

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: P331243-927

Luminaire Tested: **SA2XXDIP-C290D330U927-4F0-1E-UDD-D**

Issue Date: 10/7/2019

**Test Information**

Test Method: LM-79-08  
Report Number: P331243-927  
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-C290D330U927-4F0-1E-UDD-D  
Description: DEFINE 2 DIRECT-INDIRECT PENDANT LED LUMINAIRE  
DOWNLIGHT 290 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER  
UPLIGHT 330 LUMENS PER FOOT, NO LENS  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

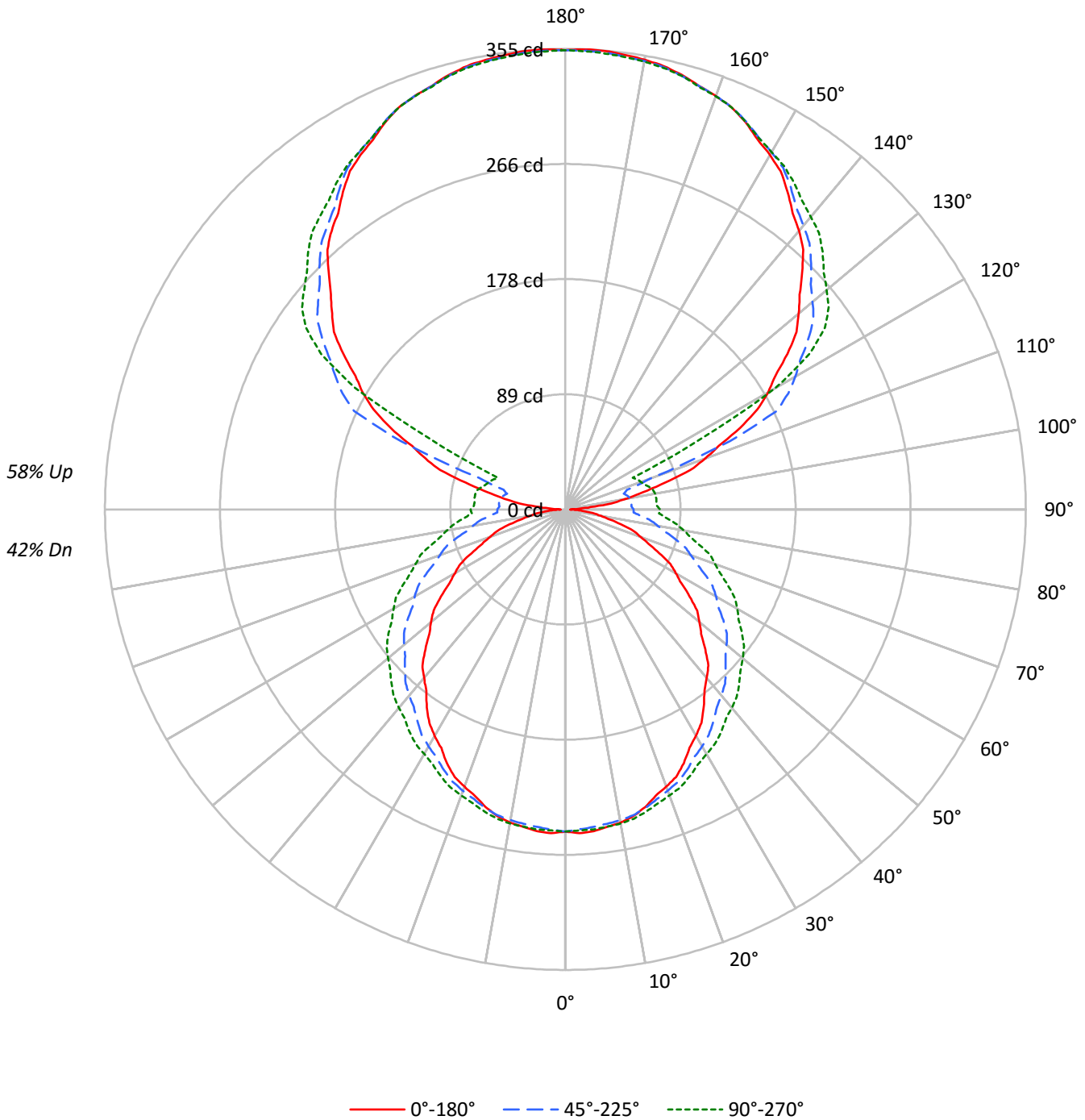
Lumens per Lamp: N/A  
Luminaire Lumens: 1985.5 lumens  
Efficiency: N/A  
Efficacy: 97.8 lumens/watt  
Spacing Criteria (0/90/45): 1.21 / 1.32 / 1.42  
Luminous Opening: Rectangular w/ Sides (W: 0.17' x L: 4' x H: 0.08')  
CIE Type: General Diffuse

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: P331243-927  
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### Luminous Intensity Polar Plot





TEST NUMBER: P331243-927

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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	50	30	10	0	
RCR																						
0	105	105	105	105	96	96	96	96	79	79	79	64	64	64	49	49	49	42				42
1	95	90	86	82	86	82	78	75	67	65	62	54	52	50	41	40	39	33				33
2	86	78	71	66	78	71	65	61	58	54	50	47	44	41	36	34	32	27				27
3	78	68	60	54	71	62	55	50	51	46	42	41	37	34	31	29	27	22				22
4	71	60	52	45	64	55	47	42	45	40	35	36	32	29	28	25	22	19				19
5	65	53	45	39	59	49	41	36	40	34	30	32	28	25	25	22	19	16				16
6	60	47	39	33	54	43	36	31	36	30	26	29	25	21	22	19	17	14				14
7	55	43	35	29	50	39	32	27	32	27	23	26	22	19	20	17	15	12				12
8	51	39	31	25	46	35	28	24	30	24	20	24	20	17	19	16	13	11				11
9	48	35	28	22	43	32	26	21	27	22	18	22	18	15	17	14	12	10				10
10	44	32	25	20	40	30	23	19	25	20	16	20	16	13	16	13	11	9				9

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

	0°	45°	90°
0°	4009	4009	4009
5°	4030	3859	3845
10°	4004	3746	3703
15°	3948	3624	3554
20°	3878	3495	3410
25°	3809	3371	3279
30°	3712	3242	3150
35°	3615	3118	3059
40°	3511	3013	2965
45°	3413	2919	2886
50°	3309	2833	2810
55°	3196	2741	2731
60°	3061	2646	2648
65°	2922	2534	2548
70°	2764	2415	2440
75°	2564	2299	2342
80°	2245	2177	2240
85°	1945	2073	2163



TEST NUMBER: P331243-927

CATALOG NUMBER: SA2XXDIP-C290D330U927-4F0-1E-UDD-D

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	23.5	1.2
10°-20°	67.5	3.4
20°-30°	102.2	5.1
30°-40°	124.5	6.3
40°-50°	134.0	6.7
50°-60°	130.1	6.6
60°-70°	113.6	5.7
70°-80°	87.5	4.4
80°-90°	59.6	3.0
90°-100°	52.2	2.6
100°-110°	72.8	3.7
110°-120°	135.2	6.8
120°-130°	201.9	10.2
130°-140°	207.8	10.5
140°-150°	189.7	9.6
150°-160°	151.8	7.6
160°-170°	97.8	4.9
170°-180°	33.7	1.7
0°-30°	193.2	9.7
0°-40°	317.8	16.0
0°-60°	581.9	29.3
0°-90°	842.5	42.4
90°-120°	260.3	13.1
90°-150°	859.7	43.3
90°-180°	1143.0	57.6
0°-180°	1985.5	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	248	248	248	248	248	
5°	249	248	246	248	248	24
15°	238	238	238	241	241	67
25°	216	218	222	226	227	99
35°	186	192	199	207	210	116
45°	153	162	175	186	190	118
55°	117	130	149	161	166	105
65°	80	98	119	133	138	79
75°	44	65	88	102	108	47
85°	13	35	58	73	78	14
90°	4	28	53	68	73	3
95°	20	29	51	66	70	23
105°	80	94	47	61	67	85
115°	149	158	180	77	57	146
125°	209	213	229	240	244	186
135°	258	262	268	278	280	199
145°	299	299	303	307	307	187
155°	329	327	330	331	329	152
165°	347	345	346	348	346	98
175°	355	353	354	355	353	34
180°	354	354	354	354	354	



TEST NUMBER: P331243-927

CATALOG NUMBER: SA2XXDIP-C290D330U927-4F0-1E-UDD-D

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	248.3	248.3	248.3	248.3	248.3	248.3	248.3	248.3	248.3	248.3	248.3
2.5°	249.8	249.5	249.4	249.1	249.0	248.7	248.2	247.8	247.3	246.8	247.2
5°	249.1	248.8	248.6	248.3	248.0	247.7	247.2	246.8	246.3	245.8	246.3
7.5°	246.8	246.6	246.4	246.3	246.1	245.9	245.5	245.2	244.8	244.4	245.0
10°	245.1	244.9	244.8	244.6	244.5	244.2	244.0	243.8	243.5	243.3	243.9
12.5°	242.2	242.2	242.2	242.3	242.3	242.2	242.1	241.9	241.7	241.5	242.2
15°	237.5	237.7	237.8	238.0	238.1	238.2	238.2	238.2	238.2	238.2	238.9
17.5°	231.5	231.8	232.1	232.5	232.8	233.1	233.4	233.6	233.9	234.2	234.9
20°	227.4	227.8	228.2	228.6	229.0	229.4	229.7	230.0	230.4	230.7	231.6
22.5°	223.2	223.6	224.0	224.5	225.0	225.5	225.9	226.3	226.8	227.2	228.1
25°	215.9	216.5	217.1	217.6	218.2	218.8	219.5	220.2	220.9	221.7	222.6
27.5°	207.3	208.2	209.1	210.0	211.0	211.8	212.6	213.5	214.4	215.2	216.4
30°	201.5	202.6	203.6	204.6	205.7	206.8	207.8	208.8	209.8	210.9	212.1
32.5°	195.2	196.4	197.5	198.7	199.9	201.1	202.3	203.5	204.8	206.0	207.5
35°	186.1	187.4	188.8	190.1	191.5	192.9	194.5	196.0	197.5	199.0	200.7
37.5°	176.1	177.7	179.3	180.9	182.4	184.2	186.2	188.1	190.0	192.0	194.0
40°	169.5	171.3	173.0	174.8	176.5	178.5	180.6	182.8	185.0	187.1	189.2
42.5°	163.2	164.9	166.7	168.4	170.2	172.3	174.8	177.3	179.7	182.2	184.5
45°	152.6	154.7	156.9	159.1	161.2	163.7	166.5	169.3	172.1	174.9	177.4
47.5°	142.1	144.5	146.9	149.2	151.5	154.4	157.6	160.9	164.2	167.5	170.1
50°	135.0	137.4	139.9	142.4	144.9	147.9	151.5	155.1	158.7	162.3	165.0
52.5°	128.0	130.6	133.2	135.9	138.5	141.6	145.4	149.2	153.0	156.9	159.6
55°	116.9	119.9	122.7	125.6	128.5	132.0	136.2	140.3	144.5	148.6	151.5
57.5°	106.0	109.2	112.5	115.7	119.0	122.7	127.0	131.2	135.5	139.7	142.8
60°	98.2	101.7	105.1	108.5	112.0	116.0	120.6	125.1	129.7	134.2	137.3
62.5°	91.3	94.9	98.5	102.0	105.6	109.6	114.2	118.7	123.3	127.9	131.1
65°	79.9	83.8	87.7	91.7	95.5	99.9	104.6	109.3	114.1	118.7	122.1
67.5°	69.4	73.5	77.6	81.7	85.8	90.2	95.1	99.9	104.7	109.6	112.9
70°	61.9	66.1	70.2	74.4	78.5	83.1	88.0	93.0	98.0	102.9	106.4
72.5°	55.0	59.3	63.5	67.8	72.2	76.8	81.8	86.8	91.9	96.9	100.3
75°	44.3	48.7	53.2	57.7	62.2	66.9	72.1	77.2	82.3	87.5	90.9
77.5°	33.9	38.6	43.3	47.9	52.7	57.6	62.8	68.0	73.2	78.3	81.8
80°	27.0	31.8	36.8	41.6	46.5	51.6	56.7	61.9	67.1	72.3	75.7
82.5°	21.2	26.1	30.9	35.6	40.5	45.6	50.8	56.1	61.3	66.5	69.9
85°	13.0	17.9	22.9	27.8	32.8	37.8	42.9	48.1	53.2	58.3	61.6
87.5°	7.1	12.0	16.9	21.8	26.7	31.7	36.9	42.1	47.4	52.5	55.8
90°	3.9	9.1	14.4	19.6	24.9	30.3	35.9	41.5	47.1	52.6	56.1
92.5°	8.5	12.8	17.0	21.2	25.5	30.3	35.4	40.6	45.7	50.9	54.1
95°	19.6	21.4	23.3	25.2	27.0	30.6	35.8	41.0	46.2	51.4	54.7
97.5°	35.6	33.6	31.7	29.7	27.7	29.5	35.1	40.6	46.1	51.7	54.8
100°	47.8	43.0	38.2	33.4	28.5	28.8	34.2	39.7	45.2	50.6	54.0
102.5°	61.1	62.1	63.2	64.2	65.3	63.9	60.2	56.5	52.8	49.0	52.4
105°	79.7	83.7	87.7	91.7	95.8	92.1	80.7	69.3	58.0	46.6	50.0
107.5°	101.2	104.5	107.7	111.0	114.2	108.4	93.8	79.1	64.6	49.9	51.9
110°	114.9	117.7	120.5	123.3	126.1	121.2	108.7	96.2	83.7	71.1	68.0



TEST NUMBER: P331243-927

CATALOG NUMBER: SA2XXDIP-C290D330U927-4F0-1E-UDD-D

**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	128.0	130.4	132.8	135.2	137.6	138.6	138.3	138.0	137.7	137.3	119.1
115°	148.7	150.6	152.4	154.2	156.1	159.5	164.5	169.6	174.6	179.7	155.7
117.5°	166.8	168.5	170.2	171.8	173.5	176.5	180.8	185.1	189.4	193.7	189.6
120°	180.4	181.6	182.8	183.9	185.1	187.7	192.0	196.2	200.4	204.7	207.6
122.5°	191.9	192.9	193.9	195.0	196.0	198.5	202.6	206.8	210.9	215.0	217.6
125°	209.0	209.7	210.4	211.2	211.9	214.1	217.8	221.4	225.1	228.7	231.2
127.5°	224.8	225.5	226.2	227.0	227.8	229.6	232.4	235.3	238.1	241.1	243.6
130°	234.8	235.7	236.5	237.3	238.1	239.7	242.0	244.3	246.6	248.9	251.5
132.5°	245.1	245.7	246.4	247.2	247.9	249.1	251.0	253.0	254.9	256.8	259.2
135°	258.0	259.0	259.8	260.8	261.7	262.8	264.1	265.4	266.7	268.0	270.3
137.5°	271.5	272.1	272.7	273.4	274.0	274.7	275.7	276.6	277.6	278.5	280.5
140°	280.4	280.7	281.1	281.5	281.8	282.4	283.2	284.0	284.8	285.6	287.3
142.5°	287.7	288.0	288.4	288.7	289.0	289.5	290.3	291.0	291.8	292.6	294.1
145°	298.9	298.9	298.8	298.7	298.7	299.1	300.1	301.1	302.1	303.0	303.9
147.5°	309.0	308.8	308.6	308.3	308.2	308.5	309.4	310.5	311.4	312.4	312.7
150°	315.5	315.1	314.7	314.3	313.9	314.3	315.1	316.1	317.0	317.9	318.2
152.5°	321.1	320.7	320.2	319.7	319.3	319.5	320.4	321.2	322.1	323.0	323.3
155°	329.2	328.6	328.1	327.6	327.1	327.2	327.9	328.5	329.2	329.9	330.3
157.5°	335.4	335.0	334.5	334.1	333.7	333.7	334.2	334.7	335.2	335.6	336.0
160°	339.1	338.8	338.4	338.1	337.8	337.8	338.1	338.4	338.8	339.1	339.5
162.5°	342.4	342.1	341.7	341.4	341.0	341.0	341.3	341.6	341.9	342.2	342.6
165°	346.8	346.5	346.1	345.8	345.5	345.4	345.5	345.7	345.9	346.0	346.4
167.5°	350.1	349.7	349.4	349.0	348.7	348.6	348.8	349.0	349.1	349.3	349.7
170°	352.0	351.6	351.3	350.9	350.5	350.5	350.5	350.7	350.8	350.9	351.3
172.5°	353.2	352.8	352.4	352.1	351.8	351.6	351.8	351.9	352.0	352.1	352.5
175°	354.7	354.3	353.9	353.6	353.2	353.0	353.2	353.2	353.4	353.5	353.9
177.5°	355.0	354.7	354.3	354.0	353.7	353.6	353.6	353.7	353.7	353.8	354.1
180°	353.9	353.9	353.9	353.9	353.9	353.9	353.9	353.9	353.9	353.9	353.9



TEST NUMBER: P331243-927

CATALOG NUMBER: SA2XXDIP-C290D330U927-4F0-1E-UDD-D

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	248.3	248.3	248.3	248.3	248.3	248.3	248.3	248.3
2.5°	247.5	247.8	248.1	248.3	248.1	248.0	247.9	247.7
5°	246.8	247.2	247.7	247.9	247.8	247.7	247.6	247.6
7.5°	245.6	246.1	246.8	247.0	246.9	246.8	246.8	246.7
10°	244.5	245.2	245.8	246.1	246.1	246.0	245.9	245.8
12.5°	242.8	243.4	244.1	244.4	244.3	244.2	244.2	244.1
15°	239.6	240.4	241.1	241.5	241.4	241.3	241.2	241.1
17.5°	235.7	236.4	237.1	237.5	237.5	237.5	237.5	237.5
20°	232.4	233.3	234.2	234.6	234.6	234.6	234.6	234.6
22.5°	229.0	229.9	230.8	231.2	231.4	231.5	231.6	231.8
25°	223.6	224.6	225.5	226.1	226.3	226.6	226.8	227.0
27.5°	217.6	218.9	220.1	220.8	220.9	221.1	221.3	221.5
30°	213.4	214.8	216.0	216.7	217.0	217.2	217.5	217.7
32.5°	208.9	210.4	211.9	212.9	213.3	213.7	214.1	214.5
35°	202.6	204.3	206.0	207.2	207.8	208.3	208.9	209.5
37.5°	195.9	197.9	199.9	201.1	201.7	202.3	202.9	203.4
40°	191.3	193.4	195.4	196.9	197.6	198.3	199.0	199.7
42.5°	186.8	189.0	191.3	192.8	193.5	194.2	195.0	195.7
45°	179.8	182.4	184.8	186.5	187.3	188.1	188.9	189.6
47.5°	172.7	175.2	177.8	179.6	180.5	181.3	182.2	183.1
50°	167.7	170.5	173.2	175.0	175.9	176.7	177.6	178.5
52.5°	162.4	165.2	167.9	169.8	170.8	171.7	172.7	173.6
55°	154.4	157.2	160.2	162.1	163.1	164.2	165.2	166.3
57.5°	145.9	149.0	152.1	154.2	155.3	156.3	157.3	158.4
60°	140.3	143.4	146.4	148.5	149.6	150.7	151.9	153.0
62.5°	134.4	137.6	140.9	143.0	144.0	145.0	146.2	147.2
65°	125.3	128.6	131.9	134.0	135.1	136.1	137.1	138.2
67.5°	116.1	119.5	122.8	125.0	126.0	127.1	128.3	129.4
70°	109.8	113.2	116.7	118.9	119.9	120.8	121.8	122.7
72.5°	103.6	107.0	110.4	112.6	113.8	114.9	116.1	117.2
75°	94.3	97.8	101.2	103.5	104.5	105.5	106.5	107.6
77.5°	85.2	88.6	92.1	94.3	95.5	96.6	97.7	98.8
80°	79.1	82.4	85.8	88.0	89.1	90.2	91.3	92.4
82.5°	73.3	76.7	80.0	82.2	83.3	84.4	85.4	86.4
85°	65.0	68.4	71.8	74.0	75.1	76.2	77.3	78.4
87.5°	59.2	62.5	65.8	68.0	69.1	70.1	71.1	72.2
90°	59.6	63.1	66.5	68.8	69.9	71.0	72.1	73.1
92.5°	57.4	60.7	64.0	66.1	67.2	68.2	69.2	70.3
95°	58.0	61.3	64.6	66.8	67.7	68.6	69.5	70.4
97.5°	58.1	61.2	64.4	66.5	67.5	68.5	69.6	70.6
100°	57.4	60.8	64.2	66.5	67.4	68.4	69.4	70.4
102.5°	55.9	59.4	62.9	65.2	66.2	67.3	68.3	69.3
105°	53.4	56.9	60.3	62.5	63.6	64.7	65.8	66.9
107.5°	53.9	56.0	58.1	59.7	60.8	61.9	63.0	64.1
110°	64.8	61.7	58.5	57.5	58.6	59.7	60.8	61.9





TEST NUMBER: P331243-927

CATALOG NUMBER: SA2XXDIP-C290D330U927-4F0-1E-UDD-D

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	100.9	82.7	64.5	55.9	57.0	58.1	59.1	60.2
115°	131.7	107.7	83.8	70.2	67.0	63.8	60.6	57.4
117.5°	185.7	181.6	177.7	169.3	156.7	144.0	131.3	118.7
120°	210.5	213.4	216.3	214.4	207.6	200.8	194.0	187.2
122.5°	220.2	222.8	225.4	226.2	225.5	224.8	224.0	223.3
125°	233.8	236.3	238.9	240.6	241.5	242.4	243.3	244.2
127.5°	246.1	248.7	251.3	252.9	253.7	254.4	255.2	255.9
130°	254.1	256.6	259.1	260.7	261.3	261.8	262.4	263.0
132.5°	261.7	264.0	266.4	267.9	268.5	269.0	269.7	270.2
135°	272.5	274.8	277.0	278.5	278.9	279.5	280.0	280.5
137.5°	282.6	284.6	286.6	287.8	288.1	288.5	288.8	289.2
140°	289.1	290.9	292.7	293.7	293.9	294.1	294.3	294.5
142.5°	295.6	297.0	298.5	299.3	299.4	299.6	299.7	299.8
145°	304.8	305.6	306.5	307.0	307.1	307.3	307.4	307.4
147.5°	313.1	313.4	313.8	313.9	313.9	313.9	313.8	313.7
150°	318.5	318.9	319.2	319.2	319.0	318.7	318.4	318.1
152.5°	323.7	324.0	324.3	324.3	323.9	323.6	323.2	322.8
155°	330.6	330.9	331.3	331.2	330.7	330.3	329.9	329.4
157.5°	336.4	336.8	337.2	337.2	336.7	336.3	335.8	335.4
160°	339.8	340.2	340.5	340.5	340.1	339.7	339.3	338.9
162.5°	342.9	343.3	343.7	343.7	343.2	342.7	342.2	341.7
165°	346.8	347.2	347.6	347.6	347.2	346.8	346.4	346.0
167.5°	350.1	350.5	350.9	350.8	350.3	349.7	349.3	348.7
170°	351.7	352.1	352.5	352.4	352.0	351.4	350.9	350.4
172.5°	352.9	353.3	353.7	353.7	353.2	352.7	352.1	351.6
175°	354.3	354.7	355.1	355.0	354.4	353.9	353.2	352.7
177.5°	354.4	354.7	355.1	355.0	354.6	354.2	353.8	353.4
180°	353.9	353.9	353.9	353.9	353.9	353.9	353.9	353.9

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