

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: P332117-840

Luminaire Tested: **S123DIW-S340D1535U840-4F0-1E-UDD-D1**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332117-840
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-S340D1535U840-4F0-1E-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: 6828.4 lumens
Efficiency: N/A
Efficacy: 127.9 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

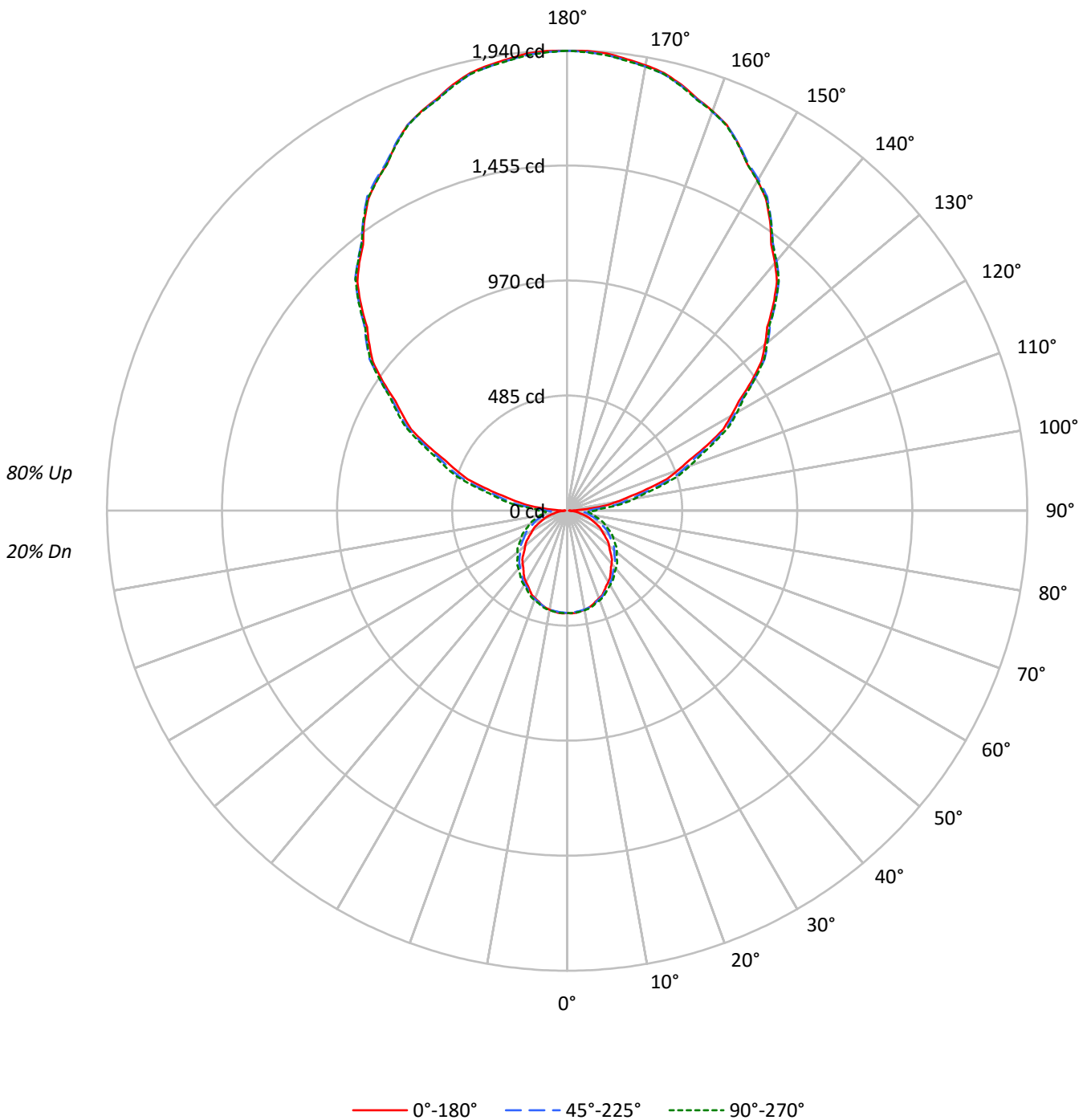
Input Watts (W): 53.4
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	4649	4649	4649
5°	4664	4533	4534
10°	4622	4428	4406
15°	4562	4309	4265
20°	4477	4174	4110
25°	4372	4019	3947
30°	4265	3879	3780
35°	4143	3731	3649
40°	4030	3595	3508
45°	3902	3466	3395
50°	3776	3338	3272
55°	3636	3207	3158
60°	3499	3074	3045
65°	3360	2931	2907
70°	3149	2772	2766
75°	2886	2590	2626
80°	2583	2410	2462
85°	2294	2286	2367



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	40.9	0.6
10°-20°	116.7	1.7
20°-30°	174.6	2.6
30°-40°	208.5	3.1
40°-50°	218.1	3.2
50°-60°	204.7	3.0
60°-70°	171.0	2.5
70°-80°	122.3	1.8
80°-90°	78.7	1.2
90°-100°	172.1	2.5
100°-110°	411.6	6.0
110°-120°	665.4	9.7
120°-130°	858.5	12.6
130°-140°	956.2	14.0
140°-150°	935.5	13.7
150°-160°	786.5	11.5
160°-170°	523.6	7.7
170°-180°	183.3	2.7
0°-30°	332.3	4.9
0°-40°	540.8	7.9
0°-60°	963.6	14.1
0°-90°	1335.6	19.6
90°-120°	1249.1	18.3
90°-150°	3999.3	58.6
90°-180°	5493.0	80.4
0°-180°	6828.4	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	432	432	432	432	432	
5°	432	431	429	432	432	41
15°	412	413	413	417	417	116
25°	372	376	378	384	384	171
35°	320	327	334	340	342	200
45°	262	273	285	293	297	202
55°	200	215	232	244	248	179
65°	138	156	177	191	196	136
75°	75	97	120	135	142	80
85°	23	47	72	87	92	24
90°	8	46	90	111	120	10
95°	95	124	159	179	185	105
105°	346	362	395	408	415	371
115°	650	660	674	686	689	643
125°	949	954	964	967	965	846
135°	1230	1238	1242	1244	1244	947
145°	1491	1494	1498	1500	1496	931
155°	1707	1707	1709	1714	1704	785
165°	1859	1855	1855	1863	1853	524
175°	1934	1928	1928	1936	1926	184
180°	1938	1938	1938	1938	1938	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	431.9	431.9	431.9	431.9	431.9	431.9	431.9	431.9	431.9	431.9	431.9
2.5°	433.8	433.6	433.3	433.1	432.8	432.4	431.7	431.0	430.4	429.7	430.4
5°	432.4	432.2	432.0	431.8	431.6	431.2	430.5	429.9	429.3	428.7	429.5
7.5°	428.2	428.3	428.3	428.3	428.4	428.1	427.5	426.9	426.3	425.7	426.7
10°	424.4	424.6	424.9	425.1	425.3	425.2	424.5	424.0	423.5	423.0	424.0
12.5°	419.9	420.2	420.5	420.8	421.1	421.0	420.7	420.3	420.0	419.6	420.6
15°	411.7	412.0	412.3	412.6	412.9	413.1	412.9	412.8	412.7	412.6	413.7
17.5°	401.4	402.0	402.6	403.2	403.8	404.1	404.1	404.0	404.0	404.0	405.0
20°	393.8	394.5	395.1	395.8	396.4	396.8	397.0	397.2	397.4	397.6	398.6
22.5°	386.0	386.6	387.2	387.8	388.5	388.9	389.2	389.5	389.8	390.1	391.3
25°	371.7	372.7	373.9	374.9	375.9	376.6	376.9	377.2	377.5	377.9	379.2
27.5°	357.4	358.6	359.8	361.0	362.2	363.1	363.8	364.5	365.2	365.8	367.0
30°	347.3	348.6	350.0	351.3	352.7	353.8	354.7	355.5	356.3	357.2	358.4
32.5°	336.0	337.5	339.0	340.5	342.0	343.4	344.5	345.6	346.7	347.7	349.1
35°	319.9	321.6	323.4	325.0	326.7	328.2	329.5	330.9	332.2	333.7	335.2
37.5°	303.1	304.9	306.8	308.7	310.5	312.4	314.0	315.7	317.4	319.0	320.8
40°	291.8	293.7	295.5	297.4	299.2	301.2	303.4	305.5	307.5	309.6	311.4
42.5°	279.3	281.7	283.9	286.2	288.5	290.7	293.0	295.1	297.3	299.4	301.4
45°	261.7	264.2	266.6	269.1	271.7	274.2	276.8	279.4	282.1	284.7	286.7
47.5°	243.1	245.9	248.7	251.7	254.5	257.4	260.3	263.4	266.3	269.3	271.6
50°	231.1	234.0	236.9	239.8	242.8	245.8	249.0	252.4	255.6	258.8	261.3
52.5°	218.2	221.4	224.4	227.5	230.7	234.0	237.5	241.2	244.7	248.2	250.7
55°	199.5	203.0	206.4	209.8	213.3	216.9	220.7	224.5	228.2	232.0	234.8
57.5°	181.3	184.8	188.4	192.1	195.6	199.5	203.6	207.7	211.9	216.0	218.8
60°	168.4	172.2	176.0	179.8	183.5	187.5	191.9	196.1	200.4	204.7	207.6
62.5°	156.4	160.3	164.1	167.9	171.8	176.0	180.6	185.1	189.7	194.2	197.0
65°	137.8	142.0	146.0	150.1	154.2	158.5	163.1	167.7	172.3	176.9	180.1
67.5°	119.1	123.4	127.7	132.0	136.3	140.9	145.5	150.3	154.9	159.7	163.0
70°	105.8	110.4	114.8	119.4	123.8	128.7	133.6	138.7	143.7	148.7	152.1
72.5°	93.8	98.4	102.8	107.3	111.8	116.6	121.8	127.0	132.2	137.4	140.9
75°	74.8	79.8	84.6	89.6	94.5	99.6	104.8	110.0	115.2	120.5	123.9
77.5°	58.3	63.2	68.2	73.1	78.1	83.2	88.5	93.7	99.0	104.3	108.0
80°	46.6	51.7	56.9	62.0	67.1	72.4	77.8	83.2	88.7	94.1	97.7
82.5°	36.5	41.6	46.9	52.0	57.3	62.6	68.2	73.6	79.2	84.7	88.3
85°	23.0	28.3	33.5	38.8	43.9	49.4	54.9	60.4	65.9	71.5	75.0
87.5°	12.8	18.7	24.5	30.5	36.4	42.4	48.6	54.8	61.0	67.3	71.1
90°	7.7	16.2	24.6	33.1	41.7	50.8	60.5	70.3	80.0	89.7	94.6
92.5°	42.6	49.5	56.5	63.3	70.3	77.7	85.3	93.1	100.9	108.7	113.2
95°	95.0	101.5	108.0	114.3	120.8	127.9	135.8	143.6	151.5	159.3	163.9
97.5°	164.2	169.7	175.1	180.6	185.9	192.1	198.9	205.8	212.7	219.5	224.2
100°	211.4	216.7	222.1	227.4	232.9	238.8	245.3	251.8	258.3	264.8	268.8
102.5°	265.8	270.0	274.3	278.5	282.7	288.3	295.3	302.3	309.2	316.1	320.1
105°	346.4	349.6	352.7	356.0	359.1	364.5	372.0	379.6	387.2	394.7	397.6
107.5°	439.6	442.2	444.7	447.3	449.8	453.8	459.3	464.7	470.3	475.7	479.6
110°	497.8	500.3	502.8	505.4	508.0	511.7	516.5	521.4	526.2	531.1	535.2



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	558.7	560.6	562.6	564.5	566.4	569.6	573.7	577.8	582.0	586.1	590.4
115°	649.5	651.9	654.1	656.4	658.6	661.4	664.4	667.5	670.6	673.7	676.5
117.5°	741.4	742.9	744.4	745.8	747.2	749.3	751.9	754.6	757.3	759.9	762.3
120°	798.3	800.8	803.4	806.0	808.5	810.7	812.4	814.3	816.0	817.7	819.8
122.5°	858.0	859.8	861.5	863.3	865.1	867.2	869.5	871.9	874.3	876.8	878.2
125°	948.6	949.6	950.7	951.7	952.7	954.3	956.7	959.1	961.4	963.8	964.6
127.5°	1032.7	1034.7	1036.8	1038.8	1040.9	1042.8	1044.6	1046.3	1048.1	1049.9	1050.1
130°	1088.7	1091.3	1093.9	1096.5	1099.1	1101.0	1102.1	1103.1	1104.2	1105.3	1105.9
132.5°	1144.4	1147.1	1149.7	1152.5	1155.1	1156.9	1157.8	1158.8	1159.7	1160.6	1160.9
135°	1229.8	1231.8	1233.8	1235.7	1237.6	1238.9	1239.7	1240.5	1241.3	1242.1	1242.7
137.5°	1309.0	1310.6	1312.2	1313.7	1315.3	1317.0	1318.5	1320.0	1321.5	1323.0	1323.3
140°	1363.4	1365.1	1366.8	1368.5	1370.2	1371.3	1372.0	1372.6	1373.3	1373.9	1375.1
142.5°	1413.3	1414.9	1416.5	1418.2	1419.8	1420.9	1421.6	1422.3	1422.9	1423.6	1424.7
145°	1491.3	1491.9	1492.5	1493.0	1493.6	1494.4	1495.4	1496.4	1497.4	1498.4	1498.9
147.5°	1559.0	1560.2	1561.5	1562.8	1564.0	1565.0	1566.0	1566.9	1567.8	1568.8	1569.0
150°	1606.6	1607.3	1607.9	1608.6	1609.3	1609.9	1610.6	1611.3	1611.9	1612.7	1612.7
152.5°	1645.6	1646.5	1647.5	1648.4	1649.3	1650.0	1650.4	1650.8	1651.2	1651.6	1652.2
155°	1707.1	1707.1	1707.1	1707.1	1707.1	1707.3	1707.6	1707.9	1708.3	1708.6	1710.0
157.5°	1759.5	1759.1	1758.7	1758.3	1757.9	1757.8	1758.1	1758.3	1758.6	1758.9	1760.3
160°	1792.4	1791.7	1791.0	1790.3	1789.7	1789.3	1789.3	1789.3	1789.3	1789.3	1791.0
162.5°	1821.6	1820.7	1819.7	1818.8	1817.9	1817.5	1817.8	1818.1	1818.3	1818.6	1820.3
165°	1859.4	1858.4	1857.3	1856.3	1855.3	1854.8	1854.8	1854.8	1854.8	1854.8	1856.8
167.5°	1889.6	1888.1	1886.8	1885.4	1884.1	1883.6	1883.8	1884.1	1884.4	1884.6	1886.7
170°	1906.5	1905.2	1903.9	1902.5	1901.2	1900.5	1900.5	1900.5	1900.5	1900.5	1902.9
172.5°	1920.0	1918.6	1917.2	1915.9	1914.6	1913.9	1913.9	1913.9	1913.9	1913.9	1916.0
175°	1934.0	1932.7	1931.3	1930.0	1928.5	1927.9	1927.9	1927.9	1927.9	1927.9	1930.0
177.5°	1939.7	1938.7	1937.6	1936.5	1935.4	1934.9	1934.9	1934.9	1934.9	1934.9	1936.5
180°	1938.5	1938.5	1938.5	1938.5	1938.5	1938.5	1938.5	1938.5	1938.5	1938.5	1938.5



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	431.9	431.9	431.9	431.9	431.9	431.9	431.9	431.9
2.5°	431.0	431.7	432.4	432.6	432.6	432.5	432.4	432.3
5°	430.3	431.2	432.0	432.4	432.3	432.1	432.0	431.9
7.5°	427.8	428.8	429.8	430.3	430.2	430.0	429.9	429.8
10°	425.2	426.2	427.2	427.6	427.4	427.2	427.0	426.8
12.5°	421.5	422.5	423.4	423.8	423.6	423.4	423.2	423.0
15°	414.8	415.8	416.9	417.3	417.2	417.1	417.0	416.9
17.5°	405.9	406.9	407.8	408.2	408.0	407.9	407.8	407.6
20°	399.5	400.4	401.4	401.9	402.0	402.1	402.2	402.3
22.5°	392.4	393.6	394.9	395.5	395.4	395.3	395.3	395.2
25°	380.5	381.9	383.2	384.0	384.0	384.0	384.0	384.0
27.5°	368.1	369.3	370.5	371.1	371.2	371.3	371.3	371.4
30°	359.6	360.9	362.1	362.7	362.7	362.7	362.7	362.7
32.5°	350.4	351.7	353.0	353.9	354.2	354.4	354.7	354.9
35°	336.8	338.3	339.9	340.9	341.3	341.7	342.1	342.5
37.5°	322.6	324.4	326.2	327.2	327.5	327.9	328.2	328.5
40°	313.2	315.0	316.7	317.8	318.2	318.7	319.1	319.5
42.5°	303.4	305.3	307.2	308.5	309.1	309.6	310.2	310.8
45°	288.6	290.6	292.7	294.1	294.9	295.7	296.6	297.4
47.5°	273.8	276.1	278.3	279.7	280.3	281.0	281.7	282.4
50°	263.6	266.0	268.4	270.0	270.7	271.5	272.2	273.0
52.5°	253.3	255.7	258.2	259.9	260.8	261.8	262.6	263.5
55°	237.6	240.4	243.3	245.1	245.9	246.8	247.6	248.4
57.5°	221.7	224.5	227.3	229.2	230.2	231.3	232.3	233.2
60°	210.6	213.5	216.4	218.4	219.5	220.8	221.9	223.1
62.5°	200.0	202.9	205.8	207.8	208.9	210.0	211.1	212.2
65°	183.2	186.3	189.5	191.6	192.6	193.7	194.7	195.7
67.5°	166.4	169.9	173.3	175.5	176.3	177.2	178.1	178.9
70°	155.4	158.8	162.1	164.3	165.3	166.3	167.4	168.4
72.5°	144.2	147.6	151.1	153.4	154.4	155.4	156.5	157.5
75°	127.3	130.8	134.3	136.6	137.8	139.2	140.4	141.7
77.5°	111.6	115.2	118.9	121.1	122.1	123.1	124.0	125.0
80°	101.2	104.8	108.4	110.6	111.7	112.7	113.8	114.8
82.5°	91.8	95.3	99.0	101.2	102.3	103.3	104.3	105.4
85°	78.7	82.2	85.7	88.1	89.1	90.2	91.2	92.2
87.5°	74.9	78.8	82.6	85.0	86.2	87.5	88.6	89.8
90°	99.6	104.4	109.4	112.7	114.4	116.1	117.9	119.6
92.5°	117.8	122.3	126.8	129.4	130.0	130.5	131.1	131.6
95°	168.4	173.1	177.6	180.5	181.5	182.6	183.6	184.7
97.5°	228.8	233.6	238.2	241.1	242.0	242.9	243.8	244.7
100°	272.9	276.9	280.9	283.9	285.6	287.3	289.0	290.7
102.5°	324.1	328.0	331.9	334.5	335.4	336.3	337.2	338.1
105°	400.5	403.4	406.4	408.7	410.3	411.9	413.5	415.2
107.5°	483.5	487.4	491.3	493.5	494.0	494.5	495.0	495.5
110°	539.3	543.3	547.4	549.6	549.7	549.9	550.0	550.2



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CATALOG NUMBER: S123DIW-S340D1535U840-4F0-1E-UDD-D1

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	594.6	599.0	603.2	605.7	606.4	607.2	608.0	608.8
115°	679.3	682.2	685.1	686.7	687.2	687.7	688.2	688.7
117.5°	764.8	767.2	769.6	770.7	770.6	770.4	770.3	770.2
120°	821.8	823.9	826.0	827.1	827.1	827.2	827.2	827.3
122.5°	879.6	881.1	882.5	883.1	882.9	882.7	882.5	882.3
125°	965.4	966.3	967.1	967.2	966.6	966.0	965.4	964.7
127.5°	1050.3	1050.5	1050.6	1050.3	1049.5	1048.5	1047.7	1046.8
130°	1106.5	1107.1	1107.8	1107.2	1105.5	1103.8	1102.1	1100.2
132.5°	1161.2	1161.4	1161.7	1161.3	1160.2	1159.1	1158.0	1156.9
135°	1243.2	1243.7	1244.3	1244.5	1244.4	1244.2	1244.1	1243.9
137.5°	1323.5	1323.7	1324.0	1323.7	1322.9	1322.2	1321.4	1320.7
140°	1376.4	1377.7	1378.9	1378.6	1376.7	1374.8	1373.0	1371.2
142.5°	1425.7	1426.8	1427.8	1427.7	1426.4	1425.1	1423.8	1422.5
145°	1499.4	1500.0	1500.5	1500.3	1499.2	1498.3	1497.4	1496.5
147.5°	1569.3	1569.5	1569.8	1569.1	1567.4	1565.8	1564.2	1562.5
150°	1612.7	1612.7	1612.7	1611.7	1609.9	1608.1	1606.3	1604.5
152.5°	1652.7	1653.3	1653.9	1653.3	1651.5	1649.8	1648.1	1646.4
155°	1711.3	1712.6	1714.0	1713.5	1711.1	1708.8	1706.4	1704.0
157.5°	1761.7	1763.1	1764.5	1764.3	1762.4	1760.5	1758.6	1756.8
160°	1792.7	1794.4	1796.0	1796.2	1794.9	1793.5	1792.2	1790.8
162.5°	1821.9	1823.6	1825.3	1825.1	1822.9	1820.8	1818.6	1816.4
165°	1858.9	1860.9	1862.9	1862.8	1860.4	1858.1	1855.6	1853.3
167.5°	1888.9	1891.0	1893.0	1893.0	1891.0	1888.9	1886.7	1884.6
170°	1905.2	1907.6	1910.0	1910.0	1907.6	1905.2	1902.9	1900.5
172.5°	1918.0	1920.2	1922.3	1922.2	1919.8	1917.4	1915.0	1912.7
175°	1932.0	1934.0	1936.0	1935.8	1933.5	1931.1	1928.7	1926.4
177.5°	1938.1	1939.7	1941.4	1941.3	1939.3	1937.4	1935.6	1933.7
180°	1938.5	1938.5	1938.5	1938.5	1938.5	1938.5	1938.5	1938.5

(END OF REPORT)