

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: P332116-830

Luminaire Tested: **S123DIW-S340D1535U830-4F0-1E-UDD-D**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332116-830
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-S340D1535U830-4F0-1E-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: 7143.9 lumens
Efficiency: N/A
Efficacy: 133.8 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

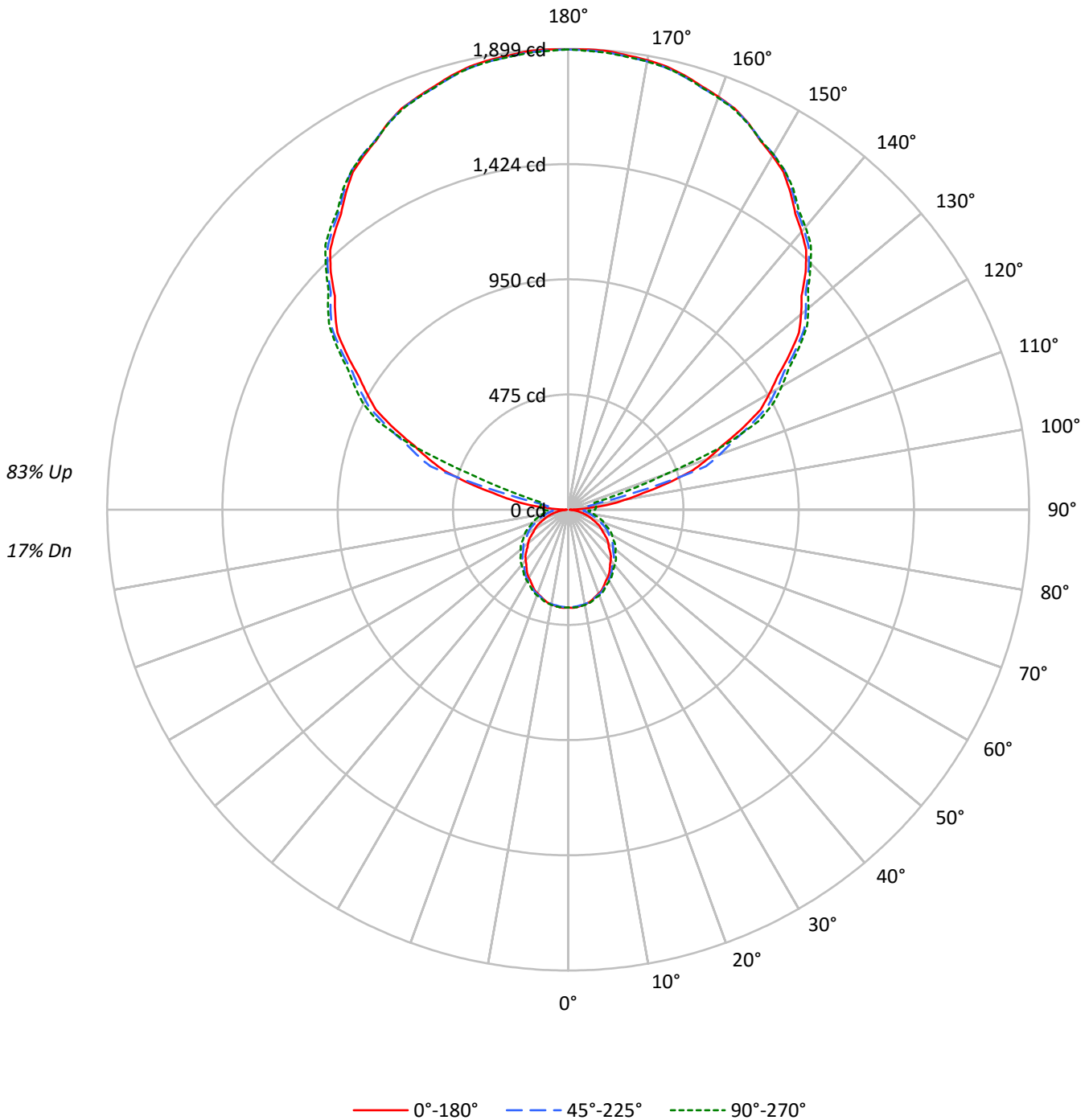
Input Watts (W): 53.4
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	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°	4339	4339	4339
5°	4353	4230	4232
10°	4315	4133	4112
15°	4259	4022	3980
20°	4179	3896	3836
25°	4080	3751	3684
30°	3980	3620	3529
35°	3867	3481	3406
40°	3760	3356	3274
45°	3641	3235	3169
50°	3525	3116	3054
55°	3393	2993	2948
60°	3266	2869	2842
65°	3138	2736	2714
70°	2941	2586	2582
75°	2693	2416	2450
80°	2412	2249	2299
85°	2145	2133	2211



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	38.2	0.5
10°-20°	108.9	1.5
20°-30°	163.0	2.3
30°-40°	194.6	2.7
40°-50°	203.6	2.8
50°-60°	191.1	2.7
60°-70°	159.6	2.2
70°-80°	114.2	1.6
80°-90°	73.4	1.0
90°-100°	111.7	1.6
100°-110°	360.0	5.0
110°-120°	810.4	11.3
120°-130°	1017.2	14.2
130°-140°	1079.4	15.1
140°-150°	1005.5	14.1
150°-160°	810.2	11.3
160°-170°	522.9	7.3
170°-180°	180.2	2.5
0°-30°	310.1	4.3
0°-40°	504.7	7.1
0°-60°	899.4	12.6
0°-90°	1246.5	17.4
90°-120°	1282.1	17.9
90°-150°	4384.2	61.4
90°-180°	5897.0	82.5
0°-180°	7143.9	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	403	403	403	403	403	
5°	404	403	400	403	403	38
15°	384	386	385	389	389	108
25°	347	351	353	358	358	160
35°	299	306	311	318	320	187
45°	244	255	266	274	278	188
55°	186	201	216	228	232	167
65°	129	146	165	178	183	127
75°	70	91	112	126	132	75
85°	22	44	67	81	86	23
90°	7	43	83	103	111	8
95°	91	54	87	110	115	110
105°	423	442	342	118	111	449
115°	790	804	832	856	866	780
125°	1112	1123	1141	1153	1159	993
135°	1383	1391	1402	1413	1412	1064
145°	1596	1605	1608	1614	1616	998
155°	1757	1754	1756	1762	1754	809
165°	1853	1849	1847	1857	1849	523
175°	1897	1890	1891	1900	1890	180
180°	1897	1897	1897	1897	1897	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	403.1	403.1	403.1	403.1	403.1	403.1	403.1	403.1	403.1	403.1	403.1
2.5°	404.9	404.7	404.4	404.3	404.0	403.6	402.9	402.3	401.7	401.1	401.7
5°	403.6	403.4	403.2	403.0	402.8	402.5	401.8	401.2	400.7	400.1	400.9
7.5°	399.6	399.7	399.7	399.7	399.8	399.5	399.0	398.4	397.8	397.3	398.2
10°	396.2	396.3	396.5	396.7	396.9	396.8	396.2	395.8	395.3	394.8	395.8
12.5°	391.9	392.2	392.5	392.8	393.0	392.9	392.7	392.3	392.0	391.6	392.6
15°	384.3	384.6	384.8	385.1	385.4	385.6	385.4	385.3	385.2	385.1	386.2
17.5°	374.7	375.2	375.8	376.4	376.9	377.2	377.2	377.1	377.1	377.1	378.0
20°	367.6	368.2	368.7	369.4	369.9	370.3	370.5	370.7	370.9	371.1	372.0
22.5°	360.2	360.8	361.4	361.9	362.6	363.0	363.3	363.5	363.8	364.1	365.2
25°	346.9	347.9	348.9	349.9	350.8	351.5	351.8	352.0	352.3	352.7	353.9
27.5°	333.6	334.7	335.8	337.0	338.1	338.9	339.5	340.2	340.8	341.4	342.5
30°	324.1	325.4	326.7	327.9	329.2	330.2	331.0	331.8	332.5	333.4	334.5
32.5°	313.6	315.0	316.4	317.8	319.2	320.5	321.5	322.5	323.6	324.5	325.8
35°	298.6	300.2	301.8	303.3	304.9	306.3	307.6	308.9	310.1	311.4	312.8
37.5°	282.9	284.6	286.3	288.1	289.8	291.5	293.0	294.6	296.2	297.7	299.4
40°	272.3	274.1	275.8	277.6	279.3	281.2	283.1	285.1	287.0	289.0	290.7
42.5°	260.7	262.9	264.9	267.1	269.3	271.4	273.4	275.4	277.5	279.5	281.3
45°	244.2	246.6	248.8	251.2	253.5	255.9	258.4	260.8	263.3	265.7	267.6
47.5°	226.9	229.5	232.1	234.9	237.5	240.3	243.0	245.8	248.5	251.4	253.4
50°	215.7	218.4	221.1	223.9	226.6	229.4	232.4	235.5	238.6	241.6	243.8
52.5°	203.7	206.6	209.4	212.4	215.3	218.4	221.7	225.1	228.4	231.7	234.0
55°	186.2	189.5	192.7	195.9	199.1	202.5	205.9	209.5	213.0	216.5	219.1
57.5°	169.2	172.5	175.9	179.3	182.6	186.2	190.0	193.9	197.7	201.6	204.2
60°	157.2	160.7	164.3	167.8	171.3	175.0	179.1	183.0	187.0	191.1	193.8
62.5°	146.0	149.6	153.2	156.7	160.3	164.3	168.5	172.8	177.0	181.3	183.9
65°	128.7	132.5	136.3	140.1	143.9	148.0	152.2	156.6	160.8	165.1	168.1
67.5°	111.1	115.2	119.2	123.2	127.2	131.5	135.8	140.3	144.6	149.0	152.1
70°	98.8	103.0	107.2	111.4	115.6	120.1	124.7	129.4	134.1	138.7	141.9
72.5°	87.6	91.8	96.0	100.2	104.3	108.9	113.7	118.6	123.4	128.3	131.5
75°	69.8	74.5	79.0	83.6	88.2	92.9	97.8	102.6	107.5	112.4	115.6
77.5°	54.4	59.0	63.6	68.2	72.9	77.7	82.6	87.5	92.4	97.4	100.8
80°	43.5	48.3	53.1	57.9	62.6	67.6	72.6	77.7	82.8	87.8	91.1
82.5°	34.0	38.8	43.7	48.5	53.4	58.4	63.6	68.7	73.9	79.1	82.4
85°	21.5	26.4	31.3	36.2	41.0	46.1	51.3	56.4	61.5	66.7	70.0
87.5°	12.0	17.4	22.9	28.5	33.9	39.6	45.3	51.1	56.9	62.7	66.3
90°	7.2	15.0	22.9	30.8	38.7	47.2	56.3	65.3	74.4	83.4	88.0
92.5°	31.6	35.0	38.5	41.8	45.3	51.0	59.0	66.9	74.9	82.8	88.1
95°	90.8	81.7	72.8	63.7	54.7	54.3	62.5	70.7	78.9	87.2	92.4
97.5°	177.1	174.7	172.4	170.0	167.8	157.6	139.6	121.7	103.7	85.7	91.1
100°	242.0	251.5	260.9	270.2	279.7	262.1	217.8	173.4	129.0	84.7	90.0
102.5°	316.1	323.5	330.7	338.1	345.4	324.6	275.7	226.7	177.8	128.8	123.9
105°	423.4	429.2	435.0	440.8	446.6	437.4	413.5	389.5	365.5	341.5	288.8
107.5°	536.2	540.9	545.6	550.4	555.2	561.8	570.1	578.6	587.0	595.5	557.4
110°	611.3	615.7	619.9	624.2	628.4	634.2	641.6	648.9	656.3	663.6	655.8



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	683.5	687.2	690.9	694.6	698.3	703.7	711.0	718.1	725.3	732.5	735.2
115°	789.9	793.0	796.0	799.0	802.1	806.7	813.1	819.4	825.8	832.1	837.5
117.5°	893.2	896.3	899.3	902.3	905.4	909.3	914.0	918.7	923.5	928.2	933.0
120°	957.2	960.5	963.7	967.0	970.3	974.1	978.3	982.4	986.6	990.7	995.4
122.5°	1022.5	1025.1	1027.7	1030.2	1032.7	1036.2	1040.5	1044.7	1049.0	1053.2	1057.2
125°	1111.6	1114.2	1116.7	1119.2	1121.7	1125.0	1129.1	1133.1	1137.3	1141.3	1144.0
127.5°	1198.4	1200.9	1203.2	1205.7	1208.2	1211.3	1215.0	1218.9	1222.8	1226.6	1229.5
130°	1252.5	1255.0	1257.4	1259.8	1262.3	1265.0	1268.2	1271.4	1274.6	1277.8	1280.9
132.5°	1304.1	1306.6	1309.1	1311.5	1314.0	1316.5	1319.1	1321.7	1324.3	1326.8	1329.8
135°	1383.2	1385.0	1386.8	1388.6	1390.3	1392.3	1394.7	1397.0	1399.4	1401.7	1404.4
137.5°	1450.8	1453.0	1455.4	1457.6	1459.9	1461.8	1463.0	1464.3	1465.7	1466.9	1470.0
140°	1495.4	1497.3	1499.2	1501.1	1503.0	1504.6	1505.8	1507.0	1508.3	1509.5	1512.2
142.5°	1537.2	1539.0	1540.8	1542.6	1544.4	1545.8	1546.8	1547.7	1548.8	1549.8	1552.1
145°	1595.5	1597.6	1599.7	1601.9	1603.9	1605.2	1605.9	1606.5	1607.1	1607.8	1609.2
147.5°	1650.0	1651.5	1652.9	1654.4	1655.8	1656.8	1657.5	1658.1	1658.7	1659.3	1660.2
150°	1683.9	1684.8	1685.7	1686.7	1687.6	1688.4	1689.0	1689.7	1690.3	1690.9	1691.5
152.5°	1714.3	1714.8	1715.1	1715.6	1716.1	1716.5	1716.8	1717.2	1717.6	1718.0	1719.1
155°	1757.1	1756.5	1755.9	1755.3	1754.6	1754.4	1754.8	1755.1	1755.4	1755.7	1757.3
157.5°	1790.4	1790.4	1790.3	1790.2	1790.2	1790.0	1789.6	1789.3	1789.0	1788.7	1790.5
160°	1810.7	1810.3	1810.1	1809.8	1809.4	1809.1	1808.8	1808.5	1808.2	1807.9	1809.8
162.5°	1829.9	1829.0	1828.2	1827.4	1826.6	1826.0	1825.7	1825.4	1825.0	1824.8	1826.9
165°	1852.9	1852.0	1851.1	1850.1	1849.2	1848.6	1848.2	1847.9	1847.7	1847.3	1849.8
167.5°	1870.9	1869.7	1868.5	1867.3	1866.0	1865.4	1865.4	1865.4	1865.4	1865.4	1867.8
170°	1881.1	1879.9	1878.6	1877.4	1876.1	1875.5	1875.5	1875.5	1875.5	1875.5	1878.0
172.5°	1887.9	1886.4	1884.9	1883.4	1881.9	1881.2	1881.5	1881.8	1882.0	1882.3	1884.8
175°	1896.6	1895.1	1893.5	1892.0	1890.4	1889.7	1890.1	1890.4	1890.6	1891.0	1893.2
177.5°	1898.8	1897.6	1896.4	1895.2	1893.9	1893.4	1893.7	1893.9	1894.1	1894.4	1896.4
180°	1896.6	1896.6	1896.6	1896.6	1896.6	1896.6	1896.6	1896.6	1896.6	1896.6	1896.6



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	403.1	403.1	403.1	403.1	403.1	403.1	403.1	403.1
2.5°	402.3	402.9	403.6	403.8	403.8	403.7	403.6	403.5
5°	401.6	402.5	403.2	403.6	403.5	403.3	403.2	403.1
7.5°	399.3	400.2	401.1	401.6	401.5	401.3	401.2	401.1
10°	396.8	397.8	398.7	399.1	398.9	398.7	398.5	398.3
12.5°	393.4	394.4	395.2	395.6	395.4	395.2	395.0	394.8
15°	387.1	388.0	389.1	389.5	389.4	389.3	389.2	389.1
17.5°	378.8	379.8	380.6	381.0	380.8	380.7	380.6	380.4
20°	372.9	373.7	374.7	375.1	375.2	375.3	375.4	375.5
22.5°	366.3	367.4	368.5	369.1	369.0	368.9	368.9	368.8
25°	355.2	356.5	357.7	358.4	358.4	358.4	358.4	358.4
27.5°	343.6	344.7	345.8	346.4	346.5	346.6	346.6	346.7
30°	335.6	336.9	338.0	338.6	338.6	338.6	338.6	338.6
32.5°	327.1	328.3	329.5	330.3	330.5	330.7	331.0	331.2
35°	314.3	315.8	317.3	318.2	318.6	319.0	319.3	319.7
37.5°	301.0	302.7	304.4	305.4	305.7	306.0	306.3	306.6
40°	292.3	294.0	295.6	296.6	297.0	297.5	297.8	298.2
42.5°	283.1	284.9	286.7	287.9	288.5	289.0	289.5	290.1
45°	269.4	271.3	273.1	274.5	275.2	276.0	276.8	277.6
47.5°	255.5	257.7	259.8	261.1	261.6	262.3	262.9	263.5
50°	246.0	248.3	250.5	252.0	252.7	253.4	254.0	254.8
52.5°	236.4	238.7	241.0	242.6	243.5	244.3	245.1	245.9
55°	221.8	224.4	227.1	228.8	229.5	230.4	231.1	231.9
57.5°	206.9	209.5	212.2	214.0	214.9	215.8	216.8	217.6
60°	196.5	199.3	202.0	203.9	204.9	206.0	207.1	208.2
62.5°	186.6	189.4	192.1	194.0	195.0	196.0	197.0	198.0
65°	171.0	173.9	176.8	178.8	179.7	180.8	181.7	182.7
67.5°	155.3	158.5	161.7	163.8	164.6	165.4	166.3	167.0
70°	145.1	148.2	151.3	153.4	154.3	155.2	156.3	157.2
72.5°	134.6	137.8	141.0	143.2	144.1	145.1	146.1	147.0
75°	118.9	122.1	125.4	127.5	128.7	129.9	131.0	132.2
77.5°	104.2	107.5	110.9	113.0	114.0	114.9	115.7	116.7
80°	94.4	97.8	101.1	103.2	104.2	105.2	106.2	107.2
82.5°	85.7	89.0	92.4	94.4	95.5	96.4	97.4	98.4
85°	73.4	76.7	80.0	82.2	83.1	84.2	85.1	86.1
87.5°	69.8	73.4	77.0	79.4	80.4	81.5	82.7	83.7
90°	92.6	97.2	101.7	104.8	106.4	108.0	109.6	111.2
92.5°	93.4	98.6	103.9	107.2	108.4	109.7	110.9	112.3
95°	97.6	102.8	108.0	111.1	112.1	113.1	114.0	115.0
97.5°	96.5	101.9	107.4	110.7	112.0	113.3	114.5	115.8
100°	95.4	100.8	106.0	109.3	110.7	112.0	113.2	114.5
102.5°	118.8	113.8	108.8	107.1	108.6	110.1	111.7	113.2
105°	236.1	183.4	130.7	105.2	106.7	108.2	109.7	111.2
107.5°	519.4	481.4	443.4	403.9	363.0	322.1	281.2	240.3
110°	648.0	640.2	632.4	606.5	562.5	518.5	474.6	430.6



TEST NUMBER: P332116-830

CATALOG NUMBER: S123DIW-S340D1535U830-4F0-1E-UDD-D

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	737.8	740.5	743.1	740.1	731.5	722.9	714.4	705.8
115°	843.0	848.5	853.9	857.7	859.8	861.8	863.8	865.9
117.5°	937.8	942.7	947.5	950.5	951.5	952.4	953.5	954.5
120°	1000.2	1004.9	1009.7	1012.4	1013.1	1013.8	1014.5	1015.1
122.5°	1061.0	1065.0	1068.9	1071.3	1072.2	1073.2	1074.1	1075.1
125°	1146.7	1149.3	1152.1	1154.0	1155.4	1156.6	1157.9	1159.2
127.5°	1232.5	1235.4	1238.3	1239.8	1239.9	1239.9	1239.9	1240.0
130°	1284.0	1287.1	1290.2	1291.8	1291.8	1291.8	1291.7	1291.7
132.5°	1332.8	1335.9	1338.9	1340.3	1340.1	1339.9	1339.7	1339.4
135°	1407.0	1409.8	1412.5	1413.6	1413.2	1412.7	1412.2	1411.7
137.5°	1473.0	1476.0	1479.1	1480.5	1480.5	1480.3	1480.2	1480.0
140°	1514.9	1517.6	1520.3	1521.6	1521.5	1521.4	1521.3	1521.1
142.5°	1554.4	1556.7	1559.1	1560.0	1559.6	1559.2	1558.8	1558.4
145°	1610.6	1612.0	1613.4	1614.3	1614.7	1615.0	1615.4	1615.9
147.5°	1661.0	1661.9	1662.7	1662.6	1661.6	1660.5	1659.4	1658.3
150°	1692.1	1692.8	1693.4	1693.4	1692.6	1691.9	1691.1	1690.4
152.5°	1720.2	1721.4	1722.5	1722.3	1720.9	1719.5	1718.2	1716.7
155°	1758.9	1760.4	1762.0	1761.8	1759.9	1758.0	1756.1	1754.4
157.5°	1792.4	1794.3	1796.2	1795.9	1793.5	1791.0	1788.6	1786.1
160°	1811.7	1813.5	1815.3	1815.2	1813.0	1810.8	1808.6	1806.5
162.5°	1829.0	1831.2	1833.2	1833.3	1831.5	1829.5	1827.6	1825.6
165°	1852.3	1854.8	1857.4	1857.5	1855.3	1853.1	1850.9	1848.7
167.5°	1870.4	1872.8	1875.4	1875.4	1872.8	1870.4	1867.8	1865.4
170°	1880.5	1883.0	1885.6	1885.6	1883.0	1880.5	1878.0	1875.5
172.5°	1887.3	1889.8	1892.2	1892.2	1889.4	1886.7	1883.9	1881.1
175°	1895.4	1897.5	1899.8	1899.6	1897.1	1894.6	1892.1	1889.6
177.5°	1898.4	1900.4	1902.4	1902.1	1899.6	1897.1	1894.6	1892.2
180°	1896.6	1896.6	1896.6	1896.6	1896.6	1896.6	1896.6	1896.6

(END OF REPORT)