

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: P332408-940

Luminaire Tested: **S123RDIW-S340D1535U940-4F0-1E-UDD-F**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332408-940
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-S340D1535U940-4F0-1E-UDD-F
Description: DEFINE 3 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 340 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER, REGRESSED
HOUSING
UPLIGHT 1535 LUMENS PER FOOT, NO LENS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 6634.3 lumens
Efficiency: N/A
Efficacy: 124.2 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

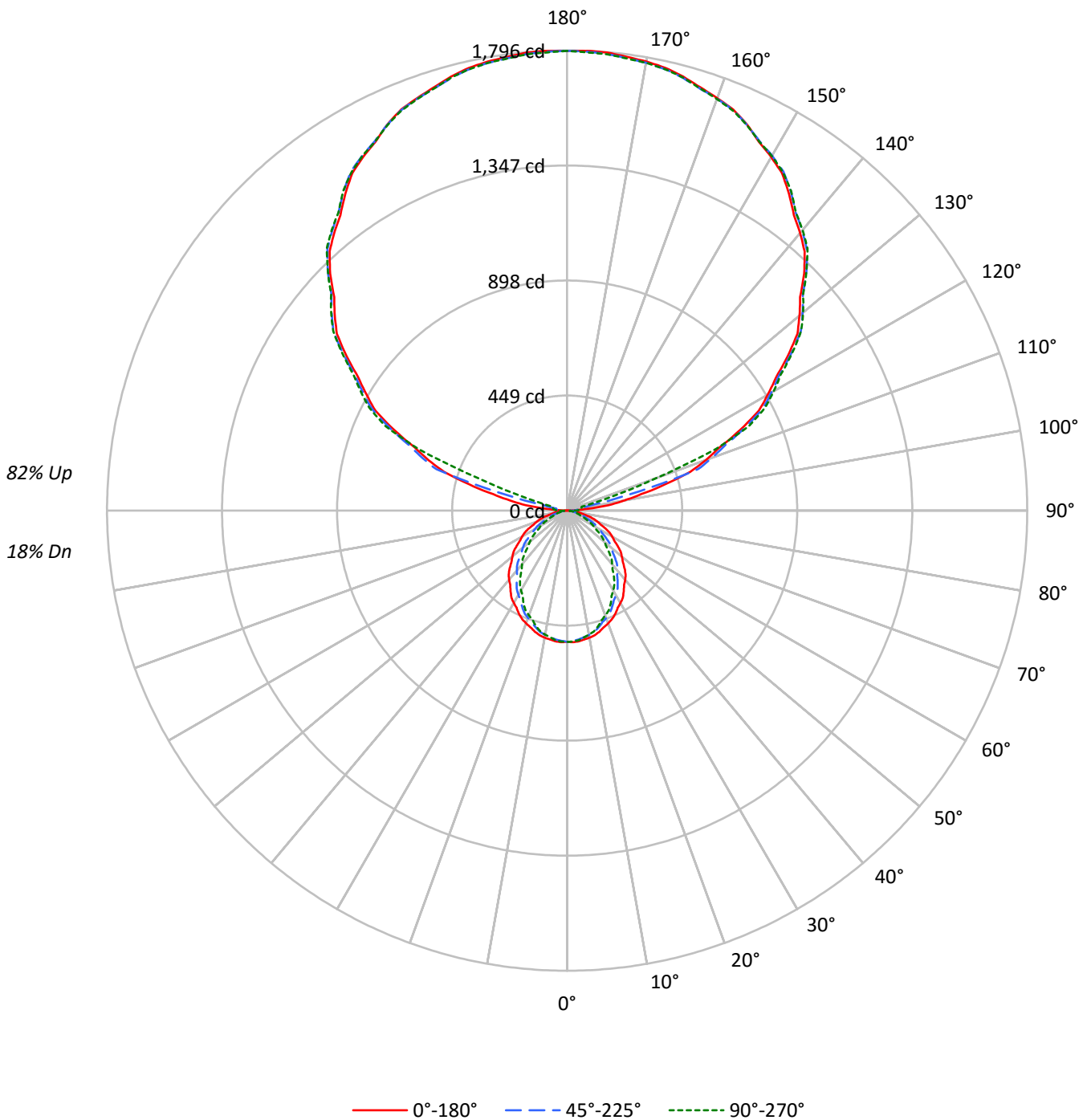
Input Watts (W): 53.4
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	99	99	99	99	88	88	88	88	65	65	65	45	45	45	26	26	26	18
1	91	87	83	80	80	76	73	71	57	55	53	40	38	37	23	23	22	15
2	83	76	70	65	72	67	62	58	50	47	44	35	33	31	21	20	19	13
3	75	66	60	54	66	59	53	48	44	40	37	31	29	27	18	17	16	11
4	69	59	51	46	60	52	46	41	39	35	32	27	25	23	16	15	14	9
5	63	52	45	39	55	46	40	35	35	31	27	25	22	20	15	13	12	8
6	58	47	39	34	51	41	35	30	31	27	24	22	19	17	13	12	11	7
7	53	42	34	29	47	37	31	26	28	24	21	20	17	15	12	11	10	6
8	49	38	31	26	43	34	27	23	26	21	18	18	15	13	11	10	9	6
9	46	34	27	23	40	31	25	20	23	19	16	17	14	12	10	9	8	5
10	43	31	25	20	38	28	22	18	21	17	14	15	13	11	10	8	7	5

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	5514	5514	5514
5°	5535	5459	5491
10°	5503	5391	5372
15°	5446	5264	5209
20°	5363	5108	4987
25°	5280	4930	4772
30°	5169	4724	4467
35°	5056	4520	4188
40°	4950	4279	3842
45°	4813	4042	3529
50°	4662	3771	3178
55°	4506	3462	2852
60°	4366	3130	2495
65°	4182	2774	2137
70°	3950	2326	1725
75°	3614	1834	1626
80°	3217	1624	1494
85°	2717	1433	1334



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	48.1	0.7
10°-20°	133.9	2.0
20°-30°	192.7	2.9
30°-40°	217.1	3.3
40°-50°	207.7	3.1
50°-60°	170.1	2.6
60°-70°	114.8	1.7
70°-80°	57.7	0.9
80°-90°	20.3	0.3
90°-100°	65.2	1.0
100°-110°	310.9	4.7
110°-120°	746.8	11.3
120°-130°	951.0	14.3
130°-140°	1016.1	15.3
140°-150°	950.2	14.3
150°-160°	766.5	11.6
160°-170°	494.7	7.5
170°-180°	170.5	2.6
0°-30°	374.7	5.6
0°-40°	591.8	8.9
0°-60°	969.6	14.6
0°-90°	1162.4	17.5
90°-120°	1123.0	16.9
90°-150°	4040.3	60.9
90°-180°	5472.0	82.5
0°-180°	6634.3	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	512	512	512	512	512	
5°	512	510	505	509	508	49
15°	489	484	472	470	467	138
25°	445	434	415	407	402	204
35°	385	369	344	327	319	241
45°	316	297	266	243	232	244
55°	240	219	184	161	152	215
65°	164	141	109	89	84	162
75°	87	67	44	40	39	93
85°	22	13	12	11	11	25
90°	1	15	32	37	40	5
95°	81	30	41	50	51	101
105°	397	404	292	69	59	421
115°	745	753	765	778	784	735
125°	1050	1061	1066	1069	1072	938
135°	1308	1316	1321	1325	1321	1006
145°	1509	1518	1521	1524	1524	944
155°	1662	1660	1661	1667	1660	766
165°	1753	1749	1748	1757	1749	495
175°	1794	1788	1789	1797	1788	171
180°	1794	1794	1794	1794	1794	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	512.3	512.3	512.3	512.3	512.3	512.3	512.3	512.3	512.3	512.3	512.3
2.5°	514.0	513.6	513.4	513.1	512.8	512.2	511.3	510.4	509.5	508.6	509.4
5°	512.3	511.8	511.4	511.0	510.4	509.7	508.5	507.5	506.3	505.2	506.0
7.5°	507.6	507.0	506.6	506.0	505.6	504.6	503.2	501.8	500.2	498.8	499.3
10°	503.5	502.9	502.3	501.7	501.0	499.8	498.2	496.5	494.8	493.2	493.3
12.5°	497.9	497.2	496.5	495.8	495.1	493.7	491.6	489.6	487.6	485.5	485.4
15°	488.7	487.6	486.6	485.5	484.6	482.8	480.2	477.6	475.0	472.4	472.0
17.5°	476.9	475.7	474.6	473.3	472.2	469.9	466.6	463.3	460.1	456.8	455.8
20°	468.2	466.8	465.3	463.9	462.4	459.9	456.4	452.8	449.3	445.9	444.6
22.5°	458.6	456.9	455.2	453.5	451.8	449.2	445.4	441.7	437.9	434.2	432.7
25°	444.6	442.3	440.0	437.7	435.3	432.0	427.8	423.6	419.3	415.1	413.1
27.5°	427.6	425.0	422.4	419.9	417.3	413.8	409.0	404.2	399.5	394.8	392.1
30°	415.9	413.1	410.4	407.6	404.8	400.8	395.7	390.5	385.3	380.1	377.0
32.5°	404.3	401.1	398.0	394.8	391.7	387.4	381.9	376.5	371.0	365.5	362.1
35°	384.8	381.4	378.1	374.8	371.5	366.9	361.2	355.4	349.7	344.0	340.1
37.5°	365.0	361.2	357.6	353.9	350.2	345.3	339.2	333.1	327.0	320.8	316.4
40°	352.3	348.3	344.2	340.2	336.1	330.7	324.2	317.6	311.1	304.5	299.8
42.5°	338.0	333.9	329.9	325.8	321.8	316.4	309.6	302.8	296.0	289.3	284.0
45°	316.2	312.0	307.9	303.7	299.5	293.9	286.9	279.7	272.6	265.5	260.2
47.5°	294.4	289.8	285.2	280.6	276.1	270.3	263.1	256.0	249.0	241.8	236.1
50°	278.4	274.0	269.7	265.4	261.0	255.1	247.6	240.1	232.6	225.2	219.5
52.5°	264.1	259.4	254.7	249.9	245.2	239.2	231.8	224.4	217.0	209.6	203.7
55°	240.1	235.6	231.1	226.6	222.0	215.9	208.0	200.2	192.3	184.5	179.1
57.5°	218.0	213.1	208.2	203.2	198.3	191.9	184.0	176.1	168.3	160.4	155.3
60°	202.8	197.7	192.6	187.5	182.4	176.1	168.4	160.8	153.1	145.4	140.4
62.5°	187.4	182.4	177.3	172.3	167.2	160.8	153.1	145.4	137.8	130.1	125.5
65°	164.2	159.1	154.0	148.9	143.8	137.7	130.5	123.2	116.1	108.9	104.3
67.5°	140.8	135.6	130.5	125.4	120.2	114.2	107.3	100.4	93.5	86.6	83.2
70°	125.5	120.5	115.5	110.5	105.6	99.8	93.4	86.9	80.4	73.9	70.7
72.5°	110.2	105.3	100.4	95.4	90.5	85.2	79.3	73.4	67.5	61.6	59.0
75°	86.9	82.4	77.9	73.6	69.1	64.4	59.3	54.2	49.1	44.1	43.2
77.5°	65.5	61.5	57.5	53.5	49.6	45.9	42.6	39.3	36.1	32.8	32.4
80°	51.9	48.2	44.4	40.6	36.8	34.0	32.0	30.1	28.1	26.2	25.9
82.5°	39.0	35.7	32.5	29.2	25.9	23.8	22.9	22.0	21.1	20.2	19.9
85°	22.0	20.0	17.9	16.0	13.9	12.8	12.5	12.2	11.9	11.6	11.4
87.5°	8.2	8.0	7.8	7.6	7.4	7.7	8.4	9.2	10.0	10.7	10.9
90°	1.3	4.3	7.2	10.3	13.2	16.6	20.4	24.3	28.2	32.0	33.2
92.5°	24.8	24.0	23.1	22.3	21.5	22.5	25.4	28.4	31.2	34.2	36.0
95°	81.3	69.2	57.1	44.9	32.7	28.3	31.6	34.8	38.1	41.3	43.4
97.5°	163.5	158.0	152.6	147.0	141.6	128.2	106.9	85.6	64.3	42.9	45.3
100°	225.3	231.2	237.1	243.1	249.0	228.8	182.6	136.4	90.2	44.0	46.4
102.5°	295.7	300.0	304.3	308.4	312.7	289.6	239.2	188.7	138.2	87.7	80.3
105°	397.3	400.6	403.8	407.1	410.3	398.6	371.9	345.3	318.6	291.9	239.5
107.5°	504.4	507.0	509.6	512.3	514.9	518.3	522.5	526.7	530.9	535.1	496.7
110°	575.9	578.3	580.6	583.0	585.4	588.2	591.5	594.7	598.0	601.2	591.5



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	644.2	646.3	648.5	650.6	652.6	655.4	658.6	661.9	665.1	668.4	668.6
115°	745.2	747.0	748.8	750.6	752.3	754.6	757.2	759.8	762.5	765.2	768.1
117.5°	843.0	845.3	847.4	849.6	851.9	853.6	855.0	856.3	857.6	859.1	861.4
120°	903.8	906.5	909.2	911.9	914.5	916.3	917.1	918.0	918.9	919.8	922.2
122.5°	965.7	967.9	970.1	972.2	974.5	976.2	977.2	978.4	979.5	980.6	982.3
125°	1050.4	1052.8	1055.3	1057.6	1060.0	1061.8	1062.9	1064.1	1065.3	1066.5	1067.1
127.5°	1132.6	1135.0	1137.4	1139.7	1142.1	1144.0	1145.4	1146.8	1148.3	1149.7	1150.6
130°	1183.7	1186.2	1188.6	1190.9	1193.3	1195.1	1196.2	1197.4	1198.6	1199.8	1201.0
132.5°	1232.9	1235.2	1237.6	1239.9	1242.3	1244.0	1244.9	1245.9	1246.8	1247.8	1248.9
135°	1307.8	1309.6	1311.3	1313.1	1314.9	1316.3	1317.5	1318.8	1319.9	1321.1	1322.0
137.5°	1371.7	1374.0	1376.3	1378.5	1380.7	1382.2	1382.9	1383.5	1384.2	1384.8	1386.3
140°	1414.4	1416.2	1418.0	1419.8	1421.6	1422.8	1423.7	1424.6	1425.5	1426.4	1427.6
142.5°	1453.8	1455.6	1457.4	1459.2	1461.0	1462.3	1463.2	1464.1	1465.0	1465.9	1466.8
145°	1509.0	1511.1	1513.2	1515.3	1517.3	1518.7	1519.3	1519.8	1520.5	1521.1	1521.6
147.5°	1561.0	1562.5	1563.8	1565.1	1566.5	1567.4	1568.1	1568.7	1569.2	1569.9	1570.5
150°	1593.0	1593.9	1594.8	1595.7	1596.6	1597.3	1597.9	1598.6	1599.1	1599.7	1600.3
152.5°	1621.8	1622.3	1622.6	1623.1	1623.5	1623.9	1624.3	1624.6	1625.0	1625.3	1626.4
155°	1662.3	1661.8	1661.2	1660.6	1660.0	1659.8	1660.2	1660.5	1660.7	1661.0	1662.5
157.5°	1693.8	1693.8	1693.7	1693.6	1693.6	1693.4	1693.1	1692.8	1692.6	1692.2	1694.0
160°	1713.1	1712.7	1712.4	1712.2	1711.8	1711.5	1711.3	1710.9	1710.7	1710.4	1712.2
162.5°	1731.2	1730.4	1729.7	1728.8	1728.0	1727.5	1727.2	1727.0	1726.6	1726.4	1728.4
165°	1753.0	1752.1	1751.2	1750.3	1749.4	1748.9	1748.6	1748.3	1748.0	1747.7	1750.1
167.5°	1770.0	1768.9	1767.7	1766.6	1765.3	1764.8	1764.8	1764.8	1764.8	1764.8	1767.1
170°	1779.7	1778.5	1777.3	1776.1	1775.0	1774.3	1774.3	1774.3	1774.3	1774.3	1776.7
172.5°	1786.1	1784.7	1783.2	1781.8	1780.4	1779.8	1780.0	1780.3	1780.5	1780.7	1783.2
175°	1794.3	1792.9	1791.4	1789.9	1788.4	1787.8	1788.1	1788.4	1788.7	1789.0	1791.1
177.5°	1796.4	1795.3	1794.1	1793.0	1791.7	1791.3	1791.5	1791.7	1792.0	1792.2	1794.1
180°	1794.3	1794.3	1794.3	1794.3	1794.3	1794.3	1794.3	1794.3	1794.3	1794.3	1794.3



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	512.3	512.3	512.3	512.3	512.3	512.3	512.3	512.3
2.5°	510.2	511.0	511.9	512.2	512.1	511.9	511.8	511.7
5°	506.9	507.7	508.5	508.9	508.7	508.5	508.4	508.2
7.5°	499.8	500.2	500.7	500.8	500.4	500.2	499.8	499.5
10°	493.4	493.5	493.6	493.4	492.9	492.5	492.0	491.5
12.5°	485.4	485.4	485.4	485.0	484.5	483.9	483.4	482.9
15°	471.4	471.0	470.6	470.0	469.4	468.7	468.1	467.4
17.5°	454.9	453.9	452.9	451.9	450.9	450.0	449.1	448.1
20°	443.4	442.2	441.0	439.9	438.7	437.7	436.6	435.4
22.5°	431.2	429.7	428.2	427.0	425.9	424.9	423.8	422.8
25°	411.2	409.3	407.3	405.8	404.8	403.9	402.8	401.8
27.5°	389.4	386.7	384.1	381.9	380.3	378.8	377.3	375.7
30°	373.9	370.8	367.7	365.3	363.8	362.4	360.9	359.4
32.5°	358.6	355.3	351.8	349.3	347.8	346.3	344.6	343.1
35°	336.1	332.1	328.1	325.3	323.7	322.0	320.3	318.7
37.5°	311.8	307.3	302.8	299.5	297.5	295.4	293.4	291.3
40°	295.0	290.2	285.3	281.9	279.7	277.7	275.5	273.4
42.5°	278.7	273.6	268.3	264.7	262.8	260.9	259.0	257.1
45°	254.9	249.7	244.4	240.7	238.5	236.3	234.1	231.8
47.5°	230.3	224.6	218.9	215.1	213.1	211.2	209.1	207.1
50°	213.7	208.0	202.3	198.4	196.3	194.1	192.0	189.8
52.5°	197.7	191.7	185.8	181.9	179.9	178.1	176.2	174.2
55°	173.8	168.4	163.1	159.4	157.7	155.8	153.9	152.0
57.5°	150.3	145.2	140.2	136.8	135.3	133.7	132.2	130.5
60°	135.5	130.5	125.5	122.2	120.6	119.0	117.5	115.9
62.5°	120.7	116.1	111.4	108.2	106.6	105.0	103.3	101.7
65°	99.8	95.3	90.8	88.0	86.9	86.0	85.0	83.9
67.5°	79.8	76.4	73.0	70.8	69.7	68.7	67.6	66.5
70°	67.5	64.3	61.0	58.9	57.9	56.9	55.8	54.8
72.5°	56.4	53.8	51.1	49.6	49.1	48.7	48.3	47.9
75°	42.2	41.3	40.3	39.8	39.6	39.4	39.2	39.1
77.5°	31.8	31.3	30.9	30.5	30.3	30.1	30.0	29.8
80°	25.6	25.3	25.1	24.9	24.6	24.4	24.3	24.1
82.5°	19.6	19.4	19.1	18.9	18.9	18.8	18.8	18.8
85°	11.2	11.1	10.9	10.8	10.8	10.8	10.8	10.8
87.5°	11.1	11.2	11.4	11.5	11.5	11.6	11.6	11.7
90°	34.3	35.6	36.7	37.6	38.3	38.8	39.4	39.9
92.5°	37.9	39.9	41.7	42.8	43.2	43.5	43.9	44.2
95°	45.5	47.5	49.6	50.6	50.6	50.6	50.6	50.6
97.5°	47.7	50.0	52.4	53.8	54.0	54.3	54.7	54.9
100°	48.7	51.1	53.5	54.8	55.1	55.4	55.7	56.0
102.5°	73.0	65.7	58.3	54.9	55.5	56.0	56.5	57.1
105°	187.1	134.6	82.2	56.3	56.9	57.5	58.1	58.7
107.5°	458.2	419.7	381.3	342.3	302.8	263.2	223.7	184.2
110°	581.7	571.9	562.1	536.0	493.7	451.3	408.9	366.6



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CATALOG NUMBER: S123RDIW-S340D1535U940-4F0-1E-UDD-F

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	668.8	669.0	669.1	664.8	655.8	646.8	637.9	628.9
115°	771.2	774.1	777.0	779.1	780.3	781.5	782.7	783.9
117.5°	863.8	866.1	868.5	869.9	870.0	870.3	870.6	870.8
120°	924.6	926.9	929.3	930.5	930.5	930.5	930.5	930.5
122.5°	983.9	985.6	987.3	988.2	988.5	988.6	988.9	989.2
125°	1067.6	1068.3	1068.8	1069.4	1070.1	1070.6	1071.2	1071.8
127.5°	1151.6	1152.5	1153.4	1153.6	1153.1	1152.4	1151.8	1151.3
130°	1202.1	1203.4	1204.5	1204.8	1204.3	1203.6	1203.0	1202.5
132.5°	1250.2	1251.3	1252.5	1252.7	1251.9	1251.1	1250.2	1249.4
135°	1322.9	1323.7	1324.6	1324.6	1323.7	1322.9	1322.0	1321.1
137.5°	1387.7	1389.1	1390.5	1390.9	1390.4	1389.7	1389.1	1388.6
140°	1428.8	1429.9	1431.1	1431.5	1430.8	1430.3	1429.7	1429.1
142.5°	1467.8	1468.7	1469.6	1469.7	1468.9	1468.0	1467.2	1466.4
145°	1522.2	1522.9	1523.4	1523.8	1523.8	1523.8	1523.8	1523.8
147.5°	1571.0	1571.6	1572.3	1571.8	1570.5	1569.1	1567.7	1566.4
150°	1600.9	1601.5	1602.0	1602.0	1601.1	1600.2	1599.3	1598.4
152.5°	1627.5	1628.5	1629.6	1629.4	1628.1	1626.7	1625.3	1624.0
155°	1664.0	1665.4	1667.0	1666.8	1665.0	1663.2	1661.4	1659.7
157.5°	1695.8	1697.5	1699.3	1699.1	1696.7	1694.4	1692.1	1689.8
160°	1714.0	1715.7	1717.4	1717.3	1715.2	1713.2	1711.1	1709.1
162.5°	1730.4	1732.4	1734.4	1734.5	1732.7	1730.8	1729.0	1727.2
165°	1752.4	1754.8	1757.2	1757.3	1755.2	1753.2	1751.1	1749.0
167.5°	1769.5	1771.8	1774.2	1774.2	1771.8	1769.5	1767.1	1764.8
170°	1779.1	1781.5	1783.9	1783.9	1781.5	1779.1	1776.7	1774.3
172.5°	1785.5	1787.9	1790.2	1790.1	1787.5	1784.9	1782.3	1779.7
175°	1793.1	1795.2	1797.3	1797.2	1794.7	1792.4	1790.0	1787.7
177.5°	1796.0	1797.9	1799.8	1799.6	1797.2	1794.8	1792.4	1790.1
180°	1794.3	1794.3	1794.3	1794.3	1794.3	1794.3	1794.3	1794.3

(END OF REPORT)