

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: P331378-935

Luminaire Tested: **SA2XXDIP-C865D330U935-4F0-1E-UDD-D**

Issue Date: 10/7/2019

**Test Information**

Test Method: LM-79-08  
Report Number: P331378-935  
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-C865D330U935-4F0-1E-UDD-D  
Description: DEFINE 2 DIRECT-INDIRECT PENDANT LED LUMINAIRE  
DOWNLIGHT 865 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER  
UPLIGHT 330 LUMENS PER FOOT, NO LENS  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

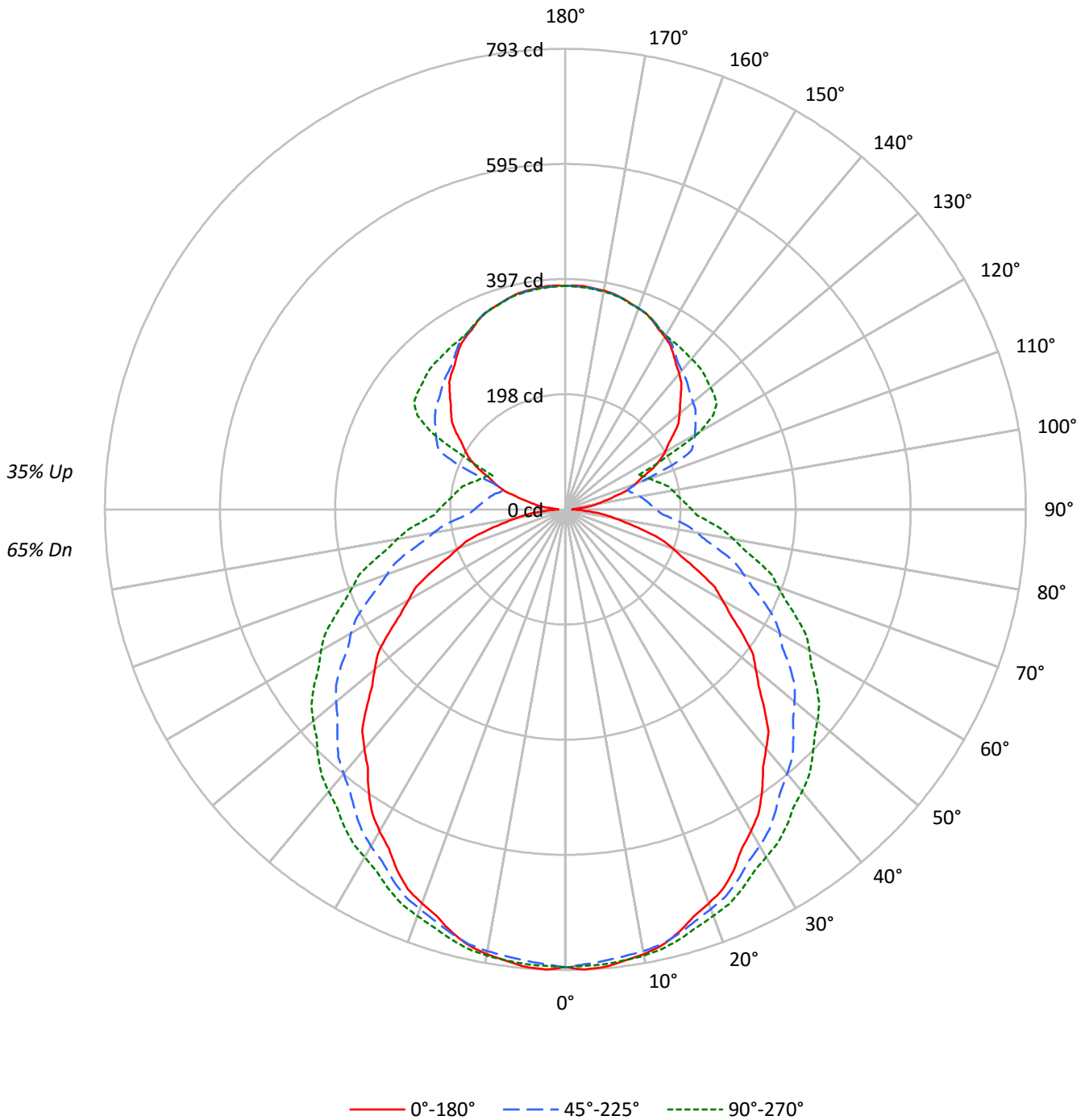
Lumens per Lamp: N/A  
Luminaire Lumens: 4136.0 lumens  
Efficiency: N/A  
Efficacy: 95.1 lumens/watt  
Spacing Criteria (0/90/45): 1.21 / 1.32 / 1.42  
Luminous Opening: Rectangular w/ Sides (W: 0.17' x L: 4' x H: 0.08')  
CIE Type: Semi-Direct

Input Watts (W): 43.5  
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: P331378-935  
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### Luminous Intensity Polar Plot





TEST NUMBER: P331378-935

CATALOG NUMBER: SA2XXDIP-C865D330U935-4F0-1E-UDD-D

**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	111	111	111	111	104	104	104	104	91	91	91	80	80	80	70	70	70	65				
1	99	94	89	85	93	88	84	80	77	74	71	68	65	63	58	57	55	50				
2	89	81	74	68	84	76	70	64	67	62	57	58	54	51	50	47	45	41				
3	81	70	62	56	76	66	59	53	58	52	47	51	46	42	44	40	37	34				
4	74	62	53	47	69	58	50	44	51	45	40	45	40	36	39	35	32	28				
5	68	55	46	40	63	52	44	38	46	39	34	40	35	31	35	31	27	24				
6	62	49	41	34	58	47	39	33	41	35	30	36	31	27	32	27	24	21				
7	58	44	36	30	54	42	34	29	37	31	26	33	27	23	29	24	21	18				
8	54	40	32	26	50	38	31	25	34	28	23	30	25	21	26	22	19	16				
9	50	37	29	23	47	35	28	23	31	25	21	28	22	19	24	20	17	15				
10	47	34	26	21	44	32	25	20	29	23	19	26	20	17	23	18	15	13				

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

	0°	45°	90°
0°	12728	12728	12728
5°	12790	12252	12205
10°	12710	11890	11756
15°	12535	11506	11284
20°	12312	11097	10828
25°	12095	10701	10415
30°	11786	10293	10000
35°	11474	9900	9708
40°	11147	9566	9415
45°	10835	9267	9165
50°	10500	8995	8920
55°	10150	8703	8668
60°	9721	8403	8403
65°	9278	8047	8088
70°	8774	7666	7748
75°	8132	7293	7435
80°	7126	6912	7117
85°	6164	6582	6872



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	74.7	1.8
10°-20°	214.2	5.2
20°-30°	324.6	7.8
30°-40°	395.4	9.6
40°-50°	425.3	10.3
50°-60°	413.1	10.0
60°-70°	360.7	8.7
70°-80°	277.7	6.7
80°-90°	187.3	4.5
90°-100°	141.2	3.4
100°-110°	140.8	3.4
110°-120°	187.7	4.5
120°-130°	242.2	5.9
130°-140°	235.3	5.7
140°-150°	207.8	5.0
150°-160°	165.0	4.0
160°-170°	106.3	2.6
170°-180°	36.6	0.9
0°-30°	613.5	14.8
0°-40°	1008.9	24.4
0°-60°	1847.2	44.7
0°-90°	2672.9	64.6
90°-120°	469.7	11.4
90°-150°	1155.1	27.9
90°-180°	1463.0	35.4
0°-180°	4136.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	788	788	788	788	788	
5°	791	787	780	787	786	75
15°	754	756	756	766	766	212
25°	686	694	704	717	721	315
35°	591	610	632	656	665	369
45°	484	516	555	589	602	374
55°	371	413	472	512	528	332
65°	254	310	377	422	439	252
75°	140	205	278	325	342	149
85°	41	112	185	231	249	44
90°	12	81	156	202	218	8
95°	27	73	142	185	200	29
105°	90	129	115	157	172	97
115°	165	184	240	151	138	162
125°	229	234	274	306	318	204
135°	281	286	300	325	335	217
145°	325	325	329	338	342	203
155°	358	356	358	360	358	165
165°	377	375	376	378	376	106
175°	386	384	384	386	383	37
180°	385	385	385	385	385	



TEST NUMBER: P331378-935

CATALOG NUMBER: SA2XXDIP-C865D330U935-4F0-1E-UDD-D

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	788.3	788.3	788.3	788.3	788.3	788.3	788.3	788.3	788.3	788.3	788.3
2.5°	792.9	792.3	791.7	791.1	790.5	789.5	788.0	786.6	785.1	783.8	784.8
5°	790.6	789.9	789.1	788.3	787.6	786.4	784.9	783.3	781.9	780.3	781.9
7.5°	783.5	783.0	782.5	782.0	781.5	780.7	779.5	778.3	777.1	776.0	777.8
10°	778.1	777.6	777.1	776.5	776.0	775.4	774.6	773.9	773.1	772.3	774.4
12.5°	768.9	769.0	769.1	769.2	769.3	769.0	768.5	767.9	767.4	766.8	768.9
15°	754.1	754.6	755.1	755.6	756.0	756.3	756.3	756.3	756.3	756.3	758.6
17.5°	734.9	735.9	737.0	738.0	739.1	740.0	740.9	741.7	742.5	743.3	745.7
20°	722.0	723.3	724.6	725.9	727.1	728.3	729.3	730.3	731.3	732.4	735.1
22.5°	708.3	709.8	711.3	712.7	714.2	715.7	717.1	718.5	720.0	721.3	724.2
25°	685.5	687.3	689.1	690.9	692.6	694.7	696.9	699.2	701.5	703.8	706.8
27.5°	658.1	661.0	663.8	666.8	669.7	672.4	675.1	677.9	680.5	683.2	687.1
30°	639.8	643.1	646.4	649.7	653.0	656.3	659.6	662.9	666.2	669.5	673.6
32.5°	619.7	623.4	627.1	630.9	634.6	638.3	642.2	646.2	650.1	653.9	658.7
35°	590.6	595.0	599.3	603.6	608.0	612.5	617.3	622.2	627.0	631.8	637.4
37.5°	559.1	564.1	569.1	574.0	579.0	584.6	590.9	597.2	603.4	609.7	615.9
40°	538.1	543.7	549.3	554.9	560.4	566.7	573.5	580.4	587.3	594.1	600.7
42.5°	518.0	523.6	529.2	534.8	540.4	547.1	554.9	562.8	570.7	578.6	585.7
45°	484.4	491.3	498.1	505.0	511.9	519.7	528.6	537.5	546.4	555.3	563.1
47.5°	451.3	458.7	466.2	473.7	481.1	490.1	500.5	510.9	521.3	531.8	539.9
50°	428.4	436.3	444.2	452.0	459.9	469.6	481.0	492.4	503.9	515.3	523.9
52.5°	406.5	414.7	423.1	431.4	439.6	449.8	461.8	473.8	485.9	497.9	506.7
55°	371.3	380.5	389.6	398.7	407.9	419.0	432.2	445.5	458.7	471.8	481.0
57.5°	336.6	346.9	357.2	367.5	377.8	389.7	403.1	416.6	430.1	443.5	453.4
60°	311.9	322.8	333.7	344.7	355.6	368.2	382.7	397.2	411.6	426.2	435.8
62.5°	290.0	301.3	312.6	323.9	335.3	348.2	362.7	377.1	391.6	406.0	416.3
65°	253.7	266.0	278.5	290.9	303.4	317.1	332.1	347.1	362.1	377.0	387.4
67.5°	220.2	233.2	246.2	259.2	272.2	286.5	301.8	317.1	332.4	347.8	358.3
70°	196.5	209.7	222.9	236.1	249.3	263.8	279.6	295.2	311.0	326.7	337.7
72.5°	174.6	188.2	201.8	215.4	229.0	243.7	259.8	275.7	291.6	307.5	318.3
75°	140.5	154.7	168.9	183.2	197.4	212.7	228.9	245.1	261.4	277.6	288.5
77.5°	107.6	122.5	137.4	152.2	167.1	182.8	199.3	215.9	232.3	248.8	259.7
80°	85.7	101.2	116.7	132.2	147.7	163.6	180.1	196.7	213.1	229.6	240.3
82.5°	67.4	82.7	98.0	113.2	128.5	144.6	161.3	178.0	194.7	211.4	222.1
85°	41.2	56.9	72.6	88.3	104.1	120.1	136.3	152.6	168.8	185.1	195.8
87.5°	22.5	37.7	53.0	68.3	83.5	99.4	115.7	132.0	148.4	164.7	175.1
90°	11.7	27.1	42.5	57.9	73.4	89.4	106.2	122.9	139.7	156.4	166.9
92.5°	16.1	29.8	43.4	57.1	70.7	85.5	101.3	117.3	133.2	149.0	159.2
95°	27.2	37.1	47.0	56.9	66.8	79.6	95.2	110.9	126.6	142.2	152.2
97.5°	43.9	48.7	53.6	58.5	63.4	73.6	89.2	104.9	120.5	136.1	145.8
100°	57.3	58.2	59.2	60.0	61.0	69.1	84.3	99.6	114.9	130.1	140.0
102.5°	71.0	77.8	84.6	91.4	98.2	104.1	109.1	114.2	119.2	124.2	134.0
105°	90.3	99.5	108.7	118.0	127.3	130.0	126.3	122.6	118.9	115.2	124.8
107.5°	113.7	121.1	128.5	135.9	143.2	143.1	135.5	127.9	120.3	112.6	120.5
110°	127.9	134.2	140.7	147.1	153.4	153.9	148.4	143.0	137.6	132.1	134.1



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	142.2	147.6	153.0	158.4	163.8	170.2	177.6	185.0	192.4	199.9	185.5
115°	164.6	168.5	172.4	176.2	180.0	188.4	201.4	214.4	227.3	240.3	219.3
117.5°	183.6	186.6	189.6	192.6	195.6	202.9	214.6	226.2	237.8	249.4	250.0
120°	198.3	200.3	202.2	204.1	206.0	212.7	223.9	235.2	246.5	257.8	265.6
122.5°	210.8	212.2	213.5	214.9	216.3	222.4	233.2	243.9	254.7	265.4	272.8
125°	228.6	229.5	230.2	231.0	231.9	236.9	246.2	255.5	264.8	274.1	281.4
127.5°	245.8	246.4	247.1	247.7	248.4	252.4	259.8	267.3	274.7	282.1	289.0
130°	256.8	257.4	258.2	258.9	259.7	263.0	269.1	275.1	281.1	287.1	293.9
132.5°	267.9	268.5	269.1	269.7	270.2	272.9	277.7	282.5	287.3	292.1	298.6
135°	281.2	282.1	283.2	284.1	285.2	287.2	290.3	293.4	296.5	299.5	305.6
137.5°	295.8	296.4	297.1	297.7	298.4	299.6	301.4	303.1	304.9	306.6	311.9
140°	305.4	305.7	305.9	306.2	306.3	307.1	308.3	309.4	310.6	311.9	316.5
142.5°	313.4	313.7	313.8	314.0	314.2	314.8	315.6	316.5	317.4	318.2	322.0
145°	324.9	324.9	324.8	324.7	324.6	325.1	326.1	327.3	328.3	329.3	331.3
147.5°	335.9	335.6	335.4	335.1	334.9	335.3	336.3	337.4	338.5	339.5	340.0
150°	342.9	342.5	342.1	341.6	341.2	341.6	342.5	343.5	344.5	345.5	345.9
152.5°	349.0	348.5	348.0	347.5	347.1	347.2	348.2	349.1	350.1	351.0	351.4
155°	357.7	357.1	356.6	356.0	355.5	355.6	356.4	357.1	357.8	358.5	359.0
157.5°	364.5	364.1	363.6	363.2	362.7	362.7	363.3	363.8	364.3	364.8	365.2
160°	368.6	368.2	367.8	367.5	367.1	367.1	367.5	367.8	368.2	368.6	368.9
162.5°	372.1	371.8	371.4	371.0	370.7	370.7	370.9	371.3	371.6	372.0	372.4
165°	376.9	376.6	376.2	375.8	375.5	375.4	375.6	375.7	375.9	376.1	376.5
167.5°	380.5	380.1	379.8	379.4	379.0	378.9	379.1	379.3	379.4	379.6	380.0
170°	382.5	382.1	381.8	381.4	381.0	380.9	381.0	381.2	381.3	381.4	381.9
172.5°	383.8	383.5	383.1	382.7	382.4	382.2	382.4	382.5	382.6	382.7	383.1
175°	385.6	385.1	384.7	384.3	383.8	383.7	383.8	383.9	384.1	384.2	384.6
177.5°	385.8	385.5	385.1	384.8	384.4	384.4	384.4	384.4	384.4	384.5	384.9
180°	384.7	384.7	384.7	384.7	384.7	384.7	384.7	384.7	384.7	384.7	384.7



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	788.3	788.3	788.3	788.3	788.3	788.3	788.3	788.3
2.5°	785.7	786.8	787.8	788.2	787.7	787.3	786.9	786.5
5°	783.3	784.9	786.4	787.0	786.8	786.5	786.3	786.0
7.5°	779.6	781.4	783.3	784.1	783.9	783.6	783.3	783.1
10°	776.4	778.4	780.5	781.4	781.1	780.8	780.6	780.3
12.5°	770.9	772.9	775.0	775.8	775.6	775.3	775.1	774.8
15°	760.9	763.2	765.5	766.5	766.2	765.9	765.7	765.5
17.5°	748.1	750.4	752.9	754.1	754.1	754.1	754.1	754.1
20°	738.0	740.7	743.5	744.9	744.9	744.9	744.9	744.9
22.5°	726.9	729.8	732.5	734.2	734.5	734.9	735.4	735.8
25°	709.9	712.9	716.0	717.9	718.6	719.4	720.1	720.9
27.5°	691.0	694.8	698.6	700.9	701.5	702.0	702.6	703.1
30°	677.6	681.7	685.8	688.2	688.9	689.7	690.4	691.2
32.5°	663.3	668.0	672.6	675.7	677.0	678.4	679.8	681.1
35°	643.0	648.6	654.2	657.8	659.6	661.4	663.1	665.0
37.5°	622.0	628.2	634.4	638.4	640.3	642.2	644.1	646.0
40°	607.3	613.9	620.5	624.9	627.2	629.5	631.8	634.1
42.5°	593.0	600.2	607.4	612.2	614.4	616.7	619.0	621.3
45°	571.0	578.9	586.8	591.9	594.5	597.0	599.6	602.1
47.5°	548.2	556.4	564.6	570.2	572.9	575.8	578.5	581.3
50°	532.5	541.1	549.8	555.5	558.3	561.1	563.9	566.7
52.5°	515.6	524.4	533.2	539.2	542.2	545.2	548.1	551.1
55°	490.2	499.3	508.4	514.6	517.9	521.2	524.5	527.8
57.5°	463.2	473.0	482.9	489.6	492.8	496.2	499.6	502.9
60°	445.5	455.1	464.8	471.3	474.9	478.5	482.0	485.6
62.5°	426.5	436.8	447.0	453.9	457.2	460.5	463.9	467.3
65°	397.9	408.3	418.7	425.5	428.8	432.1	435.4	438.7
67.5°	368.8	379.3	389.9	396.8	400.3	403.7	407.2	410.6
70°	348.6	359.5	370.4	377.4	380.5	383.5	386.6	389.6
72.5°	329.0	339.7	350.4	357.6	361.3	364.9	368.6	372.2
75°	299.5	310.4	321.3	328.4	331.7	335.0	338.3	341.6
77.5°	270.6	281.5	292.3	299.5	303.1	306.6	310.2	313.7
80°	251.0	261.7	272.3	279.4	282.9	286.5	290.1	293.6
82.5°	232.7	243.3	254.0	261.1	264.4	267.7	271.0	274.4
85°	206.4	217.1	227.7	234.9	238.4	241.9	245.5	249.1
87.5°	185.5	196.0	206.4	213.3	216.5	219.8	223.1	226.4
90°	177.3	187.8	198.2	205.1	208.2	211.4	214.6	217.7
92.5°	169.3	179.3	189.5	196.1	199.2	202.3	205.4	208.6
95°	162.1	172.1	182.1	188.6	191.5	194.5	197.5	200.4
97.5°	155.4	165.1	174.7	181.0	184.1	187.2	190.2	193.3
100°	149.9	159.8	169.7	176.1	179.0	181.9	184.9	187.8
102.5°	143.9	153.7	163.5	169.9	172.9	175.8	178.8	181.8
105°	134.4	144.0	153.5	159.8	162.8	165.9	168.9	171.9
107.5°	128.4	136.2	144.0	149.5	152.5	155.5	158.6	161.6
110°	136.0	137.9	139.9	142.3	145.4	148.4	151.4	154.5





TEST NUMBER: P331378-935

CATALOG NUMBER: SA2XXDIP-C865D330U935-4F0-1E-UDD-D

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	171.0	156.5	142.2	136.4	139.4	142.3	145.3	148.4
115°	198.3	177.2	156.2	144.9	143.2	141.5	139.9	138.2
117.5°	250.6	251.2	251.8	246.1	234.0	222.0	209.9	197.9
120°	273.5	281.3	289.1	290.3	284.7	279.2	273.6	268.0
122.5°	280.1	287.5	294.8	298.9	299.6	300.4	301.2	302.0
125°	288.7	295.9	303.2	308.2	310.6	313.1	315.6	318.0
127.5°	295.9	302.9	309.8	314.4	316.7	319.0	321.2	323.5
130°	300.7	307.4	314.2	318.6	320.6	322.5	324.5	326.4
132.5°	305.1	311.5	318.0	322.2	324.2	326.1	328.1	330.1
135°	311.5	317.5	323.4	327.4	329.2	331.1	333.0	334.9
137.5°	317.2	322.4	327.7	331.1	332.6	334.2	335.6	337.2
140°	321.1	325.7	330.4	333.2	334.5	335.7	336.9	338.1
142.5°	325.8	329.5	333.3	335.7	336.7	337.7	338.7	339.8
145°	333.2	335.2	337.2	338.6	339.6	340.5	341.5	342.4
147.5°	340.5	341.0	341.6	342.0	342.3	342.7	343.0	343.4
150°	346.2	346.6	347.0	347.0	346.7	346.4	346.0	345.8
152.5°	351.8	352.1	352.5	352.5	352.1	351.7	351.3	350.9
155°	359.3	359.6	360.1	360.0	359.5	359.0	358.5	358.0
157.5°	365.7	366.1	366.4	366.4	365.9	365.5	365.0	364.5
160°	369.4	369.7	370.1	370.1	369.6	369.2	368.8	368.3
162.5°	372.7	373.2	373.6	373.6	373.0	372.5	372.0	371.4
165°	376.9	377.4	377.8	377.8	377.4	376.9	376.5	376.1
167.5°	380.5	380.9	381.3	381.3	380.7	380.1	379.6	379.0
170°	382.3	382.7	383.1	383.1	382.5	381.9	381.4	380.8
172.5°	383.6	384.0	384.4	384.4	383.8	383.3	382.7	382.2
175°	385.0	385.5	385.9	385.8	385.2	384.6	383.9	383.3
177.5°	385.2	385.6	385.9	385.8	385.4	385.0	384.5	384.1
180°	384.7	384.7	384.7	384.7	384.7	384.7	384.7	384.7

(END OF REPORT)