

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: P332472-940

Luminaire Tested: **S123RDIW-S1165D460U940-4F0-1E-UDD-F**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332472-940
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-S1165D460U940-4F0-1E-UDD-F
Description: DEFINE 3 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 1165 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER, REGRESSED
HOUSING
UPLIGHT 460 LUMENS PER FOOT, NO LENS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 5550.3 lumens
Efficiency: N/A
Efficacy: 105.9 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-Direct

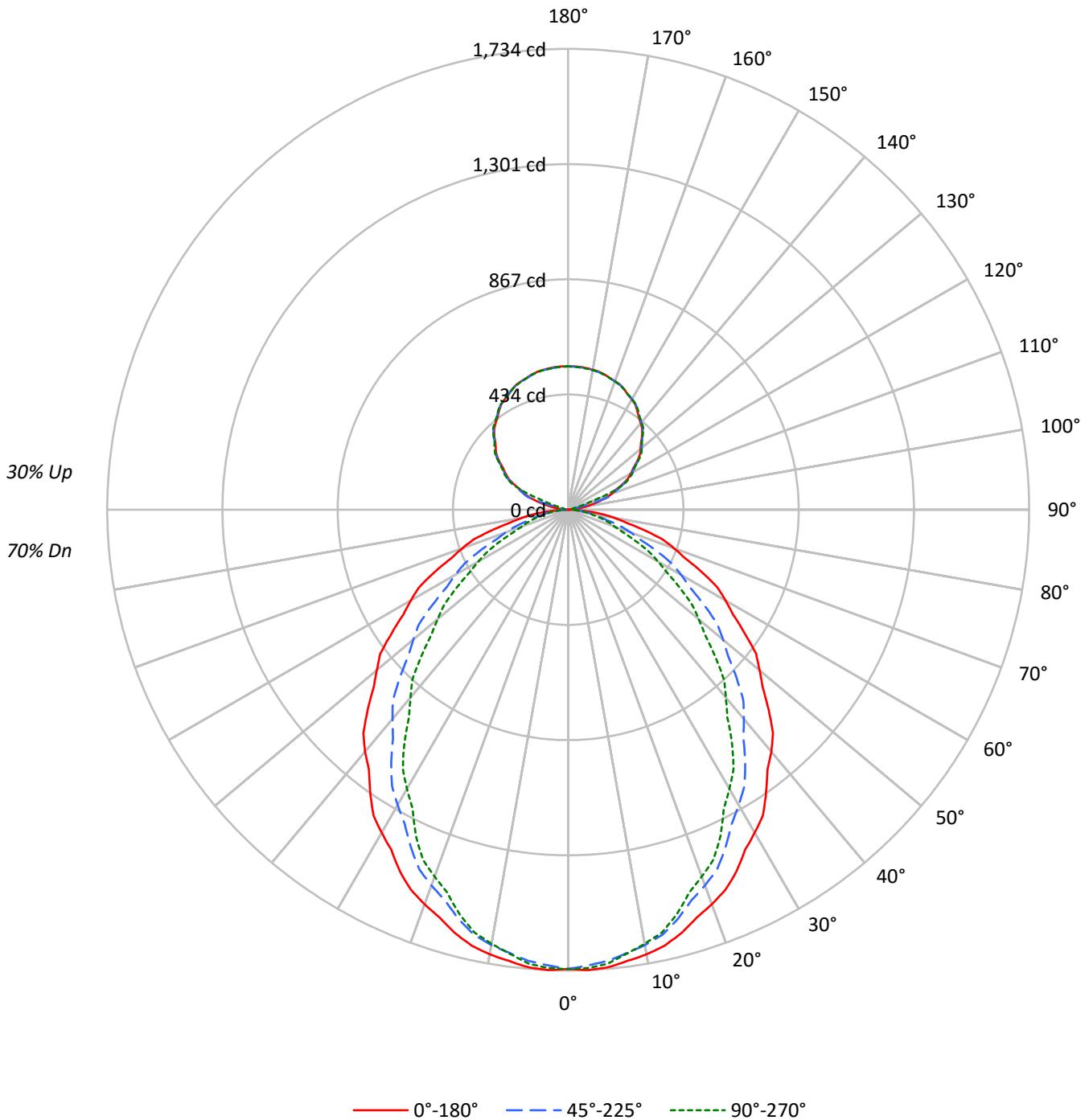
Input Watts (W): 52.4
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	112	112	112	112	106	106	106	106	95	95	95	84	84	84	75	75	75	70
1	103	99	95	91	97	93	90	87	84	81	79	75	73	71	67	65	64	60
2	94	87	80	75	89	82	77	72	74	70	66	66	63	60	59	57	55	51
3	86	77	69	63	81	73	66	61	66	60	56	59	55	52	53	50	47	44
4	79	68	60	54	75	65	58	52	59	53	48	53	48	45	48	44	41	38
5	73	61	53	47	69	58	51	45	53	47	42	48	43	39	43	39	36	33
6	67	55	47	41	64	53	45	40	48	42	37	43	38	34	39	35	32	29
7	62	50	42	36	59	48	40	35	44	37	33	40	35	31	36	32	29	26
8	58	46	38	32	55	44	36	31	40	34	29	36	31	28	33	29	26	24
9	54	42	34	29	51	40	33	28	37	31	27	34	29	25	31	26	23	21
10	51	39	31	26	48	37	30	26	34	28	24	31	26	23	29	24	21	19

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	18603	18603	18603
5°	18674	18416	18522
10°	18569	18185	18124
15°	18369	17761	17572
20°	18095	17228	16827
25°	17813	16631	16098
30°	17439	15940	15070
35°	17056	15251	14127
40°	16703	14436	12960
45°	16238	13633	11905
50°	15726	12722	10727
55°	15204	11678	9627
60°	14725	10562	8420
65°	14103	9352	7210
70°	13322	7852	5822
75°	12181	6180	5481
80°	10860	5473	5040
85°	9176	4841	4508



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	162.3	2.9
10°-20°	451.6	8.1
20°-30°	650.2	11.7
30°-40°	732.4	13.2
40°-50°	700.7	12.6
50°-60°	573.8	10.3
60°-70°	387.1	7.0
70°-80°	194.8	3.5
80°-90°	53.0	1.0
90°-100°	19.6	0.4
100°-110°	93.4	1.7
110°-120°	224.4	4.0
120°-130°	285.8	5.1
130°-140°	305.4	5.5
140°-150°	285.5	5.1
150°-160°	230.3	4.1
160°-170°	148.7	2.7
170°-180°	51.2	0.9
0°-30°	1264.1	22.8
0°-40°	1996.5	36.0
0°-60°	3270.9	58.9
0°-90°	3905.8	70.4
90°-120°	337.5	6.1
90°-150°	1214.2	21.9
90°-180°	1644.0	29.6
0°-180°	5550.3	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1728	1728	1728	1728	1728	
5°	1728	1721	1704	1716	1714	164
15°	1648	1632	1594	1587	1577	464
25°	1500	1463	1400	1372	1355	689
35°	1298	1246	1161	1102	1075	812
45°	1067	1001	896	818	782	823
55°	810	739	622	544	513	726
65°	554	475	367	302	283	548
75°	293	225	149	135	132	312
85°	74	45	39	37	36	83
90°	0	4	10	11	12	5
95°	24	9	12	15	15	30
105°	119	122	88	21	18	127
115°	224	226	230	234	236	221
125°	316	319	320	321	322	282
135°	393	395	397	398	397	302
145°	454	456	457	458	458	284
155°	500	499	499	501	499	230
165°	527	526	525	528	526	149
175°	539	537	538	540	537	51
180°	539	539	539	539	539	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1728.3	1728.3	1728.3	1728.3	1728.3	1728.3	1728.3	1728.3	1728.3	1728.3	1728.3
2.5°	1733.9	1732.9	1731.9	1730.9	1729.9	1727.9	1724.9	1721.9	1719.0	1715.9	1718.7
5°	1728.3	1726.7	1725.2	1723.6	1722.1	1719.4	1715.7	1711.9	1708.2	1704.4	1707.3
7.5°	1712.3	1710.7	1709.0	1707.3	1705.6	1702.3	1697.5	1692.6	1687.7	1682.8	1684.4
10°	1698.9	1696.7	1694.5	1692.3	1690.1	1686.2	1680.6	1675.0	1669.4	1663.8	1664.1
12.5°	1679.8	1677.4	1674.9	1672.5	1670.1	1665.4	1658.6	1651.7	1644.8	1638.0	1637.8
15°	1648.4	1644.9	1641.6	1638.1	1634.7	1628.6	1619.9	1611.1	1602.4	1593.8	1592.1
17.5°	1608.8	1604.9	1600.9	1596.9	1593.0	1585.4	1574.3	1563.2	1552.1	1541.1	1537.8
20°	1579.7	1574.8	1569.8	1564.8	1559.8	1551.4	1539.5	1527.7	1515.8	1504.0	1499.9
22.5°	1547.2	1541.4	1535.7	1530.0	1524.3	1515.1	1502.5	1490.0	1477.4	1464.7	1459.7
25°	1499.8	1492.0	1484.3	1476.4	1468.6	1457.6	1443.2	1429.0	1414.6	1400.3	1393.7
27.5°	1442.3	1433.8	1425.1	1416.6	1407.9	1395.7	1379.7	1363.8	1347.8	1331.9	1322.8
30°	1403.1	1393.7	1384.4	1375.0	1365.7	1352.3	1334.9	1317.4	1300.0	1282.5	1271.9
32.5°	1363.9	1353.3	1342.6	1332.0	1321.5	1307.0	1288.5	1270.1	1251.6	1233.2	1221.6
35°	1298.0	1286.7	1275.5	1264.4	1253.1	1237.9	1218.5	1199.3	1179.9	1160.6	1147.2
37.5°	1231.3	1218.8	1206.3	1193.8	1181.4	1164.8	1144.2	1123.6	1103.0	1082.4	1067.2
40°	1188.7	1174.9	1161.2	1147.5	1133.8	1115.9	1093.8	1071.7	1049.5	1027.4	1011.2
42.5°	1140.4	1126.7	1113.0	1099.3	1085.6	1067.3	1044.5	1021.5	998.7	975.9	958.1
45°	1066.7	1052.7	1038.7	1024.7	1010.6	991.6	967.6	943.6	919.6	895.6	877.9
47.5°	992.9	977.6	962.2	946.8	931.4	911.7	887.7	863.7	839.7	815.8	796.5
50°	939.1	924.5	909.8	895.2	880.6	860.7	835.4	810.2	785.0	759.7	740.4
52.5°	890.9	875.0	859.2	843.3	827.3	806.9	781.9	757.0	732.0	707.0	687.0
55°	810.2	794.9	779.6	764.4	749.1	728.3	701.8	675.3	648.8	622.3	604.3
57.5°	735.6	719.0	702.3	685.7	669.1	647.5	620.9	594.2	567.7	541.1	524.0
60°	684.0	666.9	649.8	632.7	615.5	594.0	568.1	542.3	516.5	490.6	473.8
62.5°	632.4	615.3	598.2	581.0	563.9	542.4	516.6	490.7	464.8	439.0	423.2
65°	553.7	536.5	519.4	502.3	485.2	464.4	440.1	415.8	391.6	367.2	352.0
67.5°	474.9	457.5	440.2	422.9	405.6	385.3	362.0	338.7	315.4	292.1	280.7
70°	423.3	406.5	389.7	372.8	356.1	336.7	315.0	293.1	271.3	249.5	238.6
72.5°	371.8	355.2	338.6	322.0	305.4	287.2	267.4	247.6	227.8	208.0	199.1
75°	292.9	278.0	263.1	248.1	233.2	217.1	200.0	182.8	165.7	148.6	145.4
77.5°	221.1	207.7	194.1	180.7	167.1	154.8	143.8	132.8	121.7	110.8	109.1
80°	175.2	162.5	149.6	136.9	124.1	114.5	107.9	101.4	94.9	88.3	87.4
82.5°	131.4	120.5	109.4	98.4	87.4	80.3	77.3	74.2	71.2	68.1	67.1
85°	74.3	67.4	60.5	53.8	46.9	43.0	42.1	41.1	40.2	39.2	38.6
87.5°	27.0	24.4	21.8	19.3	16.8	15.6	15.8	16.1	16.2	16.5	16.3
90°	0.4	1.2	2.1	3.0	3.9	5.0	6.2	7.3	8.5	9.6	10.0
92.5°	7.5	7.2	7.0	6.7	6.4	6.8	7.7	8.5	9.4	10.3	10.8
95°	24.4	20.8	17.1	13.5	9.8	8.5	9.5	10.4	11.4	12.4	13.0
97.5°	49.1	47.4	45.8	44.2	42.5	38.5	32.1	25.7	19.4	12.9	13.6
100°	67.7	69.5	71.2	73.0	74.8	68.8	54.9	41.0	27.1	13.2	13.9
102.5°	88.8	90.2	91.4	92.7	94.0	87.0	71.9	56.7	41.6	26.4	24.2
105°	119.4	120.4	121.4	122.3	123.3	119.8	111.7	103.8	95.8	87.7	72.0
107.5°	151.6	152.4	153.2	153.9	154.7	155.8	157.0	158.3	159.5	160.8	149.3
110°	173.1	173.8	174.5	175.2	175.9	176.7	177.7	178.7	179.7	180.7	177.7



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	193.6	194.2	194.8	195.5	196.2	197.0	198.0	198.9	199.9	200.9	200.9
115°	223.9	224.4	225.0	225.5	226.0	226.8	227.6	228.4	229.2	230.0	230.9
117.5°	253.3	254.0	254.7	255.3	256.0	256.5	256.9	257.3	257.8	258.2	258.9
120°	271.6	272.4	273.2	274.0	274.8	275.4	275.6	275.9	276.2	276.4	277.1
122.5°	290.3	290.9	291.5	292.2	292.8	293.4	293.7	294.0	294.4	294.7	295.2
125°	315.7	316.4	317.1	317.8	318.5	319.1	319.4	319.8	320.1	320.5	320.7
127.5°	340.4	341.1	341.8	342.5	343.2	343.8	344.2	344.6	345.1	345.5	345.8
130°	355.8	356.5	357.2	357.9	358.6	359.2	359.5	359.9	360.3	360.5	360.9
132.5°	370.5	371.2	371.9	372.6	373.4	373.8	374.2	374.4	374.7	375.0	375.3
135°	393.0	393.5	394.0	394.6	395.1	395.6	395.9	396.3	396.6	397.0	397.3
137.5°	412.2	413.0	413.6	414.3	414.9	415.4	415.6	415.8	416.0	416.2	416.6
140°	425.1	425.6	426.1	426.7	427.2	427.6	427.8	428.1	428.4	428.6	429.0
142.5°	436.9	437.5	438.0	438.5	439.1	439.4	439.7	440.0	440.2	440.5	440.8
145°	453.5	454.1	454.8	455.4	456.0	456.4	456.6	456.7	456.9	457.1	457.3
147.5°	469.1	469.6	469.9	470.4	470.7	471.1	471.3	471.4	471.6	471.8	472.0
150°	478.8	479.0	479.3	479.6	479.8	480.0	480.2	480.4	480.5	480.7	480.9
152.5°	487.4	487.5	487.7	487.8	487.9	488.0	488.1	488.2	488.3	488.5	488.7
155°	499.5	499.4	499.2	499.1	498.9	498.8	498.9	499.0	499.1	499.2	499.6
157.5°	509.1	509.0	509.0	509.0	509.0	508.9	508.8	508.7	508.6	508.5	509.1
160°	514.8	514.7	514.6	514.5	514.4	514.3	514.2	514.2	514.1	514.0	514.5
162.5°	520.2	520.0	519.8	519.6	519.3	519.2	519.1	519.0	518.9	518.8	519.4
165°	526.8	526.6	526.3	526.0	525.8	525.6	525.5	525.4	525.3	525.2	525.9
167.5°	532.0	531.6	531.3	530.9	530.6	530.4	530.4	530.4	530.4	530.4	531.1
170°	534.8	534.5	534.1	533.8	533.4	533.2	533.2	533.2	533.2	533.2	534.0
172.5°	536.7	536.4	535.9	535.5	535.0	534.8	534.9	535.0	535.1	535.1	535.8
175°	539.2	538.8	538.3	537.9	537.4	537.3	537.3	537.4	537.5	537.6	538.2
177.5°	539.8	539.5	539.1	538.8	538.4	538.3	538.4	538.4	538.5	538.6	539.1
180°	539.2	539.2	539.2	539.2	539.2	539.2	539.2	539.2	539.2	539.2	539.2



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1728.3	1728.3	1728.3	1728.3	1728.3	1728.3	1728.3	1728.3
2.5°	1721.4	1724.2	1726.9	1728.0	1727.5	1727.1	1726.5	1726.0
5°	1710.0	1712.9	1715.7	1716.7	1716.1	1715.5	1714.8	1714.2
7.5°	1686.0	1687.6	1689.1	1689.3	1688.3	1687.2	1686.1	1685.1
10°	1664.5	1664.7	1665.1	1664.5	1662.9	1661.3	1659.7	1658.2
12.5°	1637.6	1637.4	1637.3	1636.3	1634.5	1632.6	1630.8	1629.1
15°	1590.6	1589.0	1587.5	1585.6	1583.4	1581.3	1579.0	1576.9
17.5°	1534.5	1531.1	1527.8	1524.6	1521.3	1518.0	1514.8	1511.5
20°	1495.9	1491.8	1487.8	1483.9	1480.2	1476.4	1472.7	1469.0
22.5°	1454.6	1449.7	1444.6	1440.3	1436.8	1433.3	1429.9	1426.4
25°	1387.2	1380.6	1374.1	1369.1	1365.7	1362.3	1358.9	1355.4
27.5°	1313.7	1304.6	1295.5	1288.3	1283.1	1277.9	1272.6	1267.4
30°	1261.3	1250.8	1240.2	1232.4	1227.4	1222.4	1217.5	1212.5
32.5°	1210.1	1198.5	1186.9	1178.5	1173.2	1168.0	1162.8	1157.5
35°	1133.8	1120.4	1107.1	1097.5	1091.9	1086.3	1080.7	1075.1
37.5°	1052.0	1036.8	1021.5	1010.5	1003.6	996.7	989.8	982.8
40°	995.1	978.8	962.7	951.0	943.8	936.7	929.5	922.3
42.5°	940.5	922.7	905.1	893.0	886.6	880.2	873.8	867.4
45°	860.1	842.4	824.7	812.1	804.6	797.1	789.6	782.1
47.5°	777.1	757.9	738.5	725.6	718.9	712.2	705.5	698.9
50°	721.1	701.8	682.4	669.2	662.1	654.9	647.7	640.6
52.5°	666.9	646.8	626.8	613.5	607.1	600.7	594.3	587.9
55°	586.2	568.1	550.1	538.0	531.7	525.5	519.2	513.0
57.5°	506.9	489.8	472.8	461.5	456.3	451.0	445.7	440.4
60°	456.9	440.1	423.3	412.2	407.0	401.6	396.4	391.1
62.5°	407.3	391.6	375.7	365.1	359.4	353.9	348.4	342.9
65°	336.7	321.5	306.2	296.9	293.5	290.0	286.6	283.1
67.5°	269.3	257.9	246.5	239.0	235.3	231.6	227.9	224.3
70°	227.7	216.8	205.9	198.8	195.3	191.9	188.4	185.0
72.5°	190.2	181.3	172.4	167.2	165.8	164.3	162.9	161.5
75°	142.3	139.2	136.1	134.3	133.7	133.0	132.4	131.8
77.5°	107.4	105.7	104.0	102.8	102.2	101.6	100.9	100.3
80°	86.4	85.5	84.5	83.8	83.2	82.6	81.9	81.3
82.5°	66.3	65.4	64.4	63.8	63.8	63.6	63.5	63.4
85°	38.0	37.4	36.7	36.5	36.5	36.5	36.5	36.5
87.5°	16.1	16.0	15.8	15.6	15.3	15.2	15.0	14.7
90°	10.3	10.7	11.1	11.3	11.5	11.7	11.9	12.0
92.5°	11.4	11.9	12.6	12.8	13.0	13.1	13.2	13.3
95°	13.6	14.3	14.9	15.2	15.2	15.2	15.2	15.2
97.5°	14.4	15.1	15.8	16.1	16.2	16.3	16.4	16.5
100°	14.6	15.3	16.1	16.5	16.6	16.7	16.8	16.9
102.5°	21.9	19.7	17.6	16.5	16.7	16.9	16.9	17.1
105°	56.2	40.5	24.7	16.9	17.1	17.3	17.5	17.7
107.5°	137.7	126.2	114.6	102.9	91.0	79.1	67.2	55.4
110°	174.8	171.8	168.9	161.1	148.4	135.6	122.9	110.2



TEST NUMBER: P332472-940

CATALOG NUMBER: S123RDIW-S1165D460U940-4F0-1E-UDD-F

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	201.0	201.0	201.1	199.7	197.1	194.4	191.7	189.0
115°	231.8	232.6	233.5	234.2	234.5	234.9	235.2	235.6
117.5°	259.6	260.3	261.0	261.4	261.4	261.5	261.6	261.7
120°	277.9	278.6	279.3	279.6	279.6	279.6	279.6	279.6
122.5°	295.7	296.2	296.7	296.9	297.0	297.1	297.2	297.3
125°	320.8	321.0	321.2	321.4	321.6	321.7	321.9	322.1
127.5°	346.1	346.3	346.6	346.7	346.5	346.3	346.2	346.0
130°	361.2	361.6	361.9	362.0	361.9	361.7	361.5	361.3
132.5°	375.7	376.0	376.4	376.5	376.2	375.9	375.7	375.5
135°	397.5	397.8	398.1	398.1	397.8	397.5	397.3	397.0
137.5°	417.1	417.4	417.9	418.0	417.9	417.7	417.5	417.3
140°	429.4	429.7	430.1	430.2	430.0	429.8	429.6	429.4
142.5°	441.1	441.4	441.7	441.7	441.4	441.2	441.0	440.7
145°	457.4	457.6	457.8	457.9	457.9	457.9	457.9	457.9
147.5°	472.2	472.3	472.5	472.3	472.0	471.5	471.2	470.7
150°	481.1	481.3	481.4	481.4	481.2	480.9	480.6	480.4
152.5°	489.1	489.4	489.7	489.6	489.3	488.8	488.5	488.0
155°	500.1	500.5	501.0	500.9	500.3	499.8	499.3	498.8
157.5°	509.6	510.1	510.7	510.6	509.9	509.3	508.5	507.8
160°	515.1	515.6	516.1	516.1	515.5	514.9	514.2	513.6
162.5°	520.0	520.7	521.2	521.3	520.7	520.1	519.6	519.1
165°	526.6	527.4	528.1	528.1	527.4	526.9	526.3	525.7
167.5°	531.8	532.4	533.2	533.2	532.4	531.8	531.1	530.4
170°	534.7	535.4	536.1	536.1	535.4	534.7	534.0	533.2
172.5°	536.5	537.3	538.0	538.0	537.2	536.4	535.7	534.8
175°	538.9	539.5	540.1	540.1	539.4	538.7	538.0	537.3
177.5°	539.8	540.3	540.9	540.8	540.1	539.4	538.7	538.0
180°	539.2	539.2	539.2	539.2	539.2	539.2	539.2	539.2

(END OF REPORT)