

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: P332416-935

Luminaire Tested: **S123RDIW-S560D755U935-4F0-1E-UDD-F**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P332416-935  
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-5,  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: S123RDIW-S560D755U935-4F0-1E-UDD-F  
Description: DEFINE 3 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE  
DOWNLIGHT 560 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER, REGRESSED  
HOUSING  
UPLIGHT 755 LUMENS PER FOOT, NO LENS  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 4440.1 lumens  
Efficiency: N/A  
Efficacy: 118.1 lumens/watt  
Spacing Criteria (0/90/45): 1.21 / 1.06 / 1.23  
Luminous Opening: Rectangular (W 0.25' x L: 4' x H: 0')  
CIE Type: General Diffuse

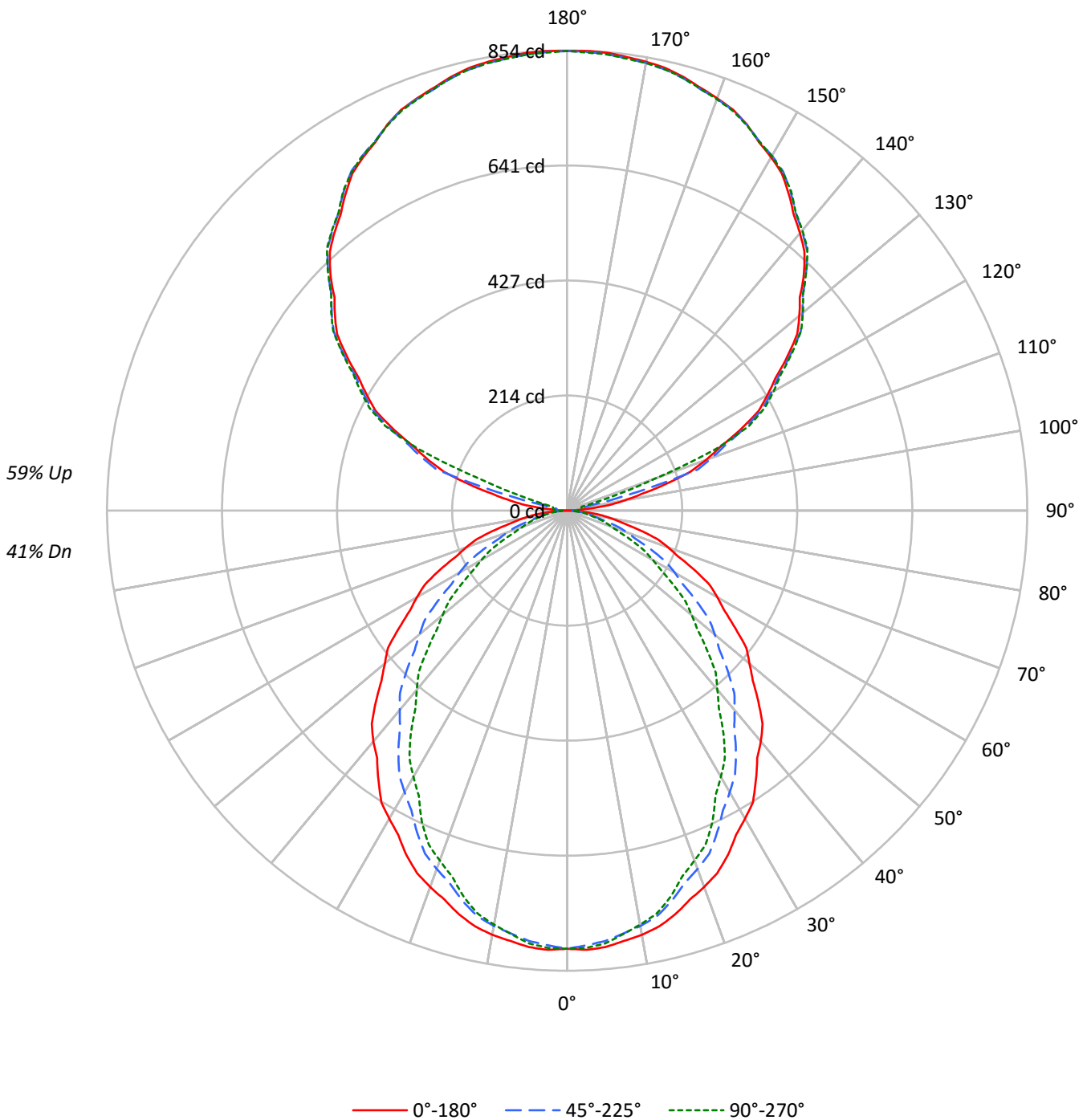
Input Watts (W): 37.6  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	105	105	105	105	96	96	96	96	79	79	79	63	63	63	48	48	48	41
1	96	92	88	85	88	84	81	78	69	67	65	56	54	53	43	42	41	35
2	88	81	75	70	80	74	69	64	61	57	54	49	47	44	38	37	35	30
3	80	71	64	58	73	65	59	54	54	49	46	44	40	38	34	32	30	26
4	73	63	55	49	67	58	51	46	48	43	39	39	35	33	31	28	26	22
5	67	56	48	42	61	52	45	40	43	38	34	35	31	28	28	25	23	20
6	62	50	43	37	57	46	39	34	39	34	30	32	28	25	25	22	20	17
7	57	46	38	32	52	42	35	30	35	30	26	29	25	22	23	20	18	15
8	53	41	34	29	49	38	31	27	32	27	23	26	23	20	21	18	16	14
9	50	38	30	25	45	35	28	24	29	24	21	24	21	18	20	17	15	13
10	46	35	28	23	42	32	26	21	27	22	19	23	19	16	18	15	13	11

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

	0°	45°	90°
0°	8753	8753	8753
5°	8787	8666	8715
10°	8737	8557	8528
15°	8643	8357	8269
20°	8514	8107	7918
25°	8381	7826	7574
30°	8206	7501	7091
35°	8025	7176	6646
40°	7859	6794	6097
45°	7640	6416	5602
50°	7400	5987	5047
55°	7156	5495	4530
60°	6928	4969	3961
65°	6635	4401	3393
70°	6266	3695	2738
75°	5731	2907	2578
80°	5114	2579	2368
85°	4323	2272	2112



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	76.4	1.7
10°-20°	212.5	4.8
20°-30°	305.9	6.9
30°-40°	344.6	7.8
40°-50°	329.7	7.4
50°-60°	270.0	6.1
60°-70°	182.2	4.1
70°-80°	91.6	2.1
80°-90°	26.6	0.6
90°-100°	31.0	0.7
100°-110°	147.8	3.3
110°-120°	355.0	8.0
120°-130°	452.0	10.2
130°-140°	482.9	10.9
140°-150°	451.6	10.2
150°-160°	364.3	8.2
160°-170°	235.1	5.3
170°-180°	81.0	1.8
0°-30°	594.8	13.4
0°-40°	939.4	21.2
0°-60°	1539.1	34.7
0°-90°	1839.5	41.4
90°-120°	533.7	12.0
90°-150°	1920.2	43.2
90°-180°	2601.0	58.6
0°-180°	4440.1	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	813	813	813	813	813	
5°	813	810	802	808	807	77
15°	776	768	750	747	742	218
25°	706	688	659	645	638	324
35°	611	586	546	519	506	382
45°	502	471	422	385	368	387
55°	381	348	293	256	241	342
65°	260	223	173	142	133	258
75°	138	106	70	64	62	147
85°	35	21	18	17	17	39
90°	1	7	15	18	19	4
95°	39	14	20	24	24	48
105°	189	192	139	33	28	200
115°	354	358	364	370	373	349
125°	499	504	507	508	509	446
135°	622	625	628	630	628	478
145°	717	722	723	724	724	449
155°	790	789	790	792	789	364
165°	833	831	831	835	831	235
175°	853	850	850	854	850	81
180°	853	853	853	853	853	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	813.2	813.2	813.2	813.2	813.2	813.2	813.2	813.2	813.2	813.2	813.2
2.5°	815.9	815.4	814.9	814.4	814.0	813.0	811.7	810.2	808.8	807.4	808.7
5°	813.2	812.5	811.8	811.1	810.3	809.1	807.3	805.6	803.7	802.0	803.3
7.5°	805.7	804.9	804.1	803.3	802.5	801.0	798.7	796.4	794.1	791.9	792.6
10°	799.4	798.3	797.3	796.3	795.3	793.4	790.8	788.2	785.5	782.9	783.0
12.5°	790.4	789.3	788.1	787.0	785.8	783.7	780.4	777.2	774.0	770.8	770.7
15°	775.6	774.0	772.4	770.8	769.2	766.3	762.2	758.1	754.0	749.9	749.2
17.5°	757.0	755.2	753.3	751.4	749.5	746.0	740.7	735.6	730.3	725.1	723.6
20°	743.3	741.0	738.7	736.2	733.9	730.0	724.4	718.8	713.3	707.7	705.8
22.5°	728.0	725.3	722.6	719.9	717.2	712.9	707.0	701.0	695.2	689.2	686.8
25°	705.7	702.1	698.4	694.7	691.0	685.9	679.1	672.4	665.6	658.9	655.8
27.5°	678.6	674.6	670.5	666.5	662.5	656.7	649.2	641.7	634.2	626.7	622.4
30°	660.2	655.8	651.4	647.0	642.7	636.3	628.1	619.9	611.7	603.5	598.5
32.5°	641.7	636.8	631.8	626.8	621.8	615.0	606.3	597.6	588.9	580.2	574.8
35°	610.7	605.5	600.2	595.0	589.6	582.5	573.3	564.3	555.2	546.1	539.8
37.5°	579.4	573.5	567.7	561.7	555.9	548.1	538.4	528.7	519.0	509.3	502.1
40°	559.3	552.8	546.4	539.9	533.5	525.0	514.7	504.3	493.9	483.5	475.8
42.5°	536.6	530.1	523.7	517.3	510.8	502.2	491.5	480.7	469.9	459.2	450.8
45°	501.9	495.3	488.7	482.2	475.5	466.6	455.3	444.0	432.7	421.5	413.1
47.5°	467.2	459.9	452.7	445.5	438.2	429.0	417.7	406.4	395.1	383.8	374.8
50°	441.9	435.0	428.1	421.2	414.3	404.9	393.0	381.3	369.4	357.5	348.4
52.5°	419.2	411.7	404.2	396.7	389.3	379.7	367.9	356.2	344.4	332.7	323.2
55°	381.3	374.0	366.9	359.6	352.5	342.7	330.2	317.8	305.3	292.8	284.3
57.5°	346.1	338.3	330.5	322.6	314.8	304.6	292.1	279.7	267.1	254.6	246.6
60°	321.8	313.8	305.7	297.6	289.6	279.5	267.3	255.2	243.0	230.8	222.9
62.5°	297.6	289.6	281.5	273.4	265.4	255.2	243.1	230.9	218.7	206.6	199.1
65°	260.5	252.4	244.4	236.3	228.3	218.5	207.1	195.7	184.3	172.8	165.7
67.5°	223.4	215.3	207.2	199.0	190.9	181.3	170.3	159.4	148.4	137.4	132.1
70°	199.1	191.2	183.4	175.5	167.6	158.4	148.2	137.9	127.7	117.4	112.3
72.5°	174.9	167.1	159.3	151.5	143.7	135.2	125.9	116.5	107.2	97.9	93.7
75°	137.8	130.8	123.8	116.8	109.7	102.1	94.1	86.0	78.0	69.9	68.4
77.5°	104.1	97.7	91.4	85.0	78.6	72.8	67.7	62.5	57.3	52.1	51.3
80°	82.5	76.5	70.4	64.4	58.4	53.9	50.8	47.7	44.6	41.6	41.1
82.5°	61.9	56.7	51.5	46.3	41.1	37.8	36.3	35.0	33.5	32.0	31.6
85°	35.0	31.8	28.5	25.3	22.0	20.2	19.8	19.4	18.9	18.4	18.2
87.5°	12.8	11.8	10.8	9.7	8.8	8.4	8.8	9.1	9.6	9.9	9.9
90°	0.6	2.1	3.4	4.8	6.3	7.9	9.7	11.5	13.3	15.2	15.8
92.5°	11.8	11.4	11.0	10.6	10.2	10.7	12.1	13.4	14.8	16.2	17.1
95°	38.7	32.9	27.1	21.4	15.6	13.4	15.0	16.5	18.1	19.6	20.7
97.5°	77.7	75.1	72.5	69.9	67.3	61.0	50.8	40.6	30.6	20.4	21.5
100°	107.1	109.9	112.7	115.5	118.3	108.7	86.8	64.8	42.9	20.9	22.0
102.5°	140.5	142.6	144.6	146.6	148.6	137.7	113.7	89.6	65.7	41.7	38.2
105°	188.8	190.4	191.9	193.5	195.0	189.4	176.8	164.1	151.4	138.8	113.8
107.5°	239.7	241.0	242.2	243.5	244.7	246.3	248.3	250.3	252.4	254.3	236.0
110°	273.7	274.8	276.0	277.1	278.2	279.6	281.1	282.7	284.2	285.8	281.1



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	306.2	307.1	308.2	309.2	310.2	311.5	313.1	314.6	316.2	317.7	317.8
115°	354.1	355.0	355.9	356.7	357.6	358.6	359.9	361.1	362.4	363.7	365.1
117.5°	400.7	401.7	402.8	403.8	404.8	405.7	406.3	407.0	407.6	408.3	409.4
120°	429.6	430.8	432.1	433.3	434.6	435.5	435.9	436.4	436.8	437.1	438.3
122.5°	459.0	460.0	461.1	462.1	463.1	463.9	464.4	465.0	465.5	466.1	466.8
125°	499.3	500.4	501.5	502.7	503.8	504.6	505.1	505.8	506.3	506.9	507.1
127.5°	538.3	539.4	540.5	541.7	542.8	543.7	544.4	545.0	545.7	546.4	546.8
130°	562.6	563.8	564.9	566.0	567.1	568.0	568.5	569.1	569.6	570.2	570.8
132.5°	585.9	587.0	588.1	589.3	590.5	591.2	591.7	592.1	592.5	593.1	593.6
135°	621.6	622.4	623.2	624.1	624.9	625.6	626.2	626.7	627.3	627.8	628.3
137.5°	651.9	653.0	654.1	655.1	656.3	656.9	657.2	657.5	657.9	658.1	658.8
140°	672.2	673.0	673.9	674.8	675.6	676.2	676.7	677.1	677.5	678.0	678.5
142.5°	691.0	691.8	692.7	693.5	694.4	695.0	695.4	695.9	696.3	696.7	697.2
145°	717.2	718.2	719.2	720.1	721.2	721.8	722.0	722.4	722.6	722.9	723.2
147.5°	741.9	742.5	743.2	743.8	744.5	744.9	745.3	745.5	745.8	746.1	746.4
150°	757.2	757.5	757.9	758.4	758.8	759.1	759.5	759.7	760.0	760.3	760.6
152.5°	770.8	771.0	771.2	771.4	771.6	771.8	772.0	772.1	772.3	772.5	772.9
155°	790.1	789.8	789.5	789.2	788.9	788.8	789.0	789.2	789.3	789.5	790.1
157.5°	805.0	805.0	804.9	804.9	804.9	804.9	804.7	804.5	804.4	804.3	805.1
160°	814.2	814.0	813.9	813.7	813.6	813.5	813.3	813.1	813.0	812.9	813.7
162.5°	822.8	822.4	822.0	821.7	821.3	821.0	820.9	820.8	820.6	820.4	821.5
165°	833.2	832.8	832.3	831.9	831.5	831.2	831.0	830.9	830.8	830.6	831.7
167.5°	841.3	840.7	840.2	839.6	839.0	838.7	838.7	838.7	838.7	838.7	839.8
170°	845.8	845.2	844.7	844.1	843.6	843.3	843.3	843.3	843.3	843.3	844.4
172.5°	848.9	848.2	847.5	846.9	846.2	845.8	846.0	846.1	846.2	846.4	847.5
175°	852.8	852.0	851.4	850.7	850.0	849.7	849.8	850.0	850.2	850.2	851.3
177.5°	853.8	853.3	852.6	852.1	851.5	851.4	851.4	851.5	851.7	851.8	852.6
180°	852.8	852.8	852.8	852.8	852.8	852.8	852.8	852.8	852.8	852.8	852.8



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	813.2	813.2	813.2	813.2	813.2	813.2	813.2	813.2
2.5°	810.0	811.3	812.6	813.1	812.9	812.6	812.4	812.2
5°	804.6	806.0	807.3	807.8	807.5	807.2	806.9	806.6
7.5°	793.3	794.0	794.8	794.9	794.4	793.9	793.4	792.9
10°	783.2	783.3	783.4	783.2	782.5	781.7	781.0	780.2
12.5°	770.6	770.5	770.4	769.9	769.0	768.2	767.4	766.5
15°	748.5	747.7	747.0	746.1	745.0	744.1	743.0	742.0
17.5°	722.0	720.5	718.8	717.4	715.8	714.3	712.7	711.3
20°	703.9	702.0	700.1	698.3	696.5	694.7	692.9	691.2
22.5°	684.5	682.1	679.8	677.7	676.1	674.4	672.8	671.1
25°	652.7	649.6	646.6	644.2	642.7	641.0	639.4	637.7
27.5°	618.1	613.9	609.6	606.2	603.7	601.3	598.8	596.3
30°	593.5	588.5	583.6	579.9	577.6	575.2	572.8	570.5
32.5°	569.4	563.9	558.4	554.5	552.1	549.6	547.1	544.7
35°	533.5	527.2	520.9	516.4	513.8	511.2	508.5	505.8
37.5°	495.0	487.8	480.7	475.5	472.3	469.0	465.7	462.4
40°	468.2	460.5	453.0	447.5	444.1	440.7	437.4	433.9
42.5°	442.6	434.2	425.9	420.2	417.2	414.1	411.1	408.1
45°	404.8	396.4	388.1	382.1	378.6	375.1	371.5	368.0
47.5°	365.7	356.6	347.5	341.4	338.3	335.1	332.0	328.8
50°	339.3	330.2	321.2	314.9	311.5	308.2	304.8	301.4
52.5°	313.8	304.4	294.9	288.7	285.7	282.7	279.7	276.6
55°	275.9	267.3	258.8	253.1	250.2	247.3	244.4	241.4
57.5°	238.5	230.5	222.5	217.2	214.7	212.2	209.7	207.2
60°	215.0	207.1	199.1	194.0	191.5	189.0	186.5	184.0
62.5°	191.7	184.3	176.8	171.8	169.2	166.5	163.9	161.4
65°	158.4	151.3	144.0	139.7	138.1	136.5	134.8	133.2
67.5°	126.7	121.3	116.0	112.4	110.7	109.0	107.3	105.6
70°	107.1	102.0	96.9	93.5	91.9	90.3	88.7	87.0
72.5°	89.5	85.3	81.1	78.7	78.0	77.3	76.6	75.9
75°	67.0	65.5	64.1	63.2	62.9	62.6	62.3	62.0
77.5°	50.5	49.8	48.9	48.4	48.1	47.8	47.5	47.2
80°	40.6	40.2	39.8	39.4	39.2	38.8	38.6	38.2
82.5°	31.2	30.7	30.3	30.0	30.0	30.0	29.9	29.8
85°	17.9	17.6	17.3	17.1	17.1	17.1	17.1	17.1
87.5°	9.9	9.9	9.9	9.8	9.8	9.7	9.6	9.6
90°	16.4	16.9	17.5	17.9	18.2	18.4	18.7	19.0
92.5°	18.0	18.9	19.8	20.3	20.5	20.7	20.8	21.0
95°	21.6	22.6	23.6	24.1	24.1	24.1	24.1	24.1
97.5°	22.6	23.8	24.9	25.6	25.7	25.8	26.0	26.1
100°	23.2	24.3	25.4	26.1	26.2	26.3	26.4	26.6
102.5°	34.7	31.3	27.7	26.1	26.3	26.6	26.9	27.1
105°	88.9	64.0	39.1	26.8	27.0	27.3	27.6	27.9
107.5°	217.7	199.5	181.2	162.7	143.9	125.1	106.3	87.6
110°	276.5	271.8	267.2	254.8	234.6	214.5	194.3	174.3





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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	317.9	318.0	318.1	315.9	311.7	307.5	303.2	298.9
115°	366.5	367.9	369.3	370.3	370.8	371.4	372.0	372.6
117.5°	410.5	411.6	412.8	413.4	413.5	413.6	413.7	413.9
120°	439.5	440.6	441.7	442.2	442.2	442.2	442.2	442.2
122.5°	467.6	468.4	469.2	469.7	469.8	469.8	470.0	470.1
125°	507.4	507.7	508.0	508.2	508.6	508.9	509.1	509.4
127.5°	547.3	547.8	548.2	548.3	548.0	547.7	547.4	547.2
130°	571.4	571.9	572.5	572.7	572.3	572.0	571.8	571.4
132.5°	594.2	594.7	595.3	595.4	595.0	594.6	594.2	593.7
135°	628.7	629.1	629.6	629.6	629.1	628.7	628.3	627.8
137.5°	659.5	660.2	660.9	661.1	660.8	660.5	660.2	660.0
140°	679.1	679.6	680.2	680.4	680.0	679.8	679.5	679.2
142.5°	697.6	698.0	698.4	698.5	698.1	697.8	697.3	696.9
145°	723.5	723.8	724.0	724.2	724.2	724.2	724.2	724.2
147.5°	746.7	746.9	747.3	747.0	746.4	745.7	745.1	744.4
150°	760.9	761.1	761.4	761.4	761.0	760.5	760.1	759.7
152.5°	773.4	774.0	774.5	774.4	773.8	773.1	772.5	771.8
155°	790.8	791.5	792.3	792.2	791.3	790.5	789.6	788.8
157.5°	806.0	806.8	807.6	807.5	806.4	805.3	804.3	803.1
160°	814.6	815.5	816.2	816.2	815.2	814.2	813.2	812.3
162.5°	822.4	823.4	824.3	824.3	823.5	822.6	821.7	820.9
165°	832.8	834.0	835.1	835.2	834.2	833.2	832.2	831.2
167.5°	840.9	842.1	843.3	843.3	842.1	840.9	839.8	838.7
170°	845.5	846.7	847.8	847.8	846.7	845.5	844.4	843.3
172.5°	848.6	849.7	850.8	850.8	849.5	848.3	847.1	845.8
175°	852.2	853.3	854.2	854.1	853.0	851.9	850.8	849.6
177.5°	853.6	854.5	855.4	855.2	854.1	853.0	851.9	850.8
180°	852.8	852.8	852.8	852.8	852.8	852.8	852.8	852.8

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