

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: P332849-830

Luminaire Tested: **S124DIW-S1195D1050U830-4F0-1E-UDD-D**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P332849-830  
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-S1195D1050U830-4F0-1E-UDD-D  
Description: DEFINE 4 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE  
DOWNLIGHT 1195 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER  
UPLIGHT 1050 LUMENS PER FOOT, NO LENS  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 8534.8 lumens  
Efficiency: N/A  
Efficacy: 126.6 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

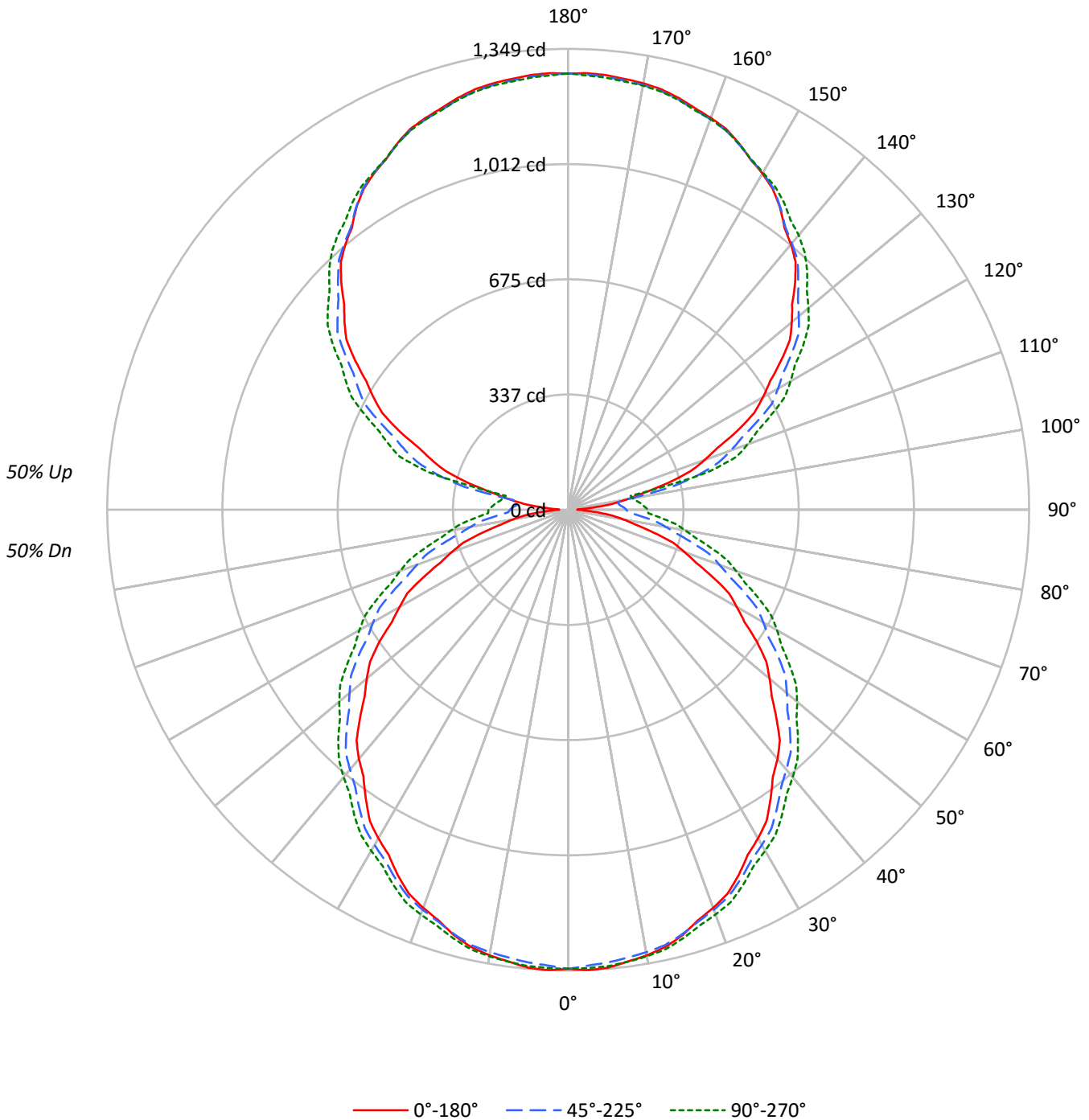
Input Watts (W): 67.4  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



TEST NUMBER: P332849-830

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### Luminous Intensity Polar Plot





TEST NUMBER: P332849-830

CATALOG NUMBER: S124DIW-S1195D1050U830-4F0-1E-UDD-D

**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	107	107	107	107	99	99	99	99	83	83	83	69	69	69	56	56	56	50
1	97	92	88	84	89	85	81	78	71	69	66	59	57	55	48	46	45	40
2	88	80	73	68	80	74	68	63	62	58	54	51	48	45	41	39	37	32
3	80	70	62	56	73	64	58	52	54	49	45	45	41	38	36	34	31	27
4	73	61	53	47	67	57	49	44	48	42	38	40	36	32	32	29	27	23
5	67	55	46	40	61	50	43	37	43	37	32	36	31	28	29	26	23	20
6	61	49	40	34	56	45	38	32	38	33	28	32	28	24	26	23	20	17
7	57	44	36	30	52	41	33	28	35	29	25	29	25	21	24	20	18	15
8	52	40	32	26	48	37	30	25	32	26	22	27	22	19	22	18	16	13
9	49	36	29	24	45	34	27	22	29	23	19	24	20	17	20	17	14	12
10	46	33	26	21	42	31	24	20	27	21	17	23	18	15	19	15	13	11

**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	1.5
10°-20°	364.7	4.3
20°-30°	551.4	6.5
30°-40°	667.1	7.8
40°-50°	705.3	8.3
50°-60°	663.8	7.8
60°-70°	550.7	6.5
70°-80°	386.8	4.5
80°-90°	222.4	2.6
90°-100°	173.5	2.0
100°-110°	374.5	4.4
110°-120°	597.2	7.0
120°-130°	712.5	8.3
130°-140°	739.2	8.7
140°-150°	679.7	8.0
150°-160°	545.6	6.4
160°-170°	351.9	4.1
170°-180°	121.3	1.4
0°-30°	1043.3	12.2
0°-40°	1710.5	20.0
0°-60°	3079.5	36.1
0°-90°	4239.5	49.7
90°-120°	1145.2	13.4
90°-150°	3276.6	38.4
90°-180°	4295.0	50.3
0°-180°	8534.8	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°	27	98	170	217	233	18
95°	72	92	152	196	213	83
105°	301	338	397	440	421	316
115°	546	564	609	643	655	538
125°	760	765	798	829	840	679
135°	939	939	952	977	989	724
145°	1081	1082	1082	1092	1100	675
155°	1183	1184	1181	1185	1182	545
165°	1248	1244	1243	1250	1242	353
175°	1277	1271	1272	1280	1269	122
180°	1277	1277	1277	1277	1277	



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**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°	45.1	59.2	73.3	87.5	101.6	116.1	131.1	146.1	161.1	176.1	186.1
90°	27.0	42.7	58.3	74.1	89.8	105.7	121.8	137.9	153.9	170.0	181.0
92.5°	34.9	47.0	59.3	71.4	83.6	97.7	113.8	129.9	145.9	162.0	172.8
95°	72.1	75.9	79.7	83.5	87.4	96.2	110.2	124.1	138.0	151.9	162.2
97.5°	129.3	143.3	157.3	171.3	185.3	187.3	177.1	167.0	156.9	146.8	155.7
100°	173.1	185.7	198.2	210.8	223.2	221.4	205.1	188.9	172.7	156.4	161.8
102.5°	223.6	234.0	244.4	254.9	265.3	275.0	284.0	292.9	301.9	310.9	280.7
105°	301.0	309.0	316.9	324.9	332.8	343.6	356.9	370.4	383.8	397.3	407.6
107.5°	375.3	381.4	387.6	393.7	399.8	409.5	422.6	435.8	448.9	462.1	471.3
110°	424.6	429.9	435.3	440.5	445.8	455.0	468.0	481.0	494.0	506.9	515.0



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	472.3	477.6	482.9	488.1	493.4	502.0	513.8	525.5	537.2	549.0	556.4
115°	545.7	549.4	553.0	556.7	560.3	567.4	577.9	588.3	598.9	609.4	617.1
117.5°	613.2	615.9	618.5	621.2	623.9	630.4	640.8	651.3	661.7	672.1	679.0
120°	657.9	659.7	661.6	663.5	665.2	670.9	680.4	689.9	699.4	708.9	716.0
122.5°	700.6	701.3	702.1	702.8	703.5	708.6	718.0	727.5	737.0	746.4	753.4
125°	760.4	760.9	761.5	762.0	762.5	766.8	774.7	782.6	790.5	798.4	805.5
127.5°	818.2	818.0	817.9	817.8	817.7	821.3	828.8	836.1	843.6	850.9	856.9
130°	854.4	854.3	854.2	854.0	853.9	856.9	862.9	868.8	874.9	880.8	887.0
132.5°	888.8	888.8	888.9	888.9	889.0	891.6	896.6	901.7	906.8	911.9	917.8
135°	938.9	938.7	938.5	938.2	938.0	939.5	942.7	945.9	949.0	952.3	958.1
137.5°	984.5	984.3	984.0	983.7	983.5	984.4	986.5	988.5	990.6	992.7	998.1
140°	1014.3	1014.4	1014.5	1014.6	1014.6	1015.1	1015.9	1016.6	1017.4	1018.1	1023.1
142.5°	1039.8	1040.6	1041.2	1042.0	1042.6	1043.0	1043.1	1043.1	1043.2	1043.2	1047.5
145°	1080.6	1080.9	1081.2	1081.5	1081.9	1081.9	1081.9	1081.9	1081.9	1081.9	1084.2
147.5°	1113.2	1114.1	1114.9	1115.9	1116.7	1117.0	1116.8	1116.6	1116.3	1116.2	1116.6
150°	1137.0	1137.5	1138.0	1138.5	1139.0	1139.2	1139.0	1138.8	1138.5	1138.3	1138.3
152.5°	1155.7	1156.2	1156.9	1157.4	1158.1	1158.2	1157.8	1157.4	1157.1	1156.7	1157.0
155°	1183.2	1183.5	1183.6	1183.8	1184.0	1183.8	1183.2	1182.6	1181.9	1181.3	1182.1
157.5°	1206.7	1206.5	1206.5	1206.3	1206.2	1205.8	1205.0	1204.3	1203.6	1202.9	1204.0
160°	1220.4	1219.8	1219.2	1218.5	1217.9	1217.5	1217.3	1217.0	1216.8	1216.6	1217.9
162.5°	1232.7	1231.9	1231.1	1230.2	1229.5	1228.9	1228.7	1228.5	1228.3	1228.0	1229.4
165°	1248.1	1247.1	1246.0	1244.9	1243.9	1243.4	1243.4	1243.4	1243.4	1243.4	1245.1
167.5°	1260.4	1259.2	1258.2	1257.1	1255.9	1255.4	1255.2	1255.1	1255.0	1254.8	1256.7
170°	1267.2	1265.9	1264.7	1263.4	1262.2	1261.6	1261.8	1262.1	1262.3	1262.4	1264.1
172.5°	1271.8	1270.5	1269.2	1268.0	1266.7	1266.2	1266.4	1266.6	1266.9	1267.1	1268.8
175°	1276.8	1275.5	1274.2	1273.0	1271.7	1271.2	1271.4	1271.6	1271.8	1272.1	1273.9
177.5°	1279.0	1277.9	1276.7	1275.5	1274.3	1273.9	1274.2	1274.6	1274.9	1275.3	1276.6
180°	1276.8	1276.8	1276.8	1276.8	1276.8	1276.8	1276.8	1276.8	1276.8	1276.8	1276.8



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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°	196.0	205.9	215.9	222.3	225.5	228.5	231.5	234.5
90°	192.0	202.9	213.9	220.9	224.0	227.2	230.3	233.4
92.5°	183.4	194.2	204.8	211.6	214.3	217.1	219.9	222.6
95°	172.6	182.9	193.1	199.9	203.1	206.4	209.6	212.8
97.5°	164.6	173.5	182.4	188.4	191.4	194.5	197.7	200.8
100°	167.2	172.7	178.1	182.1	184.6	187.2	189.7	192.3
102.5°	250.5	220.4	190.2	176.4	179.1	181.7	184.4	187.0
105°	417.8	428.1	438.4	441.0	436.0	431.1	426.1	421.1
107.5°	480.4	489.6	498.7	504.9	508.1	511.3	514.5	517.7
110°	523.2	531.3	539.4	545.1	548.5	551.8	555.1	558.4





TEST NUMBER: P332849-830

CATALOG NUMBER: S124DIW-S1195D1050U830-4F0-1E-UDD-D

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	563.7	571.1	578.4	583.8	587.3	590.8	594.3	597.8
115°	624.9	632.7	640.5	645.5	647.9	650.2	652.5	654.9
117.5°	685.9	692.8	699.6	704.4	706.9	709.5	712.1	714.7
120°	723.1	730.2	737.4	742.1	744.2	746.5	748.8	751.0
122.5°	760.3	767.2	774.2	778.6	780.6	782.6	784.6	786.6
125°	812.5	819.4	826.4	831.0	833.3	835.5	837.7	839.9
127.5°	862.7	868.6	874.5	878.5	880.6	882.7	884.9	886.9
130°	893.2	899.6	905.8	909.8	911.9	913.9	915.9	917.9
132.5°	923.9	929.8	935.8	939.7	941.5	943.4	945.2	947.1
135°	963.8	969.6	975.3	979.5	981.9	984.3	986.7	989.2
137.5°	1003.4	1008.8	1014.1	1017.6	1019.1	1020.7	1022.2	1023.8
140°	1028.1	1033.1	1038.1	1041.5	1043.4	1045.3	1047.2	1049.0
142.5°	1051.8	1056.0	1060.4	1063.2	1064.7	1066.1	1067.5	1069.0
145°	1086.4	1088.6	1090.8	1092.9	1094.6	1096.4	1098.2	1099.9
147.5°	1117.0	1117.5	1117.9	1118.8	1120.0	1121.3	1122.7	1123.9
150°	1138.3	1138.3	1138.3	1138.4	1138.6	1138.9	1139.1	1139.3
152.5°	1157.3	1157.6	1158.0	1158.1	1158.0	1157.8	1157.7	1157.6
155°	1183.0	1183.8	1184.7	1184.8	1184.1	1183.6	1182.9	1182.2
157.5°	1205.0	1206.2	1207.3	1207.3	1206.2	1205.0	1204.0	1202.9
160°	1219.2	1220.4	1221.7	1221.7	1220.4	1219.2	1217.9	1216.6
162.5°	1230.6	1231.9	1233.1	1233.1	1231.6	1230.2	1228.8	1227.3
165°	1246.8	1248.5	1250.2	1250.0	1248.1	1246.2	1244.3	1242.4
167.5°	1258.6	1260.5	1262.3	1262.2	1260.1	1257.9	1255.8	1253.7
170°	1265.8	1267.5	1269.2	1269.0	1266.9	1264.8	1262.6	1260.6
172.5°	1270.5	1272.1	1273.8	1273.6	1271.2	1268.9	1266.7	1264.3
175°	1275.8	1277.7	1279.7	1279.3	1276.8	1274.2	1271.7	1269.1
177.5°	1278.0	1279.3	1280.7	1280.3	1278.3	1276.3	1274.2	1272.2
180°	1276.8	1276.8	1276.8	1276.8	1276.8	1276.8	1276.8	1276.8

(END OF REPORT)