

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: P332839-830

Luminaire Tested: **S124DIW-S1195D470U830-4F0-1E-UDD-F**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P332839-830  
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: S124DIW-S1195D470U830-4F0-1E-UDD-F  
Description: DEFINE 4 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE  
DOWNLIGHT 1195 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER  
UPLIGHT 470 LUMENS PER FOOT, NO LENS  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 6588.4 lumens  
Efficiency: N/A  
Efficacy: 125.7 lumens/watt  
Spacing Criteria (0/90/45): 1.2 / 1.17 / 1.3  
Luminous Opening: Rectangular (W 0.33' x L: 4' x H: 0')  
CIE Type: Semi-Direct

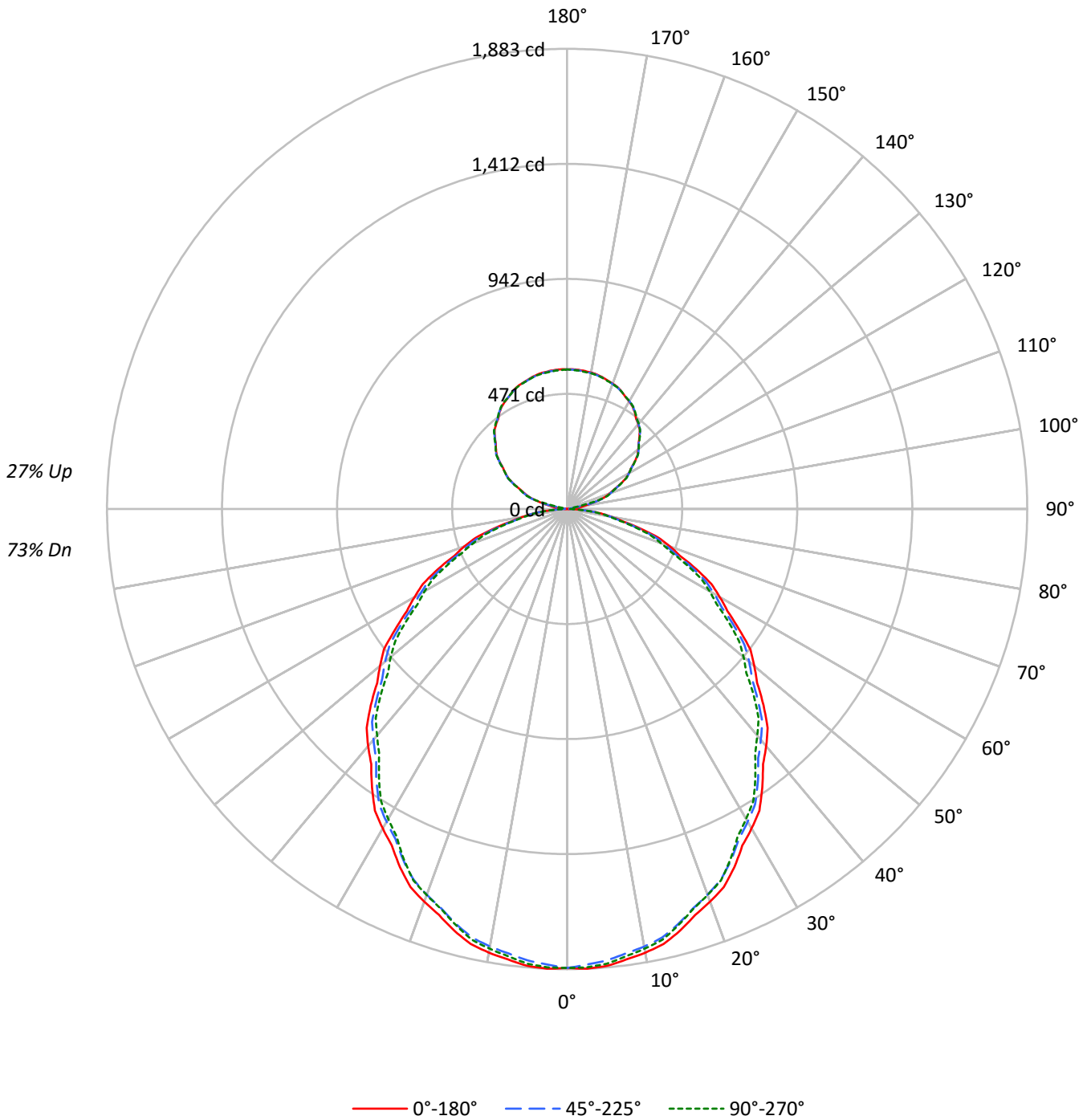
Input Watts (W): 52.4  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	96	96	96	86	86	86	77	77	77	73
1	103	98	94	91	98	94	90	87	84	82	79	76	74	72	68	67	65	62
2	94	86	80	74	89	82	76	71	74	69	66	67	63	60	60	57	55	52
3	86	76	68	62	81	72	65	60	65	60	55	59	55	51	53	50	47	44
4	78	67	59	52	74	64	56	51	58	52	47	53	48	44	48	44	40	37
5	72	60	51	45	68	57	49	44	52	46	41	47	42	38	43	39	35	33
6	66	54	45	39	63	52	44	38	47	41	36	43	38	33	39	35	31	29
7	62	49	40	35	58	47	39	34	43	36	32	39	34	30	36	31	28	25
8	57	44	36	31	54	43	35	30	39	33	28	36	30	27	33	28	25	23
9	53	41	33	28	51	39	32	27	36	30	25	33	28	24	30	26	22	20
10	50	37	30	25	48	36	29	24	33	27	23	31	25	22	28	24	20	19

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

	0°	45°	90°
0°	15163	15163	15163
5°	15209	15027	15135
10°	15114	14905	14978
15°	14931	14692	14730
20°	14689	14430	14442
25°	14412	14130	14091
30°	14072	13778	13651
35°	13720	13409	13232
40°	13354	12991	12752
45°	12973	12578	12337
50°	12552	12210	11833
55°	12096	11736	11354
60°	11641	11202	10863
65°	11127	10695	10264
70°	10551	10017	9626
75°	9669	9201	8968
80°	8605	8257	8047
85°	7521	7243	7104



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	176.9	2.7
10°-20°	498.4	7.6
20°-30°	733.6	11.1
30°-40°	852.8	12.9
40°-50°	852.8	12.9
50°-60°	746.0	11.3
60°-70°	554.0	8.4
70°-80°	314.7	4.8
80°-90°	92.5	1.4
90°-100°	19.5	0.3
100°-110°	124.6	1.9
110°-120°	238.3	3.6
120°-130°	302.4	4.6
130°-140°	323.6	4.9
140°-150°	302.6	4.6
150°-160°	244.0	3.7
160°-170°	157.4	2.4
170°-180°	54.2	0.8
0°-30°	1408.8	21.4
0°-40°	2261.6	34.3
0°-60°	3860.5	58.6
0°-90°	4821.7	73.2
90°-120°	382.4	5.8
90°-150°	1311.0	19.9
90°-180°	1767.0	26.8
0°-180°	6588.4	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1878	1878	1878	1878	1878	
5°	1877	1870	1854	1870	1868	178
15°	1786	1780	1758	1766	1762	503
25°	1618	1607	1586	1587	1582	744
35°	1392	1381	1361	1350	1343	870
45°	1136	1125	1102	1086	1081	876
55°	859	854	834	816	807	769
65°	582	575	560	545	537	577
75°	310	302	295	289	288	329
85°	81	81	78	78	77	89
90°	1	6	9	12	13	5
95°	24	10	9	12	12	30
105°	129	131	133	136	122	135
115°	240	241	241	242	242	236
125°	337	339	338	340	340	301
135°	419	418	420	421	422	322
145°	483	484	484	484	485	301
155°	529	530	528	530	529	244
165°	558	556	556	559	556	158
175°	571	569	569	572	568	54
180°	571	571	571	571	571	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1878.3	1878.3	1878.3	1878.3	1878.3	1878.3	1878.3	1878.3	1878.3	1878.3	1878.3
2.5°	1883.1	1882.4	1881.5	1880.7	1879.9	1878.0	1875.1	1872.2	1869.3	1866.3	1869.0
5°	1876.8	1875.5	1874.2	1872.8	1871.5	1869.0	1865.3	1861.6	1857.9	1854.3	1857.9
7.5°	1859.4	1858.0	1856.7	1855.3	1854.0	1851.3	1847.2	1843.1	1839.1	1834.9	1838.0
10°	1843.7	1842.4	1841.1	1839.7	1838.3	1835.5	1831.2	1826.8	1822.5	1818.2	1820.8
12.5°	1823.3	1821.9	1820.5	1819.2	1817.9	1814.9	1810.3	1805.7	1801.1	1796.5	1799.4
15°	1786.5	1785.2	1783.9	1782.5	1781.1	1778.0	1772.9	1767.9	1762.9	1757.9	1759.9
17.5°	1742.3	1740.6	1738.9	1737.3	1735.6	1732.4	1727.6	1722.9	1718.2	1713.4	1714.7
20°	1709.8	1708.1	1706.4	1704.8	1703.1	1699.7	1694.7	1689.7	1684.7	1679.6	1680.6
22.5°	1674.8	1672.6	1670.5	1668.2	1666.0	1662.4	1657.4	1652.4	1647.4	1642.3	1644.2
25°	1618.0	1615.6	1613.3	1610.9	1608.5	1605.1	1600.3	1595.7	1591.0	1586.3	1586.7
27.5°	1552.9	1550.5	1548.1	1545.7	1543.3	1539.9	1535.6	1531.3	1526.9	1522.5	1521.7
30°	1509.6	1506.9	1504.2	1501.6	1498.9	1495.3	1491.0	1486.7	1482.3	1478.0	1476.7
32.5°	1463.9	1461.4	1459.1	1456.6	1454.2	1450.7	1446.0	1441.4	1436.8	1432.2	1430.6
35°	1392.2	1389.9	1387.5	1385.2	1382.8	1379.3	1374.6	1370.0	1365.3	1360.6	1358.2
37.5°	1316.6	1314.5	1312.4	1310.2	1308.1	1304.5	1299.5	1294.5	1289.4	1284.4	1281.9
40°	1267.2	1264.6	1261.9	1259.2	1256.6	1252.7	1247.7	1242.6	1237.7	1232.7	1229.3
42.5°	1214.3	1212.7	1211.1	1209.5	1207.9	1204.3	1198.7	1193.2	1187.6	1182.0	1178.2
45°	1136.3	1134.0	1131.6	1129.3	1127.0	1123.1	1117.8	1112.4	1107.0	1101.7	1098.1
47.5°	1054.7	1053.1	1051.5	1049.9	1048.3	1045.1	1040.1	1035.2	1030.2	1025.3	1021.2
50°	999.4	998.1	996.6	995.3	994.0	991.0	986.3	981.7	976.9	972.2	967.6
52.5°	945.2	943.6	942.0	940.4	938.8	935.5	930.6	925.6	920.7	915.7	911.5
55°	859.4	858.4	857.4	856.4	855.4	852.5	847.8	843.2	838.5	833.8	829.8
57.5°	777.5	776.4	775.2	774.1	773.0	770.1	765.4	760.8	756.2	751.6	747.8
60°	721.0	719.3	717.6	716.0	714.3	711.2	706.9	702.6	698.1	693.8	690.8
62.5°	665.5	664.1	662.7	661.3	660.0	657.0	652.3	647.7	643.1	638.5	635.7
65°	582.5	580.8	579.1	577.4	575.8	573.3	570.0	566.6	563.3	559.9	556.6
67.5°	498.8	497.3	495.7	494.2	492.7	490.2	487.0	483.8	480.6	477.4	474.2
70°	447.0	444.7	442.3	440.0	437.6	435.2	432.4	429.8	427.1	424.4	421.8
72.5°	391.6	389.3	386.9	384.6	382.3	380.0	377.9	375.7	373.6	371.5	369.3
75°	310.0	308.4	306.7	305.0	303.3	301.7	300.0	298.3	296.7	295.0	293.7
77.5°	232.1	231.3	230.6	229.9	229.1	228.0	226.6	225.1	223.7	222.2	221.8
80°	185.1	184.1	183.1	182.1	181.2	180.3	179.6	178.9	178.2	177.6	176.9
82.5°	139.4	138.9	138.5	138.0	137.5	137.2	137.0	137.0	136.8	136.7	136.3
85°	81.2	81.2	81.2	81.2	81.2	81.0	80.3	79.6	78.9	78.2	78.2
87.5°	31.6	31.5	31.5	31.4	31.3	31.2	31.1	31.0	30.9	30.8	30.9
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°	5.4	5.5	5.5	5.6	5.7	6.0	6.8	7.5	8.3	9.0	9.6
95°	23.5	20.3	17.1	13.9	10.6	9.0	9.1	9.2	9.3	9.4	10.0
97.5°	49.9	51.9	53.9	55.9	58.0	53.6	43.1	32.4	21.9	11.3	11.3
100°	70.0	71.7	73.5	75.2	76.9	71.2	58.1	45.0	31.9	18.8	17.2
102.5°	92.7	93.9	95.1	96.3	97.6	97.4	95.7	94.0	92.3	90.6	73.1
105°	128.6	129.1	129.7	130.3	130.8	131.4	131.9	132.3	132.8	133.3	134.1
107.5°	162.0	162.3	162.6	162.9	163.2	163.6	164.2	164.9	165.5	166.2	166.5
110°	184.5	184.8	185.1	185.4	185.7	186.1	186.6	187.3	187.8	188.4	188.6



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	206.4	206.9	207.5	207.9	208.5	208.9	209.2	209.3	209.6	209.9	209.9
115°	240.1	240.3	240.6	240.9	241.2	241.3	241.2	241.1	241.0	240.9	241.1
117.5°	270.4	270.8	271.2	271.5	271.9	272.2	272.4	272.6	272.9	273.1	273.0
120°	290.9	291.2	291.6	292.0	292.4	292.6	292.5	292.4	292.3	292.2	292.4
122.5°	310.0	310.3	310.5	310.8	310.9	311.1	311.2	311.4	311.5	311.7	311.8
125°	337.4	337.8	338.2	338.6	338.9	339.0	338.8	338.7	338.5	338.3	338.6
127.5°	363.4	363.5	363.6	363.7	363.8	364.1	364.5	365.0	365.4	365.8	365.8
130°	380.1	380.2	380.4	380.5	380.6	380.8	381.1	381.4	381.6	381.9	382.0
132.5°	395.6	395.7	395.9	396.1	396.2	396.5	396.9	397.2	397.6	397.9	398.0
135°	418.6	418.5	418.4	418.3	418.2	418.4	418.8	419.1	419.5	419.9	420.1
137.5°	439.0	439.0	439.1	439.1	439.2	439.4	439.8	440.3	440.6	441.1	441.3
140°	452.3	452.5	452.7	452.9	453.1	453.3	453.5	453.7	453.9	454.1	454.4
142.5°	464.3	464.7	465.1	465.3	465.7	465.9	466.0	466.2	466.3	466.4	466.6
145°	482.7	483.0	483.2	483.5	483.8	484.0	484.0	484.0	484.0	484.0	484.1
147.5°	497.3	497.9	498.3	498.9	499.5	499.6	499.5	499.5	499.4	499.3	499.4
150°	507.9	508.3	508.7	509.1	509.4	509.5	509.4	509.3	509.3	509.2	509.2
152.5°	516.8	517.1	517.4	517.6	518.0	518.0	517.9	517.7	517.6	517.4	517.6
155°	529.2	529.3	529.4	529.5	529.6	529.5	529.2	529.0	528.7	528.4	528.8
157.5°	539.8	539.7	539.6	539.6	539.5	539.3	539.0	538.7	538.4	538.1	538.6
160°	545.9	545.6	545.4	545.1	544.8	544.6	544.5	544.4	544.3	544.2	544.8
162.5°	551.4	551.0	550.6	550.3	550.0	549.7	549.6	549.5	549.4	549.3	549.9
165°	558.3	557.8	557.3	556.9	556.4	556.2	556.2	556.2	556.2	556.2	556.9
167.5°	563.7	563.3	562.8	562.3	561.8	561.5	561.5	561.4	561.4	561.3	562.1
170°	566.8	566.3	565.7	565.1	564.6	564.3	564.4	564.5	564.6	564.7	565.4
172.5°	568.9	568.4	567.8	567.2	566.7	566.4	566.5	566.6	566.7	566.8	567.5
175°	571.1	570.5	570.0	569.4	568.8	568.6	568.7	568.8	568.9	569.0	569.9
177.5°	572.1	571.7	571.1	570.5	570.0	569.9	570.0	570.1	570.2	570.4	571.0
180°	571.1	571.1	571.1	571.1	571.1	571.1	571.1	571.1	571.1	571.1	571.1



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1878.3	1878.3	1878.3	1878.3	1878.3	1878.3	1878.3	1878.3
2.5°	1871.6	1874.3	1877.0	1878.2	1877.9	1877.6	1877.4	1877.1
5°	1861.6	1865.3	1869.0	1870.5	1869.8	1869.2	1868.5	1867.7
7.5°	1840.9	1843.8	1846.7	1848.0	1847.7	1847.2	1846.8	1846.4
10°	1823.4	1826.2	1828.8	1829.9	1829.2	1828.5	1827.8	1827.1
12.5°	1802.3	1805.3	1808.3	1809.2	1808.3	1807.3	1806.4	1805.4
15°	1761.9	1764.0	1765.9	1766.4	1765.5	1764.4	1763.4	1762.5
17.5°	1715.9	1717.2	1718.4	1718.7	1718.1	1717.4	1716.7	1716.1
20°	1681.7	1682.6	1683.7	1683.9	1683.2	1682.5	1681.9	1681.1
22.5°	1646.0	1647.8	1649.5	1649.8	1648.7	1647.5	1646.2	1645.0
25°	1587.1	1587.3	1587.7	1587.1	1585.8	1584.5	1583.2	1581.9
27.5°	1520.9	1520.1	1519.3	1518.1	1516.4	1514.8	1513.1	1511.4
30°	1475.3	1473.9	1472.6	1471.1	1469.4	1467.8	1466.1	1464.4
32.5°	1429.0	1427.4	1425.8	1424.2	1422.5	1420.8	1419.2	1417.5
35°	1355.9	1353.6	1351.2	1349.2	1347.6	1345.9	1344.2	1342.6
37.5°	1279.3	1276.8	1274.2	1271.9	1269.7	1267.4	1265.3	1263.0
40°	1226.0	1222.6	1219.3	1216.7	1215.1	1213.4	1211.7	1210.0
42.5°	1174.3	1170.4	1166.6	1164.0	1162.9	1161.8	1160.6	1159.5
45°	1094.4	1090.7	1087.0	1084.7	1083.6	1082.6	1081.7	1080.6
47.5°	1017.0	1012.9	1008.7	1005.3	1002.8	1000.2	997.7	995.1
50°	962.9	958.2	953.6	950.2	948.2	946.2	944.1	942.2
52.5°	907.4	903.2	899.1	895.8	893.2	890.7	888.2	885.6
55°	825.8	821.8	817.7	814.7	812.8	810.8	808.7	806.7
57.5°	744.0	740.2	736.4	733.5	731.6	729.6	727.6	725.8
60°	687.8	684.9	681.8	679.5	677.8	676.1	674.5	672.8
62.5°	632.9	630.2	627.5	625.3	623.6	621.9	620.3	618.6
65°	553.2	549.9	546.5	544.0	542.3	540.6	538.9	537.3
67.5°	471.0	467.8	464.6	462.7	462.2	461.8	461.3	460.8
70°	419.1	416.4	413.7	411.9	410.9	409.9	408.9	407.8
72.5°	367.2	365.0	362.9	361.3	360.3	359.3	358.3	357.3
75°	292.3	291.0	289.6	288.8	288.5	288.1	287.8	287.5
77.5°	221.3	220.9	220.6	219.9	219.0	218.2	217.3	216.4
80°	176.3	175.6	174.9	174.5	174.1	173.7	173.4	173.1
82.5°	135.8	135.4	135.1	134.7	134.3	134.0	133.7	133.4
85°	78.2	78.2	78.2	78.1	77.8	77.4	77.1	76.7
87.5°	31.0	31.1	31.2	31.3	31.4	31.4	31.4	31.5
90°	10.6	11.1	11.7	12.1	12.3	12.4	12.6	12.8
92.5°	10.2	10.7	11.3	11.6	11.7	11.7	11.8	11.8
95°	10.6	11.1	11.7	12.0	12.1	12.2	12.3	12.3
97.5°	11.4	11.4	11.5	11.6	11.7	11.8	11.9	12.0
100°	15.6	13.9	12.3	11.6	11.7	11.8	11.9	12.0
102.5°	55.7	38.4	20.9	12.3	12.3	12.3	12.3	12.3
105°	135.0	135.8	136.7	135.4	132.0	128.6	125.2	121.8
107.5°	167.0	167.4	167.9	168.2	168.6	168.9	169.3	169.7
110°	188.8	189.0	189.2	189.4	189.6	189.9	190.2	190.5





TEST NUMBER: P332839-830

CATALOG NUMBER: S124DIW-S1195D470U830-4F0-1E-UDD-F

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	209.8	209.8	209.7	209.9	210.3	210.7	211.0	211.3
115°	241.3	241.5	241.7	241.8	241.8	241.8	241.8	241.8
117.5°	273.0	273.0	272.9	272.9	272.8	272.8	272.8	272.7
120°	292.6	292.8	292.9	292.9	292.8	292.6	292.4	292.2
122.5°	311.9	312.0	312.1	312.1	311.9	311.7	311.5	311.3
125°	338.8	339.1	339.4	339.6	339.7	339.8	339.9	340.0
127.5°	365.7	365.6	365.6	365.5	365.4	365.3	365.3	365.2
130°	382.1	382.2	382.3	382.3	382.3	382.3	382.3	382.3
132.5°	398.1	398.2	398.3	398.3	398.2	398.2	398.1	398.0
135°	420.3	420.5	420.7	420.8	421.0	421.2	421.4	421.6
137.5°	441.5	441.7	442.0	442.0	442.0	441.9	441.9	441.8
140°	454.7	455.0	455.2	455.4	455.5	455.6	455.7	455.8
142.5°	466.7	467.0	467.2	467.3	467.3	467.4	467.4	467.4
145°	484.2	484.3	484.4	484.5	484.7	484.8	485.0	485.2
147.5°	499.5	499.5	499.5	499.6	499.7	499.8	499.9	500.0
150°	509.2	509.2	509.2	509.3	509.3	509.4	509.5	509.6
152.5°	517.6	517.8	518.0	518.0	518.0	517.9	517.8	517.8
155°	529.1	529.5	529.9	530.0	529.7	529.4	529.1	528.9
157.5°	539.0	539.5	540.0	540.0	539.5	539.0	538.6	538.1
160°	545.4	545.9	546.5	546.5	545.9	545.4	544.8	544.2
162.5°	550.4	551.0	551.6	551.6	550.9	550.3	549.6	549.0
165°	557.7	558.5	559.2	559.1	558.3	557.4	556.6	555.7
167.5°	563.0	563.8	564.7	564.6	563.6	562.7	561.8	560.8
170°	566.2	566.9	567.8	567.7	566.7	565.7	564.8	563.8
172.5°	568.3	569.0	569.8	569.7	568.6	567.6	566.6	565.5
175°	570.7	571.6	572.4	572.2	571.1	570.0	568.8	567.7
177.5°	571.7	572.2	572.9	572.7	571.8	570.9	570.0	569.1
180°	571.1	571.1	571.1	571.1	571.1	571.1	571.1	571.1

(END OF REPORT)