

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

Luminaire Tested: **S123DIW-S340D1535U835-4F0-1E-UDD-D**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332116
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-S340D1535U835-4F0-1E-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: 7579.4 lumens
Efficiency: N/A
Efficacy: 141.9 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

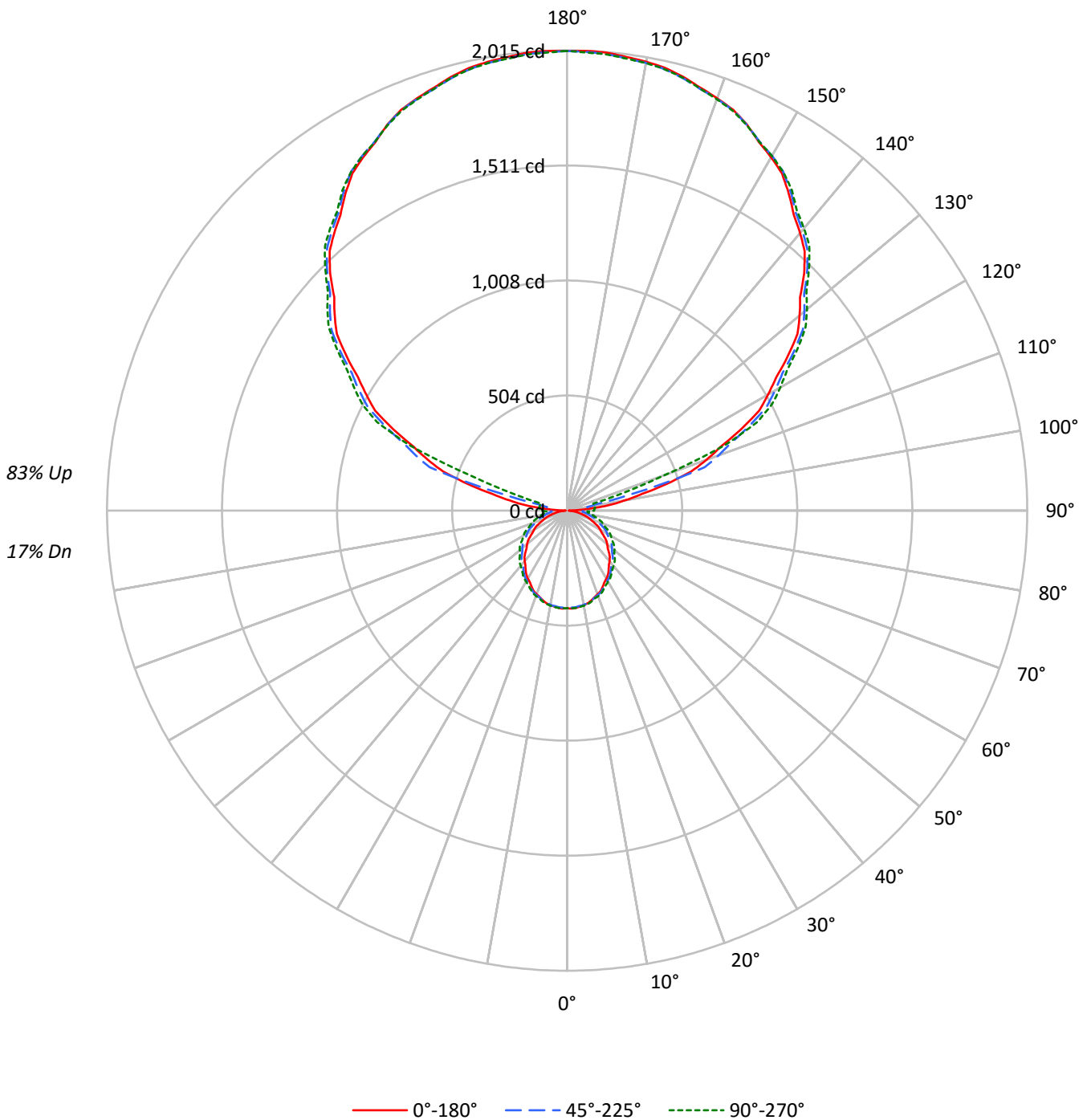
Input Watts (W): 53.4
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P332116

CATALOG NUMBER: S123DIW-S340D1535U835-4F0-1E-UDD-D

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				
1	90	86	82	79	79	76	72	70	56	54	52	39	38	36	22	22	21	14				
2	82	75	69	64	72	66	61	57	49	46	43	34	32	30	20	19	18	11				
3	74	65	58	53	65	58	52	47	43	39	36	30	27	25	17	16	15	9				
4	68	58	50	44	59	51	45	40	38	34	30	26	24	21	15	14	13	8				
5	62	51	43	38	54	45	39	34	34	29	26	23	21	18	14	12	11	7				
6	57	46	38	32	50	40	34	29	30	26	22	21	18	16	12	11	9	6				
7	53	41	33	28	46	36	30	25	27	23	19	19	16	14	11	10	8	5				
8	49	37	30	24	43	33	26	22	25	20	17	17	14	12	10	9	7	5				
9	45	33	26	22	40	30	24	19	23	18	15	16	13	11	9	8	7	4				
10	42	30	24	19	37	27	21	17	21	16	13	14	12	10	9	7	6	4				

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	4604	4604	4604
5°	4618	4488	4490
10°	4577	4385	4363
15°	4518	4267	4223
20°	4434	4133	4070
25°	4330	3980	3908
30°	4224	3841	3744
35°	4103	3694	3614
40°	3990	3560	3474
45°	3864	3432	3362
50°	3739	3305	3239
55°	3601	3175	3128
60°	3466	3044	3015
65°	3328	2903	2878
70°	3120	2744	2740
75°	2859	2565	2600
80°	2556	2387	2438
85°	2274	2264	2344



TEST NUMBER: P332116

CATALOG NUMBER: S123DIW-S340D1535U835-4F0-1E-UDD-D

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	40.5	0.5
10°-20°	115.6	1.5
20°-30°	172.9	2.3
30°-40°	206.5	2.7
40°-50°	216.0	2.9
50°-60°	202.7	2.7
60°-70°	169.3	2.2
70°-80°	121.1	1.6
80°-90°	77.9	1.0
90°-100°	118.5	1.6
100°-110°	382.0	5.0
110°-120°	859.8	11.3
120°-130°	1079.2	14.2
130°-140°	1145.2	15.1
140°-150°	1066.8	14.1
150°-160°	859.5	11.3
160°-170°	554.7	7.3
170°-180°	191.2	2.5
0°-30°	329.0	4.3
0°-40°	535.5	7.1
0°-60°	954.2	12.6
0°-90°	1322.5	17.4
90°-120°	1360.2	17.9
90°-150°	4651.5	61.4
90°-180°	6257.0	82.6
0°-180°	7579.4	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	428	428	428	428	428	
5°	428	427	424	428	428	41
15°	408	409	409	413	413	115
25°	368	373	374	380	380	170
35°	317	324	330	337	339	198
45°	259	270	282	290	294	200
55°	198	213	230	242	246	177
65°	136	155	175	189	194	135
75°	74	96	119	134	140	79
85°	23	46	71	86	91	24
90°	8	46	88	110	118	8
95°	96	58	92	116	122	117
105°	449	469	362	125	118	476
115°	838	853	883	908	919	827
125°	1179	1192	1211	1223	1230	1053
135°	1468	1476	1487	1499	1498	1129
145°	1693	1702	1706	1712	1714	1059
155°	1864	1862	1863	1869	1861	859
165°	1966	1962	1960	1971	1961	555
175°	2012	2005	2006	2016	2005	191
180°	2012	2012	2012	2012	2012	



TEST NUMBER: P332116

CATALOG NUMBER: S123DIW-S340D1535U835-4F0-1E-UDD-D

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	427.7	427.7	427.7	427.7	427.7	427.7	427.7	427.7	427.7	427.7	427.7
2.5°	429.6	429.4	429.1	428.9	428.6	428.2	427.5	426.8	426.2	425.5	426.2
5°	428.2	428.0	427.8	427.6	427.4	427.0	426.3	425.7	425.1	424.5	425.3
7.5°	424.0	424.1	424.1	424.1	424.2	423.9	423.3	422.7	422.1	421.5	422.5
10°	420.3	420.5	420.7	420.9	421.1	421.0	420.4	419.9	419.4	418.9	419.9
12.5°	415.8	416.1	416.4	416.7	417.0	416.9	416.6	416.2	415.9	415.5	416.5
15°	407.7	408.0	408.3	408.6	408.9	409.1	408.9	408.8	408.7	408.6	409.7
17.5°	397.5	398.1	398.7	399.3	399.9	400.2	400.2	400.1	400.1	400.1	401.0
20°	390.0	390.6	391.2	391.9	392.5	392.9	393.1	393.3	393.5	393.7	394.7
22.5°	382.2	382.8	383.4	384.0	384.7	385.1	385.4	385.7	386.0	386.3	387.5
25°	368.1	369.1	370.2	371.2	372.2	372.9	373.2	373.5	373.8	374.2	375.5
27.5°	353.9	355.1	356.3	357.5	358.7	359.6	360.2	360.9	361.6	362.2	363.4
30°	343.9	345.2	346.6	347.9	349.3	350.3	351.2	352.0	352.8	353.7	354.9
32.5°	332.7	334.2	335.7	337.2	338.7	340.0	341.1	342.2	343.3	344.3	345.7
35°	316.8	318.5	320.2	321.8	323.5	325.0	326.3	327.7	329.0	330.4	331.9
37.5°	300.1	301.9	303.8	305.7	307.5	309.3	310.9	312.6	314.3	315.9	317.7
40°	288.9	290.8	292.6	294.5	296.3	298.3	300.4	302.5	304.5	306.6	308.4
42.5°	276.6	278.9	281.1	283.4	285.7	287.9	290.1	292.2	294.4	296.5	298.5
45°	259.1	261.6	264.0	266.5	269.0	271.5	274.1	276.7	279.3	281.9	283.9
47.5°	240.7	243.5	246.3	249.2	252.0	254.9	257.8	260.8	263.7	266.7	268.9
50°	228.8	231.7	234.6	237.5	240.4	243.4	246.6	249.9	253.1	256.3	258.7
52.5°	216.1	219.2	222.2	225.3	228.4	231.7	235.2	238.8	242.3	245.8	248.3
55°	197.6	201.0	204.4	207.8	211.2	214.8	218.5	222.3	226.0	229.7	232.5
57.5°	179.5	183.0	186.6	190.2	193.7	197.6	201.6	205.7	209.8	213.9	216.7
60°	166.8	170.5	174.3	178.0	181.7	185.7	190.0	194.2	198.4	202.7	205.6
62.5°	154.9	158.7	162.5	166.3	170.1	174.3	178.8	183.3	187.8	192.3	195.1
65°	136.5	140.6	144.6	148.6	152.7	157.0	161.5	166.1	170.6	175.2	178.3
67.5°	117.9	122.2	126.5	130.7	135.0	139.5	144.1	148.8	153.4	158.1	161.4
70°	104.8	109.3	113.7	118.2	122.6	127.4	132.3	137.3	142.3	147.2	150.6
72.5°	92.9	97.4	101.8	106.3	110.7	115.5	120.6	125.8	130.9	136.1	139.5
75°	74.1	79.0	83.8	88.7	93.6	98.6	103.8	108.9	114.1	119.3	122.7
77.5°	57.7	62.6	67.5	72.4	77.3	82.4	87.6	92.8	98.0	103.3	106.9
80°	46.1	51.2	56.3	61.4	66.4	71.7	77.0	82.4	87.8	93.2	96.7
82.5°	36.1	41.2	46.4	51.5	56.7	62.0	67.5	72.9	78.4	83.9	87.4
85°	22.8	28.0	33.2	38.4	43.5	48.9	54.4	59.8	65.3	70.8	74.3
87.5°	12.7	18.5	24.3	30.2	36.0	42.0	48.1	54.2	60.4	66.5	70.3
90°	7.6	15.9	24.3	32.7	41.1	50.1	59.7	69.3	78.9	88.5	93.4
92.5°	33.5	37.1	40.8	44.4	48.1	54.1	62.6	71.0	79.5	87.9	93.5
95°	96.3	86.7	77.2	67.6	58.0	57.6	66.3	75.0	83.7	92.5	98.0
97.5°	187.9	185.4	182.9	180.4	178.0	167.2	148.1	129.1	110.0	90.9	96.7
100°	256.8	266.8	276.8	286.7	296.7	278.1	231.1	184.0	136.9	89.9	95.5
102.5°	335.4	343.2	350.9	358.7	366.5	344.4	292.5	240.5	188.6	136.7	131.4
105°	449.2	455.4	461.5	467.7	473.8	464.1	438.7	413.2	387.8	362.3	306.4
107.5°	568.9	573.9	578.9	584.0	589.0	596.0	604.9	613.9	622.8	631.8	591.4
110°	648.6	653.2	657.7	662.2	666.7	672.9	680.7	688.5	696.3	704.1	695.8



TEST NUMBER: P332116

CATALOG NUMBER: S123DIW-S340D1535U835-4F0-1E-UDD-D

CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	725.2	729.1	733.0	736.9	740.9	746.6	754.3	761.9	769.5	777.2	780.0
115°	838.0	841.3	844.5	847.7	851.0	855.9	862.7	869.4	876.1	882.8	888.6
117.5°	947.7	950.9	954.1	957.3	960.6	964.7	969.7	974.7	979.8	984.8	989.9
120°	1015.5	1019.0	1022.5	1026.0	1029.5	1033.5	1037.9	1042.3	1046.7	1051.1	1056.1
122.5°	1084.8	1087.6	1090.3	1093.0	1095.7	1099.4	1103.9	1108.4	1112.9	1117.4	1121.6
125°	1179.4	1182.1	1184.8	1187.4	1190.1	1193.6	1197.9	1202.2	1206.6	1210.9	1213.7
127.5°	1271.5	1274.1	1276.6	1279.2	1281.8	1285.1	1289.1	1293.2	1297.3	1301.4	1304.5
130°	1328.9	1331.5	1334.1	1336.6	1339.2	1342.1	1345.5	1348.9	1352.3	1355.7	1359.0
132.5°	1383.6	1386.2	1388.9	1391.5	1394.1	1396.8	1399.5	1402.3	1405.0	1407.7	1410.9
135°	1467.5	1469.4	1471.3	1473.2	1475.1	1477.2	1479.7	1482.2	1484.7	1487.1	1490.0
137.5°	1539.2	1541.6	1544.1	1546.5	1548.9	1550.9	1552.2	1553.6	1555.0	1556.3	1559.6
140°	1586.6	1588.6	1590.6	1592.6	1594.6	1596.3	1597.6	1598.9	1600.2	1601.5	1604.4
142.5°	1630.9	1632.8	1634.7	1636.6	1638.5	1640.0	1641.1	1642.1	1643.2	1644.3	1646.7
145°	1692.8	1695.0	1697.2	1699.5	1701.7	1703.1	1703.8	1704.4	1705.1	1705.8	1707.3
147.5°	1750.6	1752.2	1753.7	1755.2	1756.7	1757.8	1758.5	1759.2	1759.8	1760.5	1761.4
150°	1786.5	1787.5	1788.5	1789.5	1790.5	1791.3	1792.0	1792.7	1793.3	1794.0	1794.6
152.5°	1818.8	1819.3	1819.7	1820.2	1820.7	1821.1	1821.5	1821.9	1822.3	1822.7	1823.9
155°	1864.2	1863.6	1862.9	1862.3	1861.6	1861.4	1861.8	1862.1	1862.4	1862.7	1864.4
157.5°	1899.5	1899.5	1899.4	1899.3	1899.3	1899.1	1898.7	1898.4	1898.1	1897.7	1899.7
160°	1921.1	1920.7	1920.4	1920.1	1919.7	1919.4	1919.1	1918.7	1918.4	1918.1	1920.1
162.5°	1941.4	1940.5	1939.7	1938.8	1937.9	1937.3	1937.0	1936.7	1936.3	1936.0	1938.3
165°	1965.9	1964.9	1963.9	1962.9	1961.9	1961.3	1960.9	1960.6	1960.3	1959.9	1962.6
167.5°	1985.0	1983.7	1982.4	1981.1	1979.7	1979.1	1979.1	1979.1	1979.1	1979.1	1981.7
170°	1995.8	1994.5	1993.1	1991.8	1990.5	1989.8	1989.8	1989.8	1989.8	1989.8	1992.5
172.5°	2003.0	2001.4	1999.8	1998.2	1996.6	1995.9	1996.2	1996.5	1996.7	1997.0	1999.7
175°	2012.2	2010.6	2008.9	2007.3	2005.6	2004.9	2005.3	2005.6	2005.9	2006.3	2008.6
177.5°	2014.6	2013.3	2012.0	2010.7	2009.3	2008.8	2009.1	2009.3	2009.6	2009.9	2012.0
180°	2012.2	2012.2	2012.2	2012.2	2012.2	2012.2	2012.2	2012.2	2012.2	2012.2	2012.2



TEST NUMBER: P332116

CATALOG NUMBER: S123DIW-S340D1535U835-4F0-1E-UDD-D

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	427.7	427.7	427.7	427.7	427.7	427.7	427.7	427.7
2.5°	426.8	427.5	428.2	428.4	428.4	428.3	428.2	428.1
5°	426.1	427.0	427.8	428.2	428.1	427.9	427.8	427.7
7.5°	423.6	424.6	425.6	426.1	426.0	425.8	425.7	425.6
10°	421.0	422.0	423.0	423.4	423.2	423.0	422.8	422.6
12.5°	417.4	418.4	419.3	419.7	419.5	419.3	419.1	418.9
15°	410.7	411.7	412.8	413.2	413.1	413.0	412.9	412.8
17.5°	401.9	402.9	403.8	404.2	404.0	403.9	403.8	403.6
20°	395.6	396.5	397.5	398.0	398.1	398.2	398.3	398.4
22.5°	388.6	389.8	391.0	391.6	391.5	391.4	391.4	391.3
25°	376.8	378.2	379.5	380.2	380.2	380.2	380.2	380.2
27.5°	364.5	365.7	366.9	367.5	367.6	367.7	367.7	367.8
30°	356.1	357.4	358.6	359.2	359.2	359.2	359.2	359.2
32.5°	347.0	348.3	349.6	350.4	350.7	350.9	351.2	351.4
35°	333.5	335.0	336.6	337.6	338.0	338.4	338.8	339.2
37.5°	319.4	321.2	323.0	324.0	324.3	324.7	325.0	325.3
40°	310.1	311.9	313.6	314.7	315.1	315.6	316.0	316.4
42.5°	300.4	302.3	304.2	305.5	306.1	306.6	307.2	307.8
45°	285.8	287.8	289.8	291.2	292.0	292.8	293.7	294.5
47.5°	271.1	273.4	275.6	277.0	277.6	278.3	278.9	279.6
50°	261.0	263.4	265.8	267.4	268.1	268.8	269.5	270.3
52.5°	250.8	253.2	255.7	257.4	258.3	259.2	260.0	260.9
55°	235.3	238.1	240.9	242.7	243.5	244.4	245.2	246.0
57.5°	219.5	222.3	225.1	227.0	228.0	229.0	230.0	230.9
60°	208.5	211.4	214.3	216.3	217.4	218.6	219.7	220.9
62.5°	198.0	200.9	203.8	205.8	206.9	207.9	209.0	210.1
65°	181.4	184.5	187.6	189.7	190.7	191.8	192.8	193.8
67.5°	164.8	168.2	171.6	173.8	174.6	175.5	176.4	177.2
70°	153.9	157.2	160.5	162.7	163.7	164.7	165.8	166.8
72.5°	142.8	146.2	149.6	151.9	152.9	153.9	155.0	156.0
75°	126.1	129.5	133.0	135.3	136.5	137.8	139.0	140.3
77.5°	110.5	114.1	117.7	119.9	120.9	121.9	122.8	123.8
80°	100.2	103.8	107.3	109.5	110.6	111.6	112.7	113.7
82.5°	90.9	94.4	98.0	100.2	101.3	102.3	103.3	104.4
85°	77.9	81.4	84.9	87.2	88.2	89.3	90.3	91.3
87.5°	74.1	77.9	81.7	84.2	85.3	86.5	87.7	88.8
90°	98.2	103.1	107.9	111.2	112.9	114.6	116.3	118.0
92.5°	99.1	104.6	110.2	113.7	115.0	116.4	117.7	119.1
95°	103.5	109.1	114.6	117.9	118.9	120.0	121.0	122.0
97.5°	102.4	108.1	113.9	117.4	118.8	120.2	121.5	122.9
100°	101.2	106.9	112.5	116.0	117.4	118.8	120.1	121.5
102.5°	126.0	120.7	115.4	113.6	115.2	116.8	118.5	120.1
105°	250.5	194.6	138.7	111.6	113.2	114.8	116.4	118.0
107.5°	551.1	510.7	470.4	428.5	385.1	341.7	298.3	254.9
110°	687.5	679.2	671.0	643.5	596.8	550.1	503.5	456.8



TEST NUMBER: P332116

CATALOG NUMBER: S123DIW-S340D1535U835-4F0-1E-UDD-D

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	782.8	785.6	788.4	785.2	776.1	767.0	757.9	748.8
115°	894.4	900.2	906.0	910.0	912.2	914.3	916.5	918.7
117.5°	995.0	1000.2	1005.3	1008.4	1009.5	1010.5	1011.6	1012.7
120°	1061.2	1066.2	1071.3	1074.1	1074.9	1075.6	1076.3	1077.0
122.5°	1125.7	1129.9	1134.1	1136.6	1137.6	1138.6	1139.6	1140.6
125°	1216.6	1219.4	1222.3	1224.4	1225.8	1227.1	1228.5	1229.9
127.5°	1307.6	1310.7	1313.8	1315.4	1315.5	1315.5	1315.5	1315.6
130°	1362.3	1365.6	1368.9	1370.5	1370.5	1370.5	1370.4	1370.4
132.5°	1414.1	1417.3	1420.5	1422.0	1421.8	1421.6	1421.4	1421.1
135°	1492.8	1495.7	1498.6	1499.8	1499.3	1498.8	1498.3	1497.8
137.5°	1562.8	1566.0	1569.3	1570.8	1570.7	1570.5	1570.4	1570.2
140°	1607.3	1610.1	1613.0	1614.4	1614.2	1614.1	1614.0	1613.8
142.5°	1649.2	1651.6	1654.1	1655.1	1654.7	1654.3	1653.8	1653.4
145°	1708.8	1710.3	1711.7	1712.7	1713.1	1713.5	1713.9	1714.4
147.5°	1762.3	1763.2	1764.1	1764.0	1762.9	1761.7	1760.6	1759.4
150°	1795.3	1796.0	1796.6	1796.6	1795.8	1795.0	1794.2	1793.4
152.5°	1825.1	1826.3	1827.5	1827.3	1825.8	1824.3	1822.9	1821.4
155°	1866.1	1867.7	1869.4	1869.2	1867.2	1865.2	1863.2	1861.3
157.5°	1901.7	1903.7	1905.7	1905.4	1902.8	1900.2	1897.6	1895.0
160°	1922.1	1924.0	1926.0	1925.9	1923.5	1921.2	1918.9	1916.6
162.5°	1940.5	1942.8	1945.0	1945.1	1943.1	1941.0	1939.0	1936.9
165°	1965.2	1967.9	1970.6	1970.7	1968.4	1966.1	1963.7	1961.4
167.5°	1984.4	1987.0	1989.7	1989.7	1987.0	1984.4	1981.7	1979.1
170°	1995.1	1997.8	2000.5	2000.5	1997.8	1995.1	1992.5	1989.8
172.5°	2002.3	2005.0	2007.6	2007.5	2004.6	2001.7	1998.7	1995.8
175°	2010.9	2013.2	2015.6	2015.4	2012.7	2010.1	2007.4	2004.8
177.5°	2014.1	2016.2	2018.4	2018.1	2015.4	2012.8	2010.1	2007.5
180°	2012.2	2012.2	2012.2	2012.2	2012.2	2012.2	2012.2	2012.2

(END OF REPORT)