

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: P333097-840

Luminaire Tested: **S124RDIW-S1195D470U840-4F0-1E-UDD-F**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P333097-840
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-S1195D470U840-4F0-1E-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: 6760.3 lumens
Efficiency: N/A
Efficacy: 129.0 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

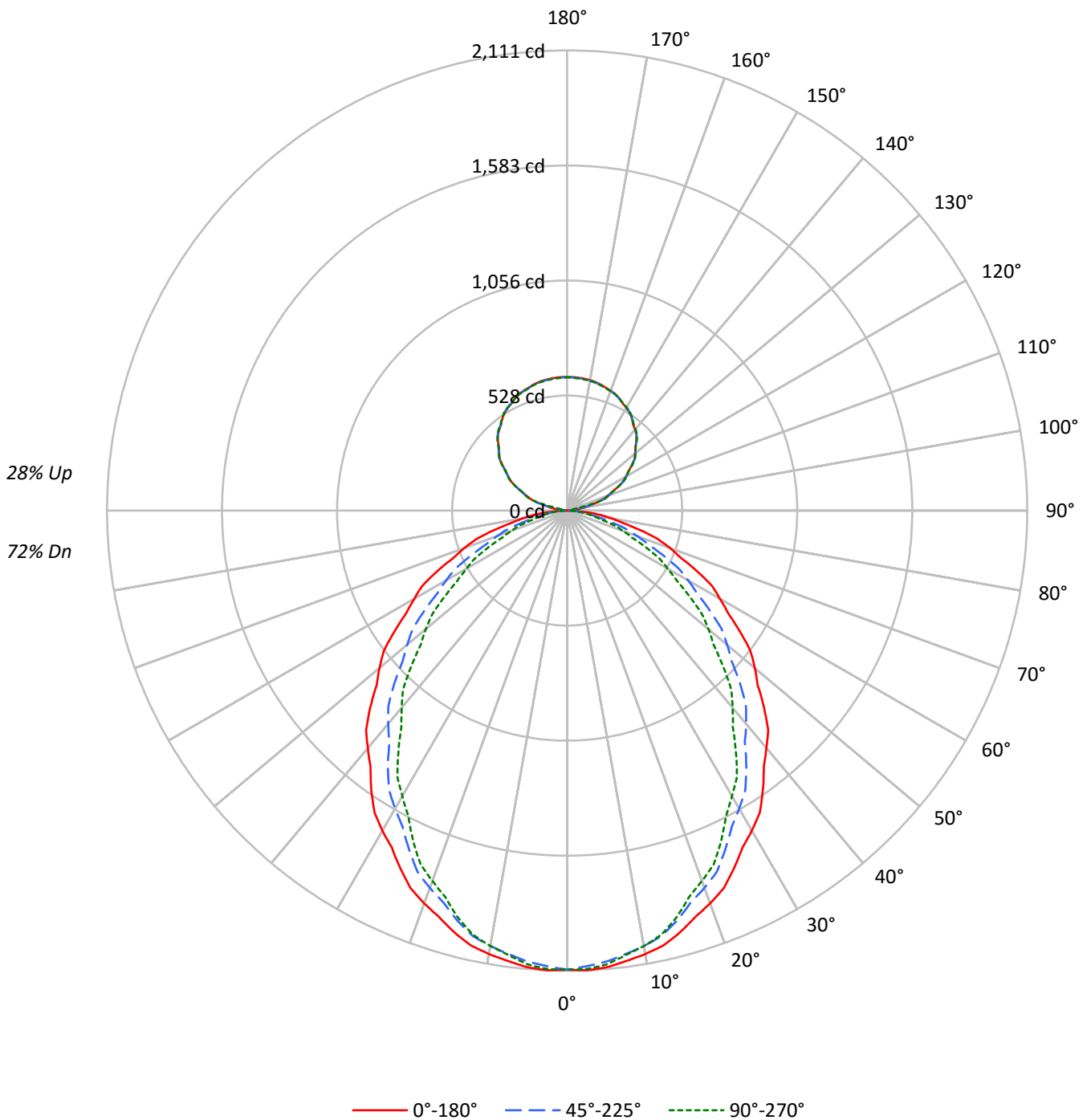
Input Watts (W): 52.4
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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

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	2.9
10°-20°	551.7	8.2
20°-30°	796.6	11.8
30°-40°	903.0	13.4
40°-50°	872.0	12.9
50°-60°	725.1	10.7
60°-70°	500.7	7.4
70°-80°	253.8	3.8
80°-90°	66.9	1.0
90°-100°	20.9	0.3
100°-110°	133.4	2.0
110°-120°	255.3	3.8
120°-130°	324.0	4.8
130°-140°	346.7	5.1
140°-150°	324.2	4.8
150°-160°	261.4	3.9
160°-170°	168.6	2.5
170°-180°	58.1	0.9
0°-30°	1546.1	22.9
0°-40°	2449.1	36.2
0°-60°	4046.2	59.9
0°-90°	4867.5	72.0
90°-120°	409.6	6.1
90°-150°	1404.6	20.8
90°-180°	1893.0	28.0
0°-180°	6760.3	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	10	13	14	5
95°	25	10	10	13	13	32
105°	138	140	143	146	130	144
115°	257	258	258	259	259	253
125°	362	363	362	364	364	323
135°	448	448	450	451	452	345
145°	517	518	519	519	520	323
155°	567	567	566	568	567	261
165°	598	596	596	599	595	169
175°	612	609	610	613	608	58
180°	612	612	612	612	612	



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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°	30.0	27.9	25.9	23.7	21.7	20.6	20.4	20.3	20.2	20.1	19.9
90°	1.4	2.5	3.6	4.7	5.9	6.8	7.7	8.5	9.3	10.1	10.7
92.5°	5.8	5.9	5.9	6.0	6.1	6.5	7.3	8.1	8.9	9.7	10.3
95°	25.1	21.7	18.3	14.8	11.3	9.7	9.8	9.9	10.0	10.1	10.7
97.5°	53.4	55.6	57.8	59.9	62.1	57.5	46.2	34.7	23.4	12.1	12.1
100°	75.0	76.9	78.8	80.6	82.4	76.2	62.2	48.2	34.1	20.1	18.4
102.5°	99.3	100.6	101.9	103.2	104.6	104.3	102.5	100.7	98.9	97.0	78.4
105°	137.7	138.4	139.0	139.6	140.2	140.8	141.3	141.8	142.3	142.8	143.7
107.5°	173.6	173.9	174.2	174.5	174.8	175.3	175.9	176.6	177.3	178.0	178.4
110°	197.7	198.0	198.3	198.6	198.9	199.3	200.0	200.7	201.3	201.9	202.1



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	221.2	221.7	222.3	222.8	223.4	223.8	224.1	224.3	224.6	224.9	224.9
115°	257.2	257.5	257.8	258.1	258.4	258.5	258.4	258.3	258.2	258.1	258.3
117.5°	289.7	290.1	290.5	290.9	291.3	291.6	291.9	292.1	292.4	292.6	292.5
120°	311.6	312.0	312.5	312.9	313.3	313.5	313.4	313.3	313.2	313.1	313.3
122.5°	332.1	332.4	332.6	333.0	333.2	333.4	333.5	333.7	333.8	334.0	334.1
125°	361.5	361.9	362.3	362.7	363.1	363.2	363.0	362.8	362.6	362.4	362.7
127.5°	389.4	389.5	389.6	389.7	389.8	390.1	390.5	391.0	391.5	391.9	391.9
130°	407.3	407.4	407.6	407.7	407.8	408.0	408.3	408.6	408.9	409.2	409.3
132.5°	423.8	423.9	424.1	424.3	424.5	424.9	425.3	425.6	426.0	426.4	426.5
135°	448.5	448.4	448.3	448.2	448.1	448.3	448.7	449.1	449.5	449.9	450.1
137.5°	470.4	470.4	470.5	470.5	470.6	470.8	471.2	471.7	472.1	472.6	472.8
140°	484.6	484.8	485.0	485.2	485.4	485.6	485.8	486.1	486.4	486.6	486.9
142.5°	497.5	497.9	498.3	498.6	499.0	499.2	499.3	499.5	499.6	499.7	499.9
145°	517.2	517.5	517.8	518.1	518.4	518.6	518.6	518.6	518.6	518.6	518.7
147.5°	532.8	533.4	533.9	534.5	535.1	535.3	535.2	535.1	535.0	534.9	535.0
150°	544.2	544.6	545.0	545.4	545.8	545.9	545.8	545.7	545.6	545.5	545.5
152.5°	553.7	554.0	554.3	554.6	555.0	555.0	554.9	554.7	554.5	554.3	554.5
155°	567.0	567.1	567.2	567.3	567.4	567.3	567.0	566.7	566.4	566.1	566.5
157.5°	578.3	578.2	578.1	578.1	578.0	577.8	577.5	577.1	576.8	576.5	577.0
160°	584.9	584.6	584.3	584.0	583.7	583.5	583.4	583.3	583.2	583.1	583.7
162.5°	590.8	590.4	590.0	589.6	589.3	589.0	588.9	588.8	588.7	588.5	589.2
165°	598.1	597.6	597.1	596.6	596.1	595.9	595.9	595.9	595.9	595.9	596.7
167.5°	604.0	603.5	603.0	602.5	601.9	601.6	601.6	601.5	601.5	601.4	602.3
170°	607.3	606.7	606.1	605.5	604.9	604.6	604.7	604.8	604.9	605.0	605.8
172.5°	609.6	608.9	608.3	607.7	607.1	606.8	606.9	607.0	607.1	607.2	608.0
175°	611.9	611.3	610.7	610.1	609.5	609.3	609.4	609.5	609.6	609.7	610.6
177.5°	613.0	612.5	611.9	611.3	610.8	610.6	610.7	610.9	611.0	611.2	611.8
180°	611.9	611.9	611.9	611.9	611.9	611.9	611.9	611.9	611.9	611.9	611.9



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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°	19.8	19.6	19.4	19.5	19.8	20.2	20.5	20.8
90°	11.3	11.9	12.5	12.9	13.1	13.3	13.5	13.7
92.5°	10.9	11.5	12.1	12.4	12.5	12.5	12.6	12.6
95°	11.3	11.9	12.5	12.8	12.9	13.0	13.1	13.2
97.5°	12.2	12.2	12.3	12.4	12.5	12.6	12.7	12.8
100°	16.7	14.9	13.2	12.4	12.5	12.6	12.7	12.8
102.5°	59.7	41.1	22.4	13.1	13.1	13.1	13.1	13.2
105°	144.6	145.5	146.4	145.1	141.4	137.7	134.1	130.5
107.5°	178.9	179.4	179.9	180.3	180.7	181.0	181.4	181.8
110°	202.3	202.5	202.7	202.9	203.2	203.5	203.8	204.1



TEST NUMBER: P333097-840

CATALOG NUMBER: S124RDIW-S1195D470U840-4F0-1E-UDD-F

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	224.8	224.8	224.7	224.9	225.3	225.7	226.1	226.4
115°	258.5	258.7	258.9	259.0	259.0	259.0	259.0	259.0
117.5°	292.5	292.5	292.4	292.4	292.3	292.3	292.3	292.2
120°	313.5	313.7	313.9	313.9	313.7	313.5	313.3	313.1
122.5°	334.2	334.3	334.4	334.4	334.2	334.0	333.8	333.6
125°	363.0	363.3	363.7	363.9	364.0	364.1	364.2	364.3
127.5°	391.8	391.7	391.7	391.6	391.5	391.4	391.4	391.3
130°	409.4	409.5	409.6	409.6	409.6	409.6	409.6	409.6
132.5°	426.6	426.7	426.8	426.8	426.7	426.7	426.6	426.5
135°	450.3	450.5	450.7	450.9	451.1	451.3	451.5	451.7
137.5°	473.0	473.2	473.5	473.5	473.5	473.4	473.4	473.3
140°	487.2	487.5	487.8	488.0	488.1	488.2	488.3	488.4
142.5°	500.1	500.4	500.6	500.7	500.7	500.8	500.8	500.8
145°	518.8	518.9	519.0	519.1	519.3	519.5	519.7	519.9
147.5°	535.1	535.1	535.2	535.3	535.4	535.5	535.6	535.7
150°	545.5	545.5	545.5	545.6	545.7	545.8	545.9	546.0
152.5°	554.6	554.8	555.0	555.0	555.0	554.9	554.8	554.8
155°	566.9	567.3	567.7	567.8	567.5	567.2	566.9	566.6
157.5°	577.5	578.0	578.6	578.6	578.0	577.5	577.0	576.5
160°	584.3	584.9	585.5	585.5	584.9	584.3	583.7	583.1
162.5°	589.8	590.4	591.0	591.0	590.3	589.6	588.9	588.2
165°	597.5	598.3	599.2	599.1	598.1	597.2	596.3	595.4
167.5°	603.2	604.1	605.0	604.9	603.9	602.9	601.9	600.9
170°	606.6	607.4	608.3	608.2	607.1	606.1	605.1	604.1
172.5°	608.8	609.7	610.5	610.4	609.3	608.1	607.0	605.9
175°	611.5	612.4	613.3	613.1	611.9	610.7	609.5	608.2
177.5°	612.5	613.1	613.8	613.6	612.7	611.7	610.7	609.8
180°	611.9	611.9	611.9	611.9	611.9	611.9	611.9	611.9

(END OF REPORT)