

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: P332724-927

Luminaire Tested: **S124DIW-S350D770U927-4F0-1E-UDD-D1**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P332724-927  
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-10,  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: S124DIW-S350D770U927-4F0-1E-UDD-D1  
Description: DEFINE 4 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE  
DOWNLIGHT 350 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER  
UPLIGHT 770 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 3252.9 lumens  
Efficiency: N/A  
Efficacy: 107.0 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

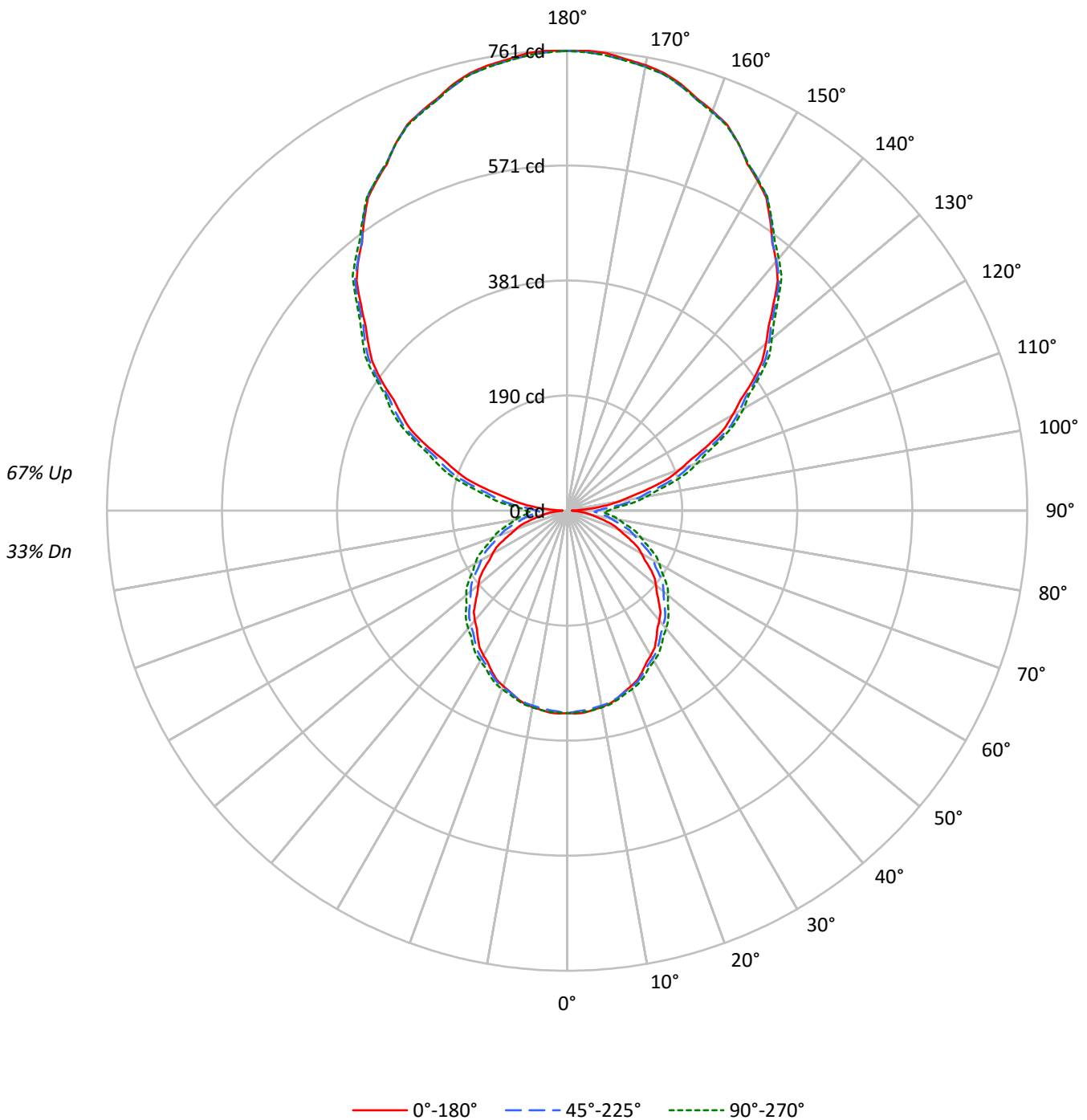
Input Watts (W): 30.4  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Luminous Intensity Polar Plot





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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	0
RCR																		
0	103	103	103	103	93	93	93	93	74	74	74	56	56	56	40	40	40	33
1	93	89	85	81	84	80	76	73	63	61	59	48	47	45	34	33	32	26
2	85	77	71	66	76	69	64	60	55	51	48	42	39	37	30	28	27	21
3	77	67	60	54	69	61	54	49	48	44	40	37	34	31	26	24	22	18
4	70	59	52	45	63	54	47	42	43	38	34	33	29	26	23	21	19	15
5	64	53	45	39	57	48	41	35	38	33	29	29	26	23	21	18	17	13
6	59	47	39	33	53	43	36	31	34	29	25	26	23	20	19	16	14	11
7	54	42	34	29	49	38	31	27	31	26	22	24	20	17	17	15	13	10
8	50	38	31	25	45	35	28	23	28	23	19	22	18	15	16	13	11	9
9	47	35	27	22	42	32	25	21	26	21	17	20	16	14	14	12	10	8
10	44	32	25	20	39	29	23	18	23	19	15	18	15	12	13	11	9	7

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

	0°	45°	90°
0°	2704	2704	2704
5°	2712	2641	2650
10°	2694	2599	2596
15°	2670	2549	2535
20°	2635	2494	2475
25°	2594	2432	2408
30°	2549	2370	2340
35°	2498	2307	2280
40°	2458	2247	2218
45°	2398	2191	2164
50°	2348	2128	2108
55°	2296	2068	2042
60°	2214	1991	1982
65°	2125	1909	1908
70°	2018	1816	1820
75°	1867	1712	1743
80°	1701	1613	1665
85°	1489	1525	1621



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	31.7	1.0
10°-20°	90.8	2.8
20°-30°	137.4	4.2
30°-40°	166.2	5.1
40°-50°	175.7	5.4
50°-60°	165.4	5.1
60°-70°	137.2	4.2
70°-80°	96.4	3.0
80°-90°	56.8	1.7
90°-100°	82.5	2.5
100°-110°	172.5	5.3
110°-120°	268.2	8.2
120°-130°	341.5	10.5
130°-140°	377.3	11.6
140°-150°	367.7	11.3
150°-160°	308.6	9.5
160°-170°	205.3	6.3
170°-180°	71.9	2.2
0°-30°	259.9	8.0
0°-40°	426.1	13.1
0°-60°	767.2	23.6
0°-90°	1057.6	32.5
90°-120°	523.2	16.1
90°-150°	1609.6	49.5
90°-180°	2195.0	67.5
0°-180°	3252.9	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	335	335	335	335	335	
5°	335	334	331	334	334	32
15°	321	322	321	324	324	90
25°	294	296	297	301	302	135
35°	257	262	266	270	272	161
45°	214	222	229	235	237	166
55°	168	176	187	194	197	150
65°	116	128	141	150	153	115
75°	64	78	94	104	108	69
85°	20	36	52	63	68	21
90°	8	29	50	64	69	6
95°	40	58	77	89	93	43
105°	140	149	165	175	181	149
115°	259	262	273	280	282	255
125°	375	375	383	389	390	334
135°	482	486	488	493	494	373
145°	585	587	588	590	589	366
155°	670	670	670	672	670	308
165°	730	728	727	730	728	206
175°	759	756	756	759	756	72
180°	760	760	760	760	760	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	334.9	334.9	334.9	334.9	334.9	334.9	334.9	334.9	334.9	334.9	334.9
2.5°	336.0	335.8	335.6	335.4	335.3	334.9	334.4	333.8	333.3	332.7	333.2
5°	335.3	334.9	334.7	334.5	334.2	333.8	333.2	332.6	332.1	331.4	332.2
7.5°	332.4	332.2	332.1	331.9	331.8	331.4	331.0	330.5	330.0	329.5	330.3
10°	329.9	329.9	329.8	329.7	329.6	329.4	329.0	328.5	328.1	327.7	328.4
12.5°	326.7	326.6	326.6	326.6	326.6	326.5	326.1	325.9	325.6	325.3	326.0
15°	321.3	321.5	321.5	321.6	321.7	321.6	321.3	321.1	320.8	320.6	321.3
17.5°	314.1	314.3	314.6	314.8	315.1	315.2	315.1	315.1	315.1	315.0	315.8
20°	309.0	309.2	309.5	309.7	310.0	310.1	310.2	310.3	310.4	310.5	311.3
22.5°	303.2	303.6	303.9	304.2	304.5	304.8	304.9	305.1	305.2	305.4	306.2
25°	294.0	294.5	295.0	295.5	296.0	296.4	296.6	296.8	297.1	297.4	298.3
27.5°	283.6	284.4	285.1	285.8	286.5	287.1	287.5	287.9	288.3	288.7	289.5
30°	276.7	277.4	278.1	278.7	279.4	280.0	280.6	281.1	281.8	282.3	283.3
32.5°	269.3	270.1	270.8	271.6	272.4	273.1	273.8	274.4	275.1	275.8	276.8
35°	257.2	258.3	259.2	260.2	261.3	262.1	263.0	263.8	264.7	265.5	266.6
37.5°	245.2	246.3	247.5	248.6	249.8	250.8	251.9	252.9	254.0	255.0	256.2
40°	237.3	238.4	239.6	240.6	241.7	242.8	244.0	245.2	246.3	247.5	248.7
42.5°	228.4	229.6	230.8	232.0	233.2	234.5	235.9	237.3	238.6	240.0	241.4
45°	214.4	216.0	217.6	219.2	220.8	222.4	223.9	225.5	227.1	228.7	230.1
47.5°	201.2	202.9	204.5	206.1	207.7	209.5	211.3	213.2	215.0	216.8	218.2
50°	191.6	193.5	195.3	197.1	198.9	200.7	202.6	204.5	206.3	208.1	209.8
52.5°	182.0	183.9	185.7	187.5	189.3	191.3	193.4	195.5	197.6	199.7	201.4
55°	168.0	169.8	171.5	173.3	175.0	177.1	179.6	182.1	184.6	187.1	188.8
57.5°	152.3	154.5	156.6	158.8	161.0	163.3	165.8	168.3	170.7	173.3	175.2
60°	142.1	144.3	146.5	148.6	150.8	153.2	156.0	158.8	161.4	164.2	166.1
62.5°	132.2	134.6	137.0	139.3	141.6	144.3	146.9	149.7	152.5	155.3	157.2
65°	116.2	118.9	121.6	124.2	126.9	129.7	132.5	135.3	138.2	141.0	143.1
67.5°	100.8	103.7	106.5	109.4	112.2	115.1	118.2	121.2	124.2	127.2	129.4
70°	90.4	93.2	96.0	98.9	101.7	104.7	107.9	111.1	114.2	117.4	119.6
72.5°	80.2	83.1	86.0	88.9	91.7	94.9	98.2	101.6	105.0	108.4	110.5
75°	64.5	67.6	70.7	73.8	76.8	80.1	83.7	87.1	90.6	94.1	96.5
77.5°	49.9	53.2	56.4	59.7	62.9	66.4	70.0	73.8	77.4	81.0	83.4
80°	40.9	44.2	47.5	50.9	54.2	57.7	61.4	65.0	68.7	72.4	74.9
82.5°	31.8	35.3	38.8	42.3	45.7	49.3	53.0	56.6	60.3	64.0	66.5
85°	19.9	23.4	26.9	30.3	33.9	37.5	41.3	45.0	48.7	52.5	55.0
87.5°	11.5	15.1	18.9	22.5	26.2	29.9	33.8	37.7	41.5	45.4	48.0
90°	7.8	12.5	17.3	22.1	26.9	31.5	36.2	40.8	45.4	50.1	53.2
92.5°	18.3	22.9	27.6	32.2	36.8	41.4	45.6	50.0	54.3	58.6	61.4
95°	40.2	44.0	48.0	52.0	55.8	60.0	64.3	68.7	73.0	77.3	79.9
97.5°	66.1	69.3	72.6	76.0	79.3	83.2	87.6	92.1	96.5	101.0	103.6
100°	86.4	89.1	91.8	94.5	97.2	100.8	105.2	109.6	114.0	118.4	121.0
102.5°	108.1	110.2	112.3	114.4	116.5	119.7	124.0	128.2	132.5	136.7	139.3
105°	140.4	142.2	143.9	145.8	147.6	150.3	153.8	157.5	161.1	164.7	167.2
107.5°	175.0	176.5	178.0	179.6	181.1	183.3	186.3	189.3	192.3	195.3	197.7
110°	198.2	199.6	201.1	202.5	203.9	206.0	208.8	211.6	214.4	217.1	218.8



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	222.4	223.5	224.5	225.6	226.7	228.5	231.1	233.6	236.1	238.7	240.5
115°	258.6	259.4	260.1	260.9	261.6	263.2	265.5	268.0	270.4	272.8	274.5
117.5°	293.1	293.7	294.2	294.8	295.3	296.8	299.0	301.3	303.6	305.9	307.2
120°	315.8	316.6	317.3	318.1	318.9	320.4	322.3	324.4	326.4	328.4	329.5
122.5°	339.8	340.1	340.3	340.6	340.9	342.1	344.1	346.3	348.3	350.5	351.6
125°	374.9	374.8	374.7	374.6	374.5	375.4	377.4	379.4	381.3	383.3	384.6
127.5°	406.9	407.2	407.5	407.8	408.1	408.9	410.4	411.8	413.1	414.5	415.7
130°	429.1	429.4	429.8	430.1	430.4	431.2	432.5	433.9	435.2	436.6	437.8
132.5°	452.2	452.4	452.6	452.8	453.0	453.6	454.6	455.5	456.5	457.5	458.6
135°	482.3	483.1	483.9	484.7	485.4	486.1	486.7	487.3	487.8	488.5	489.5
137.5°	515.5	515.7	516.0	516.3	516.6	517.0	517.5	517.9	518.4	519.0	519.8
140°	537.6	537.7	537.9	538.1	538.3	538.4	538.4	538.5	538.6	538.7	539.7
142.5°	557.5	557.7	557.9	558.2	558.5	558.5	558.3	558.2	558.0	557.9	558.8
145°	585.3	585.8	586.3	586.7	587.2	587.4	587.6	587.7	587.8	588.0	588.4
147.5°	613.1	613.7	614.3	614.7	615.3	615.5	615.4	615.3	615.2	615.1	615.1
150°	630.1	630.5	631.0	631.4	631.8	632.1	632.1	632.1	632.1	632.1	632.1
152.5°	645.8	646.0	646.3	646.7	647.0	647.1	647.2	647.4	647.5	647.5	647.8
155°	670.3	670.3	670.3	670.3	670.3	670.2	670.0	669.9	669.8	669.7	670.2
157.5°	690.9	690.7	690.5	690.2	690.0	689.9	689.8	689.8	689.8	689.8	690.1
160°	703.2	703.1	702.9	702.8	702.7	702.5	702.4	702.3	702.1	702.0	702.4
162.5°	714.5	714.2	713.8	713.4	713.1	712.9	712.7	712.6	712.5	712.3	713.0
165°	729.7	729.3	728.9	728.5	728.1	727.8	727.5	727.2	727.0	726.7	727.5
167.5°	741.2	740.8	740.2	739.7	739.1	738.8	738.9	738.9	738.9	738.9	739.7
170°	747.9	747.2	746.6	745.9	745.3	745.0	745.1	745.3	745.4	745.5	746.3
172.5°	752.6	752.0	751.5	750.9	750.4	750.1	750.1	750.2	750.2	750.2	751.1
175°	759.1	758.4	757.7	757.1	756.5	756.1	755.9	755.7	755.7	755.5	756.5
177.5°	761.1	760.7	760.1	759.6	759.1	758.8	758.8	758.8	758.8	758.8	759.5
180°	760.2	760.2	760.2	760.2	760.2	760.2	760.2	760.2	760.2	760.2	760.2



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	334.9	334.9	334.9	334.9	334.9	334.9	334.9	334.9
2.5°	333.7	334.1	334.6	334.8	334.8	334.7	334.6	334.5
5°	332.8	333.4	334.1	334.5	334.4	334.2	334.1	334.1
7.5°	331.1	331.8	332.6	332.9	332.8	332.7	332.6	332.6
10°	329.2	329.9	330.7	331.1	331.0	330.9	330.8	330.7
12.5°	326.7	327.4	328.0	328.4	328.4	328.4	328.4	328.3
15°	322.1	322.8	323.6	323.9	323.8	323.8	323.7	323.6
17.5°	316.5	317.3	318.1	318.4	318.3	318.2	318.2	318.1
20°	312.1	313.0	313.8	314.3	314.3	314.3	314.3	314.3
22.5°	307.0	307.8	308.7	309.2	309.3	309.4	309.6	309.7
25°	299.2	300.1	301.0	301.5	301.6	301.7	301.7	301.8
27.5°	290.3	291.2	292.1	292.6	292.6	292.7	292.8	292.9
30°	284.2	285.1	286.0	286.5	286.7	286.9	287.1	287.2
32.5°	277.8	278.9	280.0	280.6	280.7	280.9	281.1	281.2
35°	267.8	268.9	270.1	270.8	271.1	271.3	271.6	271.9
37.5°	257.4	258.5	259.7	260.5	260.7	260.9	261.3	261.5
40°	250.0	251.2	252.5	253.3	253.6	254.0	254.3	254.6
42.5°	242.7	244.2	245.5	246.4	246.6	246.8	247.2	247.4
45°	231.6	233.0	234.4	235.3	235.8	236.1	236.5	236.9
47.5°	219.8	221.2	222.7	223.6	224.2	224.7	225.1	225.7
50°	211.4	213.1	214.8	215.9	216.3	216.8	217.4	217.9
52.5°	203.0	204.7	206.4	207.5	207.9	208.4	209.0	209.5
55°	190.4	192.1	193.8	194.9	195.4	195.8	196.4	196.9
57.5°	177.2	179.2	181.2	182.4	182.8	183.3	183.8	184.3
60°	168.1	170.0	171.9	173.2	173.9	174.5	175.2	175.9
62.5°	159.1	161.0	162.9	164.2	164.9	165.5	166.2	166.8
65°	145.1	147.3	149.3	150.7	151.4	152.0	152.7	153.4
67.5°	131.5	133.6	135.7	137.1	137.8	138.4	139.0	139.7
70°	121.8	124.1	126.4	127.8	128.3	129.0	129.5	130.1
72.5°	112.7	114.9	117.1	118.5	119.1	119.8	120.5	121.1
75°	98.8	101.1	103.5	105.0	105.8	106.5	107.3	108.0
77.5°	85.8	88.2	90.5	92.1	92.9	93.7	94.5	95.3
80°	77.4	79.9	82.4	84.0	84.6	85.3	86.0	86.6
82.5°	69.1	71.7	74.2	75.9	76.6	77.3	78.1	78.8
85°	57.5	60.0	62.5	64.2	65.0	65.8	66.6	67.5
87.5°	50.5	53.2	55.7	57.4	58.1	58.9	59.7	60.5
90°	56.5	59.7	62.8	65.0	65.8	66.8	67.7	68.6
92.5°	64.2	67.1	69.9	71.7	72.6	73.4	74.1	75.0
95°	82.6	85.2	87.9	89.6	90.3	91.1	91.8	92.6
97.5°	106.3	108.9	111.6	113.3	114.0	114.7	115.4	116.1
100°	123.5	126.0	128.5	130.1	130.6	131.2	131.8	132.4
102.5°	141.8	144.3	146.9	148.5	149.3	150.0	150.8	151.5
105°	169.6	172.1	174.6	176.3	177.4	178.5	179.5	180.6
107.5°	200.1	202.6	204.9	206.4	207.1	207.6	208.2	208.7
110°	220.5	222.1	223.8	225.1	226.2	227.3	228.3	229.3





TEST NUMBER: P332724-927

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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	242.3	244.1	245.9	247.2	248.0	248.7	249.4	250.2
115°	276.2	277.9	279.6	280.7	281.1	281.6	282.0	282.5
117.5°	308.5	309.8	311.1	312.0	312.4	312.8	313.1	313.5
120°	330.4	331.4	332.5	333.4	334.4	335.3	336.2	337.2
122.5°	352.9	354.1	355.3	356.0	356.2	356.2	356.4	356.6
125°	385.9	387.2	388.6	389.4	389.6	389.8	390.1	390.3
127.5°	417.0	418.3	419.5	420.3	420.6	421.0	421.4	421.7
130°	439.0	440.2	441.5	442.1	442.1	442.0	442.0	442.0
132.5°	459.8	461.0	462.2	462.9	463.2	463.4	463.7	464.1
135°	490.6	491.6	492.7	493.3	493.5	493.5	493.6	493.8
137.5°	520.7	521.6	522.4	523.2	523.6	524.1	524.6	525.1
140°	540.7	541.6	542.6	543.1	543.4	543.8	544.0	544.3
142.5°	559.8	560.6	561.6	562.2	562.5	562.8	563.2	563.5
145°	588.7	589.1	589.5	589.5	589.5	589.5	589.4	589.4
147.5°	615.1	615.0	615.0	615.0	615.1	615.3	615.4	615.5
150°	632.1	632.1	632.1	632.0	631.8	631.7	631.6	631.4
152.5°	648.2	648.5	648.8	648.8	648.5	648.2	647.8	647.5
155°	670.7	671.2	671.8	671.8	671.2	670.7	670.2	669.7
157.5°	690.5	690.9	691.3	691.3	690.9	690.5	690.0	689.5
160°	702.8	703.2	703.6	703.5	702.8	702.1	701.5	700.8
162.5°	713.8	714.5	715.2	715.2	714.5	713.9	713.3	712.6
165°	728.3	729.0	729.8	730.0	729.4	728.9	728.4	727.9
167.5°	740.5	741.2	742.0	742.0	741.2	740.5	739.7	738.8
170°	747.1	747.9	748.7	748.6	747.7	746.8	745.8	745.0
172.5°	752.0	752.9	753.8	753.8	752.8	751.9	751.0	750.1
175°	757.3	758.3	759.1	759.1	758.3	757.3	756.5	755.5
177.5°	760.3	761.0	761.8	761.7	760.8	760.0	759.1	758.4
180°	760.2	760.2	760.2	760.2	760.2	760.2	760.2	760.2

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