

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: P243424

Luminaire Tested: **S123RDR-H340D830-X4F0-XX-UDD-A-W**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P243424  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-69)  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: S123RDR-H340D830-X4F0-XX-UDD-A-W  
Description: DEFINE 3 REGRESSED DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER.  
HIGH PERFORMANCE LIGHT ENGINE  
Light Source: (184) 3000K CCT, 80 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

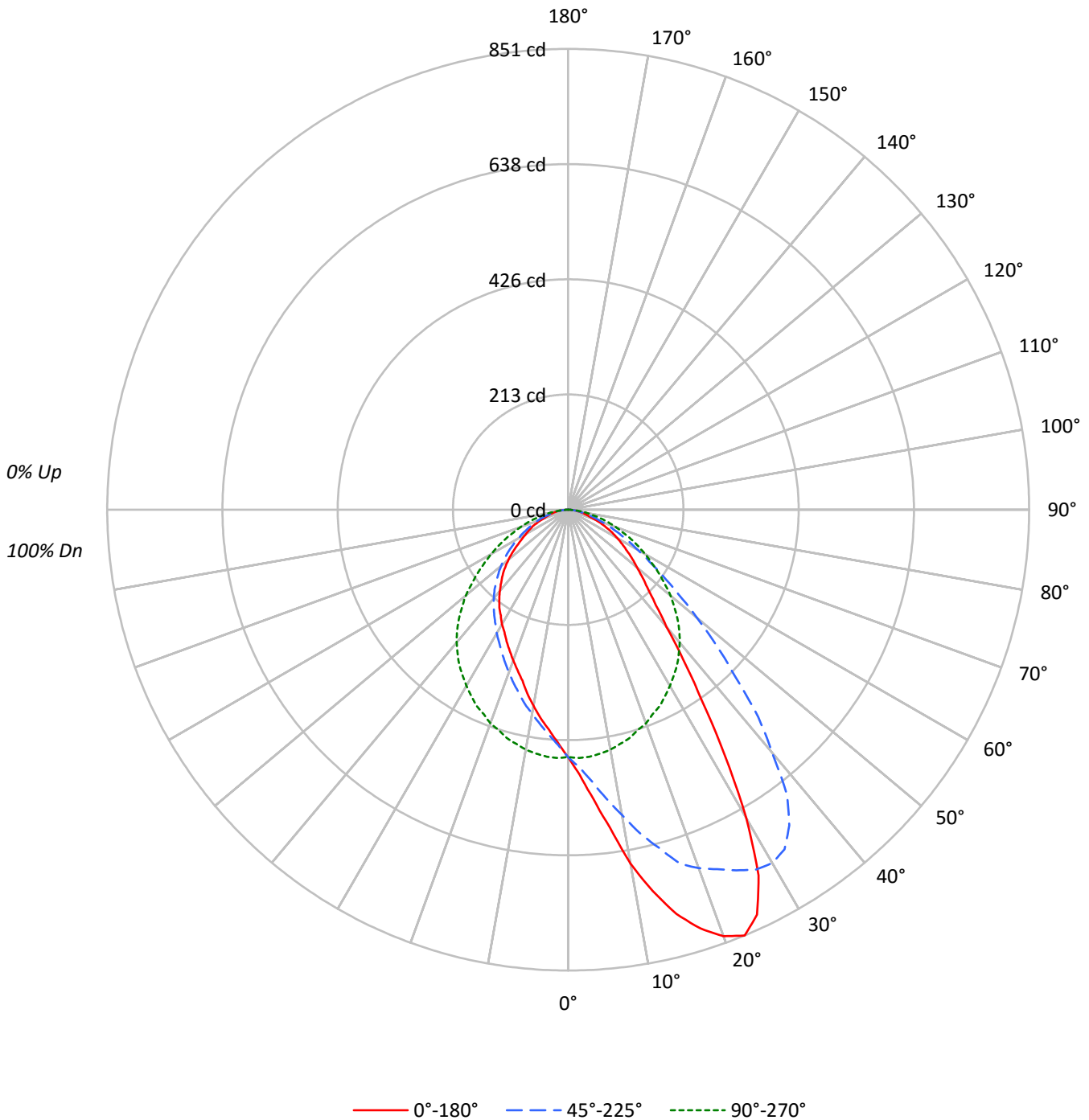
Lumens per Lamp: N/A  
Luminaire Lumens: 1190.5 lumens  
Efficiency: N/A  
Efficacy: 106.3 lumens/watt  
Spacing Criteria (0/90/45): 1.28 / 1.22 / 1.4  
Luminous Opening: Rectangular (W 3.88' x L: 0.23' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 11.2  
Input Voltage (V): 120  
Input Current (Ain): 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: P243424

CATALOG NUMBER: S123RDR-H340D830-X4F0-XX-UDD-A-W

### Luminous Intensity Polar Plot





TEST NUMBER: P243424

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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	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100
1	110	106	102	99	107	104	100	97	99	97	94	96	93	91	92	90	89	87
2	101	94	88	83	99	92	86	82	89	84	80	85	81	78	82	79	76	74
3	93	84	76	70	91	82	75	70	79	73	68	76	71	67	74	70	66	64
4	86	75	67	61	84	74	66	60	71	65	59	69	63	59	67	62	58	56
5	79	68	59	53	77	66	59	53	64	57	52	62	56	52	61	55	51	49
6	74	61	53	47	72	60	52	47	59	52	46	57	51	46	55	50	46	44
7	69	56	48	42	67	55	47	42	54	47	41	52	46	41	51	45	41	39
8	64	51	43	38	62	51	43	37	49	42	37	48	42	37	47	41	37	35
9	60	47	39	34	59	47	39	34	45	39	34	44	38	34	43	38	33	32
10	56	44	36	31	55	43	36	31	42	35	31	41	35	31	40	35	31	29

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

	0°	90°	180°
0°	5538	5538	5538
5°	6529	5569	4959
10°	8173	5536	4526
15°	9699	5481	4100
20°	10811	5415	3817
25°	11034	5348	3594
30°	9194	5257	3418
35°	6352	5185	3275
40°	4464	5067	3103
45°	3584	4887	2935
50°	3125	4654	2715
55°	2802	4307	2418
60°	2536	3978	2192
65°	2217	3665	2048
70°	1790	3299	1733
75°	1550	2876	1700
80°	1431	2450	1710
85°	1266	1975	1488



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	44.8	3.8
10°-20°	141.1	11.9
20°-30°	226.1	19.0
30°-40°	245.5	20.6
40°-50°	210.3	17.7
50°-60°	159.4	13.4
60°-70°	101.9	8.6
70°-80°	48.7	4.1
80°-90°	12.8	1.1
90°-100°	0.0	0.0
100°-110°	0.0	0.0
110°-120°	0.0	0.0
120°-130°	0.0	0.0
130°-140°	0.0	0.0
140°-150°	0.0	0.0
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	412.0	34.6
0°-40°	657.5	55.2
0°-60°	1027.2	86.3
0°-90°	1190.5	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1190.5	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	457	457	457	457	457	
5°	537	504	458	416	408	55
15°	773	646	437	351	327	219
25°	825	735	400	290	269	366
35°	429	712	350	238	221	276
45°	209	436	285	188	171	165
55°	133	214	204	135	114	120
65°	77	103	128	82	71	77
75°	33	40	61	39	36	36
85°	9	10	14	11	11	10
90°	0	0	0	0	0	



TEST NUMBER: P243424

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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	456.9	456.9	456.9	456.9	456.9	456.9	456.9	456.9	456.9	456.9	456.9
2.5°	489.7	490.2	489.3	489.1	488.9	485.7	484.7	483.1	477.6	476.2	475.3
5°	536.6	535.0	536.8	533.4	529.7	527.5	524.0	516.1	509.2	503.7	500.1
7.5°	592.2	592.8	591.1	587.9	580.4	577.2	567.6	558.1	549.0	537.6	529.1
10°	664.0	659.3	660.3	650.4	642.5	633.1	619.9	604.7	588.7	572.5	560.5
12.5°	721.3	724.6	722.2	717.5	702.3	693.1	681.0	658.9	633.7	612.0	593.6
15°	772.9	768.4	769.0	757.6	752.0	743.6	723.6	701.7	685.4	646.1	624.4
17.5°	810.8	810.4	809.8	800.2	793.5	775.7	755.4	732.9	712.4	685.2	657.9
20°	838.1	841.0	840.2	832.3	820.5	803.3	791.1	763.1	729.4	704.5	671.2
22.5°	851.1	851.3	851.7	847.9	840.0	829.0	811.6	789.1	759.1	718.5	681.4
25°	825.0	826.0	831.1	834.3	836.5	831.5	822.5	802.1	776.3	734.9	696.4
27.5°	761.1	764.3	770.0	788.9	796.6	807.3	811.0	802.9	783.8	749.3	705.5
30°	656.9	665.8	671.3	692.9	723.0	751.4	764.9	778.1	776.3	753.4	709.0
32.5°	537.8	543.5	559.5	582.6	606.4	648.1	694.6	726.6	744.5	743.4	712.0
35°	429.3	437.6	451.2	468.7	501.7	544.9	597.6	647.9	692.9	711.6	700.3
37.5°	348.4	349.2	362.0	386.9	407.4	445.5	493.0	555.2	614.1	663.1	673.9
40°	282.1	287.6	294.3	309.9	334.2	370.7	402.3	463.4	524.6	585.9	629.7
42.5°	240.3	240.3	247.8	257.6	273.8	295.7	333.4	388.8	443.9	519.2	568.6
45°	209.1	211.1	214.4	220.8	232.2	249.2	278.4	316.0	372.3	435.6	509.8
47.5°	186.6	186.4	189.4	193.1	202.0	214.8	232.0	262.6	304.2	372.5	438.0
50°	165.7	166.5	168.7	171.8	177.8	186.8	197.7	220.8	255.9	309.9	378.6
52.5°	149.5	149.3	151.1	153.1	157.6	162.8	172.4	189.6	213.9	256.9	313.9
55°	132.6	133.4	135.5	136.7	140.5	143.8	151.9	161.6	181.1	213.5	265.3
57.5°	118.0	119.0	120.1	121.3	123.9	127.2	134.0	139.9	154.1	177.4	218.8
60°	104.6	104.2	105.5	107.5	108.9	111.9	115.6	121.7	131.6	148.2	178.5
62.5°	91.1	91.3	91.5	92.7	95.3	97.9	101.2	105.7	111.7	123.9	145.4
65°	77.3	77.5	77.9	79.1	81.7	83.3	86.8	90.7	95.5	102.8	117.8
67.5°	65.1	65.9	65.9	66.9	67.9	69.4	72.0	75.0	78.9	84.2	93.9
70°	50.5	50.3	51.3	53.3	54.3	57.0	58.8	60.8	64.3	67.7	76.0
72.5°	40.6	40.6	40.6	41.4	41.6	42.2	43.4	47.5	50.3	53.7	58.2
75°	33.1	33.3	33.3	33.5	33.7	34.3	34.7	35.9	36.7	40.2	43.0
77.5°	26.4	26.6	26.6	26.8	27.0	27.2	28.0	28.0	28.6	29.4	30.6
80°	20.5	20.3	20.3	20.5	20.5	21.1	21.1	21.5	21.7	22.1	22.7
82.5°	14.6	14.4	14.6	14.4	14.6	14.8	15.2	15.0	15.4	15.8	16.0
85°	9.1	9.3	9.3	9.7	9.5	9.3	9.5	9.5	9.5	9.5	9.9
87.5°	3.9	4.3	4.3	4.1	4.3	4.3	3.9	4.3	4.3	4.3	4.5
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	456.9	456.9	456.9	456.9	456.9	456.9	456.9	456.9	456.9	456.9	456.9
2.5°	474.7	473.9	470.9	468.1	464.0	462.2	459.9	458.9	455.7	451.4	449.4
5°	496.8	490.8	485.1	478.2	472.5	465.8	462.0	457.7	451.0	444.9	440.5
7.5°	520.2	511.6	500.9	489.5	479.2	469.5	461.2	454.3	445.7	437.2	430.5
10°	546.1	531.3	514.1	499.5	484.7	470.7	460.3	449.8	438.6	427.9	419.8
12.5°	573.9	553.0	532.3	510.4	488.3	472.1	456.5	443.1	430.5	419.2	409.6
15°	602.7	574.1	547.7	523.0	492.2	470.5	453.4	436.8	421.0	407.2	397.7
17.5°	623.2	590.5	557.1	522.2	495.8	468.9	447.6	426.7	412.1	397.9	385.1
20°	642.2	605.1	565.4	532.9	496.0	463.2	439.9	419.8	399.5	384.3	373.5
22.5°	650.2	616.7	576.7	531.5	494.6	461.0	431.1	408.4	390.2	373.7	359.4
25°	651.8	614.3	573.3	529.7	489.3	453.0	422.6	399.9	376.2	359.1	348.0
27.5°	658.7	607.4	567.2	523.8	482.7	444.9	412.9	387.7	365.6	347.2	333.0
30°	660.5	604.5	554.2	512.7	470.5	433.4	401.1	375.6	351.6	332.8	320.0
32.5°	661.3	600.5	540.6	495.2	454.9	420.0	390.4	362.8	339.9	320.2	307.0
35°	658.5	595.0	524.2	475.3	436.6	402.3	374.8	350.4	324.9	306.4	292.4
37.5°	647.7	586.3	514.9	452.0	415.1	382.7	359.4	335.4	311.9	291.8	277.4
40°	627.2	573.7	497.5	432.4	390.6	361.6	339.9	320.2	296.5	277.2	263.0
42.5°	594.4	556.5	481.6	410.3	366.4	338.9	320.8	303.8	282.5	264.2	248.6
45°	545.9	532.5	460.3	387.9	339.9	314.1	298.3	285.1	265.7	249.0	234.6
47.5°	493.4	496.4	438.8	365.0	315.8	291.2	277.4	265.7	251.1	233.2	220.0
50°	432.8	449.0	408.6	341.9	291.8	267.5	253.9	246.8	233.2	218.2	205.8
52.5°	377.4	403.0	378.0	316.6	268.1	244.2	231.6	224.5	215.4	203.0	190.4
55°	320.0	352.5	334.4	289.4	244.0	220.0	209.3	203.8	196.3	186.6	175.2
57.5°	272.4	307.2	295.7	260.8	220.6	198.9	189.4	183.1	178.5	169.7	160.4
60°	225.9	258.0	253.5	227.9	197.3	176.6	169.3	164.1	160.4	153.9	144.8
62.5°	182.3	213.5	216.2	196.1	174.6	155.9	149.1	145.6	142.6	137.5	129.2
65°	144.6	172.0	177.8	162.4	150.7	136.5	130.0	127.8	125.7	119.7	113.4
67.5°	113.2	134.7	142.2	133.6	125.3	117.0	111.9	108.9	107.3	103.8	99.4
70°	86.6	105.2	111.5	107.7	102.2	99.0	95.1	93.1	91.5	87.0	84.6
72.5°	64.9	77.5	85.4	84.2	83.1	80.9	78.5	77.9	75.6	72.6	70.4
75°	47.5	54.8	61.9	64.5	64.1	64.9	62.3	61.4	60.0	57.8	56.0
77.5°	34.1	38.5	43.4	46.6	48.1	48.3	48.3	47.7	46.8	45.2	43.8
80°	23.7	24.7	29.2	32.2	33.7	34.9	34.9	35.1	34.1	33.5	32.6
82.5°	16.4	17.0	18.0	20.3	22.3	23.7	23.9	23.7	23.3	23.1	21.7
85°	10.3	10.1	10.1	10.7	12.2	13.6	13.8	14.2	14.0	13.8	12.4
87.5°	4.3	4.3	4.5	4.3	4.9	5.1	5.5	6.5	6.3	5.3	4.9
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



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**CANDELA DISTRIBUTION (continued):**

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	456.9	456.9	456.9	456.9	456.9	456.9	456.9	456.9	456.9	456.9	456.9
2.5°	448.2	445.7	443.3	440.7	437.6	434.6	434.2	433.8	434.8	432.8	432.0
5°	437.2	432.2	428.5	423.8	420.4	416.1	413.7	413.1	412.9	411.7	410.1
7.5°	425.1	419.8	414.5	409.2	403.6	399.1	396.5	395.2	394.0	392.0	390.4
10°	413.9	407.2	401.5	394.2	388.3	382.3	380.0	378.0	376.8	374.0	371.9
12.5°	401.3	392.8	386.5	378.6	373.3	368.1	364.4	360.6	357.9	353.7	352.0
15°	390.2	381.3	370.7	366.0	358.5	350.8	346.6	346.6	340.9	337.5	335.4
17.5°	375.4	367.7	360.2	350.6	339.9	335.4	330.6	326.5	322.6	321.6	317.6
20°	362.4	353.3	345.6	335.2	325.5	320.2	314.7	310.1	307.2	304.4	302.2
22.5°	349.6	340.5	328.7	318.4	311.9	304.8	298.9	294.9	292.4	288.2	286.3
25°	336.2	325.3	314.7	304.6	296.5	290.4	284.3	282.1	277.6	275.4	272.6
27.5°	322.8	309.7	299.7	291.0	281.9	276.0	271.9	267.9	264.0	262.8	261.2
30°	307.8	295.7	286.1	277.6	268.9	263.8	258.8	255.3	251.9	249.4	247.6
32.5°	292.8	282.7	273.4	263.6	255.7	250.2	246.0	242.9	241.3	236.9	235.4
35°	279.0	268.7	258.8	249.6	243.2	237.9	234.2	231.2	227.9	225.1	223.5
37.5°	264.8	255.5	245.4	237.5	230.4	226.1	221.9	218.0	215.4	213.9	211.9
40°	250.9	241.1	233.4	224.7	218.4	213.5	209.1	206.2	203.0	201.6	199.1
42.5°	237.9	228.5	219.6	211.7	206.0	201.2	197.1	193.7	191.2	188.6	187.2
45°	222.9	214.6	206.6	198.7	193.3	188.2	183.7	180.7	177.2	175.0	174.2
47.5°	210.3	201.6	192.9	185.6	180.1	174.6	170.8	167.3	164.3	162.2	161.0
50°	195.3	187.2	180.1	172.8	167.5	161.6	157.0	153.7	150.3	148.8	146.8
52.5°	182.5	174.6	165.9	159.4	153.3	148.2	144.0	141.3	138.3	135.9	134.5
55°	166.5	158.8	151.9	145.0	138.9	134.7	131.4	126.7	124.1	121.7	118.0
57.5°	152.5	145.2	137.9	131.2	125.5	120.5	116.4	113.2	109.9	108.1	105.5
60°	137.7	130.0	123.3	118.2	111.9	106.5	103.8	100.0	97.3	94.5	93.7
62.5°	123.1	116.0	109.3	104.0	98.2	94.1	90.6	88.8	86.0	83.8	83.1
65°	107.9	102.0	95.7	89.8	86.2	81.5	79.5	76.5	75.0	74.0	73.8
67.5°	92.9	87.6	81.9	77.3	74.0	70.8	68.5	67.3	65.7	64.5	63.5
70°	79.3	74.2	69.2	65.5	62.9	60.6	59.0	56.8	55.2	53.7	51.5
72.5°	65.9	61.7	57.6	54.6	52.1	50.7	48.5	45.2	43.6	43.2	43.0
75°	53.5	48.9	46.0	44.4	42.0	38.7	37.3	36.9	36.7	36.3	36.3
77.5°	41.2	38.5	36.5	33.1	32.0	31.8	30.8	30.6	30.2	30.4	30.4
80°	30.0	28.4	26.0	25.1	24.7	24.9	24.5	24.7	24.3	24.5	24.1
82.5°	19.9	18.5	18.9	18.3	18.3	18.7	18.5	18.0	18.0	17.8	17.8
85°	11.8	11.6	12.0	12.0	11.8	11.2	11.6	11.4	10.9	11.0	11.0
87.5°	5.1	5.1	5.1	4.9	5.1	4.9	4.9	4.9	4.3	4.3	4.3
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0





TEST NUMBER: P243424

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**CANDELA DISTRIBUTION (continued):**

	165°	170°	175°	180°
0°	456.9	456.9	456.9	456.9
2.5°	432.4	432.0	431.5	430.9
5°	410.1	408.4	408.2	407.6
7.5°	389.2	388.4	387.1	388.6
10°	370.1	370.7	369.3	367.7
12.5°	350.2	349.0	346.8	348.0
15°	332.6	330.6	329.5	326.7
17.5°	314.3	312.7	312.7	310.9
20°	298.3	296.7	297.1	295.9
22.5°	284.9	283.7	281.9	282.1
25°	272.2	270.5	268.5	268.7
27.5°	258.2	256.7	256.3	254.9
30°	245.8	244.4	244.2	244.2
32.5°	233.8	233.2	232.2	231.6
35°	223.3	222.5	221.0	221.3
37.5°	210.3	209.5	209.3	209.1
40°	198.1	197.5	195.9	196.1
42.5°	185.8	184.9	183.9	183.5
45°	172.6	172.4	170.8	171.2
47.5°	160.0	159.6	158.8	157.8
50°	146.0	145.8	145.2	144.0
52.5°	132.4	131.8	130.6	129.4
55°	117.0	115.2	115.4	114.4
57.5°	104.4	103.6	102.0	101.4
60°	92.1	91.3	91.1	90.4
62.5°	81.9	81.1	80.5	80.5
65°	72.6	71.6	71.4	71.4
67.5°	62.3	61.4	61.2	60.8
70°	49.5	49.3	48.9	48.9
72.5°	42.6	42.4	42.6	41.8
75°	36.3	36.1	36.1	36.3
77.5°	30.2	30.2	30.0	30.0
80°	23.9	24.1	23.9	24.5
82.5°	18.0	17.6	17.8	17.4
85°	11.0	11.0	10.7	10.7
87.5°	4.3	4.3	4.3	4.3
90°	0.0	0.0	0.0	0.0

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