

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: P332845-840

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

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332845-840
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-6,
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-F
Description: DEFINE 4 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 1195 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
UPLIGHT 770 LUMENS PER FOOT, NO LENS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 8267.4 lumens
Efficiency: N/A
Efficacy: 138.3 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

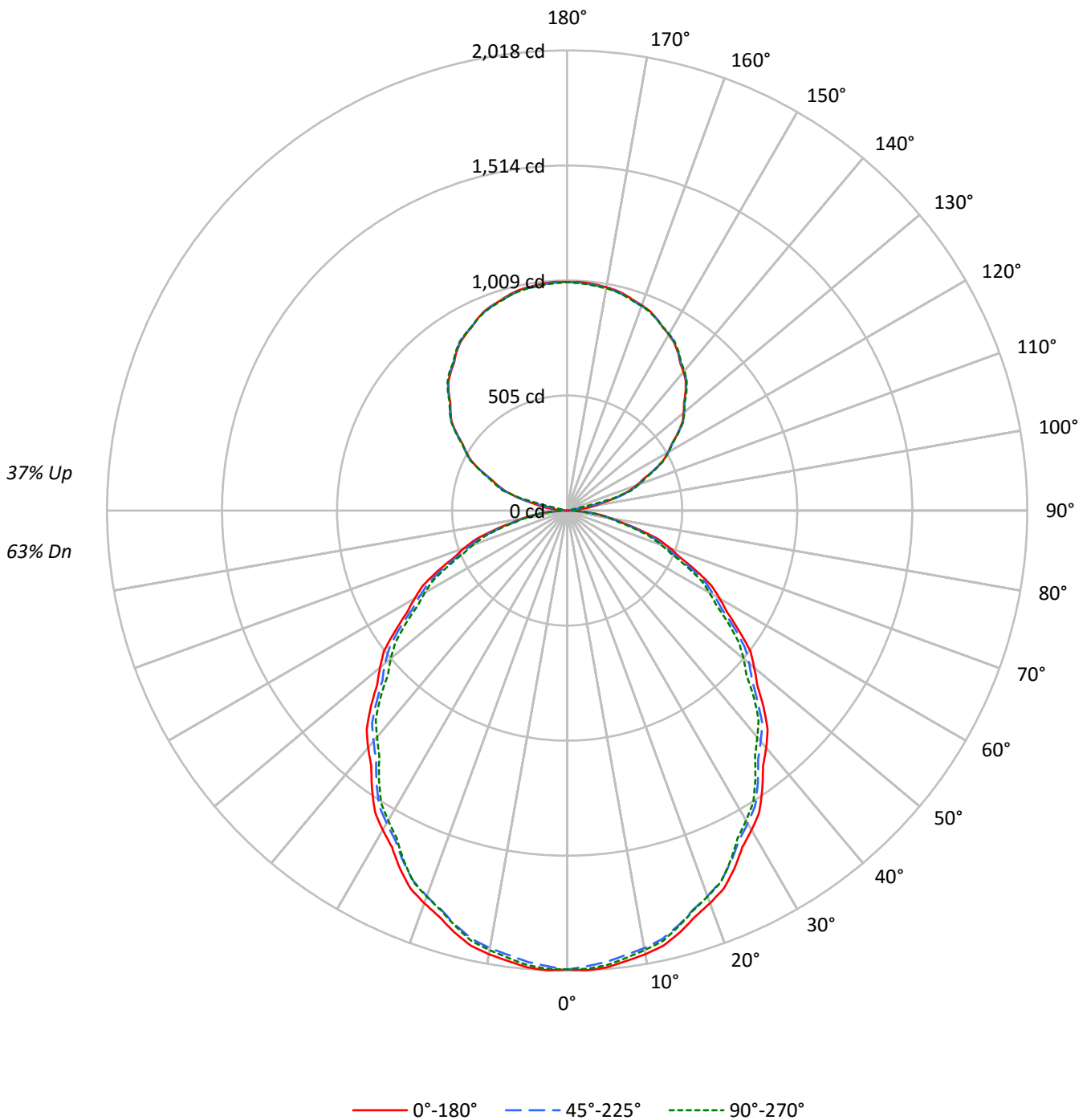
Input Watts (W): 59.8
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	110	110	110	110	103	103	103	103	90	90	90	78	78	78	68	68	68	63
1	101	96	92	89	94	90	87	84	79	77	74	69	67	65	60	58	57	53
2	92	84	78	72	86	79	73	69	69	65	61	61	57	55	53	50	48	44
3	84	74	66	60	78	69	63	57	61	56	52	54	50	46	47	43	41	37
4	76	65	57	51	71	62	54	49	54	49	44	48	43	40	42	38	35	32
5	70	58	50	44	66	55	48	42	49	43	38	43	38	34	38	34	31	28
6	65	52	44	38	61	50	42	37	44	38	33	39	34	30	34	30	27	24
7	60	47	39	34	56	45	37	32	40	34	29	35	30	27	31	27	24	22
8	56	43	35	30	52	41	34	29	36	30	26	32	27	24	29	25	22	19
9	52	39	32	27	49	37	30	26	34	28	24	30	25	22	26	22	20	17
10	49	36	29	24	46	34	28	23	31	25	21	28	23	20	25	21	18	16

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	2.3
10°-20°	534.0	6.5
20°-30°	786.0	9.5
30°-40°	913.7	11.1
40°-50°	913.7	11.1
50°-60°	799.3	9.7
60°-70°	593.6	7.2
70°-80°	337.2	4.1
80°-90°	100.2	1.2
90°-100°	34.3	0.4
100°-110°	218.6	2.6
110°-120°	418.1	5.1
120°-130°	530.7	6.4
130°-140°	567.9	6.9
140°-150°	531.0	6.4
150°-160°	428.2	5.2
160°-170°	276.2	3.3
170°-180°	95.2	1.2
0°-30°	1509.5	18.3
0°-40°	2423.2	29.3
0°-60°	4136.2	50.0
0°-90°	5167.2	62.5
90°-120°	670.9	8.1
90°-150°	2300.6	27.8
90°-180°	3100.0	37.5
0°-180°	8267.4	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°	41	17	16	21	22	53
105°	226	230	234	239	214	236
115°	421	423	423	424	424	414
125°	592	595	594	596	597	529
135°	735	734	737	738	740	566
145°	847	849	849	850	852	529
155°	929	929	927	930	928	428
165°	980	976	976	981	975	277
175°	1002	998	998	1004	996	95
180°	1002	1002	1002	1002	1002	



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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°	9.5	9.6	9.7	9.7	9.8	10.6	11.9	13.2	14.5	15.9	16.9
95°	41.2	35.5	29.9	24.2	18.6	15.9	16.0	16.2	16.4	16.5	17.5
97.5°	87.6	91.1	94.6	98.2	101.7	94.1	75.5	57.0	38.4	19.8	19.9
100°	122.9	125.9	129.0	131.9	134.9	124.9	102.0	79.0	55.9	33.0	30.2
102.5°	162.5	164.7	166.9	169.2	171.3	170.9	167.9	164.9	161.9	159.0	128.4
105°	225.6	226.6	227.6	228.6	229.6	230.6	231.4	232.2	233.1	233.9	235.4
107.5°	284.3	284.8	285.3	285.8	286.3	287.1	288.2	289.3	290.4	291.5	292.4
110°	323.9	324.4	324.9	325.4	325.8	326.6	327.6	328.6	329.6	330.5	330.9



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	362.2	363.1	364.1	364.9	365.8	366.5	367.0	367.4	367.9	368.4	368.3
115°	421.3	421.8	422.3	422.7	423.2	423.4	423.2	423.1	422.9	422.7	423.1
117.5°	474.5	475.1	475.8	476.5	477.2	477.7	478.1	478.4	478.8	479.2	479.1
120°	510.5	511.2	511.8	512.5	513.1	513.4	513.2	513.1	512.9	512.7	513.1
122.5°	544.1	544.4	544.8	545.2	545.6	545.9	546.2	546.4	546.6	546.9	547.1
125°	592.2	592.9	593.5	594.2	594.8	595.0	594.7	594.4	594.0	593.7	594.2
127.5°	637.7	637.9	638.1	638.2	638.4	638.9	639.6	640.5	641.2	642.0	641.9
130°	667.1	667.3	667.5	667.6	667.8	668.1	668.6	669.1	669.6	670.1	670.3
132.5°	694.2	694.5	694.8	695.0	695.3	695.8	696.4	697.1	697.7	698.3	698.5
135°	734.6	734.5	734.3	734.1	734.0	734.2	734.9	735.5	736.2	736.9	737.2
137.5°	770.4	770.5	770.6	770.6	770.7	771.1	771.8	772.5	773.4	774.1	774.4
140°	793.9	794.2	794.5	794.9	795.2	795.5	795.9	796.2	796.5	796.9	797.3
142.5°	814.9	815.5	816.1	816.6	817.2	817.6	817.8	818.0	818.2	818.4	818.8
145°	847.1	847.6	848.1	848.6	849.1	849.3	849.3	849.3	849.3	849.3	849.5
147.5°	872.7	873.6	874.5	875.5	876.5	876.8	876.7	876.5	876.3	876.2	876.3
150°	891.3	891.9	892.6	893.3	893.9	894.2	894.0	893.8	893.7	893.5	893.5
152.5°	906.9	907.4	908.0	908.5	909.0	909.1	908.8	908.6	908.3	908.0	908.2
155°	928.8	929.0	929.1	929.3	929.5	929.3	928.8	928.3	927.8	927.3	928.0
157.5°	947.3	947.2	947.1	947.0	946.8	946.4	945.9	945.3	944.7	944.2	945.0
160°	958.0	957.5	957.0	956.5	956.0	955.6	955.5	955.3	955.1	955.0	956.0
162.5°	967.6	966.9	966.3	965.7	965.0	964.6	964.5	964.3	964.1	964.0	965.0
165°	979.8	978.9	978.1	977.2	976.4	976.0	976.0	976.0	976.0	976.0	977.3
167.5°	989.4	988.5	987.6	986.7	985.8	985.4	985.3	985.2	985.1	985.0	986.4
170°	994.7	993.7	992.7	991.7	990.8	990.3	990.5	990.7	990.8	991.0	992.3
172.5°	998.4	997.3	996.3	995.3	994.3	993.9	994.1	994.2	994.4	994.6	995.9
175°	1002.2	1001.2	1000.3	999.3	998.3	997.8	997.9	998.2	998.4	998.5	1000.0
177.5°	1004.0	1003.1	1002.2	1001.2	1000.3	1000.0	1000.3	1000.5	1000.8	1001.0	1002.1
180°	1002.2	1002.2	1002.2	1002.2	1002.2	1002.2	1002.2	1002.2	1002.2	1002.2	1002.2



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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°	17.9	18.9	19.9	20.4	20.5	20.6	20.6	20.7
95°	18.5	19.5	20.5	21.1	21.2	21.4	21.6	21.7
97.5°	20.0	20.1	20.2	20.3	20.5	20.7	20.8	21.0
100°	27.4	24.4	21.6	20.3	20.5	20.7	20.8	21.0
102.5°	97.9	67.3	36.8	21.4	21.5	21.5	21.5	21.6
105°	236.9	238.3	239.8	237.6	231.7	225.6	219.6	213.7
107.5°	293.1	293.8	294.6	295.2	295.9	296.5	297.1	297.7
110°	331.2	331.5	331.9	332.3	332.9	333.4	333.9	334.4



TEST NUMBER: P332845-840

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

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	368.2	368.2	368.1	368.4	369.0	369.6	370.3	370.9
115°	423.4	423.7	424.1	424.2	424.2	424.2	424.2	424.2
117.5°	479.0	479.0	478.9	478.8	478.8	478.7	478.6	478.6
120°	513.4	513.7	514.0	514.0	513.7	513.4	513.1	512.7
122.5°	547.3	547.5	547.8	547.6	547.3	546.9	546.6	546.3
125°	594.7	595.2	595.7	596.0	596.2	596.3	596.5	596.7
127.5°	641.8	641.7	641.6	641.5	641.4	641.2	641.1	641.0
130°	670.4	670.7	670.9	670.9	670.9	670.9	670.9	670.9
132.5°	698.6	698.8	699.0	699.0	698.9	698.7	698.6	698.5
135°	737.5	737.9	738.2	738.5	738.8	739.2	739.5	739.8
137.5°	774.8	775.2	775.5	775.7	775.6	775.5	775.4	775.3
140°	797.8	798.3	798.8	799.2	799.3	799.5	799.7	799.8
142.5°	819.2	819.5	819.9	820.1	820.1	820.1	820.2	820.2
145°	849.6	849.8	850.0	850.2	850.5	850.9	851.2	851.5
147.5°	876.4	876.6	876.7	876.9	877.0	877.2	877.4	877.5
150°	893.5	893.5	893.5	893.6	893.8	893.9	894.1	894.2
152.5°	908.5	908.7	909.0	909.1	909.0	908.9	908.8	908.7
155°	928.6	929.3	929.9	930.0	929.5	929.0	928.5	928.1
157.5°	945.9	946.8	947.7	947.7	946.8	945.9	945.0	944.2
160°	957.0	958.0	959.0	959.0	958.0	957.0	956.0	955.0
162.5°	966.0	966.9	968.0	968.0	966.8	965.6	964.5	963.4
165°	978.7	980.0	981.3	981.3	979.8	978.3	976.7	975.2
167.5°	988.0	989.4	990.9	990.8	989.1	987.4	985.7	984.1
170°	993.6	995.0	996.3	996.1	994.5	992.8	991.2	989.5
172.5°	997.2	998.6	999.9	999.7	997.8	996.1	994.3	992.5
175°	1001.5	1003.0	1004.5	1004.2	1002.2	1000.3	998.3	996.2
177.5°	1003.2	1004.2	1005.3	1005.0	1003.4	1001.8	1000.3	998.7
180°	1002.2	1002.2	1002.2	1002.2	1002.2	1002.2	1002.2	1002.2

(END OF REPORT)