

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: P332504-840

Luminaire Tested: **SA4XXDIP-C350D590U840-4F0-1E-UDD-D4**

Issue Date: 10/7/2019

**Test Information**

Test Method: LM-79-08  
Report Number: P332504-840  
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-18,  
Test Lab: INNOVATION CENTER  
Issue Date: 10/7/2019  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: SA4XXDIP-C350D590U840-4F0-1E-UDD-D4  
Description: DEFINE 4 DIRECT-INDIRECT PENDANT LED LUMINAIRE  
DOWNLIGHT 350 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER  
UPLIGHT 590 LUMENS PER FOOT, BATWING OPTIC  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

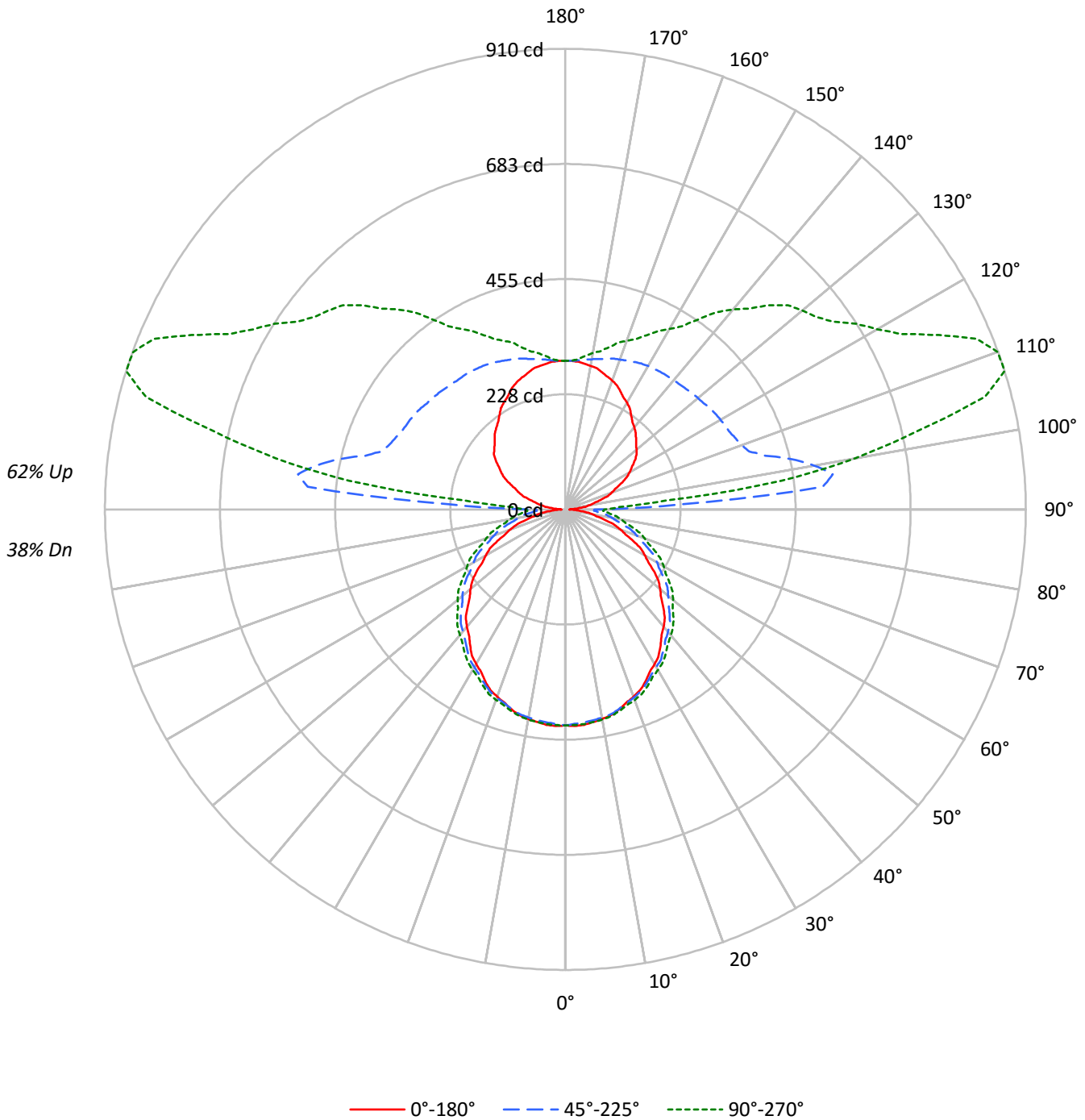
Lumens per Lamp: N/A  
Luminaire Lumens: 3589.3 lumens  
Efficiency: N/A  
Efficacy: 140.2 lumens/watt  
Spacing Criteria (0/90/45): 1.23 / 1.28 / 1.39  
Luminous Opening: Rectangular w/ Sides (W: 0.33' x L: 4' x H: 0.08')  
CIE Type: Semi-Indirect

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: P332504-840  
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### Luminous Intensity Polar Plot





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**COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:**

RF	20									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	50	30	10	50	30	10	50	30	10	0																
RCR	0	104	104	104	104	94	94	94	94	76	76	76	60	60	60	45	45	45	38	38	38	38	38	38	38	38	38	38	38	38																
	1	94	90	86	82	85	81	78	75	66	63	61	51	50	48	38	37	36	30	30	30	30	30	30	30	30	30	30	30	30																
	2	85	78	71	66	77	71	65	61	57	53	50	45	42	40	33	31	30	25	25	25	25	25	25	25	25	25	25	25	25																
	3	78	68	61	55	70	62	55	50	50	45	42	39	36	33	29	27	25	20	20	20	20	20	20	20	20	20	20	20	20																
	4	71	60	52	46	64	55	48	42	44	39	35	35	31	28	26	23	21	17	17	17	17	17	17	17	17	17	17	17	17																
	5	65	53	45	39	59	48	41	36	39	34	30	31	27	24	23	21	18	15	15	15	15	15	15	15	15	15	15	15	15																
	6	60	48	39	34	54	43	36	31	35	30	26	28	24	21	21	18	16	13	13	13	13	13	13	13	13	13	13	13	13																
	7	55	43	35	29	50	39	32	27	32	27	23	25	21	18	19	16	14	11	11	11	11	11	11	11	11	11	11	11	11																
	8	51	39	31	26	46	35	29	24	29	24	20	23	19	16	17	15	13	10	10	10	10	10	10	10	10	10	10	10	10																
	9	47	35	28	23	43	32	26	21	27	21	18	21	17	15	16	13	11	9	9	9	9	9	9	9	9	9	9	9	9																
	10	44	32	25	20	40	30	23	19	24	19	16	19	16	13	15	12	10	8	8	8	8	8	8	8	8	8	8	8	8																

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

	0°	45°	90°
0°	3446	3446	3446
5°	3457	3367	3378
10°	3435	3313	3310
15°	3404	3249	3231
20°	3358	3179	3155
25°	3306	3100	3070
30°	3249	3021	2983
35°	3185	2941	2907
40°	3134	2865	2828
45°	3058	2793	2759
50°	2994	2713	2687
55°	2928	2636	2603
60°	2824	2538	2526
65°	2708	2435	2431
70°	2572	2315	2320
75°	2379	2183	2220
80°	2166	2057	2123
85°	1893	1946	2065



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	40.4	1.1
10°-20°	115.8	3.2
20°-30°	175.1	4.9
30°-40°	211.9	5.9
40°-50°	224.0	6.2
50°-60°	210.8	5.9
60°-70°	174.9	4.9
70°-80°	122.9	3.4
80°-90°	71.1	2.0
90°-100°	253.0	7.0
100°-110°	471.3	13.1
110°-120°	415.3	11.6
120°-130°	343.7	9.6
130°-140°	281.9	7.9
140°-150°	212.6	5.9
150°-160°	148.7	4.1
160°-170°	87.5	2.4
170°-180°	28.5	0.8
0°-30°	331.4	9.2
0°-40°	543.2	15.1
0°-60°	978.1	27.2
0°-90°	1346.9	37.5
90°-120°	1139.7	31.8
90°-150°	1977.8	55.1
90°-180°	2242.0	62.5
0°-180°	3589.3	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	427	427	427	427	427	
5°	427	426	422	426	426	41
15°	410	410	409	413	412	115
25°	375	378	379	384	385	173
35°	328	334	338	345	347	205
45°	273	282	292	299	302	211
55°	214	224	238	248	251	191
65°	148	164	180	191	196	147
75°	82	100	120	133	138	87
85°	25	46	67	81	86	27
90°	8	31	58	72	77	6
95°	25	82	511	286	199	26
105°	72	112	410	857	858	77
115°	122	157	360	680	815	121
125°	167	199	349	573	646	149
135°	197	235	337	501	570	153
145°	227	259	331	415	458	142
155°	258	278	321	364	380	119
165°	280	289	308	326	331	79
175°	293	293	296	300	298	28
180°	293	293	293	293	293	



TEST NUMBER: P332504-840

CATALOG NUMBER: SA4XXDIP-C350D590U840-4F0-1E-UDD-D4

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	426.9	426.9	426.9	426.9	426.9	426.9	426.9	426.9	426.9	426.9	426.9
2.5°	428.4	428.1	427.9	427.6	427.4	426.9	426.3	425.6	424.9	424.1	424.7
5°	427.4	427.0	426.7	426.4	426.1	425.6	424.7	424.0	423.3	422.5	423.4
7.5°	423.7	423.5	423.3	423.1	422.9	422.5	421.9	421.3	420.7	420.1	421.0
10°	420.6	420.5	420.4	420.3	420.2	419.9	419.4	418.8	418.3	417.8	418.7
12.5°	416.5	416.4	416.4	416.4	416.4	416.2	415.8	415.5	415.1	414.8	415.6
15°	409.6	409.8	409.9	410.0	410.1	410.0	409.6	409.3	409.0	408.7	409.6
17.5°	400.4	400.7	401.0	401.3	401.6	401.8	401.7	401.6	401.6	401.5	402.5
20°	393.8	394.2	394.6	394.9	395.2	395.4	395.5	395.6	395.7	395.8	396.9
22.5°	386.6	387.0	387.4	387.8	388.2	388.5	388.7	388.9	389.1	389.3	390.3
25°	374.8	375.4	376.1	376.7	377.3	377.8	378.1	378.4	378.7	379.1	380.2
27.5°	361.5	362.5	363.5	364.4	365.3	366.0	366.5	367.0	367.5	368.0	369.0
30°	352.7	353.7	354.5	355.3	356.2	357.0	357.7	358.4	359.2	359.9	361.1
32.5°	343.3	344.3	345.3	346.3	347.3	348.2	349.0	349.8	350.7	351.5	352.8
35°	327.9	329.2	330.4	331.7	333.1	334.2	335.3	336.3	337.4	338.4	339.9
37.5°	312.6	314.0	315.5	316.9	318.4	319.7	321.1	322.4	323.8	325.1	326.6
40°	302.6	304.0	305.4	306.7	308.1	309.5	311.0	312.6	314.0	315.5	317.1
42.5°	291.1	292.7	294.2	295.8	297.3	298.9	300.7	302.5	304.2	305.9	307.7
45°	273.4	275.4	277.4	279.4	281.4	283.5	285.5	287.5	289.5	291.5	293.4
47.5°	256.5	258.6	260.6	262.8	264.8	267.0	269.3	271.8	274.1	276.4	278.2
50°	244.3	246.6	248.9	251.3	253.6	255.9	258.3	260.6	263.0	265.3	267.4
52.5°	232.1	234.4	236.7	239.0	241.4	243.9	246.5	249.2	251.9	254.6	256.7
55°	214.2	216.4	218.6	220.9	223.1	225.8	228.9	232.2	235.3	238.5	240.7
57.5°	194.2	196.9	199.7	202.5	205.2	208.1	211.4	214.5	217.6	220.9	223.4
60°	181.2	183.9	186.7	189.5	192.2	195.3	198.8	202.4	205.8	209.3	211.8
62.5°	168.5	171.6	174.6	177.6	180.6	183.9	187.3	190.9	194.4	197.9	200.4
65°	148.1	151.6	155.0	158.3	161.8	165.3	168.8	172.5	176.1	179.8	182.4
67.5°	128.6	132.2	135.8	139.5	143.0	146.7	150.7	154.5	158.3	162.2	164.9
70°	115.2	118.8	122.4	126.0	129.7	133.5	137.5	141.6	145.6	149.7	152.5
72.5°	102.2	105.9	109.6	113.3	116.9	121.0	125.2	129.6	133.8	138.1	140.9
75°	82.2	86.1	90.1	94.0	98.0	102.1	106.6	111.1	115.5	120.0	123.0
77.5°	63.6	67.8	71.9	76.0	80.2	84.6	89.3	94.0	98.7	103.3	106.3
80°	52.1	56.4	60.6	64.8	69.1	73.5	78.3	82.9	87.6	92.3	95.4
82.5°	40.6	45.0	49.5	53.9	58.3	62.8	67.6	72.2	76.9	81.6	84.8
85°	25.3	29.8	34.2	38.7	43.2	47.8	52.6	57.4	62.1	67.0	70.1
87.5°	14.2	18.8	23.5	28.0	32.4	36.9	42.2	46.9	51.8	56.7	59.6
90°	8.2	13.6	19.6	24.4	29.3	33.6	41.7	46.3	52.0	57.7	60.2
92.5°	13.8	20.7	29.9	40.7	53.0	69.2	103.0	152.3	200.4	227.7	200.3
95°	25.2	30.5	39.7	50.7	68.1	96.1	150.7	249.4	391.5	511.1	527.3
97.5°	39.8	42.7	50.7	60.7	75.5	99.5	142.4	224.7	365.9	533.1	647.9
100°	49.1	51.8	58.6	68.3	82.0	103.8	142.0	211.3	332.9	499.5	649.8
102.5°	58.3	61.6	67.6	76.4	89.4	110.2	144.9	206.3	310.3	458.4	613.3
105°	71.7	75.5	80.6	89.6	102.1	121.8	153.4	205.1	289.7	409.5	547.4
107.5°	87.6	90.4	95.0	104.1	115.8	135.0	164.1	211.4	284.0	380.9	494.0
110°	97.8	100.4	104.7	113.1	125.0	143.1	172.2	216.2	283.4	370.6	467.0



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	107.4	110.0	114.6	122.4	134.1	152.1	180.1	221.6	284.4	364.6	450.6
115°	121.6	124.2	129.3	135.9	147.8	165.5	192.0	229.9	286.9	359.5	434.3
117.5°	136.6	138.9	143.0	149.9	160.8	178.7	203.8	238.7	289.9	356.0	425.5
120°	146.4	147.8	152.2	158.9	169.0	186.8	211.8	244.8	292.3	354.2	420.2
122.5°	155.6	156.8	161.0	166.8	177.6	194.8	219.6	250.6	294.7	351.7	414.5
125°	167.2	169.5	172.8	179.0	189.9	207.2	230.7	259.8	298.7	348.7	406.0
127.5°	177.8	179.6	183.7	190.8	202.1	219.3	241.4	267.7	301.4	344.6	394.9
130°	183.5	185.7	190.2	198.7	209.5	227.0	248.3	272.5	303.6	342.1	387.9
132.5°	189.5	191.2	197.1	205.2	216.9	233.4	254.3	277.6	305.6	340.1	381.6
135°	197.4	199.8	205.5	215.3	227.3	242.7	262.5	284.0	308.3	336.7	371.8
137.5°	205.8	207.9	214.1	223.4	235.8	250.2	268.3	288.0	309.3	334.4	363.5
140°	211.8	213.4	219.6	229.3	241.4	255.2	272.6	291.0	310.7	332.8	358.9
142.5°	217.8	219.5	225.4	234.7	246.4	259.6	276.4	293.5	312.0	332.0	355.3
145°	226.9	228.5	234.2	242.1	253.0	265.6	280.5	296.1	312.9	330.6	349.7
147.5°	237.1	237.6	242.6	250.7	259.7	271.1	285.2	298.7	313.4	328.6	345.0
150°	243.6	244.1	248.5	255.4	263.9	274.8	287.5	300.1	313.4	327.2	341.6
152.5°	249.2	249.2	253.9	260.3	268.0	278.0	289.3	301.0	312.5	324.9	337.9
155°	257.5	258.1	261.6	267.3	273.7	282.3	292.1	301.8	311.0	321.4	332.3
157.5°	265.7	265.7	268.9	273.4	278.9	285.7	294.1	301.8	309.6	317.9	326.8
160°	270.7	270.7	273.1	277.1	281.7	288.0	295.0	301.8	308.2	315.1	322.7
162.5°	275.4	274.9	276.7	280.3	284.5	289.4	295.9	301.8	306.8	312.4	318.9
165°	280.5	280.5	281.7	284.6	287.5	290.9	296.1	300.7	304.2	308.2	312.9
167.5°	285.7	285.2	285.7	287.9	289.5	292.2	296.0	299.3	301.4	304.1	307.3
170°	288.0	287.5	288.0	289.7	290.9	292.7	295.5	298.4	299.5	301.2	303.6
172.5°	290.3	289.7	289.8	291.1	291.9	293.1	295.1	297.5	297.7	298.5	300.3
175°	292.7	292.1	292.1	292.7	293.3	293.3	294.4	296.1	295.5	295.5	296.7
177.5°	293.7	293.3	292.8	293.3	293.3	293.3	293.7	294.6	293.7	293.7	294.2
180°	293.3	293.3	293.3	293.3	293.3	293.3	293.3	293.3	293.3	293.3	293.3



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	426.9	426.9	426.9	426.9	426.9	426.9	426.9	426.9
2.5°	425.4	426.0	426.6	426.8	426.8	426.7	426.6	426.5
5°	424.2	425.1	426.0	426.4	426.3	426.1	426.0	425.9
7.5°	422.0	422.9	423.9	424.3	424.2	424.1	424.0	423.9
10°	419.7	420.6	421.6	422.0	421.9	421.8	421.7	421.6
12.5°	416.5	417.4	418.2	418.6	418.6	418.6	418.6	418.5
15°	410.6	411.5	412.5	412.9	412.8	412.7	412.6	412.5
17.5°	403.4	404.5	405.5	405.9	405.8	405.7	405.7	405.6
20°	397.9	399.0	400.0	400.6	400.6	400.6	400.6	400.6
22.5°	391.4	392.4	393.5	394.2	394.4	394.5	394.7	394.9
25°	381.4	382.5	383.7	384.4	384.5	384.6	384.7	384.8
27.5°	370.1	371.2	372.3	372.9	373.0	373.1	373.2	373.4
30°	362.2	363.5	364.6	365.3	365.5	365.8	366.0	366.2
32.5°	354.2	355.6	356.9	357.7	357.9	358.1	358.3	358.5
35°	341.4	342.8	344.4	345.3	345.6	345.9	346.3	346.6
37.5°	328.1	329.5	331.0	332.0	332.3	332.6	333.1	333.4
40°	318.7	320.2	321.8	322.9	323.3	323.8	324.2	324.6
42.5°	309.4	311.2	313.0	314.1	314.4	314.7	315.1	315.4
45°	295.2	297.0	298.8	299.9	300.5	301.0	301.5	302.1
47.5°	280.1	282.0	283.9	285.1	285.8	286.4	287.0	287.7
50°	269.5	271.7	273.8	275.2	275.8	276.4	277.1	277.7
52.5°	258.8	260.9	263.1	264.5	265.1	265.7	266.4	267.0
55°	242.8	244.9	247.0	248.4	249.0	249.6	250.3	251.0
57.5°	225.9	228.4	231.0	232.5	233.1	233.7	234.3	234.9
60°	214.3	216.7	219.1	220.8	221.7	222.5	223.4	224.2
62.5°	202.8	205.2	207.6	209.3	210.2	211.0	211.9	212.7
65°	185.0	187.7	190.4	192.1	193.0	193.8	194.7	195.5
67.5°	167.6	170.4	173.0	174.8	175.6	176.4	177.2	178.1
70°	155.3	158.2	161.1	162.9	163.6	164.4	165.1	165.8
72.5°	143.7	146.5	149.3	151.1	151.9	152.7	153.6	154.4
75°	125.9	128.9	131.9	133.8	134.8	135.7	136.7	137.6
77.5°	109.4	112.4	115.4	117.4	118.5	119.5	120.5	121.5
80°	98.7	101.8	105.0	107.0	107.9	108.8	109.6	110.4
82.5°	88.1	91.4	94.6	96.7	97.7	98.6	99.6	100.5
85°	73.3	76.4	79.7	81.8	82.8	83.9	84.9	86.0
87.5°	62.8	66.0	69.2	71.2	72.3	73.3	74.1	75.0
90°	63.8	67.5	71.2	73.1	74.5	75.9	76.2	77.2
92.5°	164.2	139.2	124.7	115.1	109.2	106.9	105.8	106.6
95°	474.2	387.8	313.5	259.4	232.2	215.3	205.9	199.3
97.5°	674.9	644.5	590.9	532.6	492.2	458.4	442.0	431.0
100°	736.8	751.2	725.9	685.0	635.6	601.3	584.7	580.9
102.5°	731.5	791.4	802.4	786.5	756.5	731.8	714.5	711.7
105°	682.1	784.4	844.0	869.4	871.4	867.7	860.5	857.9
107.5°	613.4	722.2	805.1	858.2	887.4	901.3	907.8	910.1
110°	571.9	674.0	760.0	825.1	866.8	891.8	903.0	909.1





TEST NUMBER: P332504-840

CATALOG NUMBER: SA4XXDIP-C350D590U840-4F0-1E-UDD-D4

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	540.8	631.3	712.6	777.6	824.9	855.0	870.3	879.6
115°	508.8	581.9	651.7	708.5	754.8	790.1	809.2	814.6
117.5°	491.3	552.2	607.4	655.8	695.5	725.4	744.9	749.3
120°	482.8	538.5	586.7	629.0	662.8	688.9	704.8	712.0
122.5°	475.3	529.2	573.3	610.6	639.0	661.5	675.0	682.1
125°	463.3	514.8	556.6	589.7	613.3	630.7	642.3	646.3
127.5°	448.7	498.0	539.5	570.9	594.8	610.4	620.3	624.5
130°	437.6	485.0	526.0	557.8	582.2	597.1	607.0	611.2
132.5°	426.2	470.8	510.9	542.6	566.4	583.3	592.7	596.7
135°	409.8	449.0	485.7	515.7	539.5	556.2	566.0	570.2
137.5°	395.2	428.5	459.6	486.7	508.8	525.2	533.3	538.1
140°	386.8	415.3	442.5	467.8	488.4	501.6	510.2	515.3
142.5°	379.2	404.3	427.8	449.6	467.9	480.1	487.7	491.3
145°	368.8	389.0	407.0	423.6	438.5	448.7	454.8	458.2
147.5°	360.2	375.9	389.8	402.6	413.6	422.3	427.1	428.5
150°	355.5	368.7	380.2	390.6	399.8	407.3	410.7	411.3
152.5°	350.3	361.7	372.3	380.9	388.7	394.9	396.9	397.5
155°	342.7	351.9	360.6	367.5	373.3	377.9	379.6	379.6
157.5°	334.6	342.3	349.5	355.1	359.5	362.9	364.0	364.0
160°	329.5	335.9	342.1	346.8	350.2	353.8	354.3	354.3
162.5°	324.5	329.8	334.8	339.0	341.5	345.0	345.6	345.1
165°	317.4	320.8	324.9	327.8	330.1	332.3	331.8	331.2
167.5°	310.6	313.3	316.5	318.2	319.4	320.8	320.7	320.3
170°	306.5	308.2	310.5	312.3	313.4	314.0	313.4	313.4
172.5°	302.8	304.1	305.5	306.7	307.4	308.0	307.4	306.5
175°	297.8	298.4	299.5	299.5	299.5	300.7	299.5	298.4
177.5°	294.6	295.1	295.1	295.5	295.1	295.5	294.6	293.7
180°	293.3	293.3	293.3	293.3	293.3	293.3	293.3	293.3

(END OF REPORT)