

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: P333101-840

Luminaire Tested: **S124RDIW-S1195D770U840-4F0-1E-UDD-F**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P333101-840
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: S124RDIW-S1195D770U840-4F0-1E-UDD-F
Description: DEFINE 4 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 1195 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER, REGRESSED
HOUSING
UPLIGHT 770 LUMENS PER FOOT, NO LENS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 7968.9 lumens
Efficiency: N/A
Efficacy: 133.3 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

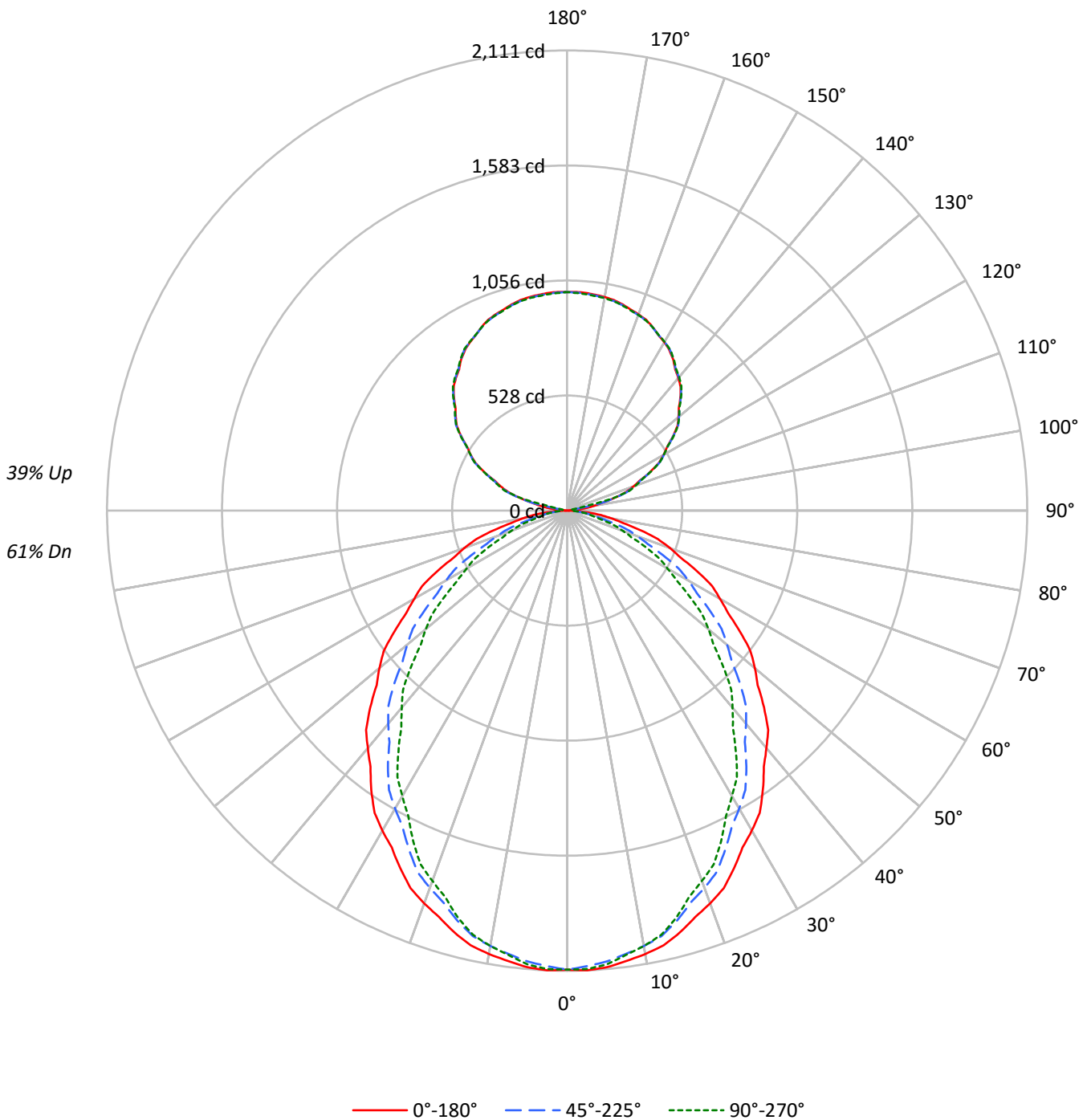
Input Watts (W): 59.8
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	110	110	110	110	103	103	103	103	89	89	89		77	77	77		66	66	66	61
1	101	96	93	89	94	90	87	84	79	77	74		69	67	65		59	58	57	52
2	92	85	78	73	86	79	74	69	70	66	62		61	58	55		52	50	48	44
3	84	75	67	61	78	70	64	58	62	57	53		54	50	47		47	44	41	38
4	77	66	58	52	72	62	55	50	55	49	45		48	44	40		42	39	36	33
5	71	59	51	45	66	56	49	43	49	44	39		44	39	35		38	34	31	29
6	65	53	45	39	61	50	43	38	45	39	34		39	35	31		35	31	28	25
7	61	48	40	35	57	46	38	33	41	35	30		36	31	28		32	28	25	22
8	56	44	36	31	53	42	35	30	37	31	27		33	28	25		29	25	22	20
9	53	40	33	28	49	38	31	27	34	28	24		30	26	22		27	23	20	18
10	49	37	30	25	46	35	28	24	32	26	22		28	24	20		25	21	19	17

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	17002	17002	17002
5°	17040	16832	16936
10°	16934	16629	16629
15°	16739	16280	16160
20°	16472	15821	15530
25°	16131	15284	14895
30°	15800	14716	14100
35°	15431	14128	13302
40°	14989	13460	12440
45°	14582	12795	11562
50°	14117	12031	10633
55°	13619	11234	9623
60°	13070	10362	8591
65°	12567	9270	7578
70°	11837	8068	6434
75°	10914	6691	5231
80°	9521	5100	4798
85°	8068	4631	4335



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	197.8	2.5
10°-20°	551.7	6.9
20°-30°	796.6	10.0
30°-40°	903.0	11.3
40°-50°	872.0	10.9
50°-60°	725.1	9.1
60°-70°	500.7	6.3
70°-80°	253.8	3.2
80°-90°	68.0	0.9
90°-100°	34.3	0.4
100°-110°	218.6	2.7
110°-120°	418.1	5.2
120°-130°	530.7	6.7
130°-140°	567.9	7.1
140°-150°	531.0	6.7
150°-160°	428.2	5.4
160°-170°	276.2	3.5
170°-180°	95.2	1.2
0°-30°	1546.1	19.4
0°-40°	2449.1	30.7
0°-60°	4046.2	50.8
0°-90°	4868.7	61.1
90°-120°	670.9	8.4
90°-150°	2300.6	28.9
90°-180°	3100.0	38.9
0°-180°	7968.9	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2106	2106	2106	2106	2106	
5°	2103	2096	2077	2092	2090	199
15°	2003	1987	1948	1944	1934	564
25°	1811	1780	1716	1689	1672	834
35°	1566	1513	1434	1380	1350	978
45°	1277	1215	1121	1044	1013	984
55°	968	901	798	717	684	865
65°	658	587	485	419	397	649
75°	350	289	214	179	168	369
85°	87	56	50	47	47	98
90°	2	10	16	21	22	6
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°	2106.0	2106.0	2106.0	2106.0	2106.0	2106.0	2106.0	2106.0	2106.0	2106.0	2106.0
2.5°	2111.1	2110.0	2108.9	2107.7	2106.6	2104.5	2101.3	2098.1	2095.0	2091.8	2095.0
5°	2102.7	2101.3	2099.9	2098.5	2097.1	2094.2	2089.9	2085.6	2081.3	2077.0	2080.5
7.5°	2083.8	2082.2	2080.7	2079.2	2077.7	2074.2	2068.6	2063.1	2057.4	2051.8	2054.2
10°	2065.7	2063.9	2062.1	2060.3	2058.5	2054.4	2048.0	2041.5	2035.1	2028.6	2030.0
12.5°	2042.5	2040.4	2038.3	2036.2	2034.2	2029.3	2021.7	2014.2	2006.5	1998.9	1999.8
15°	2002.8	1999.5	1996.4	1993.2	1989.9	1983.8	1974.9	1965.9	1956.9	1947.9	1947.2
17.5°	1954.8	1950.0	1945.4	1940.8	1936.1	1928.4	1917.6	1906.9	1896.1	1885.4	1883.4
20°	1917.3	1912.7	1908.0	1903.4	1898.7	1890.3	1878.1	1865.9	1853.7	1841.6	1838.7
22.5°	1876.0	1870.9	1865.6	1860.4	1855.1	1846.0	1832.9	1819.9	1806.9	1793.8	1789.5
25°	1810.9	1804.4	1798.0	1791.6	1785.1	1774.5	1759.9	1745.1	1730.5	1715.8	1709.7
27.5°	1742.5	1734.4	1726.4	1718.3	1710.1	1698.3	1682.5	1666.9	1651.1	1635.5	1627.9
30°	1694.9	1685.9	1676.9	1667.9	1659.0	1646.1	1629.2	1612.4	1595.6	1578.7	1569.7
32.5°	1644.5	1634.4	1624.3	1614.2	1604.1	1590.3	1572.9	1555.5	1538.0	1520.7	1510.3
35°	1565.8	1554.3	1542.9	1531.4	1519.9	1505.2	1487.3	1469.5	1451.5	1433.6	1421.4
37.5°	1481.7	1469.8	1457.9	1446.1	1434.3	1418.5	1398.7	1378.8	1359.0	1339.1	1325.4
40°	1422.3	1410.5	1398.7	1386.8	1374.9	1358.9	1338.5	1318.0	1297.6	1277.2	1262.1
42.5°	1365.5	1353.1	1340.7	1328.3	1316.0	1299.1	1277.8	1256.5	1235.3	1214.0	1198.6
45°	1277.2	1263.8	1250.6	1237.4	1224.2	1206.7	1185.3	1163.8	1142.3	1120.7	1103.2
47.5°	1185.9	1172.2	1158.5	1144.8	1131.1	1113.1	1090.8	1068.3	1046.0	1023.7	1005.4
50°	1124.0	1109.9	1096.0	1082.1	1068.0	1049.6	1026.6	1003.7	980.8	957.9	940.0
52.5°	1060.8	1047.0	1033.4	1019.7	1006.0	987.3	963.9	940.4	916.9	893.3	875.1
55°	967.6	953.2	938.9	924.5	910.2	891.4	868.1	844.9	821.5	798.2	779.6
57.5°	875.3	860.4	845.5	830.6	815.7	796.8	773.9	750.8	727.9	705.0	686.1
60°	809.5	795.2	780.8	766.5	752.1	733.6	710.6	687.7	664.7	641.8	623.2
62.5°	750.1	735.3	720.3	705.5	690.5	671.4	647.8	624.3	600.8	577.3	560.1
65°	657.9	642.5	627.1	611.7	596.3	577.1	554.2	531.3	508.4	485.3	470.0
67.5°	562.1	547.3	532.6	517.9	503.1	485.0	463.7	442.5	421.2	399.9	386.7
70°	501.5	486.5	471.4	456.4	441.3	423.5	403.1	382.7	362.3	341.8	330.0
72.5°	437.0	423.4	409.8	396.2	382.5	366.1	346.8	327.5	308.2	288.9	278.8
75°	349.9	336.7	323.4	310.1	296.9	281.9	265.0	248.1	231.4	214.5	206.2
77.5°	261.6	250.3	239.0	227.8	216.5	204.1	190.5	176.9	163.3	149.7	144.8
80°	204.8	194.4	184.0	173.6	163.2	152.7	141.9	131.2	120.4	109.7	108.6
82.5°	155.8	146.2	136.7	127.1	117.6	109.8	103.6	97.5	91.3	85.1	84.3
85°	87.1	79.9	72.7	65.5	58.4	54.3	53.2	52.1	51.1	50.0	49.3
87.5°	30.1	28.2	26.3	24.3	22.4	21.4	21.4	21.4	21.4	21.4	21.3
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°	2106.0	2106.0	2106.0	2106.0	2106.0	2106.0	2106.0	2106.0
2.5°	2098.1	2101.3	2104.5	2105.9	2105.6	2105.3	2105.0	2104.8
5°	2084.2	2087.7	2091.3	2092.7	2092.0	2091.3	2090.6	2089.9
7.5°	2056.4	2058.7	2061.0	2061.5	2060.4	2059.3	2058.1	2057.0
10°	2031.4	2032.9	2034.4	2034.4	2032.9	2031.4	2030.0	2028.6
12.5°	2000.6	2001.6	2002.4	2001.8	1999.8	1997.8	1995.8	1993.8
15°	1946.5	1945.8	1945.1	1943.5	1941.0	1938.4	1936.0	1933.5
17.5°	1881.4	1879.4	1877.3	1874.5	1870.7	1866.8	1863.1	1859.3
20°	1835.8	1832.9	1830.1	1826.3	1821.7	1817.1	1812.3	1807.7
22.5°	1785.2	1780.9	1776.7	1772.6	1768.8	1764.9	1761.2	1757.4
25°	1703.5	1697.5	1691.4	1686.6	1682.9	1679.4	1675.8	1672.2
27.5°	1620.4	1612.9	1605.4	1599.0	1593.9	1588.7	1583.6	1578.4
30°	1560.7	1551.9	1542.9	1535.5	1529.7	1524.1	1518.3	1512.6
32.5°	1499.9	1489.4	1479.0	1471.2	1465.7	1460.3	1454.8	1449.4
35°	1409.2	1397.0	1384.8	1375.5	1369.1	1362.6	1356.1	1349.7
37.5°	1311.8	1298.2	1284.6	1274.6	1268.1	1261.6	1255.3	1248.8
40°	1247.1	1232.0	1217.0	1206.2	1199.7	1193.3	1186.9	1180.4
42.5°	1183.3	1167.9	1152.6	1141.6	1134.8	1128.1	1121.4	1114.6
45°	1085.6	1068.0	1050.5	1038.4	1032.1	1025.6	1019.2	1012.7
47.5°	987.2	969.1	950.9	938.2	931.1	924.0	916.9	909.8
50°	922.0	904.1	886.2	873.8	867.1	860.2	853.4	846.6
52.5°	857.0	838.8	820.5	807.9	800.8	793.8	786.6	779.5
55°	760.9	742.4	723.7	710.9	704.2	697.3	690.5	683.7
57.5°	667.2	648.2	629.3	617.3	612.2	606.9	601.8	596.6
60°	604.5	585.9	567.2	555.1	549.4	543.6	537.9	532.1
62.5°	542.9	525.7	508.5	497.6	493.0	488.5	483.8	479.3
65°	454.5	439.2	423.7	413.8	409.6	405.3	401.0	396.7
67.5°	373.4	360.1	346.9	337.9	333.2	328.4	323.7	318.9
70°	318.2	306.4	294.6	286.9	283.3	279.7	276.1	272.6
72.5°	268.7	258.6	248.5	241.9	238.5	235.3	232.0	228.6
75°	198.0	189.8	181.5	176.3	174.2	172.0	169.9	167.7
77.5°	140.1	135.2	130.5	127.7	127.0	126.4	125.8	125.1
80°	107.6	106.4	105.3	104.6	104.3	103.9	103.6	103.2
82.5°	83.6	82.8	82.0	81.4	81.1	80.7	80.4	80.0
85°	48.6	47.9	47.2	46.8	46.8	46.8	46.8	46.8
87.5°	21.2	21.1	21.0	21.1	21.5	21.8	22.2	22.5
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: P333101-840

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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)