

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: P332286-830

Luminaire Tested: **S123RDIP-S560D805U830-4F0-1E-UDD-F1**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332286-830
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-9,
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S123RDIP-S560D805U830-4F0-1E-UDD-F1
Description: DEFINE 3 DIRECT-INDIRECT PENDANT LED LUMINAIRE
DOWNLIGHT 560 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER, REGRESSED
HOUSING
UPLIGHT 805 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4613.0 lumens
Efficiency: N/A
Efficacy: 120.1 lumens/watt
Spacing Criteria (0/90/45): 1.21 / 1.06 / 1.22
Luminous Opening: Rectangular (W 0.25' x L: 4' x H: 0')
CIE Type: General Diffuse

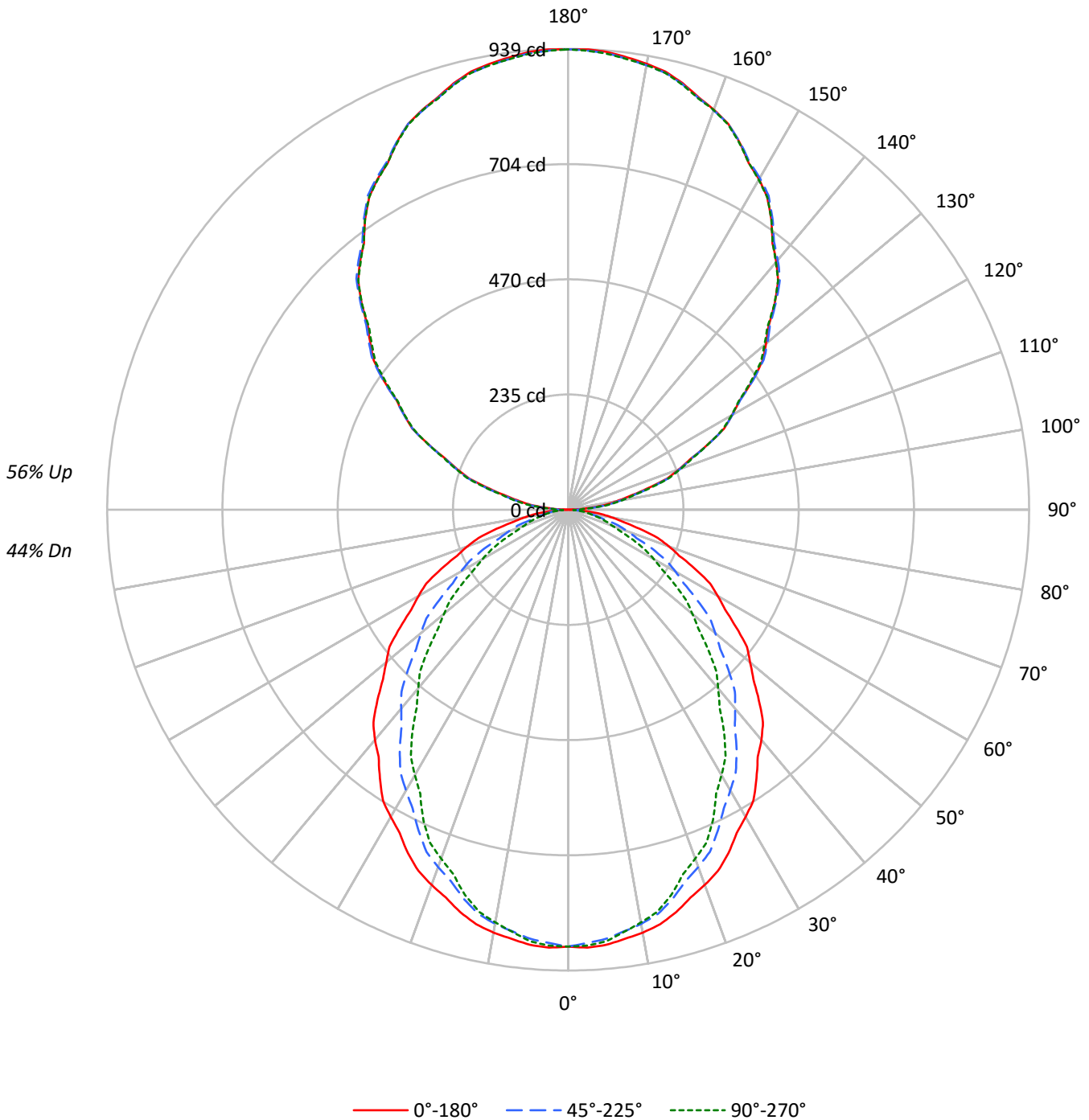
Input Watts (W): 38.4
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	106	106	106	106	97	97	97	97	80	80	80	64	64	64	50	50	50	44
1	97	92	89	85	88	85	82	79	70	68	66	57	56	54	45	44	43	37
2	88	81	75	70	80	74	69	65	62	58	55	50	48	46	40	38	37	32
3	81	71	64	59	74	66	60	55	55	50	47	45	42	39	36	33	31	27
4	74	63	56	50	67	58	52	46	49	44	40	40	36	34	32	29	27	24
5	68	57	49	43	62	52	45	40	44	39	35	36	32	29	29	26	24	21
6	63	51	43	37	57	47	40	35	40	34	30	33	29	26	26	23	21	18
7	58	46	38	33	53	42	36	31	36	31	27	30	26	23	24	21	19	16
8	54	42	34	29	49	39	32	27	33	27	24	27	23	20	22	19	17	15
9	50	38	31	26	46	35	29	24	30	25	21	25	21	18	20	18	15	13
10	47	35	28	23	43	32	26	22	28	23	19	23	19	17	19	16	14	12

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	9582	9582	9582
5°	9619	9487	9541
10°	9565	9368	9335
15°	9461	9149	9052
20°	9321	8874	8668
25°	9175	8567	8291
30°	8983	8211	7762
35°	8784	7857	7276
40°	8604	7436	6674
45°	8363	7024	6132
50°	8100	6553	5526
55°	7833	6016	4960
60°	7584	5440	4336
65°	7264	4819	3713
70°	6861	4047	2999
75°	6276	3182	2824
80°	5597	2820	2591
85°	4730	2495	2322



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	83.6	1.8
10°-20°	232.6	5.0
20°-30°	334.9	7.3
30°-40°	377.3	8.2
40°-50°	360.9	7.8
50°-60°	295.6	6.4
60°-70°	199.4	4.3
70°-80°	100.3	2.2
80°-90°	29.3	0.6
90°-100°	61.1	1.3
100°-110°	182.9	4.0
110°-120°	311.1	6.7
120°-130°	409.2	8.9
130°-140°	460.0	10.0
140°-150°	452.1	9.8
150°-160°	380.6	8.3
160°-170°	253.4	5.5
170°-180°	88.7	1.9
0°-30°	651.1	14.1
0°-40°	1028.4	22.3
0°-60°	1684.8	36.5
0°-90°	2013.9	43.7
90°-120°	555.1	12.0
90°-150°	1876.4	40.7
90°-180°	2599.0	56.3
0°-180°	4613.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	890	890	890	890	890	
5°	890	886	878	884	883	84
15°	849	840	821	817	812	239
25°	772	754	721	706	698	355
35°	668	642	598	568	554	418
45°	549	516	461	422	403	424
55°	417	380	321	280	264	374
65°	285	245	189	155	146	282
75°	151	116	76	70	68	161
85°	38	23	20	19	19	43
90°	1	8	18	21	22	5
95°	44	49	55	57	58	49
105°	166	168	174	174	175	178
115°	313	315	314	315	314	310
125°	458	460	459	456	453	409
135°	595	599	598	596	594	458
145°	721	723	725	724	721	450
155°	826	826	827	829	825	380
165°	900	898	898	901	897	254
175°	936	933	933	937	932	89
180°	938	938	938	938	938	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	890.2	890.2	890.2	890.2	890.2	890.2	890.2	890.2	890.2	890.2	890.2
2.5°	893.2	892.6	892.1	891.6	891.1	890.0	888.5	886.9	885.4	883.9	885.3
5°	890.2	889.5	888.6	887.9	887.0	885.7	883.7	881.8	879.9	878.0	879.4
7.5°	882.0	881.2	880.2	879.4	878.5	876.8	874.4	871.9	869.3	866.9	867.6
10°	875.1	873.9	872.8	871.7	870.6	868.6	865.7	862.8	859.9	857.1	857.1
12.5°	865.3	864.0	862.7	861.5	860.3	857.9	854.3	850.8	847.3	843.8	843.7
15°	849.0	847.3	845.6	843.8	842.1	838.9	834.4	829.9	825.4	821.0	820.1
17.5°	828.7	826.7	824.6	822.6	820.5	816.6	810.9	805.2	799.5	793.8	792.1
20°	813.7	811.2	808.6	806.0	803.4	799.1	793.0	786.9	780.8	774.7	772.6
22.5°	796.9	794.0	791.1	788.1	785.1	780.4	773.9	767.4	761.0	754.5	751.9
25°	772.5	768.5	764.5	760.5	756.5	750.8	743.4	736.0	728.7	721.3	717.9
27.5°	742.9	738.5	734.1	729.6	725.2	718.9	710.7	702.5	694.3	686.1	681.4
30°	722.7	717.9	713.1	708.3	703.5	696.5	687.6	678.6	669.6	660.6	655.2
32.5°	702.5	697.1	691.6	686.2	680.7	673.3	663.7	654.2	644.7	635.2	629.2
35°	668.5	662.8	657.0	651.3	645.5	637.6	627.6	617.7	607.8	597.9	590.9
37.5°	634.2	627.8	621.4	614.9	608.5	600.0	589.4	578.8	568.2	557.5	549.7
40°	612.3	605.2	598.1	591.1	584.0	574.8	563.5	552.0	540.6	529.2	520.8
42.5°	587.4	580.3	573.3	566.3	559.2	549.8	538.0	526.2	514.4	502.7	493.5
45°	549.4	542.2	535.0	527.8	520.6	510.8	498.4	486.1	473.7	461.4	452.2
47.5°	511.4	503.5	495.6	487.7	479.8	469.7	457.2	444.9	432.5	420.2	410.3
50°	483.7	476.2	468.6	461.1	453.6	443.3	430.3	417.4	404.4	391.3	381.4
52.5°	458.9	450.7	442.5	434.3	426.2	415.7	402.7	389.9	377.0	364.2	353.8
55°	417.4	409.4	401.6	393.7	385.9	375.1	361.5	347.9	334.2	320.6	311.2
57.5°	378.9	370.3	361.7	353.2	344.6	333.5	319.8	306.1	292.4	278.7	269.9
60°	352.3	343.6	334.7	325.8	317.1	305.9	292.7	279.4	266.0	252.7	244.0
62.5°	325.7	317.0	308.1	299.3	290.5	279.4	266.1	252.8	239.4	226.1	218.0
65°	285.2	276.4	267.6	258.7	249.9	239.2	226.7	214.2	201.7	189.2	181.3
67.5°	244.6	235.7	226.8	217.8	209.0	198.5	186.4	174.5	162.5	150.4	144.6
70°	218.0	209.3	200.8	192.1	183.4	173.4	162.2	151.0	139.8	128.6	122.9
72.5°	191.4	182.9	174.4	165.9	157.3	148.0	137.8	127.5	117.3	107.2	102.5
75°	150.9	143.2	135.5	127.8	120.1	111.8	103.0	94.2	85.4	76.5	74.9
77.5°	114.0	107.0	100.0	93.0	86.1	79.7	74.1	68.4	62.7	57.0	56.2
80°	90.3	83.7	77.1	70.5	63.9	59.0	55.6	52.2	48.8	45.5	45.0
82.5°	67.8	62.0	56.4	50.7	45.0	41.4	39.8	38.3	36.7	35.1	34.6
85°	38.3	34.8	31.2	27.7	24.1	22.1	21.7	21.2	20.7	20.2	19.9
87.5°	14.0	12.9	11.9	10.7	9.7	9.3	9.8	10.2	10.7	11.0	11.0
90°	0.8	2.4	4.1	5.7	7.3	9.1	11.3	13.4	15.6	17.7	18.4
92.5°	17.8	18.9	20.1	21.2	22.2	23.5	24.7	25.9	27.1	28.3	28.8
95°	43.5	44.6	45.8	46.9	48.1	49.3	50.6	51.9	53.3	54.6	55.2
97.5°	77.2	78.0	78.9	79.7	80.7	81.5	82.5	83.4	84.4	85.3	86.1
100°	100.2	101.2	102.2	103.2	104.2	105.1	105.8	106.7	107.5	108.3	108.9
102.5°	126.8	127.3	127.9	128.6	129.1	130.0	131.0	132.1	133.2	134.3	134.8
105°	165.8	166.2	166.5	166.8	167.1	168.1	169.5	171.0	172.5	173.9	173.9
107.5°	211.2	211.4	211.6	211.8	212.0	212.4	213.0	213.6	214.1	214.7	215.3
110°	239.5	239.8	240.2	240.4	240.8	241.1	241.5	241.8	242.1	242.4	243.1



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	269.0	269.2	269.4	269.6	269.8	269.8	269.9	270.0	270.1	270.1	271.0
115°	313.2	313.7	314.1	314.6	315.2	315.3	314.9	314.6	314.2	314.0	314.1
117.5°	357.7	358.1	358.4	358.6	359.0	358.9	358.5	358.1	357.7	357.2	357.2
120°	385.4	386.3	387.4	388.3	389.4	389.5	388.6	387.8	387.0	386.2	386.0
122.5°	414.3	415.0	415.8	416.4	417.2	417.4	416.9	416.5	416.0	415.7	415.2
125°	458.4	458.8	459.3	459.9	460.3	460.4	460.1	459.8	459.4	459.1	458.5
127.5°	499.1	500.1	501.1	502.2	503.2	503.6	503.2	502.8	502.5	502.1	501.2
130°	526.1	527.4	528.8	530.1	531.4	531.8	531.3	530.8	530.4	529.8	529.1
132.5°	553.3	554.6	555.9	557.2	558.6	559.0	558.6	558.3	557.9	557.5	556.8
135°	594.7	595.7	596.6	597.7	598.6	599.1	598.9	598.7	598.5	598.4	597.8
137.5°	633.0	633.9	634.6	635.5	636.3	636.9	637.3	637.7	638.2	638.6	637.9
140°	659.5	660.3	661.2	662.0	662.8	663.3	663.5	663.6	663.8	663.9	663.8
142.5°	683.7	684.6	685.3	686.2	687.0	687.6	687.9	688.2	688.4	688.7	688.5
145°	721.4	721.8	722.1	722.5	722.7	723.1	723.7	724.2	724.6	725.1	725.0
147.5°	754.5	755.1	755.6	756.2	756.9	757.3	757.8	758.3	758.7	759.2	759.2
150°	777.4	777.8	778.1	778.4	778.7	779.1	779.4	779.8	780.0	780.4	780.4
152.5°	796.4	796.7	797.2	797.7	798.1	798.5	798.7	798.9	799.1	799.3	799.6
155°	826.0	826.0	826.0	826.0	826.0	826.1	826.3	826.5	826.7	826.8	827.5
157.5°	851.4	851.2	851.0	850.8	850.6	850.6	850.7	850.9	851.0	851.1	851.9
160°	867.3	867.0	866.7	866.4	866.0	865.9	865.9	865.9	865.9	865.9	866.7
162.5°	881.5	881.1	880.6	880.1	879.7	879.5	879.7	879.8	879.9	880.1	880.8
165°	899.8	899.3	898.8	898.3	897.8	897.6	897.6	897.6	897.6	897.6	898.5
167.5°	914.4	913.7	913.0	912.4	911.7	911.5	911.6	911.7	911.9	912.0	913.0
170°	922.7	922.0	921.3	920.7	920.0	919.6	919.6	919.6	919.6	919.6	920.9
172.5°	929.1	928.5	927.8	927.2	926.5	926.1	926.1	926.1	926.1	926.1	927.2
175°	935.9	935.2	934.6	934.0	933.3	932.9	932.9	932.9	932.9	932.9	934.0
177.5°	938.7	938.2	937.6	937.1	936.6	936.3	936.3	936.3	936.3	936.3	937.1
180°	938.1	938.1	938.1	938.1	938.1	938.1	938.1	938.1	938.1	938.1	938.1



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	890.2	890.2	890.2	890.2	890.2	890.2	890.2	890.2
2.5°	886.7	888.2	889.6	890.1	889.9	889.6	889.4	889.1
5°	880.8	882.3	883.7	884.3	884.0	883.6	883.4	883.0
7.5°	868.5	869.2	870.1	870.2	869.6	869.1	868.6	868.0
10°	857.3	857.5	857.6	857.3	856.6	855.7	855.0	854.1
12.5°	843.6	843.5	843.4	842.8	841.9	840.9	840.1	839.1
15°	819.4	818.5	817.7	816.7	815.6	814.5	813.4	812.3
17.5°	790.4	788.7	786.9	785.3	783.6	781.9	780.2	778.6
20°	770.5	768.5	766.4	764.4	762.4	760.5	758.6	756.7
22.5°	749.3	746.7	744.1	741.9	740.1	738.3	736.5	734.7
25°	714.5	711.1	707.8	705.2	703.5	701.7	699.9	698.1
27.5°	676.7	672.0	667.3	663.6	660.9	658.3	655.5	652.8
30°	649.7	644.2	638.9	634.8	632.3	629.7	627.1	624.5
32.5°	623.3	617.3	611.3	607.0	604.4	601.6	598.9	596.3
35°	584.0	577.1	570.2	565.3	562.4	559.6	556.7	553.7
37.5°	541.9	534.0	526.2	520.6	517.0	513.4	509.8	506.2
40°	512.6	504.2	495.9	489.8	486.2	482.5	478.8	475.0
42.5°	484.5	475.3	466.2	460.0	456.7	453.4	450.1	446.8
45°	443.1	433.9	424.8	418.3	414.4	410.6	406.7	402.8
47.5°	400.3	390.4	380.4	373.7	370.3	366.8	363.4	360.0
50°	371.5	361.5	351.6	344.7	341.0	337.3	333.7	330.0
52.5°	343.6	333.2	322.8	316.0	312.7	309.4	306.1	302.8
55°	302.0	292.7	283.3	277.1	273.9	270.7	267.5	264.3
57.5°	261.1	252.3	243.6	237.8	235.1	232.3	229.6	226.9
60°	235.4	226.7	218.0	212.4	209.6	206.9	204.2	201.4
62.5°	209.8	201.7	193.5	188.0	185.2	182.3	179.5	176.6
65°	173.4	165.6	157.7	152.9	151.2	149.4	147.6	145.8
67.5°	138.7	132.8	127.0	123.1	121.2	119.3	117.4	115.6
70°	117.3	111.7	106.0	102.4	100.6	98.9	97.1	95.3
72.5°	97.9	93.4	88.8	86.1	85.4	84.6	83.9	83.1
75°	73.3	71.7	70.1	69.2	68.8	68.5	68.1	67.9
77.5°	55.3	54.5	53.5	53.0	52.7	52.3	52.0	51.7
80°	44.5	44.0	43.5	43.2	42.9	42.5	42.2	41.8
82.5°	34.1	33.6	33.2	32.9	32.8	32.8	32.7	32.6
85°	19.6	19.2	18.9	18.8	18.8	18.8	18.8	18.8
87.5°	11.0	11.0	11.0	11.0	10.9	10.9	10.8	10.7
90°	19.0	19.6	20.3	20.8	21.1	21.5	21.8	22.1
92.5°	29.3	29.9	30.3	30.5	30.3	30.2	30.0	29.8
95°	55.8	56.5	57.1	57.5	57.5	57.5	57.5	57.5
97.5°	86.8	87.6	88.3	88.7	88.6	88.6	88.5	88.4
100°	109.3	109.8	110.3	110.7	111.0	111.3	111.7	112.0
102.5°	135.3	135.7	136.2	136.5	136.4	136.3	136.3	136.2
105°	173.9	173.9	173.9	174.1	174.4	174.7	175.0	175.4
107.5°	215.7	216.3	216.9	217.0	216.8	216.6	216.4	216.2
110°	243.7	244.4	245.1	245.2	244.9	244.6	244.2	243.9



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	271.7	272.5	273.3	273.6	273.6	273.5	273.4	273.4
115°	314.2	314.4	314.6	314.6	314.4	314.2	314.1	314.0
117.5°	357.2	357.1	357.1	356.8	356.5	356.0	355.5	355.1
120°	385.8	385.7	385.5	385.2	384.9	384.6	384.3	383.9
122.5°	414.8	414.3	414.0	413.5	413.0	412.6	412.1	411.6
125°	457.8	457.1	456.5	455.8	455.2	454.5	453.8	453.2
127.5°	500.3	499.4	498.5	497.7	496.9	496.2	495.4	494.6
130°	528.6	527.9	527.3	526.3	525.2	524.1	522.9	521.7
132.5°	556.0	555.2	554.4	553.6	552.7	551.8	550.9	550.1
135°	597.1	596.4	595.8	595.3	594.9	594.7	594.3	594.0
137.5°	637.3	636.6	635.8	635.2	634.6	634.0	633.4	632.7
140°	663.6	663.5	663.3	662.7	661.5	660.3	659.2	658.1
142.5°	688.4	688.2	688.1	687.6	686.6	685.8	684.9	684.0
145°	724.8	724.6	724.4	724.1	723.4	722.7	722.1	721.4
147.5°	759.2	759.2	759.2	758.7	757.7	756.7	755.7	754.8
150°	780.4	780.4	780.4	780.0	778.9	778.0	776.9	776.0
152.5°	799.7	800.0	800.3	800.0	799.2	798.3	797.5	796.6
155°	828.1	828.8	829.4	829.2	828.0	826.9	825.8	824.6
157.5°	852.5	853.2	853.8	853.8	852.9	852.0	851.0	850.1
160°	867.5	868.4	869.1	869.2	868.6	867.9	867.2	866.6
162.5°	881.7	882.5	883.4	883.2	882.1	881.1	880.1	879.0
165°	899.6	900.5	901.5	901.4	900.3	899.1	898.0	896.8
167.5°	914.1	915.0	916.1	916.1	915.0	914.1	913.0	912.0
170°	922.0	923.1	924.3	924.3	923.1	922.0	920.9	919.6
172.5°	928.2	929.3	930.2	930.2	929.0	927.8	926.7	925.6
175°	934.9	935.9	936.9	936.8	935.7	934.5	933.3	932.2
177.5°	937.9	938.7	939.4	939.4	938.5	937.5	936.7	935.8
180°	938.1	938.1	938.1	938.1	938.1	938.1	938.1	938.1

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