

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: P331246-935

Luminaire Tested: **SA2XXDIP-C290D330U935-4F0-1E-UDD-F**

Issue Date: 10/7/2019

Test Information

Test Method: LM-79-08
Report Number: P331246-935
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-C290D330U935-4F0-1E-UDD-F
Description: DEFINE 2 DIRECT-INDIRECT PENDANT LED LUMINAIRE
DOWNLIGHT 290 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
UPLIGHT 330 LUMENS PER FOOT, NO LENS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2163.3 lumens
Efficiency: N/A
Efficacy: 106.6 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: General Diffuse

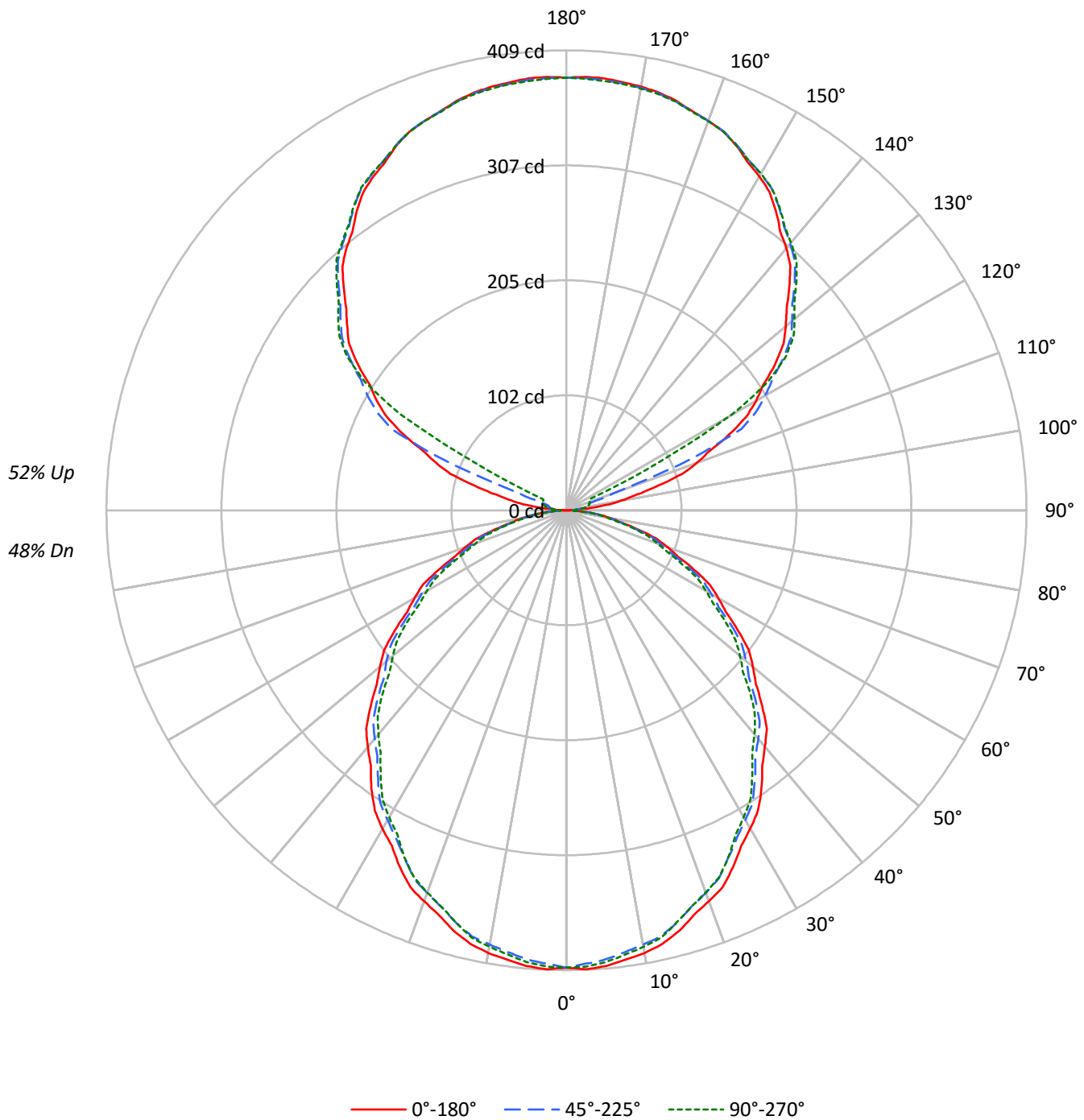
Input Watts (W): 20.3
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P331246-935

CATALOG NUMBER: SA2XXDIP-C290D330U935-4F0-1E-UDD-F

Luminous Intensity Polar Plot



TEST NUMBER: P331246-935

CATALOG NUMBER: SA2XXDIP-C290D330U935-4F0-1E-UDD-F

COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20				20				20				20				20
RC	80				70				50				30				10
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10
RCR																	
0	107	107	107	107	98	98	98	98	82	82	82	68	68	68	54	54	54
1	97	93	89	86	89	86	82	79	72	70	67	59	58	56	48	47	46
2	89	81	75	70	81	75	70	65	63	59	56	52	49	47	42	40	39
3	81	71	64	58	74	66	60	54	56	51	47	46	43	40	37	35	33
4	74	63	55	49	68	58	51	46	49	44	40	41	37	34	33	31	28
5	68	56	48	42	62	52	45	40	44	39	34	37	33	29	30	27	25
6	62	50	42	37	57	47	40	34	40	34	30	33	29	26	27	24	22
7	58	46	38	32	53	42	35	30	36	31	26	30	26	23	25	22	19
8	54	41	34	28	49	38	32	27	33	27	24	28	23	20	23	20	17
9	50	38	30	25	46	35	28	24	30	25	21	26	21	18	21	18	16
10	47	35	27	23	43	32	26	21	28	23	19	24	19	17	20	16	14

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	6567	6567	6567
5°	6592	6498	6536
10°	6555	6432	6465
15°	6472	6349	6342
20°	6357	6223	6216
25°	6242	6070	6070
30°	6096	5929	5876
35°	5960	5757	5673
40°	5788	5590	5482
45°	5617	5421	5286
50°	5433	5247	5061
55°	5239	5044	4856
60°	5028	4799	4624
65°	4795	4558	4348
70°	4504	4263	4060
75°	4099	3924	3830
80°	3636	3533	3347
85°	2964	2816	2538

TEST NUMBER: P331246-935

CATALOG NUMBER: SA2XXDIP-C290D330U935-4F0-1E-UDD-F

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	38.3	1.8
10°-20°	107.6	5.0
20°-30°	158.2	7.3
30°-40°	183.8	8.5
40°-50°	183.6	8.5
50°-60°	160.1	7.4
60°-70°	118.4	5.5
70°-80°	67.0	3.1
80°-90°	19.0	0.9
90°-100°	12.8	0.6
100°-110°	47.1	2.2
110°-120°	125.8	5.8
120°-130°	207.7	9.6
130°-140°	220.8	10.2
140°-150°	205.3	9.5
150°-160°	165.0	7.6
160°-170°	106.3	4.9
170°-180°	36.6	1.7
0°-30°	304.1	14.1
0°-40°	487.8	22.6
0°-60°	831.5	38.4
0°-90°	1035.8	47.9
90°-120°	185.7	8.6
90°-150°	819.5	37.9
90°-180°	1127.0	52.1
0°-180°	2163.3	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	407	407	407	407	407	
5°	407	405	401	404	403	39
15°	387	385	380	381	379	109
25°	350	347	341	341	341	161
35°	302	298	292	290	288	189
45°	246	243	237	233	232	190
55°	186	184	179	175	172	166
65°	126	123	119	116	114	124
75°	66	65	63	61	61	70
85°	16	16	15	14	14	18
90°	0	3	6	7	8	2
95°	18	10	11	12	12	22
105°	85	88	17	20	21	90
115°	160	165	172	49	23	158
125°	226	230	235	237	238	202
135°	280	284	287	290	289	216
145°	325	325	329	331	330	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: P331246-935

CATALOG NUMBER: SA2XXDIP-C290D330U935-4F0-1E-UDD-F

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	406.7	406.7	406.7	406.7	406.7	406.7	406.7	406.7	406.7	406.7	406.7
2.5°	408.6	408.3	407.9	407.6	407.3	406.7	406.0	405.2	404.4	403.6	404.3
5°	406.7	406.4	406.0	405.7	405.4	404.8	403.8	402.9	401.8	400.9	401.6
7.5°	403.2	402.6	402.1	401.6	401.1	400.3	399.3	398.3	397.4	396.4	397.1
10°	399.8	399.2	398.6	398.0	397.3	396.5	395.5	394.4	393.4	392.3	393.0
12.5°	395.0	394.5	394.0	393.4	392.9	392.1	391.1	390.0	389.0	388.0	388.4
15°	387.2	386.7	386.2	385.6	385.1	384.4	383.1	382.0	380.9	379.8	380.1
17.5°	377.2	376.7	376.2	375.7	375.1	374.3	373.2	372.0	370.8	369.7	370.1
20°	370.0	369.5	368.9	368.4	367.9	367.0	365.8	364.6	363.4	362.2	362.5
22.5°	362.8	362.1	361.4	360.6	359.9	359.0	357.8	356.6	355.5	354.4	354.4
25°	350.4	349.7	349.0	348.4	347.7	346.6	345.1	343.6	342.2	340.7	340.9
27.5°	336.4	335.8	335.1	334.5	333.9	332.9	331.8	330.6	329.5	328.3	328.0
30°	327.0	326.3	325.6	324.9	324.2	323.2	321.9	320.6	319.3	318.0	317.7
32.5°	316.9	316.4	315.9	315.3	314.8	313.7	312.4	311.1	309.7	308.3	307.8
35°	302.4	301.4	300.6	299.7	298.9	297.7	296.4	295.0	293.6	292.1	291.6
37.5°	285.9	285.1	284.3	283.5	282.8	281.7	280.3	279.0	277.5	276.1	275.5
40°	274.6	273.9	273.2	272.5	271.8	270.8	269.3	267.9	266.6	265.2	264.4
42.5°	263.6	262.9	262.3	261.6	260.9	259.8	258.4	257.0	255.6	254.3	253.4
45°	246.0	245.4	244.8	244.2	243.6	242.6	241.3	240.0	238.8	237.4	236.4
47.5°	228.5	227.9	227.4	226.8	226.2	225.2	223.9	222.6	221.2	219.8	218.8
50°	216.3	215.9	215.4	215.0	214.6	213.7	212.5	211.3	210.1	208.9	207.7
52.5°	204.4	203.8	203.3	202.7	202.1	201.2	200.1	199.0	197.8	196.7	195.6
55°	186.1	185.6	185.1	184.6	184.1	183.3	182.3	181.2	180.2	179.2	178.1
57.5°	167.9	167.5	167.0	166.6	166.2	165.4	164.3	163.2	162.0	160.8	159.8
60°	155.7	155.3	155.0	154.6	154.3	153.5	152.3	151.1	149.8	148.6	147.7
62.5°	143.8	143.2	142.7	142.2	141.5	140.8	139.8	139.0	138.0	137.1	136.1
65°	125.5	125.0	124.5	124.0	123.5	122.8	121.9	121.1	120.2	119.3	118.5
67.5°	107.0	106.6	106.2	105.7	105.4	104.8	103.9	103.1	102.4	101.6	101.0
70°	95.4	95.1	94.7	94.4	94.0	93.5	92.7	92.0	91.1	90.3	89.7
72.5°	83.5	83.2	82.8	82.5	82.1	81.7	81.2	80.8	80.2	79.7	79.1
75°	65.7	65.5	65.3	65.2	65.0	64.7	64.3	63.8	63.4	62.9	62.4
77.5°	49.8	49.4	49.2	48.9	48.6	48.3	48.1	48.0	47.8	47.6	47.4
80°	39.1	39.0	38.9	38.8	38.7	38.7	38.5	38.3	38.1	38.0	37.7
82.5°	29.1	29.1	29.1	29.0	29.0	28.9	28.8	28.8	28.7	28.6	28.2
85°	16.0	15.9	15.8	15.8	15.7	15.6	15.5	15.4	15.3	15.2	15.0
87.5°	5.7	5.7	5.7	5.7	5.7	5.7	5.6	5.6	5.5	5.5	5.3
90°	0.3	0.9	1.6	2.3	3.0	3.6	4.0	4.6	5.1	5.6	5.9
92.5°	5.6	5.6	5.5	5.4	5.3	5.5	5.7	5.9	6.2	6.5	6.6
95°	18.1	16.0	14.0	12.0	9.9	9.1	9.6	10.0	10.4	10.8	11.2
97.5°	35.9	30.1	24.4	18.7	12.9	10.5	11.5	12.5	13.5	14.6	14.8
100°	49.2	40.8	32.3	23.8	15.4	11.6	12.7	13.8	14.8	15.8	16.4
102.5°	64.0	62.2	60.4	58.6	56.8	51.5	42.7	33.9	25.1	16.3	17.0
105°	84.6	86.4	88.3	90.2	92.0	84.6	67.7	50.8	33.8	17.0	17.7
107.5°	108.1	109.7	111.2	112.7	114.2	104.8	84.6	64.3	44.0	23.8	23.1
110°	123.3	124.6	126.0	127.3	128.5	120.2	102.4	84.5	66.6	48.7	42.5



TEST NUMBER: P331246-935

CATALOG NUMBER: SA2XXDIP-C290D330U935-4F0-1E-UDD-F

CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	137.6	138.7	139.9	141.0	142.2	140.5	136.1	131.7	127.3	122.9	100.3
115°	160.1	161.1	162.2	163.2	164.3	165.6	167.1	168.7	170.2	171.8	143.1
117.5°	180.2	181.3	182.5	183.7	184.9	186.0	187.1	188.1	189.2	190.3	183.3
120°	194.8	195.8	196.7	197.7	198.5	199.6	200.7	201.8	202.9	204.1	204.8
122.5°	207.3	208.4	209.3	210.3	211.3	212.3	213.5	214.7	216.0	217.2	217.7
125°	226.4	227.1	227.9	228.8	229.5	230.6	231.7	232.9	234.0	235.2	235.7
127.5°	243.5	244.4	245.3	246.2	247.1	248.0	248.8	249.8	250.6	251.5	252.1
130°	254.4	255.5	256.4	257.4	258.4	259.2	259.9	260.6	261.3	262.0	262.6
132.5°	265.6	266.4	267.3	268.1	269.0	269.7	270.4	271.0	271.7	272.4	273.0
135°	280.1	281.0	282.1	283.0	284.0	284.8	285.3	285.9	286.5	287.1	287.7
137.5°	294.7	295.4	296.1	296.8	297.5	298.2	298.8	299.4	300.1	300.7	301.3
140°	304.3	304.8	305.2	305.7	306.3	306.9	307.5	308.2	308.9	309.5	310.1
142.5°	312.3	312.7	313.1	313.7	314.1	314.7	315.5	316.2	317.0	317.8	318.3
145°	324.9	324.9	324.8	324.7	324.6	325.1	326.1	327.3	328.3	329.3	329.8
147.5°	335.9	335.6	335.4	335.1	334.9	335.3	336.3	337.4	338.5	339.5	339.8
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

TEST NUMBER: P331246-935

CATALOG NUMBER: SA2XXDIP-C290D330U935-4F0-1E-UDD-F

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	406.7	406.7	406.7	406.7	406.7	406.7	406.7	406.7
2.5°	405.0	405.7	406.4	406.7	406.6	406.4	406.3	406.1
5°	402.3	403.0	403.7	404.0	403.8	403.6	403.5	403.3
7.5°	397.8	398.5	399.2	399.4	399.2	399.0	398.8	398.6
10°	393.7	394.4	395.1	395.3	395.0	394.8	394.5	394.3
12.5°	388.9	389.3	389.9	390.0	389.9	389.6	389.4	389.3
15°	380.5	380.8	381.2	381.2	380.7	380.3	379.9	379.4
17.5°	370.5	370.9	371.3	371.3	370.8	370.5	370.1	369.6
20°	362.7	363.0	363.3	363.2	362.8	362.5	362.1	361.8
22.5°	354.5	354.6	354.6	354.5	354.3	354.0	353.9	353.7
25°	341.0	341.2	341.4	341.4	341.2	341.0	340.9	340.7
27.5°	327.8	327.5	327.3	326.9	326.5	326.1	325.7	325.3
30°	317.5	317.2	316.9	316.7	316.3	316.0	315.6	315.2
32.5°	307.4	306.9	306.4	306.0	305.7	305.3	305.0	304.6
35°	291.1	290.6	290.1	289.6	289.2	288.8	288.3	287.8
37.5°	274.8	274.2	273.5	273.0	272.6	272.2	271.8	271.4
40°	263.6	262.9	262.1	261.5	261.1	260.8	260.5	260.1
42.5°	252.5	251.7	250.8	250.1	249.7	249.2	248.7	248.2
45°	235.5	234.5	233.6	232.9	232.6	232.2	231.9	231.5
47.5°	217.8	216.8	215.8	215.0	214.6	214.0	213.5	213.0
50°	206.5	205.2	204.0	203.2	202.8	202.3	201.9	201.5
52.5°	194.7	193.6	192.6	191.8	191.2	190.7	190.1	189.5
55°	177.0	176.0	175.0	174.3	173.8	173.3	172.9	172.5
57.5°	158.8	157.7	156.7	156.0	155.8	155.4	155.1	154.7
60°	146.7	145.8	144.8	144.2	144.0	143.7	143.4	143.2
62.5°	135.3	134.4	133.5	132.9	132.6	132.2	131.9	131.6
65°	117.7	116.9	116.1	115.5	115.1	114.7	114.3	113.8
67.5°	100.4	99.8	99.2	98.7	98.3	98.0	97.6	97.3
70°	89.1	88.5	87.9	87.5	87.1	86.7	86.4	86.0
72.5°	78.5	77.9	77.3	76.8	76.5	76.3	76.0	75.7
75°	61.9	61.4	60.9	60.7	60.9	61.0	61.2	61.4
77.5°	47.1	46.8	46.6	46.3	46.1	45.9	45.6	45.4
80°	37.5	37.2	36.9	36.7	36.5	36.3	36.2	36.0
82.5°	27.9	27.6	27.2	27.0	27.0	26.9	26.9	26.9
85°	14.7	14.5	14.2	14.0	13.9	13.9	13.8	13.7
87.5°	5.2	5.1	4.9	4.8	4.7	4.7	4.6	4.6
90°	6.2	6.5	6.8	7.1	7.1	7.2	7.4	7.5
92.5°	6.8	7.0	7.1	7.2	7.3	7.4	7.4	7.5
95°	11.5	11.8	12.1	12.2	12.1	12.1	12.1	12.0
97.5°	15.1	15.2	15.5	15.7	15.8	15.8	15.9	16.0
100°	16.9	17.4	17.8	18.2	18.3	18.4	18.5	18.7
102.5°	17.6	18.3	18.9	19.3	19.5	19.6	19.8	20.0
105°	18.3	19.0	19.7	20.1	20.4	20.7	20.9	21.2
107.5°	22.4	21.7	21.0	20.8	21.0	21.3	21.5	21.8
110°	36.3	30.1	23.9	21.0	21.3	21.5	21.8	22.0

TEST NUMBER: P331246-935

CATALOG NUMBER: SA2XXDIP-C290D330U935-4F0-1E-UDD-F

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	77.7	55.2	32.6	21.4	21.6	21.8	22.0	22.2
115°	114.5	85.8	57.2	40.6	36.2	31.8	27.3	22.8
117.5°	176.4	169.4	162.6	151.8	137.2	122.5	107.9	93.2
120°	205.5	206.3	207.0	203.2	194.8	186.5	178.1	169.8
122.5°	218.1	218.5	219.0	218.3	216.8	215.2	213.5	211.9
125°	236.1	236.5	236.9	237.3	237.5	237.6	237.8	238.0
127.5°	252.8	253.4	254.0	254.3	254.4	254.4	254.4	254.5
130°	263.3	264.0	264.7	265.0	264.9	264.8	264.8	264.8
132.5°	273.6	274.1	274.7	275.0	274.9	274.9	274.8	274.7
135°	288.3	288.9	289.5	289.7	289.6	289.5	289.4	289.2
137.5°	301.9	302.5	303.1	303.2	303.1	302.9	302.6	302.5
140°	310.6	311.3	311.8	311.9	311.6	311.3	311.0	310.6
142.5°	318.8	319.3	319.9	319.9	319.6	319.3	319.0	318.7
145°	330.2	330.6	331.1	331.1	330.8	330.5	330.2	329.8
147.5°	340.1	340.4	340.8	340.8	340.5	340.3	340.0	339.8
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)