

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: P331559-840

Luminaire Tested: **S122DIW-S865D435U840-4F0-1E-UDD-F**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P331559-840
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-S865D435U840-4F0-1E-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: 5295.2 lumens
Efficiency: N/A
Efficacy: 114.6 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

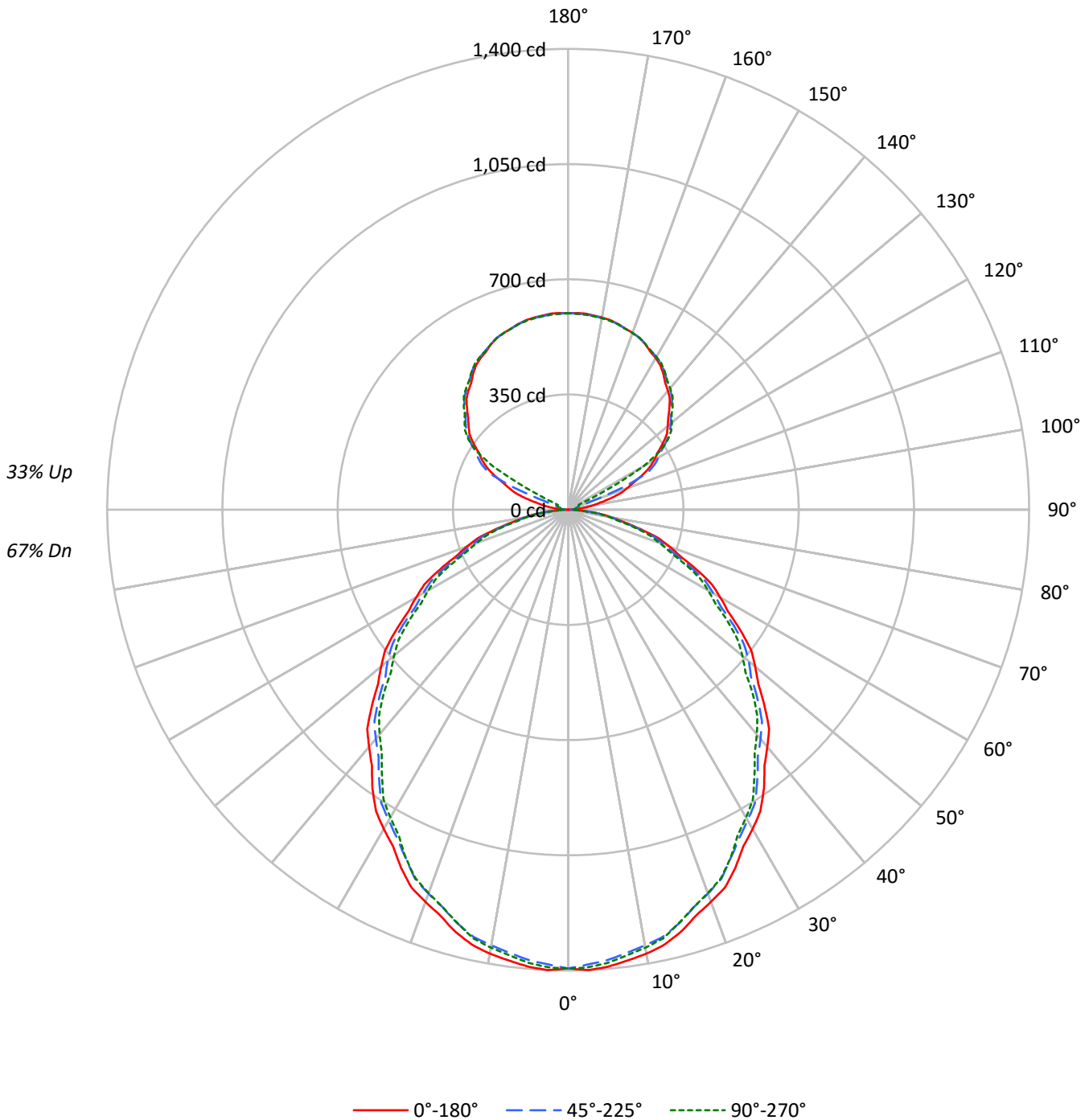
Input Watts (W): 46.2
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	22501	22501	22501
5°	22587	22261	22392
10°	22453	22035	22146
15°	22176	21750	21727
20°	21782	21321	21297
25°	21389	20794	20794
30°	20885	20310	20137
35°	20416	19730	19438
40°	19827	19150	18782
45°	19244	18573	18114
50°	18613	17975	17334
55°	17954	17275	16636
60°	17221	16443	15839
65°	16435	15614	14896
70°	15437	14611	13917
75°	14042	13456	13125
80°	12459	12087	11464
85°	10170	9689	8688



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	131.0	2.5
10°-20°	368.7	7.0
20°-30°	542.0	10.2
30°-40°	629.6	11.9
40°-50°	628.9	11.9
50°-60°	548.4	10.4
60°-70°	405.5	7.7
70°-80°	229.7	4.3
80°-90°	63.2	1.2
90°-100°	19.9	0.4
100°-110°	73.0	1.4
110°-120°	195.0	3.7
120°-130°	322.0	6.1
130°-140°	342.4	6.5
140°-150°	318.3	6.0
150°-160°	255.9	4.8
160°-170°	164.9	3.1
170°-180°	56.8	1.1
0°-30°	1041.8	19.7
0°-40°	1671.3	31.6
0°-60°	2848.6	53.8
0°-90°	3547.1	67.0
90°-120°	287.9	5.4
90°-150°	1270.6	24.0
90°-180°	1748.0	33.0
0°-180°	5295.2	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1394	1394	1394	1394	1394	
5°	1394	1388	1374	1384	1382	132
15°	1327	1318	1301	1306	1300	373
25°	1201	1189	1167	1170	1167	552
35°	1036	1022	1001	993	986	646
45°	843	833	813	799	793	650
55°	638	629	614	598	591	570
65°	430	422	409	397	390	425
75°	225	222	216	208	210	240
85°	55	54	52	48	47	63
90°	0	5	9	11	12	4
95°	28	15	17	19	19	34
105°	131	137	26	31	33	140
115°	248	256	266	76	35	244
125°	351	357	365	368	369	313
135°	434	441	445	449	448	335
145°	504	504	511	513	512	315
155°	555	551	556	558	555	255
165°	584	582	583	586	583	165
175°	598	595	596	598	594	57
180°	596	596	596	596	596	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1393.6	1393.6	1393.6	1393.6	1393.6	1393.6	1393.6	1393.6	1393.6	1393.6	1393.6
2.5°	1400.1	1398.9	1397.7	1396.5	1395.3	1393.4	1390.8	1388.2	1385.5	1382.9	1385.3
5°	1393.6	1392.4	1391.3	1390.1	1388.9	1386.6	1383.4	1380.1	1376.8	1373.5	1375.9
7.5°	1381.3	1379.5	1377.7	1375.7	1373.9	1371.3	1368.0	1364.6	1361.3	1358.0	1360.4
10°	1369.5	1367.5	1365.3	1363.2	1361.2	1358.4	1354.7	1351.2	1347.7	1344.0	1346.5
12.5°	1353.4	1351.6	1349.8	1347.9	1346.0	1343.3	1339.8	1336.2	1332.6	1329.1	1330.7
15°	1326.7	1324.8	1323.0	1321.3	1319.5	1316.7	1312.8	1308.9	1305.0	1301.2	1302.3
17.5°	1292.3	1290.5	1288.8	1287.0	1285.2	1282.3	1278.4	1274.4	1270.5	1266.6	1268.0
20°	1267.7	1265.9	1264.1	1262.3	1260.5	1257.6	1253.3	1249.2	1245.1	1240.9	1241.7
22.5°	1243.0	1240.5	1238.0	1235.5	1233.0	1229.8	1225.9	1221.9	1218.0	1214.1	1214.3
25°	1200.6	1198.3	1195.9	1193.6	1191.1	1187.4	1182.3	1177.3	1172.3	1167.2	1167.8
27.5°	1152.5	1150.3	1148.1	1146.0	1143.9	1140.7	1136.8	1132.8	1128.8	1124.8	1124.0
30°	1120.2	1117.9	1115.5	1113.2	1110.8	1107.3	1102.9	1098.4	1093.9	1089.4	1088.5
32.5°	1086.0	1084.1	1082.2	1080.3	1078.3	1075.0	1070.4	1065.6	1061.0	1056.2	1054.6
35°	1035.8	1032.9	1029.9	1026.9	1023.9	1020.1	1015.3	1010.6	1005.7	1001.0	999.3
37.5°	979.3	976.6	974.0	971.4	968.9	965.1	960.4	955.6	950.8	946.0	943.8
40°	940.7	938.4	935.9	933.5	931.2	927.6	922.8	918.1	913.3	908.6	905.8
42.5°	903.2	900.8	898.4	896.1	893.6	890.1	885.3	880.6	875.8	871.0	868.1
45°	842.8	840.8	838.7	836.7	834.6	831.2	826.8	822.3	817.9	813.4	810.1
47.5°	782.8	780.9	778.9	777.0	775.0	771.6	767.0	762.3	757.7	753.1	749.6
50°	741.0	739.5	738.1	736.6	735.1	732.3	728.1	723.9	719.7	715.6	711.4
52.5°	700.3	698.3	696.4	694.4	692.5	689.5	685.6	681.7	677.7	673.8	670.3
55°	637.8	636.1	634.3	632.5	630.7	628.0	624.5	620.9	617.3	613.7	610.2
57.5°	575.1	573.7	572.3	570.9	569.5	566.7	562.8	558.9	554.9	551.0	547.5
60°	533.3	532.1	531.0	529.8	528.6	525.9	521.7	517.6	513.4	509.2	505.9
62.5°	492.6	490.7	488.8	486.9	484.9	482.4	479.2	475.9	472.7	469.6	466.6
65°	430.2	428.4	426.6	424.7	423.0	420.6	417.7	414.7	411.7	408.7	406.1
67.5°	366.7	365.2	363.8	362.3	360.9	358.9	356.2	353.5	350.8	348.1	346.1
70°	327.0	325.8	324.6	323.4	322.2	320.2	317.6	314.9	312.3	309.5	307.5
72.5°	286.2	285.1	283.9	282.7	281.4	280.0	278.3	276.6	274.8	273.1	271.0
75°	225.1	224.5	223.9	223.4	222.8	221.7	220.3	218.7	217.2	215.7	214.0
77.5°	170.5	169.5	168.4	167.4	166.4	165.6	165.0	164.4	163.8	163.2	162.3
80°	134.0	133.7	133.4	133.1	132.8	132.4	131.8	131.2	130.6	130.0	129.1
82.5°	99.7	99.7	99.6	99.5	99.5	99.3	98.9	98.6	98.2	97.9	96.6
85°	54.9	54.6	54.3	54.0	53.7	53.4	53.1	52.8	52.5	52.3	51.4
87.5°	19.4	19.1	18.9	18.6	18.3	18.1	17.7	17.4	17.1	16.8	16.2
90°	0.4	1.5	2.5	3.6	4.6	5.6	6.4	7.1	7.9	8.6	9.1
92.5°	8.7	8.6	8.5	8.4	8.4	8.5	8.9	9.3	9.6	10.0	10.3
95°	28.1	24.8	21.7	18.6	15.3	14.1	14.8	15.5	16.2	16.9	17.3
97.5°	55.6	46.8	37.9	28.9	20.0	16.4	17.9	19.4	21.0	22.5	22.9
100°	76.4	63.2	50.1	37.0	23.8	18.1	19.7	21.3	22.9	24.6	25.3
102.5°	99.2	96.4	93.6	90.9	88.1	79.9	66.2	52.6	39.0	25.2	26.3
105°	131.2	134.1	136.9	139.9	142.7	131.1	104.9	78.7	52.5	26.4	27.4
107.5°	167.7	170.1	172.4	174.7	177.0	162.5	131.1	99.7	68.3	36.9	35.7
110°	191.2	193.2	195.2	197.2	199.2	186.4	158.6	131.0	103.2	75.5	65.9



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	213.3	215.1	216.9	218.6	220.5	217.9	211.1	204.2	197.3	190.6	155.5
115°	248.2	249.8	251.5	253.1	254.7	256.7	259.1	261.6	263.9	266.3	221.9
117.5°	279.3	281.1	283.0	284.8	286.6	288.4	290.0	291.6	293.4	295.0	284.3
120°	302.2	303.6	305.0	306.5	307.9	309.5	311.2	313.0	314.7	316.4	317.5
122.5°	321.4	323.0	324.5	326.0	327.5	329.2	331.1	333.0	334.9	336.8	337.5
125°	350.9	352.1	353.5	354.7	355.9	357.4	359.3	361.1	362.9	364.8	365.4
127.5°	377.6	379.0	380.3	381.7	383.1	384.5	385.9	387.2	388.6	389.9	390.9
130°	394.6	396.1	397.6	399.1	400.6	401.9	403.0	404.0	405.2	406.2	407.2
132.5°	411.8	413.0	414.3	415.7	417.0	418.2	419.2	420.3	421.3	422.4	423.3
135°	434.2	435.8	437.3	438.8	440.4	441.5	442.4	443.3	444.1	445.0	446.0
137.5°	457.0	458.0	459.1	460.2	461.2	462.2	463.2	464.2	465.1	466.2	467.1
140°	471.8	472.5	473.3	474.0	474.8	475.7	476.9	477.9	478.9	480.0	480.8
142.5°	484.2	484.9	485.5	486.3	487.0	488.0	489.1	490.3	491.5	492.7	493.5
145°	503.7	503.6	503.5	503.4	503.3	504.1	505.7	507.4	509.0	510.6	511.3
147.5°	520.7	520.4	520.0	519.7	519.3	519.9	521.5	523.1	524.7	526.3	526.8
150°	531.8	531.1	530.4	529.8	529.1	529.5	531.1	532.6	534.1	535.6	536.2
152.5°	541.1	540.4	539.6	538.9	538.1	538.5	539.9	541.4	542.8	544.3	544.8
155°	554.6	553.8	552.9	552.1	551.2	551.4	552.5	553.6	554.8	555.9	556.5
157.5°	565.2	564.5	563.8	563.1	562.4	562.4	563.2	564.0	564.8	565.6	566.2
160°	571.5	570.9	570.4	569.8	569.2	569.2	569.8	570.4	570.9	571.5	572.1
162.5°	577.0	576.4	575.8	575.3	574.7	574.7	575.1	575.6	576.1	576.6	577.3
165°	584.4	583.9	583.3	582.7	582.1	582.0	582.3	582.6	582.9	583.1	583.8
167.5°	590.0	589.4	588.9	588.2	587.6	587.5	587.7	588.0	588.3	588.5	589.3
170°	593.1	592.5	591.9	591.4	590.8	590.6	590.8	591.0	591.2	591.4	592.0
172.5°	595.1	594.6	594.0	593.4	592.8	592.7	592.8	593.0	593.2	593.4	594.1
175°	597.8	597.1	596.4	595.8	595.1	594.9	595.1	595.3	595.4	595.6	596.3
177.5°	598.2	597.7	597.1	596.6	596.1	595.8	595.9	596.0	596.1	596.1	596.7
180°	596.5	596.5	596.5	596.5	596.5	596.5	596.5	596.5	596.5	596.5	596.5



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1393.6	1393.6	1393.6	1393.6	1393.6	1393.6	1393.6	1393.6
2.5°	1387.7	1390.1	1392.4	1393.4	1392.9	1392.4	1392.0	1391.5
5°	1378.3	1380.7	1383.1	1383.9	1383.4	1382.8	1382.2	1381.6
7.5°	1362.7	1365.1	1367.6	1368.4	1367.8	1367.1	1366.4	1365.7
10°	1348.8	1351.2	1353.6	1354.3	1353.4	1352.5	1351.6	1350.8
12.5°	1332.4	1334.0	1335.7	1336.3	1335.5	1334.9	1334.2	1333.6
15°	1303.5	1304.7	1306.0	1305.8	1304.3	1302.8	1301.3	1299.8
17.5°	1269.3	1270.7	1272.1	1272.0	1270.6	1269.2	1267.8	1266.4
20°	1242.6	1243.5	1244.5	1244.3	1243.1	1241.9	1240.7	1239.5
22.5°	1214.5	1214.6	1214.8	1214.6	1213.8	1213.0	1212.3	1211.6
25°	1168.4	1168.9	1169.5	1169.5	1168.9	1168.4	1167.8	1167.2
27.5°	1123.1	1122.2	1121.3	1120.1	1118.6	1117.2	1115.8	1114.4
30°	1087.6	1086.8	1085.9	1084.8	1083.7	1082.5	1081.3	1080.1
32.5°	1053.0	1051.4	1049.8	1048.3	1047.2	1046.0	1044.8	1043.6
35°	997.4	995.6	993.9	992.2	990.8	989.3	987.7	986.2
37.5°	941.7	939.5	937.3	935.4	934.0	932.6	931.2	929.7
40°	903.2	900.5	897.9	895.9	894.7	893.5	892.3	891.1
42.5°	865.2	862.2	859.4	857.1	855.4	853.7	852.0	850.4
45°	806.9	803.5	800.3	798.1	796.9	795.7	794.5	793.3
47.5°	746.2	742.8	739.3	736.7	735.0	733.3	731.5	729.8
50°	707.2	703.1	698.9	696.1	694.6	693.1	691.7	690.1
52.5°	666.8	663.4	659.9	657.2	655.3	653.3	651.4	649.3
55°	606.6	603.0	599.5	596.9	595.4	593.9	592.5	591.0
57.5°	544.0	540.5	536.9	534.6	533.5	532.4	531.3	530.1
60°	502.7	499.4	496.1	494.0	493.1	492.2	491.3	490.5
62.5°	463.4	460.4	457.4	455.3	454.1	453.0	451.9	450.8
65°	403.3	400.7	398.0	395.9	394.5	392.9	391.4	389.9
67.5°	344.0	341.8	339.8	338.2	337.0	335.8	334.6	333.4
70°	305.4	303.3	301.2	299.5	298.4	297.2	296.0	294.8
72.5°	268.9	266.8	264.8	263.3	262.3	261.4	260.3	259.4
75°	212.2	210.4	208.6	208.0	208.6	209.2	209.7	210.4
77.5°	161.5	160.6	159.7	158.8	157.9	157.1	156.3	155.4
80°	128.2	127.3	126.4	125.6	125.0	124.5	123.9	123.3
82.5°	95.5	94.4	93.3	92.7	92.5	92.4	92.3	92.2
85°	50.5	49.6	48.7	48.1	47.8	47.5	47.2	46.9
87.5°	15.5	14.8	14.2	13.8	13.6	13.4	13.2	13.0
90°	9.6	10.1	10.5	10.9	11.1	11.3	11.5	11.6
92.5°	10.5	10.8	11.0	11.2	11.3	11.4	11.5	11.6
95°	17.8	18.3	18.8	19.0	18.9	18.8	18.7	18.6
97.5°	23.3	23.7	24.0	24.3	24.4	24.5	24.6	24.7
100°	26.2	26.9	27.7	28.2	28.4	28.6	28.7	28.9
102.5°	27.3	28.3	29.3	29.9	30.2	30.5	30.7	31.0
105°	28.5	29.5	30.6	31.3	31.6	32.0	32.4	32.8
107.5°	34.7	33.6	32.5	32.2	32.6	33.0	33.3	33.7
110°	56.4	46.8	37.2	32.5	32.9	33.3	33.7	34.1



TEST NUMBER: P331559-840

CATALOG NUMBER: S122DIW-S865D435U840-4F0-1E-UDD-F

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	120.6	85.5	50.6	33.2	33.5	33.8	34.1	34.4
115°	177.5	133.1	88.7	63.0	56.1	49.2	42.3	35.3
117.5°	273.5	262.8	252.0	235.3	212.6	189.9	167.2	144.5
120°	318.7	319.8	321.0	315.1	302.2	289.2	276.2	263.3
122.5°	338.1	338.8	339.5	338.6	336.1	333.6	331.0	328.5
125°	366.1	366.8	367.4	367.9	368.2	368.5	368.8	369.0
127.5°	391.9	392.8	393.8	394.4	394.5	394.5	394.6	394.6
130°	408.3	409.3	410.4	410.9	410.8	410.7	410.6	410.5
132.5°	424.2	425.1	426.0	426.4	426.3	426.2	426.2	426.1
135°	447.0	447.9	448.9	449.2	449.1	448.9	448.7	448.5
137.5°	468.1	469.0	469.9	470.2	469.9	469.6	469.3	468.9
140°	481.7	482.6	483.4	483.6	483.1	482.6	482.2	481.7
142.5°	494.3	495.1	495.9	496.0	495.5	495.1	494.6	494.1
145°	512.0	512.6	513.3	513.4	512.9	512.4	512.0	511.5
147.5°	527.4	527.9	528.4	528.4	528.0	527.6	527.1	526.7
150°	536.8	537.3	538.0	538.1	537.6	537.0	536.5	536.1
152.5°	545.4	546.0	546.6	546.5	545.9	545.3	544.6	544.0
155°	557.1	557.6	558.3	558.2	557.3	556.6	555.8	555.1
157.5°	566.9	567.5	568.3	568.2	567.4	566.6	565.9	565.2
160°	572.6	573.2	573.8	573.7	573.1	572.4	571.7	571.1
162.5°	577.9	578.7	579.3	579.2	578.3	577.5	576.7	575.9
165°	584.5	585.1	585.8	585.8	585.1	584.5	583.8	583.1
167.5°	590.0	590.6	591.3	591.2	590.3	589.5	588.5	587.7
170°	592.7	593.4	594.0	593.9	593.1	592.2	591.4	590.5
172.5°	594.7	595.4	596.1	596.0	595.1	594.3	593.4	592.6
175°	597.0	597.6	598.3	598.2	597.2	596.3	595.3	594.4
177.5°	597.2	597.7	598.3	598.2	597.5	596.8	596.1	595.5
180°	596.5	596.5	596.5	596.5	596.5	596.5	596.5	596.5

(END OF REPORT)