

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: P332826

Luminaire Tested: **S124DIW-S1020D1340U835-4F0-1E-UDD-D1**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P332826  
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: S124DIW-S1020D1340U835-4F0-1E-UDD-D1  
Description: DEFINE 4 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE  
DOWNLIGHT 1020 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER  
UPLIGHT 1340 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

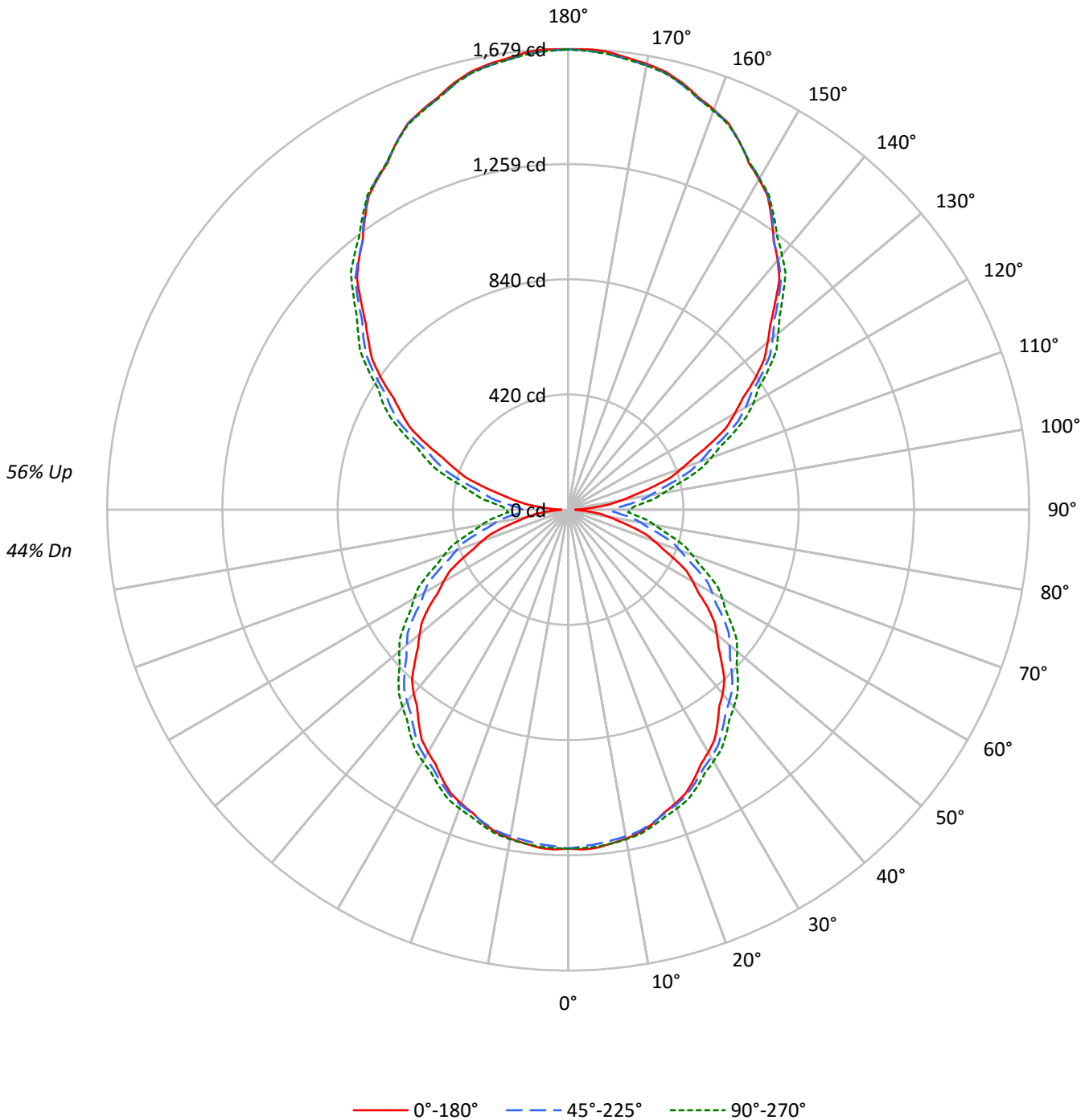
Lumens per Lamp: N/A  
Luminaire Lumens: 8866.2 lumens  
Efficiency: N/A  
Efficacy: 127.0 lumens/watt  
Spacing Criteria (0/90/45): 1.23 / 1.28 / 1.39  
Luminous Opening: Rectangular w/ Sides (W: 0.33' x L: 4' x H: 0.08')  
CIE Type: General Diffuse  
  
Input Watts (W): 69.8  
Input Voltage (V): 120  
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	50	30	10	0	
RCR																						
0	106	106	106	106	97	97	97	97	80	80	80	65	65	65	51	51	51	44				
1	96	91	87	83	87	83	80	76	69	66	64	55	54	52	43	42	41	35				
2	87	79	72	67	79	72	67	62	60	56	52	48	45	43	38	36	34	29				
3	79	69	61	55	72	63	57	51	52	47	43	42	39	36	33	30	28	24				
4	72	61	53	46	65	56	49	43	46	41	37	37	33	30	29	26	24	20				
5	66	54	46	39	60	50	42	37	41	36	31	33	29	26	26	23	21	17				
6	61	48	40	34	55	44	37	32	37	31	27	30	26	23	24	21	18	15				
7	56	43	35	30	51	40	33	28	33	28	24	27	23	20	22	18	16	13				
8	52	39	31	26	47	36	29	24	30	25	21	25	21	18	20	17	14	12				
9	48	36	28	23	44	33	26	22	28	22	19	23	19	16	18	15	13	11				
10	45	33	25	21	41	30	24	19	26	20	17	21	17	14	17	14	12	10				

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

	0°	45°	90°
0°	9968	9968	9968
5°	9998	9741	9769
10°	9937	9582	9575
15°	9848	9397	9346
20°	9714	9194	9123
25°	9563	8966	8879
30°	9399	8739	8627
35°	9213	8507	8407
40°	9065	8285	8178
45°	8844	8081	7981
50°	8658	7846	7773
55°	8466	7625	7529
60°	8166	7342	7306
65°	7837	7040	7032
70°	7439	6694	6714
75°	6882	6312	6425
80°	6266	5946	6141
85°	5484	5623	5977



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	116.9	1.3
10°-20°	335.0	3.8
20°-30°	506.5	5.7
30°-40°	612.9	6.9
40°-50°	647.9	7.3
50°-60°	609.8	6.9
60°-70°	505.9	5.7
70°-80°	355.4	4.0
80°-90°	205.9	2.3
90°-100°	229.9	2.6
100°-110°	415.9	4.7
110°-120°	615.4	6.9
120°-130°	766.7	8.6
130°-140°	838.0	9.5
140°-150°	812.2	9.2
150°-160°	680.6	7.7
160°-170°	452.8	5.1
170°-180°	158.6	1.8
0°-30°	958.4	10.8
0°-40°	1571.3	17.7
0°-60°	2829.0	31.9
0°-90°	3896.2	43.9
90°-120°	1261.2	14.2
90°-150°	3678.0	41.5
90°-180°	4970.0	56.1
0°-180°	8866.2	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1235	1235	1235	1235	1235	
5°	1236	1232	1222	1233	1232	117
15°	1185	1186	1182	1194	1193	334
25°	1084	1092	1096	1111	1113	499
35°	948	965	979	997	1002	594
45°	791	817	843	866	874	611
55°	619	649	690	716	726	552
65°	429	473	520	553	566	425
75°	238	289	347	384	398	253
85°	73	132	194	234	249	78
90°	26	96	165	211	227	20
95°	96	154	219	258	272	101
105°	315	345	400	437	453	335
115°	574	588	628	656	665	566
125°	829	830	861	884	890	739
135°	1065	1073	1082	1101	1106	824
145°	1292	1295	1297	1304	1306	808
155°	1478	1478	1477	1482	1477	680
165°	1609	1606	1603	1610	1606	453
175°	1674	1668	1666	1675	1666	159
180°	1677	1677	1677	1677	1677	



TEST NUMBER: P332826

CATALOG NUMBER: S124DIW-S1020D1340U835-4F0-1E-UDD-D1

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1234.7	1234.7	1234.7	1234.7	1234.7	1234.7	1234.7	1234.7	1234.7	1234.7	1234.7
2.5°	1239.1	1238.4	1237.6	1236.9	1236.1	1234.8	1232.8	1230.9	1228.9	1226.9	1228.6
5°	1236.0	1235.1	1234.2	1233.3	1232.4	1230.8	1228.7	1226.5	1224.4	1222.2	1224.7
7.5°	1225.5	1225.0	1224.4	1223.9	1223.3	1222.2	1220.4	1218.6	1216.8	1215.0	1217.8
10°	1216.7	1216.4	1216.1	1215.8	1215.5	1214.5	1213.0	1211.5	1209.9	1208.4	1211.2
12.5°	1204.5	1204.5	1204.4	1204.3	1204.3	1203.7	1202.7	1201.6	1200.6	1199.5	1202.1
15°	1184.9	1185.2	1185.5	1185.8	1186.1	1185.8	1184.9	1184.0	1183.0	1182.1	1184.9
17.5°	1158.1	1159.0	1159.9	1160.8	1161.8	1162.1	1161.9	1161.8	1161.6	1161.4	1164.2
20°	1139.3	1140.2	1141.1	1142.0	1143.0	1143.6	1143.9	1144.2	1144.5	1144.8	1147.9
22.5°	1118.2	1119.4	1120.6	1121.8	1122.9	1123.8	1124.3	1124.9	1125.4	1126.0	1129.1
25°	1084.0	1085.8	1087.6	1089.5	1091.3	1092.7	1093.6	1094.6	1095.5	1096.4	1099.8
27.5°	1045.8	1048.5	1051.2	1053.9	1056.6	1058.7	1060.1	1061.5	1062.9	1064.3	1067.5
30°	1020.4	1022.8	1025.3	1027.7	1030.2	1032.5	1034.6	1036.8	1038.9	1041.1	1044.5
32.5°	992.7	995.7	998.6	1001.6	1004.5	1007.2	1009.6	1012.0	1014.4	1016.8	1020.6
35°	948.5	952.2	955.8	959.5	963.2	966.6	969.7	972.7	975.8	978.9	983.2
37.5°	903.9	908.2	912.4	916.7	920.9	924.9	928.7	932.5	936.4	940.2	944.5
40°	875.2	879.2	883.2	887.2	891.2	895.3	899.6	903.9	908.2	912.5	917.1
42.5°	842.0	846.5	851.0	855.5	859.9	864.7	869.7	874.8	879.8	884.9	890.0
45°	790.8	796.7	802.5	808.4	814.2	820.0	825.9	831.7	837.5	843.4	848.6
47.5°	741.9	747.9	753.9	760.0	766.0	772.4	779.1	785.9	792.7	799.4	804.8
50°	706.5	713.3	720.0	726.8	733.5	740.3	747.1	753.8	760.6	767.3	773.5
52.5°	671.1	677.9	684.6	691.4	698.2	705.4	713.1	720.9	728.6	736.4	742.5
55°	619.4	625.9	632.3	638.8	645.2	653.0	662.3	671.5	680.7	689.9	696.1
57.5°	561.6	569.6	577.6	585.6	593.6	602.1	611.3	620.5	629.6	638.8	646.1
60°	524.0	532.0	540.0	548.0	556.0	565.0	575.2	585.3	595.4	605.6	612.6
62.5°	487.5	496.2	505.0	513.7	522.4	531.8	542.0	552.1	562.3	572.4	579.5
65°	428.6	438.4	448.3	458.1	467.9	478.1	488.5	499.0	509.4	519.9	527.5
67.5°	371.9	382.4	392.8	403.3	413.7	424.5	435.7	446.9	458.1	469.3	477.1
70°	333.2	343.7	354.1	364.5	375.0	386.1	397.7	409.4	421.1	432.8	441.1
72.5°	295.6	306.3	317.0	327.7	338.4	349.9	362.3	374.7	387.2	399.6	407.6
75°	237.8	249.2	260.5	271.9	283.3	295.4	308.3	321.2	334.1	347.0	355.6
77.5°	183.9	195.9	208.0	220.0	232.1	244.8	258.4	271.9	285.4	298.9	307.6
80°	150.7	163.0	175.3	187.6	199.9	212.8	226.3	239.8	253.3	266.8	276.1
82.5°	117.5	130.3	143.1	155.9	168.6	181.8	195.3	208.8	222.4	235.9	245.3
85°	73.3	86.2	99.1	112.0	124.9	138.3	152.1	165.9	179.7	193.6	202.8
87.5°	41.7	54.9	68.0	81.2	94.4	107.9	121.8	135.8	149.7	163.6	172.9
90°	26.0	41.5	56.9	72.4	87.9	103.3	118.9	134.4	149.9	165.4	176.0
92.5°	48.8	63.5	78.2	92.8	107.5	122.3	137.1	151.9	166.8	181.6	191.3
95°	95.8	108.5	121.3	134.0	146.7	160.4	175.0	189.6	204.2	218.8	228.0
97.5°	152.2	163.0	173.8	184.6	195.4	208.3	223.1	237.9	252.8	267.6	276.7
100°	196.8	205.9	215.1	224.2	233.3	245.2	259.8	274.3	288.9	303.5	312.4
102.5°	244.5	252.0	259.4	266.9	274.4	285.1	299.2	313.3	327.4	341.5	350.4
105°	314.6	321.1	327.5	333.9	340.3	349.8	362.3	374.9	387.4	399.9	408.5
107.5°	390.9	396.2	401.6	407.0	412.4	420.6	431.5	442.4	453.3	464.3	472.6
110°	441.6	446.5	451.4	456.3	461.1	468.8	479.3	489.7	500.2	510.7	517.2



TEST NUMBER: P332826

CATALOG NUMBER: S124DIW-S1020D1340U835-4F0-1E-UDD-D1

**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	494.5	498.4	502.3	506.2	510.2	517.0	526.7	536.5	546.2	556.0	562.7
115°	573.7	576.5	579.3	582.0	584.8	590.8	600.1	609.3	618.6	627.8	634.3
117.5°	649.7	651.6	653.5	655.4	657.3	662.6	671.3	680.1	688.9	697.6	703.0
120°	699.4	701.5	703.6	705.7	707.7	712.8	720.9	728.9	736.9	745.0	749.7
122.5°	752.4	753.0	753.7	754.3	754.9	759.3	767.3	775.3	783.3	791.3	796.5
125°	829.1	828.7	828.4	828.1	827.8	831.4	838.8	846.2	853.5	860.9	866.2
127.5°	899.6	900.1	900.7	901.3	901.8	904.8	910.2	915.7	921.1	926.6	931.5
130°	948.3	948.8	949.4	950.0	950.5	953.2	958.2	963.1	968.0	972.9	977.9
132.5°	999.1	999.4	999.8	1000.1	1000.4	1002.4	1006.1	1009.8	1013.5	1017.2	1022.0
135°	1064.9	1066.6	1068.4	1070.1	1071.8	1073.8	1075.9	1078.1	1080.2	1082.4	1086.7
137.5°	1138.1	1138.6	1139.1	1139.6	1140.1	1141.1	1142.6	1144.1	1145.6	1147.1	1150.8
140°	1186.8	1187.1	1187.4	1187.6	1187.9	1188.2	1188.5	1188.8	1189.1	1189.4	1193.1
142.5°	1230.3	1230.8	1231.4	1231.9	1232.4	1232.4	1232.0	1231.6	1231.2	1230.8	1234.2
145°	1291.8	1292.6	1293.5	1294.3	1295.2	1295.7	1296.0	1296.3	1296.6	1296.9	1298.4
147.5°	1353.0	1354.1	1355.1	1356.2	1357.3	1357.7	1357.5	1357.3	1357.0	1356.8	1356.8
150°	1390.3	1391.2	1392.0	1392.9	1393.7	1394.1	1394.1	1394.1	1394.1	1394.1	1394.1
152.5°	1424.5	1425.1	1425.8	1426.4	1427.0	1427.5	1427.7	1427.9	1428.2	1428.4	1429.1
155°	1478.4	1478.4	1478.4	1478.4	1478.4	1478.3	1478.0	1477.7	1477.4	1477.2	1478.3
157.5°	1524.1	1523.6	1523.1	1522.5	1522.0	1521.7	1521.7	1521.6	1521.6	1521.5	1522.4
160°	1551.1	1550.8	1550.5	1550.2	1549.9	1549.6	1549.3	1549.1	1548.8	1548.5	1549.3
162.5°	1576.0	1575.2	1574.5	1573.7	1573.0	1572.5	1572.2	1571.9	1571.6	1571.3	1572.9
165°	1609.4	1608.6	1607.7	1606.8	1606.0	1605.3	1604.7	1604.1	1603.5	1602.9	1604.7
167.5°	1635.1	1633.9	1632.7	1631.5	1630.3	1629.7	1629.8	1629.8	1629.9	1629.9	1631.7
170°	1649.6	1648.2	1646.8	1645.3	1643.9	1643.3	1643.6	1643.9	1644.2	1644.4	1646.2
172.5°	1660.0	1658.8	1657.6	1656.4	1655.2	1654.6	1654.7	1654.7	1654.8	1654.8	1656.8
175°	1674.3	1672.8	1671.4	1670.0	1668.5	1667.6	1667.4	1667.1	1666.8	1666.5	1668.5
177.5°	1678.9	1677.8	1676.6	1675.5	1674.3	1673.8	1673.8	1673.8	1673.8	1673.8	1675.4
180°	1676.9	1676.9	1676.9	1676.9	1676.9	1676.9	1676.9	1676.9	1676.9	1676.9	1676.9



TEST NUMBER: P332826

CATALOG NUMBER: S124DIW-S1020D1340U835-4F0-1E-UDD-D1

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1234.7	1234.7	1234.7	1234.7	1234.7	1234.7	1234.7	1234.7
2.5°	1230.4	1232.1	1233.8	1234.5	1234.3	1234.0	1233.8	1233.6
5°	1227.1	1229.6	1232.1	1233.1	1232.8	1232.5	1232.2	1231.9
7.5°	1220.6	1223.3	1226.1	1227.3	1227.0	1226.7	1226.4	1226.1
10°	1213.9	1216.7	1219.5	1220.7	1220.4	1220.1	1219.8	1219.5
12.5°	1204.6	1207.1	1209.6	1210.9	1210.8	1210.7	1210.7	1210.6
15°	1187.7	1190.4	1193.2	1194.4	1194.1	1193.8	1193.5	1193.2
17.5°	1167.0	1169.9	1172.7	1174.0	1173.7	1173.5	1173.2	1173.0
20°	1150.9	1154.0	1157.1	1158.6	1158.6	1158.6	1158.6	1158.6
22.5°	1132.1	1135.2	1138.3	1140.1	1140.6	1141.0	1141.5	1142.0
25°	1103.2	1106.5	1109.9	1111.8	1112.1	1112.4	1112.7	1113.0
27.5°	1070.6	1073.7	1076.9	1078.6	1079.0	1079.4	1079.7	1080.1
30°	1047.9	1051.2	1054.6	1056.6	1057.2	1057.8	1058.5	1059.1
32.5°	1024.5	1028.4	1032.3	1034.5	1035.1	1035.7	1036.3	1037.0
35°	987.5	991.8	996.1	998.7	999.6	1000.5	1001.5	1002.4
37.5°	948.9	953.3	957.6	960.3	961.3	962.3	963.2	964.2
40°	921.7	926.3	931.0	933.9	935.1	936.3	937.6	938.8
42.5°	895.1	900.2	905.3	908.3	909.3	910.3	911.3	912.2
45°	853.8	859.1	864.3	867.7	869.2	870.7	872.3	873.8
47.5°	810.2	815.6	821.1	824.7	826.5	828.4	830.2	832.1
50°	779.6	785.8	791.9	795.9	797.8	799.6	801.4	803.3
52.5°	748.7	754.8	761.0	764.9	766.8	768.6	770.5	772.3
55°	702.2	708.4	714.5	718.5	720.3	722.2	724.0	725.9
57.5°	653.4	660.7	668.0	672.5	674.2	676.0	677.7	679.4
60°	619.7	626.8	633.8	638.6	641.1	643.5	646.0	648.4
62.5°	586.5	593.6	600.7	605.4	607.9	610.3	612.8	615.3
65°	535.2	542.9	550.6	555.7	558.1	560.6	563.0	565.5
67.5°	484.9	492.7	500.5	505.6	508.0	510.4	512.8	515.2
70°	449.3	457.6	465.9	471.2	473.3	475.5	477.6	479.8
72.5°	415.7	423.7	431.8	437.0	439.4	441.8	444.2	446.6
75°	364.2	372.8	381.4	387.1	389.9	392.7	395.4	398.2
77.5°	316.4	325.1	333.8	339.7	342.6	345.6	348.5	351.5
80°	285.3	294.5	303.7	309.5	312.0	314.5	316.9	319.4
82.5°	254.8	264.3	273.7	279.8	282.5	285.2	287.9	290.6
85°	212.0	221.2	230.4	236.6	239.7	242.7	245.8	248.9
87.5°	182.1	191.4	200.6	206.7	209.5	212.3	215.1	217.9
90°	186.7	197.3	208.0	214.8	217.8	220.9	223.9	226.9
92.5°	201.0	210.7	220.4	226.7	229.5	232.3	235.1	237.9
95°	237.2	246.3	255.5	261.5	264.2	267.0	269.7	272.5
97.5°	285.8	294.9	303.9	309.8	312.5	315.1	317.7	320.4
100°	321.2	330.1	339.0	344.5	346.7	348.8	351.0	353.1
102.5°	359.3	368.1	377.0	382.7	385.3	388.0	390.6	393.2
105°	417.0	425.5	434.1	440.0	443.3	446.7	450.0	453.3
107.5°	481.0	489.4	497.7	503.0	505.1	507.3	509.4	511.6
110°	523.7	530.1	536.6	541.5	544.9	548.2	551.5	554.8





TEST NUMBER: P332826

CATALOG NUMBER: S124DIW-S1020D1340U835-4F0-1E-UDD-D1

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	569.4	576.1	582.8	587.5	590.1	592.7	595.4	598.0
115°	640.8	647.2	653.7	657.9	659.7	661.6	663.5	665.3
117.5°	708.4	713.8	719.2	722.9	724.8	726.7	728.5	730.4
120°	754.4	759.1	763.8	767.7	770.7	773.7	776.8	779.8
122.5°	801.7	806.8	812.0	815.2	816.3	817.5	818.7	819.9
125°	871.5	876.7	882.0	885.2	886.5	887.8	889.0	890.3
127.5°	936.5	941.4	946.4	949.7	951.3	952.9	954.6	956.2
130°	982.8	987.8	992.7	995.5	996.2	996.9	997.6	998.3
132.5°	1026.7	1031.4	1036.1	1039.1	1040.5	1041.9	1043.3	1044.7
135°	1091.1	1095.4	1099.7	1102.4	1103.4	1104.3	1105.3	1106.3
137.5°	1154.6	1158.3	1162.0	1164.8	1166.5	1168.2	1169.9	1171.6
140°	1196.8	1200.5	1204.2	1206.7	1208.0	1209.2	1210.5	1211.7
142.5°	1237.7	1241.1	1244.6	1246.9	1248.1	1249.4	1250.6	1251.8
145°	1300.0	1301.5	1303.1	1304.1	1304.4	1304.8	1305.2	1305.5
147.5°	1356.8	1356.8	1356.9	1357.2	1357.9	1358.6	1359.3	1360.0
150°	1394.1	1394.1	1394.1	1394.0	1393.7	1393.4	1393.1	1392.9
152.5°	1429.8	1430.5	1431.2	1431.1	1430.4	1429.6	1428.9	1428.1
155°	1479.5	1480.6	1481.8	1481.8	1480.6	1479.5	1478.3	1477.2
157.5°	1523.2	1524.1	1525.0	1524.9	1523.9	1522.9	1522.0	1521.0
160°	1550.2	1551.1	1551.9	1551.6	1550.2	1548.8	1547.3	1545.9
162.5°	1574.4	1576.0	1577.5	1577.6	1576.1	1574.7	1573.3	1571.8
165°	1606.4	1608.1	1609.9	1610.2	1609.0	1607.8	1606.7	1605.5
167.5°	1633.4	1635.1	1636.8	1636.8	1635.0	1633.2	1631.5	1629.7
170°	1647.9	1649.6	1651.4	1651.2	1649.2	1647.2	1645.2	1643.2
172.5°	1658.7	1660.7	1662.7	1662.6	1660.6	1658.6	1656.6	1654.6
175°	1670.5	1672.5	1674.6	1674.6	1672.5	1670.5	1668.5	1666.5
177.5°	1677.0	1678.6	1680.2	1680.1	1678.3	1676.4	1674.6	1672.7
180°	1676.9	1676.9	1676.9	1676.9	1676.9	1676.9	1676.9	1676.9

(END OF REPORT)