

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: P333097

Luminaire Tested: **S124RDIW-S1195D470U835-4F0-1E-UDD-F**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P333097  
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-S1195D470U835-4F0-1E-UDD-F  
Description: DEFINE 4 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE  
DOWNLIGHT 1195 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER, REGRESSED  
HOUSING  
UPLIGHT 470 LUMENS PER FOOT, NO LENS  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 6694.3 lumens  
Efficiency: N/A  
Efficacy: 127.8 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

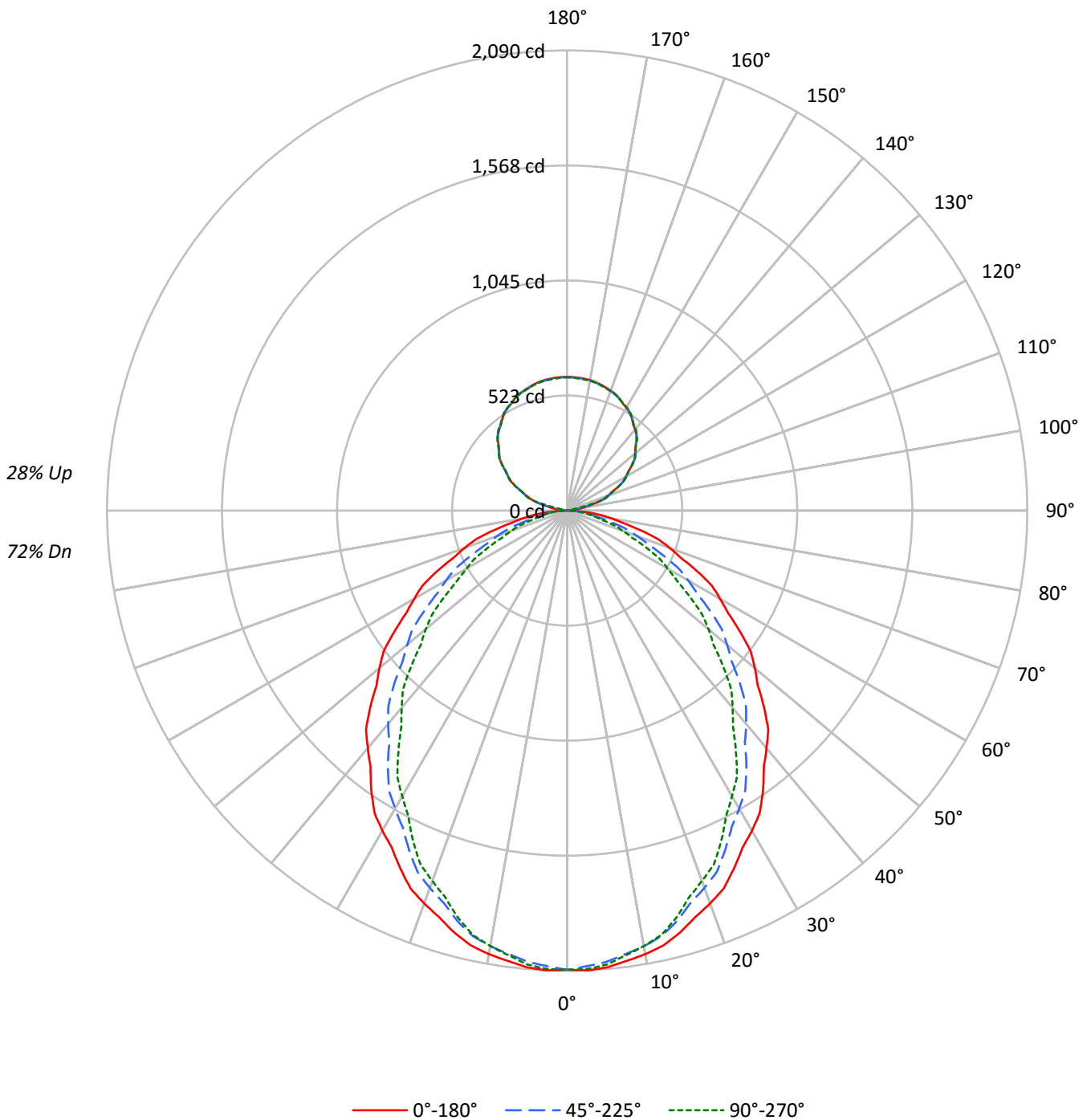
Input Watts (W): 52.4  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Luminous Intensity Polar Plot





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**COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:**

RF	20									20									20									20										
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	50	30	10	50	30	10	0														
RCR																																						
0	112	112	112	112	107	107	107	107	96	96	96	86	86	86	76	76	76	72	72	72	72	72	72	72														
1	103	99	95	91	98	94	90	87	85	82	80	76	74	72	68	67	65	61	61	61	61	61	61	61														
2	94	87	81	75	89	83	77	72	75	70	66	67	64	61	60	58	56	52	52	52	52	52	52	52														
3	86	77	69	63	81	73	66	61	66	61	56	60	56	52	54	51	48	45	45	45	45	45	45	45														
4	79	68	60	54	75	65	58	52	59	53	48	54	49	45	48	45	41	38	38	38	38	38	38	38														
5	73	61	53	47	69	58	51	45	53	47	42	48	43	39	44	40	36	34	34	34	34	34	34	34														
6	67	55	47	41	64	53	45	40	48	42	37	44	39	35	40	36	32	30	30	30	30	30	30	30														
7	62	50	42	36	59	48	40	35	44	37	33	40	35	31	36	32	29	26	26	26	26	26	26	26														
8	58	46	38	32	55	44	36	31	40	34	29	37	31	28	34	29	26	24	24	24	24	24	24	24														
9	54	42	34	29	51	40	33	28	37	31	27	34	29	25	31	27	23	22	22	22	22	22	22	22														
10	51	38	31	26	48	37	30	25	34	28	24	31	26	23	29	25	21	20	20	20	20	20	20	20														

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	16835	16835	16835
5°	16874	16667	16771
10°	16768	16467	16467
15°	16575	16121	16002
20°	16311	15667	15378
25°	15973	15134	14750
30°	15645	14573	13962
35°	15281	13991	13172
40°	14842	13328	12318
45°	14439	12670	11449
50°	13978	11912	10528
55°	13485	11125	9529
60°	12943	10261	8507
65°	12445	9181	7503
70°	11722	7990	6371
75°	10808	6625	5181
80°	9428	5049	4751
85°	7984	4585	4289



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	195.9	2.9
10°-20°	546.3	8.2
20°-30°	788.8	11.8
30°-40°	894.2	13.4
40°-50°	863.5	12.9
50°-60°	718.0	10.7
60°-70°	495.8	7.4
70°-80°	251.3	3.8
80°-90°	66.2	1.0
90°-100°	20.7	0.3
100°-110°	132.1	2.0
110°-120°	252.8	3.8
120°-130°	320.9	4.8
130°-140°	343.3	5.1
140°-150°	321.0	4.8
150°-160°	258.9	3.9
160°-170°	167.0	2.5
170°-180°	57.6	0.9
0°-30°	1531.0	22.9
0°-40°	2425.2	36.2
0°-60°	4006.7	59.9
0°-90°	4820.0	72.0
90°-120°	405.6	6.1
90°-150°	1390.9	20.8
90°-180°	1874.0	28.0
0°-180°	6694.3	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2085	2085	2085	2085	2085	
5°	2082	2075	2057	2072	2070	197
15°	1983	1967	1929	1925	1915	559
25°	1793	1762	1699	1672	1656	826
35°	1550	1498	1420	1367	1336	968
45°	1265	1204	1110	1034	1003	975
55°	958	892	790	710	677	857
65°	652	581	481	415	393	643
75°	346	287	212	177	166	366
85°	86	56	50	46	46	97
90°	1	6	10	13	14	5
95°	25	10	10	13	13	32
105°	136	139	141	144	129	143
115°	255	256	256	256	256	251
125°	358	360	359	360	361	320
135°	444	444	446	446	447	342
145°	512	513	514	514	515	320
155°	562	562	561	562	561	259
165°	592	590	590	593	590	167
175°	606	603	604	607	602	58
180°	606	606	606	606	606	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	2085.4	2085.4	2085.4	2085.4	2085.4	2085.4	2085.4	2085.4	2085.4	2085.4	2085.4
2.5°	2090.5	2089.4	2088.3	2087.1	2086.0	2083.9	2080.8	2077.6	2074.5	2071.4	2074.5
5°	2082.2	2080.8	2079.4	2078.0	2076.6	2073.7	2069.5	2065.2	2061.0	2056.7	2060.2
7.5°	2063.4	2061.9	2060.4	2058.9	2057.4	2053.9	2048.4	2042.9	2037.3	2031.8	2034.1
10°	2045.5	2043.7	2042.0	2040.2	2038.4	2034.3	2028.0	2021.6	2015.2	2008.8	2010.2
12.5°	2022.5	2020.5	2018.4	2016.3	2014.3	2009.5	2002.0	1994.5	1986.9	1979.4	1980.3
15°	1983.2	1980.0	1976.9	1973.7	1970.5	1964.4	1955.6	1946.7	1937.8	1928.9	1928.2
17.5°	1935.7	1931.0	1926.4	1921.8	1917.2	1909.6	1898.9	1888.3	1877.6	1867.0	1865.0
20°	1898.6	1894.0	1889.4	1884.8	1880.2	1871.8	1859.8	1847.7	1835.6	1823.6	1820.7
22.5°	1857.7	1852.6	1847.4	1842.2	1837.0	1828.0	1815.0	1802.1	1789.2	1776.3	1772.0
25°	1793.2	1786.8	1780.4	1774.1	1767.7	1757.2	1742.7	1728.1	1713.6	1699.0	1693.0
27.5°	1725.5	1717.5	1709.5	1701.5	1693.4	1681.7	1666.1	1650.6	1635.0	1619.5	1612.0
30°	1678.3	1669.4	1660.5	1651.6	1642.8	1630.0	1613.3	1596.6	1580.0	1563.3	1554.4
32.5°	1628.4	1618.4	1608.4	1598.4	1588.4	1574.8	1557.5	1540.3	1523.0	1505.8	1495.5
35°	1550.5	1539.1	1527.8	1516.4	1505.1	1490.5	1472.8	1455.1	1437.3	1419.6	1407.5
37.5°	1467.2	1455.4	1443.7	1432.0	1420.3	1404.6	1385.0	1365.3	1345.7	1326.0	1312.5
40°	1408.4	1396.7	1385.0	1373.3	1361.5	1345.6	1325.4	1305.1	1284.9	1264.7	1249.8
42.5°	1352.2	1339.9	1327.6	1315.3	1303.1	1286.4	1265.3	1244.2	1223.2	1202.1	1186.9
45°	1264.7	1251.5	1238.4	1225.3	1212.2	1194.9	1173.7	1152.4	1131.1	1109.8	1092.4
47.5°	1174.3	1160.7	1147.2	1133.6	1120.1	1102.2	1080.1	1057.9	1035.8	1013.7	995.6
50°	1113.0	1099.1	1085.3	1071.5	1057.6	1039.3	1016.6	993.9	971.2	948.5	930.8
52.5°	1050.4	1036.8	1023.3	1009.7	996.2	977.7	954.5	931.2	907.9	884.6	866.6
55°	958.1	943.9	929.7	915.5	901.3	882.7	859.6	836.6	813.5	790.4	772.0
57.5°	866.7	852.0	837.2	822.5	807.7	789.0	766.3	743.5	720.8	698.1	679.4
60°	801.6	787.4	773.2	759.0	744.8	726.4	703.7	681.0	658.2	635.5	617.1
62.5°	742.8	728.1	713.3	698.6	683.8	664.8	641.5	618.2	594.9	571.7	554.6
65°	651.5	636.2	621.0	605.7	590.5	571.5	548.8	526.1	503.4	480.6	465.4
67.5°	556.6	542.0	527.4	512.8	498.2	480.3	459.2	438.2	417.1	396.0	382.9
70°	496.6	481.7	466.8	451.9	437.0	419.4	399.2	379.0	358.8	338.5	326.8
72.5°	432.7	419.3	405.8	392.3	378.8	362.5	343.4	324.3	305.2	286.1	276.1
75°	346.5	333.4	320.2	307.1	294.0	279.1	262.4	245.7	229.1	212.4	204.2
77.5°	259.0	247.9	236.7	225.6	214.4	202.1	188.6	175.2	161.7	148.2	143.4
80°	202.8	192.5	182.2	171.9	161.6	151.2	140.5	129.9	119.2	108.6	107.5
82.5°	154.3	144.8	135.4	125.9	116.5	108.7	102.6	96.5	90.4	84.3	83.5
85°	86.2	79.1	72.0	64.9	57.8	53.8	52.7	51.6	50.6	49.5	48.8
87.5°	29.7	27.6	25.6	23.5	21.5	20.4	20.2	20.1	20.0	19.9	19.7
90°	1.4	2.5	3.6	4.7	5.8	6.7	7.6	8.4	9.2	10.0	10.6
92.5°	5.7	5.8	5.8	5.9	6.0	6.4	7.2	8.0	8.8	9.6	10.2
95°	24.9	21.5	18.1	14.7	11.2	9.6	9.7	9.8	9.9	10.0	10.6
97.5°	52.9	55.1	57.2	59.3	61.5	56.9	45.7	34.4	23.2	12.0	12.0
100°	74.3	76.1	78.0	79.8	81.6	75.5	61.6	47.7	33.8	19.9	18.2
102.5°	98.3	99.6	100.9	102.2	103.6	103.3	101.5	99.7	97.9	96.1	77.6
105°	136.4	137.0	137.6	138.2	138.8	139.4	139.9	140.4	140.9	141.4	142.3
107.5°	171.9	172.2	172.5	172.8	173.1	173.6	174.2	174.9	175.6	176.3	176.7
110°	195.8	196.1	196.4	196.7	197.0	197.4	198.0	198.7	199.3	199.9	200.1



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	219.0	219.5	220.1	220.6	221.2	221.6	221.9	222.1	222.4	222.7	222.7
115°	254.7	255.0	255.3	255.6	255.9	256.0	255.9	255.8	255.7	255.6	255.8
117.5°	286.9	287.3	287.7	288.1	288.5	288.8	289.0	289.2	289.5	289.7	289.6
120°	308.6	309.0	309.4	309.8	310.2	310.4	310.3	310.2	310.1	310.0	310.2
122.5°	328.9	329.2	329.4	329.7	329.9	330.1	330.2	330.4	330.5	330.7	330.8
125°	358.0	358.4	358.8	359.2	359.6	359.7	359.5	359.3	359.1	358.9	359.2
127.5°	385.6	385.7	385.8	385.9	386.0	386.3	386.7	387.2	387.7	388.1	388.1
130°	403.3	403.4	403.6	403.7	403.8	404.0	404.3	404.6	404.9	405.2	405.3
132.5°	419.7	419.8	420.0	420.2	420.4	420.7	421.1	421.4	421.8	422.2	422.3
135°	444.1	444.0	443.9	443.8	443.7	443.9	444.3	444.7	445.1	445.5	445.7
137.5°	465.8	465.8	465.9	465.9	466.0	466.2	466.6	467.1	467.5	468.0	468.2
140°	479.9	480.1	480.3	480.5	480.7	480.9	481.1	481.4	481.6	481.8	482.1
142.5°	492.6	493.0	493.4	493.7	494.1	494.3	494.4	494.6	494.7	494.8	495.0
145°	512.1	512.4	512.7	513.0	513.3	513.5	513.5	513.5	513.5	513.5	513.6
147.5°	527.6	528.2	528.7	529.3	529.9	530.1	530.0	529.9	529.8	529.7	529.8
150°	538.9	539.3	539.7	540.1	540.5	540.6	540.5	540.4	540.3	540.2	540.2
152.5°	548.3	548.6	548.9	549.2	549.6	549.6	549.5	549.3	549.1	548.9	549.1
155°	561.5	561.6	561.7	561.8	561.9	561.8	561.5	561.2	560.9	560.6	561.0
157.5°	572.7	572.6	572.5	572.5	572.4	572.2	571.9	571.5	571.2	570.9	571.4
160°	579.2	578.9	578.6	578.3	578.0	577.8	577.7	577.6	577.5	577.4	578.0
162.5°	585.0	584.6	584.2	583.8	583.5	583.2	583.1	583.0	582.9	582.8	583.4
165°	592.3	591.8	591.3	590.8	590.3	590.1	590.1	590.1	590.1	590.1	590.9
167.5°	598.1	597.6	597.1	596.6	596.0	595.7	595.7	595.6	595.6	595.5	596.4
170°	601.4	600.8	600.2	599.6	599.0	598.7	598.8	598.9	599.0	599.1	599.9
172.5°	603.6	603.0	602.4	601.8	601.2	600.9	601.0	601.1	601.2	601.3	602.1
175°	605.9	605.3	604.7	604.1	603.5	603.3	603.4	603.5	603.6	603.7	604.6
177.5°	607.0	606.5	605.9	605.3	604.8	604.6	604.7	604.9	605.0	605.2	605.8
180°	605.9	605.9	605.9	605.9	605.9	605.9	605.9	605.9	605.9	605.9	605.9



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	2085.4	2085.4	2085.4	2085.4	2085.4	2085.4	2085.4	2085.4
2.5°	2077.6	2080.8	2083.9	2085.3	2085.0	2084.7	2084.4	2084.2
5°	2063.8	2067.3	2070.9	2072.3	2071.6	2070.9	2070.2	2069.5
7.5°	2036.3	2038.6	2040.9	2041.4	2040.3	2039.2	2038.0	2036.9
10°	2011.6	2013.0	2014.5	2014.5	2013.0	2011.6	2010.2	2008.8
12.5°	1981.1	1982.0	1982.8	1982.2	1980.3	1978.3	1976.3	1974.3
15°	1927.5	1926.8	1926.1	1924.5	1922.0	1919.5	1917.1	1914.6
17.5°	1863.0	1861.0	1859.0	1856.2	1852.4	1848.6	1844.9	1841.1
20°	1817.9	1815.0	1812.2	1808.5	1803.9	1799.3	1794.6	1790.0
22.5°	1767.8	1763.5	1759.3	1755.3	1751.5	1747.7	1744.0	1740.2
25°	1686.9	1680.9	1674.9	1670.1	1666.5	1663.0	1659.4	1655.9
27.5°	1604.6	1597.1	1589.7	1583.4	1578.3	1573.2	1568.1	1563.0
30°	1545.5	1536.7	1527.8	1520.5	1514.8	1509.2	1503.5	1497.8
32.5°	1485.2	1474.9	1464.6	1456.8	1451.4	1446.0	1440.6	1435.2
35°	1395.4	1383.4	1371.3	1362.1	1355.7	1349.3	1342.9	1336.5
37.5°	1299.0	1285.5	1272.1	1262.1	1255.7	1249.3	1243.0	1236.6
40°	1234.9	1220.0	1205.1	1194.4	1188.0	1181.6	1175.3	1168.9
42.5°	1171.7	1156.5	1141.3	1130.4	1123.7	1117.1	1110.4	1103.7
45°	1075.0	1057.6	1040.2	1028.3	1022.0	1015.6	1009.2	1002.8
47.5°	977.6	959.6	941.6	929.0	922.0	915.0	907.9	900.9
50°	913.0	895.3	877.5	865.3	858.6	851.8	845.1	838.3
52.5°	848.6	830.6	812.5	800.0	793.0	786.0	778.9	771.9
55°	753.5	735.1	716.6	704.0	697.3	690.5	683.8	677.0
57.5°	660.7	641.9	623.2	611.3	606.2	601.0	595.9	590.8
60°	598.6	580.2	561.7	549.7	544.0	538.3	532.6	526.9
62.5°	537.6	520.6	503.5	492.7	488.2	483.7	479.1	474.6
65°	450.1	434.9	419.6	409.8	405.6	401.3	397.1	392.8
67.5°	369.8	356.6	343.5	334.6	329.9	325.2	320.5	315.8
70°	315.1	303.4	291.7	284.1	280.5	277.0	273.4	269.9
72.5°	266.1	256.1	246.1	239.5	236.2	233.0	229.7	226.4
75°	196.1	187.9	179.7	174.6	172.5	170.3	168.2	166.1
77.5°	138.7	133.9	129.2	126.5	125.8	125.2	124.6	123.9
80°	106.5	105.4	104.3	103.6	103.3	102.9	102.6	102.2
82.5°	82.8	82.0	81.2	80.6	80.3	79.9	79.6	79.2
85°	48.1	47.4	46.7	46.3	46.3	46.3	46.3	46.3
87.5°	19.6	19.4	19.2	19.3	19.6	20.0	20.3	20.6
90°	11.2	11.8	12.4	12.8	13.0	13.2	13.4	13.6
92.5°	10.8	11.4	12.0	12.3	12.4	12.4	12.5	12.5
95°	11.2	11.8	12.4	12.7	12.8	12.9	13.0	13.1
97.5°	12.1	12.1	12.2	12.3	12.4	12.5	12.6	12.7
100°	16.5	14.8	13.1	12.3	12.4	12.5	12.6	12.7
102.5°	59.1	40.7	22.2	13.0	13.0	13.0	13.0	13.1
105°	143.2	144.1	145.0	143.7	140.0	136.4	132.8	129.2
107.5°	177.2	177.6	178.1	178.5	178.9	179.2	179.6	180.0
110°	200.3	200.5	200.7	200.9	201.2	201.5	201.8	202.1





TEST NUMBER: P333097

CATALOG NUMBER: S124RDIW-S1195D470U835-4F0-1E-UDD-F

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	222.6	222.6	222.5	222.7	223.1	223.5	223.9	224.2
115°	256.0	256.2	256.4	256.5	256.5	256.5	256.5	256.5
117.5°	289.6	289.6	289.5	289.5	289.4	289.4	289.4	289.3
120°	310.4	310.6	310.8	310.8	310.6	310.4	310.2	310.0
122.5°	330.9	331.0	331.1	331.1	330.9	330.7	330.5	330.3
125°	359.5	359.8	360.1	360.3	360.4	360.5	360.6	360.7
127.5°	388.0	387.9	387.9	387.8	387.7	387.6	387.6	387.5
130°	405.4	405.5	405.6	405.6	405.6	405.6	405.6	405.6
132.5°	422.4	422.5	422.6	422.6	422.5	422.5	422.4	422.3
135°	445.9	446.1	446.3	446.5	446.7	446.9	447.1	447.3
137.5°	468.4	468.6	468.9	468.9	468.9	468.8	468.8	468.7
140°	482.4	482.7	483.0	483.2	483.3	483.4	483.5	483.6
142.5°	495.2	495.5	495.7	495.8	495.8	495.9	495.9	495.9
145°	513.7	513.8	513.9	514.0	514.2	514.4	514.6	514.8
147.5°	529.9	529.9	530.0	530.1	530.2	530.3	530.4	530.5
150°	540.2	540.2	540.2	540.3	540.4	540.5	540.6	540.7
152.5°	549.2	549.4	549.6	549.6	549.6	549.5	549.4	549.4
155°	561.4	561.8	562.2	562.3	562.0	561.7	561.4	561.1
157.5°	571.9	572.4	572.9	572.9	572.4	571.9	571.4	570.9
160°	578.6	579.2	579.8	579.8	579.2	578.6	578.0	577.4
162.5°	584.0	584.6	585.2	585.2	584.5	583.8	583.1	582.5
165°	591.7	592.5	593.3	593.2	592.3	591.4	590.5	589.6
167.5°	597.3	598.2	599.1	599.0	598.0	597.0	596.0	595.0
170°	600.7	601.5	602.4	602.3	601.2	600.2	599.2	598.2
172.5°	602.9	603.7	604.5	604.4	603.3	602.2	601.1	600.0
175°	605.5	606.4	607.3	607.1	605.9	604.7	603.5	602.3
177.5°	606.5	607.1	607.8	607.6	606.7	605.7	604.7	603.8
180°	605.9	605.9	605.9	605.9	605.9	605.9	605.9	605.9

(END OF REPORT)