

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: P332112-935

Luminaire Tested: **S123DIW-S340D1320U935-4F0-1E-UDD-F**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332112-935
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: S123DIW-S340D1320U935-4F0-1E-UDD-F
Description: DEFINE 3 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 340 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
UPLIGHT 1320 LUMENS PER FOOT, NO LENS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 5762.5 lumens
Efficiency: N/A
Efficacy: 123.7 lumens/watt
Spacing Criteria (0/90/45): 1.21 / 1.18 / 1.31
Luminous Opening: Rectangular (W 0.25' x L: 4' x H: 0')
CIE Type: Semi-Indirect

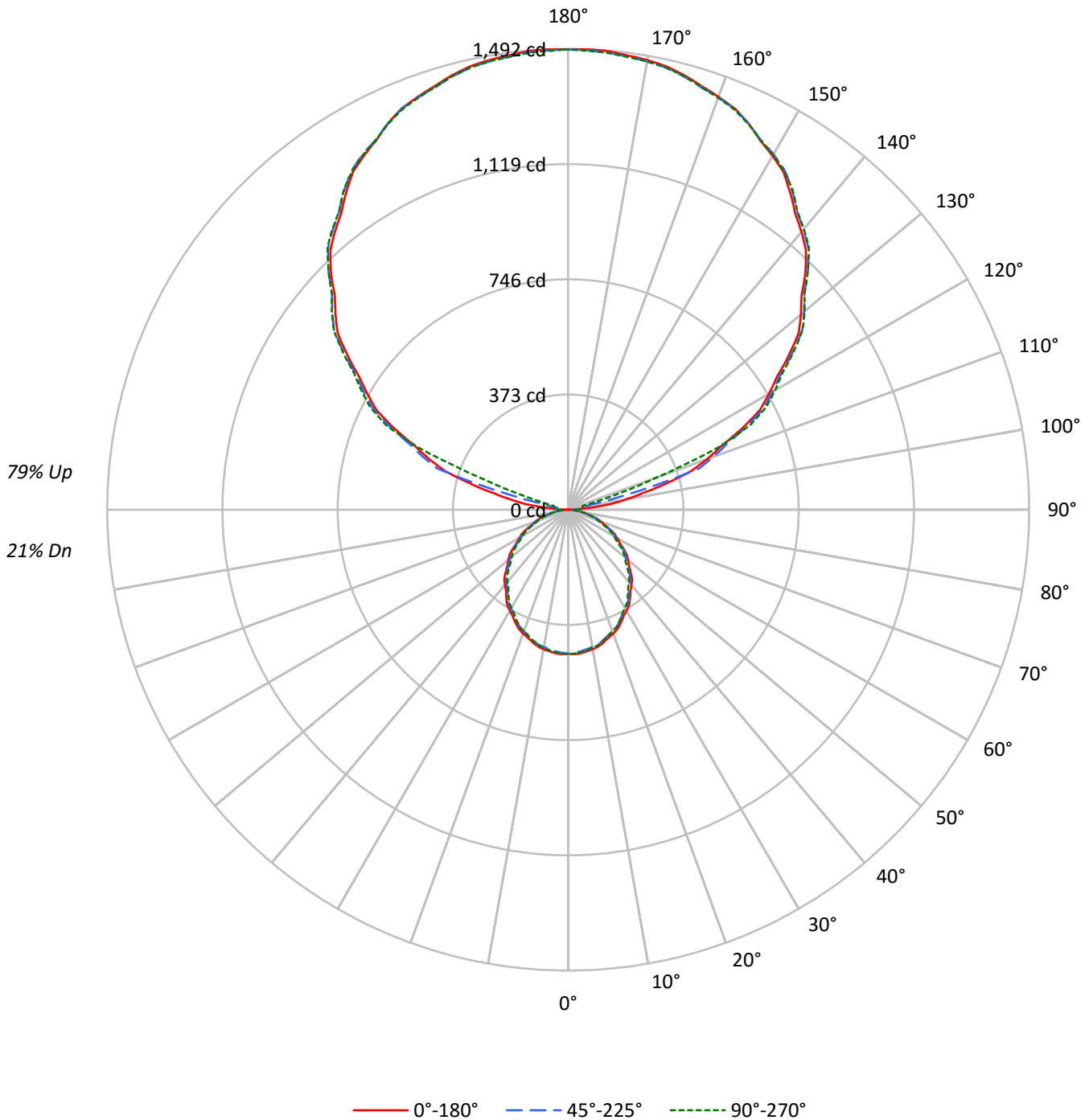
Input Watts (W): 46.6
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	89	89	89	89	67	67	67	48	48	48	30	30	30	21
1	91	87	83	80	81	77	74	71	59	57	55	42	41	39	26	25	25	18
2	83	76	70	65	73	67	63	58	51	48	45	37	35	33	23	22	21	15
3	76	67	60	54	67	59	53	49	45	41	38	32	30	28	20	19	18	13
4	69	59	51	46	61	52	46	41	40	36	32	29	26	24	18	17	15	11
5	63	52	45	39	56	47	40	35	36	31	28	26	23	20	16	15	13	9
6	58	47	39	33	51	42	35	30	32	27	24	23	20	18	15	13	12	8
7	54	42	34	29	47	37	31	26	29	24	21	21	18	16	13	12	10	7
8	50	38	31	25	44	34	27	23	26	22	18	19	16	14	12	10	9	6
9	46	34	27	22	41	31	25	20	24	19	16	17	14	12	11	9	8	6
10	43	31	25	20	38	28	22	18	22	18	15	16	13	11	10	9	7	5

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	5022	5022	5022
5°	5046	4976	5010
10°	5012	4933	4964
15°	4953	4878	4886
20°	4885	4798	4802
25°	4793	4703	4694
30°	4692	4598	4561
35°	4586	4486	4428
40°	4477	4363	4295
45°	4354	4250	4147
50°	4232	4113	3997
55°	4074	3969	3847
60°	3914	3800	3679
65°	3769	3617	3505
70°	3559	3408	3257
75°	3256	3136	3003
80°	2938	2814	2783
85°	2569	2482	2384



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	44.0	0.8
10°-20°	124.1	2.2
20°-30°	183.3	3.2
30°-40°	214.1	3.7
40°-50°	215.3	3.7
50°-60°	189.1	3.3
60°-70°	140.9	2.4
70°-80°	80.3	1.4
80°-90°	27.2	0.5
90°-100°	54.2	0.9
100°-110°	258.2	4.5
110°-120°	620.2	10.8
120°-130°	789.8	13.7
130°-140°	843.9	14.6
140°-150°	789.1	13.7
150°-160°	636.5	11.0
160°-170°	410.8	7.1
170°-180°	141.6	2.5
0°-30°	351.4	6.1
0°-40°	565.5	9.8
0°-60°	969.9	16.8
0°-90°	1218.2	21.1
90°-120°	932.6	16.2
90°-150°	3355.4	58.2
90°-180°	4544.0	78.9
0°-180°	5762.5	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	467	467	467	467	467	
5°	467	465	460	464	464	44
15°	444	443	438	441	438	125
25°	404	401	396	396	395	186
35°	349	346	341	339	337	218
45°	286	284	279	275	272	221
55°	217	216	212	207	205	194
65°	148	146	142	139	138	146
75°	78	77	75	73	72	84
85°	21	20	20	19	19	23
90°	1	12	27	31	33	4
95°	68	25	34	42	42	83
105°	330	336	242	58	49	350
115°	619	626	636	646	651	611
125°	872	881	886	888	890	779
135°	1086	1093	1097	1100	1097	836
145°	1253	1261	1263	1265	1265	784
155°	1380	1378	1379	1384	1378	636
165°	1456	1453	1451	1459	1452	411
175°	1490	1485	1486	1493	1485	142
180°	1490	1490	1490	1490	1490	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	466.6	466.6	466.6	466.6	466.6	466.6	466.6	466.6	466.6	466.6	466.6
2.5°	468.2	467.9	467.6	467.4	467.0	466.5	465.7	464.9	464.2	463.4	464.1
5°	467.0	466.5	466.1	465.6	465.2	464.5	463.5	462.5	461.5	460.5	461.4
7.5°	462.4	461.9	461.5	461.1	460.6	459.9	458.9	457.9	456.8	455.8	456.6
10°	458.6	458.1	457.6	457.2	456.8	456.0	454.8	453.7	452.5	451.3	452.1
12.5°	453.4	453.1	452.6	452.3	451.9	451.2	450.1	449.0	447.9	446.9	447.5
15°	444.5	444.2	443.8	443.4	443.1	442.3	441.2	440.0	438.9	437.7	438.4
17.5°	434.1	433.7	433.3	432.7	432.3	431.5	430.3	429.2	428.0	426.9	427.3
20°	426.5	425.9	425.4	424.8	424.3	423.4	422.3	421.1	420.0	418.9	419.2
22.5°	417.8	417.2	416.7	416.2	415.7	414.8	413.6	412.5	411.3	410.2	410.4
25°	403.6	403.0	402.5	402.0	401.5	400.6	399.4	398.3	397.1	396.0	396.1
27.5°	388.4	387.9	387.4	386.8	386.3	385.5	384.3	383.0	381.8	380.5	380.6
30°	377.5	377.0	376.6	376.2	375.7	374.9	373.7	372.4	371.2	369.9	369.9
32.5°	366.6	366.0	365.4	364.8	364.3	363.4	362.5	361.5	360.6	359.6	359.1
35°	349.0	348.5	347.9	347.4	346.9	346.0	344.9	343.7	342.6	341.4	340.9
37.5°	331.1	330.4	329.7	329.0	328.4	327.4	326.2	325.0	323.9	322.7	322.1
40°	318.6	318.0	317.5	316.9	316.4	315.5	314.3	313.0	311.8	310.5	309.8
42.5°	306.0	305.4	304.8	304.2	303.6	302.6	301.4	300.1	298.9	297.6	297.0
45°	286.0	285.7	285.3	285.0	284.6	283.9	282.7	281.5	280.3	279.2	278.2
47.5°	266.2	265.7	265.2	264.7	264.2	263.4	262.3	261.1	260.1	259.0	258.0
50°	252.7	252.3	251.8	251.4	251.0	250.1	249.0	247.9	246.7	245.6	244.5
52.5°	238.6	238.3	238.0	237.7	237.4	236.6	235.4	234.2	233.0	231.7	230.9
55°	217.1	217.0	216.9	216.8	216.7	216.0	214.9	213.7	212.6	211.5	210.4
57.5°	196.5	196.2	195.9	195.6	195.3	194.7	193.7	192.8	191.9	191.0	190.1
60°	181.8	181.7	181.6	181.5	181.4	180.8	179.7	178.7	177.6	176.5	175.7
62.5°	168.6	168.3	168.2	167.9	167.6	167.0	165.9	164.9	163.8	162.7	162.0
65°	148.0	147.6	147.1	146.7	146.3	145.6	144.7	143.8	142.9	142.0	141.3
67.5°	126.3	125.9	125.5	125.1	124.8	124.2	123.6	122.9	122.2	121.5	120.9
70°	113.1	112.6	112.1	111.5	111.0	110.5	109.9	109.3	108.8	108.3	107.7
72.5°	99.4	98.9	98.6	98.2	97.7	97.3	96.7	96.1	95.5	94.9	94.3
75°	78.3	77.8	77.5	77.1	76.8	76.5	76.2	75.9	75.7	75.4	75.0
77.5°	59.5	59.3	59.2	59.0	58.7	58.5	58.2	57.9	57.5	57.2	56.9
80°	47.4	47.1	46.8	46.6	46.2	46.1	45.9	45.7	45.5	45.4	45.2
82.5°	35.5	35.4	35.4	35.3	35.2	35.2	35.1	35.1	35.1	35.0	34.9
85°	20.8	20.7	20.5	20.3	20.1	20.1	20.1	20.1	20.1	20.1	19.9
87.5°	8.5	8.9	9.1	9.4	9.6	10.1	10.7	11.3	11.8	12.4	12.5
90°	1.1	3.5	6.0	8.5	10.9	13.8	17.0	20.1	23.3	26.6	27.6
92.5°	20.6	19.9	19.2	18.5	17.8	18.7	21.1	23.5	25.9	28.3	29.9
95°	67.5	57.4	47.4	37.3	27.2	23.5	26.2	28.9	31.6	34.4	36.1
97.5°	135.7	131.2	126.7	122.2	117.6	106.5	88.8	71.1	53.4	35.6	37.6
100°	187.1	192.0	196.9	201.8	206.8	190.0	151.7	113.3	74.9	36.5	38.5
102.5°	245.6	249.1	252.6	256.1	259.8	240.6	198.6	156.7	114.8	72.8	66.7
105°	329.9	332.6	335.4	338.0	340.7	331.1	308.8	286.7	264.6	242.5	198.9
107.5°	419.0	421.1	423.3	425.4	427.6	430.4	433.9	437.4	440.9	444.4	412.4
110°	478.3	480.3	482.2	484.1	486.1	488.4	491.2	493.9	496.6	499.3	491.2



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	534.9	536.7	538.5	540.3	542.0	544.2	547.0	549.7	552.4	555.1	555.3
115°	618.9	620.4	621.8	623.3	624.7	626.6	628.8	631.0	633.3	635.5	637.9
117.5°	700.2	702.0	703.8	705.6	707.4	708.9	710.0	711.2	712.3	713.4	715.4
120°	750.6	752.9	755.0	757.2	759.5	761.0	761.6	762.4	763.2	763.9	765.9
122.5°	802.0	803.8	805.6	807.4	809.3	810.6	811.6	812.5	813.5	814.4	815.8
125°	872.4	874.3	876.3	878.3	880.3	881.8	882.7	883.7	884.7	885.7	886.1
127.5°	940.6	942.5	944.5	946.5	948.5	950.0	951.2	952.4	953.6	954.8	955.5
130°	983.1	985.1	987.1	989.0	991.0	992.5	993.4	994.5	995.4	996.3	997.4
132.5°	1023.8	1025.8	1027.8	1029.8	1031.7	1033.1	1033.9	1034.7	1035.4	1036.2	1037.2
135°	1086.1	1087.5	1089.0	1090.5	1092.0	1093.2	1094.2	1095.2	1096.1	1097.2	1097.9
137.5°	1139.2	1141.1	1143.0	1144.8	1146.7	1147.9	1148.4	1149.0	1149.5	1150.0	1151.2
140°	1174.7	1176.1	1177.6	1179.1	1180.5	1181.6	1182.4	1183.1	1183.9	1184.6	1185.6
142.5°	1207.4	1208.8	1210.4	1211.9	1213.3	1214.4	1215.1	1215.9	1216.6	1217.4	1218.1
145°	1253.3	1255.0	1256.7	1258.4	1260.2	1261.2	1261.7	1262.2	1262.7	1263.2	1263.7
147.5°	1296.4	1297.5	1298.6	1299.8	1301.0	1301.7	1302.3	1302.7	1303.2	1303.7	1304.2
150°	1323.0	1323.7	1324.5	1325.2	1325.9	1326.5	1327.1	1327.5	1328.0	1328.5	1329.0
152.5°	1346.9	1347.2	1347.6	1347.9	1348.2	1348.6	1348.9	1349.2	1349.4	1349.8	1350.7
155°	1380.5	1380.1	1379.6	1379.1	1378.5	1378.5	1378.7	1379.0	1379.2	1379.4	1380.7
157.5°	1406.7	1406.6	1406.6	1406.5	1406.4	1406.4	1406.1	1405.8	1405.6	1405.3	1406.8
160°	1422.6	1422.4	1422.1	1421.9	1421.6	1421.4	1421.2	1420.9	1420.6	1420.4	1421.9
162.5°	1437.7	1437.0	1436.4	1435.7	1435.1	1434.7	1434.4	1434.2	1433.9	1433.7	1435.4
165°	1455.9	1455.1	1454.3	1453.6	1452.9	1452.4	1452.2	1451.9	1451.6	1451.4	1453.4
167.5°	1470.0	1469.0	1468.0	1467.1	1466.0	1465.6	1465.6	1465.6	1465.6	1465.6	1467.6
170°	1478.0	1477.0	1476.0	1475.1	1474.0	1473.5	1473.5	1473.5	1473.5	1473.5	1475.5
172.5°	1483.3	1482.1	1480.9	1479.7	1478.6	1478.1	1478.3	1478.5	1478.7	1478.9	1480.8
175°	1490.1	1488.9	1487.7	1486.4	1485.2	1484.7	1485.0	1485.2	1485.5	1485.7	1487.5
177.5°	1491.9	1490.9	1490.0	1489.0	1488.0	1487.6	1487.8	1488.0	1488.2	1488.4	1490.0
180°	1490.1	1490.1	1490.1	1490.1	1490.1	1490.1	1490.1	1490.1	1490.1	1490.1	1490.1



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	466.6	466.6	466.6	466.6	466.6	466.6	466.6	466.6
2.5°	464.8	465.5	466.2	466.6	466.5	466.4	466.3	466.2
5°	462.4	463.2	464.2	464.5	464.3	464.2	463.9	463.7
7.5°	457.4	458.2	459.0	459.3	459.3	459.2	459.1	458.9
10°	453.0	453.7	454.5	454.9	454.7	454.5	454.3	454.2
12.5°	448.0	448.6	449.2	449.4	449.4	449.2	449.1	449.0
15°	439.1	439.8	440.6	440.7	440.1	439.5	439.0	438.5
17.5°	427.8	428.3	428.9	429.0	428.8	428.6	428.4	428.3
20°	419.6	419.9	420.3	420.3	420.0	419.7	419.5	419.2
22.5°	410.7	411.0	411.3	411.3	411.0	410.6	410.3	409.9
25°	396.1	396.2	396.3	396.2	396.0	395.7	395.5	395.2
27.5°	380.6	380.7	380.7	380.6	380.3	380.0	379.6	379.3
30°	369.9	369.9	369.9	369.5	368.9	368.3	367.7	367.0
32.5°	358.6	358.1	357.7	357.2	356.9	356.5	356.2	355.9
35°	340.4	339.8	339.2	338.8	338.4	337.9	337.4	337.0
37.5°	321.4	320.8	320.1	319.7	319.4	319.1	318.8	318.6
40°	309.1	308.4	307.6	307.1	306.8	306.4	306.1	305.7
42.5°	296.3	295.5	294.8	294.3	293.9	293.6	293.3	292.8
45°	277.1	276.0	274.9	274.2	273.7	273.3	272.9	272.4
47.5°	256.9	255.9	254.8	254.1	253.7	253.3	252.9	252.5
50°	243.6	242.5	241.6	240.8	240.3	239.8	239.3	238.7
52.5°	230.1	229.2	228.3	227.6	227.1	226.6	226.1	225.6
55°	209.5	208.4	207.5	206.8	206.4	205.9	205.4	205.0
57.5°	189.2	188.3	187.4	186.8	186.2	185.7	185.2	184.7
60°	175.0	174.1	173.3	172.7	172.2	171.8	171.3	170.9
62.5°	161.1	160.3	159.5	158.9	158.7	158.3	158.1	157.7
65°	140.6	139.9	139.1	138.7	138.4	138.1	137.8	137.6
67.5°	120.2	119.6	119.0	118.5	118.1	117.7	117.4	117.0
70°	107.1	106.4	105.8	105.3	104.9	104.4	103.9	103.5
72.5°	93.8	93.2	92.6	92.2	92.0	91.8	91.5	91.3
75°	74.6	74.0	73.6	73.3	73.0	72.8	72.5	72.2
77.5°	56.6	56.3	56.0	55.9	55.9	55.9	55.9	55.9
80°	45.1	45.0	44.9	44.9	44.9	44.9	44.9	44.9
82.5°	34.8	34.6	34.4	34.3	34.3	34.2	34.1	34.0
85°	19.7	19.5	19.4	19.3	19.3	19.3	19.3	19.3
87.5°	12.7	12.7	12.9	13.0	13.1	13.2	13.3	13.3
90°	28.5	29.5	30.5	31.3	31.8	32.2	32.7	33.2
92.5°	31.5	33.1	34.6	35.6	35.9	36.2	36.4	36.8
95°	37.8	39.5	41.2	42.1	42.1	42.1	42.1	42.1
97.5°	39.6	41.6	43.5	44.6	44.9	45.1	45.4	45.6
100°	40.5	42.4	44.4	45.5	45.7	46.0	46.2	46.5
102.5°	60.6	54.5	48.5	45.6	46.1	46.5	46.9	47.4
105°	155.3	111.8	68.3	46.8	47.3	47.7	48.2	48.7
107.5°	380.6	348.6	316.7	284.3	251.5	218.6	185.8	153.0
110°	483.0	474.9	466.8	445.1	410.0	374.8	339.7	304.4



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CATALOG NUMBER: S123DIW-S340D1320U935-4F0-1E-UDD-F

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	555.4	555.5	555.7	552.1	544.6	537.2	529.8	522.4
115°	640.4	642.8	645.3	647.0	648.0	649.0	650.0	651.0
117.5°	717.4	719.3	721.3	722.4	722.6	722.7	723.0	723.2
120°	767.8	769.8	771.8	772.7	772.7	772.7	772.7	772.7
122.5°	817.2	818.6	819.9	820.7	820.9	821.0	821.3	821.5
125°	886.7	887.2	887.6	888.1	888.6	889.2	889.6	890.1
127.5°	956.3	957.1	957.9	958.0	957.6	957.1	956.6	956.1
130°	998.3	999.4	1000.3	1000.6	1000.1	999.6	999.1	998.6
132.5°	1038.2	1039.2	1040.2	1040.3	1039.7	1039.0	1038.3	1037.6
135°	1098.6	1099.3	1100.1	1100.1	1099.3	1098.6	1097.9	1097.2
137.5°	1152.4	1153.6	1154.8	1155.1	1154.6	1154.2	1153.7	1153.1
140°	1186.5	1187.6	1188.5	1188.8	1188.3	1187.7	1187.3	1186.8
142.5°	1218.9	1219.7	1220.6	1220.6	1219.9	1219.2	1218.5	1217.8
145°	1264.2	1264.6	1265.2	1265.4	1265.4	1265.4	1265.4	1265.4
147.5°	1304.7	1305.2	1305.7	1305.4	1304.2	1303.1	1302.0	1300.8
150°	1329.5	1330.0	1330.5	1330.3	1329.6	1328.9	1328.2	1327.4
152.5°	1351.5	1352.5	1353.3	1353.2	1352.0	1350.9	1349.8	1348.7
155°	1381.9	1383.1	1384.4	1384.2	1382.8	1381.3	1379.8	1378.4
157.5°	1408.3	1409.8	1411.3	1411.0	1409.1	1407.2	1405.2	1403.3
160°	1423.3	1424.9	1426.3	1426.2	1424.4	1422.7	1421.0	1419.3
162.5°	1437.0	1438.7	1440.4	1440.5	1438.9	1437.4	1435.9	1434.3
165°	1455.3	1457.3	1459.3	1459.4	1457.7	1456.0	1454.2	1452.5
167.5°	1469.6	1471.4	1473.4	1473.4	1471.4	1469.6	1467.6	1465.6
170°	1477.5	1479.5	1481.4	1481.4	1479.5	1477.5	1475.5	1473.5
172.5°	1482.8	1484.8	1486.8	1486.6	1484.5	1482.3	1480.1	1478.0
175°	1489.2	1490.9	1492.6	1492.5	1490.6	1488.6	1486.6	1484.6
177.5°	1491.5	1493.1	1494.7	1494.5	1492.5	1490.6	1488.6	1486.6
180°	1490.1	1490.1	1490.1	1490.1	1490.1	1490.1	1490.1	1490.1

(END OF REPORT)