

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: P332838

Luminaire Tested: **S124DIW-S1195D470U835-4F0-1E-UDD-D1**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P332838  
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-S1195D470U835-4F0-1E-UDD-D1  
Description: DEFINE 4 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE  
DOWNLIGHT 1195 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER  
UPLIGHT 470 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

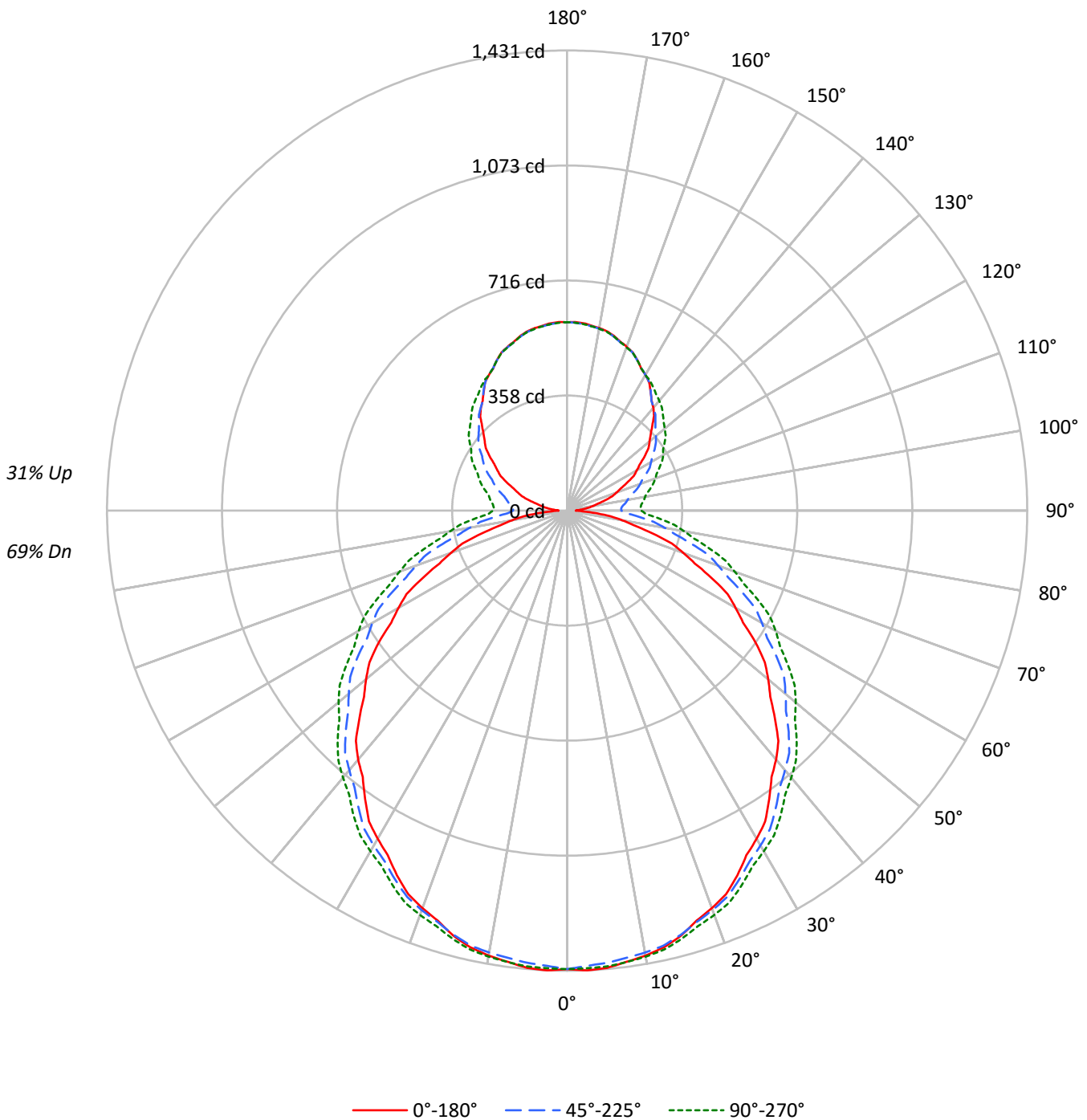
Lumens per Lamp: N/A  
Luminaire Lumens: 6488.2 lumens  
Efficiency: N/A  
Efficacy: 123.8 lumens/watt  
Spacing Criteria (0/90/45): 1.23 / 1.28 / 1.39  
Luminous Opening: Rectangular w/ Sides (W: 0.33' x L: 4' x H: 0.08')  
CIE Type: Semi-Direct  
  
Input Watts (W): 52.4  
Input Voltage (V): 120  
Input Current (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	50	30	10	0		
RCR																										
0	112	112	112	112	106	106	106	106	94	94	94	84	84	84	74	74	74	69								
1	101	96	91	87	95	90	86	83	81	77	75	71	69	67	63	61	60	55								
2	91	83	76	70	86	78	72	67	70	65	61	62	58	55	55	52	49	45								
3	83	72	64	58	78	68	61	55	61	55	50	54	50	46	48	44	41	38								
4	76	64	55	48	71	60	52	46	54	48	43	48	43	39	43	38	35	32								
5	69	57	48	41	65	54	46	40	48	42	36	43	38	33	38	34	30	27								
6	64	51	42	36	60	48	40	34	43	37	32	39	33	29	35	30	27	24								
7	59	46	37	31	55	44	36	30	39	33	28	35	30	26	31	27	23	21								
8	55	42	33	28	52	40	32	27	36	29	25	32	27	23	29	24	21	19								
9	51	38	30	25	48	36	29	24	33	27	22	30	24	20	27	22	19	17								
10	48	35	27	22	45	33	26	21	30	24	20	27	22	19	25	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	2.1
10°-20°	386.9	6.0
20°-30°	585.0	9.0
30°-40°	707.8	10.9
40°-50°	748.3	11.5
50°-60°	704.2	10.9
60°-70°	584.3	9.0
70°-80°	410.4	6.3
80°-90°	233.8	3.6
90°-100°	176.4	2.7
100°-110°	216.5	3.3
110°-120°	262.7	4.0
120°-130°	294.8	4.5
130°-140°	304.4	4.7
140°-150°	286.1	4.4
150°-160°	237.8	3.7
160°-170°	158.2	2.4
170°-180°	55.4	0.9
0°-30°	1106.9	17.1
0°-40°	1814.7	28.0
0°-60°	3267.3	50.4
0°-90°	4495.7	69.3
90°-120°	655.6	10.1
90°-150°	1541.0	23.8
90°-180°	1992.0	30.7
0°-180°	6488.2	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	19
95°	48	105	173	216	232	47
105°	120	154	213	253	269	128
115°	207	224	272	305	317	205
125°	294	295	332	360	370	262
135°	374	378	388	412	421	290
145°	452	453	453	462	467	283
155°	517	517	516	518	516	238
165°	562	561	560	563	561	158
175°	585	583	582	585	582	56
180°	586	586	586	586	586	



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**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°	34.0	48.0	62.1	76.1	90.1	105.1	120.9	136.7	152.5	168.4	178.7
95°	47.9	60.6	73.2	85.8	98.4	112.3	127.6	142.9	158.1	173.4	183.2
97.5°	66.3	77.1	87.9	98.7	109.5	122.6	137.8	153.0	168.3	183.5	193.1
100°	81.0	90.6	100.3	109.9	119.5	131.7	146.5	161.2	175.9	190.7	200.5
102.5°	97.7	105.9	114.2	122.4	130.7	142.0	156.4	170.8	185.1	199.5	209.1
105°	120.0	127.2	134.3	141.5	148.7	159.1	172.6	186.2	199.7	213.2	222.4
107.5°	146.4	152.3	158.2	164.2	170.1	179.3	191.8	204.3	216.8	229.3	238.3
110°	163.2	168.4	173.6	178.7	183.9	192.6	205.0	217.3	229.6	241.9	249.9



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	180.8	185.2	189.7	194.1	198.6	206.6	218.3	229.9	241.6	253.3	261.1
115°	207.2	210.3	213.5	216.7	219.9	227.1	238.3	249.4	260.6	271.7	279.4
117.5°	233.5	235.5	237.5	239.5	241.5	247.7	258.1	268.5	279.0	289.4	296.4
120°	250.0	251.4	252.9	254.4	255.8	261.6	271.5	281.5	291.5	301.5	308.1
122.5°	268.4	268.8	269.2	269.6	269.9	274.9	284.5	294.1	303.7	313.3	320.0
125°	294.1	293.8	293.4	293.1	292.7	296.9	305.7	314.5	323.2	332.0	338.5
127.5°	318.6	318.5	318.4	318.4	318.3	321.6	328.3	334.9	341.6	348.3	354.4
130°	334.7	334.6	334.6	334.5	334.5	337.3	343.0	348.6	354.3	360.0	366.2
132.5°	352.4	352.3	352.2	352.0	351.9	354.1	358.5	363.0	367.5	371.9	377.8
135°	374.3	374.9	375.5	376.1	376.7	378.3	380.8	383.2	385.7	388.2	393.7
137.5°	399.9	399.8	399.7	399.7	399.6	400.2	401.6	403.0	404.3	405.7	410.6
140°	416.9	416.8	416.6	416.5	416.3	416.4	416.8	417.1	417.5	417.8	422.3
142.5°	431.2	431.4	431.5	431.6	431.7	431.7	431.4	431.1	430.8	430.5	434.5
145°	452.5	452.5	452.6	452.6	452.7	452.7	452.8	452.9	453.0	453.1	455.2
147.5°	473.9	474.0	474.1	474.2	474.4	474.4	474.3	474.2	474.2	474.1	474.3
150°	486.9	487.0	487.0	487.1	487.1	487.1	487.1	487.1	487.1	487.1	487.1
152.5°	498.0	498.1	498.3	498.5	498.6	498.8	498.8	498.9	499.0	499.1	499.3
155°	516.6	516.6	516.6	516.6	516.6	516.5	516.4	516.3	516.2	516.1	516.5
157.5°	532.5	532.3	532.2	532.0	531.8	531.7	531.7	531.7	531.6	531.6	531.9
160°	542.0	541.9	541.8	541.7	541.6	541.5	541.4	541.3	541.2	541.1	541.4
162.5°	550.7	550.4	550.1	549.9	549.6	549.4	549.3	549.2	549.1	549.0	549.6
165°	562.3	562.0	561.7	561.4	561.1	560.9	560.7	560.5	560.3	560.1	560.7
167.5°	571.3	570.9	570.5	570.1	569.6	569.4	569.4	569.5	569.5	569.5	570.1
170°	576.4	575.9	575.4	574.9	574.4	574.2	574.3	574.4	574.5	574.6	575.2
172.5°	580.0	579.6	579.2	578.8	578.3	578.1	578.1	578.2	578.2	578.2	578.9
175°	585.0	584.5	584.0	583.5	583.0	582.7	582.6	582.5	582.4	582.3	583.0
177.5°	586.6	586.2	585.8	585.4	585.0	584.8	584.8	584.8	584.8	584.8	585.4
180°	585.9	585.9	585.9	585.9	585.9	585.9	585.9	585.9	585.9	585.9	585.9



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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°	189.1	199.5	209.8	216.5	219.5	222.4	225.4	228.3
95°	193.1	203.0	212.9	219.4	222.6	225.8	229.0	232.2
97.5°	202.8	212.5	222.1	228.5	231.5	234.6	237.6	240.7
100°	210.3	220.0	229.8	236.0	238.4	240.9	243.4	245.9
102.5°	218.7	228.3	237.8	244.1	246.9	249.8	252.6	255.4
105°	231.6	240.8	249.9	256.1	259.2	262.4	265.5	268.7
107.5°	247.3	256.3	265.3	271.1	273.6	276.1	278.7	281.2
110°	257.8	265.8	273.8	279.3	282.4	285.6	288.7	291.9





TEST NUMBER: P332838

CATALOG NUMBER: S124DIW-S1195D470U835-4F0-1E-UDD-D1

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	269.0	276.8	284.6	290.0	292.9	295.8	298.7	301.6
115°	287.1	294.8	302.5	307.6	310.0	312.3	314.7	317.1
117.5°	303.5	310.5	317.6	322.4	325.0	327.7	330.3	333.0
120°	314.7	321.3	327.9	332.7	335.7	338.8	341.8	344.9
122.5°	326.8	333.5	340.3	344.7	346.9	349.1	351.3	353.5
125°	345.1	351.6	358.2	362.4	364.3	366.3	368.2	370.1
127.5°	360.6	366.8	373.0	377.2	379.5	381.7	384.0	386.2
130°	372.4	378.5	384.7	388.7	390.4	392.1	393.9	395.6
132.5°	383.7	389.6	395.5	399.5	401.4	403.4	405.4	407.3
135°	399.2	404.6	410.1	413.8	415.6	417.4	419.2	421.1
137.5°	415.5	420.5	425.4	428.8	430.6	432.4	434.3	436.1
140°	426.8	431.4	435.9	439.0	440.6	442.3	444.0	445.7
142.5°	438.5	442.6	446.6	449.3	450.8	452.3	453.7	455.2
145°	457.2	459.2	461.3	462.8	463.9	465.1	466.2	467.3
147.5°	474.5	474.7	474.9	475.5	476.5	477.6	478.6	479.6
150°	487.1	487.1	487.1	487.1	487.0	486.9	486.8	486.7
152.5°	499.6	499.8	500.1	500.0	499.8	499.5	499.3	499.0
155°	516.9	517.3	517.7	517.7	517.3	516.9	516.5	516.1
157.5°	532.2	532.5	532.8	532.8	532.5	532.1	531.8	531.4
160°	541.7	542.0	542.3	542.2	541.7	541.2	540.6	540.1
162.5°	550.1	550.7	551.2	551.2	550.7	550.2	549.7	549.2
165°	561.3	561.9	562.5	562.6	562.2	561.8	561.4	561.0
167.5°	570.7	571.3	571.9	571.9	571.3	570.7	570.0	569.4
170°	575.8	576.4	577.0	576.9	576.2	575.5	574.8	574.1
172.5°	579.6	580.3	580.9	580.9	580.2	579.5	578.8	578.1
175°	583.7	584.4	585.1	585.1	584.4	583.7	583.0	582.3
177.5°	586.0	586.5	587.1	587.0	586.4	585.8	585.1	584.5
180°	585.9	585.9	585.9	585.9	585.9	585.9	585.9	585.9

(END OF REPORT)