

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: P332116-840

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

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332116-840
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-S340D1535U840-4F0-1E-UDD-D
Description: DEFINE 3 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 340 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER
UPLIGHT 1535 LUMENS PER FOOT, NO LENS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 7654.2 lumens
Efficiency: N/A
Efficacy: 143.3 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

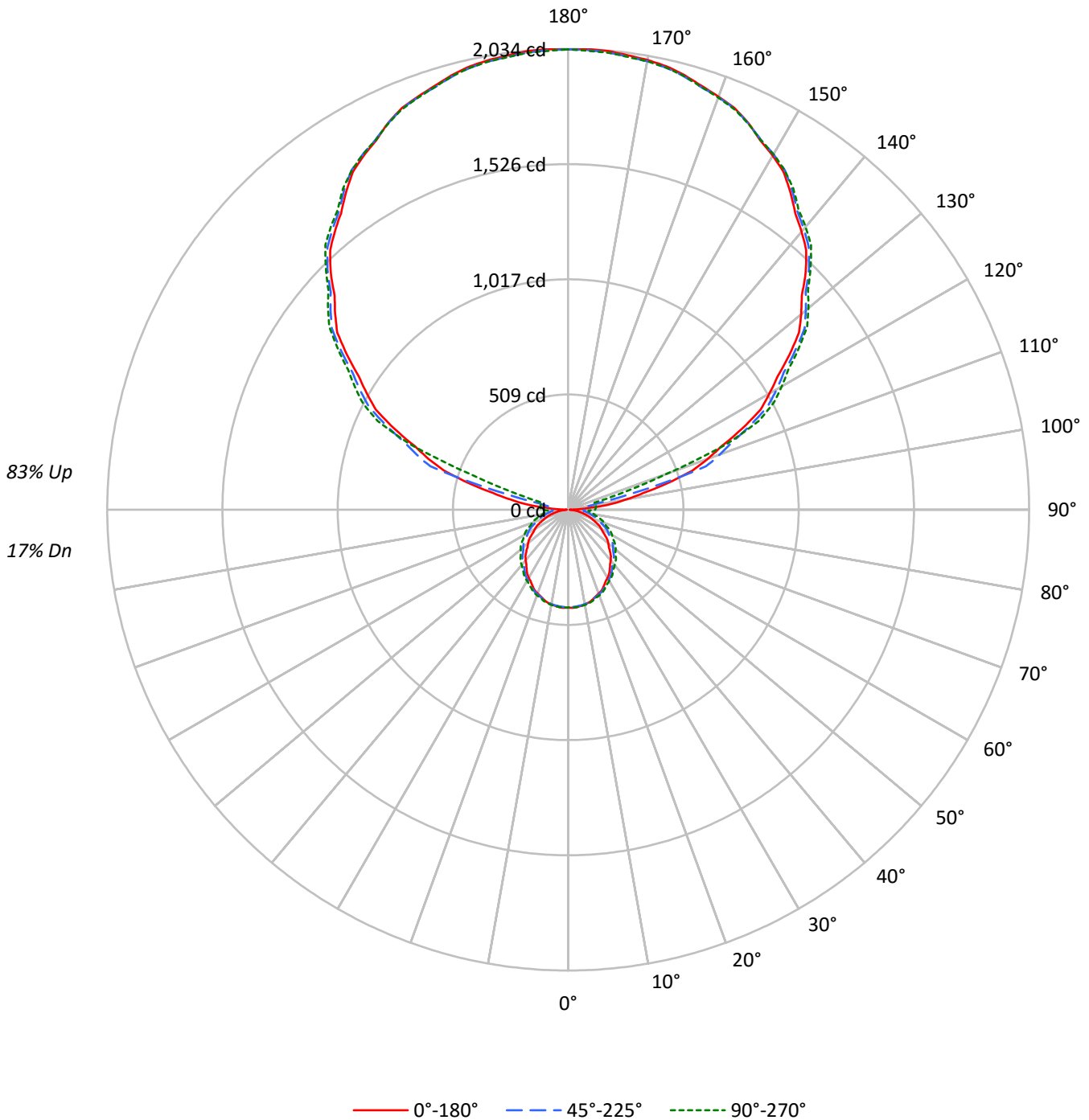
Input Watts (W): 53.4
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	50	30	10	0	
RCR																						
0	99	99	99	99	87	87	87	87	65	65	65	45	45	45	26	26	26	17				17
1	90	86	82	79	79	76	72	70	56	54	52	39	38	36	22	22	21	14				14
2	82	75	69	64	72	66	61	57	49	46	43	34	32	30	20	19	18	11				11
3	74	65	58	53	65	58	52	47	43	39	36	30	27	25	17	16	15	9				9
4	68	58	50	44	59	51	45	40	38	34	30	26	24	21	15	14	13	8				8
5	62	51	43	38	54	45	39	34	34	29	26	23	21	18	14	12	11	7				7
6	57	46	38	32	50	40	34	29	30	26	22	21	18	16	12	11	9	6				6
7	53	41	33	28	46	36	30	25	27	23	19	19	16	14	11	10	8	5				5
8	49	37	30	24	43	33	26	22	25	20	17	17	14	12	10	9	7	5				5
9	45	33	26	22	40	30	24	19	23	18	15	16	13	11	9	8	7	4				4
10	42	30	24	19	37	27	21	17	21	16	13	14	12	10	9	7	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	0.5
10°-20°	116.7	1.5
20°-30°	174.6	2.3
30°-40°	208.5	2.7
40°-50°	218.1	2.9
50°-60°	204.7	2.7
60°-70°	171.0	2.2
70°-80°	122.3	1.6
80°-90°	78.6	1.0
90°-100°	119.7	1.6
100°-110°	385.8	5.0
110°-120°	868.2	11.3
120°-130°	1089.8	14.2
130°-140°	1156.5	15.1
140°-150°	1077.3	14.1
150°-160°	868.0	11.3
160°-170°	560.2	7.3
170°-180°	193.1	2.5
0°-30°	332.3	4.3
0°-40°	540.8	7.1
0°-60°	963.6	12.6
0°-90°	1335.6	17.4
90°-120°	1373.7	17.9
90°-150°	4697.3	61.4
90°-180°	6319.0	82.6
0°-180°	7654.2	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	89	111	119	8
95°	97	58	93	117	123	118
105°	454	474	366	126	119	481
115°	846	862	892	917	928	835
125°	1191	1204	1223	1235	1242	1063
135°	1482	1491	1502	1514	1513	1140
145°	1710	1719	1723	1729	1731	1070
155°	1883	1880	1881	1888	1880	867
165°	1985	1981	1979	1990	1981	561
175°	2032	2025	2026	2035	2025	193
180°	2032	2032	2032	2032	2032	



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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	54.7	61.0	67.2	71.0
90°	7.7	16.1	24.5	33.0	41.5	50.6	60.3	70.0	79.7	89.4	94.3
92.5°	33.8	37.5	41.2	44.8	48.6	54.6	63.2	71.7	80.3	88.8	94.4
95°	97.3	87.6	78.0	68.3	58.6	58.2	67.0	75.7	84.5	93.4	99.0
97.5°	189.8	187.2	184.7	182.2	179.8	168.8	149.6	130.4	111.1	91.8	97.7
100°	259.3	269.4	279.5	289.5	299.6	280.8	233.4	185.8	138.3	90.8	96.4
102.5°	338.7	346.6	354.4	362.2	370.1	347.8	295.4	242.9	190.5	138.0	132.7
105°	453.6	459.9	466.1	472.3	478.5	468.7	443.0	417.3	391.6	365.9	309.4
107.5°	574.5	579.6	584.6	589.8	594.8	601.9	610.9	620.0	628.9	638.0	597.2
110°	655.0	659.6	664.2	668.7	673.3	679.5	687.4	695.3	703.2	711.0	702.7



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	732.4	736.3	740.2	744.2	748.2	754.0	761.7	769.4	777.1	784.9	787.7
115°	846.3	849.6	852.8	856.1	859.4	864.3	871.2	878.0	884.7	891.5	897.4
117.5°	957.0	960.3	963.5	966.7	970.1	974.2	979.3	984.3	989.5	994.5	999.7
120°	1025.5	1029.1	1032.6	1036.1	1039.7	1043.7	1048.1	1052.6	1057.0	1061.5	1066.5
122.5°	1095.5	1098.3	1101.1	1103.8	1106.5	1110.2	1114.8	1119.3	1123.9	1128.4	1132.7
125°	1191.0	1193.8	1196.5	1199.1	1201.8	1205.4	1209.7	1214.1	1218.5	1222.8	1225.7
127.5°	1284.0	1286.7	1289.2	1291.8	1294.4	1297.8	1301.8	1306.0	1310.1	1314.2	1317.4
130°	1342.0	1344.6	1347.3	1349.8	1352.4	1355.3	1358.8	1362.2	1365.6	1369.1	1372.4
132.5°	1397.2	1399.9	1402.6	1405.2	1407.9	1410.6	1413.3	1416.1	1418.9	1421.6	1424.8
135°	1482.0	1483.9	1485.8	1487.7	1489.7	1491.8	1494.3	1496.8	1499.3	1501.8	1504.7
137.5°	1554.4	1556.8	1559.3	1561.8	1564.2	1566.2	1567.5	1568.9	1570.3	1571.7	1575.0
140°	1602.3	1604.3	1606.3	1608.3	1610.3	1612.0	1613.4	1614.7	1616.0	1617.3	1620.2
142.5°	1647.0	1648.9	1650.8	1652.7	1654.7	1656.2	1657.3	1658.3	1659.4	1660.5	1662.9
145°	1709.5	1711.7	1713.9	1716.3	1718.5	1719.9	1720.6	1721.2	1721.9	1722.6	1724.1
147.5°	1767.9	1769.5	1771.0	1772.5	1774.0	1775.1	1775.8	1776.6	1777.2	1777.9	1778.8
150°	1804.1	1805.1	1806.1	1807.2	1808.2	1809.0	1809.7	1810.4	1811.0	1811.7	1812.3
152.5°	1836.7	1837.2	1837.7	1838.2	1838.7	1839.1	1839.5	1839.9	1840.3	1840.7	1841.9
155°	1882.6	1882.0	1881.3	1880.7	1880.0	1879.8	1880.2	1880.5	1880.8	1881.1	1882.8
157.5°	1918.2	1918.2	1918.1	1918.0	1918.0	1917.8	1917.4	1917.1	1916.8	1916.4	1918.4
160°	1940.1	1939.6	1939.3	1939.0	1938.6	1938.3	1938.0	1937.6	1937.3	1937.0	1939.0
162.5°	1960.6	1959.6	1958.8	1957.9	1957.0	1956.4	1956.1	1955.8	1955.4	1955.1	1957.4
165°	1985.3	1984.3	1983.3	1982.3	1981.3	1980.6	1980.2	1979.9	1979.6	1979.2	1982.0
167.5°	2004.6	2003.3	2002.0	2000.6	1999.2	1998.6	1998.6	1998.6	1998.6	1998.6	2001.2
170°	2015.5	2014.2	2012.8	2011.4	2010.1	2009.4	2009.4	2009.4	2009.4	2009.4	2012.2
172.5°	2022.8	2021.1	2019.5	2017.9	2016.3	2015.6	2015.9	2016.2	2016.4	2016.7	2019.4
175°	2032.1	2030.4	2028.7	2027.1	2025.4	2024.7	2025.1	2025.4	2025.7	2026.1	2028.4
177.5°	2034.5	2033.2	2031.8	2030.5	2029.1	2028.6	2028.9	2029.1	2029.4	2029.7	2031.8
180°	2032.1	2032.1	2032.1	2032.1	2032.1	2032.1	2032.1	2032.1	2032.1	2032.1	2032.1



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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°	74.8	78.7	82.5	85.0	86.1	87.4	88.6	89.7
90°	99.2	104.1	109.0	112.3	114.0	115.7	117.4	119.2
92.5°	100.1	105.6	111.3	114.8	116.1	117.5	118.9	120.3
95°	104.5	110.2	115.7	119.1	120.1	121.2	122.2	123.2
97.5°	103.4	109.2	115.0	118.6	120.0	121.4	122.7	124.1
100°	102.2	108.0	113.6	117.1	118.6	120.0	121.3	122.7
102.5°	127.2	121.9	116.5	114.7	116.3	118.0	119.7	121.3
105°	253.0	196.5	140.1	112.7	114.3	115.9	117.5	119.2
107.5°	556.5	515.7	475.0	432.7	388.9	345.1	301.2	257.4
110°	694.3	685.9	677.6	649.8	602.7	555.5	508.5	461.3



TEST NUMBER: P332116-840

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

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	790.5	793.3	796.2	792.9	783.8	774.6	765.4	756.2
115°	903.2	909.1	914.9	919.0	921.2	923.3	925.5	927.8
117.5°	1004.8	1010.1	1015.2	1018.3	1019.5	1020.5	1021.6	1022.7
120°	1071.7	1076.7	1081.9	1084.7	1085.5	1086.2	1086.9	1087.6
122.5°	1136.8	1141.0	1145.3	1147.8	1148.8	1149.8	1150.8	1151.9
125°	1228.6	1231.4	1234.4	1236.5	1237.9	1239.2	1240.6	1242.0
127.5°	1320.5	1323.6	1326.8	1328.4	1328.5	1328.5	1328.5	1328.6
130°	1375.7	1379.1	1382.4	1384.0	1384.0	1384.0	1383.9	1383.9
132.5°	1428.1	1431.3	1434.5	1436.0	1435.8	1435.6	1435.4	1435.1
135°	1507.5	1510.5	1513.4	1514.6	1514.1	1513.6	1513.1	1512.6
137.5°	1578.2	1581.4	1584.8	1586.3	1586.2	1586.0	1585.9	1585.7
140°	1623.2	1626.0	1628.9	1630.3	1630.1	1630.0	1629.9	1629.7
142.5°	1665.5	1667.9	1670.4	1671.4	1671.0	1670.6	1670.1	1669.7
145°	1725.7	1727.2	1728.6	1729.6	1730.0	1730.4	1730.8	1731.3
147.5°	1779.7	1780.6	1781.5	1781.4	1780.3	1779.1	1778.0	1776.8
150°	1813.0	1813.7	1814.3	1814.3	1813.5	1812.7	1811.9	1811.1
152.5°	1843.1	1844.3	1845.5	1845.3	1843.8	1842.3	1840.9	1839.4
155°	1884.5	1886.1	1887.8	1887.6	1885.6	1883.6	1881.6	1879.7
157.5°	1920.5	1922.5	1924.5	1924.2	1921.6	1918.9	1916.3	1913.7
160°	1941.1	1943.0	1945.0	1944.9	1942.5	1940.2	1937.8	1935.5
162.5°	1959.6	1962.0	1964.2	1964.3	1962.3	1960.1	1958.1	1956.0
165°	1984.6	1987.3	1990.0	1990.1	1987.8	1985.5	1983.1	1980.7
167.5°	2004.0	2006.6	2009.3	2009.3	2006.6	2004.0	2001.2	1998.6
170°	2014.8	2017.5	2020.2	2020.2	2017.5	2014.8	2012.2	2009.4
172.5°	2022.1	2024.8	2027.4	2027.3	2024.4	2021.4	2018.4	2015.5
175°	2030.7	2033.1	2035.5	2035.3	2032.6	2029.9	2027.2	2024.6
177.5°	2034.0	2036.1	2038.3	2038.0	2035.3	2032.7	2029.9	2027.3
180°	2032.1	2032.1	2032.1	2032.1	2032.1	2032.1	2032.1	2032.1

(END OF REPORT)