

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: P332846-840

Luminaire Tested: **S124DIW-S1195D770U840-4F0-1E-UDD-F1**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332846-840
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-S1195D770U840-4F0-1E-UDD-F1
Description: DEFINE 4 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 1195 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
UPLIGHT 770 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 7855.9 lumens
Efficiency: N/A
Efficacy: 131.4 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

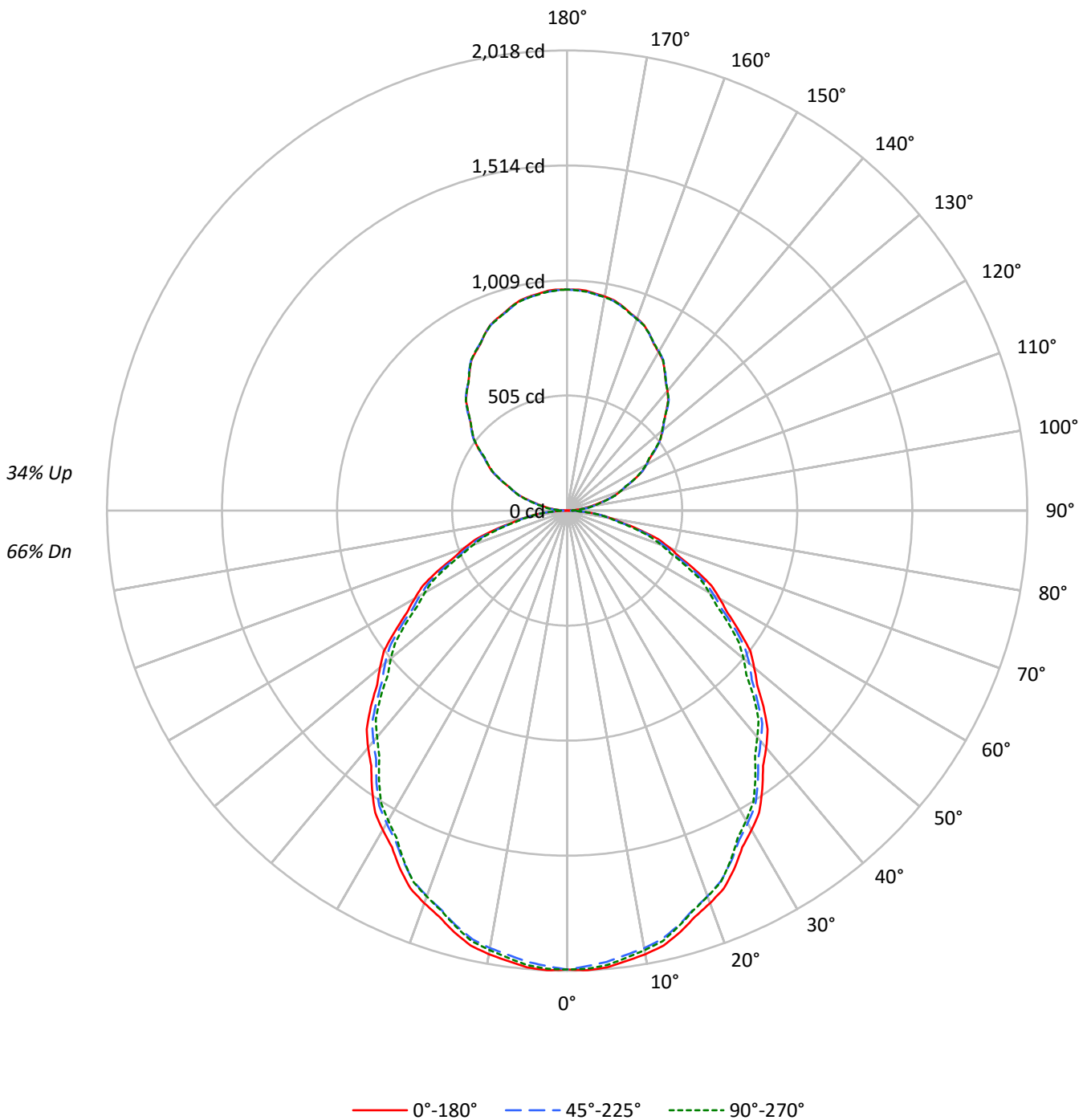
Input Watts (W): 59.8
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	111	111	111	111	104	104	104	104	92	92	92	81	81	81	71	71	71	66
1	101	97	93	89	95	91	88	85	81	78	76	71	69	67	62	61	60	55
2	92	85	78	73	86	80	74	69	71	66	63	63	59	56	55	52	50	46
3	84	74	67	61	79	70	63	58	62	57	53	55	51	48	49	45	43	39
4	77	66	58	51	72	62	55	49	56	50	45	49	45	41	43	40	37	34
5	71	59	50	44	66	56	48	42	50	44	39	44	39	35	39	35	32	29
6	65	53	45	39	61	50	43	37	45	39	34	40	35	31	36	31	28	26
7	60	48	40	34	57	45	38	33	41	35	30	37	31	28	33	28	25	23
8	56	44	36	30	53	41	34	29	37	31	27	33	28	25	30	26	23	20
9	52	40	32	27	49	38	31	26	34	28	24	31	26	22	28	23	20	18
10	49	37	29	24	46	35	28	23	32	26	22	29	24	20	26	22	19	17

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	2.4
10°-20°	534.0	6.8
20°-30°	786.0	10.0
30°-40°	913.7	11.6
40°-50°	913.7	11.6
50°-60°	799.3	10.2
60°-70°	593.6	7.6
70°-80°	337.2	4.3
80°-90°	100.2	1.3
90°-100°	63.9	0.8
100°-110°	189.3	2.4
110°-120°	321.4	4.1
120°-130°	423.8	5.4
130°-140°	475.9	6.1
140°-150°	467.7	6.0
150°-160°	393.4	5.0
160°-170°	261.7	3.3
170°-180°	91.6	1.2
0°-30°	1509.5	19.2
0°-40°	2423.2	30.8
0°-60°	4136.2	52.7
0°-90°	5167.2	65.8
90°-120°	574.6	7.3
90°-150°	1942.0	24.7
90°-180°	2689.0	34.2
0°-180°	7855.9	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°	2	10	16	21	22	7
95°	45	52	57	59	59	50
105°	175	176	178	181	183	185
115°	327	327	325	325	324	322
125°	476	476	475	474	472	424
135°	614	618	618	617	615	475
145°	746	749	750	749	746	467
155°	854	854	854	856	854	393
165°	930	928	926	930	928	262
175°	968	964	963	968	963	92
180°	969	969	969	969	969	



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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°	34.0	34.0	34.1	34.2	34.3	34.3	34.3	34.3	34.2	34.2	34.4
90°	2.2	4.0	6.0	7.8	9.6	11.2	12.5	13.8	15.1	16.5	17.5
92.5°	16.1	18.2	20.2	22.3	24.4	26.0	26.9	27.8	28.8	29.7	30.3
95°	44.9	46.5	48.0	49.5	51.0	52.3	53.4	54.6	55.8	57.0	57.5
97.5°	78.6	79.8	81.0	82.1	83.3	84.6	86.0	87.4	88.8	90.1	90.7
100°	104.9	105.6	106.2	106.9	107.6	108.7	110.2	111.7	113.2	114.7	115.0
102.5°	132.5	132.8	133.0	133.3	133.6	134.4	135.7	137.1	138.5	139.9	140.4
105°	174.6	174.8	175.0	175.1	175.3	175.7	176.4	177.0	177.7	178.3	178.8
107.5°	218.8	219.0	219.2	219.4	219.6	219.8	219.9	220.0	220.2	220.3	220.7
110°	248.8	249.1	249.5	249.8	250.1	250.2	250.0	249.9	249.7	249.5	249.2



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	280.0	280.0	280.1	280.2	280.2	280.1	279.8	279.5	279.2	278.9	278.9
115°	326.8	326.8	326.8	326.8	326.8	326.6	326.3	326.0	325.6	325.3	325.1
117.5°	370.8	371.0	371.1	371.2	371.4	371.3	371.1	370.9	370.6	370.4	369.8
120°	400.2	400.9	401.5	402.2	402.9	402.9	402.5	402.0	401.5	401.0	400.1
122.5°	430.8	431.1	431.3	431.6	431.9	431.9	431.7	431.4	431.2	431.0	430.4
125°	475.9	475.9	475.9	475.9	475.9	475.8	475.6	475.5	475.3	475.1	474.8
127.5°	516.8	517.4	517.9	518.4	518.9	519.0	518.7	518.5	518.2	518.0	517.6
130°	545.6	546.1	546.6	547.1	547.6	547.9	547.9	547.9	547.9	547.9	547.5
132.5°	575.0	575.4	575.7	576.1	576.5	576.6	576.4	576.3	576.2	576.0	575.7
135°	613.9	614.8	615.8	616.8	617.8	618.3	618.3	618.3	618.3	618.3	618.0
137.5°	656.1	656.6	657.0	657.5	658.0	658.3	658.6	658.8	659.1	659.4	658.9
140°	684.3	684.6	685.0	685.3	685.6	685.8	685.8	685.8	685.8	685.8	685.6
142.5°	710.0	710.4	710.7	711.0	711.4	711.6	711.3	711.2	711.1	710.9	710.9
145°	745.8	746.4	747.1	747.8	748.4	748.8	749.0	749.2	749.3	749.5	749.3
147.5°	781.1	781.9	782.7	783.6	784.4	784.7	784.6	784.4	784.3	784.2	784.0
150°	802.7	803.3	804.1	804.8	805.4	805.8	805.8	805.8	805.8	805.8	805.8
152.5°	823.1	823.5	823.9	824.4	824.8	825.0	825.1	825.3	825.4	825.5	825.9
155°	854.4	854.4	854.4	854.4	854.4	854.3	854.1	854.0	853.8	853.7	854.3
157.5°	880.8	880.5	880.2	879.9	879.6	879.5	879.4	879.4	879.4	879.3	879.8
160°	896.5	896.3	896.1	896.0	895.8	895.5	895.4	895.2	895.0	894.9	895.4
162.5°	910.8	910.4	909.9	909.5	909.1	908.8	908.6	908.5	908.3	908.1	909.0
165°	930.2	929.7	929.2	928.7	928.2	927.8	927.4	927.1	926.8	926.3	927.4
167.5°	944.9	944.3	943.6	942.9	942.2	941.8	941.9	941.9	941.9	942.0	943.0
170°	953.4	952.5	951.7	950.9	950.1	949.7	949.9	950.1	950.2	950.4	951.4
172.5°	959.4	958.7	958.0	957.3	956.5	956.2	956.2	956.3	956.3	956.3	957.6
175°	967.7	966.7	965.9	965.1	964.3	963.8	963.6	963.4	963.3	963.1	964.3
177.5°	970.3	969.7	969.0	968.4	967.7	967.3	967.3	967.3	967.3	967.3	968.3
180°	969.1	969.1	969.1	969.1	969.1	969.1	969.1	969.1	969.1	969.1	969.1



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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°	34.6	34.8	35.0	35.1	35.2	35.3	35.3	35.4
90°	18.5	19.5	20.5	21.1	21.5	21.8	22.1	22.5
92.5°	30.9	31.5	32.1	32.5	32.7	32.9	33.1	33.3
95°	58.0	58.5	59.0	59.2	59.2	59.2	59.2	59.2
97.5°	91.3	91.9	92.5	92.8	92.8	92.8	92.8	92.8
100°	115.3	115.6	116.0	116.1	116.1	116.1	116.1	116.1
102.5°	140.8	141.3	141.7	142.0	142.2	142.3	142.4	142.6
105°	179.4	179.9	180.4	180.9	181.4	181.9	182.4	182.9
107.5°	221.2	221.6	222.1	222.3	222.3	222.3	222.2	222.2
110°	248.9	248.6	248.2	248.3	248.8	249.3	249.8	250.3



TEST NUMBER: P332846-840

CATALOG NUMBER: S124DIW-S1195D770U840-4F0-1E-UDD-F1

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	278.8	278.7	278.7	278.7	278.8	278.9	279.0	279.1
115°	325.0	324.8	324.6	324.5	324.3	324.2	324.0	323.8
117.5°	369.3	368.7	368.1	367.7	367.4	367.0	366.7	366.4
120°	399.3	398.5	397.7	397.4	397.8	398.1	398.4	398.7
122.5°	429.8	429.3	428.7	428.1	427.5	426.9	426.4	425.8
125°	474.5	474.2	473.8	473.5	473.2	472.8	472.5	472.2
127.5°	517.3	516.9	516.5	516.2	516.0	515.7	515.4	515.2
130°	547.2	546.8	546.5	546.0	545.4	544.7	544.0	543.4
132.5°	575.4	575.1	574.7	574.4	574.2	573.9	573.6	573.4
135°	617.6	617.3	617.0	616.6	616.1	615.6	615.1	614.6
137.5°	658.5	658.1	657.7	657.5	657.6	657.7	657.8	657.9
140°	685.5	685.3	685.1	685.0	684.8	684.6	684.5	684.3
142.5°	710.9	710.8	710.8	710.8	710.7	710.7	710.7	710.6
145°	749.2	749.0	748.8	748.5	748.0	747.5	747.0	746.5
147.5°	783.9	783.8	783.6	783.5	783.3	783.2	782.9	782.7
150°	805.8	805.8	805.8	805.7	805.5	805.3	805.2	805.0
152.5°	826.3	826.7	827.1	827.1	826.7	826.3	825.8	825.4
155°	855.1	855.7	856.4	856.4	855.7	855.1	854.3	853.7
157.5°	880.3	880.8	881.3	881.3	880.7	880.2	879.6	879.0
160°	896.0	896.5	897.0	896.8	896.0	895.0	894.2	893.4
162.5°	909.9	910.8	911.7	911.7	910.9	910.1	909.3	908.4
165°	928.4	929.4	930.4	930.6	929.9	929.2	928.6	927.9
167.5°	944.0	944.9	945.9	945.9	944.9	943.9	942.9	941.8
170°	952.4	953.4	954.4	954.3	953.1	952.0	950.8	949.7
172.5°	958.7	959.8	960.9	960.9	959.7	958.6	957.4	956.2
175°	965.4	966.6	967.8	967.8	966.6	965.4	964.3	963.1
177.5°	969.2	970.1	971.1	971.0	969.9	968.9	967.8	966.7
180°	969.1	969.1	969.1	969.1	969.1	969.1	969.1	969.1

(END OF REPORT)