1164.3	1164.3	1164.3
147.5°	1200.4	1200.9	1201.3	1201.0	1200.0	1199.0	1197.9	1196.8
150°	1223.2	1223.7	1224.2	1224.0	1223.4	1222.7	1222.0	1221.3
152.5°	1243.5	1244.4	1245.2	1245.1	1244.0	1242.9	1241.9	1240.9
155°	1271.5	1272.6	1273.7	1273.6	1272.2	1270.9	1269.6	1268.2
157.5°	1295.8	1297.1	1298.5	1298.2	1296.5	1294.7	1292.9	1291.2
160°	1309.6	1311.0	1312.3	1312.2	1310.6	1309.0	1307.4	1305.8
162.5°	1322.2	1323.7	1325.2	1325.3	1323.9	1322.5	1321.1	1319.7
165°	1339.0	1340.8	1342.7	1342.7	1341.2	1339.6	1338.0	1336.4
167.5°	1352.1	1353.8	1355.7	1355.7	1353.8	1352.1	1350.3	1348.5
170°	1359.4	1361.2	1363.0	1363.0	1361.2	1359.4	1357.6	1355.7
172.5°	1364.3	1366.1	1367.9	1367.8	1365.8	1363.8	1361.8	1359.9
175°	1370.2	1371.7	1373.3	1373.2	1371.4	1369.6	1367.8	1366.0
177.5°	1372.3	1373.8	1375.2	1375.1	1373.2	1371.4	1369.6	1367.8
180°	1371.0	1371.0	1371.0	1371.0	1371.0	1371.0	1371.0	1371.0

(END OF REPORT)