

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: P332404-927

Luminaire Tested: **S123RDIW-S340D1320U927-4F0-1E-UDD-F**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P332404-927  
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-S340D1320U927-4F0-1E-UDD-F  
Description: DEFINE 3 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE  
DOWNLIGHT 340 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: 5213.0 lumens  
Efficiency: N/A  
Efficacy: 111.9 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

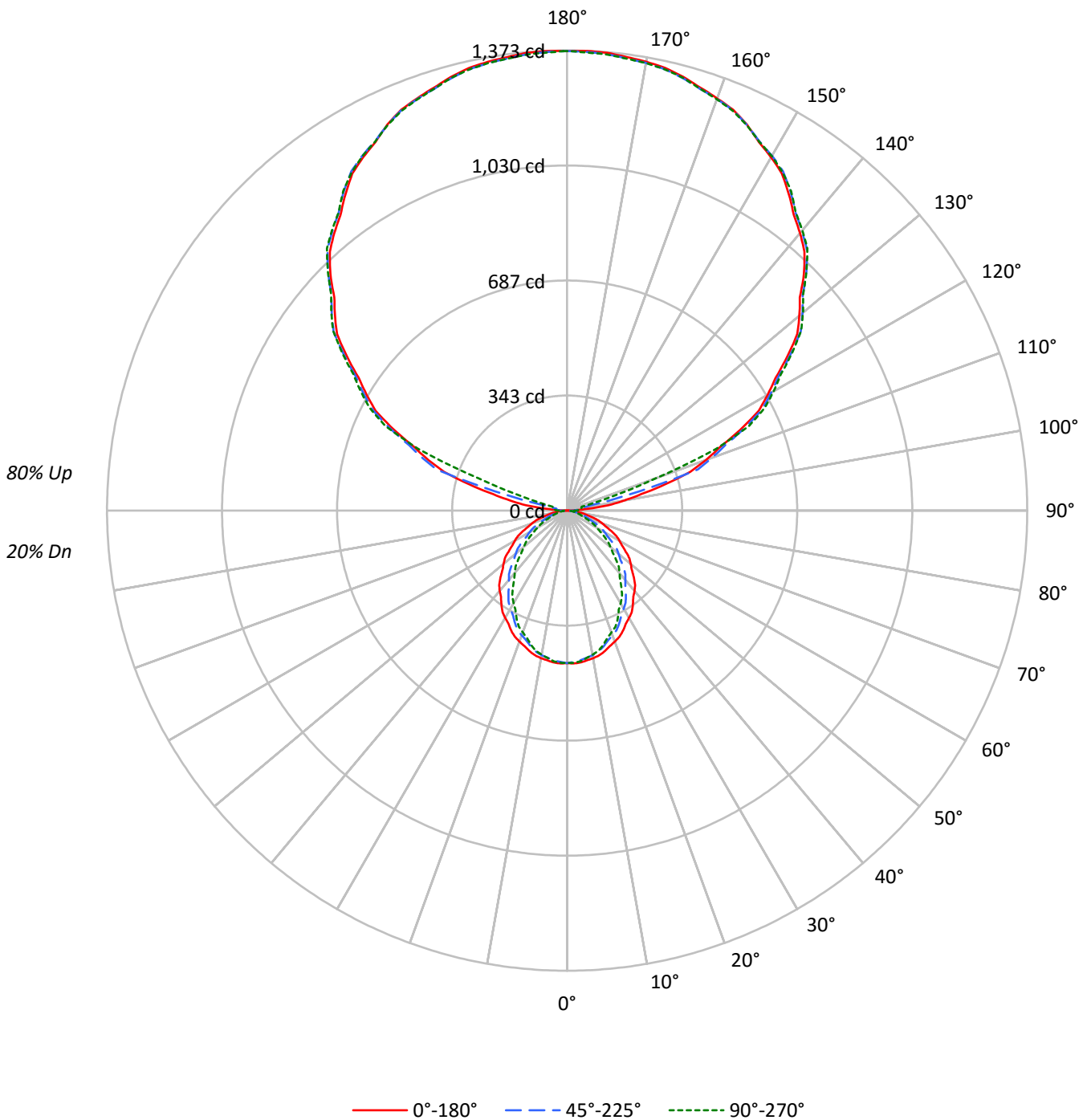
Input Watts (W): 46.6  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	100	100	100	100	88	88	88	88	67	67	67	47	47	47	28	28	28	20
1	91	87	83	80	80	77	74	71	58	56	55	41	40	39	25	25	24	17
2	83	76	70	66	73	67	63	59	51	48	45	36	34	33	22	21	20	14
3	76	67	60	55	67	59	54	49	45	41	38	32	30	28	20	19	18	12
4	69	59	52	46	61	53	46	41	40	36	32	29	26	24	18	16	15	11
5	63	53	45	39	56	47	40	35	36	31	28	26	23	20	16	14	13	9
6	58	47	39	34	51	42	35	31	32	28	24	23	20	18	15	13	12	8
7	54	42	35	29	47	38	31	27	29	24	21	21	18	16	13	12	10	7
8	50	38	31	26	44	34	28	23	26	22	19	19	16	14	12	11	9	7
9	46	35	28	23	41	31	25	21	24	20	17	17	15	12	11	10	8	6
10	43	32	25	20	38	28	22	18	22	18	15	16	13	11	10	9	8	5

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	4899	4899	4899
5°	4917	4850	4878
10°	4889	4790	4773
15°	4837	4677	4628
20°	4765	4537	4431
25°	4691	4380	4240
30°	4593	4197	3967
35°	4491	4016	3720
40°	4398	3801	3413
45°	4276	3589	3136
50°	4141	3349	2825
55°	4003	3076	2535
60°	3877	2781	2217
65°	3713	2463	1897
70°	3509	2068	1533
75°	3211	1626	1443
80°	2858	1444	1327
85°	2421	1272	1186



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	42.7	0.8
10°-20°	118.9	2.3
20°-30°	171.2	3.3
30°-40°	192.9	3.7
40°-50°	184.5	3.5
50°-60°	151.1	2.9
60°-70°	101.9	2.0
70°-80°	51.3	1.0
80°-90°	17.4	0.3
90°-100°	49.8	1.0
100°-110°	237.6	4.6
110°-120°	570.6	10.9
120°-130°	726.7	13.9
130°-140°	776.4	14.9
140°-150°	726.0	13.9
150°-160°	585.6	11.2
160°-170°	378.0	7.3
170°-180°	130.3	2.5
0°-30°	332.9	6.4
0°-40°	525.7	10.1
0°-60°	861.4	16.5
0°-90°	1032.0	19.8
90°-120°	858.1	16.5
90°-150°	3087.2	59.2
90°-180°	4181.0	80.2
0°-180°	5213.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	455	455	455	455	455	
5°	455	453	449	452	452	43
15°	434	430	420	418	415	122
25°	395	385	369	361	357	182
35°	342	328	306	290	283	214
45°	281	264	236	215	206	217
55°	213	195	164	143	135	191
65°	146	125	97	79	74	144
75°	77	59	39	36	35	82
85°	20	12	10	10	10	22
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°	455.1	455.1	455.1	455.1	455.1	455.1	455.1	455.1	455.1	455.1	455.1
2.5°	456.6	456.3	456.1	455.8	455.6	455.0	454.2	453.4	452.7	451.9	452.6
5°	455.1	454.7	454.3	453.9	453.4	452.8	451.8	450.8	449.8	448.9	449.6
7.5°	450.9	450.4	450.0	449.6	449.2	448.3	447.0	445.8	444.4	443.1	443.5
10°	447.3	446.8	446.2	445.7	445.0	444.0	442.6	441.1	439.6	438.2	438.2
12.5°	442.4	441.7	441.1	440.5	439.8	438.6	436.7	435.0	433.2	431.3	431.3
15°	434.1	433.2	432.3	431.3	430.5	428.9	426.6	424.3	422.0	419.7	419.3
17.5°	423.7	422.6	421.6	420.5	419.5	417.5	414.5	411.6	408.8	405.8	405.0
20°	416.0	414.7	413.4	412.1	410.7	408.5	405.4	402.3	399.2	396.1	395.0
22.5°	407.4	405.9	404.4	402.9	401.4	399.0	395.7	392.4	389.0	385.7	384.4
25°	395.0	392.9	390.9	388.8	386.7	383.8	380.1	376.3	372.5	368.8	367.0
27.5°	379.9	377.6	375.3	373.0	370.7	367.6	363.4	359.1	354.9	350.7	348.3
30°	369.5	367.0	364.6	362.1	359.7	356.1	351.5	346.9	342.3	337.7	334.9
32.5°	359.2	356.3	353.6	350.8	348.0	344.2	339.3	334.5	329.6	324.7	321.7
35°	341.8	338.8	335.9	333.0	330.0	326.0	320.9	315.8	310.7	305.6	302.1
37.5°	324.2	320.9	317.7	314.4	311.1	306.7	301.3	295.9	290.5	285.0	281.1
40°	313.0	309.4	305.8	302.2	298.6	293.8	288.0	282.2	276.4	270.5	266.3
42.5°	300.3	296.7	293.1	289.5	285.9	281.1	275.0	269.0	263.0	257.0	252.3
45°	280.9	277.2	273.5	269.8	266.1	261.1	254.8	248.5	242.2	235.8	231.2
47.5°	261.5	257.5	253.3	249.3	245.3	240.1	233.8	227.4	221.2	214.8	209.8
50°	247.3	243.4	239.6	235.8	231.9	226.6	220.0	213.3	206.7	200.0	195.0
52.5°	234.6	230.4	226.2	222.0	217.9	212.5	205.9	199.3	192.7	186.2	180.9
55°	213.3	209.3	205.3	201.3	197.3	191.8	184.8	177.8	170.9	163.9	159.1
57.5°	193.7	189.3	185.0	180.5	176.2	170.5	163.5	156.5	149.5	142.5	138.0
60°	180.1	175.6	171.1	166.6	162.1	156.5	149.6	142.8	136.0	129.2	124.8
62.5°	166.5	162.0	157.5	153.0	148.5	142.8	136.0	129.2	122.4	115.6	111.5
65°	145.8	141.3	136.8	132.3	127.8	122.3	115.9	109.5	103.1	96.7	92.7
67.5°	125.1	120.5	115.9	111.4	106.8	101.5	95.3	89.2	83.0	76.9	73.9
70°	111.5	107.0	102.6	98.2	93.8	88.6	82.9	77.2	71.5	65.7	62.8
72.5°	97.9	93.6	89.2	84.8	80.4	75.7	70.4	65.2	60.0	54.7	52.4
75°	77.2	73.2	69.2	65.4	61.4	57.2	52.7	48.2	43.6	39.1	38.3
77.5°	58.2	54.7	51.1	47.5	44.0	40.8	37.9	34.9	32.1	29.2	28.8
80°	46.1	42.8	39.5	36.0	32.7	30.2	28.4	26.7	25.0	23.3	23.0
82.5°	34.6	31.7	28.8	25.9	23.0	21.2	20.4	19.6	18.8	17.9	17.7
85°	19.6	17.7	15.9	14.2	12.4	11.3	11.1	10.9	10.6	10.3	10.1
87.5°	7.3	7.1	6.7	6.5	6.2	6.3	7.0	7.5	8.2	8.7	8.9
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°	455.1	455.1	455.1	455.1	455.1	455.1	455.1	455.1
2.5°	453.3	454.0	454.8	455.0	455.0	454.8	454.6	454.6
5°	450.4	451.1	451.8	452.1	451.9	451.8	451.6	451.5
7.5°	444.0	444.4	444.8	444.9	444.6	444.3	444.0	443.8
10°	438.3	438.4	438.5	438.3	437.9	437.5	437.0	436.7
12.5°	431.3	431.2	431.2	430.9	430.4	429.9	429.4	429.0
15°	418.8	418.4	418.0	417.6	417.0	416.4	415.8	415.3
17.5°	404.1	403.2	402.3	401.5	400.6	399.7	398.9	398.1
20°	394.0	392.8	391.8	390.8	389.8	388.8	387.9	386.8
22.5°	383.1	381.8	380.4	379.3	378.3	377.5	376.5	375.7
25°	365.3	363.6	361.9	360.5	359.7	358.8	357.8	357.0
27.5°	345.9	343.6	341.2	339.3	337.9	336.5	335.2	333.7
30°	332.2	329.4	326.6	324.6	323.2	321.9	320.6	319.2
32.5°	318.6	315.6	312.5	310.3	309.0	307.6	306.2	304.8
35°	298.6	295.0	291.5	289.0	287.6	286.1	284.6	283.1
37.5°	277.0	273.0	269.0	266.1	264.3	262.4	260.6	258.8
40°	262.1	257.8	253.5	250.4	248.5	246.7	244.8	242.9
42.5°	247.6	243.0	238.4	235.2	233.5	231.8	230.1	228.4
45°	226.5	221.8	217.1	213.8	211.9	209.9	207.9	206.0
47.5°	204.6	199.6	194.5	191.1	189.3	187.6	185.8	184.0
50°	189.9	184.8	179.7	176.3	174.4	172.5	170.6	168.7
52.5°	175.6	170.3	165.1	161.6	159.9	158.2	156.5	154.8
55°	154.4	149.6	144.9	141.6	140.1	138.4	136.7	135.1
57.5°	133.5	129.0	124.5	121.5	120.2	118.7	117.4	116.0
60°	120.3	115.9	111.5	108.5	107.2	105.8	104.4	103.0
62.5°	107.3	103.1	98.9	96.1	94.7	93.2	91.7	90.3
65°	88.6	84.7	80.6	78.2	77.2	76.4	75.5	74.5
67.5°	70.9	67.9	64.9	62.9	61.9	61.0	60.0	59.1
70°	60.0	57.1	54.2	52.4	51.4	50.5	49.6	48.7
72.5°	50.1	47.8	45.4	44.0	43.6	43.3	42.9	42.5
75°	37.5	36.7	35.8	35.3	35.2	35.0	34.9	34.7
77.5°	28.3	27.8	27.4	27.1	26.9	26.8	26.6	26.5
80°	22.7	22.5	22.3	22.1	21.9	21.7	21.5	21.4
82.5°	17.4	17.2	17.0	16.8	16.8	16.7	16.7	16.7
85°	10.0	9.8	9.7	9.6	9.6	9.6	9.6	9.6
87.5°	9.0	9.1	9.2	9.3	9.3	9.3	9.3	9.3
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





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CATALOG NUMBER: S123RDIW-S340D1320U927-4F0-1E-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)