

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: P332123-830

Luminaire Tested: **S123DIW-S560D460U830-4F0-1E-UDD-D1**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332123-830
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: S123DIW-S560D460U830-4F0-1E-UDD-D1
Description: DEFINE 3 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 560 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER
UPLIGHT 460 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3735.4 lumens
Efficiency: N/A
Efficacy: 123.7 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.26 / 1.37
Luminous Opening: Rectangular w/ Sides (W: 0.25' x L: 4' x H: 0.08')
CIE Type: General Diffuse

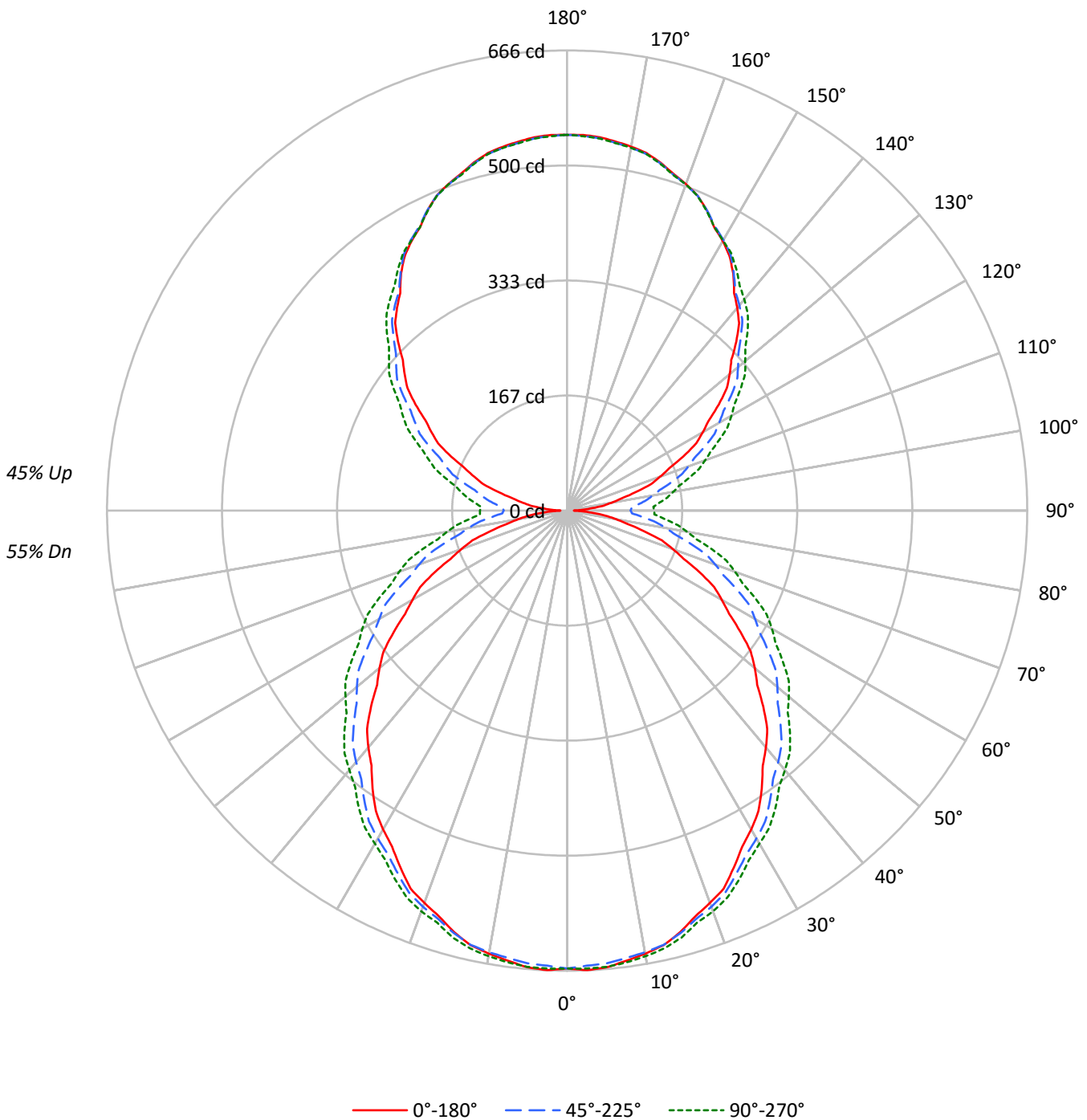
Input Watts (W): 30.2
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	108	108	108	108	100	100	100	100	86	86	86	73	73	73	60	60	60	55
1	98	93	88	85	90	86	82	79	74	71	68	62	60	58	52	50	49	44
2	88	80	74	68	82	75	69	64	64	59	56	54	51	48	45	42	40	36
3	80	70	62	56	74	65	58	53	56	51	46	47	43	40	39	36	34	30
4	73	62	54	47	68	58	50	44	50	44	39	42	37	34	35	32	29	25
5	67	55	47	40	62	51	44	38	44	38	34	38	33	29	31	28	25	22
6	62	49	41	35	57	46	38	33	40	34	29	34	29	25	28	25	22	19
7	57	45	36	30	53	42	34	29	36	30	26	31	26	22	26	22	19	17
8	53	40	32	27	49	38	31	25	33	27	23	28	23	20	24	20	17	15
9	49	37	29	24	46	35	27	23	30	24	20	26	21	18	22	18	15	13
10	46	34	26	21	43	32	25	20	28	22	18	24	19	16	20	17	14	12

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	7134	7134	7134
5°	7156	6954	6959
10°	7093	6795	6761
15°	7001	6612	6544
20°	6871	6405	6306
25°	6709	6166	6056
30°	6544	5951	5803
35°	6359	5723	5601
40°	6181	5515	5382
45°	5986	5318	5210
50°	5793	5121	5019
55°	5578	4919	4848
60°	5369	4716	4670
65°	5156	4499	4462
70°	4837	4254	4245
75°	4430	3973	4029
80°	3958	3698	3779
85°	3521	3508	3633



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	62.8	1.7
10°-20°	179.1	4.8
20°-30°	267.9	7.2
30°-40°	319.9	8.6
40°-50°	334.7	9.0
50°-60°	314.1	8.4
60°-70°	262.3	7.0
70°-80°	187.7	5.0
80°-90°	113.5	3.0
90°-100°	105.7	2.8
100°-110°	157.6	4.2
110°-120°	214.8	5.8
120°-130°	256.9	6.9
130°-140°	275.4	7.4
140°-150°	263.9	7.1
150°-160°	220.6	5.9
160°-170°	146.9	3.9
170°-180°	51.4	1.4
0°-30°	509.8	13.6
0°-40°	829.7	22.2
0°-60°	1478.6	39.6
0°-90°	2042.2	54.7
90°-120°	478.1	12.8
90°-150°	1274.3	34.1
90°-180°	1693.0	45.3
0°-180°	3735.4	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	663	663	663	663	663	
5°	664	662	658	663	663	63
15°	632	634	633	640	640	178
25°	570	577	580	589	589	263
35°	491	502	512	522	526	307
45°	401	419	437	450	456	310
55°	306	330	356	375	381	274
65°	212	240	272	292	300	209
75°	115	149	185	208	217	123
85°	35	72	110	133	142	37
90°	10	50	92	117	126	8
95°	33	65	103	126	134	35
105°	102	121	155	174	182	109
115°	185	196	220	237	243	183
125°	268	270	289	302	306	239
135°	346	348	356	366	370	267
145°	419	419	420	425	427	261
155°	479	479	479	481	478	220
165°	522	520	520	522	520	147
175°	542	541	541	543	540	52
180°	544	544	544	544	544	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	662.8	662.8	662.8	662.8	662.8	662.8	662.8	662.8	662.8	662.8	662.8
2.5°	665.7	665.3	665.0	664.5	664.1	663.5	662.4	661.4	660.3	659.3	660.3
5°	663.5	663.2	662.9	662.6	662.2	661.6	660.6	659.7	658.7	657.7	659.0
7.5°	657.0	657.0	657.1	657.2	657.3	656.9	655.9	655.0	654.0	653.1	654.7
10°	651.3	651.6	651.9	652.2	652.5	652.3	651.5	650.7	649.9	649.1	650.7
12.5°	644.3	644.8	645.3	645.6	646.1	646.1	645.5	645.0	644.4	643.9	645.4
15°	631.8	632.3	632.7	633.2	633.7	633.9	633.7	633.5	633.4	633.2	634.8
17.5°	615.9	616.8	617.8	618.8	619.7	620.2	620.1	620.0	620.0	619.9	621.3
20°	604.4	605.3	606.2	607.2	608.1	608.8	609.2	609.4	609.7	610.1	611.5
22.5°	592.2	593.1	594.1	595.1	596.1	596.7	597.2	597.7	598.1	598.5	600.4
25°	570.4	572.0	573.6	575.2	576.8	577.9	578.3	578.8	579.3	579.8	581.8
27.5°	548.5	550.3	552.1	553.9	555.7	557.1	558.2	559.2	560.2	561.3	563.1
30°	532.8	534.9	537.0	539.1	541.2	542.9	544.1	545.4	546.7	548.0	550.0
32.5°	515.5	517.8	520.2	522.5	524.9	526.9	528.6	530.2	531.9	533.6	535.6
35°	491.0	493.5	496.1	498.7	501.2	503.6	505.7	507.7	509.8	511.9	514.3
37.5°	465.0	467.9	470.7	473.6	476.5	479.3	481.8	484.4	486.9	489.6	492.3
40°	447.6	450.5	453.5	456.3	459.2	462.2	465.4	468.6	471.8	475.0	477.8
42.5°	428.6	432.2	435.6	439.1	442.7	446.1	449.5	452.8	456.2	459.5	462.5
45°	401.4	405.3	409.2	413.0	416.8	420.8	424.8	428.8	432.8	436.8	439.9
47.5°	373.0	377.4	381.7	386.1	390.4	394.9	399.5	404.1	408.7	413.3	416.7
50°	354.5	359.0	363.4	368.0	372.5	377.2	382.2	387.2	392.1	397.1	400.8
52.5°	334.9	339.6	344.4	349.1	353.8	359.0	364.5	369.9	375.4	381.0	384.7
55°	306.1	311.4	316.7	322.0	327.3	332.8	338.7	344.4	350.2	355.9	360.2
57.5°	278.1	283.6	289.2	294.6	300.2	306.1	312.5	318.8	325.1	331.4	335.7
60°	258.4	264.3	270.0	275.8	281.5	287.8	294.4	301.0	307.5	314.1	318.6
62.5°	240.0	245.9	251.8	257.7	263.6	270.0	277.0	284.0	291.0	297.9	302.4
65°	211.5	217.8	224.0	230.4	236.6	243.3	250.3	257.3	264.4	271.5	276.3
67.5°	182.7	189.4	196.0	202.6	209.2	216.1	223.4	230.5	237.7	244.9	250.2
70°	162.5	169.4	176.3	183.1	190.0	197.4	205.0	212.7	220.5	228.2	233.3
72.5°	143.9	150.9	157.8	164.7	171.5	179.0	186.9	194.9	202.8	210.8	216.1
75°	114.8	122.3	129.9	137.4	145.0	152.8	160.8	168.8	176.8	184.8	190.1
77.5°	89.4	97.0	104.6	112.2	119.8	127.6	135.7	143.8	151.9	160.0	165.6
80°	71.4	79.4	87.2	95.1	102.9	111.0	119.3	127.7	136.1	144.4	149.9
82.5°	55.9	63.9	71.8	79.8	87.8	96.0	104.5	113.0	121.5	130.0	135.4
85°	35.3	43.4	51.5	59.5	67.5	75.7	84.3	92.7	101.2	109.7	115.2
87.5°	19.3	27.4	35.6	43.8	52.0	60.3	68.7	77.2	85.6	94.1	99.5
90°	9.8	18.7	27.4	36.3	45.1	54.2	63.6	73.0	82.4	91.8	97.6
92.5°	19.1	26.9	34.6	42.3	50.0	58.3	67.1	75.9	84.6	93.4	99.0
95°	33.2	40.1	47.0	53.9	60.8	68.6	77.2	85.9	94.4	103.1	108.5
97.5°	51.8	58.0	64.1	70.2	76.4	83.5	91.5	99.6	107.6	115.7	120.9
100°	64.6	70.3	76.0	81.7	87.4	94.2	102.1	109.9	117.7	125.6	130.5
102.5°	79.4	84.4	89.4	94.3	99.2	105.7	113.6	121.4	129.3	137.1	141.9
105°	101.9	105.9	110.0	114.0	118.0	123.9	131.7	139.4	147.2	155.0	159.5
107.5°	127.3	130.7	134.1	137.5	140.9	146.0	152.9	159.8	166.6	173.5	178.1
110°	143.2	146.2	149.3	152.4	155.4	160.3	166.9	173.5	180.1	186.7	191.2



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	160.2	162.7	165.2	167.7	170.2	174.6	180.8	186.9	193.1	199.3	203.9
115°	185.1	187.4	189.5	191.8	194.0	197.8	203.5	209.1	214.6	220.3	224.1
117.5°	210.8	212.2	213.6	214.9	216.3	219.6	224.8	230.0	235.1	240.3	244.1
120°	226.3	227.6	229.0	230.4	231.8	234.9	239.7	244.5	249.3	254.1	257.8
122.5°	243.0	243.8	244.7	245.5	246.4	249.2	253.9	258.7	263.5	268.3	271.6
125°	267.9	268.2	268.4	268.7	269.0	271.4	275.8	280.3	284.7	289.2	292.2
127.5°	291.4	291.9	292.3	292.8	293.2	295.3	298.9	302.6	306.1	309.8	312.5
130°	307.2	307.7	308.3	309.0	309.5	311.3	314.2	317.2	320.1	323.0	325.6
132.5°	322.3	323.0	323.8	324.4	325.2	326.8	329.1	331.5	333.8	336.2	338.7
135°	346.1	346.6	346.9	347.3	347.8	348.8	350.5	352.1	353.8	355.5	358.0
137.5°	368.3	368.5	368.9	369.3	369.6	370.4	371.6	372.9	374.1	375.3	377.5
140°	383.0	383.5	384.0	384.5	384.9	385.4	386.0	386.6	387.2	387.8	390.0
142.5°	397.0	397.4	397.8	398.0	398.4	398.7	399.0	399.3	399.5	399.7	401.8
145°	418.9	419.0	419.0	419.0	419.0	419.1	419.4	419.7	420.0	420.3	421.5
147.5°	437.3	437.6	438.0	438.3	438.7	438.9	439.2	439.5	439.8	440.1	440.5
150°	450.6	450.8	451.0	451.2	451.4	451.6	451.8	451.9	452.1	452.3	452.3
152.5°	461.6	461.8	462.1	462.3	462.6	462.8	462.9	463.1	463.2	463.3	463.4
155°	478.8	478.8	478.8	478.8	478.8	478.9	479.0	479.1	479.2	479.3	479.7
157.5°	493.5	493.4	493.3	493.1	493.0	493.0	493.1	493.2	493.2	493.3	493.7
160°	502.8	502.6	502.4	502.2	502.0	501.9	501.9	501.9	501.9	501.9	502.4
162.5°	511.0	510.7	510.4	510.1	509.9	509.8	509.8	509.9	510.0	510.1	510.6
165°	521.5	521.2	520.9	520.7	520.4	520.3	520.3	520.3	520.3	520.3	520.8
167.5°	530.0	529.6	529.2	528.9	528.5	528.3	528.4	528.5	528.6	528.6	529.2
170°	534.8	534.4	534.0	533.7	533.3	533.1	533.1	533.1	533.1	533.1	533.8
172.5°	538.6	538.2	537.8	537.4	537.0	536.8	536.8	536.8	536.8	536.8	537.4
175°	542.4	542.1	541.7	541.3	540.9	540.7	540.7	540.7	540.7	540.7	541.3
177.5°	544.1	543.8	543.5	543.2	542.9	542.7	542.7	542.7	542.7	542.7	543.2
180°	543.8	543.8	543.8	543.8	543.8	543.8	543.8	543.8	543.8	543.8	543.8



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	662.8	662.8	662.8	662.8	662.8	662.8	662.8	662.8
2.5°	661.4	662.4	663.5	663.9	663.7	663.6	663.5	663.4
5°	660.3	661.6	662.9	663.5	663.3	663.1	663.0	662.8
7.5°	656.3	657.9	659.6	660.3	660.1	659.9	659.7	659.5
10°	652.3	653.9	655.5	656.1	655.8	655.5	655.2	654.9
12.5°	646.9	648.3	649.8	650.4	650.1	649.7	649.4	649.1
15°	636.4	638.0	639.6	640.4	640.2	640.0	639.9	639.7
17.5°	622.8	624.2	625.7	626.3	626.0	625.8	625.7	625.4
20°	613.0	614.4	615.9	616.7	616.8	617.0	617.2	617.3
22.5°	602.2	604.1	605.9	606.7	606.6	606.5	606.4	606.3
25°	583.9	586.1	588.1	589.2	589.2	589.2	589.2	589.2
27.5°	564.9	566.7	568.4	569.5	569.6	569.7	569.9	570.0
30°	551.9	553.7	555.7	556.7	556.7	556.7	556.7	556.7
32.5°	537.6	539.7	541.8	543.0	543.4	543.8	544.1	544.5
35°	516.7	519.2	521.5	523.0	523.7	524.3	525.0	525.7
37.5°	494.9	497.7	500.4	502.1	502.6	503.0	503.6	504.1
40°	480.5	483.2	486.0	487.7	488.3	489.0	489.6	490.2
42.5°	465.4	468.4	471.5	473.3	474.3	475.1	476.1	476.9
45°	442.9	445.9	449.0	451.2	452.4	453.7	455.1	456.3
47.5°	420.2	423.6	427.0	429.2	430.2	431.2	432.3	433.2
50°	404.4	408.2	411.9	414.2	415.4	416.5	417.6	418.8
52.5°	388.6	392.4	396.2	398.8	400.2	401.5	402.9	404.4
55°	364.6	368.9	373.2	376.1	377.4	378.6	379.9	381.3
57.5°	340.2	344.5	348.8	351.8	353.3	354.8	356.3	357.8
60°	323.1	327.5	332.1	335.2	337.0	338.7	340.4	342.2
62.5°	306.9	311.4	315.8	319.0	320.6	322.2	323.9	325.5
65°	281.1	285.9	290.8	294.0	295.6	297.2	298.8	300.4
67.5°	255.4	260.7	266.0	269.3	270.6	271.9	273.3	274.7
70°	238.5	243.6	248.7	252.0	253.6	255.2	256.8	258.4
72.5°	221.3	226.6	231.9	235.4	237.0	238.6	240.2	241.8
75°	195.4	200.8	206.0	209.6	211.5	213.5	215.4	217.4
77.5°	171.2	176.7	182.3	185.9	187.4	188.8	190.3	191.8
80°	155.3	160.8	166.3	169.8	171.4	173.0	174.6	176.2
82.5°	140.9	146.3	151.7	155.3	156.9	158.5	160.1	161.7
85°	120.6	126.1	131.6	135.1	136.7	138.3	139.9	141.5
87.5°	105.1	110.7	116.1	119.7	121.4	123.0	124.7	126.3
90°	103.5	109.3	115.2	118.9	120.7	122.6	124.4	126.2
92.5°	104.6	110.3	115.9	119.4	120.7	122.2	123.5	124.8
95°	113.8	119.1	124.5	128.0	129.6	131.2	132.8	134.4
97.5°	126.2	131.4	136.6	140.0	141.6	143.2	144.7	146.3
100°	135.4	140.4	145.3	148.7	150.5	152.3	154.1	155.9
102.5°	146.8	151.6	156.4	159.6	161.2	162.8	164.3	165.9
105°	163.9	168.4	173.0	176.0	177.6	179.3	180.9	182.5
107.5°	182.8	187.4	192.0	194.9	196.2	197.6	198.8	200.1
110°	195.9	200.4	204.9	207.7	208.9	209.9	211.0	212.2



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	208.3	212.8	217.4	220.3	221.6	223.0	224.4	225.7
115°	228.1	232.1	236.0	238.6	239.8	240.9	242.1	243.4
117.5°	247.9	251.7	255.5	257.9	258.8	259.9	260.8	261.8
120°	261.4	264.9	268.5	270.8	271.7	272.7	273.6	274.6
122.5°	274.9	278.3	281.6	283.7	284.6	285.4	286.3	287.1
125°	295.2	298.2	301.1	303.0	303.8	304.5	305.3	306.0
127.5°	315.1	317.7	320.4	322.1	322.7	323.4	324.0	324.7
130°	328.3	331.0	333.7	335.2	335.5	335.7	336.0	336.3
132.5°	341.1	343.6	346.0	347.5	348.1	348.7	349.3	349.9
135°	360.5	363.1	365.5	367.1	367.7	368.3	368.9	369.6
137.5°	379.7	381.7	383.9	385.2	385.6	386.1	386.5	386.9
140°	392.4	394.6	397.0	398.2	398.3	398.5	398.6	398.8
142.5°	403.9	406.0	408.0	409.2	409.4	409.7	410.0	410.3
145°	422.6	423.9	425.1	425.7	426.0	426.3	426.6	426.8
147.5°	440.8	441.2	441.6	441.8	441.8	441.8	441.8	441.8
150°	452.3	452.3	452.3	452.2	451.9	451.8	451.5	451.2
152.5°	463.5	463.7	463.9	463.7	463.4	462.9	462.4	462.0
155°	480.0	480.4	480.8	480.6	479.9	479.3	478.6	478.0
157.5°	494.2	494.6	494.9	494.8	494.4	493.8	493.2	492.8
160°	502.8	503.3	503.8	503.8	503.4	503.0	502.7	502.3
162.5°	511.0	511.5	512.0	511.9	511.3	510.7	510.1	509.4
165°	521.4	522.0	522.5	522.5	521.8	521.1	520.5	519.8
167.5°	529.8	530.4	530.9	530.9	530.4	529.8	529.2	528.6
170°	534.4	535.1	535.7	535.7	535.1	534.4	533.8	533.1
172.5°	538.0	538.6	539.1	539.1	538.5	537.8	537.2	536.5
175°	541.9	542.4	543.0	543.0	542.3	541.7	541.0	540.4
177.5°	543.7	544.1	544.5	544.5	543.9	543.5	542.9	542.3
180°	543.8	543.8	543.8	543.8	543.8	543.8	543.8	543.8

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