

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: P332404

Luminaire Tested: **S123RDIW-S340D1320U835-4F0-1E-UDD-F**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332404
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-S340D1320U835-4F0-1E-UDD-F
Description: DEFINE 3 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 340 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER, REGRESSED
HOUSING
UPLIGHT 1320 LUMENS PER FOOT, NO LENS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 6580.6 lumens
Efficiency: N/A
Efficacy: 141.2 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

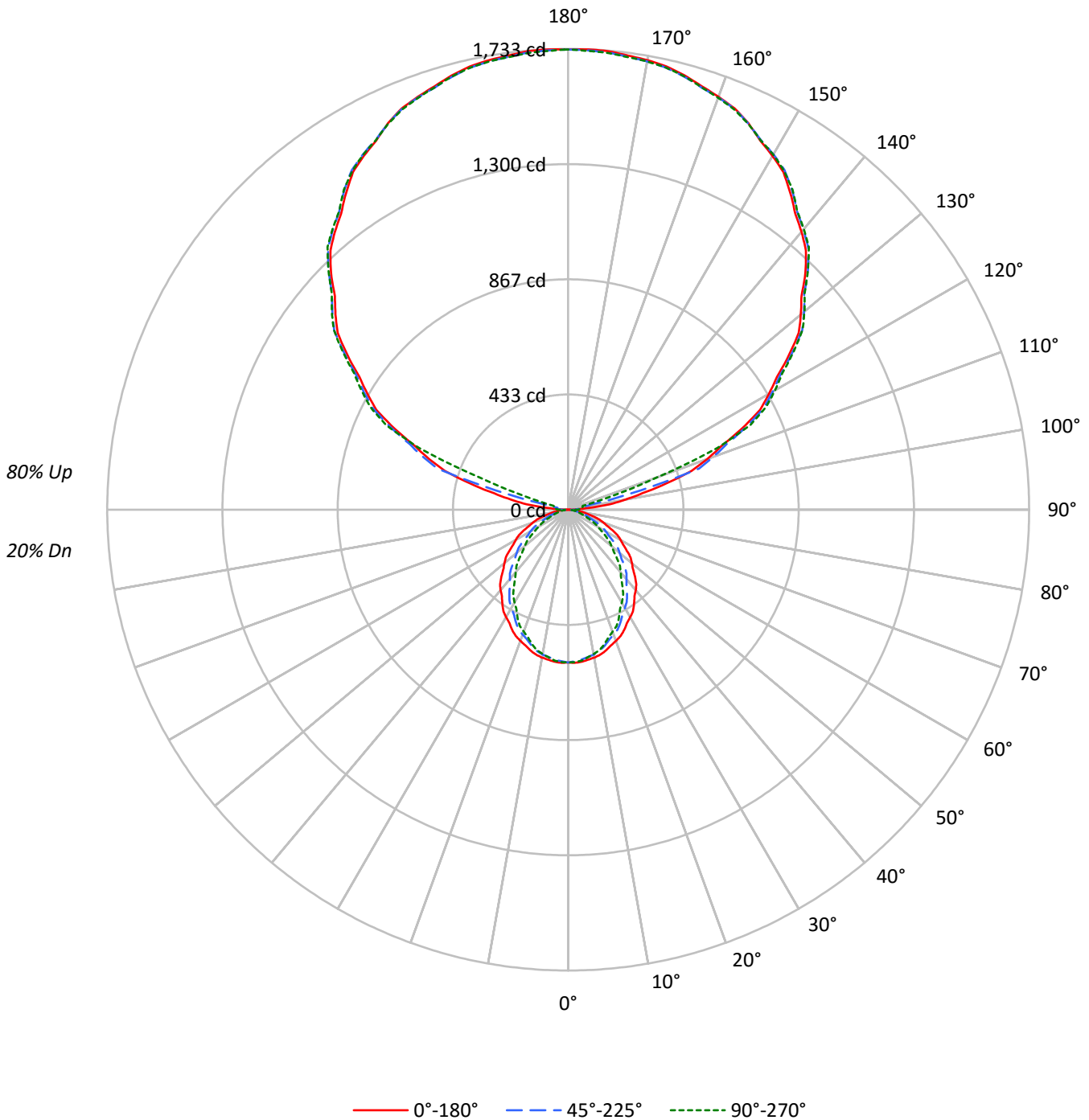
Input Watts (W): 46.6
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	100	100	100	100	88	88	88	88	67	67	67	47	47	47	28	28	28	20
1	91	87	83	80	80	77	74	71	58	56	55	41	40	39	25	25	24	17
2	83	76	70	66	73	67	63	59	51	48	45	36	34	33	22	21	20	14
3	76	67	60	55	67	59	54	49	45	41	38	32	30	28	20	19	18	12
4	69	59	52	46	61	53	46	41	40	36	32	29	26	24	18	16	15	11
5	63	53	45	39	56	47	40	35	36	31	28	26	23	20	16	14	13	9
6	58	47	39	34	51	42	35	31	32	28	24	23	20	18	15	13	12	8
7	54	42	35	29	47	38	31	27	29	24	21	21	18	16	13	12	10	7
8	50	38	31	26	44	34	28	23	26	22	19	19	16	14	12	11	9	7
9	46	35	28	23	41	31	25	21	24	20	17	17	15	12	11	10	8	6
10	43	32	25	20	38	28	22	18	22	18	15	16	13	11	10	9	8	5

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	6184	6184	6184
5°	6207	6122	6158
10°	6172	6045	6025
15°	6107	5904	5841
20°	6015	5727	5593
25°	5922	5529	5352
30°	5797	5299	5009
35°	5670	5070	4696
40°	5552	4799	4308
45°	5398	4532	3958
50°	5228	4228	3565
55°	5054	3883	3200
60°	4895	3511	2799
65°	4689	3110	2397
70°	4428	2609	1936
75°	4051	2054	1822
80°	3608	1822	1674
85°	3051	1606	1494



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	54.0	0.8
10°-20°	150.1	2.3
20°-30°	216.1	3.3
30°-40°	243.5	3.7
40°-50°	232.9	3.5
50°-60°	190.7	2.9
60°-70°	128.7	2.0
70°-80°	64.7	1.0
80°-90°	22.0	0.3
90°-100°	62.9	1.0
100°-110°	299.9	4.6
110°-120°	720.3	10.9
120°-130°	917.3	13.9
130°-140°	980.1	14.9
140°-150°	916.5	13.9
150°-160°	739.3	11.2
160°-170°	477.1	7.3
170°-180°	164.4	2.5
0°-30°	420.2	6.4
0°-40°	663.7	10.1
0°-60°	1087.3	16.5
0°-90°	1302.7	19.8
90°-120°	1083.2	16.5
90°-150°	3897.1	59.2
90°-180°	5278.0	80.2
0°-180°	6580.6	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	574	574	574	574	574	
5°	574	572	567	570	570	54
15°	548	542	530	527	524	154
25°	499	486	466	456	451	229
35°	432	414	386	366	357	270
45°	355	333	298	272	260	273
55°	269	246	207	181	170	241
65°	184	158	122	100	94	182
75°	97	75	49	45	44	104
85°	25	15	13	12	12	28
90°	1	14	31	36	39	5
95°	78	29	40	48	49	97
105°	383	390	282	67	57	406
115°	719	727	738	750	756	709
125°	1013	1023	1029	1031	1034	905
135°	1261	1269	1274	1278	1274	971
145°	1456	1464	1467	1470	1470	911
155°	1603	1601	1602	1608	1601	738
165°	1691	1687	1686	1695	1687	478
175°	1731	1725	1726	1734	1724	165
180°	1731	1731	1731	1731	1731	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	574.5	574.5	574.5	574.5	574.5	574.5	574.5	574.5	574.5	574.5	574.5
2.5°	576.4	576.0	575.7	575.4	575.1	574.4	573.4	572.4	571.4	570.4	571.3
5°	574.5	574.0	573.5	573.0	572.4	571.6	570.3	569.1	567.8	566.6	567.5
7.5°	569.2	568.6	568.1	567.5	567.0	565.9	564.3	562.7	561.0	559.4	559.9
10°	564.7	564.0	563.3	562.6	561.8	560.5	558.7	556.8	554.9	553.1	553.2
12.5°	558.4	557.6	556.8	556.0	555.2	553.6	551.3	549.1	546.8	544.5	544.4
15°	548.0	546.8	545.7	544.5	543.4	541.4	538.5	535.6	532.7	529.8	529.3
17.5°	534.8	533.5	532.2	530.8	529.5	527.0	523.3	519.6	516.0	512.3	511.2
20°	525.1	523.5	521.8	520.2	518.5	515.7	511.8	507.8	503.9	500.0	498.6
22.5°	514.3	512.4	510.5	508.6	506.7	503.7	499.5	495.3	491.1	486.9	485.2
25°	498.6	496.0	493.4	490.8	488.2	484.5	479.8	475.0	470.2	465.5	463.3
27.5°	479.5	476.6	473.7	470.9	468.0	464.0	458.7	453.3	448.0	442.7	439.7
30°	466.4	463.3	460.2	457.1	454.0	449.5	443.7	437.9	432.1	426.3	422.8
32.5°	453.4	449.8	446.3	442.8	439.3	434.5	428.3	422.2	416.1	409.9	406.1
35°	431.5	427.7	424.0	420.3	416.6	411.5	405.1	398.6	392.2	385.8	381.4
37.5°	409.3	405.1	401.0	396.9	392.7	387.2	380.4	373.5	366.7	359.8	354.8
40°	395.1	390.6	386.0	381.5	376.9	370.9	363.6	356.2	348.9	341.5	336.2
42.5°	379.1	374.5	370.0	365.4	360.9	354.8	347.2	339.6	332.0	324.4	318.5
45°	354.6	349.9	345.3	340.6	335.9	329.6	321.7	313.7	305.7	297.7	291.8
47.5°	330.1	325.0	319.8	314.7	309.6	303.1	295.1	287.1	279.2	271.2	264.8
50°	312.2	307.3	302.5	297.6	292.7	286.1	277.7	269.3	260.9	252.5	246.1
52.5°	296.2	290.9	285.6	280.3	275.0	268.2	259.9	251.6	243.3	235.0	228.4
55°	269.3	264.2	259.2	254.1	249.0	242.1	233.3	224.5	215.7	206.9	200.9
57.5°	244.5	239.0	233.5	227.9	222.4	215.2	206.4	197.5	188.7	179.9	174.2
60°	227.4	221.7	216.0	210.3	204.6	197.5	188.9	180.3	171.7	163.1	157.5
62.5°	210.2	204.5	198.8	193.2	187.5	180.3	171.7	163.1	154.5	145.9	140.7
65°	184.1	178.4	172.7	167.0	161.3	154.4	146.3	138.2	130.2	122.1	117.0
67.5°	157.9	152.1	146.3	140.6	134.8	128.1	120.3	112.6	104.8	97.1	93.3
70°	140.7	135.1	129.5	123.9	118.4	111.9	104.7	97.4	90.2	82.9	79.3
72.5°	123.6	118.1	112.6	107.0	101.5	95.5	88.9	82.3	75.7	69.1	66.2
75°	97.4	92.4	87.4	82.5	77.5	72.2	66.5	60.8	55.1	49.4	48.4
77.5°	73.5	69.0	64.5	60.0	55.6	51.5	47.8	44.1	40.5	36.8	36.3
80°	58.2	54.0	49.8	45.5	41.3	38.1	35.9	33.7	31.5	29.4	29.0
82.5°	43.7	40.0	36.4	32.7	29.0	26.7	25.7	24.7	23.7	22.6	22.3
85°	24.7	22.4	20.1	17.9	15.6	14.3	14.0	13.7	13.4	13.0	12.8
87.5°	9.2	8.9	8.5	8.2	7.8	8.0	8.8	9.5	10.3	11.0	11.2
90°	1.3	4.1	7.0	9.9	12.7	16.0	19.7	23.4	27.1	30.9	32.0
92.5°	23.9	23.1	22.3	21.5	20.7	21.7	24.5	27.3	30.1	32.9	34.7
95°	78.4	66.7	55.0	43.3	31.6	27.3	30.4	33.6	36.7	39.9	41.9
97.5°	157.6	152.4	147.1	141.9	136.6	123.7	103.1	82.6	62.0	41.4	43.7
100°	217.3	223.0	228.7	234.4	240.2	220.7	176.2	131.6	87.0	42.4	44.7
102.5°	285.2	289.3	293.4	297.5	301.7	279.4	230.7	182.0	133.3	84.6	77.5
105°	383.2	386.3	389.5	392.6	395.7	384.5	358.7	333.0	307.3	281.6	231.0
107.5°	486.6	489.1	491.6	494.1	496.6	499.9	504.0	508.0	512.1	516.1	479.0
110°	555.5	557.8	560.0	562.3	564.6	567.3	570.5	573.6	576.8	579.9	570.5



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	621.3	623.4	625.4	627.5	629.5	632.1	635.3	638.4	641.6	644.7	644.9
115°	718.8	720.5	722.2	723.9	725.6	727.8	730.3	732.9	735.5	738.1	740.9
117.5°	813.2	815.3	817.4	819.5	821.6	823.3	824.6	826.0	827.3	828.6	830.9
120°	871.8	874.4	876.9	879.5	882.1	883.8	884.6	885.5	886.4	887.2	889.5
122.5°	931.5	933.6	935.7	937.8	939.9	941.5	942.6	943.7	944.8	945.9	947.5
125°	1013.2	1015.5	1017.8	1020.1	1022.4	1024.1	1025.2	1026.4	1027.5	1028.7	1029.2
127.5°	1092.4	1094.7	1097.0	1099.3	1101.6	1103.4	1104.8	1106.2	1107.5	1108.9	1109.8
130°	1141.8	1144.1	1146.4	1148.7	1151.0	1152.7	1153.8	1155.0	1156.1	1157.2	1158.4
132.5°	1189.1	1191.4	1193.7	1196.0	1198.3	1199.9	1200.8	1201.7	1202.6	1203.5	1204.7
135°	1261.4	1263.1	1264.8	1266.5	1268.3	1269.7	1270.8	1272.0	1273.1	1274.3	1275.1
137.5°	1323.1	1325.3	1327.5	1329.6	1331.8	1333.2	1333.8	1334.5	1335.1	1335.7	1337.1
140°	1364.3	1366.0	1367.7	1369.4	1371.1	1372.4	1373.3	1374.1	1375.0	1375.8	1377.0
142.5°	1402.3	1404.0	1405.8	1407.5	1409.2	1410.5	1411.3	1412.2	1413.0	1413.9	1414.8
145°	1455.6	1457.6	1459.6	1461.6	1463.6	1464.8	1465.4	1466.0	1466.6	1467.1	1467.7
147.5°	1505.7	1507.0	1508.3	1509.6	1511.0	1511.9	1512.5	1513.0	1513.6	1514.2	1514.8
150°	1536.6	1537.4	1538.3	1539.1	1540.0	1540.7	1541.3	1541.8	1542.4	1543.0	1543.6
152.5°	1564.3	1564.7	1565.1	1565.5	1565.9	1566.3	1566.7	1567.0	1567.3	1567.7	1568.7
155°	1603.4	1602.9	1602.3	1601.7	1601.1	1601.0	1601.3	1601.6	1601.9	1602.1	1603.6
157.5°	1633.8	1633.7	1633.7	1633.6	1633.5	1633.4	1633.1	1632.8	1632.5	1632.2	1633.9
160°	1652.3	1652.0	1651.7	1651.4	1651.1	1650.9	1650.6	1650.3	1650.0	1649.7	1651.4
162.5°	1669.8	1669.0	1668.3	1667.5	1666.8	1666.3	1666.0	1665.7	1665.4	1665.1	1667.1
165°	1690.9	1690.0	1689.1	1688.3	1687.4	1686.9	1686.6	1686.3	1686.0	1685.7	1688.0
167.5°	1707.3	1706.2	1705.0	1703.9	1702.7	1702.2	1702.2	1702.2	1702.2	1702.2	1704.5
170°	1716.6	1715.4	1714.3	1713.2	1712.0	1711.4	1711.4	1711.4	1711.4	1711.4	1713.7
172.5°	1722.8	1721.4	1720.0	1718.6	1717.3	1716.7	1716.9	1717.2	1717.4	1717.6	1719.9
175°	1730.7	1729.3	1727.9	1726.4	1725.0	1724.4	1724.7	1725.0	1725.3	1725.6	1727.6
177.5°	1732.8	1731.6	1730.5	1729.4	1728.2	1727.8	1728.0	1728.2	1728.4	1728.7	1730.5
180°	1730.7	1730.7	1730.7	1730.7	1730.7	1730.7	1730.7	1730.7	1730.7	1730.7	1730.7



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	574.5	574.5	574.5	574.5	574.5	574.5	574.5	574.5
2.5°	572.2	573.1	574.1	574.4	574.3	574.1	573.9	573.8
5°	568.5	569.4	570.3	570.7	570.5	570.3	570.1	569.9
7.5°	560.5	561.0	561.5	561.6	561.2	560.9	560.5	560.2
10°	553.3	553.4	553.5	553.3	552.8	552.3	551.7	551.2
12.5°	544.4	544.3	544.3	543.9	543.3	542.7	542.1	541.5
15°	528.7	528.2	527.7	527.1	526.4	525.6	524.9	524.2
17.5°	510.1	509.0	507.9	506.8	505.7	504.6	503.6	502.5
20°	497.3	495.9	494.6	493.3	492.0	490.8	489.6	488.3
22.5°	483.6	481.9	480.2	478.8	477.6	476.5	475.3	474.2
25°	461.1	459.0	456.8	455.1	454.0	452.9	451.7	450.6
27.5°	436.7	433.7	430.7	428.3	426.5	424.8	423.1	421.3
30°	419.3	415.8	412.3	409.7	408.0	406.4	404.7	403.0
32.5°	402.2	398.4	394.5	391.7	390.0	388.3	386.5	384.8
35°	376.9	372.4	368.0	364.8	363.0	361.1	359.2	357.4
37.5°	349.7	344.6	339.6	335.9	333.6	331.3	329.0	326.7
40°	330.8	325.4	320.0	316.1	313.7	311.4	309.0	306.6
42.5°	312.6	306.8	300.9	296.9	294.7	292.6	290.5	288.3
45°	285.9	280.0	274.1	269.9	267.5	265.0	262.5	260.0
47.5°	258.3	251.9	245.5	241.2	239.0	236.8	234.5	232.3
50°	239.7	233.3	226.9	222.5	220.1	217.7	215.3	212.9
52.5°	221.7	215.0	208.4	204.0	201.8	199.7	197.6	195.4
55°	194.9	188.9	182.9	178.8	176.8	174.7	172.6	170.5
57.5°	168.5	162.8	157.2	153.4	151.7	149.9	148.2	146.4
60°	151.9	146.3	140.7	137.0	135.3	133.5	131.8	130.0
62.5°	135.4	130.2	124.9	121.3	119.5	117.7	115.8	114.0
65°	111.9	106.9	101.8	98.7	97.5	96.4	95.3	94.1
67.5°	89.5	85.7	81.9	79.4	78.2	77.0	75.8	74.6
70°	75.7	72.1	68.4	66.1	64.9	63.8	62.6	61.5
72.5°	63.2	60.3	57.3	55.6	55.1	54.6	54.2	53.7
75°	47.3	46.3	45.2	44.6	44.4	44.2	44.0	43.8
77.5°	35.7	35.1	34.6	34.2	34.0	33.8	33.6	33.4
80°	28.7	28.4	28.1	27.9	27.6	27.4	27.2	27.0
82.5°	22.0	21.7	21.4	21.2	21.2	21.1	21.1	21.1
85°	12.6	12.4	12.2	12.1	12.1	12.1	12.1	12.1
87.5°	11.3	11.5	11.6	11.7	11.7	11.8	11.8	11.8
90°	33.1	34.3	35.4	36.3	36.9	37.4	38.0	38.6
92.5°	36.6	38.4	40.2	41.3	41.7	42.0	42.3	42.7
95°	43.9	45.9	47.9	48.9	48.9	48.9	48.9	48.9
97.5°	46.0	48.3	50.5	51.8	52.1	52.4	52.7	53.0
100°	47.0	49.3	51.6	52.9	53.1	53.4	53.7	54.0
102.5°	70.4	63.3	56.3	53.0	53.5	54.0	54.5	55.0
105°	180.4	129.9	79.3	54.3	54.9	55.4	56.0	56.6
107.5°	442.0	404.9	367.8	330.2	292.1	253.9	215.8	177.7
110°	561.0	551.6	542.2	517.0	476.2	435.3	394.5	353.6



TEST NUMBER: P332404

CATALOG NUMBER: S123RDIW-S340D1320U835-4F0-1E-UDD-F

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	645.1	645.2	645.4	641.2	632.5	623.9	615.3	606.7
115°	743.8	746.6	749.5	751.5	752.6	753.8	754.9	756.1
117.5°	833.2	835.4	837.7	839.0	839.2	839.4	839.7	839.9
120°	891.8	894.1	896.4	897.5	897.5	897.5	897.5	897.5
122.5°	949.1	950.7	952.3	953.2	953.4	953.6	953.9	954.1
125°	1029.8	1030.4	1030.9	1031.5	1032.1	1032.7	1033.2	1033.8
127.5°	1110.7	1111.6	1112.6	1112.7	1112.2	1111.6	1111.0	1110.4
130°	1159.5	1160.7	1161.8	1162.1	1161.5	1161.0	1160.4	1159.8
132.5°	1205.8	1207.0	1208.1	1208.3	1207.5	1206.7	1205.9	1205.1
135°	1276.0	1276.8	1277.7	1277.7	1276.8	1276.0	1275.1	1274.3
137.5°	1338.5	1339.8	1341.2	1341.6	1341.0	1340.5	1339.9	1339.3
140°	1378.1	1379.3	1380.4	1380.7	1380.1	1379.5	1379.0	1378.4
142.5°	1415.7	1416.6	1417.6	1417.6	1416.8	1416.0	1415.2	1414.4
145°	1468.3	1468.8	1469.4	1469.7	1469.7	1469.7	1469.7	1469.7
147.5°	1515.3	1515.9	1516.5	1516.1	1514.8	1513.5	1512.2	1510.8
150°	1544.1	1544.7	1545.3	1545.1	1544.3	1543.4	1542.6	1541.7
152.5°	1569.7	1570.8	1571.8	1571.7	1570.3	1569.0	1567.7	1566.4
155°	1605.0	1606.4	1607.9	1607.7	1606.0	1604.3	1602.6	1600.9
157.5°	1635.7	1637.4	1639.1	1638.8	1636.6	1634.4	1632.1	1629.9
160°	1653.1	1654.9	1656.6	1656.4	1654.4	1652.4	1650.4	1648.4
162.5°	1669.0	1671.0	1672.9	1673.0	1671.2	1669.5	1667.7	1665.9
165°	1690.3	1692.6	1694.9	1695.0	1693.0	1691.0	1689.0	1687.0
167.5°	1706.8	1709.0	1711.3	1711.3	1709.0	1706.8	1704.5	1702.2
170°	1716.0	1718.3	1720.6	1720.6	1718.3	1716.0	1713.7	1711.4
172.5°	1722.2	1724.5	1726.8	1726.6	1724.1	1721.6	1719.1	1716.6
175°	1729.6	1731.6	1733.6	1733.4	1731.2	1728.9	1726.6	1724.3
177.5°	1732.3	1734.2	1736.0	1735.8	1733.5	1731.2	1728.9	1726.6
180°	1730.7	1730.7	1730.7	1730.7	1730.7	1730.7	1730.7	1730.7

(END OF REPORT)