

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: P332840-840

Luminaire Tested: **S124DIW-S1195D470U840-4F0-1E-UDD-F1**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332840-840
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: S124DIW-S1195D470U840-4F0-1E-UDD-F1
Description: DEFINE 4 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 1195 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
UPLIGHT 470 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 6807.7 lumens
Efficiency: N/A
Efficacy: 129.9 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.17 / 1.3
Luminous Opening: Rectangular (W 0.33' x L: 4' x H: 0')
CIE Type: Semi-Direct

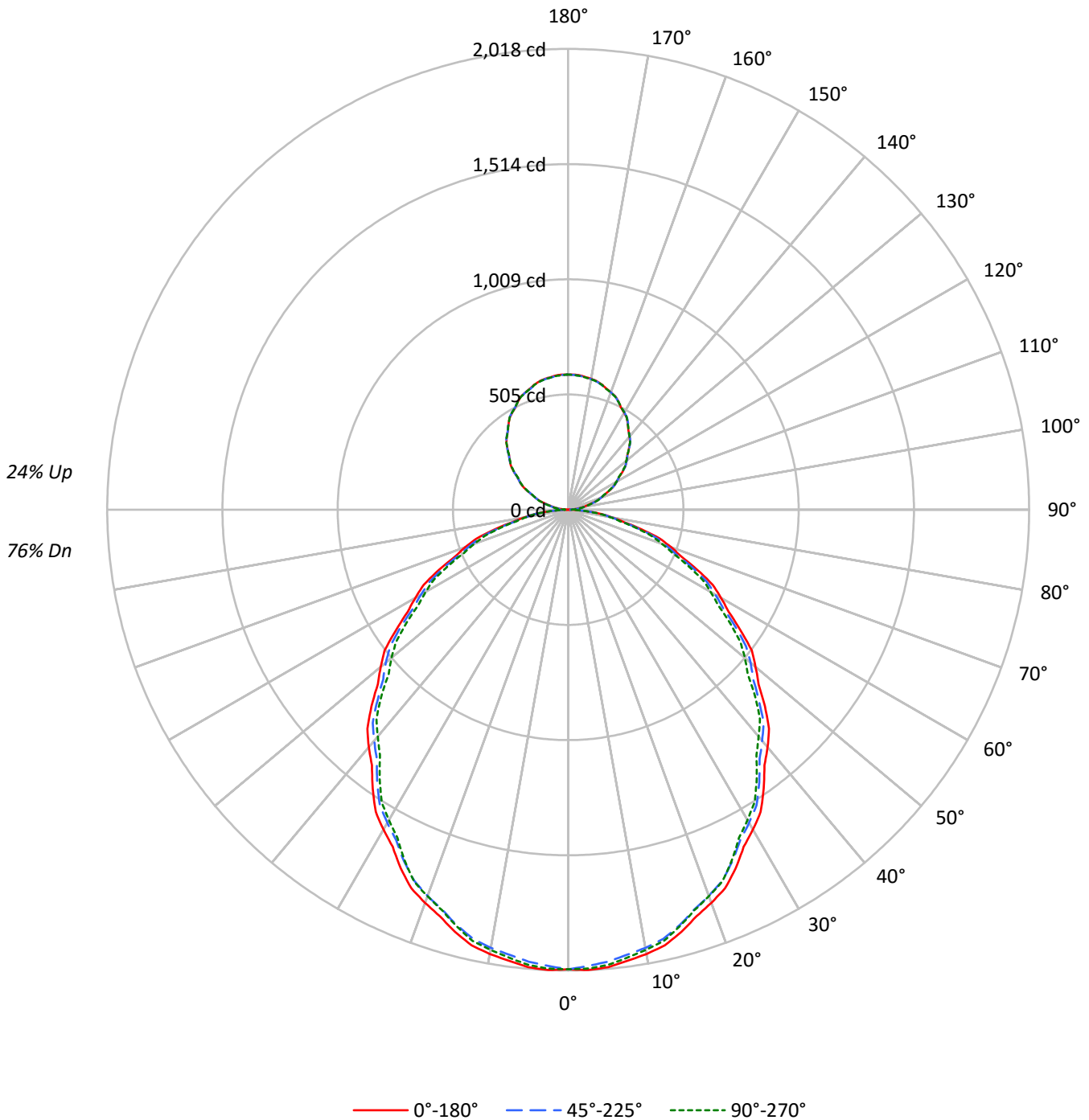
Input Watts (W): 52.4
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	108	108	108	108	98	98	98	88	88	88	80	80	80	76
1	104	99	95	91	98	94	91	88	86	83	80	78	76	74	71	69	67	64
2	94	86	80	75	89	83	77	72	75	71	67	68	65	62	62	59	57	53
3	86	76	68	62	82	73	66	60	66	61	56	60	56	52	55	51	48	45
4	79	67	59	53	75	65	57	51	59	53	48	54	49	45	49	45	42	39
5	72	60	52	45	69	58	50	44	53	46	41	49	43	39	44	40	36	34
6	67	54	46	40	63	52	44	39	48	41	36	44	38	34	40	36	32	30
7	62	49	41	35	59	47	39	34	44	37	32	40	35	30	37	32	29	26
8	58	45	37	31	55	43	36	30	40	33	29	37	31	27	34	29	26	24
9	54	41	33	28	51	40	32	27	37	30	26	34	28	25	31	27	23	21
10	50	38	30	25	48	36	29	25	34	28	23	31	26	22	29	24	21	19

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	16247	16247	16247
5°	16295	16100	16216
10°	16193	15969	16047
15°	15998	15742	15782
20°	15738	15460	15474
25°	15441	15139	15097
30°	15077	14762	14626
35°	14701	14366	14177
40°	14309	13918	13663
45°	13900	13476	13218
50°	13448	13083	12679
55°	12960	12573	12165
60°	12471	12003	11638
65°	11922	11459	10997
70°	11306	10733	10315
75°	10359	9860	9607
80°	9219	8847	8619
85°	8068	7762	7614



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	189.5	2.8
10°-20°	534.0	7.8
20°-30°	786.0	11.5
30°-40°	913.7	13.4
40°-50°	913.7	13.4
50°-60°	799.3	11.7
60°-70°	593.6	8.7
70°-80°	337.2	5.0
80°-90°	99.1	1.5
90°-100°	39.0	0.6
100°-110°	115.6	1.7
110°-120°	196.2	2.9
120°-130°	258.7	3.8
130°-140°	290.6	4.3
140°-150°	285.5	4.2
150°-160°	240.2	3.5
160°-170°	159.8	2.3
170°-180°	56.0	0.8
0°-30°	1509.5	22.2
0°-40°	2423.2	35.6
0°-60°	4136.2	60.8
0°-90°	5166.1	75.9
90°-120°	350.9	5.2
90°-150°	1185.7	17.4
90°-180°	1642.0	24.1
0°-180°	6807.7	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2012	2012	2012	2012	2012	
5°	2011	2004	1987	2003	2001	191
15°	1914	1907	1884	1892	1888	539
25°	1734	1722	1700	1701	1695	797
35°	1492	1480	1458	1447	1438	932
45°	1218	1205	1180	1163	1158	938
55°	921	915	893	875	864	824
65°	624	616	600	584	576	618
75°	332	324	316	310	308	353
85°	87	87	84	84	82	96
90°	1	6	10	13	14	6
95°	28	32	35	36	36	31
105°	107	107	109	110	112	113
115°	200	199	199	198	198	197
125°	290	290	290	289	288	259
135°	375	377	378	377	375	290
145°	455	457	458	457	456	285
155°	522	522	521	523	521	240
165°	568	566	566	568	566	160
175°	591	589	588	591	588	56
180°	592	592	592	592	592	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	2012.5	2012.5	2012.5	2012.5	2012.5	2012.5	2012.5	2012.5	2012.5	2012.5	2012.5
2.5°	2017.6	2016.8	2015.9	2015.1	2014.2	2012.2	2009.0	2005.9	2002.8	1999.6	2002.5
5°	2010.8	2009.4	2008.0	2006.6	2005.2	2002.5	1998.5	1994.6	1990.6	1986.7	1990.6
7.5°	1992.2	1990.7	1989.3	1987.8	1986.4	1983.6	1979.1	1974.8	1970.4	1966.0	1969.2
10°	1975.4	1974.0	1972.6	1971.1	1969.6	1966.6	1962.0	1957.3	1952.7	1948.0	1950.9
12.5°	1953.5	1952.1	1950.6	1949.1	1947.7	1944.5	1939.6	1934.7	1929.8	1924.8	1927.9
15°	1914.1	1912.7	1911.3	1909.9	1908.3	1905.0	1899.6	1894.2	1888.9	1883.5	1885.6
17.5°	1866.7	1864.9	1863.1	1861.4	1859.6	1856.1	1851.0	1845.9	1840.9	1835.7	1837.1
20°	1831.9	1830.1	1828.3	1826.5	1824.7	1821.1	1815.7	1810.4	1805.0	1799.6	1800.7
22.5°	1794.4	1792.1	1789.8	1787.4	1785.0	1781.1	1775.7	1770.4	1765.0	1759.6	1761.6
25°	1733.5	1731.0	1728.5	1726.0	1723.4	1719.7	1714.6	1709.7	1704.7	1699.6	1700.0
27.5°	1663.9	1661.2	1658.7	1656.1	1653.6	1649.9	1645.3	1640.6	1636.0	1631.2	1630.4
30°	1617.4	1614.6	1611.6	1608.8	1606.0	1602.2	1597.5	1592.9	1588.2	1583.6	1582.2
32.5°	1568.4	1565.8	1563.3	1560.6	1558.0	1554.3	1549.3	1544.4	1539.4	1534.5	1532.8
35°	1491.7	1489.1	1486.6	1484.1	1481.6	1477.8	1472.8	1467.8	1462.8	1457.7	1455.2
37.5°	1410.7	1408.4	1406.1	1403.8	1401.5	1397.7	1392.3	1386.9	1381.5	1376.1	1373.4
40°	1357.8	1354.9	1352.0	1349.2	1346.4	1342.2	1336.9	1331.4	1326.1	1320.7	1317.1
42.5°	1301.0	1299.3	1297.6	1295.9	1294.1	1290.3	1284.3	1278.4	1272.4	1266.5	1262.3
45°	1217.5	1215.0	1212.4	1209.9	1207.5	1203.4	1197.6	1191.8	1186.1	1180.4	1176.5
47.5°	1130.0	1128.3	1126.6	1124.9	1123.2	1119.7	1114.4	1109.1	1103.8	1098.5	1094.1
50°	1070.8	1069.3	1067.8	1066.4	1065.0	1061.8	1056.7	1051.8	1046.7	1041.7	1036.7
52.5°	1012.7	1011.0	1009.3	1007.5	1005.8	1002.3	997.0	991.7	986.4	981.1	976.6
55°	920.8	919.7	918.7	917.6	916.5	913.4	908.4	903.4	898.4	893.3	889.1
57.5°	833.0	831.8	830.6	829.4	828.2	825.1	820.1	815.2	810.2	805.3	801.2
60°	772.4	770.6	768.8	767.1	765.3	762.0	757.4	752.8	748.0	743.4	740.1
62.5°	713.1	711.6	710.0	708.5	707.1	703.9	698.9	694.0	689.0	684.1	681.2
65°	624.1	622.3	620.5	618.6	616.9	614.2	610.7	607.0	603.5	599.9	596.3
67.5°	534.4	532.8	531.1	529.5	527.9	525.2	521.8	518.4	514.9	511.5	508.1
70°	479.0	476.5	473.9	471.4	468.9	466.3	463.3	460.5	457.6	454.7	451.9
72.5°	419.6	417.1	414.5	412.0	409.6	407.2	404.9	402.5	400.3	398.0	395.7
75°	332.1	330.4	328.6	326.8	325.0	323.3	321.4	319.6	317.9	316.1	314.7
77.5°	248.6	247.8	247.1	246.3	245.5	244.3	242.8	241.2	239.6	238.0	237.6
80°	198.3	197.2	196.2	195.1	194.1	193.2	192.5	191.7	191.0	190.3	189.6
82.5°	149.4	148.9	148.3	147.8	147.3	147.0	146.8	146.7	146.5	146.4	146.0
85°	87.1	87.1	87.1	87.1	87.1	86.7	86.0	85.3	84.5	83.8	83.8
87.5°	33.8	33.7	33.7	33.6	33.5	33.4	33.3	33.2	33.1	33.0	33.1
90°	1.4	2.5	3.6	4.7	5.9	6.8	7.7	8.5	9.3	10.1	10.7
92.5°	9.8	11.1	12.3	13.6	14.9	15.9	16.5	17.0	17.6	18.1	18.5
95°	27.5	28.4	29.3	30.2	31.1	31.9	32.6	33.3	34.0	34.7	35.0
97.5°	48.0	48.7	49.4	50.2	50.9	51.7	52.5	53.3	54.1	55.0	55.3
100°	64.0	64.4	64.8	65.2	65.7	66.3	67.3	68.2	69.1	70.0	70.2
102.5°	80.9	81.1	81.2	81.4	81.6	82.1	82.9	83.7	84.5	85.4	85.6
105°	106.6	106.7	106.8	106.9	107.0	107.2	107.7	108.1	108.5	108.9	109.2
107.5°	133.6	133.7	133.9	134.0	134.1	134.2	134.3	134.3	134.4	134.4	134.7
110°	151.9	152.1	152.3	152.5	152.7	152.8	152.7	152.6	152.5	152.4	152.2



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	171.0	171.0	171.1	171.1	171.2	171.1	170.9	170.7	170.5	170.4	170.3
115°	199.5	199.5	199.5	199.5	199.5	199.4	199.2	199.0	198.8	198.6	198.5
117.5°	226.4	226.5	226.6	226.7	226.7	226.7	226.6	226.4	226.3	226.1	225.8
120°	244.4	244.8	245.2	245.6	246.0	246.0	245.7	245.4	245.1	244.8	244.3
122.5°	263.1	263.2	263.4	263.5	263.7	263.7	263.6	263.4	263.3	263.2	262.8
125°	290.5	290.5	290.5	290.5	290.5	290.5	290.4	290.3	290.2	290.1	289.9
127.5°	315.6	315.9	316.2	316.5	316.8	316.9	316.7	316.5	316.4	316.2	316.0
130°	333.2	333.5	333.8	334.1	334.4	334.5	334.5	334.5	334.5	334.5	334.3
132.5°	351.0	351.3	351.5	351.7	351.9	352.0	351.9	351.8	351.8	351.7	351.5
135°	374.8	375.4	376.0	376.6	377.2	377.5	377.5	377.5	377.5	377.5	377.3
137.5°	400.6	400.9	401.1	401.4	401.7	401.9	402.1	402.3	402.4	402.6	402.3
140°	417.8	418.0	418.2	418.4	418.6	418.7	418.7	418.7	418.7	418.7	418.6
142.5°	433.5	433.7	433.9	434.1	434.3	434.4	434.3	434.2	434.1	434.0	434.0
145°	455.3	455.8	456.2	456.6	457.0	457.2	457.3	457.4	457.5	457.6	457.5
147.5°	477.0	477.4	477.9	478.4	478.9	479.1	479.0	478.9	478.9	478.8	478.7
150°	490.1	490.5	490.9	491.3	491.7	491.9	491.9	491.9	491.9	491.9	491.9
152.5°	502.5	502.8	503.0	503.3	503.5	503.7	503.7	503.8	503.9	504.0	504.2
155°	521.7	521.7	521.7	521.7	521.7	521.6	521.5	521.4	521.3	521.2	521.6
157.5°	537.8	537.6	537.5	537.2	537.0	536.9	536.9	536.9	536.8	536.8	537.1
160°	547.3	547.2	547.1	547.0	546.9	546.8	546.7	546.6	546.5	546.4	546.7
162.5°	556.1	555.8	555.5	555.3	555.0	554.8	554.7	554.6	554.5	554.4	555.0
165°	567.8	567.5	567.2	566.9	566.6	566.4	566.2	566.0	565.8	565.6	566.2
167.5°	576.9	576.5	576.1	575.7	575.2	575.0	575.0	575.1	575.1	575.1	575.7
170°	582.1	581.6	581.1	580.6	580.1	579.9	580.0	580.1	580.2	580.3	580.9
172.5°	585.7	585.3	584.9	584.5	584.0	583.8	583.8	583.9	583.9	583.9	584.6
175°	590.8	590.3	589.8	589.3	588.8	588.4	588.3	588.2	588.1	588.0	588.8
177.5°	592.4	592.0	591.6	591.2	590.8	590.6	590.6	590.6	590.6	590.6	591.2
180°	591.7	591.7	591.7	591.7	591.7	591.7	591.7	591.7	591.7	591.7	591.7



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	2012.5	2012.5	2012.5	2012.5	2012.5	2012.5	2012.5	2012.5
2.5°	2005.3	2008.2	2011.0	2012.4	2012.1	2011.8	2011.4	2011.1
5°	1994.6	1998.5	2002.5	2004.1	2003.4	2002.7	2002.0	2001.1
7.5°	1972.4	1975.5	1978.6	1980.0	1979.6	1979.1	1978.7	1978.3
10°	1953.7	1956.6	1959.4	1960.6	1959.8	1959.1	1958.3	1957.6
12.5°	1931.1	1934.2	1937.4	1938.4	1937.4	1936.4	1935.4	1934.4
15°	1887.7	1890.0	1892.1	1892.6	1891.6	1890.5	1889.4	1888.3
17.5°	1838.5	1839.9	1841.2	1841.5	1840.8	1840.1	1839.4	1838.7
20°	1801.8	1802.8	1803.9	1804.1	1803.4	1802.7	1802.0	1801.2
22.5°	1763.5	1765.4	1767.4	1767.7	1766.5	1765.1	1763.8	1762.5
25°	1700.4	1700.7	1701.1	1700.5	1699.1	1697.7	1696.3	1694.9
27.5°	1629.5	1628.7	1627.8	1626.5	1624.7	1623.0	1621.1	1619.3
30°	1580.6	1579.2	1577.8	1576.2	1574.4	1572.7	1570.8	1569.0
32.5°	1531.1	1529.3	1527.6	1525.9	1524.1	1522.3	1520.6	1518.7
35°	1452.8	1450.3	1447.7	1445.6	1443.8	1442.0	1440.2	1438.5
37.5°	1370.7	1368.0	1365.2	1362.7	1360.4	1358.0	1355.6	1353.2
40°	1313.5	1309.9	1306.4	1303.6	1301.9	1300.1	1298.3	1296.5
42.5°	1258.2	1254.1	1249.9	1247.2	1246.0	1244.8	1243.5	1242.3
45°	1172.6	1168.6	1164.7	1162.2	1161.0	1159.9	1158.9	1157.8
47.5°	1089.6	1085.2	1080.8	1077.1	1074.4	1071.7	1068.9	1066.2
50°	1031.7	1026.6	1021.7	1018.0	1015.9	1013.8	1011.6	1009.5
52.5°	972.2	967.8	963.3	959.8	957.0	954.3	951.6	948.9
55°	884.7	880.5	876.2	872.9	870.8	868.7	866.5	864.3
57.5°	797.2	793.0	789.0	785.9	783.9	781.7	779.6	777.6
60°	736.9	733.8	730.5	728.0	726.2	724.4	722.7	720.8
62.5°	678.1	675.2	672.3	669.9	668.1	666.3	664.6	662.8
65°	592.7	589.2	585.5	582.9	581.1	579.3	577.4	575.7
67.5°	504.6	501.2	497.8	495.7	495.2	494.7	494.2	493.7
70°	449.0	446.2	443.2	441.3	440.2	439.2	438.1	437.0
72.5°	393.4	391.1	388.8	387.1	386.1	385.0	383.8	382.8
75°	313.2	311.7	310.3	309.4	309.1	308.7	308.3	308.0
77.5°	237.1	236.7	236.3	235.6	234.7	233.8	232.8	231.9
80°	188.8	188.1	187.4	186.9	186.5	186.1	185.8	185.4
82.5°	145.5	145.1	144.7	144.3	143.9	143.6	143.2	142.9
85°	83.8	83.8	83.8	83.7	83.3	82.9	82.6	82.2
87.5°	33.2	33.3	33.4	33.5	33.6	33.6	33.6	33.7
90°	11.3	11.9	12.5	12.9	13.1	13.3	13.5	13.7
92.5°	18.9	19.2	19.6	19.8	20.0	20.1	20.2	20.3
95°	35.3	35.6	36.0	36.2	36.2	36.2	36.2	36.2
97.5°	55.7	56.1	56.5	56.7	56.7	56.7	56.7	56.7
100°	70.4	70.6	70.8	70.9	70.9	70.9	70.9	70.9
102.5°	85.9	86.2	86.5	86.7	86.7	86.8	86.9	87.1
105°	109.6	109.9	110.2	110.5	110.8	111.1	111.4	111.7
107.5°	135.0	135.3	135.6	135.7	135.7	135.7	135.6	135.6
110°	152.0	151.8	151.6	151.6	151.9	152.2	152.5	152.8



TEST NUMBER: P332840-840

CATALOG NUMBER: S124DIW-S1195D470U840-4F0-1E-UDD-F1

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	170.3	170.2	170.2	170.2	170.3	170.3	170.4	170.4
115°	198.4	198.3	198.2	198.1	198.0	197.9	197.8	197.7
117.5°	225.5	225.1	224.8	224.5	224.3	224.1	223.9	223.7
120°	243.8	243.3	242.8	242.7	242.9	243.1	243.3	243.5
122.5°	262.5	262.1	261.8	261.4	261.1	260.6	260.2	259.9
125°	289.7	289.5	289.3	289.1	288.9	288.7	288.5	288.3
127.5°	315.8	315.6	315.4	315.2	315.1	314.9	314.8	314.6
130°	334.1	333.9	333.7	333.4	333.0	332.5	332.1	331.7
132.5°	351.3	351.1	350.9	350.7	350.5	350.4	350.2	350.1
135°	377.1	376.9	376.7	376.5	376.2	375.9	375.6	375.3
137.5°	402.0	401.8	401.5	401.4	401.5	401.5	401.6	401.7
140°	418.5	418.4	418.3	418.2	418.1	418.0	417.9	417.8
142.5°	434.0	434.0	434.0	433.9	433.9	433.9	433.9	433.9
145°	457.4	457.3	457.2	457.0	456.7	456.4	456.1	455.8
147.5°	478.6	478.5	478.5	478.4	478.3	478.2	478.1	478.0
150°	491.9	491.9	491.9	491.9	491.8	491.7	491.6	491.5
152.5°	504.5	504.7	505.0	504.9	504.7	504.4	504.2	503.9
155°	522.0	522.4	522.8	522.8	522.4	522.0	521.6	521.2
157.5°	537.5	537.8	538.1	538.1	537.8	537.3	537.0	536.6
160°	547.0	547.3	547.6	547.5	547.0	546.5	545.9	545.4
162.5°	555.5	556.1	556.6	556.6	556.1	555.6	555.1	554.6
165°	566.8	567.4	568.0	568.2	567.7	567.3	566.9	566.5
167.5°	576.3	576.9	577.5	577.5	576.9	576.3	575.6	575.0
170°	581.5	582.1	582.7	582.6	581.9	581.2	580.5	579.8
172.5°	585.3	586.0	586.6	586.6	585.9	585.2	584.5	583.8
175°	589.5	590.2	590.9	590.9	590.2	589.5	588.8	588.0
177.5°	591.8	592.3	592.9	592.8	592.2	591.6	590.9	590.3
180°	591.7	591.7	591.7	591.7	591.7	591.7	591.7	591.7

(END OF REPORT)