

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: P332124-840

Luminaire Tested: **S123DIW-S560D460U840-4F0-1E-UDD-F**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332124-840
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: S123DIW-S560D460U840-4F0-1E-UDD-F
Description: DEFINE 3 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 560 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
UPLIGHT 460 LUMENS PER FOOT, NO LENS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4205.1 lumens
Efficiency: N/A
Efficacy: 139.2 lumens/watt
Spacing Criteria (0/90/45): 1.21 / 1.18 / 1.31
Luminous Opening: Rectangular (W 0.25' x L: 4' x H: 0')
CIE Type: General Diffuse

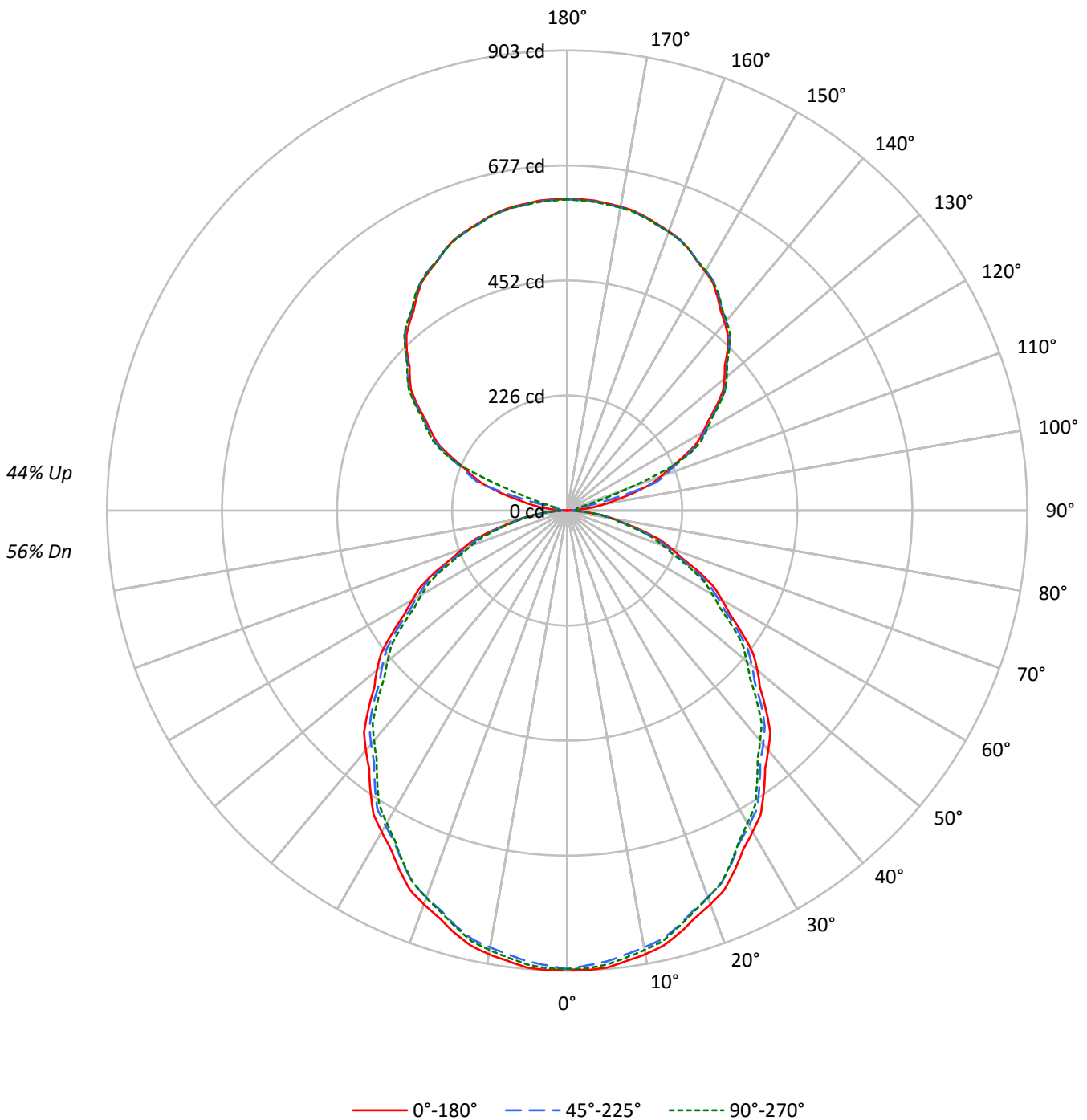
Input Watts (W): 30.2
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	109	109	109	109	101	101	101	101	87	87	87	73	73	73	61	61	61	56
1	99	95	91	87	92	88	85	82	76	73	71	65	63	61	54	53	52	47
2	90	83	76	71	83	77	71	67	66	62	59	57	54	51	48	45	43	39
3	82	73	65	59	76	68	61	56	59	53	49	50	46	43	42	39	37	33
4	75	64	56	50	70	60	53	47	52	46	42	45	40	37	38	34	32	28
5	69	57	49	43	64	54	46	41	47	41	36	40	35	32	34	30	28	25
6	64	51	43	37	59	48	41	35	42	36	32	36	32	28	31	27	24	22
7	59	46	38	33	55	44	36	31	38	32	28	33	28	25	28	24	22	19
8	55	42	34	29	51	40	32	28	35	29	25	30	25	22	26	22	19	17
9	51	39	31	26	47	36	29	25	32	26	22	28	23	20	24	20	18	15
10	48	35	28	23	44	33	27	22	29	24	20	26	21	18	22	19	16	14

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	9684	9684	9684
5°	9729	9596	9662
10°	9664	9512	9571
15°	9551	9404	9423
20°	9419	9251	9260
25°	9242	9069	9049
30°	9047	8866	8797
35°	8843	8650	8539
40°	8630	8413	8283
45°	8397	8196	7995
50°	8162	7927	7708
55°	7854	7651	7418
60°	7543	7326	7093
65°	7272	6976	6757
70°	6864	6571	6279
75°	6276	6047	5793
80°	5659	5424	5368
85°	4965	4780	4594



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	84.7	2.0
10°-20°	239.3	5.7
20°-30°	353.5	8.4
30°-40°	412.9	9.8
40°-50°	415.1	9.9
50°-60°	364.6	8.7
60°-70°	271.7	6.5
70°-80°	154.8	3.7
80°-90°	46.2	1.1
90°-100°	22.2	0.5
100°-110°	105.8	2.5
110°-120°	254.2	6.0
120°-130°	323.7	7.7
130°-140°	345.8	8.2
140°-150°	323.4	7.7
150°-160°	260.8	6.2
160°-170°	168.4	4.0
170°-180°	58.0	1.4
0°-30°	677.5	16.1
0°-40°	1090.4	25.9
0°-60°	1870.2	44.5
0°-90°	2342.8	55.7
90°-120°	382.2	9.1
90°-150°	1375.1	32.7
90°-180°	1862.0	44.3
0°-180°	4205.1	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	900	900	900	900	900	
5°	900	896	888	895	894	85
15°	857	854	844	850	846	242
25°	778	773	764	764	762	358
35°	673	668	658	654	650	421
45°	552	548	538	529	525	426
55°	418	417	408	399	395	375
65°	286	281	274	268	265	282
75°	151	148	145	142	139	161
85°	40	39	39	37	37	44
90°	0	5	11	13	14	3
95°	28	10	14	17	17	34
105°	135	138	99	24	20	143
115°	254	256	260	265	267	250
125°	358	361	363	364	365	319
135°	445	448	450	451	450	343
145°	514	517	518	519	519	321
155°	566	565	565	567	565	261
165°	597	595	595	598	595	169
175°	611	608	609	612	608	58
180°	611	611	611	611	611	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	899.7	899.7	899.7	899.7	899.7	899.7	899.7	899.7	899.7	899.7	899.7
2.5°	902.7	902.2	901.7	901.1	900.6	899.5	898.0	896.5	895.0	893.5	894.8
5°	900.4	899.6	898.7	897.9	897.0	895.6	893.7	891.8	890.0	888.1	889.8
7.5°	891.6	890.8	889.9	889.1	888.2	886.8	884.8	882.8	880.9	879.0	880.5
10°	884.2	883.3	882.5	881.6	880.8	879.2	877.0	874.7	872.5	870.3	871.8
12.5°	874.3	873.5	872.8	872.1	871.4	870.0	867.9	865.8	863.7	861.6	862.7
15°	857.1	856.5	855.8	855.1	854.3	852.9	850.7	848.5	846.2	843.9	845.4
17.5°	837.2	836.3	835.4	834.5	833.5	832.0	829.8	827.6	825.4	823.0	824.0
20°	822.3	821.3	820.2	819.2	818.2	816.6	814.4	812.1	809.8	807.6	808.3
22.5°	805.6	804.6	803.5	802.5	801.4	799.8	797.6	795.4	793.1	790.9	791.4
25°	778.2	777.2	776.2	775.2	774.1	772.4	770.2	768.0	765.8	763.6	763.7
27.5°	749.0	748.0	747.0	746.0	745.0	743.3	740.8	738.5	736.1	733.7	733.8
30°	727.9	727.1	726.2	725.4	724.5	722.9	720.4	718.0	715.7	713.3	713.3
32.5°	706.9	705.8	704.6	703.5	702.4	700.8	699.0	697.1	695.3	693.5	692.5
35°	673.0	672.0	671.0	669.9	668.9	667.2	665.0	662.8	660.6	658.3	657.3
37.5°	638.3	637.0	635.7	634.4	633.1	631.4	629.0	626.8	624.5	622.3	621.1
40°	614.2	613.2	612.2	611.2	610.1	608.3	605.9	603.6	601.2	598.7	597.3
42.5°	590.1	589.0	587.7	586.5	585.4	583.6	581.2	578.9	576.4	574.0	572.6
45°	551.6	550.9	550.2	549.5	548.8	547.3	545.1	542.9	540.7	538.4	536.3
47.5°	513.3	512.3	511.4	510.4	509.4	507.8	505.7	503.6	501.5	499.4	497.4
50°	487.4	486.5	485.6	484.7	483.9	482.4	480.1	477.9	475.6	473.4	471.5
52.5°	460.1	459.5	459.0	458.4	457.8	456.3	453.9	451.6	449.2	446.9	445.2
55°	418.5	418.3	418.2	418.0	417.8	416.6	414.3	412.1	409.9	407.7	405.8
57.5°	378.9	378.3	377.7	377.2	376.6	375.4	373.5	371.8	370.0	368.2	366.6
60°	350.4	350.2	350.1	349.9	349.7	348.6	346.6	344.5	342.4	340.3	338.8
62.5°	325.1	324.6	324.2	323.8	323.3	322.0	319.9	317.9	315.8	313.8	312.3
65°	285.5	284.6	283.8	282.9	282.1	280.7	279.0	277.3	275.6	273.9	272.5
67.5°	243.5	242.8	242.0	241.3	240.4	239.4	238.1	236.8	235.5	234.3	233.1
70°	218.1	217.1	216.1	215.1	214.0	213.0	212.0	211.0	209.8	208.8	207.6
72.5°	191.6	190.8	190.1	189.2	188.5	187.5	186.4	185.2	184.0	182.9	181.8
75°	150.9	150.2	149.5	148.8	148.1	147.5	146.9	146.4	145.9	145.4	144.6
77.5°	114.8	114.4	114.0	113.7	113.3	112.8	112.2	111.6	110.9	110.3	109.8
80°	91.3	90.8	90.3	89.8	89.2	88.8	88.5	88.1	87.8	87.5	87.3
82.5°	68.4	68.3	68.2	68.1	68.0	67.9	67.9	67.8	67.7	67.7	67.3
85°	40.2	39.9	39.6	39.2	38.9	38.7	38.7	38.7	38.7	38.7	38.4
87.5°	16.2	16.0	15.8	15.6	15.3	15.2	15.5	15.6	15.7	15.8	15.8
90°	0.4	1.4	2.4	3.4	4.4	5.7	7.0	8.3	9.6	10.9	11.3
92.5°	8.5	8.2	7.9	7.6	7.3	7.7	8.7	9.6	10.6	11.6	12.2
95°	27.7	23.5	19.4	15.2	11.1	9.6	10.7	11.8	12.9	14.0	14.7
97.5°	55.6	53.7	51.9	50.1	48.2	43.6	36.4	29.1	21.9	14.6	15.5
100°	76.6	78.7	80.7	82.7	84.7	77.9	62.2	46.5	30.7	14.9	15.8
102.5°	100.6	102.1	103.5	105.0	106.4	98.6	81.4	64.2	47.1	29.9	27.4
105°	135.2	136.3	137.4	138.6	139.7	135.6	126.5	117.5	108.5	99.4	81.5
107.5°	171.7	172.6	173.5	174.3	175.2	176.4	177.8	179.3	180.7	182.1	169.1
110°	196.0	196.8	197.6	198.4	199.2	200.2	201.3	202.4	203.5	204.6	201.3



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	219.2	219.9	220.7	221.4	222.2	223.1	224.2	225.3	226.4	227.5	227.5
115°	253.6	254.2	254.8	255.4	256.0	256.8	257.7	258.6	259.5	260.4	261.5
117.5°	286.9	287.7	288.4	289.1	289.9	290.5	290.9	291.4	292.0	292.4	293.2
120°	307.6	308.5	309.4	310.3	311.2	311.8	312.1	312.5	312.8	313.1	313.9
122.5°	328.7	329.4	330.1	330.9	331.6	332.2	332.6	333.0	333.4	333.8	334.3
125°	357.5	358.3	359.1	359.9	360.7	361.3	361.7	362.1	362.5	362.9	363.1
127.5°	385.5	386.3	387.1	387.9	388.7	389.3	389.8	390.3	390.8	391.3	391.6
130°	402.9	403.7	404.6	405.4	406.2	406.8	407.2	407.6	408.0	408.3	408.7
132.5°	419.6	420.4	421.2	422.0	422.8	423.3	423.7	424.0	424.3	424.6	425.1
135°	445.0	445.7	446.3	446.9	447.5	448.0	448.4	448.8	449.2	449.6	449.9
137.5°	466.9	467.7	468.4	469.2	469.9	470.4	470.7	470.9	471.1	471.3	471.8
140°	481.4	482.0	482.6	483.2	483.8	484.2	484.5	484.8	485.1	485.4	485.8
142.5°	494.8	495.4	496.0	496.7	497.3	497.7	498.0	498.3	498.6	498.9	499.2
145°	513.6	514.3	515.0	515.7	516.4	516.8	517.1	517.3	517.5	517.7	517.9
147.5°	531.3	531.8	532.2	532.7	533.1	533.5	533.7	533.9	534.1	534.3	534.5
150°	542.2	542.5	542.8	543.1	543.4	543.6	543.8	544.0	544.2	544.4	544.6
152.5°	552.0	552.1	552.3	552.4	552.6	552.7	552.8	552.9	553.0	553.2	553.5
155°	565.7	565.5	565.3	565.2	565.0	564.9	565.0	565.1	565.2	565.3	565.8
157.5°	576.5	576.4	576.4	576.4	576.4	576.3	576.2	576.1	576.0	575.9	576.5
160°	583.0	582.9	582.8	582.7	582.6	582.5	582.4	582.3	582.2	582.1	582.7
162.5°	589.2	589.0	588.7	588.4	588.1	587.9	587.8	587.7	587.6	587.5	588.2
165°	596.6	596.3	596.0	595.7	595.4	595.2	595.1	595.0	594.9	594.8	595.6
167.5°	602.5	602.1	601.7	601.3	600.9	600.7	600.7	600.7	600.7	600.7	601.5
170°	605.7	605.3	604.9	604.5	604.1	603.9	603.9	603.9	603.9	603.9	604.7
172.5°	607.8	607.4	606.9	606.4	605.9	605.7	605.8	605.9	606.0	606.0	606.8
175°	610.7	610.2	609.7	609.2	608.6	608.4	608.5	608.6	608.7	608.8	609.6
177.5°	611.4	611.0	610.6	610.2	609.8	609.7	609.8	609.8	609.9	610.0	610.6
180°	610.7	610.7	610.7	610.7	610.7	610.7	610.7	610.7	610.7	610.7	610.7



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	899.7	899.7	899.7	899.7	899.7	899.7	899.7	899.7
2.5°	896.3	897.6	899.0	899.6	899.5	899.3	899.2	899.1
5°	891.5	893.2	894.9	895.6	895.2	894.9	894.6	894.2
7.5°	882.0	883.5	885.1	885.8	885.6	885.3	885.1	884.9
10°	873.3	874.9	876.5	877.1	876.8	876.4	876.1	875.7
12.5°	863.8	865.1	866.2	866.6	866.4	866.2	866.0	865.8
15°	846.8	848.1	849.5	849.6	848.6	847.6	846.6	845.6
17.5°	825.1	826.0	827.0	827.2	826.9	826.5	826.1	825.7
20°	809.0	809.7	810.3	810.4	809.9	809.4	808.9	808.4
22.5°	792.0	792.5	793.1	793.0	792.4	791.7	791.1	790.4
25°	763.9	764.1	764.2	764.1	763.6	763.1	762.4	761.9
27.5°	734.0	734.1	734.2	734.0	733.3	732.7	732.0	731.3
30°	713.3	713.3	713.3	712.7	711.4	710.2	709.0	707.8
32.5°	691.6	690.5	689.5	688.7	688.1	687.5	686.8	686.2
35°	656.2	655.2	654.2	653.3	652.4	651.6	650.7	649.8
37.5°	619.8	618.5	617.3	616.4	615.9	615.3	614.8	614.2
40°	596.0	594.6	593.3	592.2	591.5	590.9	590.2	589.5
42.5°	571.3	569.9	568.5	567.4	566.7	566.1	565.4	564.7
45°	534.3	532.2	530.2	528.7	527.9	526.9	526.1	525.2
47.5°	495.3	493.3	491.3	489.9	489.2	488.4	487.7	486.9
50°	469.7	467.8	465.9	464.4	463.3	462.3	461.3	460.3
52.5°	443.6	442.0	440.4	439.0	438.0	437.0	436.0	434.9
55°	403.8	402.0	400.1	398.7	397.9	397.0	396.2	395.3
57.5°	364.9	363.1	361.5	360.1	359.1	358.2	357.2	356.2
60°	337.3	335.8	334.2	333.0	332.1	331.2	330.4	329.5
62.5°	310.6	309.1	307.6	306.5	305.9	305.4	304.8	304.2
65°	271.0	269.7	268.3	267.4	266.9	266.4	265.9	265.3
67.5°	231.9	230.7	229.4	228.4	227.7	227.0	226.3	225.6
70°	206.4	205.3	204.1	203.0	202.2	201.3	200.5	199.5
72.5°	180.8	179.7	178.6	177.8	177.4	176.9	176.5	176.0
75°	143.7	142.9	142.0	141.3	140.8	140.3	139.8	139.3
77.5°	109.2	108.6	108.0	107.7	107.7	107.7	107.7	107.7
80°	87.1	86.8	86.7	86.6	86.6	86.6	86.6	86.6
82.5°	67.0	66.7	66.3	66.1	66.0	65.8	65.7	65.6
85°	38.0	37.7	37.3	37.2	37.2	37.2	37.2	37.2
87.5°	15.7	15.7	15.6	15.6	15.6	15.7	15.7	15.8
90°	11.7	12.1	12.5	12.8	13.0	13.2	13.4	13.6
92.5°	12.9	13.5	14.2	14.5	14.7	14.8	14.9	15.0
95°	15.5	16.2	16.9	17.3	17.3	17.3	17.3	17.3
97.5°	16.3	17.1	17.9	18.3	18.4	18.5	18.6	18.7
100°	16.6	17.4	18.2	18.7	18.8	18.9	19.0	19.1
102.5°	24.8	22.3	19.9	18.7	18.9	19.1	19.2	19.4
105°	63.6	45.8	28.0	19.2	19.4	19.6	19.8	20.0
107.5°	155.9	142.9	129.8	116.5	103.0	89.6	76.1	62.7
110°	197.9	194.6	191.3	182.5	168.0	153.6	139.2	124.8



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	227.6	227.6	227.7	226.2	223.2	220.2	217.1	214.1
115°	262.5	263.5	264.5	265.2	265.6	266.0	266.4	266.8
117.5°	294.0	294.8	295.6	296.0	296.1	296.2	296.3	296.4
120°	314.7	315.5	316.3	316.7	316.7	316.7	316.7	316.7
122.5°	334.9	335.5	336.0	336.3	336.4	336.5	336.6	336.7
125°	363.3	363.6	363.8	364.0	364.2	364.4	364.6	364.8
127.5°	391.9	392.2	392.5	392.6	392.4	392.2	392.0	391.8
130°	409.1	409.5	409.9	410.0	409.8	409.6	409.4	409.2
132.5°	425.5	425.9	426.3	426.4	426.1	425.8	425.5	425.3
135°	450.2	450.5	450.8	450.8	450.5	450.2	449.9	449.6
137.5°	472.3	472.7	473.2	473.4	473.2	473.0	472.8	472.6
140°	486.3	486.7	487.1	487.2	487.0	486.8	486.6	486.4
142.5°	499.6	499.9	500.2	500.2	499.9	499.7	499.4	499.1
145°	518.1	518.3	518.5	518.6	518.6	518.6	518.6	518.6
147.5°	534.7	534.9	535.1	534.9	534.5	534.0	533.6	533.1
150°	544.8	545.0	545.2	545.2	544.9	544.6	544.3	544.0
152.5°	553.9	554.2	554.6	554.5	554.1	553.6	553.2	552.7
155°	566.3	566.8	567.3	567.2	566.6	566.0	565.4	564.9
157.5°	577.1	577.7	578.3	578.2	577.4	576.7	575.9	575.1
160°	583.3	583.9	584.5	584.5	583.8	583.1	582.4	581.7
162.5°	589.0	589.7	590.3	590.4	589.7	589.1	588.4	587.8
165°	596.4	597.2	598.0	598.0	597.3	596.7	596.0	595.3
167.5°	602.3	603.0	603.8	603.8	603.0	602.3	601.5	600.7
170°	605.5	606.3	607.1	607.1	606.3	605.5	604.7	603.9
172.5°	607.6	608.4	609.3	609.3	608.3	607.4	606.6	605.7
175°	610.3	611.0	611.7	611.7	610.9	610.1	609.3	608.4
177.5°	611.3	611.9	612.6	612.5	611.7	610.9	610.1	609.3
180°	610.7	610.7	610.7	610.7	610.7	610.7	610.7	610.7

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