

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: P332837

Luminaire Tested: **S124DIW-S1195D470U835-4F0-1E-UDD-D**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332837
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-S1195D470U835-4F0-1E-UDD-D
Description: DEFINE 4 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 1195 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER
UPLIGHT 470 LUMENS PER FOOT, NO LENS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 6737.0 lumens
Efficiency: N/A
Efficacy: 128.6 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: Semi-Direct

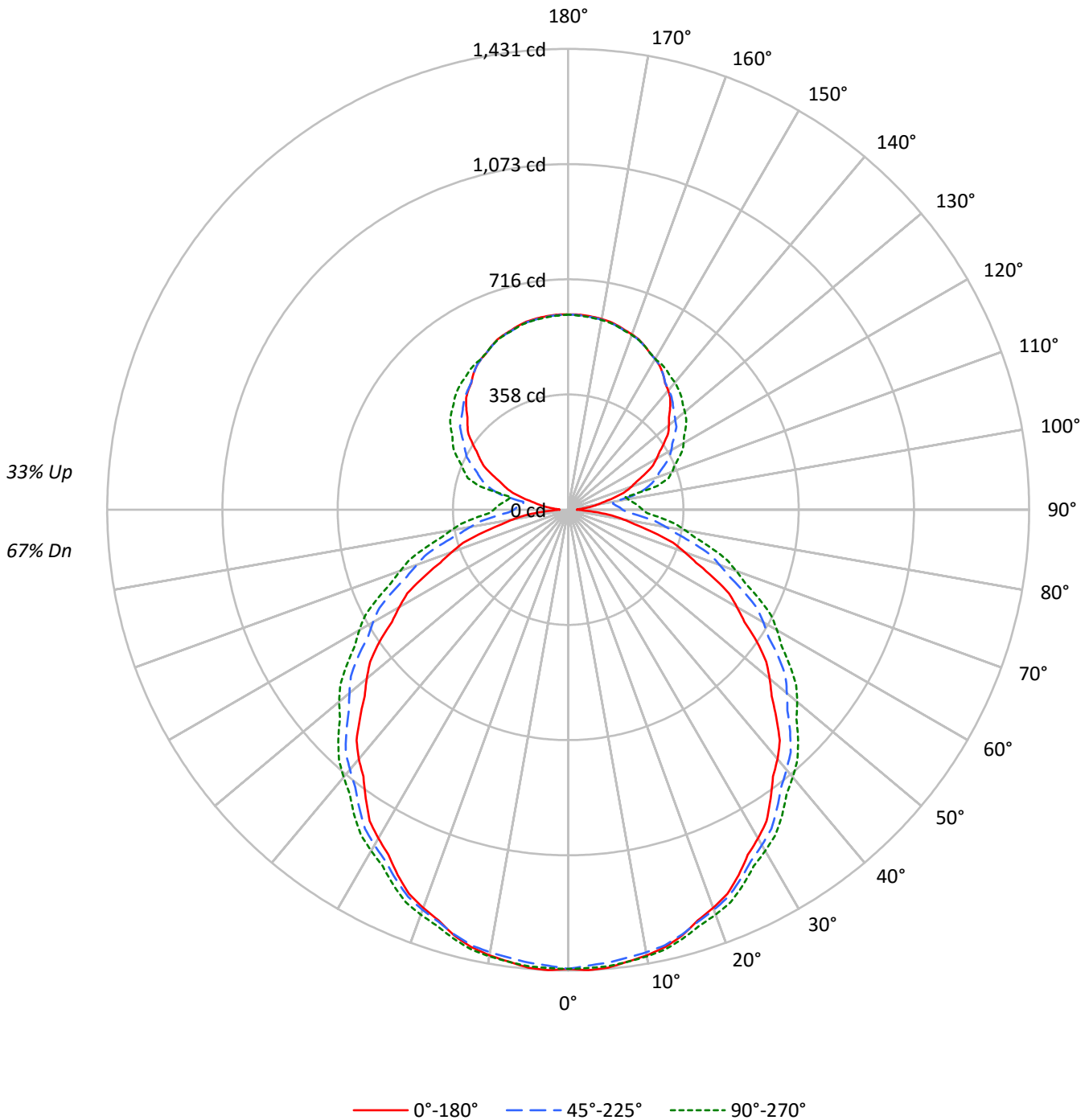
Input Watts (W): 52.4
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





TEST NUMBER: P332837

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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	50	30	10	0		
RCR																										
0	111	111	111	111	105	105	105	105	93	93	93	82	82	82	71	71	71	67								
1	100	95	91	87	94	90	86	82	79	76	73	70	67	65	61	59	58	53								
2	91	82	75	70	85	78	71	66	69	64	60	61	57	53	53	50	48	44								
3	82	72	64	57	77	68	61	55	60	54	50	53	48	45	46	43	40	36								
4	75	63	55	48	70	60	52	46	53	47	42	47	42	38	41	37	34	31								
5	69	56	48	41	65	53	45	39	47	41	36	42	37	33	37	33	29	26								
6	64	51	42	36	59	48	40	34	43	36	31	38	33	28	33	29	26	23								
7	59	46	37	31	55	43	35	30	39	32	27	34	29	25	30	26	23	20								
8	55	41	33	28	51	39	32	26	35	29	24	32	26	22	28	24	20	18								
9	51	38	30	25	48	36	29	24	32	26	22	29	24	20	26	21	18	16								
10	47	35	27	22	45	33	26	21	30	24	20	27	22	18	24	20	17	15								

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	11512	11512	11512
5°	11547	11251	11283
10°	11477	11067	11058
15°	11374	10854	10794
20°	11219	10619	10537
25°	11044	10355	10254
30°	10854	10093	9964
35°	10640	9824	9710
40°	10469	9569	9445
45°	10215	9334	9218
50°	10000	9062	8977
55°	9778	8806	8695
60°	9431	8480	8438
65°	9051	8130	8122
70°	8591	7730	7753
75°	7950	7291	7421
80°	7239	6868	7093
85°	6329	6495	6901



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	135.0	2.0
10°-20°	386.9	5.7
20°-30°	585.0	8.7
30°-40°	707.8	10.5
40°-50°	748.3	11.1
50°-60°	704.2	10.5
60°-70°	584.3	8.7
70°-80°	410.4	6.1
80°-90°	233.8	3.5
90°-100°	158.5	2.4
100°-110°	234.1	3.5
110°-120°	321.2	4.8
120°-130°	359.5	5.3
130°-140°	360.0	5.3
140°-150°	324.4	4.8
150°-160°	258.9	3.8
160°-170°	167.0	2.5
170°-180°	57.6	0.9
0°-30°	1106.9	16.4
0°-40°	1814.7	26.9
0°-60°	3267.3	48.5
0°-90°	4495.7	66.7
90°-120°	713.8	10.6
90°-150°	1757.8	26.1
90°-180°	2241.0	33.3
0°-180°	6737.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1426	1426	1426	1426	1426	
5°	1428	1422	1412	1424	1423	135
15°	1368	1370	1365	1379	1378	385
25°	1252	1261	1266	1283	1285	576
35°	1095	1114	1130	1152	1158	686
45°	913	944	974	1000	1009	706
55°	715	750	797	828	838	637
65°	495	546	600	639	653	490
75°	275	334	401	444	460	292
85°	85	152	224	270	287	90
90°	27	96	168	215	231	18
95°	46	85	149	193	210	49
105°	151	187	247	288	287	159
115°	264	282	331	365	378	261
125°	364	367	404	434	445	326
135°	447	448	460	485	497	345
145°	514	514	514	523	531	321
155°	562	562	561	562	561	259
165°	592	590	590	593	590	167
175°	606	603	604	607	602	58
180°	606	606	606	606	606	



TEST NUMBER: P332837

CATALOG NUMBER: S124DIW-S1195D470U835-4F0-1E-UDD-D

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1426.0	1426.0	1426.0	1426.0	1426.0	1426.0	1426.0	1426.0	1426.0	1426.0	1426.0
2.5°	1431.1	1430.2	1429.4	1428.5	1427.7	1426.1	1423.8	1421.6	1419.3	1417.0	1419.0
5°	1427.5	1426.5	1425.4	1424.4	1423.3	1421.5	1419.0	1416.5	1414.1	1411.6	1414.4
7.5°	1415.4	1414.8	1414.1	1413.5	1412.9	1411.5	1409.5	1407.4	1405.3	1403.3	1406.5
10°	1405.2	1404.8	1404.5	1404.1	1403.8	1402.7	1400.9	1399.2	1397.4	1395.6	1398.8
12.5°	1391.1	1391.1	1391.0	1390.9	1390.9	1390.2	1389.0	1387.8	1386.6	1385.4	1388.3
15°	1368.5	1368.8	1369.2	1369.5	1369.9	1369.5	1368.5	1367.4	1366.3	1365.3	1368.5
17.5°	1337.5	1338.6	1339.6	1340.7	1341.7	1342.2	1342.0	1341.7	1341.5	1341.3	1344.6
20°	1315.8	1316.8	1317.9	1319.0	1320.0	1320.7	1321.1	1321.5	1321.8	1322.2	1325.7
22.5°	1291.5	1292.8	1294.2	1295.5	1296.9	1297.9	1298.5	1299.2	1299.8	1300.4	1304.0
25°	1251.9	1254.0	1256.2	1258.3	1260.4	1262.0	1263.1	1264.1	1265.2	1266.3	1270.2
27.5°	1207.8	1211.0	1214.1	1217.2	1220.3	1222.7	1224.3	1226.0	1227.6	1229.2	1232.8
30°	1178.4	1181.3	1184.1	1187.0	1189.8	1192.5	1194.9	1197.4	1199.9	1202.4	1206.3
32.5°	1146.5	1149.9	1153.3	1156.7	1160.1	1163.2	1166.0	1168.8	1171.5	1174.3	1178.8
35°	1095.4	1099.7	1103.9	1108.2	1112.4	1116.3	1119.9	1123.4	1127.0	1130.5	1135.5
37.5°	1044.0	1048.9	1053.8	1058.7	1063.6	1068.2	1072.6	1077.0	1081.4	1085.8	1090.9
40°	1010.8	1015.4	1020.0	1024.6	1029.2	1034.0	1039.0	1044.0	1048.9	1053.9	1059.2
42.5°	972.5	977.6	982.8	988.0	993.2	998.7	1004.5	1010.3	1016.1	1022.0	1027.9
45°	913.4	920.1	926.9	933.6	940.3	947.1	953.8	960.6	967.3	974.1	980.1
47.5°	856.8	863.8	870.8	877.7	884.7	892.1	899.9	907.7	915.5	923.3	929.5
50°	816.0	823.8	831.6	839.4	847.2	855.0	862.8	870.6	878.4	886.2	893.3
52.5°	775.1	782.9	790.7	798.5	806.3	814.7	823.6	832.6	841.5	850.5	857.6
55°	715.4	722.8	730.3	737.7	745.2	754.2	764.9	775.5	786.2	796.8	803.9
57.5°	648.6	657.9	667.1	676.3	685.5	695.4	706.0	716.6	727.2	737.7	746.2
60°	605.2	614.4	623.6	632.9	642.1	652.6	664.3	676.0	687.7	699.4	707.6
62.5°	563.0	573.1	583.2	593.3	603.3	614.2	626.0	637.7	649.4	661.1	669.2
65°	495.0	506.4	517.7	529.1	540.4	552.1	564.2	576.3	588.3	600.4	609.3
67.5°	429.5	441.6	453.7	465.7	477.8	490.3	503.2	516.1	529.0	542.0	551.0
70°	384.8	396.9	409.0	421.0	433.1	445.9	459.3	472.8	486.3	499.8	509.4
72.5°	341.4	353.7	366.1	378.4	390.8	404.1	418.5	432.8	447.1	461.5	470.8
75°	274.7	287.8	300.9	314.0	327.2	341.2	356.1	371.0	385.9	400.8	410.7
77.5°	212.4	226.3	240.2	254.1	268.0	282.8	298.4	314.0	329.6	345.2	355.3
80°	174.1	188.2	202.4	216.6	230.8	245.7	261.3	277.0	292.6	308.2	318.8
82.5°	135.7	150.5	165.3	180.0	194.8	210.0	225.6	241.2	256.8	272.4	283.3
85°	84.6	99.5	114.4	129.3	144.2	159.7	175.6	191.6	207.6	223.6	234.2
87.5°	47.5	62.2	76.9	91.6	106.3	121.5	137.2	152.9	168.6	184.3	194.8
90°	26.9	42.2	57.5	72.8	88.1	103.8	119.9	135.9	152.0	168.1	178.9
92.5°	30.0	42.8	55.7	68.5	81.3	95.8	111.8	127.9	144.0	160.0	170.6
95°	45.7	54.0	62.3	70.5	78.8	90.3	104.9	119.6	134.2	148.9	159.1
97.5°	71.8	84.0	96.2	108.4	120.6	128.3	131.5	134.7	137.8	141.0	150.3
100°	91.9	102.9	114.0	125.0	136.0	141.5	141.5	141.4	141.4	141.3	149.2
102.5°	115.8	125.2	134.7	144.1	153.5	164.1	175.8	187.6	199.3	211.0	201.9
105°	150.8	158.5	166.2	173.9	181.6	192.3	205.9	219.5	233.2	246.8	256.6
107.5°	185.9	192.0	198.1	204.3	210.4	220.0	233.1	246.2	259.3	272.4	281.6
110°	208.6	213.8	219.1	224.4	229.6	238.8	251.8	264.8	277.9	290.9	299.2



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	230.5	235.4	240.4	245.3	250.3	258.8	270.9	283.1	295.2	307.3	315.2
115°	264.3	267.8	271.3	274.8	278.3	285.6	296.9	308.1	319.4	330.7	338.7
117.5°	296.1	298.5	300.8	303.1	305.4	312.0	322.8	333.6	344.4	355.2	362.5
120°	316.6	318.1	319.5	321.0	322.5	328.3	338.5	348.7	358.9	369.1	376.4
122.5°	336.9	337.4	337.8	338.3	338.7	343.9	353.8	363.6	373.5	383.4	390.6
125°	364.4	364.5	364.5	364.6	364.6	369.0	377.6	386.3	395.0	403.6	410.7
127.5°	391.7	391.4	391.1	390.9	390.6	394.1	401.4	408.7	416.0	423.3	429.6
130°	408.1	407.9	407.6	407.4	407.1	410.0	416.0	421.9	427.9	433.9	440.4
132.5°	424.5	424.3	424.1	423.9	423.8	426.1	431.1	436.0	440.9	445.8	452.0
135°	447.3	447.2	447.1	447.0	446.9	448.3	451.2	454.1	457.0	459.9	465.7
137.5°	469.0	468.7	468.4	468.1	467.7	468.4	470.1	471.7	473.4	475.0	480.4
140°	483.1	483.0	482.8	482.7	482.5	482.7	483.3	483.8	484.4	484.9	489.9
142.5°	494.5	494.8	495.1	495.4	495.7	495.8	495.7	495.6	495.5	495.4	499.7
145°	513.7	513.7	513.6	513.6	513.5	513.5	513.5	513.5	513.5	513.5	515.7
147.5°	529.2	529.4	529.6	529.8	530.1	530.1	530.0	529.9	529.8	529.7	530.1
150°	540.5	540.5	540.5	540.6	540.6	540.6	540.5	540.4	540.3	540.2	540.2
152.5°	548.6	548.9	549.1	549.4	549.6	549.6	549.5	549.3	549.1	548.9	549.1
155°	561.5	561.6	561.7	561.8	561.9	561.8	561.5	561.2	560.9	560.6	561.0
157.5°	572.7	572.6	572.5	572.5	572.4	572.2	571.9	571.5	571.2	570.9	571.4
160°	579.2	578.9	578.6	578.3	578.0	577.8	577.7	577.6	577.5	577.4	578.0
162.5°	585.0	584.6	584.2	583.8	583.5	583.2	583.1	583.0	582.9	582.8	583.4
165°	592.3	591.8	591.3	590.8	590.3	590.1	590.1	590.1	590.1	590.1	590.9
167.5°	598.1	597.6	597.1	596.6	596.0	595.7	595.7	595.6	595.6	595.5	596.4
170°	601.4	600.8	600.2	599.6	599.0	598.7	598.8	598.9	599.0	599.1	599.9
172.5°	603.6	603.0	602.4	601.8	601.2	600.9	601.0	601.1	601.2	601.3	602.1
175°	605.9	605.3	604.7	604.1	603.5	603.3	603.4	603.5	603.6	603.7	604.6
177.5°	607.0	606.5	605.9	605.3	604.8	604.6	604.7	604.9	605.0	605.2	605.8
180°	605.9	605.9	605.9	605.9	605.9	605.9	605.9	605.9	605.9	605.9	605.9



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1426.0	1426.0	1426.0	1426.0	1426.0	1426.0	1426.0	1426.0
2.5°	1421.0	1423.0	1425.0	1425.8	1425.5	1425.2	1425.0	1424.7
5°	1417.3	1420.1	1422.9	1424.2	1423.8	1423.5	1423.1	1422.8
7.5°	1409.7	1412.9	1416.1	1417.5	1417.1	1416.8	1416.4	1416.1
10°	1402.0	1405.2	1408.4	1409.8	1409.5	1409.1	1408.7	1408.4
12.5°	1391.2	1394.1	1397.0	1398.5	1398.4	1398.3	1398.2	1398.2
15°	1371.7	1374.9	1378.0	1379.5	1379.1	1378.8	1378.4	1378.0
17.5°	1347.9	1351.1	1354.4	1355.9	1355.6	1355.3	1355.0	1354.7
20°	1329.3	1332.8	1336.4	1338.1	1338.1	1338.1	1338.1	1338.1
22.5°	1307.5	1311.1	1314.6	1316.7	1317.3	1317.8	1318.4	1319.0
25°	1274.1	1278.0	1281.9	1284.0	1284.4	1284.7	1285.1	1285.4
27.5°	1236.5	1240.1	1243.7	1245.7	1246.2	1246.6	1247.0	1247.4
30°	1210.2	1214.1	1218.0	1220.3	1221.0	1221.7	1222.4	1223.2
32.5°	1183.2	1187.7	1192.2	1194.8	1195.5	1196.2	1196.9	1197.6
35°	1140.5	1145.4	1150.4	1153.4	1154.5	1155.6	1156.6	1157.7
37.5°	1095.9	1100.9	1106.0	1109.1	1110.2	1111.3	1112.5	1113.6
40°	1064.5	1069.9	1075.2	1078.6	1080.0	1081.4	1082.8	1084.2
42.5°	1033.7	1039.6	1045.5	1049.0	1050.2	1051.3	1052.4	1053.6
45°	986.1	992.2	998.2	1002.1	1003.9	1005.6	1007.4	1009.2
47.5°	935.8	942.0	948.3	952.4	954.6	956.7	958.8	961.0
50°	900.4	907.5	914.6	919.2	921.4	923.5	925.6	927.7
52.5°	864.7	871.8	878.8	883.5	885.6	887.7	889.8	892.0
55°	811.0	818.1	825.2	829.8	831.9	834.1	836.2	838.3
57.5°	754.6	763.1	771.5	776.7	778.7	780.7	782.7	784.7
60°	715.7	723.9	732.0	737.5	740.4	743.2	746.1	748.9
62.5°	677.4	685.6	693.7	699.2	702.1	704.9	707.7	710.6
65°	618.1	627.0	635.9	641.7	644.6	647.4	650.3	653.1
67.5°	560.0	569.0	578.0	583.9	586.7	589.4	592.2	595.0
70°	519.0	528.5	538.1	544.2	546.6	549.1	551.6	554.1
72.5°	480.1	489.4	498.7	504.7	507.5	510.2	513.0	515.8
75°	420.7	430.6	440.5	447.1	450.3	453.5	456.7	459.9
77.5°	365.4	375.5	385.5	392.3	395.7	399.1	402.5	405.9
80°	329.5	340.1	350.8	357.5	360.3	363.2	366.0	368.9
82.5°	294.3	305.2	316.1	323.2	326.3	329.4	332.5	335.6
85°	244.8	255.5	266.1	273.2	276.8	280.3	283.9	287.4
87.5°	205.2	215.6	226.0	232.8	235.9	239.1	242.3	245.4
90°	189.8	200.7	211.6	218.6	221.6	224.7	227.7	230.8
92.5°	181.2	191.9	202.5	209.2	212.1	215.0	217.9	220.7
95°	169.3	179.4	189.6	196.4	199.7	203.0	206.3	209.6
97.5°	159.7	169.1	178.4	184.7	187.8	191.0	194.1	197.3
100°	157.0	164.9	172.8	178.0	180.6	183.2	185.8	188.3
102.5°	192.7	183.5	174.4	171.2	174.0	176.7	179.5	182.3
105°	266.3	276.1	285.9	290.4	289.6	288.8	288.0	287.2
107.5°	290.8	299.9	309.1	315.2	318.1	321.0	324.0	326.9
110°	307.6	316.0	324.3	330.1	333.2	336.4	339.5	342.6



TEST NUMBER: P332837

CATALOG NUMBER: S124DIW-S1195D470U835-4F0-1E-UDD-D

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	323.0	330.8	338.7	344.2	347.4	350.7	353.9	357.1
115°	346.7	354.7	362.7	367.9	370.4	372.9	375.4	377.9
117.5°	369.8	377.2	384.5	389.6	392.4	395.2	398.0	400.8
120°	383.7	391.0	398.3	403.2	405.9	408.5	411.1	413.8
122.5°	397.8	405.0	412.2	417.0	419.4	421.7	424.1	426.4
125°	417.7	424.8	431.8	436.5	438.7	440.9	443.1	445.4
127.5°	435.9	442.2	448.6	452.9	455.2	457.6	459.9	462.2
130°	446.9	453.4	459.9	464.2	466.3	468.4	470.6	472.7
132.5°	458.2	464.4	470.7	474.8	476.8	478.9	480.9	483.0
135°	471.6	477.5	483.4	487.5	489.8	492.1	494.5	496.8
137.5°	485.8	491.2	496.6	500.2	501.9	503.6	505.3	507.0
140°	494.8	499.7	504.6	508.0	509.9	511.8	513.6	515.5
142.5°	504.0	508.2	512.5	515.4	516.9	518.4	519.9	521.4
145°	517.9	520.2	522.4	524.3	525.9	527.6	529.2	530.8
147.5°	530.4	530.8	531.2	532.0	533.2	534.4	535.7	536.9
150°	540.2	540.2	540.2	540.3	540.4	540.5	540.6	540.7
152.5°	549.2	549.4	549.6	549.6	549.6	549.5	549.4	549.4
155°	561.4	561.8	562.2	562.3	562.0	561.7	561.4	561.1
157.5°	571.9	572.4	572.9	572.9	572.4	571.9	571.4	570.9
160°	578.6	579.2	579.8	579.8	579.2	578.6	578.0	577.4
162.5°	584.0	584.6	585.2	585.2	584.5	583.8	583.1	582.5
165°	591.7	592.5	593.3	593.2	592.3	591.4	590.5	589.6
167.5°	597.3	598.2	599.1	599.0	598.0	597.0	596.0	595.0
170°	600.7	601.5	602.4	602.3	601.2	600.2	599.2	598.2
172.5°	602.9	603.7	604.5	604.4	603.3	602.2	601.1	600.0
175°	605.5	606.4	607.3	607.1	605.9	604.7	603.5	602.3
177.5°	606.5	607.1	607.8	607.6	606.7	605.7	604.7	603.8
180°	605.9	605.9	605.9	605.9	605.9	605.9	605.9	605.9

(END OF REPORT)