

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: P333098-940

Luminaire Tested: **S124RDIW-S1195D470U940-4F0-1E-UDD-F1**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P333098-940
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-10,
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S124RDIW-S1195D470U940-4F0-1E-UDD-F1
Description: DEFINE 4 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 1195 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER, REGRESSED
HOUSING
UPLIGHT 470 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 5747.6 lumens
Efficiency: N/A
Efficacy: 109.7 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.09 / 1.24
Luminous Opening: Rectangular (W 0.33' x L: 4' x H: 0')
CIE Type: Semi-Direct

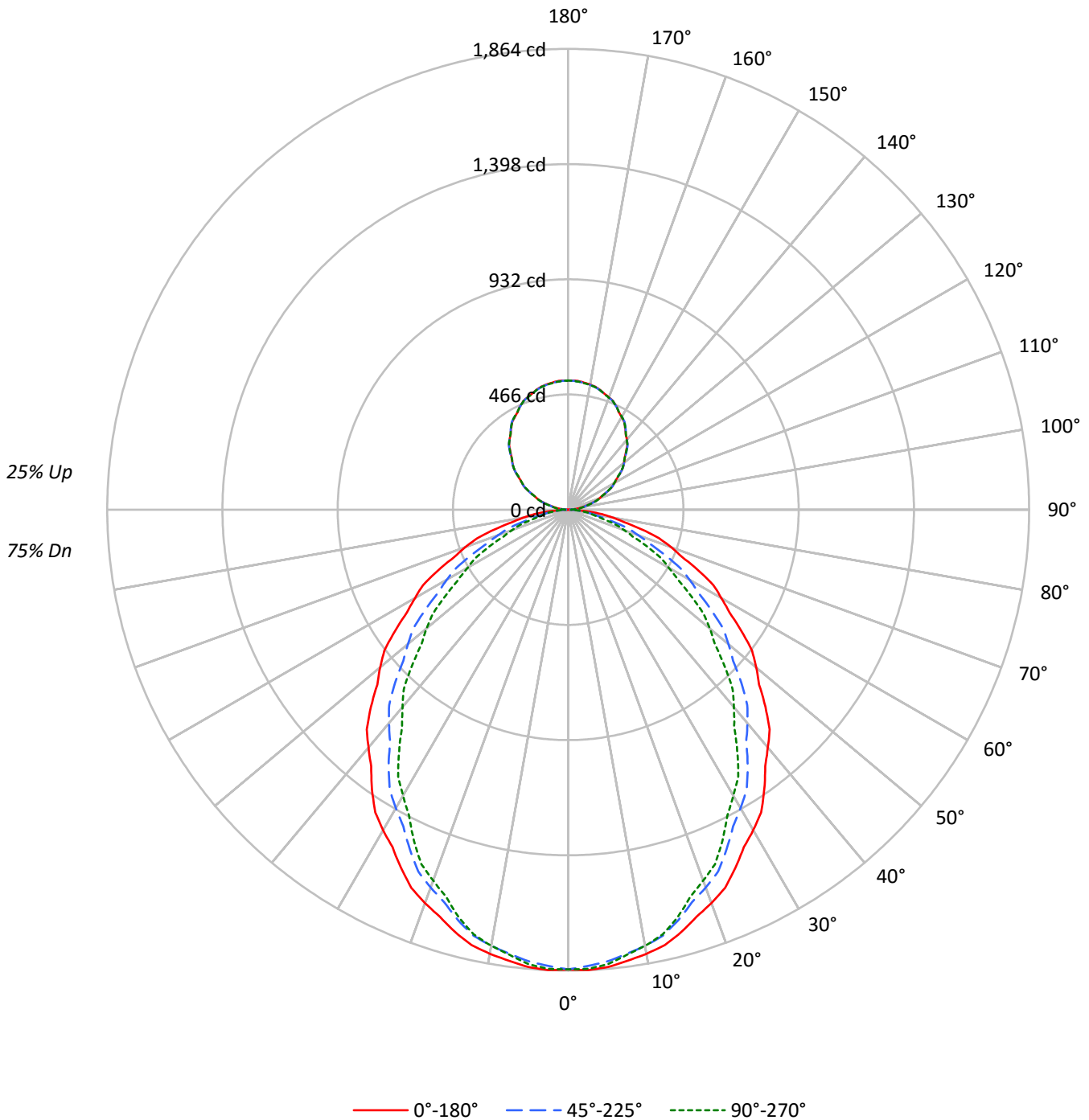
Input Watts (W): 52.4
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	113	113	113	113	107	107	107	107	97	97	97	88	88	88	79	79	79	75
1	104	99	96	92	99	95	91	88	86	83	81	78	76	74	70	69	68	64
2	95	87	81	76	90	83	78	73	76	71	68	69	65	62	62	60	57	54
3	87	77	70	64	82	74	67	62	67	62	57	61	57	53	56	52	49	46
4	80	69	61	54	76	66	58	53	60	54	49	55	50	46	50	46	43	40
5	73	61	53	47	70	59	51	46	54	48	43	49	44	40	45	41	38	35
6	68	55	47	41	64	53	46	40	49	43	38	45	40	35	41	37	33	31
7	63	50	42	36	60	48	41	35	45	38	34	41	36	32	38	33	30	27
8	59	46	38	33	56	44	37	32	41	35	30	38	32	28	35	30	27	25
9	55	42	34	29	52	41	33	29	38	31	27	35	29	26	32	28	24	22
10	51	39	31	26	49	37	31	26	35	29	25	32	27	23	30	25	22	20

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	15012	15012	15012
5°	15046	14862	14955
10°	14952	14684	14684
15°	14780	14375	14269
20°	14545	13970	13713
25°	14243	13495	13153
30°	13951	12995	12450
35°	13626	12476	11745
40°	13235	11884	10984
45°	12875	11298	10209
50°	12465	10623	9388
55°	12024	9920	8497
60°	11541	9150	7585
65°	11096	8187	6692
70°	10452	7124	5681
75°	9638	5908	4619
80°	8405	4500	4235
85°	7123	4085	3825



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	174.7	3.0
10°-20°	487.1	8.5
20°-30°	703.4	12.2
30°-40°	797.3	13.9
40°-50°	770.0	13.4
50°-60°	640.3	11.1
60°-70°	442.1	7.7
70°-80°	224.1	3.9
80°-90°	59.1	1.0
90°-100°	34.5	0.6
100°-110°	102.1	1.8
110°-120°	173.3	3.0
120°-130°	228.5	4.0
130°-140°	256.6	4.5
140°-150°	252.1	4.4
150°-160°	212.1	3.7
160°-170°	141.1	2.5
170°-180°	49.4	0.9
0°-30°	1365.2	23.8
0°-40°	2162.6	37.6
0°-60°	3572.8	62.2
0°-90°	4298.0	74.8
90°-120°	309.8	5.4
90°-150°	1047.0	18.2
90°-180°	1450.0	25.2
0°-180°	5747.6	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1860	1860	1860	1860	1860	
5°	1857	1850	1834	1847	1845	176
15°	1768	1754	1720	1717	1707	498
25°	1599	1572	1515	1491	1477	736
35°	1383	1336	1266	1219	1192	864
45°	1128	1073	990	922	894	869
55°	854	795	705	633	604	764
65°	581	518	429	370	350	573
75°	309	256	189	158	148	326
85°	77	50	44	41	41	87
90°	1	6	9	11	12	5
95°	24	28	31	32	32	27
105°	94	95	96	97	99	100
115°	176	176	175	175	175	174
125°	256	256	256	255	255	229
135°	331	333	333	332	331	256
145°	402	404	404	404	402	252
155°	461	461	460	462	460	212
165°	501	500	499	502	500	141
175°	522	520	519	522	519	49
180°	522	522	522	522	522	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1859.6	1859.6	1859.6	1859.6	1859.6	1859.6	1859.6	1859.6	1859.6	1859.6	1859.6
2.5°	1864.1	1863.1	1862.2	1861.1	1860.1	1858.2	1855.5	1852.6	1849.9	1847.1	1849.9
5°	1856.7	1855.5	1854.2	1853.0	1851.7	1849.1	1845.4	1841.6	1837.8	1834.0	1837.1
7.5°	1840.0	1838.6	1837.3	1835.9	1834.6	1831.5	1826.6	1821.7	1816.7	1811.8	1813.8
10°	1824.0	1822.4	1820.9	1819.3	1817.7	1814.0	1808.4	1802.7	1797.0	1791.3	1792.5
12.5°	1803.5	1801.7	1799.8	1798.0	1796.2	1791.9	1785.2	1778.5	1771.7	1765.1	1765.9
15°	1768.4	1765.6	1762.8	1760.0	1757.1	1751.7	1743.8	1735.9	1728.0	1720.0	1719.4
17.5°	1726.1	1721.9	1717.8	1713.7	1709.6	1702.8	1693.3	1683.8	1674.3	1664.8	1663.0
20°	1693.0	1688.9	1684.8	1680.7	1676.6	1669.1	1658.4	1647.6	1636.8	1626.1	1623.5
22.5°	1656.5	1652.0	1647.3	1642.7	1638.1	1630.0	1618.5	1607.0	1595.4	1583.9	1580.1
25°	1599.0	1593.3	1587.6	1582.0	1576.3	1566.9	1554.0	1541.0	1528.0	1515.0	1509.7
27.5°	1538.6	1531.5	1524.4	1517.2	1510.0	1499.6	1485.7	1471.9	1457.9	1444.1	1437.4
30°	1496.6	1488.6	1480.7	1472.7	1464.9	1453.5	1438.6	1423.7	1408.9	1394.0	1386.1
32.5°	1452.1	1443.1	1434.2	1425.3	1416.4	1404.3	1388.8	1373.5	1358.1	1342.7	1333.6
35°	1382.6	1372.4	1362.4	1352.2	1342.1	1329.1	1313.3	1297.5	1281.7	1265.9	1255.1
37.5°	1308.3	1297.8	1287.4	1276.9	1266.5	1252.5	1235.0	1217.5	1200.0	1182.4	1170.4
40°	1255.9	1245.5	1235.0	1224.6	1214.1	1199.9	1181.9	1163.8	1145.8	1127.7	1114.5
42.5°	1205.8	1194.8	1183.8	1172.9	1162.0	1147.1	1128.3	1109.5	1090.7	1071.9	1058.4
45°	1127.7	1116.0	1104.3	1092.6	1080.9	1065.5	1046.6	1027.6	1008.6	989.6	974.1
47.5°	1047.1	1035.0	1023.0	1010.8	998.8	982.8	963.1	943.3	923.6	903.9	887.8
50°	992.5	980.1	967.8	955.5	943.1	926.8	906.5	886.3	866.0	845.8	830.0
52.5°	936.7	924.5	912.5	900.4	888.3	871.8	851.1	830.4	809.6	788.8	772.8
55°	854.3	841.7	829.0	816.4	803.7	787.1	766.5	746.0	725.4	704.8	688.4
57.5°	772.8	759.7	746.5	733.4	720.2	703.6	683.3	663.0	642.7	622.5	605.8
60°	714.8	702.1	689.5	676.8	664.1	647.7	627.5	607.3	586.9	566.7	550.3
62.5°	662.4	649.3	636.1	622.9	609.8	592.8	572.0	551.3	530.5	509.8	494.5
65°	580.9	567.3	553.8	540.1	526.6	509.6	489.4	469.1	448.9	428.6	415.0
67.5°	496.3	483.3	470.3	457.3	444.3	428.3	409.5	390.7	371.9	353.1	341.4
70°	442.8	429.5	416.3	403.0	389.7	374.0	356.0	338.0	319.9	301.8	291.4
72.5°	385.8	373.9	361.9	349.8	337.8	323.2	306.2	289.2	272.2	255.1	246.2
75°	309.0	297.3	285.5	273.8	262.2	248.9	234.0	219.1	204.3	189.4	182.1
77.5°	231.0	221.1	211.1	201.2	191.2	180.2	168.2	156.2	144.2	132.2	127.9
80°	180.8	171.7	162.5	153.3	144.1	134.8	125.3	115.8	106.3	96.8	95.9
82.5°	137.6	129.1	120.7	112.3	103.9	96.9	91.5	86.1	80.6	75.2	74.5
85°	76.9	70.5	64.2	57.9	51.5	48.0	47.0	46.0	45.1	44.1	43.5
87.5°	26.5	24.6	22.8	21.0	19.2	18.2	18.0	17.9	17.8	17.7	17.6
90°	1.2	2.2	3.2	4.2	5.2	6.0	6.8	7.5	8.2	8.9	9.5
92.5°	8.6	9.8	10.9	12.0	13.2	14.0	14.5	15.0	15.5	16.0	16.3
95°	24.3	25.1	25.9	26.7	27.5	28.2	28.8	29.4	30.1	30.7	30.9
97.5°	42.4	43.0	43.6	44.3	44.9	45.7	46.4	47.1	47.8	48.6	48.9
100°	56.5	56.9	57.2	57.6	58.1	58.6	59.4	60.2	61.0	61.8	62.0
102.5°	71.4	71.6	71.7	71.9	72.1	72.5	73.2	73.9	74.6	75.4	75.6
105°	94.2	94.3	94.3	94.4	94.5	94.7	95.1	95.4	95.8	96.1	96.4
107.5°	118.0	118.1	118.2	118.3	118.4	118.5	118.6	118.6	118.7	118.7	119.0
110°	134.1	134.3	134.5	134.6	134.8	134.9	134.8	134.7	134.6	134.6	134.4



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	151.0	151.0	151.1	151.1	151.1	151.1	150.9	150.7	150.5	150.4	150.3
115°	176.2	176.2	176.2	176.2	176.2	176.1	175.9	175.8	175.6	175.4	175.3
117.5°	199.9	200.0	200.1	200.2	200.2	200.2	200.1	199.9	199.8	199.7	199.4
120°	215.8	216.2	216.5	216.9	217.2	217.2	217.0	216.7	216.4	216.2	215.7
122.5°	232.3	232.4	232.6	232.6	232.8	232.8	232.7	232.6	232.5	232.4	232.0
125°	256.5	256.5	256.5	256.5	256.5	256.5	256.5	256.4	256.3	256.2	256.0
127.5°	278.7	278.9	279.2	279.5	279.7	279.8	279.6	279.5	279.4	279.2	279.0
130°	294.2	294.4	294.7	295.0	295.2	295.3	295.3	295.3	295.3	295.3	295.2
132.5°	310.0	310.2	310.4	310.6	310.8	310.9	310.8	310.7	310.7	310.6	310.4
135°	330.9	331.4	332.0	332.5	333.1	333.3	333.3	333.3	333.3	333.3	333.1
137.5°	353.7	354.0	354.2	354.5	354.7	354.9	355.1	355.3	355.3	355.5	355.3
140°	368.9	369.1	369.3	369.4	369.6	369.7	369.7	369.7	369.7	369.7	369.6
142.5°	382.8	383.0	383.2	383.3	383.5	383.6	383.5	383.4	383.3	383.3	383.3
145°	402.1	402.4	402.8	403.1	403.5	403.7	403.8	403.9	403.9	404.0	403.9
147.5°	421.2	421.5	422.0	422.4	422.8	423.0	422.9	422.8	422.8	422.8	422.7
150°	432.7	433.1	433.5	433.8	434.2	434.4	434.4	434.4	434.4	434.4	434.4
152.5°	443.7	444.0	444.2	444.4	444.6	444.8	444.8	444.9	445.0	445.1	445.2
155°	460.7	460.7	460.7	460.7	460.7	460.6	460.5	460.4	460.3	460.2	460.6
157.5°	474.8	474.7	474.6	474.4	474.2	474.1	474.1	474.1	474.0	474.0	474.3
160°	483.3	483.2	483.1	483.0	483.0	482.9	482.8	482.7	482.6	482.5	482.8
162.5°	491.1	490.8	490.5	490.4	490.1	489.9	489.8	489.7	489.6	489.5	490.1
165°	501.4	501.1	500.9	500.6	500.3	500.2	500.0	499.8	499.6	499.4	500.0
167.5°	509.4	509.1	508.7	508.4	507.9	507.7	507.7	507.8	507.8	507.8	508.4
170°	514.0	513.5	513.1	512.6	512.2	512.0	512.1	512.2	512.3	512.4	512.9
172.5°	517.2	516.8	516.5	516.1	515.7	515.5	515.5	515.6	515.6	515.6	516.2
175°	521.7	521.2	520.8	520.3	519.9	519.6	519.5	519.4	519.3	519.2	519.9
177.5°	523.1	522.7	522.4	522.0	521.7	521.5	521.5	521.5	521.5	521.5	522.0
180°	522.5	522.5	522.5	522.5	522.5	522.5	522.5	522.5	522.5	522.5	522.5



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1859.6	1859.6	1859.6	1859.6	1859.6	1859.6	1859.6	1859.6
2.5°	1852.6	1855.5	1858.2	1859.5	1859.2	1858.9	1858.7	1858.5
5°	1840.3	1843.4	1846.6	1847.9	1847.3	1846.6	1846.0	1845.4
7.5°	1815.8	1817.8	1819.9	1820.3	1819.4	1818.4	1817.3	1816.3
10°	1793.8	1795.0	1796.4	1796.4	1795.0	1793.8	1792.5	1791.3
12.5°	1766.6	1767.4	1768.1	1767.5	1765.9	1764.1	1762.3	1760.5
15°	1718.8	1718.1	1717.5	1716.1	1713.9	1711.6	1709.5	1707.3
17.5°	1661.3	1659.5	1657.7	1655.2	1651.8	1648.4	1645.1	1641.7
20°	1621.0	1618.5	1616.0	1612.7	1608.6	1604.5	1600.3	1596.2
22.5°	1576.4	1572.5	1568.8	1565.2	1561.8	1558.4	1555.1	1551.8
25°	1504.2	1498.9	1493.5	1489.2	1486.0	1482.9	1479.7	1476.6
27.5°	1430.8	1424.2	1417.6	1411.9	1407.4	1402.8	1398.3	1393.7
30°	1378.1	1370.3	1362.4	1355.8	1350.8	1345.8	1340.7	1335.6
32.5°	1324.4	1315.2	1306.0	1299.0	1294.2	1289.4	1284.6	1279.8
35°	1244.3	1233.6	1222.8	1214.6	1208.9	1203.2	1197.5	1191.8
37.5°	1158.3	1146.3	1134.3	1125.4	1119.7	1114.0	1108.4	1102.7
40°	1101.2	1087.9	1074.6	1065.1	1059.4	1053.6	1048.0	1042.3
42.5°	1044.8	1031.3	1017.7	1008.0	1002.0	996.1	990.2	984.2
45°	958.6	943.1	927.6	916.9	911.3	905.6	899.9	894.2
47.5°	871.7	855.7	839.6	828.4	822.2	815.9	809.6	803.3
50°	814.1	798.3	782.5	771.6	765.6	759.6	753.6	747.5
52.5°	756.7	740.7	724.5	713.4	707.1	700.9	694.6	688.3
55°	671.9	655.5	639.0	627.8	621.8	615.7	609.8	603.7
57.5°	589.2	572.4	555.7	545.1	540.6	535.9	531.4	526.8
60°	533.8	517.4	500.9	490.2	485.1	480.0	474.9	469.8
62.5°	479.4	464.2	449.0	439.3	435.3	431.3	427.2	423.2
65°	401.4	387.8	374.2	365.4	361.7	357.8	354.1	350.3
67.5°	329.8	318.0	306.3	298.4	294.2	290.0	285.8	281.6
70°	281.0	270.5	260.1	253.3	250.1	247.0	243.8	240.7
72.5°	237.3	228.4	219.5	213.6	210.6	207.8	204.8	201.9
75°	174.9	167.6	160.2	155.7	153.8	151.9	150.0	148.1
77.5°	123.7	119.4	115.2	112.8	112.2	111.6	111.1	110.5
80°	95.0	94.0	93.0	92.4	92.1	91.8	91.5	91.1
82.5°	73.8	73.1	72.4	71.9	71.6	71.2	71.0	70.6
85°	42.9	42.3	41.6	41.3	41.3	41.3	41.3	41.3
87.5°	17.5	17.3	17.1	17.2	17.5	17.8	18.1	18.4
90°	10.0	10.5	11.1	11.4	11.6	11.8	11.9	12.1
92.5°	16.7	16.9	17.3	17.5	17.7	17.7	17.8	17.9
95°	31.2	31.5	31.7	31.9	31.9	31.9	31.9	31.9
97.5°	49.2	49.6	49.8	50.0	50.0	50.0	50.0	50.0
100°	62.2	62.3	62.5	62.6	62.6	62.6	62.6	62.6
102.5°	75.9	76.2	76.4	76.6	76.6	76.7	76.8	76.9
105°	96.8	97.0	97.3	97.6	97.8	98.1	98.4	98.6
107.5°	119.2	119.5	119.8	119.8	119.8	119.8	119.8	119.8
110°	134.2	134.0	133.8	133.8	134.1	134.4	134.6	134.9



TEST NUMBER: P333098-940

CATALOG NUMBER: S124RDIW-S1195D470U940-4F0-1E-UDD-F1

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	150.3	150.3	150.3	150.3	150.3	150.3	150.4	150.4
115°	175.2	175.1	175.0	175.0	174.9	174.8	174.7	174.6
117.5°	199.1	198.8	198.5	198.2	198.0	197.9	197.7	197.5
120°	215.3	214.8	214.4	214.3	214.5	214.6	214.8	215.0
122.5°	231.8	231.4	231.1	230.8	230.5	230.2	229.8	229.5
125°	255.8	255.7	255.5	255.3	255.1	254.9	254.8	254.6
127.5°	278.8	278.7	278.5	278.3	278.2	278.0	277.9	277.8
130°	295.0	294.8	294.6	294.4	294.0	293.6	293.3	292.9
132.5°	310.2	310.0	309.9	309.7	309.5	309.4	309.2	309.2
135°	333.0	332.8	332.6	332.4	332.2	331.9	331.6	331.4
137.5°	355.0	354.8	354.5	354.5	354.5	354.5	354.6	354.7
140°	369.5	369.4	369.3	369.3	369.2	369.1	369.0	368.9
142.5°	383.3	383.3	383.3	383.2	383.2	383.2	383.2	383.2
145°	403.9	403.8	403.7	403.5	403.2	403.0	402.7	402.4
147.5°	422.6	422.5	422.5	422.4	422.3	422.2	422.1	422.0
150°	434.4	434.4	434.4	434.4	434.3	434.2	434.1	434.0
152.5°	445.5	445.7	445.9	445.9	445.7	445.4	445.2	445.0
155°	460.9	461.3	461.6	461.6	461.3	460.9	460.6	460.2
157.5°	474.6	474.8	475.1	475.1	474.8	474.5	474.2	473.9
160°	483.0	483.3	483.6	483.5	483.0	482.6	482.1	481.6
162.5°	490.5	491.1	491.5	491.5	491.1	490.6	490.2	489.7
165°	500.5	501.1	501.6	501.7	501.3	501.0	500.6	500.2
167.5°	508.9	509.4	510.0	510.0	509.4	508.9	508.3	507.7
170°	513.4	514.0	514.5	514.4	513.8	513.2	512.6	511.9
172.5°	516.8	517.5	518.0	518.0	517.4	516.7	516.1	515.5
175°	520.5	521.1	521.7	521.7	521.1	520.5	519.9	519.2
177.5°	522.5	523.0	523.5	523.4	522.9	522.4	521.7	521.2
180°	522.5	522.5	522.5	522.5	522.5	522.5	522.5	522.5

(END OF REPORT)