

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: P333098-830

Luminaire Tested: **S124RDIW-S1195D470U830-4F0-1E-UDD-F1**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P333098-830  
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-10,  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: S124RDIW-S1195D470U830-4F0-1E-UDD-F1  
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, FLUSH SATIN WHITE DIFFUSER  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 6075.2 lumens  
Efficiency: N/A  
Efficacy: 115.9 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

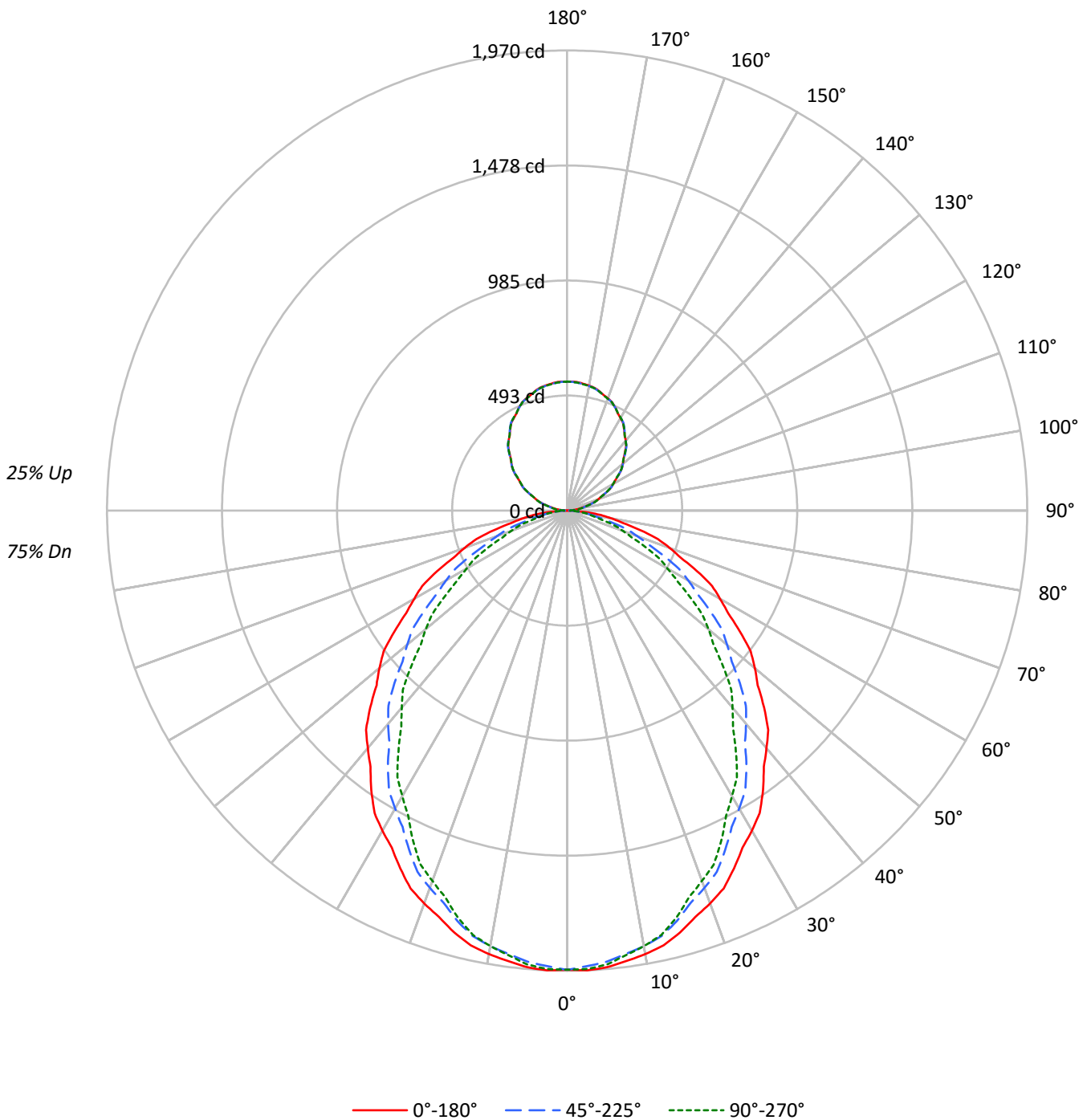
Input Watts (W): 52.4  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Luminous Intensity Polar Plot





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

RF	20				20				20				20				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	113	113	113	113	107	107	107	107	97	97	97	88	88	88	79	79	79	75
1	104	99	96	92	99	95	91	88	86	83	81	78	76	74	70	69	68	64
2	95	87	81	76	90	83	78	73	76	71	68	69	65	62	62	60	57	54
3	87	77	70	64	82	74	67	62	67	62	57	61	57	53	56	52	49	46
4	80	69	61	54	76	66	58	53	60	54	49	55	50	46	50	46	43	40
5	73	61	53	47	70	59	51	46	54	48	43	49	44	40	45	41	38	35
6	68	55	47	41	64	53	46	40	49	43	38	45	40	35	41	37	33	31
7	63	50	42	36	60	48	41	35	45	38	34	41	36	32	38	33	30	27
8	59	46	38	33	56	44	37	32	41	35	30	38	32	28	35	30	27	25
9	55	42	34	29	52	41	33	29	38	31	27	35	29	26	32	28	24	22
10	51	39	31	26	49	37	31	26	35	29	25	32	27	23	30	25	22	20

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

	0°	45°	90°
0°	15868	15868	15868
5°	15904	15709	15807
10°	15805	15521	15521
15°	15623	15195	15082
20°	15374	14766	14495
25°	15055	14264	13903
30°	14746	13736	13160
35°	14402	13186	12415
40°	13990	12562	11610
45°	13609	11942	10791
50°	13175	11228	9923
55°	12711	10486	8981
60°	12198	9671	8018
65°	11731	8653	7072
70°	11049	7532	6005
75°	10187	6245	4885
80°	8884	4761	4477
85°	7521	4326	4039



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	184.6	3.0
10°-20°	514.9	8.5
20°-30°	743.5	12.2
30°-40°	842.8	13.9
40°-50°	813.8	13.4
50°-60°	676.7	11.1
60°-70°	467.3	7.7
70°-80°	236.9	3.9
80°-90°	62.4	1.0
90°-100°	36.4	0.6
100°-110°	107.9	1.8
110°-120°	183.1	3.0
120°-130°	241.5	4.0
130°-140°	271.2	4.5
140°-150°	266.5	4.4
150°-160°	224.1	3.7
160°-170°	149.1	2.5
170°-180°	52.2	0.9
0°-30°	1443.1	23.8
0°-40°	2285.8	37.6
0°-60°	3776.4	62.2
0°-90°	4543.0	74.8
90°-120°	327.5	5.4
90°-150°	1106.7	18.2
90°-180°	1532.0	25.2
0°-180°	6075.2	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1966	1966	1966	1966	1966	
5°	1963	1956	1938	1953	1951	186
15°	1869	1854	1818	1815	1805	526
25°	1690	1661	1601	1576	1561	778
35°	1461	1412	1338	1288	1260	913
45°	1192	1134	1046	975	945	919
55°	903	841	745	669	638	807
65°	614	548	453	391	370	606
75°	327	270	200	167	157	345
85°	81	53	47	44	44	91
90°	1	6	9	12	13	5
95°	26	29	32	34	34	29
105°	100	100	102	103	104	106
115°	186	186	185	185	184	184
125°	271	271	271	270	269	242
135°	350	352	352	352	350	270
145°	425	427	427	427	425	266
155°	487	487	486	488	486	224
165°	530	529	528	530	529	149
175°	551	549	549	552	549	52
180°	552	552	552	552	552	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1965.6	1965.6	1965.6	1965.6	1965.6	1965.6	1965.6	1965.6	1965.6	1965.6	1965.6
2.5°	1970.4	1969.3	1968.3	1967.2	1966.1	1964.2	1961.2	1958.2	1955.3	1952.4	1955.3
5°	1962.6	1961.2	1959.9	1958.6	1957.3	1954.6	1950.6	1946.5	1942.6	1938.5	1941.8
7.5°	1944.8	1943.4	1942.0	1940.6	1939.2	1935.9	1930.7	1925.5	1920.2	1915.1	1917.2
10°	1928.0	1926.3	1924.7	1923.0	1921.3	1917.4	1911.5	1905.4	1899.4	1893.4	1894.7
12.5°	1906.3	1904.4	1902.4	1900.4	1898.6	1894.0	1887.0	1879.9	1872.7	1865.7	1866.5
15°	1869.3	1866.2	1863.3	1860.3	1857.3	1851.5	1843.2	1834.8	1826.5	1818.1	1817.4
17.5°	1824.5	1820.0	1815.7	1811.4	1807.0	1799.9	1789.8	1779.8	1769.7	1759.7	1757.8
20°	1789.5	1785.2	1780.8	1776.5	1772.2	1764.3	1752.9	1741.5	1730.1	1718.8	1716.1
22.5°	1751.0	1746.2	1741.3	1736.4	1731.5	1723.0	1710.7	1698.6	1686.4	1674.2	1670.2
25°	1690.2	1684.1	1678.1	1672.2	1666.1	1656.2	1642.6	1628.8	1615.1	1601.4	1595.7
27.5°	1626.4	1618.8	1611.3	1603.7	1596.1	1585.1	1570.4	1555.8	1541.1	1526.4	1519.4
30°	1581.9	1573.5	1565.1	1556.7	1548.4	1536.3	1520.6	1504.9	1489.2	1473.5	1465.1
32.5°	1534.8	1525.4	1516.0	1506.6	1497.1	1484.3	1468.0	1451.8	1435.5	1419.3	1409.6
35°	1461.4	1450.7	1440.0	1429.3	1418.6	1404.9	1388.2	1371.5	1354.7	1338.0	1326.6
37.5°	1382.9	1371.8	1360.7	1349.7	1338.7	1323.9	1305.4	1286.9	1268.4	1249.8	1237.1
40°	1327.5	1316.4	1305.4	1294.4	1283.3	1268.3	1249.2	1230.1	1211.1	1192.0	1178.0
42.5°	1274.5	1262.9	1251.3	1239.7	1228.2	1212.5	1192.6	1172.7	1152.9	1133.0	1118.7
45°	1192.0	1179.6	1167.2	1154.9	1142.6	1126.2	1106.3	1086.2	1066.1	1046.0	1029.6
47.5°	1106.8	1094.0	1081.3	1068.5	1055.7	1038.9	1018.0	997.1	976.3	955.5	938.4
50°	1049.0	1035.9	1022.9	1009.9	996.8	979.6	958.2	936.8	915.4	894.0	877.3
52.5°	990.0	977.2	964.5	951.7	939.0	921.5	899.7	877.7	855.7	833.8	816.8
55°	903.1	889.7	876.3	862.9	849.5	832.0	810.2	788.5	766.8	745.0	727.6
57.5°	816.9	803.0	789.1	775.2	761.3	743.7	722.3	700.8	679.4	658.0	640.4
60°	755.5	742.2	728.8	715.4	702.0	684.7	663.3	641.9	620.4	599.0	581.6
62.5°	700.1	686.3	672.3	658.5	644.5	626.6	604.6	582.7	560.7	538.9	522.7
65°	614.1	599.6	585.3	570.9	556.6	538.7	517.3	495.9	474.5	453.0	438.7
67.5°	524.6	510.9	497.1	483.3	469.6	452.7	432.8	413.0	393.1	373.2	360.9
70°	468.1	454.0	440.0	425.9	411.9	395.3	376.3	357.2	338.2	319.1	308.0
72.5°	407.8	395.2	382.5	369.8	357.0	341.7	323.7	305.7	287.7	269.7	260.2
75°	326.6	314.2	301.8	289.5	277.1	263.1	247.3	231.6	215.9	200.2	192.5
77.5°	244.1	233.7	223.1	212.6	202.1	190.5	177.8	165.1	152.4	139.7	135.2
80°	191.1	181.4	171.7	162.0	152.3	142.5	132.4	122.4	112.4	102.4	101.3
82.5°	145.4	136.5	127.6	118.7	109.8	102.5	96.7	91.0	85.2	79.5	78.7
85°	81.2	74.6	67.9	61.2	54.5	50.7	49.7	48.6	47.7	46.7	46.0
87.5°	28.0	26.0	24.1	22.1	20.3	19.2	19.0	18.9	18.9	18.8	18.6
90°	1.3	2.4	3.4	4.4	5.5	6.3	7.2	7.9	8.7	9.4	10.0
92.5°	9.1	10.4	11.5	12.7	13.9	14.8	15.4	15.8	16.4	16.9	17.2
95°	25.6	26.5	27.3	28.2	29.0	29.8	30.4	31.1	31.8	32.4	32.7
97.5°	44.8	45.4	46.1	46.8	47.5	48.3	49.0	49.8	50.5	51.4	51.7
100°	59.8	60.1	60.5	60.9	61.4	61.9	62.8	63.6	64.5	65.3	65.5
102.5°	75.5	75.7	75.8	76.0	76.2	76.6	77.4	78.1	78.9	79.7	79.9
105°	99.5	99.6	99.7	99.8	99.9	100.1	100.5	100.9	101.2	101.6	101.9
107.5°	124.7	124.8	125.0	125.1	125.2	125.3	125.4	125.4	125.5	125.5	125.7
110°	141.8	141.9	142.1	142.3	142.5	142.6	142.5	142.4	142.3	142.2	142.0



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	159.6	159.6	159.7	159.7	159.8	159.7	159.5	159.3	159.1	159.0	158.9
115°	186.2	186.2	186.2	186.2	186.2	186.2	186.0	185.8	185.6	185.4	185.3
117.5°	211.3	211.4	211.5	211.6	211.6	211.6	211.5	211.3	211.2	211.0	210.8
120°	228.1	228.5	228.8	229.2	229.6	229.6	229.3	229.0	228.8	228.5	228.0
122.5°	245.5	245.6	245.8	245.9	246.1	246.1	246.0	245.8	245.7	245.6	245.2
125°	271.2	271.2	271.2	271.2	271.2	271.2	271.1	271.0	270.9	270.8	270.6
127.5°	294.5	294.8	295.1	295.4	295.7	295.8	295.6	295.4	295.3	295.1	294.9
130°	310.9	311.2	311.5	311.8	312.1	312.2	312.2	312.2	312.2	312.2	312.0
132.5°	327.6	327.9	328.1	328.3	328.5	328.6	328.5	328.4	328.4	328.3	328.1
135°	349.8	350.3	350.9	351.5	352.0	352.3	352.3	352.3	352.3	352.3	352.1
137.5°	373.9	374.2	374.4	374.7	374.9	375.1	375.3	375.5	375.6	375.8	375.5
140°	389.9	390.1	390.3	390.5	390.7	390.8	390.8	390.8	390.8	390.8	390.7
142.5°	404.6	404.8	405.0	405.2	405.4	405.5	405.4	405.3	405.2	405.1	405.1
145°	425.0	425.4	425.7	426.1	426.5	426.7	426.8	426.9	427.0	427.1	427.0
147.5°	445.2	445.5	446.0	446.5	447.0	447.1	447.0	447.0	447.0	446.9	446.8
150°	457.4	457.8	458.2	458.5	458.9	459.1	459.1	459.1	459.1	459.1	459.1
152.5°	469.0	469.3	469.5	469.8	470.0	470.1	470.1	470.2	470.3	470.4	470.6
155°	486.9	486.9	486.9	486.9	486.9	486.8	486.7	486.6	486.5	486.4	486.8
157.5°	501.9	501.7	501.6	501.4	501.2	501.1	501.1	501.1	501.1	501.1	501.3
160°	510.9	510.8	510.7	510.6	510.5	510.4	510.3	510.2	510.1	510.0	510.3
162.5°	519.1	518.8	518.5	518.3	518.0	517.8	517.7	517.6	517.6	517.5	518.0
165°	530.0	529.7	529.4	529.1	528.9	528.7	528.5	528.3	528.1	527.9	528.5
167.5°	538.5	538.1	537.7	537.3	536.9	536.7	536.7	536.8	536.8	536.8	537.3
170°	543.3	542.8	542.3	541.9	541.4	541.2	541.3	541.4	541.5	541.6	542.2
172.5°	546.7	546.3	545.9	545.5	545.1	544.9	544.9	545.0	545.0	545.0	545.6
175°	551.4	550.9	550.4	550.0	549.5	549.2	549.1	549.0	548.9	548.8	549.5
177.5°	552.9	552.5	552.1	551.8	551.4	551.2	551.2	551.2	551.2	551.2	551.8
180°	552.2	552.2	552.2	552.2	552.2	552.2	552.2	552.2	552.2	552.2	552.2



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1965.6	1965.6	1965.6	1965.6	1965.6	1965.6	1965.6	1965.6
2.5°	1958.2	1961.2	1964.2	1965.5	1965.2	1964.9	1964.6	1964.4
5°	1945.2	1948.5	1951.9	1953.2	1952.6	1951.9	1951.3	1950.6
7.5°	1919.3	1921.5	1923.6	1924.1	1923.1	1922.0	1920.9	1919.9
10°	1896.0	1897.3	1898.8	1898.8	1897.3	1896.0	1894.7	1893.4
12.5°	1867.3	1868.1	1868.9	1868.3	1866.5	1864.6	1862.7	1860.9
15°	1816.8	1816.1	1815.4	1813.9	1811.6	1809.2	1806.9	1804.6
17.5°	1756.0	1754.1	1752.2	1749.5	1746.0	1742.4	1738.9	1735.3
20°	1713.4	1710.7	1708.1	1704.6	1700.3	1695.9	1691.5	1687.2
22.5°	1666.2	1662.2	1658.2	1654.4	1650.9	1647.3	1643.8	1640.2
25°	1590.0	1584.3	1578.7	1574.1	1570.7	1567.4	1564.1	1560.8
27.5°	1512.4	1505.3	1498.4	1492.4	1487.6	1482.8	1478.0	1473.2
30°	1456.7	1448.4	1440.0	1433.1	1427.8	1422.5	1417.1	1411.7
32.5°	1399.9	1390.2	1380.4	1373.1	1368.0	1362.9	1357.8	1352.7
35°	1315.2	1303.9	1292.5	1283.8	1277.8	1271.8	1265.7	1259.7
37.5°	1224.4	1211.6	1199.0	1189.6	1183.6	1177.5	1171.6	1165.5
40°	1163.9	1149.9	1135.9	1125.8	1119.7	1113.7	1107.8	1101.7
42.5°	1104.4	1090.1	1075.7	1065.5	1059.1	1052.9	1046.6	1040.3
45°	1013.2	996.8	980.4	969.2	963.3	957.2	951.2	945.2
47.5°	921.4	904.5	887.5	875.6	869.0	862.4	855.7	849.1
50°	860.5	843.9	827.1	815.6	809.3	802.9	796.5	790.1
52.5°	799.8	782.9	765.8	754.0	747.4	740.8	734.1	727.5
55°	710.2	692.9	675.4	663.5	657.2	650.8	644.5	638.1
57.5°	622.7	605.0	587.4	576.2	571.4	566.5	561.7	556.9
60°	564.2	546.9	529.4	518.1	512.7	507.4	502.0	496.6
62.5°	506.7	490.7	474.6	464.4	460.1	455.9	451.6	447.3
65°	424.2	409.9	395.5	386.3	382.3	378.2	374.3	370.2
67.5°	348.6	336.1	323.8	315.4	310.9	306.5	302.1	297.7
70°	297.0	286.0	274.9	267.8	264.4	261.1	257.7	254.4
72.5°	250.8	241.4	232.0	225.7	222.6	219.6	216.5	213.4
75°	184.8	177.1	169.4	164.6	162.6	160.5	158.5	156.6
77.5°	130.7	126.2	121.8	119.2	118.6	118.0	117.4	116.8
80°	100.4	99.3	98.3	97.6	97.4	97.0	96.7	96.3
82.5°	78.0	77.3	76.5	76.0	75.7	75.3	75.0	74.6
85°	45.3	44.7	44.0	43.6	43.6	43.6	43.6	43.6
87.5°	18.5	18.3	18.1	18.2	18.5	18.9	19.1	19.4
90°	10.6	11.1	11.7	12.1	12.3	12.4	12.6	12.8
92.5°	17.6	17.9	18.3	18.5	18.7	18.8	18.9	18.9
95°	33.0	33.3	33.6	33.7	33.7	33.7	33.7	33.7
97.5°	52.0	52.4	52.7	52.9	52.9	52.9	52.9	52.9
100°	65.7	65.9	66.1	66.2	66.2	66.2	66.2	66.2
102.5°	80.2	80.5	80.8	81.0	81.0	81.1	81.2	81.2
105°	102.3	102.5	102.8	103.1	103.4	103.7	104.0	104.2
107.5°	126.0	126.3	126.6	126.7	126.7	126.7	126.6	126.6
110°	141.9	141.7	141.5	141.5	141.8	142.0	142.3	142.6





TEST NUMBER: P333098-830

CATALOG NUMBER: S124RDIW-S1195D470U830-4F0-1E-UDD-F1

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	158.9	158.8	158.8	158.8	158.9	158.9	159.0	159.0
115°	185.2	185.1	185.0	184.9	184.8	184.7	184.6	184.5
117.5°	210.5	210.1	209.8	209.5	209.3	209.2	209.0	208.8
120°	227.5	227.1	226.6	226.5	226.7	226.9	227.1	227.2
122.5°	245.0	244.6	244.3	243.9	243.6	243.3	242.9	242.6
125°	270.4	270.2	270.0	269.8	269.7	269.5	269.3	269.1
127.5°	294.7	294.5	294.4	294.2	294.1	293.9	293.8	293.6
130°	311.8	311.6	311.4	311.1	310.8	310.4	310.0	309.6
132.5°	327.9	327.7	327.5	327.3	327.2	327.1	326.9	326.8
135°	351.9	351.8	351.6	351.4	351.1	350.8	350.5	350.2
137.5°	375.2	375.0	374.8	374.7	374.8	374.8	374.8	374.9
140°	390.6	390.5	390.4	390.3	390.2	390.1	390.0	389.9
142.5°	405.1	405.1	405.1	405.0	405.0	405.0	405.0	405.0
145°	426.9	426.8	426.7	426.5	426.2	425.9	425.7	425.4
147.5°	446.7	446.6	446.6	446.5	446.4	446.3	446.2	446.1
150°	459.1	459.1	459.1	459.1	459.0	458.9	458.8	458.7
152.5°	470.9	471.1	471.4	471.3	471.1	470.8	470.6	470.3
155°	487.2	487.6	488.0	488.0	487.6	487.2	486.8	486.4
157.5°	501.6	501.9	502.2	502.2	501.9	501.5	501.2	500.9
160°	510.6	510.9	511.1	511.0	510.6	510.1	509.5	509.1
162.5°	518.5	519.1	519.5	519.5	519.1	518.6	518.1	517.6
165°	529.0	529.6	530.2	530.3	529.9	529.5	529.1	528.8
167.5°	537.9	538.5	539.0	539.0	538.5	537.9	537.2	536.7
170°	542.7	543.3	543.8	543.8	543.1	542.4	541.8	541.1
172.5°	546.3	547.0	547.5	547.5	546.9	546.2	545.5	544.9
175°	550.2	550.8	551.5	551.5	550.8	550.2	549.5	548.8
177.5°	552.3	552.8	553.4	553.3	552.7	552.1	551.5	550.9
180°	552.2	552.2	552.2	552.2	552.2	552.2	552.2	552.2

(END OF REPORT)