

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: P332117-935

Luminaire Tested: **S123DIW-S340D1535U935-4F0-1E-UDD-D1**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332117-935
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: S123DIW-S340D1535U935-4F0-1E-UDD-D1
Description: DEFINE 3 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 340 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER
UPLIGHT 1535 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 5821.8 lumens
Efficiency: N/A
Efficacy: 109.0 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.26 / 1.37
Luminous Opening: Rectangular w/ Sides (W: 0.25' x L: 4' x H: 0.08')
CIE Type: Semi-Indirect

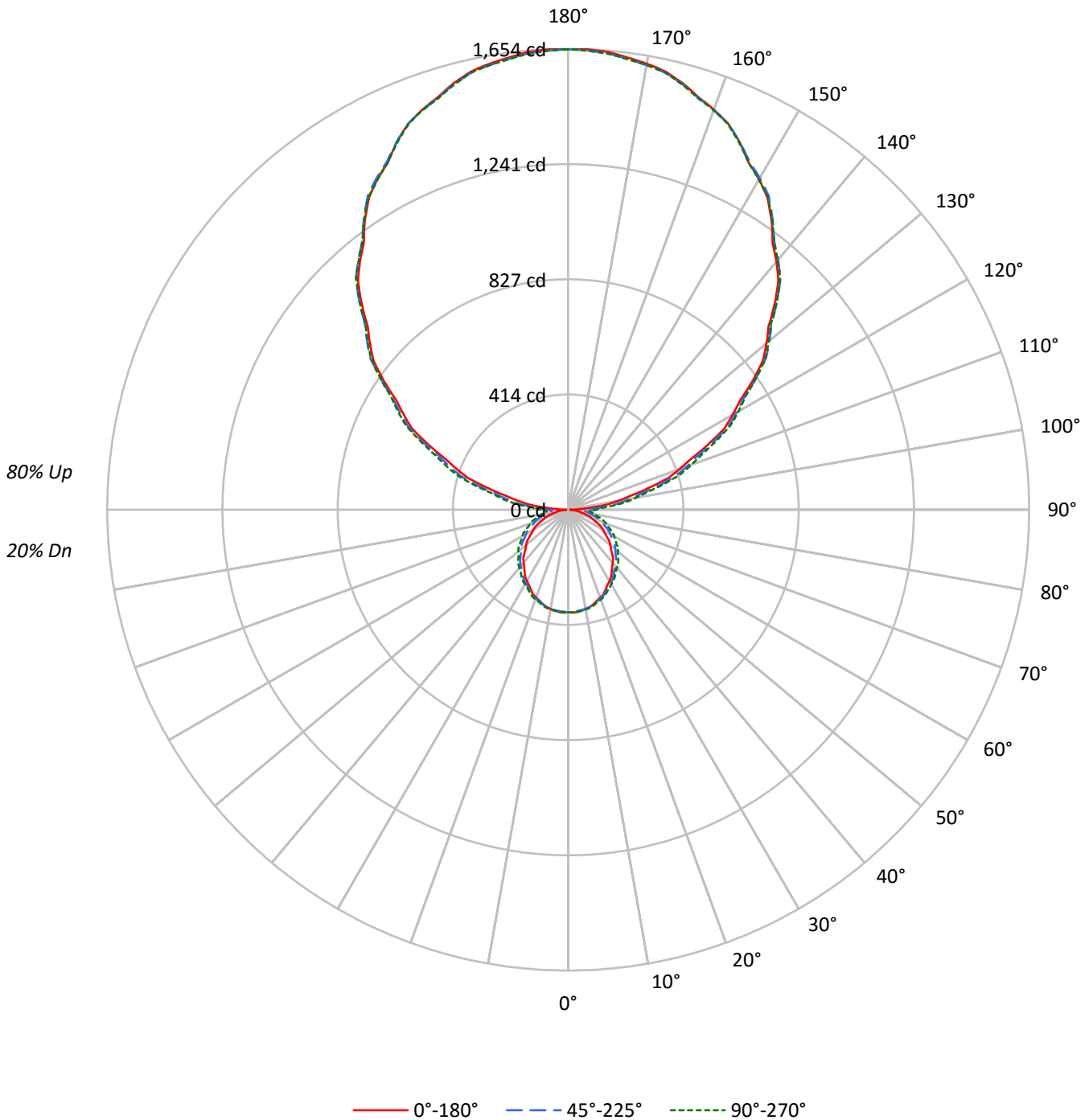
Input Watts (W): 53.4
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	100	100	100	100	88	88	88	88	66	66	66	46	46	46	28	28	28	20
1	91	86	82	79	80	76	73	70	57	55	53	40	39	38	24	23	23	16
2	82	75	69	64	72	66	61	57	50	47	44	35	33	31	21	20	19	13
3	75	66	59	53	66	58	52	47	44	40	36	31	28	26	18	17	16	11
4	68	58	50	44	60	51	45	40	39	34	31	27	24	22	16	15	14	9
5	62	51	44	38	55	45	39	34	34	30	26	24	21	19	15	13	12	8
6	57	46	38	32	50	41	34	29	31	26	23	22	19	16	13	12	10	7
7	53	41	33	28	46	37	30	25	28	23	20	20	17	14	12	10	9	6
8	49	37	30	25	43	33	27	22	25	21	17	18	15	13	11	9	8	5
9	45	34	26	22	40	30	24	20	23	18	15	16	13	11	10	8	7	5
10	42	31	24	19	37	27	21	17	21	17	14	15	12	10	9	8	6	4

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3963	3963	3963
5°	3977	3865	3866
10°	3941	3776	3757
15°	3890	3674	3636
20°	3818	3559	3504
25°	3728	3427	3365
30°	3637	3307	3224
35°	3533	3181	3112
40°	3435	3065	2991
45°	3327	2955	2895
50°	3219	2846	2789
55°	3100	2734	2693
60°	2984	2620	2596
65°	2865	2499	2479
70°	2685	2362	2359
75°	2462	2208	2239
80°	2201	2054	2100
85°	1955	1950	2018



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	34.9	0.6
10°-20°	99.5	1.7
20°-30°	148.9	2.6
30°-40°	177.8	3.1
40°-50°	186.0	3.2
50°-60°	174.5	3.0
60°-70°	145.8	2.5
70°-80°	104.3	1.8
80°-90°	67.1	1.2
90°-100°	146.7	2.5
100°-110°	350.9	6.0
110°-120°	567.3	9.7
120°-130°	731.9	12.6
130°-140°	815.3	14.0
140°-150°	797.6	13.7
150°-160°	670.6	11.5
160°-170°	446.4	7.7
170°-180°	156.3	2.7
0°-30°	283.3	4.9
0°-40°	461.0	7.9
0°-60°	821.6	14.1
0°-90°	1138.7	19.6
90°-120°	1064.9	18.3
90°-150°	3409.8	58.6
90°-180°	4683.0	80.4
0°-180°	5821.8	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	368	368	368	368	368	
5°	369	368	366	368	368	35
15°	351	352	352	356	355	99
25°	317	321	322	327	327	146
35°	273	279	284	290	292	171
45°	223	233	243	250	254	172
55°	170	183	198	208	212	152
65°	118	133	151	162	167	116
75°	64	83	103	116	121	68
85°	20	40	61	74	79	21
90°	6	39	76	95	102	8
95°	81	106	136	153	158	90
105°	295	308	336	347	354	316
115°	554	563	574	585	587	548
125°	809	813	822	825	822	721
135°	1048	1056	1059	1061	1060	808
145°	1271	1274	1278	1279	1276	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°	368.2	368.2	368.2	368.2	368.2	368.2	368.2	368.2	368.2	368.2	368.2
2.5°	369.9	369.7	369.5	369.3	369.0	368.7	368.1	367.5	367.0	366.4	367.0
5°	368.7	368.5	368.3	368.2	368.0	367.6	367.0	366.5	366.0	365.5	366.2
7.5°	365.1	365.2	365.2	365.2	365.2	365.0	364.5	363.9	363.4	362.9	363.8
10°	361.9	362.1	362.2	362.4	362.6	362.5	362.0	361.5	361.1	360.7	361.5
12.5°	358.0	358.3	358.5	358.8	359.0	359.0	358.7	358.3	358.1	357.7	358.6
15°	351.0	351.3	351.5	351.8	352.1	352.2	352.1	352.0	351.9	351.8	352.8
17.5°	342.2	342.8	343.3	343.8	344.3	344.6	344.6	344.5	344.5	344.5	345.3
20°	335.8	336.3	336.8	337.4	337.9	338.3	338.5	338.6	338.8	339.0	339.8
22.5°	329.1	329.6	330.1	330.6	331.2	331.6	331.8	332.1	332.3	332.6	333.6
25°	316.9	317.8	318.7	319.6	320.5	321.1	321.3	321.6	321.8	322.2	323.3
27.5°	304.7	305.7	306.8	307.8	308.8	309.6	310.1	310.7	311.3	311.9	312.9
30°	296.1	297.2	298.4	299.5	300.7	301.6	302.4	303.1	303.8	304.5	305.6
32.5°	286.5	287.7	289.0	290.3	291.6	292.7	293.7	294.6	295.6	296.4	297.6
35°	272.8	274.2	275.7	277.1	278.5	279.8	280.9	282.1	283.3	284.5	285.8
37.5°	258.4	259.9	261.6	263.2	264.8	266.3	267.7	269.1	270.6	272.0	273.5
40°	248.7	250.4	251.9	253.6	255.1	256.8	258.6	260.5	262.2	264.0	265.5
42.5°	238.2	240.1	242.0	244.0	246.0	247.9	249.8	251.6	253.5	255.3	257.0
45°	223.1	225.2	227.3	229.5	231.6	233.8	236.0	238.2	240.5	242.7	244.4
47.5°	207.2	209.7	212.1	214.6	217.0	219.5	222.0	224.5	227.0	229.6	231.5
50°	197.0	199.5	202.0	204.5	207.0	209.6	212.3	215.2	217.9	220.7	222.7
52.5°	186.1	188.7	191.3	194.0	196.7	199.5	202.5	205.6	208.6	211.6	213.8
55°	170.1	173.1	176.0	178.9	181.8	184.9	188.1	191.4	194.6	197.8	200.2
57.5°	154.5	157.6	160.7	163.8	166.8	170.1	173.6	177.1	180.6	184.2	186.6
60°	143.6	146.8	150.1	153.3	156.4	159.9	163.6	167.2	170.8	174.5	177.0
62.5°	133.4	136.6	139.9	143.2	146.5	150.1	153.9	157.8	161.7	165.6	168.0
65°	117.5	121.1	124.5	127.9	131.5	135.2	139.1	143.0	146.9	150.8	153.5
67.5°	101.5	105.2	108.9	112.5	116.2	120.1	124.1	128.1	132.1	136.1	139.0
70°	90.2	94.1	97.9	101.8	105.6	109.7	113.9	118.2	122.5	126.7	129.7
72.5°	80.0	83.9	87.6	91.5	95.3	99.4	103.8	108.3	112.7	117.2	120.1
75°	63.8	68.0	72.2	76.4	80.6	84.9	89.4	93.8	98.2	102.7	105.6
77.5°	49.7	53.9	58.1	62.3	66.6	70.9	75.4	79.9	84.4	88.9	92.0
80°	39.7	44.1	48.5	52.9	57.2	61.7	66.3	70.9	75.6	80.2	83.3
82.5°	31.1	35.5	40.0	44.3	48.8	53.4	58.1	62.8	67.5	72.2	75.3
85°	19.6	24.1	28.6	33.1	37.5	42.1	46.8	51.5	56.2	61.0	64.0
87.5°	10.9	15.9	20.9	26.0	31.0	36.2	41.4	46.8	52.0	57.3	60.6
90°	6.5	13.8	21.0	28.2	35.6	43.3	51.6	59.9	68.2	76.5	80.7
92.5°	36.3	42.2	48.1	54.0	59.9	66.2	72.8	79.4	86.0	92.6	96.5
95°	81.0	86.5	92.0	97.5	103.0	109.1	115.8	122.4	129.2	135.8	139.7
97.5°	140.0	144.6	149.3	153.9	158.5	163.8	169.6	175.5	181.3	187.2	191.1
100°	180.2	184.8	189.3	193.9	198.5	203.6	209.1	214.6	220.2	225.8	229.2
102.5°	226.6	230.2	233.8	237.5	241.0	245.8	251.8	257.7	263.6	269.5	272.9
105°	295.3	298.1	300.7	303.5	306.2	310.7	317.2	323.6	330.1	336.5	339.0
107.5°	374.8	377.0	379.2	381.3	383.5	386.9	391.6	396.2	401.0	405.6	408.9
110°	424.4	426.5	428.7	430.9	433.1	436.3	440.4	444.5	448.7	452.8	456.3



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	476.3	477.9	479.7	481.3	482.9	485.6	489.1	492.7	496.2	499.7	503.3
115°	553.8	555.8	557.7	559.6	561.5	563.9	566.5	569.1	571.7	574.4	576.8
117.5°	632.1	633.4	634.6	635.8	637.1	638.9	641.1	643.3	645.7	647.9	650.0
120°	680.6	682.8	685.0	687.2	689.3	691.2	692.7	694.2	695.7	697.2	699.0
122.5°	731.5	733.1	734.5	736.1	737.5	739.3	741.3	743.4	745.5	747.5	748.7
125°	808.7	809.6	810.5	811.4	812.3	813.6	815.7	817.7	819.7	821.7	822.4
127.5°	880.5	882.2	884.0	885.7	887.4	889.1	890.6	892.1	893.6	895.1	895.3
130°	928.2	930.4	932.6	934.9	937.1	938.7	939.6	940.5	941.4	942.4	942.9
132.5°	975.7	978.0	980.2	982.6	984.8	986.4	987.1	988.0	988.8	989.5	989.8
135°	1048.5	1050.2	1051.9	1053.5	1055.2	1056.3	1057.0	1057.7	1058.3	1059.0	1059.5
137.5°	1116.0	1117.4	1118.8	1120.1	1121.5	1122.8	1124.1	1125.4	1126.7	1128.0	1128.3
140°	1162.4	1163.9	1165.3	1166.7	1168.2	1169.2	1169.8	1170.3	1170.9	1171.4	1172.4
142.5°	1205.0	1206.3	1207.7	1209.1	1210.5	1211.4	1212.0	1212.6	1213.1	1213.8	1214.7
145°	1271.4	1272.0	1272.5	1272.9	1273.4	1274.1	1275.0	1275.8	1276.7	1277.6	1278.0
147.5°	1329.2	1330.2	1331.3	1332.4	1333.4	1334.3	1335.2	1335.9	1336.7	1337.6	1337.7
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°	368.2	368.2	368.2	368.2	368.2	368.2	368.2	368.2
2.5°	367.5	368.1	368.7	368.9	368.9	368.8	368.7	368.6
5°	366.9	367.6	368.3	368.7	368.6	368.4	368.3	368.2
7.5°	364.7	365.6	366.4	366.9	366.8	366.6	366.5	366.4
10°	362.5	363.3	364.2	364.5	364.4	364.2	364.0	363.9
12.5°	359.4	360.2	361.0	361.4	361.2	361.0	360.8	360.7
15°	353.6	354.5	355.4	355.8	355.7	355.6	355.5	355.4
17.5°	346.0	346.9	347.7	348.0	347.8	347.8	347.7	347.5
20°	340.6	341.4	342.2	342.7	342.8	342.9	342.9	343.0
22.5°	334.6	335.6	336.7	337.2	337.1	337.0	337.0	336.9
25°	324.4	325.6	326.7	327.4	327.4	327.4	327.4	327.4
27.5°	313.8	314.9	315.9	316.4	316.5	316.6	316.6	316.7
30°	306.6	307.7	308.8	309.3	309.3	309.3	309.3	309.3
32.5°	298.8	299.9	301.0	301.7	302.0	302.1	302.4	302.6
35°	287.1	288.4	289.8	290.7	291.0	291.4	291.7	292.1
37.5°	275.0	276.6	278.1	279.0	279.2	279.6	279.8	280.1
40°	267.0	268.5	270.0	271.0	271.3	271.7	272.1	272.4
42.5°	258.6	260.3	261.9	263.0	263.6	264.0	264.5	265.0
45°	246.1	247.8	249.5	250.7	251.4	252.1	252.9	253.6
47.5°	233.4	235.4	237.3	238.5	239.0	239.6	240.1	240.7
50°	224.7	226.8	228.9	230.2	230.8	231.4	232.0	232.7
52.5°	215.9	218.0	220.2	221.6	222.4	223.2	223.9	224.6
55°	202.6	205.0	207.4	209.0	209.7	210.4	211.1	211.8
57.5°	189.0	191.4	193.8	195.4	196.3	197.2	198.0	198.8
60°	179.5	182.0	184.5	186.2	187.2	188.2	189.2	190.2
62.5°	170.5	173.0	175.5	177.2	178.1	179.0	179.9	180.9
65°	156.2	158.9	161.5	163.3	164.2	165.1	166.0	166.9
67.5°	141.9	144.8	147.7	149.6	150.3	151.1	151.9	152.6
70°	132.5	135.3	138.2	140.1	140.9	141.8	142.8	143.6
72.5°	123.0	125.9	128.8	130.8	131.6	132.5	133.5	134.3
75°	108.6	111.5	114.5	116.5	117.5	118.6	119.7	120.8
77.5°	95.1	98.2	101.3	103.2	104.1	105.0	105.7	106.6
80°	86.3	89.4	92.4	94.3	95.2	96.1	97.0	97.9
82.5°	78.3	81.3	84.4	86.3	87.2	88.1	88.9	89.9
85°	67.1	70.1	73.1	75.1	75.9	76.9	77.7	78.6
87.5°	63.9	67.2	70.4	72.5	73.5	74.6	75.5	76.5
90°	84.9	89.0	93.2	96.1	97.6	99.0	100.5	101.9
92.5°	100.4	104.3	108.1	110.3	110.8	111.2	111.8	112.2
95°	143.6	147.6	151.4	153.9	154.7	155.7	156.5	157.5
97.5°	195.1	199.1	203.1	205.5	206.3	207.1	207.8	208.6
100°	232.6	236.1	239.5	242.0	243.5	245.0	246.4	247.9
102.5°	276.3	279.7	283.0	285.2	285.9	286.7	287.5	288.3
105°	341.5	344.0	346.5	348.4	349.8	351.2	352.6	354.0
107.5°	412.2	415.5	418.9	420.8	421.2	421.6	422.1	422.5
110°	459.8	463.2	466.7	468.6	468.6	468.8	468.9	469.1



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CATALOG NUMBER: S123DIW-S340D1535U935-4F0-1E-UDD-D1

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	507.0	510.7	514.3	516.4	517.0	517.7	518.4	519.1
115°	579.2	581.6	584.1	585.5	585.9	586.3	586.8	587.2
117.5°	652.0	654.1	656.2	657.1	657.0	656.9	656.8	656.7
120°	700.7	702.5	704.2	705.2	705.2	705.2	705.2	705.3
122.5°	749.9	751.2	752.4	752.9	752.8	752.6	752.4	752.3
125°	823.1	823.9	824.6	824.7	824.1	823.6	823.1	822.5
127.5°	895.4	895.6	895.7	895.4	894.8	894.0	893.3	892.5
130°	943.4	943.9	944.5	944.0	942.5	941.1	939.6	938.1
132.5°	990.1	990.2	990.5	990.2	989.2	988.3	987.3	986.4
135°	1060.0	1060.4	1060.8	1061.0	1060.9	1060.8	1060.7	1060.5
137.5°	1128.4	1128.6	1128.9	1128.6	1127.9	1127.3	1126.6	1126.0
140°	1173.5	1174.6	1175.6	1175.4	1173.8	1172.2	1170.6	1169.1
142.5°	1215.6	1216.5	1217.4	1217.3	1216.2	1215.0	1213.9	1212.8
145°	1278.4	1278.8	1279.3	1279.1	1278.2	1277.5	1276.7	1275.9
147.5°	1338.0	1338.2	1338.4	1337.8	1336.4	1335.0	1333.6	1332.1
150°	1374.9	1374.9	1374.9	1374.2	1372.6	1371.1	1369.5	1368.0
152.5°	1409.1	1409.5	1410.1	1409.5	1408.1	1406.6	1405.2	1403.7
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)