

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: P332861-830

Luminaire Tested: **S124DIW-S1195D1560U830-4F0-1E-UDD-D**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P332861-830  
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-S1195D1560U830-4F0-1E-UDD-D  
Description: DEFINE 4 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE  
DOWNLIGHT 1195 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER  
UPLIGHT 1560 LUMENS PER FOOT, NO LENS  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

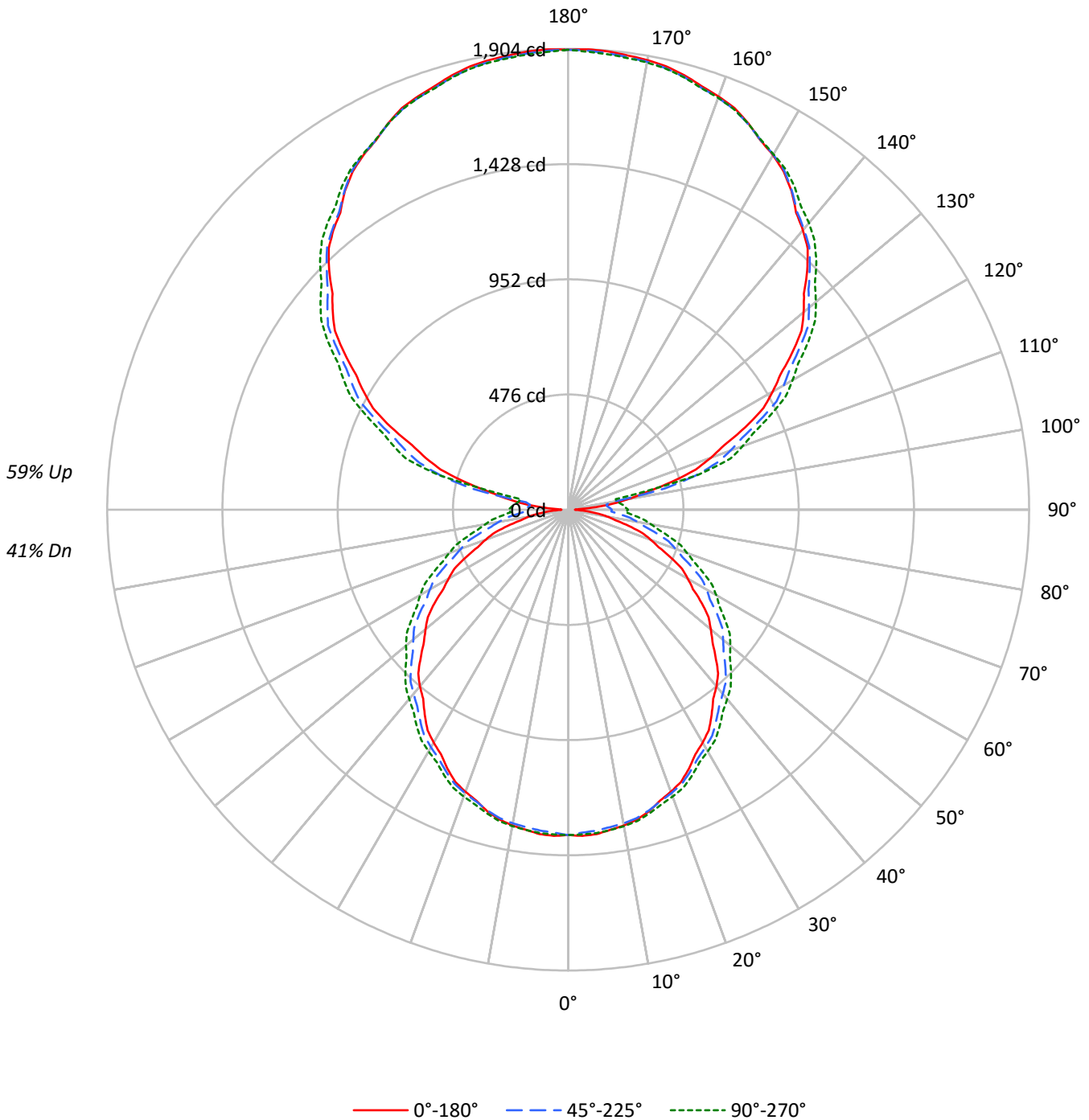
Lumens per Lamp: N/A  
Luminaire Lumens: 10465.6 lumens  
Efficiency: N/A  
Efficacy: 126.2 lumens/watt  
Spacing Criteria (0/90/45): 1.23 / 1.28 / 1.39  
Luminous Opening: Rectangular w/ Sides (W: 0.33' x L: 4' x H: 0.08')  
CIE Type: General Diffuse  
  
Input Watts (W): 82.9  
Input Voltage (V): 120  
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



TEST NUMBER: P332861-830

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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	105	105	105	105	96	96	96	96	78	78	78	62	62	62	47	47	47	41
1	95	90	86	82	86	82	79	75	67	65	62	53	52	50	41	39	38	32
2	86	78	72	67	78	71	66	61	58	54	51	46	43	41	35	33	32	26
3	78	68	61	55	71	62	56	51	51	46	42	41	37	34	31	29	27	22
4	71	60	52	46	65	55	48	43	45	40	36	36	32	29	27	25	23	19
5	65	54	45	39	59	49	42	36	40	35	31	32	28	25	25	22	20	16
6	60	48	40	34	54	44	37	31	36	31	27	29	25	22	22	19	17	14
7	55	43	35	29	50	39	32	27	33	27	23	26	22	19	20	17	15	12
8	51	39	31	26	47	36	29	24	30	24	20	24	20	17	19	16	13	11
9	48	36	28	23	43	33	26	21	27	22	18	22	18	15	17	14	12	10
10	45	32	25	20	40	30	23	19	25	20	16	20	16	14	16	13	11	9

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

	0°	45°	90°
0°	10851	10851	10851
5°	10884	10604	10635
10°	10818	10431	10423
15°	10721	10231	10174
20°	10574	10009	9931
25°	10410	9760	9665
30°	10231	9513	9392
35°	10029	9259	9152
40°	9868	9019	8902
45°	9628	8797	8688
50°	9425	8541	8461
55°	9216	8300	8195
60°	8889	7992	7953
65°	8532	7663	7655
70°	8098	7286	7308
75°	7493	6872	6995
80°	6823	6474	6686
85°	5963	6123	6505



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	127.3	1.2
10°-20°	364.7	3.5
20°-30°	551.4	5.3
30°-40°	667.1	6.4
40°-50°	705.3	6.7
50°-60°	663.8	6.3
60°-70°	550.7	5.3
70°-80°	386.8	3.7
80°-90°	224.2	2.1
90°-100°	194.8	1.9
100°-110°	510.5	4.9
110°-120°	857.3	8.2
120°-130°	1042.8	10.0
130°-140°	1092.5	10.4
140°-150°	1010.1	9.7
150°-160°	812.0	7.8
160°-170°	523.7	5.0
170°-180°	180.5	1.7
0°-30°	1043.3	10.0
0°-40°	1710.5	16.3
0°-60°	3079.5	29.4
0°-90°	4241.3	40.5
90°-120°	1562.7	14.9
90°-150°	4708.1	45.0
90°-180°	6224.0	59.5
0°-180°	10465.6	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1344	1344	1344	1344	1344	
5°	1346	1341	1330	1342	1341	128
15°	1290	1291	1287	1300	1299	363
25°	1180	1189	1194	1209	1212	543
35°	1032	1050	1066	1086	1091	646
45°	861	890	918	943	951	665
55°	674	707	751	780	790	601
65°	467	515	566	602	616	462
75°	259	315	378	418	434	275
85°	80	143	211	254	271	85
90°	28	104	180	230	247	20
95°	98	103	162	209	226	116
105°	441	481	543	588	554	463
115°	808	827	872	907	919	795
125°	1129	1135	1168	1200	1211	1008
135°	1396	1396	1411	1437	1450	1076
145°	1608	1610	1610	1621	1630	1004
155°	1761	1762	1758	1763	1760	812
165°	1858	1851	1851	1861	1849	525
175°	1900	1892	1893	1904	1889	181
180°	1900	1900	1900	1900	1900	



TEST NUMBER: P332861-830

CATALOG NUMBER: S124DIW-S1195D1560U830-4F0-1E-UDD-D

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1344.1	1344.1	1344.1	1344.1	1344.1	1344.1	1344.1	1344.1	1344.1	1344.1	1344.1
2.5°	1348.9	1348.0	1347.3	1346.4	1345.7	1344.2	1342.0	1339.9	1337.8	1335.6	1337.5
5°	1345.5	1344.5	1343.5	1342.6	1341.5	1339.8	1337.5	1335.1	1332.8	1330.5	1333.1
7.5°	1334.1	1333.5	1332.8	1332.3	1331.7	1330.4	1328.5	1326.5	1324.6	1322.7	1325.7
10°	1324.5	1324.1	1323.8	1323.4	1323.1	1322.1	1320.4	1318.8	1317.1	1315.4	1318.4
12.5°	1311.2	1311.2	1311.1	1311.0	1311.0	1310.3	1309.2	1308.1	1306.9	1305.8	1308.5
15°	1289.9	1290.2	1290.5	1290.8	1291.2	1290.8	1289.9	1288.8	1287.8	1286.9	1289.9
17.5°	1260.7	1261.7	1262.6	1263.7	1264.6	1265.1	1264.9	1264.6	1264.4	1264.2	1267.3
20°	1240.2	1241.1	1242.2	1243.2	1244.2	1244.8	1245.2	1245.6	1245.9	1246.2	1249.5
22.5°	1217.3	1218.5	1219.8	1221.1	1222.4	1223.3	1223.9	1224.6	1225.1	1225.7	1229.1
25°	1180.0	1181.9	1184.0	1186.0	1188.0	1189.5	1190.5	1191.5	1192.5	1193.5	1197.2
27.5°	1138.4	1141.4	1144.3	1147.3	1150.2	1152.4	1154.0	1155.6	1157.1	1158.6	1162.0
30°	1110.7	1113.4	1116.1	1118.8	1121.4	1124.0	1126.2	1128.6	1131.0	1133.3	1137.0
32.5°	1080.6	1083.8	1087.0	1090.2	1093.4	1096.4	1099.0	1101.6	1104.2	1106.8	1111.1
35°	1032.5	1036.5	1040.5	1044.5	1048.5	1052.2	1055.6	1058.9	1062.2	1065.5	1070.3
37.5°	984.0	988.6	993.3	997.9	1002.5	1006.8	1011.0	1015.1	1019.3	1023.4	1028.2
40°	952.7	957.1	961.4	965.7	970.1	974.6	979.3	984.0	988.6	993.3	998.3
42.5°	916.6	921.4	926.3	931.2	936.1	941.3	946.8	952.3	957.7	963.3	968.8
45°	860.9	867.2	873.6	880.0	886.3	892.7	899.0	905.4	911.7	918.1	923.8
47.5°	807.6	814.2	820.8	827.3	833.9	840.8	848.2	855.5	862.9	870.2	876.1
50°	769.1	776.5	783.8	791.2	798.5	805.9	813.2	820.6	827.9	835.3	842.0
52.5°	730.6	737.9	745.3	752.6	760.0	767.9	776.3	784.8	793.1	801.6	808.3
55°	674.3	681.3	688.3	695.3	702.4	710.9	721.0	730.9	741.0	751.0	757.7
57.5°	611.3	620.1	628.8	637.4	646.1	655.4	665.4	675.4	685.4	695.3	703.3
60°	570.4	579.1	587.8	596.5	605.2	615.1	626.1	637.2	648.2	659.2	666.9
62.5°	530.7	540.2	549.7	559.2	568.6	578.9	590.0	601.1	612.1	623.1	630.7
65°	466.6	477.3	488.0	498.7	509.3	520.4	531.8	543.2	554.5	565.9	574.3
67.5°	404.8	416.2	427.6	438.9	450.3	462.1	474.3	486.4	498.6	510.9	519.3
70°	362.7	374.1	385.5	396.8	408.2	420.3	432.9	445.6	458.4	471.1	480.1
72.5°	321.8	333.4	345.1	356.7	368.3	380.9	394.5	407.9	421.4	435.0	443.7
75°	258.9	271.3	283.6	296.0	308.4	321.6	335.6	349.7	363.7	377.8	387.1
77.5°	200.2	213.3	226.4	239.5	252.6	266.6	281.3	296.0	310.7	325.4	334.9
80°	164.1	177.4	190.8	204.2	217.5	231.6	246.3	261.1	275.8	290.5	300.5
82.5°	127.9	141.9	155.8	169.7	183.6	197.9	212.6	227.3	242.0	256.7	267.0
85°	79.7	93.8	107.8	121.9	135.9	150.5	165.5	180.6	195.7	210.8	220.7
87.5°	45.4	59.8	74.1	88.4	102.7	117.5	132.7	147.8	163.0	178.1	188.2
90°	28.4	45.2	62.0	78.9	95.8	112.6	129.5	146.5	163.3	180.3	191.9
92.5°	40.8	53.0	65.2	77.5	89.7	104.2	121.2	138.1	155.0	171.9	183.2
95°	97.7	98.0	98.3	98.6	99.0	106.1	120.1	134.1	148.2	162.2	173.1
97.5°	183.8	200.0	216.1	232.3	248.5	245.8	224.1	202.5	180.8	159.1	168.1
100°	249.7	264.0	278.4	292.8	307.2	299.1	268.5	238.0	207.5	176.9	180.6
102.5°	324.7	336.5	348.3	360.1	371.9	381.4	388.4	395.5	402.7	409.7	360.5
105°	441.4	450.0	458.5	467.1	475.7	487.0	501.0	514.9	528.9	542.8	554.0
107.5°	552.2	558.6	565.1	571.6	578.0	588.1	602.0	615.9	629.7	643.6	653.2
110°	626.0	631.7	637.3	643.0	648.6	658.2	671.8	685.4	699.0	712.7	721.0



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	697.7	703.5	709.4	715.2	721.0	730.0	742.1	754.1	766.2	778.3	785.5
115°	807.9	811.8	815.8	819.7	823.7	830.9	841.2	851.6	862.0	872.4	880.4
117.5°	908.5	911.5	914.6	917.7	920.8	927.7	938.3	949.0	959.6	970.3	977.1
120°	975.5	977.8	980.1	982.3	984.6	990.4	999.8	1009.2	1018.5	1027.9	1035.2
122.5°	1039.2	1040.1	1041.1	1042.1	1043.0	1048.3	1057.9	1067.5	1077.1	1086.8	1093.8
125°	1128.9	1129.8	1130.8	1131.7	1132.7	1137.0	1144.7	1152.4	1160.2	1167.9	1175.2
127.5°	1215.0	1215.0	1215.0	1214.9	1214.9	1218.9	1226.8	1234.6	1242.6	1250.4	1256.2
130°	1269.5	1269.5	1269.5	1269.5	1269.5	1272.6	1278.9	1285.3	1291.5	1297.8	1304.2
132.5°	1320.7	1321.0	1321.2	1321.4	1321.6	1324.6	1330.0	1335.5	1341.0	1346.4	1352.5
135°	1396.0	1395.6	1395.3	1395.1	1394.7	1396.4	1400.0	1403.5	1407.1	1410.8	1416.7
137.5°	1464.0	1463.7	1463.5	1463.3	1463.1	1464.2	1466.8	1469.3	1471.8	1474.3	1479.9
140°	1508.3	1508.5	1508.8	1509.2	1509.5	1510.0	1511.1	1512.0	1513.0	1513.9	1519.3
142.5°	1546.9	1547.9	1549.0	1550.1	1551.1	1551.8	1551.9	1552.1	1552.3	1552.5	1557.0
145°	1607.7	1608.3	1608.9	1609.5	1610.1	1610.4	1610.4	1610.4	1610.4	1610.4	1612.8
147.5°	1656.3	1657.7	1659.2	1660.6	1662.0	1662.6	1662.3	1662.0	1661.6	1661.3	1661.8
150°	1691.6	1692.4	1693.4	1694.3	1695.3	1695.5	1695.3	1695.0	1694.6	1694.3	1694.3
152.5°	1719.9	1720.8	1721.7	1722.7	1723.7	1723.9	1723.3	1722.7	1722.1	1721.6	1722.1
155°	1761.1	1761.4	1761.7	1762.1	1762.4	1762.1	1761.1	1760.2	1759.3	1758.2	1759.5
157.5°	1796.1	1795.9	1795.7	1795.5	1795.4	1794.7	1793.6	1792.5	1791.5	1790.4	1792.1
160°	1816.6	1815.6	1814.7	1813.7	1812.8	1812.1	1811.8	1811.5	1811.2	1810.8	1812.8
162.5°	1834.8	1833.5	1832.3	1831.2	1829.9	1829.2	1828.8	1828.5	1828.2	1827.9	1829.8
165°	1857.8	1856.1	1854.6	1853.0	1851.4	1850.7	1850.7	1850.7	1850.7	1850.7	1853.1
167.5°	1875.9	1874.3	1872.6	1871.0	1869.3	1868.5	1868.3	1868.1	1867.9	1867.7	1870.5
170°	1886.2	1884.3	1882.4	1880.5	1878.6	1877.8	1878.1	1878.5	1878.8	1879.1	1881.6
172.5°	1893.0	1891.1	1889.2	1887.3	1885.5	1884.6	1885.0	1885.3	1885.6	1885.9	1888.4
175°	1900.4	1898.5	1896.6	1894.7	1892.8	1892.1	1892.3	1892.6	1893.0	1893.3	1896.1
177.5°	1903.8	1902.1	1900.3	1898.5	1896.8	1896.1	1896.6	1897.1	1897.6	1898.1	1900.2
180°	1900.4	1900.4	1900.4	1900.4	1900.4	1900.4	1900.4	1900.4	1900.4	1900.4	1900.4



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1344.1	1344.1	1344.1	1344.1	1344.1	1344.1	1344.1	1344.1
2.5°	1339.4	1341.2	1343.1	1343.9	1343.6	1343.3	1343.1	1342.8
5°	1335.9	1338.5	1341.1	1342.4	1342.0	1341.7	1341.3	1341.0
7.5°	1328.7	1331.7	1334.7	1336.1	1335.7	1335.4	1335.0	1334.7
10°	1321.4	1324.5	1327.5	1328.8	1328.5	1328.1	1327.8	1327.5
12.5°	1311.3	1314.0	1316.7	1318.1	1318.1	1318.0	1317.9	1317.9
15°	1292.9	1295.9	1298.8	1300.2	1299.9	1299.6	1299.2	1298.8
17.5°	1270.5	1273.5	1276.6	1278.0	1277.7	1277.4	1277.1	1276.9
20°	1252.9	1256.2	1259.6	1261.2	1261.2	1261.2	1261.2	1261.2
22.5°	1232.4	1235.8	1239.1	1241.0	1241.6	1242.1	1242.6	1243.2
25°	1200.9	1204.6	1208.2	1210.2	1210.6	1210.9	1211.3	1211.5
27.5°	1165.5	1168.8	1172.2	1174.1	1174.6	1175.0	1175.4	1175.7
30°	1140.7	1144.3	1148.0	1150.2	1150.8	1151.5	1152.2	1152.9
32.5°	1115.2	1119.5	1123.7	1126.1	1126.8	1127.5	1128.1	1128.8
35°	1075.0	1079.6	1084.3	1087.1	1088.2	1089.2	1090.1	1091.2
37.5°	1032.9	1037.6	1042.5	1045.4	1046.4	1047.4	1048.6	1049.6
40°	1003.3	1008.4	1013.4	1016.6	1017.9	1019.3	1020.6	1021.9
42.5°	974.3	979.9	985.4	988.7	989.9	990.9	991.9	993.1
45°	929.4	935.2	940.8	944.5	946.2	947.8	949.5	951.2
47.5°	882.0	887.9	893.8	897.7	899.8	901.7	903.7	905.8
50°	848.7	855.4	862.0	866.4	868.5	870.4	872.4	874.4
52.5°	815.0	821.7	828.3	832.7	834.7	836.7	838.7	840.7
55°	764.4	771.1	777.8	782.1	784.1	786.2	788.2	790.1
57.5°	711.2	719.3	727.2	732.1	734.0	735.8	737.7	739.6
60°	674.6	682.3	689.9	695.1	697.9	700.5	703.2	705.9
62.5°	638.5	646.2	653.8	659.0	661.8	664.4	667.0	669.8
65°	582.6	591.0	599.4	604.8	607.6	610.2	612.9	615.6
67.5°	527.8	536.3	544.8	550.4	553.0	555.5	558.2	560.8
70°	489.2	498.1	507.2	512.9	515.2	517.6	519.9	522.3
72.5°	452.5	461.3	470.0	475.7	478.3	480.9	483.5	486.2
75°	396.5	405.9	415.2	421.4	424.4	427.4	430.5	433.5
77.5°	344.4	353.9	363.4	369.8	373.0	376.2	379.4	382.6
80°	310.6	320.6	330.6	337.0	339.6	342.3	345.0	347.7
82.5°	277.4	287.7	297.9	304.6	307.6	310.5	313.4	316.3
85°	230.7	240.8	250.8	257.5	260.9	264.2	267.6	270.9
87.5°	198.3	208.4	218.5	225.0	228.1	231.2	234.2	237.3
90°	203.5	215.1	226.7	234.1	237.4	240.7	244.0	247.3
92.5°	194.5	205.9	217.3	224.3	227.1	229.9	232.7	235.4
95°	184.1	195.0	205.9	213.0	216.4	219.7	223.0	226.3
97.5°	177.0	186.0	194.9	201.0	204.2	207.4	210.6	213.8
100°	184.3	187.9	191.5	194.7	197.4	200.0	202.7	205.4
102.5°	311.3	262.2	213.0	189.8	192.5	195.1	197.8	200.5
105°	565.2	576.5	587.6	588.9	580.2	571.5	562.8	554.1
107.5°	662.8	672.4	682.0	688.6	692.2	695.8	699.5	703.0
110°	729.2	737.6	745.9	751.9	755.5	759.1	762.8	766.4





TEST NUMBER: P332861-830

CATALOG NUMBER: S124DIW-S1195D1560U830-4F0-1E-UDD-D

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	792.9	800.1	807.5	813.0	816.9	820.8	824.6	828.5
115°	888.3	896.4	904.4	909.6	911.9	914.2	916.5	918.9
117.5°	983.9	990.7	997.6	1002.3	1004.8	1007.4	1009.9	1012.5
120°	1042.5	1049.9	1057.2	1061.9	1063.9	1066.0	1068.0	1070.1
122.5°	1100.9	1108.0	1115.0	1119.4	1121.2	1122.9	1124.7	1126.5
125°	1182.5	1189.8	1197.1	1201.9	1204.2	1206.5	1208.9	1211.2
127.5°	1262.1	1267.9	1273.8	1277.6	1279.7	1281.7	1283.7	1285.7
130°	1310.5	1316.8	1323.1	1327.3	1329.4	1331.3	1333.3	1335.4
132.5°	1358.6	1364.6	1370.7	1374.6	1376.4	1378.1	1379.9	1381.7
135°	1422.8	1428.7	1434.7	1439.0	1441.6	1444.3	1446.9	1449.5
137.5°	1485.5	1491.1	1496.7	1500.2	1501.7	1503.2	1504.7	1506.1
140°	1524.6	1529.8	1535.1	1538.8	1540.8	1542.8	1544.7	1546.7
142.5°	1561.5	1566.0	1570.5	1573.5	1575.0	1576.4	1577.9	1579.3
145°	1615.0	1617.4	1619.8	1621.8	1623.8	1625.8	1627.8	1629.8
147.5°	1662.4	1662.9	1663.4	1664.3	1665.8	1667.2	1668.5	1669.9
150°	1694.3	1694.3	1694.3	1694.5	1694.8	1695.1	1695.4	1695.7
152.5°	1722.6	1723.1	1723.6	1723.7	1723.5	1723.3	1723.2	1723.0
155°	1760.8	1762.1	1763.3	1763.5	1762.6	1761.6	1760.7	1759.7
157.5°	1793.7	1795.4	1797.0	1797.0	1795.4	1793.7	1792.1	1790.4
160°	1814.7	1816.6	1818.4	1818.4	1816.6	1814.7	1812.8	1810.8
162.5°	1831.7	1833.6	1835.5	1835.3	1833.2	1831.1	1828.9	1826.7
165°	1855.7	1858.2	1860.8	1860.6	1857.8	1854.9	1852.1	1849.3
167.5°	1873.3	1876.0	1878.9	1878.7	1875.5	1872.4	1869.2	1866.0
170°	1884.1	1886.7	1889.2	1888.9	1885.7	1882.5	1879.4	1876.2
172.5°	1890.9	1893.5	1896.0	1895.5	1892.2	1888.8	1885.4	1881.9
175°	1898.9	1901.9	1904.7	1904.2	1900.4	1896.6	1892.8	1889.0
177.5°	1902.1	1904.2	1906.2	1905.7	1902.7	1899.6	1896.6	1893.6
180°	1900.4	1900.4	1900.4	1900.4	1900.4	1900.4	1900.4	1900.4

(END OF REPORT)