

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: P332874-840

Luminaire Tested: **SA4XXRDIP-C350D590U840-4F0-1E-UDD-F**

Issue Date: 10/7/2019

**Test Information**

Test Method: LM-79-08  
Report Number: P332874-840  
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-6,  
Test Lab: INNOVATION CENTER  
Issue Date: 10/7/2019  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: SA4XXRDIP-C350D590U840-4F0-1E-UDD-F  
Description: DEFINE 4 DIRECT-INDIRECT PENDANT LED LUMINAIRE  
DOWNLIGHT 350 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER, REGRESSED  
HOUSING  
UPLIGHT 590 LUMENS PER FOOT, NO LENS  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 3827.0 lumens  
Efficiency: N/A  
Efficacy: 149.5 lumens/watt  
Spacing Criteria (0/90/45): 1.2 / 1.09 / 1.24  
Luminous Opening: Rectangular (W 0.33' x L: 4' x H: 0')  
CIE Type: Semi-Indirect

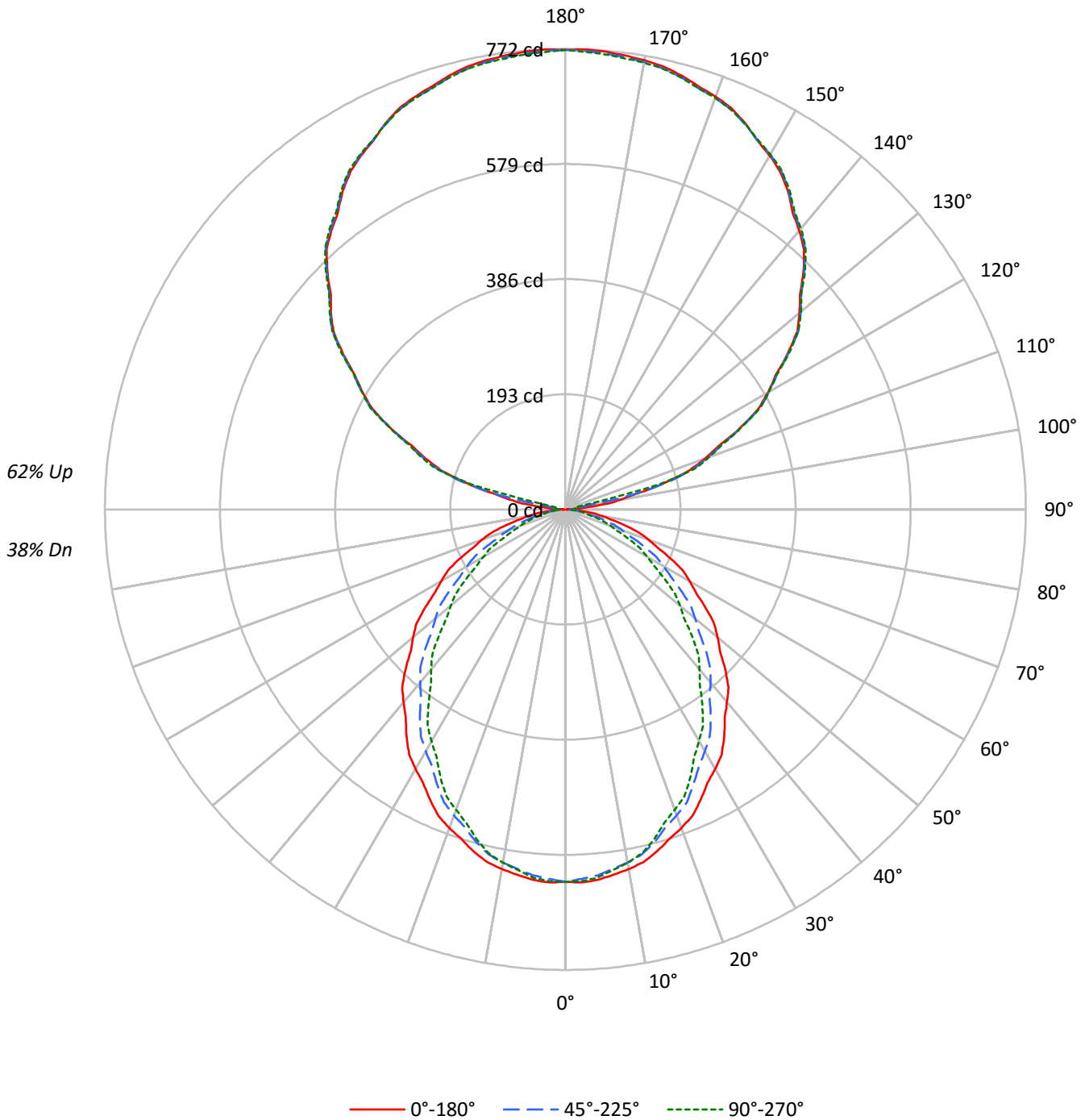
Input Watts (W): 25.6  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



TEST NUMBER: P332874-840

CATALOG NUMBER: SA4XXRDIP-C350D590U840-4F0-1E-UDD-F

### Luminous Intensity Polar Plot





TEST NUMBER: P332874-840

CATALOG NUMBER: SA4XXRDIP-C350D590U840-4F0-1E-UDD-F

**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	0	
RCR																						
0	104	104	104	104	95	95	95	95	77	77	77	60	60	60	45	45	45	38				
1	95	91	87	84	86	83	80	77	67	65	63	53	52	50	40	39	38	32				
2	87	80	74	69	79	73	68	63	59	56	53	47	44	42	35	34	32	27				
3	79	70	63	58	72	64	58	53	52	48	44	42	38	36	31	30	28	23				
4	73	62	55	49	66	57	50	45	47	42	38	37	34	31	28	26	24	20				
5	67	55	48	42	60	51	44	39	42	37	33	33	30	27	26	23	21	18				
6	61	50	42	36	56	45	39	34	38	32	29	30	26	24	23	21	19	16				
7	57	45	37	32	51	41	34	29	34	29	25	27	24	21	21	19	17	14				
8	53	41	33	28	48	37	31	26	31	26	22	25	21	19	19	17	15	12				
9	49	37	30	25	44	34	28	23	28	23	20	23	19	17	18	15	13	11				
10	46	34	27	22	41	31	25	21	26	21	18	21	18	15	17	14	12	10				

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

	0°	45°	90°
0°	5040	5040	5040
5°	5051	4989	5020
10°	5019	4930	4930
15°	4962	4826	4790
20°	4883	4689	4603
25°	4782	4530	4415
30°	4683	4363	4180
35°	4574	4188	3943
40°	4443	3990	3687
45°	4322	3793	3427
50°	4185	3567	3152
55°	4037	3330	2853
60°	3873	3073	2546
65°	3725	2749	2245
70°	3510	2391	1907
75°	3235	1984	1550
80°	2822	1511	1423
85°	2399	1371	1278



TEST NUMBER: P332874-840

CATALOG NUMBER: SA4XXRDIP-C350D590U840-4F0-1E-UDD-F

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	58.6	1.5
10°-20°	163.5	4.3
20°-30°	236.1	6.2
30°-40°	267.7	7.0
40°-50°	258.5	6.8
50°-60°	214.9	5.6
60°-70°	148.4	3.9
70°-80°	75.2	2.0
80°-90°	21.5	0.6
90°-100°	26.3	0.7
100°-110°	168.0	4.4
110°-120°	321.3	8.4
120°-130°	407.9	10.7
130°-140°	436.4	11.4
140°-150°	408.1	10.7
150°-160°	329.1	8.6
160°-170°	212.2	5.5
170°-180°	73.2	1.9
0°-30°	458.3	12.0
0°-40°	726.0	19.0
0°-60°	1199.4	31.3
0°-90°	1444.6	37.7
90°-120°	515.6	13.5
90°-150°	1767.9	46.2
90°-180°	2382.0	62.2
0°-180°	3827.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	624	624	624	624	624	
5°	623	621	616	620	620	59
15°	594	589	577	576	573	167
25°	537	528	509	501	496	247
35°	464	448	425	409	400	290
45°	379	360	332	310	300	292
55°	287	267	237	213	203	256
65°	195	174	144	124	118	193
75°	104	86	64	53	50	110
85°	26	17	15	14	14	29
90°	2	8	13	16	17	3
95°	32	13	13	16	17	41
105°	173	177	180	183	164	181
115°	324	325	325	326	326	318
125°	455	457	456	458	459	406
135°	564	564	566	567	569	435
145°	651	653	653	653	654	407
155°	714	714	713	715	713	329
165°	753	750	750	754	749	213
175°	770	767	767	772	766	73
180°	770	770	770	770	770	



TEST NUMBER: P332874-840

CATALOG NUMBER: SA4XXRDIP-C350D590U840-4F0-1E-UDD-F

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	624.3	624.3	624.3	624.3	624.3	624.3	624.3	624.3	624.3	624.3	624.3
2.5°	625.8	625.4	625.1	624.8	624.4	623.8	622.9	622.0	621.0	620.1	621.0
5°	623.3	622.9	622.5	622.1	621.6	620.8	619.5	618.2	616.9	615.7	616.7
7.5°	617.6	617.2	616.8	616.3	615.9	614.8	613.2	611.5	609.9	608.2	608.8
10°	612.3	611.8	611.3	610.8	610.2	608.9	607.0	605.1	603.2	601.4	601.8
12.5°	605.4	604.8	604.2	603.6	603.0	601.6	599.3	597.0	594.8	592.5	592.8
15°	593.7	592.7	591.8	590.8	589.9	588.0	585.4	582.7	580.1	577.4	577.2
17.5°	579.5	578.0	576.6	575.3	573.9	571.6	568.5	565.2	562.1	558.9	558.3
20°	568.4	566.9	565.6	564.2	562.8	560.4	556.7	553.1	549.5	545.8	545.0
22.5°	556.1	554.5	553.0	551.5	549.9	547.1	543.3	539.5	535.6	531.7	530.5
25°	536.8	534.9	533.0	531.1	529.2	526.0	521.7	517.4	512.9	508.6	506.8
27.5°	516.5	514.1	511.7	509.4	507.0	503.4	498.8	494.1	489.5	484.8	482.5
30°	502.4	499.7	497.1	494.4	491.8	488.0	482.9	478.0	472.9	468.0	465.3
32.5°	487.5	484.4	481.5	478.5	475.4	471.4	466.3	461.1	456.0	450.8	447.7
35°	464.1	460.7	457.4	453.9	450.5	446.2	440.9	435.6	430.3	425.0	421.3
37.5°	439.2	435.7	432.2	428.7	425.2	420.5	414.5	408.7	402.8	397.0	392.9
40°	421.6	418.1	414.5	411.1	407.6	402.8	396.8	390.7	384.7	378.6	374.2
42.5°	404.8	401.1	397.4	393.7	390.1	385.1	378.8	372.4	366.2	359.8	355.3
45°	378.6	374.7	370.7	366.8	362.8	357.7	351.3	345.0	338.6	332.2	327.0
47.5°	351.5	347.5	343.5	339.3	335.3	329.9	323.4	316.7	310.0	303.5	298.0
50°	333.2	329.0	324.9	320.7	316.6	311.1	304.4	297.5	290.7	284.0	278.6
52.5°	314.5	310.3	306.3	302.3	298.2	292.7	285.7	278.7	271.8	264.8	259.4
55°	286.8	282.6	278.3	274.1	269.8	264.2	257.3	250.4	243.5	236.6	231.1
57.5°	259.4	255.0	250.6	246.2	241.8	236.2	229.3	222.6	215.8	208.9	203.4
60°	239.9	235.7	231.5	227.2	223.0	217.4	210.7	203.8	197.0	190.3	184.7
62.5°	222.4	217.9	213.5	209.1	204.7	199.0	192.1	185.1	178.1	171.2	166.0
65°	195.0	190.5	185.9	181.4	176.7	171.1	164.3	157.4	150.7	143.9	139.4
67.5°	166.6	162.3	157.8	153.5	149.2	143.8	137.4	131.2	124.8	118.6	114.6
70°	148.7	144.2	139.8	135.3	130.8	125.5	119.5	113.4	107.3	101.3	97.9
72.5°	129.6	125.5	121.5	117.4	113.4	108.6	102.8	97.0	91.4	85.6	82.7
75°	103.7	99.8	95.8	91.9	88.0	83.5	78.6	73.5	68.6	63.6	61.1
77.5°	77.6	74.2	70.9	67.6	64.2	60.5	56.5	52.4	48.4	44.3	42.9
80°	60.7	57.7	54.5	51.5	48.4	45.2	42.1	38.9	35.6	32.5	32.2
82.5°	46.2	43.3	40.5	37.7	34.8	32.5	30.7	28.9	27.1	25.2	25.0
85°	25.9	23.7	21.6	19.4	17.3	16.1	15.8	15.5	15.1	14.8	14.6
87.5°	9.2	8.8	8.4	8.0	7.6	7.4	7.6	7.7	7.8	7.9	8.0
90°	1.7	3.1	4.5	6.0	7.4	8.6	9.6	10.6	11.6	12.6	13.4
92.5°	7.3	7.4	7.4	7.5	7.6	8.1	9.2	10.2	11.2	12.2	13.0
95°	31.7	27.4	23.0	18.6	14.2	12.1	12.3	12.4	12.5	12.6	13.4
97.5°	67.3	70.0	72.7	75.4	78.2	72.3	58.1	43.8	29.5	15.2	15.2
100°	94.4	96.7	99.1	101.4	103.7	96.0	78.4	60.7	43.0	25.3	23.1
102.5°	124.9	126.5	128.3	130.0	131.7	131.4	129.1	126.7	124.4	122.1	98.7
105°	173.4	174.2	174.9	175.7	176.4	177.1	177.8	178.4	179.0	179.8	180.9
107.5°	218.4	218.8	219.2	219.5	219.9	220.6	221.5	222.4	223.2	224.1	224.7
110°	248.8	249.2	249.6	250.0	250.3	251.0	251.8	252.5	253.3	254.1	254.3



TEST NUMBER: P332874-840

CATALOG NUMBER: SA4XXRDIP-C350D590U840-4F0-1E-UDD-F

**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	278.3	279.0	279.7	280.4	281.1	281.7	282.0	282.4	282.8	283.1	283.1
115°	323.8	324.2	324.5	324.9	325.3	325.4	325.3	325.2	325.0	324.9	325.2
117.5°	364.7	365.2	365.7	366.2	366.7	367.1	367.4	367.7	367.9	368.2	368.2
120°	392.3	392.8	393.3	393.8	394.4	394.6	394.5	394.3	394.2	394.0	394.3
122.5°	418.1	418.4	418.7	419.0	419.3	419.6	419.8	419.9	420.1	420.3	420.4
125°	455.0	455.6	456.2	456.7	457.2	457.3	457.0	456.8	456.5	456.3	456.7
127.5°	490.1	490.2	490.4	490.5	490.6	491.0	491.6	492.1	492.7	493.3	493.2
130°	512.7	512.8	512.9	513.1	513.2	513.4	513.8	514.2	514.6	515.0	515.1
132.5°	533.4	533.6	533.9	534.1	534.3	534.7	535.2	535.6	536.1	536.6	536.7
135°	564.5	564.4	564.3	564.1	564.0	564.2	564.7	565.2	565.7	566.2	566.5
137.5°	592.1	592.1	592.2	592.2	592.3	592.6	593.1	593.7	594.3	594.8	595.1
140°	610.1	610.3	610.6	610.8	611.1	611.3	611.6	611.9	612.1	612.4	612.7
142.5°	626.2	626.6	627.1	627.5	628.0	628.3	628.4	628.6	628.7	628.9	629.2
145°	651.0	651.4	651.7	652.1	652.5	652.7	652.7	652.7	652.7	652.7	652.8
147.5°	670.7	671.4	672.1	672.8	673.5	673.8	673.7	673.6	673.4	673.3	673.4
150°	684.9	685.4	686.0	686.5	687.0	687.2	687.0	686.9	686.8	686.6	686.6
152.5°	696.9	697.3	697.7	698.1	698.5	698.6	698.4	698.2	697.9	697.7	697.9
155°	713.8	713.9	714.0	714.1	714.3	714.1	713.8	713.4	713.0	712.6	713.1
157.5°	727.9	727.8	727.7	727.7	727.6	727.3	726.9	726.5	726.0	725.6	726.3
160°	736.2	735.8	735.4	735.1	734.7	734.4	734.3	734.2	734.0	733.9	734.7
162.5°	743.6	743.1	742.6	742.1	741.6	741.3	741.1	741.0	740.9	740.8	741.5
165°	752.9	752.2	751.6	750.9	750.3	750.0	750.0	750.0	750.0	750.0	751.0
167.5°	760.2	759.6	758.9	758.3	757.6	757.2	757.2	757.1	757.0	756.9	758.1
170°	764.5	763.7	762.9	762.1	761.3	761.0	761.1	761.2	761.4	761.5	762.5
172.5°	767.2	766.4	765.7	764.9	764.2	763.8	764.0	764.1	764.2	764.3	765.4
175°	770.2	769.4	768.6	767.9	767.1	766.8	766.9	767.1	767.2	767.3	768.4
177.5°	771.5	770.8	770.1	769.4	768.7	768.4	768.6	768.8	769.0	769.2	770.1
180°	770.2	770.2	770.2	770.2	770.2	770.2	770.2	770.2	770.2	770.2	770.2



TEST NUMBER: P332874-840

CATALOG NUMBER: SA4XXRDIP-C350D590U840-4F0-1E-UDD-F

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	624.3	624.3	624.3	624.3	624.3	624.3	624.3	624.3
2.5°	622.0	622.9	623.8	624.2	624.1	624.1	624.0	623.9
5°	617.8	618.8	620.0	620.4	620.2	620.0	619.7	619.5
7.5°	609.6	610.3	611.0	611.1	610.8	610.5	610.1	609.8
10°	602.2	602.6	603.0	603.0	602.6	602.2	601.8	601.4
12.5°	593.0	593.3	593.6	593.4	592.8	592.2	591.6	591.0
15°	577.0	576.8	576.5	576.1	575.3	574.6	573.9	573.1
17.5°	557.6	557.1	556.5	555.6	554.5	553.4	552.3	551.2
20°	544.2	543.3	542.5	541.4	540.0	538.6	537.2	535.8
22.5°	529.2	527.9	526.6	525.4	524.3	523.2	522.1	520.9
25°	504.9	503.2	501.4	500.0	498.9	497.8	496.8	495.6
27.5°	480.3	478.1	475.8	474.0	472.4	470.9	469.4	467.9
30°	462.6	460.0	457.4	455.1	453.4	451.8	450.1	448.4
32.5°	444.6	441.5	438.5	436.1	434.4	432.8	431.2	429.6
35°	417.7	414.1	410.5	407.8	405.9	403.9	402.0	400.1
37.5°	388.9	384.9	380.8	377.8	375.9	374.0	372.0	370.1
40°	369.6	365.2	360.7	357.6	355.7	353.8	351.8	349.9
42.5°	350.7	346.2	341.6	338.4	336.4	334.4	332.3	330.4
45°	321.8	316.6	311.3	307.8	305.9	304.0	302.1	300.2
47.5°	292.7	287.2	281.9	278.1	276.0	273.9	271.8	269.7
50°	273.3	268.0	262.7	259.0	257.0	255.0	253.0	251.0
52.5°	254.0	248.6	243.3	239.4	237.4	235.3	233.2	231.1
55°	225.6	220.0	214.5	210.8	208.7	206.7	204.7	202.7
57.5°	197.7	192.2	186.5	183.0	181.5	180.0	178.3	176.8
60°	179.2	173.7	168.1	164.5	162.8	161.2	159.5	157.7
62.5°	161.0	155.8	150.8	147.5	146.1	144.8	143.4	142.1
65°	134.7	130.2	125.6	122.7	121.4	120.2	118.9	117.5
67.5°	110.7	106.7	102.8	100.2	98.8	97.4	95.9	94.5
70°	94.3	90.8	87.4	85.0	83.9	82.9	81.8	80.8
72.5°	79.7	76.6	73.7	71.7	70.7	69.8	68.8	67.8
75°	58.7	56.2	53.8	52.3	51.6	51.0	50.4	49.7
77.5°	41.5	40.1	38.7	37.9	37.7	37.5	37.3	37.1
80°	31.9	31.5	31.2	31.0	30.9	30.8	30.7	30.6
82.5°	24.7	24.5	24.3	24.1	24.0	23.9	23.8	23.7
85°	14.4	14.1	13.9	13.8	13.8	13.8	13.8	13.8
87.5°	8.0	8.1	8.2	8.3	8.4	8.6	8.7	8.8
90°	14.2	14.9	15.8	16.3	16.6	16.8	17.1	17.3
92.5°	13.7	14.5	15.2	15.7	15.8	15.8	15.9	15.9
95°	14.2	14.9	15.8	16.2	16.4	16.5	16.6	16.7
97.5°	15.3	15.5	15.6	15.7	15.8	15.9	16.0	16.2
100°	21.0	18.8	16.7	15.7	15.8	15.9	16.0	16.2
102.5°	75.1	51.7	28.2	16.5	16.6	16.6	16.6	16.6
105°	182.1	183.2	184.3	182.6	178.0	173.4	168.7	164.2
107.5°	225.2	225.8	226.3	226.8	227.3	227.8	228.3	228.8
110°	254.6	254.8	255.1	255.4	255.8	256.1	256.5	256.9





TEST NUMBER: P332874-840

CATALOG NUMBER: SA4XXRDIP-C350D590U840-4F0-1E-UDD-F

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	283.0	283.0	282.9	283.1	283.6	284.1	284.6	285.0
115°	325.4	325.7	325.9	326.1	326.1	326.1	326.1	326.1
117.5°	368.1	368.1	368.0	368.0	367.9	367.9	367.8	367.8
120°	394.6	394.8	395.1	395.1	394.8	394.6	394.3	394.0
122.5°	420.6	420.7	420.9	420.8	420.6	420.3	420.1	419.8
125°	457.0	457.4	457.8	458.1	458.2	458.3	458.4	458.6
127.5°	493.2	493.1	493.0	492.9	492.8	492.7	492.6	492.5
130°	515.2	515.3	515.5	515.5	515.5	515.5	515.5	515.5
132.5°	536.9	537.0	537.1	537.1	537.0	536.9	536.8	536.7
135°	566.7	567.0	567.2	567.5	567.7	568.0	568.4	568.6
137.5°	595.4	595.7	595.9	596.0	596.0	595.9	595.8	595.7
140°	613.1	613.5	613.9	614.1	614.3	614.4	614.5	614.6
142.5°	629.4	629.8	630.1	630.3	630.3	630.3	630.3	630.4
145°	652.9	653.1	653.2	653.4	653.6	653.9	654.2	654.4
147.5°	673.5	673.6	673.7	673.8	674.0	674.1	674.2	674.3
150°	686.6	686.6	686.6	686.7	686.8	687.0	687.1	687.2
152.5°	698.1	698.3	698.5	698.6	698.5	698.4	698.3	698.3
155°	713.6	714.1	714.6	714.7	714.3	713.9	713.6	713.2
157.5°	726.9	727.6	728.2	728.2	727.6	726.9	726.3	725.6
160°	735.4	736.2	737.0	737.0	736.2	735.4	734.7	733.9
162.5°	742.4	743.1	743.9	743.9	743.0	742.0	741.2	740.3
165°	752.0	753.1	754.2	754.1	752.9	751.7	750.6	749.4
167.5°	759.2	760.3	761.4	761.3	760.1	758.8	757.5	756.3
170°	763.6	764.6	765.7	765.5	764.3	763.0	761.6	760.4
172.5°	766.4	767.4	768.4	768.2	766.9	765.5	764.1	762.7
175°	769.6	770.7	771.9	771.7	770.2	768.6	767.1	765.6
177.5°	770.9	771.7	772.5	772.3	771.1	769.9	768.6	767.4
180°	770.2	770.2	770.2	770.2	770.2	770.2	770.2	770.2

(END OF REPORT)