

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: P332732

Luminaire Tested: **S124DIW-S350D1050U835-4F0-1E-UDD-F1**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P332732  
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-S350D1050U835-4F0-1E-UDD-F1  
Description: DEFINE 4 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE  
DOWNLIGHT 350 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER  
UPLIGHT 1050 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 5153.9 lumens  
Efficiency: N/A  
Efficacy: 135.6 lumens/watt  
Spacing Criteria (0/90/45): 1.2 / 1.17 / 1.3  
Luminous Opening: Rectangular (W 0.33' x L: 4' x H: 0')  
CIE Type: Semi-Indirect

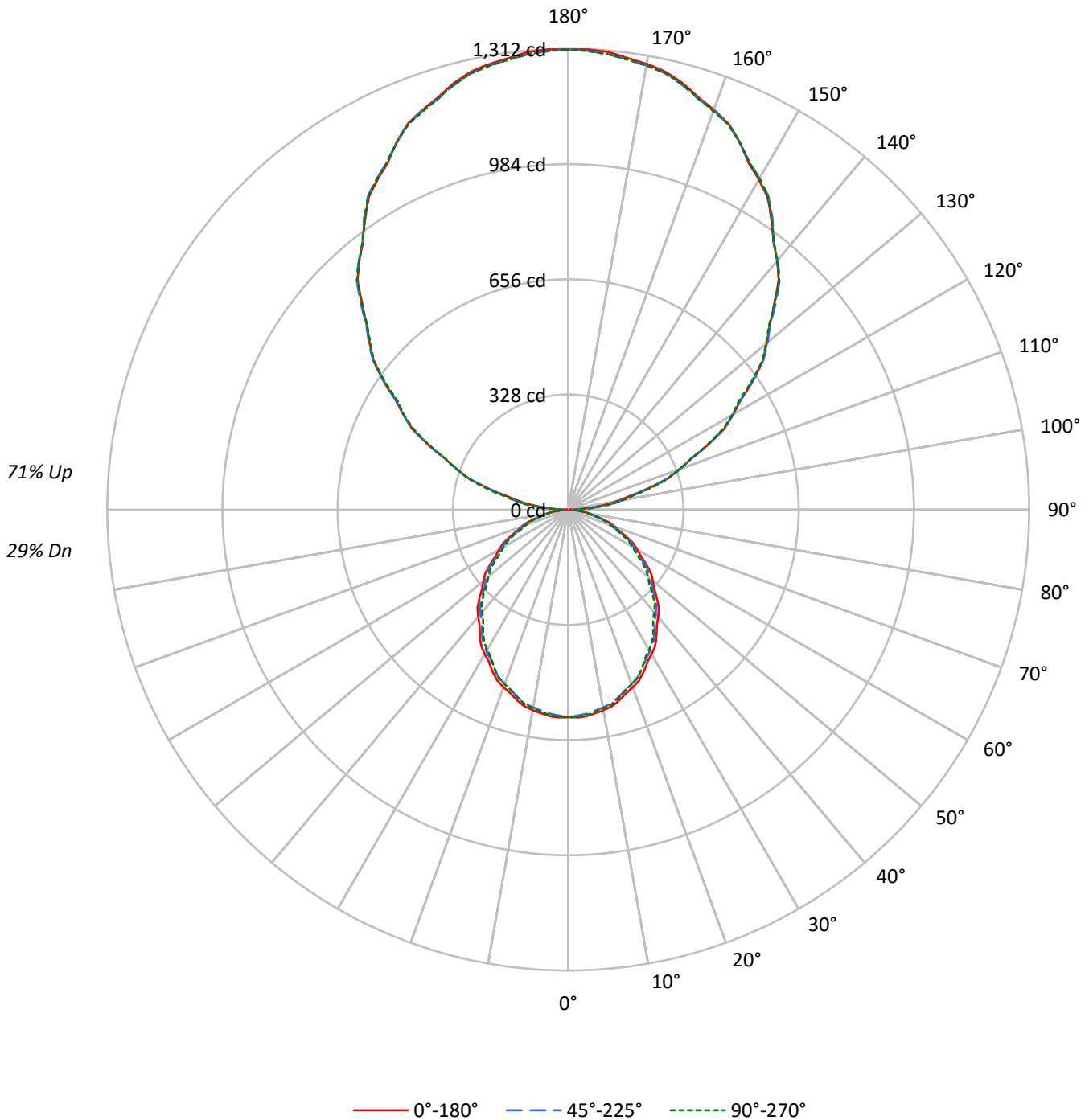
Input Watts (W): 38  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	102	102	102	102	92	92	92	92	72	72	72	54	54	54	37	37	37	29
1	93	89	85	82	83	80	77	74	63	61	59	47	46	45	33	32	31	25
2	85	78	72	67	76	70	65	61	55	52	49	41	39	37	29	28	26	21
3	77	68	61	55	69	61	55	50	48	44	41	37	34	31	26	24	22	18
4	71	60	53	47	63	54	48	43	43	38	35	33	29	27	23	21	19	15
5	65	53	46	40	58	48	42	36	38	33	30	29	26	23	21	18	17	13
6	59	48	40	34	53	43	36	32	34	30	26	26	23	20	19	16	15	11
7	55	43	35	30	49	39	32	28	31	26	23	24	20	18	17	15	13	10
8	51	39	31	26	45	35	29	24	28	23	20	22	18	16	16	13	12	9
9	47	35	28	23	42	32	26	21	26	21	18	20	17	14	14	12	11	8
10	44	32	25	21	39	29	23	19	24	19	16	18	15	13	13	11	10	7

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

	0°	45°	90°
0°	4769	4769	4769
5°	4783	4725	4760
10°	4753	4687	4710
15°	4695	4621	4633
20°	4619	4538	4542
25°	4532	4444	4431
30°	4426	4333	4294
35°	4315	4217	4161
40°	4200	4086	4011
45°	4080	3956	3881
50°	3947	3841	3721
55°	3804	3690	3571
60°	3660	3523	3416
65°	3500	3364	3228
70°	3319	3151	3028
75°	3041	2895	2820
80°	2706	2599	2529
85°	2371	2279	2232



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	55.6	1.1
10°-20°	156.7	3.0
20°-30°	230.7	4.5
30°-40°	268.2	5.2
40°-50°	268.2	5.2
50°-60°	234.6	4.6
60°-70°	174.2	3.4
70°-80°	99.0	1.9
80°-90°	32.5	0.6
90°-100°	86.4	1.7
100°-110°	255.9	5.0
110°-120°	434.4	8.4
120°-130°	572.8	11.1
130°-140°	643.3	12.5
140°-150°	632.1	12.3
150°-160°	531.7	10.3
160°-170°	353.7	6.9
170°-180°	123.9	2.4
0°-30°	443.1	8.6
0°-40°	711.3	13.8
0°-60°	1214.1	23.6
0°-90°	1519.8	29.5
90°-120°	776.7	15.1
90°-150°	2624.9	50.9
90°-180°	3634.0	70.5
0°-180°	5153.9	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	591	591	591	591	591	
5°	590	588	583	588	587	56
15°	562	560	553	555	554	158
25°	509	505	499	499	498	234
35°	438	434	428	425	422	274
45°	357	354	346	342	340	275
55°	270	269	262	257	254	242
65°	183	181	176	172	169	181
75°	98	95	93	91	90	104
85°	26	26	25	25	24	28
90°	3	14	22	28	30	5
95°	61	70	77	80	80	68
105°	236	237	241	244	247	250
115°	442	442	440	439	438	435
125°	643	643	642	640	638	573
135°	830	835	836	834	831	642
145°	1008	1012	1013	1012	1009	631
155°	1155	1155	1154	1158	1154	531
165°	1257	1254	1252	1258	1254	354
175°	1308	1303	1302	1308	1302	124
180°	1310	1310	1310	1310	1310	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	590.7	590.7	590.7	590.7	590.7	590.7	590.7	590.7	590.7	590.7	590.7
2.5°	592.2	592.0	591.7	591.5	591.2	590.6	589.7	588.8	587.9	586.9	587.8
5°	590.2	589.8	589.4	589.0	588.6	587.8	586.6	585.5	584.3	583.1	584.3
7.5°	584.8	584.3	583.9	583.5	583.1	582.2	580.9	579.7	578.4	577.1	578.0
10°	579.8	579.4	579.0	578.6	578.2	577.3	575.9	574.5	573.2	571.8	572.6
12.5°	573.4	573.0	572.6	572.1	571.7	570.8	569.3	567.9	566.4	565.0	565.9
15°	561.8	561.4	561.0	560.6	560.2	559.2	557.6	556.0	554.4	552.9	553.5
17.5°	547.9	547.4	546.9	546.4	545.8	544.8	543.3	541.8	540.3	538.8	539.2
20°	537.7	537.2	536.7	536.1	535.6	534.6	533.0	531.4	529.8	528.2	528.6
22.5°	526.7	526.0	525.3	524.6	523.9	522.8	521.2	519.7	518.1	516.5	517.1
25°	508.8	508.1	507.4	506.6	505.9	504.8	503.3	501.8	500.4	498.9	499.0
27.5°	488.4	487.6	486.9	486.1	485.4	484.3	482.9	481.6	480.2	478.8	478.6
30°	474.8	473.9	473.1	472.2	471.4	470.3	468.9	467.5	466.2	464.8	464.4
32.5°	460.4	459.6	458.8	458.1	457.3	456.2	454.8	453.3	451.9	450.4	449.9
35°	437.8	437.1	436.4	435.6	434.9	433.8	432.3	430.8	429.4	427.9	427.2
37.5°	414.1	413.4	412.7	412.1	411.4	410.3	408.7	407.1	405.5	403.9	403.1
40°	398.5	397.7	396.9	396.0	395.2	394.0	392.4	390.8	389.2	387.7	386.6
42.5°	381.9	381.4	380.9	380.4	379.9	378.7	377.0	375.2	373.5	371.8	370.5
45°	357.4	356.6	355.9	355.2	354.4	353.2	351.5	349.8	348.2	346.5	345.3
47.5°	331.7	331.2	330.7	330.2	329.7	328.7	327.1	325.5	324.0	322.4	321.1
50°	314.3	313.9	313.5	313.0	312.6	311.7	310.2	308.7	307.2	305.8	304.3
52.5°	297.3	296.7	296.2	295.7	295.2	294.2	292.6	291.1	289.5	288.0	286.7
55°	270.3	270.0	269.6	269.3	269.0	268.1	266.6	265.2	263.7	262.2	261.0
57.5°	244.5	244.2	243.8	243.5	243.1	242.2	240.7	239.3	237.8	236.4	235.2
60°	226.7	226.2	225.7	225.1	224.6	223.7	222.3	220.9	219.6	218.2	217.3
62.5°	209.3	208.9	208.4	208.0	207.5	206.6	205.1	203.7	202.2	200.8	199.9
65°	183.2	182.7	182.1	181.6	181.1	180.3	179.2	178.2	177.1	176.1	175.0
67.5°	156.9	156.4	155.9	155.4	154.9	154.2	153.2	152.2	151.2	150.1	149.1
70°	140.6	139.8	139.1	138.4	137.6	136.8	136.0	135.2	134.3	133.5	132.6
72.5°	123.2	122.4	121.7	121.0	120.2	119.5	118.8	118.2	117.5	116.8	116.1
75°	97.5	97.0	96.5	95.9	95.4	94.9	94.4	93.8	93.3	92.8	92.4
77.5°	73.0	72.8	72.5	72.3	72.1	71.7	71.3	70.8	70.3	69.9	69.7
80°	58.2	57.9	57.6	57.3	57.0	56.7	56.5	56.3	56.1	55.9	55.6
82.5°	43.8	43.7	43.5	43.4	43.2	43.1	43.1	43.1	43.0	43.0	42.9
85°	25.6	25.6	25.6	25.6	25.6	25.5	25.2	25.0	24.8	24.6	24.6
87.5°	10.5	10.9	11.3	11.7	12.1	12.4	12.7	13.0	13.3	13.5	13.8
90°	3.0	5.5	8.0	10.5	12.9	15.1	16.9	18.7	20.5	22.3	23.6
92.5°	21.7	24.5	27.4	30.2	33.0	35.1	36.3	37.6	38.9	40.1	40.9
95°	60.8	62.8	64.8	66.9	68.9	70.7	72.3	73.8	75.4	77.0	77.7
97.5°	106.2	107.8	109.4	111.0	112.7	114.4	116.2	118.1	119.9	121.8	122.6
100°	141.8	142.7	143.6	144.5	145.4	146.9	148.9	150.9	153.0	155.0	155.4
102.5°	179.1	179.5	179.8	180.2	180.5	181.6	183.5	185.3	187.2	189.0	189.7
105°	236.0	236.3	236.5	236.7	236.9	237.5	238.4	239.3	240.2	241.1	241.8
107.5°	295.8	296.1	296.3	296.6	296.9	297.1	297.2	297.4	297.5	297.6	298.3
110°	336.3	336.8	337.2	337.7	338.1	338.2	338.0	337.8	337.6	337.3	336.9



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	378.5	378.6	378.7	378.7	378.8	378.7	378.3	377.9	377.5	377.1	377.0
115°	441.7	441.7	441.7	441.7	441.7	441.5	441.0	440.6	440.1	439.7	439.4
117.5°	501.3	501.4	501.6	501.8	502.0	501.9	501.6	501.3	501.0	500.6	499.9
120°	541.0	541.9	542.8	543.7	544.6	544.7	544.0	543.3	542.7	542.0	540.9
122.5°	582.3	582.7	583.0	583.4	583.7	583.8	583.4	583.1	582.8	582.5	581.7
125°	643.3	643.3	643.3	643.3	643.3	643.2	642.9	642.7	642.5	642.3	641.8
127.5°	698.6	699.3	699.9	700.6	701.3	701.5	701.1	700.7	700.4	700.0	699.6
130°	737.5	738.2	738.8	739.5	740.2	740.5	740.5	740.5	740.5	740.5	740.1
132.5°	777.2	777.7	778.2	778.7	779.2	779.3	779.2	779.0	778.8	778.6	778.2
135°	829.7	831.0	832.4	833.7	835.1	835.8	835.8	835.8	835.8	835.8	835.3
137.5°	886.8	887.4	888.1	888.7	889.3	889.8	890.2	890.6	890.9	891.3	890.7
140°	924.9	925.4	925.8	926.3	926.7	926.9	926.9	926.9	926.9	926.9	926.7
142.5°	959.8	960.2	960.7	961.1	961.6	961.7	961.5	961.3	961.2	961.0	960.9
145°	1008.0	1008.9	1009.8	1010.7	1011.6	1012.1	1012.4	1012.6	1012.8	1013.0	1012.8
147.5°	1055.8	1056.9	1058.0	1059.0	1060.1	1060.6	1060.4	1060.2	1060.0	1059.8	1059.7
150°	1085.0	1085.9	1086.8	1087.7	1088.6	1089.0	1089.0	1089.0	1089.0	1089.0	1089.0
152.5°	1112.5	1113.1	1113.6	1114.1	1114.7	1115.0	1115.2	1115.4	1115.6	1115.8	1116.3
155°	1154.9	1154.9	1154.9	1154.9	1154.9	1154.8	1154.5	1154.3	1154.1	1153.9	1154.8
157.5°	1190.5	1190.1	1189.7	1189.3	1188.9	1188.7	1188.6	1188.6	1188.5	1188.5	1189.2
160°	1211.6	1211.4	1211.1	1210.9	1210.7	1210.5	1210.2	1210.0	1209.8	1209.6	1210.2
162.5°	1231.0	1230.5	1229.9	1229.3	1228.7	1228.3	1228.1	1227.9	1227.6	1227.4	1228.6
165°	1257.2	1256.5	1255.8	1255.2	1254.5	1253.9	1253.5	1253.0	1252.6	1252.1	1253.5
167.5°	1277.2	1276.3	1275.4	1274.4	1273.5	1273.0	1273.1	1273.1	1273.1	1273.2	1274.5
170°	1288.6	1287.5	1286.3	1285.2	1284.1	1283.6	1283.9	1284.1	1284.3	1284.5	1285.9
172.5°	1296.7	1295.7	1294.8	1293.9	1292.9	1292.5	1292.5	1292.6	1292.6	1292.6	1294.2
175°	1307.8	1306.7	1305.6	1304.5	1303.3	1302.7	1302.4	1302.2	1302.0	1301.8	1303.3
177.5°	1311.5	1310.6	1309.7	1308.8	1307.9	1307.4	1307.4	1307.4	1307.4	1307.4	1308.7
180°	1309.9	1309.9	1309.9	1309.9	1309.9	1309.9	1309.9	1309.9	1309.9	1309.9	1309.9



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	590.7	590.7	590.7	590.7	590.7	590.7	590.7	590.7
2.5°	588.6	589.5	590.3	590.7	590.6	590.5	590.4	590.3
5°	585.5	586.6	587.8	588.2	588.0	587.8	587.6	587.4
7.5°	578.9	579.9	580.8	581.2	581.1	580.9	580.8	580.7
10°	573.5	574.3	575.2	575.5	575.3	575.0	574.8	574.6
12.5°	566.8	567.7	568.7	569.0	568.7	568.4	568.1	567.8
15°	554.1	554.7	555.4	555.5	555.2	554.9	554.6	554.3
17.5°	539.6	540.0	540.4	540.5	540.3	540.1	539.9	539.7
20°	528.9	529.2	529.5	529.6	529.3	529.1	528.9	528.7
22.5°	517.6	518.2	518.8	518.9	518.5	518.1	517.7	517.4
25°	499.1	499.2	499.3	499.2	498.7	498.3	497.9	497.5
27.5°	478.3	478.1	477.8	477.4	476.9	476.4	475.8	475.3
30°	464.0	463.6	463.1	462.7	462.1	461.6	461.1	460.6
32.5°	449.4	448.9	448.4	447.9	447.4	446.8	446.3	445.8
35°	426.4	425.7	424.9	424.3	423.8	423.3	422.7	422.2
37.5°	402.3	401.5	400.7	400.0	399.3	398.6	397.9	397.2
40°	385.6	384.5	383.5	382.7	382.1	381.6	381.1	380.6
42.5°	369.3	368.1	366.9	366.1	365.7	365.4	365.0	364.7
45°	344.2	343.0	341.9	341.1	340.8	340.5	340.2	339.9
47.5°	319.8	318.5	317.2	316.2	315.4	314.6	313.8	313.0
50°	302.8	301.4	299.9	298.8	298.2	297.6	296.9	296.3
52.5°	285.4	284.1	282.8	281.7	280.9	280.1	279.3	278.5
55°	259.7	258.4	257.2	256.2	255.6	255.0	254.3	253.7
57.5°	234.0	232.8	231.6	230.7	230.1	229.5	228.9	228.2
60°	216.3	215.4	214.4	213.7	213.2	212.6	212.1	211.6
62.5°	199.1	198.2	197.3	196.6	196.1	195.6	195.1	194.5
65°	174.0	172.9	171.9	171.1	170.6	170.0	169.5	169.0
67.5°	148.1	147.1	146.1	145.5	145.4	145.2	145.1	144.9
70°	131.8	131.0	130.1	129.5	129.2	128.9	128.6	128.3
72.5°	115.5	114.8	114.1	113.6	113.3	113.0	112.7	112.4
75°	91.9	91.5	91.1	90.8	90.7	90.6	90.5	90.4
77.5°	69.6	69.5	69.4	69.2	68.9	68.6	68.3	68.1
80°	55.4	55.2	55.0	54.9	54.7	54.6	54.5	54.4
82.5°	42.7	42.6	42.5	42.4	42.3	42.1	42.0	41.9
85°	24.6	24.6	24.6	24.6	24.5	24.4	24.2	24.1
87.5°	14.1	14.4	14.6	14.8	14.9	15.0	15.1	15.2
90°	25.0	26.3	27.7	28.6	29.0	29.5	29.9	30.4
92.5°	41.7	42.5	43.4	43.9	44.2	44.4	44.7	45.0
95°	78.3	79.0	79.7	80.0	80.0	80.0	80.0	80.0
97.5°	123.4	124.2	125.0	125.4	125.4	125.4	125.4	125.4
100°	155.9	156.3	156.8	157.0	157.0	157.0	157.0	157.0
102.5°	190.3	190.9	191.6	192.0	192.1	192.3	192.5	192.7
105°	242.5	243.1	243.8	244.5	245.2	245.8	246.5	247.2
107.5°	298.9	299.5	300.2	300.4	300.4	300.4	300.3	300.3
110°	336.4	336.0	335.5	335.7	336.3	337.0	337.7	338.4





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CATALOG NUMBER: S124DIW-S350D1050U835-4F0-1E-UDD-F1

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	376.9	376.8	376.7	376.7	376.9	377.0	377.1	377.3
115°	439.2	439.0	438.8	438.5	438.3	438.1	437.9	437.6
117.5°	499.1	498.3	497.6	497.0	496.5	496.1	495.6	495.2
120°	539.7	538.6	537.5	537.1	537.6	538.0	538.5	538.9
122.5°	581.0	580.2	579.4	578.6	577.8	577.0	576.2	575.4
125°	641.4	640.9	640.5	640.0	639.6	639.1	638.7	638.2
127.5°	699.1	698.7	698.2	697.8	697.4	697.1	696.7	696.4
130°	739.6	739.2	738.7	738.1	737.2	736.3	735.4	734.5
132.5°	777.7	777.3	776.8	776.4	776.1	775.7	775.3	775.0
135°	834.9	834.4	834.0	833.4	832.7	832.0	831.4	830.7
137.5°	890.1	889.5	888.9	888.7	888.8	889.0	889.1	889.2
140°	926.5	926.3	926.0	925.8	925.6	925.4	925.1	924.9
142.5°	960.9	960.8	960.8	960.7	960.7	960.7	960.6	960.6
145°	1012.6	1012.4	1012.1	1011.7	1011.0	1010.3	1009.7	1009.0
147.5°	1059.5	1059.3	1059.1	1058.9	1058.7	1058.5	1058.2	1058.0
150°	1089.0	1089.0	1089.0	1088.9	1088.7	1088.5	1088.2	1088.0
152.5°	1116.8	1117.4	1117.9	1117.9	1117.3	1116.7	1116.1	1115.6
155°	1155.7	1156.6	1157.5	1157.5	1156.6	1155.7	1154.8	1153.9
157.5°	1189.9	1190.5	1191.2	1191.2	1190.4	1189.6	1188.9	1188.1
160°	1210.9	1211.6	1212.3	1212.0	1210.9	1209.8	1208.7	1207.5
162.5°	1229.8	1231.0	1232.3	1232.3	1231.2	1230.1	1228.9	1227.8
165°	1254.8	1256.2	1257.5	1257.7	1256.8	1255.9	1255.0	1254.1
167.5°	1275.9	1277.2	1278.6	1278.6	1277.2	1275.8	1274.4	1273.0
170°	1287.2	1288.6	1289.9	1289.8	1288.3	1286.7	1285.1	1283.5
172.5°	1295.7	1297.2	1298.8	1298.7	1297.2	1295.6	1294.0	1292.4
175°	1304.9	1306.5	1308.1	1308.1	1306.5	1304.9	1303.3	1301.8
177.5°	1310.0	1311.2	1312.5	1312.4	1310.9	1309.5	1308.1	1306.6
180°	1309.9	1309.9	1309.9	1309.9	1309.9	1309.9	1309.9	1309.9

(END OF REPORT)