

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: P331559

Luminaire Tested: **S122DIW-S865D435U835-4F0-1E-UDD-F**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P331559  
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-2,  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: S122DIW-S865D435U835-4F0-1E-UDD-F  
Description: DEFINE 2 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE  
DOWNLIGHT 865 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER  
UPLIGHT 435 LUMENS PER FOOT, NO LENS  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 5243.4 lumens  
Efficiency: N/A  
Efficacy: 113.5 lumens/watt  
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.3  
Luminous Opening: Rectangular (W 0.17' x L: 4' x H: 0')  
CIE Type: Semi-Direct

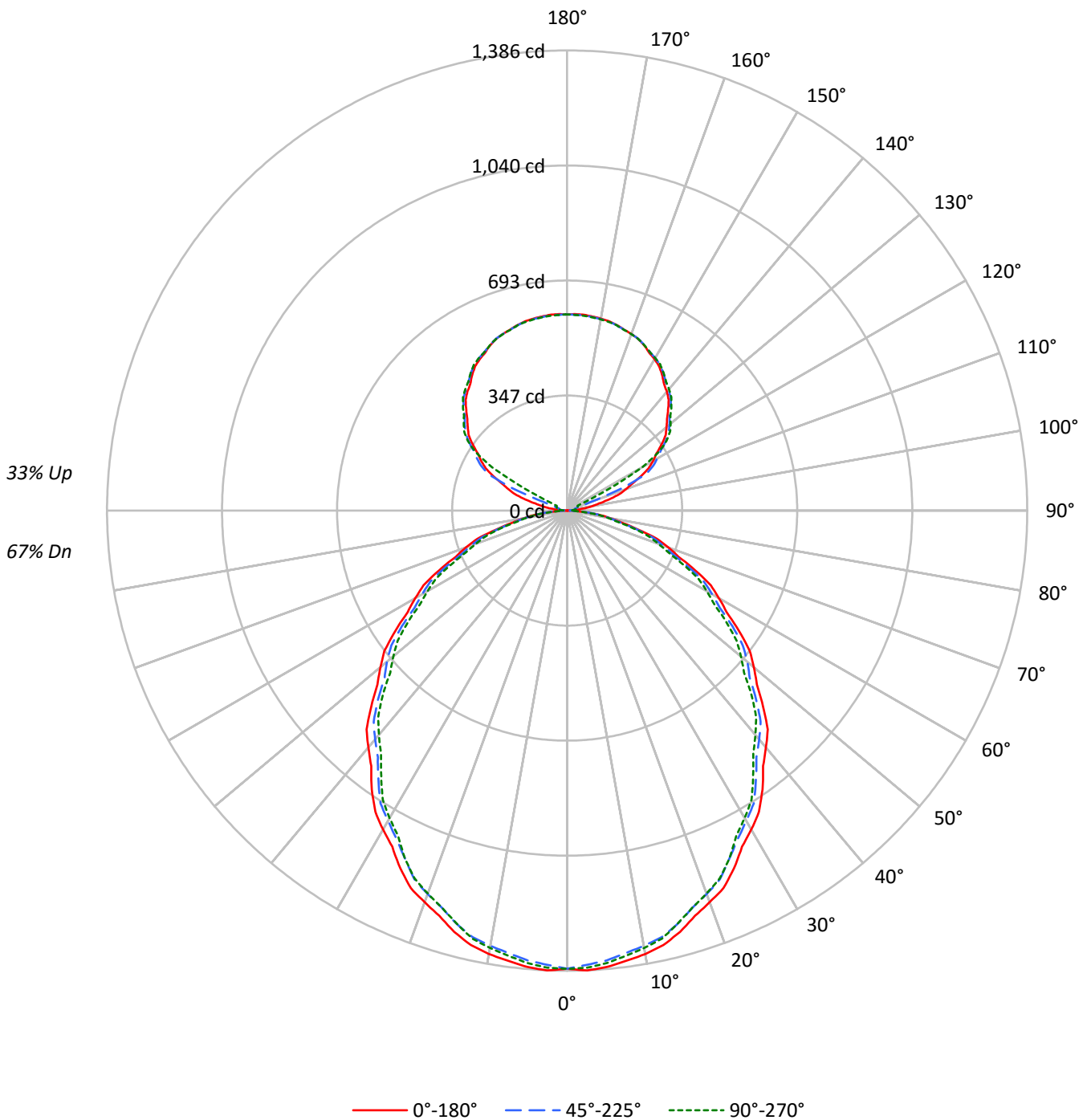
Input Watts (W): 46.2  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	0
RCR																		
0	111	111	111	111	105	105	105	105	93	93	93	82	82	82	72	72	72	67
1	102	97	93	90	96	92	88	85	81	79	76	72	70	68	63	62	61	56
2	93	85	79	73	87	80	75	70	71	67	63	63	60	57	56	53	51	47
3	84	75	67	61	79	71	64	58	63	58	53	56	52	48	49	46	43	40
4	77	66	58	52	73	63	55	50	56	50	45	50	45	41	44	41	37	34
5	71	59	51	45	67	56	48	43	50	44	39	45	40	36	40	36	33	30
6	66	53	45	39	62	50	43	37	45	39	34	41	36	32	36	32	29	26
7	61	48	40	34	57	46	38	33	41	35	30	37	32	28	33	29	26	23
8	56	44	36	30	53	42	34	29	38	32	27	34	29	25	30	26	23	21
9	53	40	32	27	50	38	31	26	35	29	24	31	26	23	28	24	21	19
10	49	37	29	24	46	35	28	24	32	26	22	29	24	21	26	22	19	17

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

	0°	45°	90°
0°	22281	22281	22281
5°	22366	22044	22174
10°	22233	21820	21930
15°	21959	21538	21514
20°	21569	21113	21089
25°	21180	20591	20591
30°	20681	20113	19939
35°	20217	19537	19249
40°	19633	18963	18598
45°	19057	18393	17938
50°	18432	17799	17166
55°	17779	17106	16473
60°	17053	16281	15684
65°	16275	15461	14751
70°	15286	14469	13780
75°	13905	13325	12994
80°	12338	11967	11353
85°	10078	9596	8596



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	129.8	2.5
10°-20°	365.1	7.0
20°-30°	536.7	10.2
30°-40°	623.4	11.9
40°-50°	622.7	11.9
50°-60°	543.1	10.4
60°-70°	401.6	7.7
70°-80°	227.4	4.3
80°-90°	62.6	1.2
90°-100°	19.7	0.4
100°-110°	72.3	1.4
110°-120°	193.1	3.7
120°-130°	318.8	6.1
130°-140°	339.1	6.5
140°-150°	315.2	6.0
150°-160°	253.4	4.8
160°-170°	163.3	3.1
170°-180°	56.2	1.1
0°-30°	1031.6	19.7
0°-40°	1655.0	31.6
0°-60°	2820.8	53.8
0°-90°	3512.4	67.0
90°-120°	285.1	5.4
90°-150°	1258.2	24.0
90°-180°	1731.0	33.0
0°-180°	5243.4	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1380	1380	1380	1380	1380	
5°	1380	1374	1360	1370	1368	131
15°	1314	1305	1288	1293	1287	370
25°	1189	1178	1156	1158	1156	547
35°	1026	1012	991	983	977	640
45°	835	825	806	791	786	644
55°	632	623	608	592	585	565
65°	426	418	405	393	386	421
75°	223	220	214	206	208	238
85°	54	53	52	48	46	62
90°	0	5	8	11	12	4
95°	28	15	17	19	18	34
105°	130	136	26	31	32	139
115°	246	253	264	75	35	242
125°	348	353	361	364	365	310
135°	430	437	441	445	444	332
145°	499	499	506	508	506	312
155°	549	546	550	553	550	253
165°	579	576	577	580	577	163
175°	592	589	590	592	589	56
180°	591	591	591	591	591	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1380.0	1380.0	1380.0	1380.0	1380.0	1380.0	1380.0	1380.0	1380.0	1380.0	1380.0
2.5°	1386.4	1385.2	1384.0	1382.9	1381.7	1379.8	1377.2	1374.6	1372.0	1369.4	1371.8
5°	1380.0	1378.8	1377.7	1376.5	1375.3	1373.1	1369.9	1366.6	1363.4	1360.1	1362.5
7.5°	1367.8	1366.0	1364.2	1362.3	1360.5	1357.9	1354.6	1351.3	1348.0	1344.7	1347.1
10°	1356.1	1354.1	1352.0	1349.9	1347.9	1345.1	1341.5	1338.0	1334.5	1330.9	1333.3
12.5°	1340.2	1338.4	1336.6	1334.7	1332.9	1330.2	1326.7	1323.1	1319.6	1316.1	1317.7
15°	1313.7	1311.9	1310.1	1308.4	1306.6	1303.8	1300.0	1296.1	1292.3	1288.5	1289.6
17.5°	1279.7	1277.9	1276.2	1274.4	1272.6	1269.8	1265.9	1262.0	1258.1	1254.2	1255.6
20°	1255.3	1253.5	1251.8	1250.0	1248.2	1245.3	1241.1	1237.0	1232.9	1228.8	1229.6
22.5°	1230.9	1228.4	1225.9	1223.4	1221.0	1217.8	1213.9	1210.0	1206.1	1202.2	1202.4
25°	1188.9	1186.6	1184.2	1181.9	1179.5	1175.8	1170.8	1165.8	1160.8	1155.8	1156.4
27.5°	1141.2	1139.1	1136.9	1134.8	1132.7	1129.6	1125.7	1121.7	1117.8	1113.8	1113.0
30°	1109.3	1107.0	1104.6	1102.3	1099.9	1096.5	1092.1	1087.7	1083.2	1078.8	1077.9
32.5°	1075.4	1073.5	1071.6	1069.7	1067.8	1064.5	1059.9	1055.2	1050.6	1045.9	1044.3
35°	1025.7	1022.8	1019.8	1016.9	1013.9	1010.1	1005.4	1000.7	995.9	991.2	989.5
37.5°	969.7	967.1	964.5	961.9	959.4	955.7	951.0	946.3	941.5	936.8	934.6
40°	931.5	929.2	926.8	924.4	922.1	918.5	913.8	909.1	904.4	899.7	897.0
42.5°	894.4	892.0	889.6	887.3	884.9	881.4	876.7	872.0	867.2	862.5	859.6
45°	834.6	832.6	830.5	828.5	826.4	823.1	818.7	814.3	809.9	805.5	802.2
47.5°	775.2	773.3	771.3	769.4	767.4	764.1	759.5	754.9	750.3	745.7	742.3
50°	733.8	732.3	730.9	729.4	727.9	725.1	721.0	716.8	712.7	708.6	704.5
52.5°	693.5	691.5	689.6	687.6	685.7	682.8	678.9	675.0	671.1	667.2	663.8
55°	631.6	629.9	628.1	626.3	624.5	621.9	618.4	614.8	611.3	607.7	604.2
57.5°	569.5	568.1	566.7	565.3	563.9	561.2	557.3	553.4	549.5	545.6	542.2
60°	528.1	526.9	525.8	524.6	523.4	520.8	516.6	512.5	508.4	504.2	501.0
62.5°	487.8	485.9	484.0	482.1	480.2	477.7	474.5	471.3	468.1	465.0	462.0
65°	426.0	424.2	422.4	420.6	418.9	416.5	413.6	410.6	407.7	404.7	402.1
67.5°	363.1	361.6	360.2	358.8	357.4	355.4	352.7	350.0	347.4	344.7	342.7
70°	323.8	322.6	321.4	320.2	319.1	317.1	314.5	311.8	309.2	306.5	304.5
72.5°	283.4	282.3	281.1	279.9	278.7	277.3	275.6	273.9	272.1	270.4	268.4
75°	222.9	222.3	221.7	221.2	220.6	219.5	218.1	216.6	215.1	213.6	211.9
77.5°	168.8	167.8	166.8	165.8	164.8	164.0	163.4	162.8	162.2	161.6	160.7
80°	132.7	132.4	132.1	131.8	131.5	131.1	130.5	129.9	129.3	128.7	127.8
82.5°	98.7	98.7	98.6	98.5	98.5	98.3	97.9	97.6	97.2	96.9	95.7
85°	54.4	54.1	53.8	53.5	53.2	52.9	52.6	52.3	52.0	51.8	50.9
87.5°	19.2	18.9	18.7	18.4	18.1	17.9	17.5	17.2	16.9	16.6	16.0
90°	0.4	1.5	2.5	3.6	4.6	5.5	6.3	7.0	7.8	8.5	9.0
92.5°	8.6	8.5	8.4	8.3	8.3	8.4	8.8	9.2	9.5	9.9	10.2
95°	27.8	24.6	21.5	18.4	15.2	14.0	14.7	15.3	16.0	16.7	17.1
97.5°	55.1	46.3	37.5	28.6	19.8	16.2	17.7	19.2	20.8	22.3	22.7
100°	75.7	62.6	49.6	36.6	23.6	17.9	19.5	21.1	22.7	24.4	25.1
102.5°	98.2	95.5	92.7	90.0	87.2	79.1	65.6	52.1	38.6	25.0	26.0
105°	129.9	132.8	135.6	138.5	141.3	129.8	103.9	77.9	52.0	26.1	27.1
107.5°	166.1	168.4	170.7	173.0	175.3	160.9	129.8	98.7	67.6	36.5	35.4
110°	189.3	191.3	193.3	195.3	197.3	184.6	157.1	129.7	102.2	74.8	65.3



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	211.2	213.0	214.8	216.5	218.3	215.8	209.0	202.2	195.4	188.7	154.0
115°	245.8	247.4	249.0	250.6	252.2	254.2	256.6	259.0	261.3	263.7	219.7
117.5°	276.6	278.4	280.2	282.0	283.8	285.6	287.2	288.8	290.5	292.1	281.5
120°	299.2	300.6	302.0	303.5	304.9	306.5	308.2	309.9	311.6	313.3	314.4
122.5°	318.3	319.8	321.3	322.8	324.3	326.0	327.9	329.7	331.6	333.5	334.2
125°	347.5	348.7	350.0	351.2	352.4	353.9	355.8	357.6	359.4	361.2	361.8
127.5°	373.9	375.3	376.6	378.0	379.4	380.7	382.1	383.4	384.8	386.1	387.1
130°	390.7	392.2	393.7	395.2	396.7	398.0	399.1	400.1	401.2	402.2	403.2
132.5°	407.8	409.0	410.3	411.6	412.9	414.1	415.1	416.2	417.2	418.3	419.2
135°	430.0	431.5	433.0	434.5	436.1	437.2	438.1	439.0	439.8	440.7	441.6
137.5°	452.5	453.5	454.6	455.7	456.7	457.7	458.7	459.7	460.6	461.6	462.5
140°	467.2	467.9	468.7	469.4	470.2	471.1	472.2	473.2	474.2	475.3	476.1
142.5°	479.5	480.2	480.8	481.5	482.2	483.2	484.3	485.5	486.7	487.9	488.7
145°	498.8	498.7	498.6	498.5	498.4	499.2	500.8	502.4	504.0	505.6	506.3
147.5°	515.6	515.3	514.9	514.6	514.2	514.8	516.4	518.0	519.6	521.2	521.7
150°	526.6	525.9	525.2	524.6	523.9	524.3	525.9	527.4	528.9	530.4	531.0
152.5°	535.8	535.1	534.3	533.6	532.8	533.2	534.6	536.1	537.5	539.0	539.5
155°	549.2	548.4	547.5	546.7	545.8	546.0	547.1	548.2	549.4	550.5	551.1
157.5°	559.7	559.0	558.3	557.6	556.9	556.9	557.7	558.5	559.3	560.1	560.7
160°	565.9	565.3	564.8	564.2	563.6	563.6	564.2	564.8	565.3	565.9	566.5
162.5°	571.4	570.8	570.2	569.7	569.1	569.1	569.5	570.0	570.5	571.0	571.7
165°	578.7	578.2	577.6	577.0	576.4	576.3	576.6	576.9	577.2	577.4	578.1
167.5°	584.2	583.6	583.1	582.5	581.9	581.8	582.0	582.3	582.6	582.8	583.5
170°	587.3	586.7	586.1	585.6	585.0	584.8	585.0	585.2	585.4	585.6	586.2
172.5°	589.3	588.8	588.2	587.6	587.0	586.9	587.0	587.2	587.4	587.6	588.3
175°	592.0	591.3	590.6	590.0	589.3	589.1	589.3	589.5	589.6	589.8	590.5
177.5°	592.4	591.9	591.3	590.8	590.3	590.0	590.1	590.2	590.3	590.3	590.9
180°	590.7	590.7	590.7	590.7	590.7	590.7	590.7	590.7	590.7	590.7	590.7



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1380.0	1380.0	1380.0	1380.0	1380.0	1380.0	1380.0	1380.0
2.5°	1374.1	1376.5	1378.8	1379.8	1379.3	1378.8	1378.4	1377.9
5°	1364.8	1367.2	1369.6	1370.4	1369.9	1369.3	1368.7	1368.1
7.5°	1349.4	1351.8	1354.2	1355.0	1354.4	1353.7	1353.1	1352.4
10°	1335.6	1338.0	1340.4	1341.1	1340.2	1339.3	1338.4	1337.6
12.5°	1319.4	1321.0	1322.7	1323.2	1322.5	1321.9	1321.2	1320.6
15°	1290.8	1292.0	1293.2	1293.0	1291.6	1290.1	1288.6	1287.1
17.5°	1256.9	1258.3	1259.7	1259.6	1258.2	1256.8	1255.4	1254.0
20°	1230.5	1231.4	1232.3	1232.1	1231.0	1229.8	1228.6	1227.4
22.5°	1202.6	1202.7	1202.9	1202.7	1201.9	1201.2	1200.5	1199.8
25°	1157.0	1157.5	1158.1	1158.1	1157.5	1157.0	1156.4	1155.8
27.5°	1112.1	1111.2	1110.3	1109.2	1107.7	1106.3	1104.9	1103.5
30°	1077.0	1076.2	1075.3	1074.2	1073.1	1071.9	1070.7	1069.5
32.5°	1042.7	1041.1	1039.5	1038.1	1037.0	1035.8	1034.6	1033.4
35°	987.7	985.9	984.2	982.5	981.1	979.6	978.1	976.6
37.5°	932.5	930.3	928.1	926.3	924.9	923.5	922.1	920.6
40°	894.4	891.7	889.1	887.1	886.0	884.8	883.6	882.4
42.5°	856.7	853.8	851.0	848.7	847.0	845.4	843.7	842.1
45°	799.0	795.7	792.5	790.3	789.1	787.9	786.7	785.6
47.5°	738.9	735.5	732.1	729.5	727.8	726.1	724.4	722.7
50°	700.3	696.2	692.1	689.3	687.8	686.3	684.9	683.4
52.5°	660.3	656.9	653.5	650.8	648.9	646.9	645.0	643.0
55°	600.7	597.1	593.6	591.1	589.6	588.1	586.7	585.2
57.5°	538.7	535.2	531.7	529.4	528.3	527.2	526.1	524.9
60°	497.8	494.5	491.3	489.2	488.3	487.4	486.5	485.7
62.5°	458.9	455.9	452.9	450.9	449.7	448.6	447.5	446.4
65°	399.4	396.8	394.1	392.0	390.6	389.1	387.6	386.1
67.5°	340.6	338.5	336.5	334.9	333.7	332.5	331.3	330.1
70°	302.4	300.3	298.3	296.6	295.5	294.3	293.1	291.9
72.5°	266.3	264.2	262.2	260.7	259.7	258.8	257.8	256.9
75°	210.1	208.3	206.6	206.0	206.6	207.2	207.7	208.3
77.5°	159.9	159.0	158.1	157.2	156.4	155.6	154.8	153.9
80°	126.9	126.1	125.2	124.4	123.8	123.3	122.7	122.1
82.5°	94.6	93.5	92.4	91.8	91.6	91.5	91.4	91.3
85°	50.0	49.1	48.2	47.6	47.3	47.0	46.7	46.4
87.5°	15.3	14.7	14.1	13.7	13.5	13.3	13.1	12.9
90°	9.5	10.0	10.4	10.8	11.0	11.2	11.4	11.5
92.5°	10.4	10.7	10.9	11.1	11.2	11.3	11.4	11.5
95°	17.6	18.1	18.6	18.8	18.7	18.6	18.5	18.4
97.5°	23.1	23.5	23.8	24.1	24.2	24.3	24.4	24.5
100°	25.9	26.6	27.4	27.9	28.1	28.3	28.4	28.6
102.5°	27.0	28.0	29.0	29.6	29.9	30.2	30.4	30.7
105°	28.2	29.2	30.3	31.0	31.3	31.7	32.1	32.5
107.5°	34.4	33.3	32.2	31.9	32.3	32.7	33.0	33.4
110°	55.8	46.3	36.8	32.2	32.6	33.0	33.4	33.8





TEST NUMBER: P331559

CATALOG NUMBER: S122DIW-S865D435U835-4F0-1E-UDD-F

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	119.4	84.7	50.1	32.9	33.2	33.5	33.8	34.1
115°	175.8	131.8	87.8	62.4	55.6	48.7	41.9	35.0
117.5°	270.8	260.2	249.5	233.0	210.5	188.0	165.6	143.1
120°	315.6	316.7	317.9	312.0	299.2	286.4	273.5	260.7
122.5°	334.8	335.5	336.2	335.3	332.8	330.3	327.8	325.3
125°	362.5	363.2	363.8	364.3	364.6	364.9	365.2	365.4
127.5°	388.1	389.0	390.0	390.5	390.6	390.6	390.7	390.7
130°	404.3	405.3	406.4	406.9	406.8	406.7	406.6	406.5
132.5°	420.1	420.9	421.8	422.2	422.1	422.0	422.0	421.9
135°	442.6	443.5	444.5	444.8	444.7	444.5	444.3	444.1
137.5°	463.5	464.4	465.3	465.6	465.3	465.0	464.7	464.3
140°	477.0	477.9	478.7	478.9	478.4	477.9	477.5	477.0
142.5°	489.5	490.3	491.1	491.2	490.7	490.3	489.8	489.3
145°	507.0	507.6	508.3	508.4	507.9	507.4	507.0	506.5
147.5°	522.2	522.7	523.2	523.2	522.8	522.4	522.0	521.6
150°	531.6	532.1	532.7	532.8	532.3	531.8	531.3	530.9
152.5°	540.1	540.7	541.3	541.2	540.6	540.0	539.3	538.7
155°	551.7	552.2	552.8	552.7	551.9	551.2	550.4	549.7
157.5°	561.4	562.0	562.7	562.6	561.9	561.1	560.4	559.7
160°	567.0	567.6	568.2	568.1	567.5	566.8	566.1	565.5
162.5°	572.3	573.0	573.6	573.5	572.7	571.9	571.1	570.3
165°	578.8	579.4	580.1	580.1	579.4	578.8	578.1	577.4
167.5°	584.2	584.8	585.5	585.4	584.5	583.7	582.8	582.0
170°	586.9	587.6	588.2	588.1	587.3	586.4	585.6	584.7
172.5°	588.9	589.6	590.3	590.2	589.3	588.5	587.6	586.8
175°	591.2	591.8	592.5	592.4	591.4	590.5	589.5	588.6
177.5°	591.4	591.9	592.5	592.4	591.7	591.0	590.3	589.7
180°	590.7	590.7	590.7	590.7	590.7	590.7	590.7	590.7

(END OF REPORT)