

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: P331282

Luminaire Tested: **SA2XXDIP-C290D1080U835-4F0-1E-UDD-F**

Issue Date: 10/7/2019

**Test Information**

Test Method: LM-79-08  
Report Number: P331282  
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-2,  
Test Lab: INNOVATION CENTER  
Issue Date: 10/7/2019  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: SA2XXDIP-C290D1080U835-4F0-1E-UDD-F  
Description: DEFINE 2 DIRECT-INDIRECT PENDANT LED LUMINAIRE  
DOWNLIGHT 290 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER  
UPLIGHT 1080 LUMENS PER FOOT, NO LENS  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 5510.9 lumens  
Efficiency: N/A  
Efficacy: 130.6 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-Indirect

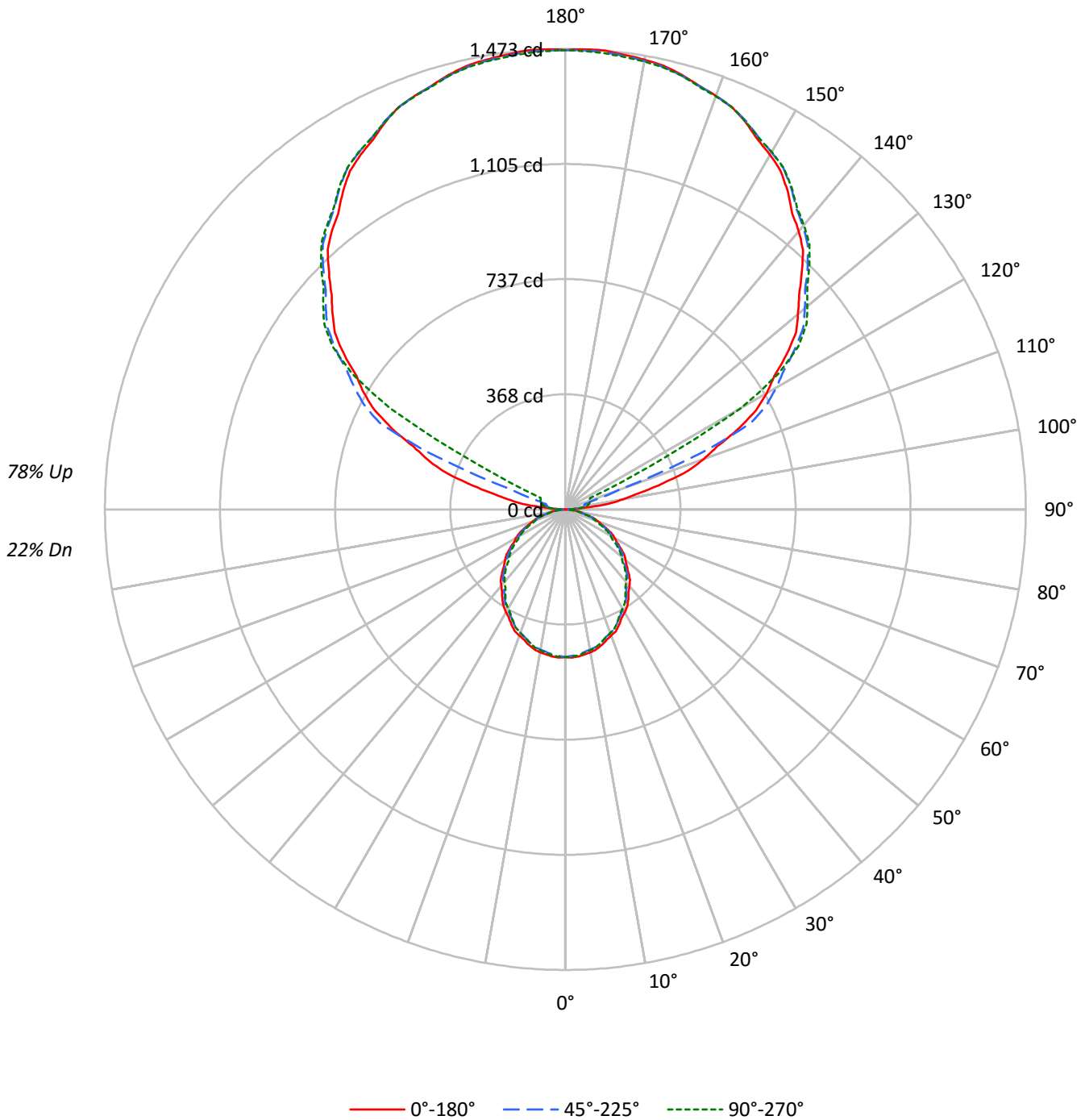
Input Watts (W): 42.2  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	100	100	100	100	89	89	89	89	68	68	68	48	48	48	30	30	30	22
1	91	87	84	80	81	78	74	72	59	57	55	42	41	40	27	26	25	18
2	83	76	70	65	74	68	63	59	52	49	46	37	35	33	23	22	21	15
3	76	67	60	54	67	59	54	49	46	42	38	33	30	28	21	19	18	13
4	69	59	52	46	61	53	46	41	40	36	33	29	26	24	19	17	16	11
5	63	52	45	39	56	47	40	35	36	31	28	26	23	21	17	15	14	10
6	58	47	39	34	51	42	35	30	32	28	24	23	20	18	15	13	12	9
7	54	42	35	29	47	38	31	26	29	24	21	21	18	16	14	12	11	8
8	50	38	31	26	44	34	28	23	26	22	19	19	16	14	13	11	9	7
9	46	35	27	23	41	31	25	21	24	20	16	18	15	12	12	10	8	6
10	43	32	25	20	38	28	22	18	22	18	15	16	13	11	11	9	8	6

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

	0°	45°	90°
0°	7627	7627	7627
5°	7656	7546	7592
10°	7612	7470	7507
15°	7517	7373	7366
20°	7383	7228	7220
25°	7251	7049	7049
30°	7081	6885	6825
35°	6922	6688	6589
40°	6721	6492	6367
45°	6524	6295	6140
50°	6310	6094	5878
55°	6086	5858	5638
60°	5838	5574	5370
65°	5570	5295	5051
70°	5231	4952	4716
75°	4760	4560	4448
80°	4221	4100	3887
85°	3446	3279	2946



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	44.4	0.8
10°-20°	125.0	2.3
20°-30°	183.7	3.3
30°-40°	213.4	3.9
40°-50°	213.2	3.9
50°-60°	185.9	3.4
60°-70°	137.5	2.5
70°-80°	77.9	1.4
80°-90°	24.6	0.4
90°-100°	49.0	0.9
100°-110°	179.7	3.3
110°-120°	480.4	8.7
120°-130°	793.0	14.4
130°-140°	843.3	15.3
140°-150°	783.8	14.2
150°-160°	630.2	11.4
160°-170°	406.1	7.4
170°-180°	139.8	2.5
0°-30°	353.2	6.4
0°-40°	566.6	10.3
0°-60°	965.7	17.5
0°-90°	1205.6	21.9
90°-120°	709.1	12.9
90°-150°	3129.2	56.8
90°-180°	4305.0	78.1
0°-180°	5510.9	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	472	472	472	472	472	
5°	472	470	466	469	468	45
15°	450	447	441	443	441	127
25°	407	403	396	396	396	187
35°	351	346	339	337	334	219
45°	286	282	276	271	269	220
55°	216	213	208	203	200	193
65°	146	143	139	135	132	144
75°	76	75	73	71	71	82
85°	19	18	18	16	16	21
90°	1	13	21	26	29	4
95°	69	36	42	46	46	85
105°	323	337	65	76	81	345
115°	611	630	656	187	87	602
125°	864	878	898	906	909	770
135°	1069	1086	1096	1106	1104	826
145°	1241	1241	1258	1264	1260	776
155°	1366	1358	1369	1375	1367	629
165°	1439	1434	1436	1443	1436	406
175°	1472	1465	1467	1473	1464	140
180°	1469	1469	1469	1469	1469	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	472.4	472.4	472.4	472.4	472.4	472.4	472.4	472.4	472.4	472.4	472.4
2.5°	474.6	474.2	473.8	473.4	473.0	472.4	471.5	470.6	469.7	468.8	469.6
5°	472.4	472.0	471.6	471.2	470.8	470.1	469.0	467.9	466.7	465.6	466.4
7.5°	468.3	467.6	467.0	466.4	465.8	464.9	463.8	462.6	461.5	460.4	461.2
10°	464.3	463.6	462.9	462.2	461.4	460.5	459.3	458.1	456.9	455.6	456.4
12.5°	458.8	458.2	457.6	456.9	456.3	455.4	454.2	453.0	451.8	450.6	451.1
15°	449.7	449.1	448.5	447.9	447.3	446.4	445.0	443.7	442.4	441.1	441.5
17.5°	438.1	437.5	436.9	436.3	435.7	434.7	433.4	432.0	430.7	429.4	429.8
20°	429.7	429.1	428.5	427.9	427.3	426.3	424.9	423.5	422.1	420.7	421.0
22.5°	421.4	420.5	419.7	418.8	418.0	416.9	415.6	414.2	412.9	411.6	411.6
25°	407.0	406.2	405.4	404.6	403.8	402.5	400.8	399.1	397.4	395.7	395.9
27.5°	390.7	390.0	389.2	388.5	387.8	386.7	385.4	384.0	382.7	381.3	381.0
30°	379.8	379.0	378.2	377.4	376.5	375.4	373.9	372.4	370.8	369.3	369.0
32.5°	368.1	367.5	366.9	366.2	365.6	364.4	362.8	361.3	359.7	358.1	357.5
35°	351.2	350.1	349.1	348.1	347.1	345.8	344.2	342.6	341.0	339.3	338.7
37.5°	332.0	331.1	330.2	329.3	328.4	327.2	325.6	324.0	322.3	320.7	320.0
40°	318.9	318.1	317.3	316.5	315.7	314.5	312.8	311.2	309.6	308.0	307.1
42.5°	306.2	305.4	304.6	303.8	303.0	301.7	300.1	298.5	296.9	295.3	294.3
45°	285.7	285.0	284.3	283.6	282.9	281.8	280.3	278.8	277.3	275.7	274.6
47.5°	265.4	264.7	264.1	263.4	262.7	261.6	260.0	258.5	256.9	255.3	254.1
50°	251.2	250.7	250.2	249.7	249.2	248.2	246.8	245.4	244.0	242.6	241.2
52.5°	237.4	236.7	236.1	235.4	234.7	233.7	232.4	231.1	229.7	228.4	227.2
55°	216.2	215.6	215.0	214.4	213.8	212.9	211.7	210.5	209.3	208.1	206.8
57.5°	195.0	194.5	194.0	193.5	193.0	192.1	190.8	189.5	188.1	186.8	185.6
60°	180.8	180.4	180.0	179.6	179.2	178.3	176.9	175.5	174.0	172.6	171.5
62.5°	167.0	166.3	165.7	165.1	164.4	163.5	162.4	161.4	160.3	159.2	158.1
65°	145.8	145.2	144.6	144.0	143.4	142.6	141.6	140.6	139.6	138.6	137.6
67.5°	124.3	123.8	123.3	122.8	122.4	121.7	120.7	119.8	118.9	118.0	117.3
70°	110.8	110.4	110.0	109.6	109.2	108.6	107.7	106.8	105.8	104.9	104.2
72.5°	97.0	96.6	96.2	95.8	95.4	94.9	94.3	93.8	93.2	92.6	91.9
75°	76.3	76.1	75.9	75.7	75.5	75.2	74.7	74.1	73.6	73.1	72.5
77.5°	57.8	57.4	57.1	56.8	56.4	56.1	55.9	55.7	55.5	55.3	55.0
80°	45.4	45.3	45.2	45.1	45.0	44.9	44.7	44.5	44.3	44.1	43.8
82.5°	33.8	33.8	33.8	33.7	33.7	33.6	33.5	33.4	33.3	33.2	32.8
85°	18.6	18.5	18.4	18.3	18.2	18.1	18.0	17.9	17.8	17.7	17.4
87.5°	6.8	7.1	7.5	7.8	8.2	8.5	8.7	8.9	9.1	9.3	9.3
90°	1.1	3.7	6.3	8.9	11.5	13.7	15.6	17.5	19.4	21.3	22.4
92.5°	21.5	21.2	21.0	20.8	20.5	20.9	21.8	22.8	23.7	24.7	25.3
95°	69.1	61.3	53.5	45.7	37.9	34.8	36.5	38.2	39.8	41.5	42.6
97.5°	137.1	115.2	93.2	71.2	49.3	40.2	44.0	47.8	51.7	55.5	56.4
100°	188.2	155.8	123.4	91.1	58.7	44.5	48.5	52.6	56.6	60.6	62.5
102.5°	244.3	237.4	230.6	223.7	216.9	196.7	163.1	129.5	95.9	62.3	64.8
105°	323.2	330.3	337.3	344.4	351.5	322.8	258.3	193.8	129.3	64.8	67.4
107.5°	413.1	418.8	424.5	430.2	436.0	400.2	322.8	245.5	168.1	90.8	88.1
110°	470.9	475.9	480.9	485.8	490.8	459.1	390.8	322.6	254.3	186.0	162.4



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	525.4	529.8	534.1	538.5	542.9	536.7	519.8	503.0	486.1	469.2	383.1
115°	611.3	615.3	619.3	623.3	627.3	632.3	638.2	644.1	650.0	655.9	546.5
117.5°	688.0	692.5	697.0	701.5	706.0	710.2	714.3	718.4	722.4	726.5	700.0
120°	744.1	747.7	751.2	754.8	758.3	762.2	766.5	770.7	775.0	779.2	782.0
122.5°	791.8	795.5	799.2	803.0	806.7	810.9	815.5	820.1	824.8	829.4	831.1
125°	864.3	867.3	870.4	873.5	876.5	880.3	884.8	889.3	893.8	898.3	899.9
127.5°	930.0	933.4	936.8	940.2	943.6	946.9	950.3	953.6	957.0	960.4	962.8
130°	971.6	975.4	979.2	983.0	986.7	989.9	992.5	995.1	997.7	1000.3	1002.9
132.5°	1014.1	1017.4	1020.6	1023.8	1027.0	1029.9	1032.5	1035.1	1037.7	1040.3	1042.5
135°	1069.4	1073.2	1077.0	1080.8	1084.5	1087.5	1089.6	1091.7	1093.9	1096.0	1098.4
137.5°	1125.3	1128.0	1130.6	1133.3	1135.9	1138.4	1140.9	1143.3	1145.7	1148.1	1150.4
140°	1161.9	1163.8	1165.7	1167.6	1169.5	1171.7	1174.3	1176.9	1179.5	1182.1	1184.2
142.5°	1192.5	1194.2	1195.9	1197.6	1199.3	1201.7	1204.6	1207.6	1210.6	1213.6	1215.5
145°	1240.6	1240.3	1240.1	1239.9	1239.6	1241.5	1245.5	1249.5	1253.6	1257.6	1259.2
147.5°	1282.5	1281.6	1280.7	1279.8	1278.9	1280.4	1284.4	1288.3	1292.3	1296.3	1297.5
150°	1309.7	1308.0	1306.4	1304.7	1303.1	1304.1	1307.9	1311.7	1315.5	1319.2	1320.7
152.5°	1332.6	1330.8	1328.9	1327.1	1325.3	1326.1	1329.7	1333.3	1336.9	1340.5	1341.9
155°	1366.0	1363.9	1361.8	1359.6	1357.5	1357.9	1360.7	1363.5	1366.4	1369.2	1370.6
157.5°	1392.2	1390.4	1388.6	1386.8	1385.0	1385.1	1387.1	1389.0	1391.0	1393.0	1394.6
160°	1407.5	1406.1	1404.6	1403.2	1401.8	1401.8	1403.2	1404.6	1406.1	1407.5	1408.9
162.5°	1421.1	1419.7	1418.2	1416.8	1415.4	1415.3	1416.5	1417.8	1419.0	1420.2	1421.8
165°	1439.4	1437.9	1436.5	1435.1	1433.7	1433.3	1434.0	1434.8	1435.5	1436.2	1437.8
167.5°	1453.0	1451.6	1450.1	1448.7	1447.3	1446.9	1447.6	1448.2	1448.9	1449.6	1451.2
170°	1460.6	1459.2	1457.8	1456.4	1455.0	1454.5	1455.0	1455.4	1455.9	1456.4	1458.0
172.5°	1465.7	1464.3	1462.9	1461.5	1460.1	1459.6	1460.1	1460.5	1461.0	1461.5	1463.1
175°	1472.3	1470.7	1469.0	1467.4	1465.7	1465.1	1465.6	1466.1	1466.5	1467.0	1468.7
177.5°	1473.4	1472.1	1470.7	1469.4	1468.1	1467.5	1467.7	1467.9	1468.1	1468.3	1469.6
180°	1469.1	1469.1	1469.1	1469.1	1469.1	1469.1	1469.1	1469.1	1469.1	1469.1	1469.1



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	472.4	472.4	472.4	472.4	472.4	472.4	472.4	472.4
2.5°	470.4	471.2	472.0	472.4	472.2	472.0	471.9	471.7
5°	467.3	468.1	468.9	469.2	469.0	468.8	468.6	468.4
7.5°	462.0	462.8	463.6	463.9	463.7	463.4	463.2	463.0
10°	457.3	458.1	458.9	459.1	458.8	458.5	458.2	457.9
12.5°	451.7	452.2	452.8	453.0	452.8	452.5	452.3	452.1
15°	441.9	442.3	442.7	442.7	442.2	441.7	441.2	440.7
17.5°	430.3	430.8	431.2	431.2	430.7	430.3	429.8	429.3
20°	421.3	421.6	421.9	421.8	421.4	421.0	420.6	420.2
22.5°	411.7	411.8	411.8	411.7	411.5	411.2	411.0	410.8
25°	396.1	396.3	396.5	396.5	396.3	396.1	395.9	395.7
27.5°	380.7	380.4	380.1	379.7	379.2	378.7	378.3	377.8
30°	368.7	368.4	368.1	367.8	367.4	367.0	366.6	366.1
32.5°	357.0	356.4	355.9	355.4	355.0	354.6	354.2	353.8
35°	338.1	337.5	336.9	336.4	335.9	335.4	334.9	334.3
37.5°	319.2	318.5	317.7	317.1	316.6	316.1	315.7	315.2
40°	306.2	305.3	304.4	303.7	303.3	302.9	302.5	302.1
42.5°	293.3	292.3	291.3	290.5	290.0	289.4	288.9	288.3
45°	273.5	272.4	271.3	270.5	270.1	269.7	269.3	268.9
47.5°	253.0	251.8	250.6	249.7	249.2	248.6	248.0	247.4
50°	239.8	238.3	236.9	236.0	235.5	235.0	234.5	234.0
52.5°	226.1	224.9	223.7	222.8	222.1	221.5	220.8	220.1
55°	205.6	204.4	203.2	202.4	201.9	201.3	200.8	200.3
57.5°	184.4	183.2	182.0	181.2	180.9	180.5	180.1	179.7
60°	170.4	169.3	168.2	167.5	167.2	166.9	166.6	166.3
62.5°	157.1	156.1	155.1	154.4	154.0	153.6	153.2	152.8
65°	136.7	135.8	134.9	134.2	133.7	133.2	132.7	132.2
67.5°	116.6	115.9	115.2	114.6	114.2	113.8	113.4	113.0
70°	103.5	102.8	102.1	101.6	101.2	100.7	100.3	99.9
72.5°	91.2	90.5	89.8	89.2	88.9	88.6	88.3	87.9
75°	71.9	71.3	70.7	70.5	70.7	70.9	71.1	71.3
77.5°	54.7	54.4	54.1	53.8	53.5	53.3	53.0	52.7
80°	43.5	43.2	42.9	42.6	42.4	42.2	42.0	41.8
82.5°	32.4	32.0	31.6	31.4	31.4	31.3	31.3	31.3
85°	17.1	16.8	16.5	16.3	16.2	16.1	16.0	15.9
87.5°	9.3	9.3	9.3	9.3	9.3	9.3	9.4	9.4
90°	23.6	24.8	26.0	26.8	27.3	27.8	28.2	28.7
92.5°	25.9	26.5	27.1	27.6	27.9	28.1	28.4	28.7
95°	43.8	45.0	46.2	46.7	46.4	46.2	45.9	45.7
97.5°	57.4	58.3	59.3	59.9	60.2	60.5	60.7	61.0
100°	64.4	66.3	68.2	69.3	69.8	70.3	70.8	71.2
102.5°	67.2	69.7	72.1	73.7	74.3	75.0	75.7	76.3
105°	70.0	72.6	75.2	77.0	78.0	78.9	79.8	80.8
107.5°	85.5	82.8	80.2	79.4	80.3	81.2	82.2	83.1
110°	138.8	115.2	91.5	80.2	81.1	82.1	83.0	84.0





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CATALOG NUMBER: SA2XXDIP-C290D1080U835-4F0-1E-UDD-F

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	296.9	210.7	124.5	81.8	82.6	83.3	84.1	84.8
115°	437.1	327.8	218.4	155.2	138.2	121.2	104.2	87.2
117.5°	673.6	647.1	620.7	579.5	523.6	467.7	411.8	355.9
120°	784.9	787.7	790.6	776.0	744.1	712.2	680.3	648.5
122.5°	832.8	834.5	836.2	833.9	827.8	821.6	815.4	809.2
125°	901.6	903.2	904.9	906.1	906.8	907.5	908.2	908.9
127.5°	965.2	967.6	970.0	971.3	971.4	971.6	971.7	971.8
130°	1005.5	1008.1	1010.7	1011.9	1011.7	1011.4	1011.2	1011.0
132.5°	1044.7	1047.0	1049.2	1050.2	1049.9	1049.7	1049.5	1049.2
135°	1100.7	1103.1	1105.4	1106.4	1105.9	1105.4	1105.0	1104.5
137.5°	1152.7	1155.0	1157.3	1158.1	1157.3	1156.5	1155.7	1154.9
140°	1186.4	1188.5	1190.6	1191.1	1189.9	1188.7	1187.5	1186.4
142.5°	1217.4	1219.4	1221.3	1221.7	1220.5	1219.3	1218.2	1217.0
145°	1260.9	1262.5	1264.2	1264.4	1263.3	1262.1	1260.9	1259.7
147.5°	1298.7	1300.0	1301.2	1301.3	1300.3	1299.3	1298.3	1297.3
150°	1322.1	1323.5	1324.9	1325.0	1323.8	1322.7	1321.5	1320.3
152.5°	1343.3	1344.8	1346.2	1346.1	1344.5	1343.0	1341.4	1339.9
155°	1372.0	1373.5	1374.9	1374.6	1372.7	1370.9	1369.0	1367.1
157.5°	1396.2	1397.8	1399.4	1399.3	1397.5	1395.6	1393.8	1391.9
160°	1410.3	1411.7	1413.1	1413.0	1411.4	1409.7	1408.1	1406.4
162.5°	1423.4	1425.0	1426.7	1426.4	1424.4	1422.4	1420.3	1418.3
165°	1439.5	1441.1	1442.8	1442.8	1441.1	1439.5	1437.8	1436.2
167.5°	1452.9	1454.5	1456.2	1455.9	1453.8	1451.7	1449.6	1447.4
170°	1459.7	1461.3	1463.0	1462.7	1460.6	1458.5	1456.4	1454.2
172.5°	1464.8	1466.4	1468.1	1467.9	1465.7	1463.6	1461.5	1459.3
175°	1470.3	1472.0	1473.6	1473.3	1470.9	1468.5	1466.2	1463.8
177.5°	1470.9	1472.2	1473.6	1473.4	1471.7	1470.0	1468.3	1466.6
180°	1469.1	1469.1	1469.1	1469.1	1469.1	1469.1	1469.1	1469.1

(END OF REPORT)