

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: P333002-840

Luminaire Tested: **S124RDIP-S1195D810U840-4F0-1E-UDD-F4**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P333002-840  
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-18,  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: S124RDIP-S1195D810U840-4F0-1E-UDD-F4  
Description: DEFINE 4 DIRECT-INDIRECT PENDANT LED LUMINAIRE  
DOWNLIGHT 1195 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER, REGRESSED  
HOUSING  
UPLIGHT 810 LUMENS PER FOOT, BATWING OPTIC  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 7791.1 lumens  
Efficiency: N/A  
Efficacy: 128.4 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

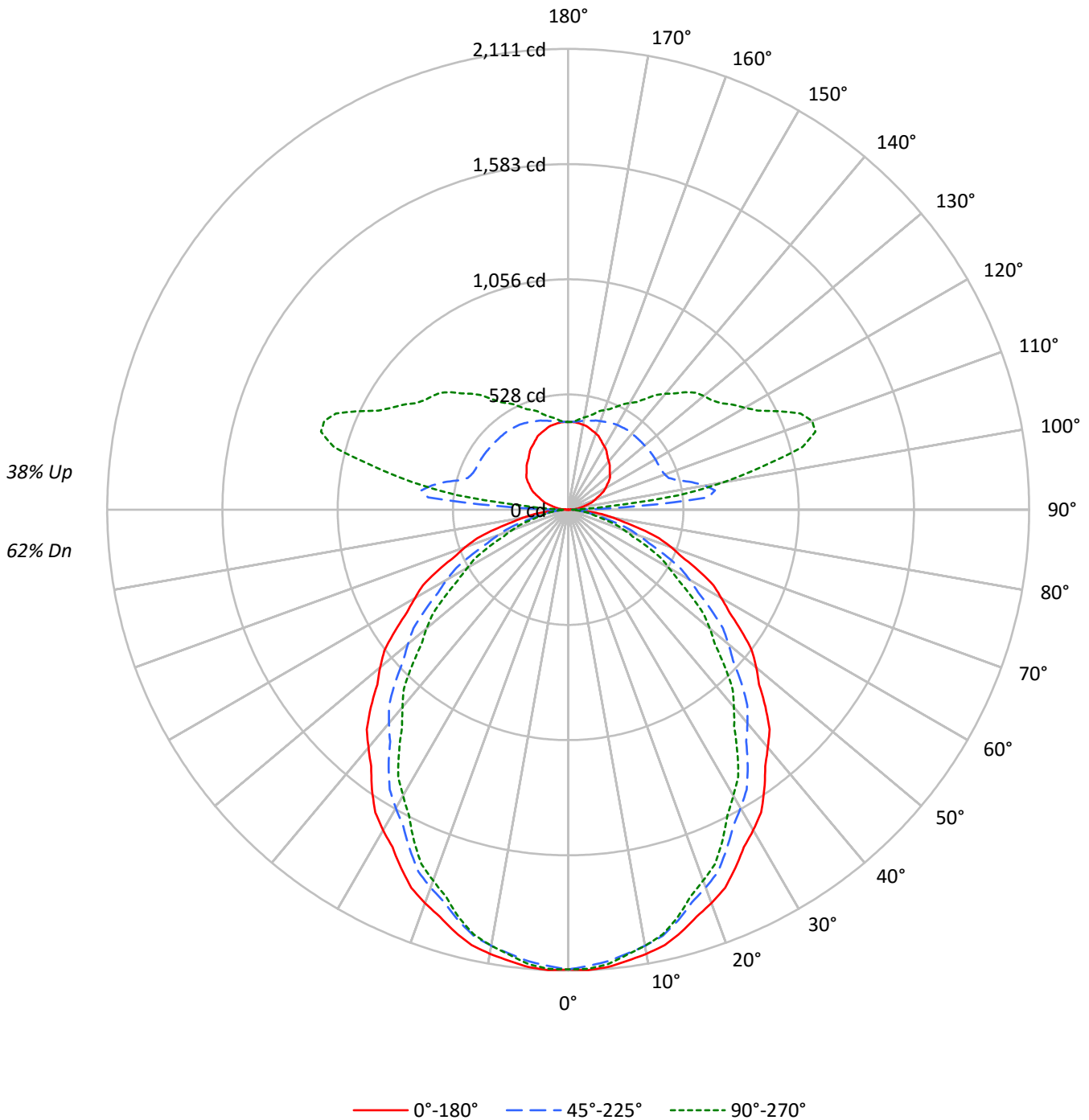
Input Watts (W): 60.7  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10
RCR																	
0	110	110	110	110	103	103	103	103	90	90	90	78	78	78	68	68	68
1	101	97	93	89	94	91	87	84	80	77	75	70	68	66	60	59	58
2	92	85	79	74	86	80	74	70	70	66	63	62	58	56	53	51	49
3	84	75	68	62	79	70	64	59	62	57	53	55	51	48	48	45	42
4	77	66	59	53	72	63	56	50	56	50	46	49	45	41	43	39	37
5	71	59	51	45	66	56	49	43	50	44	40	44	39	36	39	35	32
6	66	54	45	40	61	51	43	38	45	39	35	40	35	32	35	31	28
7	61	48	40	35	57	46	39	33	41	35	31	37	32	28	32	28	25
8	57	44	36	31	53	42	35	30	38	32	27	34	29	25	30	26	23
9	53	40	33	28	50	38	31	27	35	29	25	31	26	23	27	24	21
10	49	37	30	25	46	35	29	24	32	26	22	29	24	21	26	22	19

**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	7.1
20°-30°	796.6	10.2
30°-40°	903.0	11.6
40°-50°	872.0	11.2
50°-60°	725.1	9.3
60°-70°	500.7	6.4
70°-80°	253.8	3.3
80°-90°	67.3	0.9
90°-100°	290.3	3.7
100°-110°	604.2	7.8
110°-120°	541.2	6.9
120°-130°	455.2	5.8
130°-140°	379.6	4.9
140°-150°	290.0	3.7
150°-160°	203.8	2.6
160°-170°	119.9	1.5
170°-180°	39.0	0.5
0°-30°	1546.1	19.8
0°-40°	2449.1	31.4
0°-60°	4046.2	51.9
0°-90°	4868.0	62.5
90°-120°	1435.7	18.4
90°-150°	2560.4	32.9
90°-180°	2923.0	37.5
0°-180°	7791.1	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°	1	6	14	16	17	6
95°	26	82	644	319	193	29
105°	92	134	518	1115	1111	99
115°	163	204	462	888	1067	161
125°	227	269	460	755	851	202
135°	269	321	456	670	761	208
145°	310	355	453	565	622	195
155°	353	381	441	499	520	163
165°	385	396	422	447	454	109
175°	401	402	405	411	409	38
180°	402	402	402	402	402	



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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°	29.8	27.9	26.1	23.9	21.7	20.5	21.1	20.8	20.9	20.9	20.5
90°	0.8	2.3	4.7	5.6	6.4	6.4	11.0	11.0	12.6	14.2	13.4
92.5°	9.0	13.1	20.5	30.2	41.7	58.1	98.3	159.5	219.2	250.4	208.6
95°	26.1	28.4	36.4	46.6	65.5	98.7	167.4	296.9	485.6	643.6	661.8
97.5°	46.8	46.8	53.5	63.0	79.3	107.0	160.0	266.9	454.5	677.8	831.3
100°	60.0	60.0	65.5	75.0	90.0	115.3	161.9	251.2	412.2	634.9	837.0
102.5°	72.6	73.9	78.8	87.7	102.0	126.0	168.1	246.7	383.7	581.2	789.6
105°	92.4	94.7	98.7	108.2	122.4	145.3	183.2	248.7	359.3	518.0	703.6
107.5°	114.2	115.7	119.7	129.8	143.4	166.0	200.8	260.4	354.9	482.6	634.1
110°	128.8	130.3	134.2	143.7	157.9	179.3	214.0	269.2	356.1	470.6	599.4



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	142.6	144.2	148.8	157.6	171.8	193.2	226.6	278.7	359.9	464.9	579.8
115°	162.7	165.0	170.6	178.4	193.5	214.8	246.4	293.8	367.2	461.9	561.4
117.5°	183.5	185.7	190.7	199.3	213.4	235.5	265.5	309.0	375.0	461.1	553.2
120°	197.4	198.9	204.5	213.2	226.6	248.7	278.7	319.8	380.6	461.1	548.8
122.5°	210.1	211.7	217.1	225.2	239.8	261.4	291.3	329.9	386.3	460.5	543.7
125°	226.6	229.7	234.5	243.2	258.2	280.3	308.7	345.1	394.9	459.6	535.3
127.5°	241.4	243.9	249.5	259.4	275.1	297.4	324.9	358.2	401.6	457.9	524.1
130°	249.5	252.7	259.0	270.8	285.9	308.7	335.6	366.4	406.7	457.2	517.3
132.5°	257.7	260.2	268.5	279.7	296.0	317.6	344.5	374.6	411.1	456.6	510.9
135°	269.2	272.5	280.3	293.8	310.3	330.8	356.9	385.4	417.7	455.7	501.4
137.5°	280.8	283.8	292.5	305.3	322.4	342.0	366.4	392.9	421.6	455.4	493.2
140°	289.0	291.3	300.0	313.5	330.0	349.0	372.7	398.0	424.9	454.8	488.8
142.5°	297.8	300.2	308.3	321.0	337.0	355.4	378.4	401.7	427.4	454.8	485.0
145°	310.3	312.7	320.6	331.6	346.7	364.1	384.6	405.9	428.8	453.2	478.5
147.5°	324.4	325.2	332.1	343.5	356.0	371.6	390.9	409.5	429.6	450.4	472.7
150°	333.3	334.1	340.3	349.8	361.6	376.7	394.0	411.4	429.6	448.5	468.3
152.5°	341.4	341.6	347.9	356.8	367.4	381.1	396.6	412.6	428.3	445.4	463.2
155°	352.9	353.8	358.5	366.4	375.1	386.9	400.3	413.7	426.4	440.6	455.7
157.5°	364.2	364.2	368.6	374.8	382.3	391.6	403.0	413.7	424.3	435.8	447.9
160°	371.1	371.1	374.3	379.8	386.2	394.9	404.2	413.7	422.4	431.9	442.2
162.5°	377.5	376.8	379.3	384.3	389.9	396.7	405.6	413.7	420.6	428.2	437.2
165°	384.6	384.6	386.2	390.1	394.0	398.8	405.9	412.2	417.0	422.4	428.8
167.5°	391.6	390.9	391.6	394.7	396.9	400.5	405.8	410.3	413.1	416.8	421.2
170°	394.9	394.0	394.9	397.2	398.8	401.1	405.1	409.0	410.6	412.9	416.2
172.5°	398.0	397.2	397.4	399.1	400.0	401.7	404.5	407.8	408.1	409.2	411.7
175°	401.1	400.3	400.3	401.1	401.9	401.9	403.5	405.9	405.1	405.1	406.7
177.5°	402.5	401.9	401.3	401.9	401.9	401.9	402.5	403.8	402.5	402.5	403.1
180°	401.9	401.9	401.9	401.9	401.9	401.9	401.9	401.9	401.9	401.9	401.9



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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°	20.3	20.2	20.1	20.1	20.5	21.0	21.1	21.4
90°	14.2	15.0	15.8	15.8	16.6	17.4	16.6	16.6
92.5°	155.1	116.7	92.9	77.1	67.8	63.5	60.8	60.8
95°	585.1	462.7	356.9	280.3	241.7	217.1	203.0	192.7
97.5°	864.4	819.0	741.7	659.3	602.7	555.1	531.4	515.0
100°	952.3	968.1	929.4	871.0	802.2	754.1	730.4	724.1
102.5°	947.9	1026.2	1037.4	1013.1	971.0	936.0	911.1	906.1
105°	884.4	1021.0	1099.1	1131.6	1133.2	1126.8	1115.8	1111.1
107.5°	794.3	939.7	1049.8	1120.1	1159.2	1177.2	1185.1	1187.1
110°	739.9	876.5	991.0	1077.8	1133.9	1167.1	1181.3	1188.4





TEST NUMBER: P333002-840

CATALOG NUMBER: S124RDIP-S1195D810U840-4F0-1E-UDD-F4

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	700.1	820.9	929.1	1015.9	1079.5	1119.7	1139.6	1151.1
115°	660.1	757.3	849.6	925.4	987.8	1035.2	1060.5	1066.8
117.5°	640.6	720.9	793.6	857.9	911.1	950.9	976.4	981.4
120°	631.7	705.2	768.3	824.4	869.4	904.1	924.6	933.3
122.5°	624.1	695.0	752.6	801.6	839.7	869.4	886.8	895.4
125°	611.2	679.1	733.6	777.0	808.6	831.5	846.5	851.2
127.5°	595.4	660.2	714.6	755.9	787.6	808.0	820.6	825.4
130°	582.8	645.1	698.8	740.6	773.1	792.8	805.5	810.2
132.5°	569.5	628.0	680.5	722.4	754.1	776.4	788.4	793.1
135°	551.2	602.5	650.7	690.1	721.8	743.9	756.5	761.2
137.5°	534.6	578.0	618.6	654.3	683.8	705.6	716.0	721.8
140°	525.1	562.2	597.7	631.0	658.5	675.9	687.0	693.3
142.5°	516.2	549.0	579.5	608.1	632.7	648.7	658.5	663.0
145°	503.8	530.7	554.3	576.4	596.2	609.6	617.5	621.5
147.5°	493.5	514.8	533.8	551.2	565.7	577.2	583.2	584.6
150°	487.2	505.3	521.2	535.3	548.1	558.3	563.0	563.8
152.5°	480.3	495.8	510.4	522.1	532.8	541.2	544.0	544.8
155°	469.8	482.5	494.3	503.8	511.7	518.0	520.4	520.4
157.5°	458.6	469.2	479.2	486.8	492.7	497.5	498.9	498.9
160°	451.7	460.4	469.1	475.3	480.1	484.8	485.6	485.6
162.5°	444.7	452.1	459.0	464.6	468.1	472.8	473.6	473.0
165°	435.0	439.8	445.4	449.3	452.4	455.7	454.8	454.0
167.5°	425.8	429.4	433.8	436.2	437.8	439.8	439.7	439.0
170°	420.1	422.4	425.7	428.0	429.6	430.3	429.6	429.6
172.5°	415.1	416.8	418.7	420.4	421.3	422.1	421.3	420.1
175°	408.3	409.0	410.6	410.6	410.6	412.2	410.6	409.0
177.5°	403.8	404.5	404.5	405.1	404.5	405.1	403.8	402.5
180°	401.9	401.9	401.9	401.9	401.9	401.9	401.9	401.9

(END OF REPORT)