

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: P332807-927

Luminaire Tested: **S124DIW-S1020D470U927-4F0-1E-UDD-D**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332807-927
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-6,
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S124DIW-S1020D470U927-4F0-1E-UDD-D
Description: DEFINE 4 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 1020 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER
UPLIGHT 470 LUMENS PER FOOT, NO LENS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4820.3 lumens
Efficiency: N/A
Efficacy: 104.3 lumens/watt
Spacing Criteria (0/90/45): 1.23 / 1.28 / 1.39
Luminous Opening: Rectangular w/ Sides (W: 0.33' x L: 4' x H: 0.08')
CIE Type: Semi-Direct

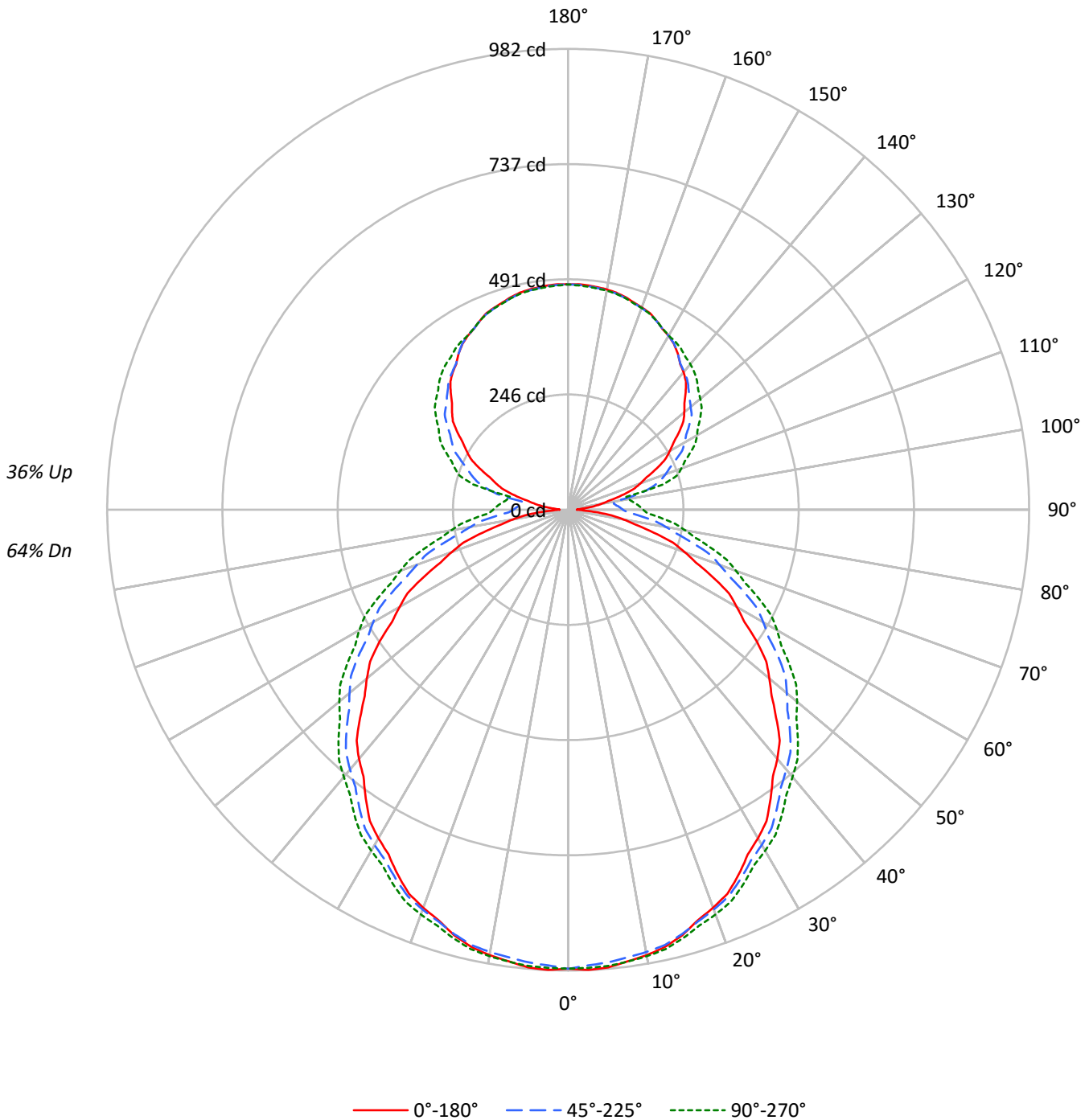
Input Watts (W): 46.2
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	110	110	110	110	104	104	104	104	91	91	91	80	80	80	69	69	69	64
1	100	95	90	86	93	89	85	81	78	75	72	68	66	64	59	57	56	51
2	90	82	75	69	84	77	71	66	68	63	59	59	55	52	51	48	46	42
3	82	72	64	57	76	67	60	54	59	54	49	52	47	44	45	41	38	35
4	75	63	55	48	70	59	52	46	52	46	41	46	41	37	40	36	33	29
5	69	56	47	41	64	53	45	39	47	40	35	41	36	32	36	32	28	25
6	63	50	42	35	59	47	40	34	42	36	31	37	32	28	32	28	25	22
7	58	45	37	31	55	43	35	30	38	32	27	34	28	24	29	25	22	19
8	54	41	33	27	51	39	31	26	35	28	24	31	26	22	27	23	20	17
9	50	38	30	24	47	36	28	23	32	26	21	28	23	20	25	21	18	15
10	47	35	27	22	44	33	26	21	29	23	19	26	21	18	23	19	16	14

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	7896	7896	7896
5°	7920	7717	7739
10°	7872	7591	7585
15°	7802	7444	7404
20°	7695	7284	7227
25°	7575	7102	7034
30°	7445	6922	6835
35°	7299	6739	6660
40°	7181	6564	6478
45°	7007	6402	6322
50°	6859	6215	6158
55°	6707	6040	5964
60°	6469	5816	5788
65°	6208	5578	5571
70°	5894	5303	5319
75°	5453	5001	5089
80°	4964	4711	4865
85°	4347	4456	4735



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	92.6	1.9
10°-20°	265.4	5.5
20°-30°	401.3	8.3
30°-40°	485.5	10.1
40°-50°	513.3	10.6
50°-60°	483.1	10.0
60°-70°	400.8	8.3
70°-80°	281.5	5.8
80°-90°	160.5	3.3
90°-100°	110.9	2.3
100°-110°	174.6	3.6
110°-120°	247.2	5.1
120°-130°	280.7	5.8
130°-140°	283.4	5.9
140°-150°	256.6	5.3
150°-160°	205.1	4.3
160°-170°	132.3	2.7
170°-180°	45.6	0.9
0°-30°	759.3	15.8
0°-40°	1244.8	25.8
0°-60°	2241.1	46.5
0°-90°	3083.9	64.0
90°-120°	532.7	11.1
90°-150°	1353.5	28.1
90°-180°	1736.0	36.0
0°-180°	4820.3	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	978	978	978	978	978	
5°	979	976	968	976	976	93
15°	939	940	936	946	945	264
25°	859	865	868	880	882	395
35°	751	764	776	790	794	470
45°	626	647	668	686	692	484
55°	491	514	546	568	575	437
65°	340	375	412	438	448	336
75°	188	229	275	304	315	200
85°	58	104	153	185	197	62
90°	19	66	116	149	160	12
95°	34	59	103	134	145	37
105°	118	143	184	213	211	124
115°	208	221	254	278	286	205
125°	288	290	315	336	344	257
135°	354	354	363	380	388	273
145°	407	407	407	414	419	254
155°	445	445	444	445	444	205
165°	469	468	468	470	467	133
175°	480	478	478	481	477	46
180°	480	480	480	480	480	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	978.1	978.1	978.1	978.1	978.1	978.1	978.1	978.1	978.1	978.1	978.1
2.5°	981.6	981.0	980.4	979.9	979.2	978.2	976.6	975.1	973.5	971.9	973.3
5°	979.1	978.4	977.7	977.0	976.3	975.0	973.4	971.6	969.9	968.2	970.2
7.5°	970.8	970.4	969.9	969.6	969.1	968.2	966.8	965.4	963.9	962.5	964.7
10°	963.8	963.6	963.4	963.1	962.9	962.1	960.9	959.7	958.5	957.3	959.5
12.5°	954.2	954.2	954.1	954.0	954.0	953.5	952.8	951.9	951.1	950.2	952.3
15°	938.7	938.9	939.1	939.4	939.6	939.4	938.7	937.9	937.2	936.4	938.7
17.5°	917.4	918.1	918.9	919.6	920.4	920.6	920.4	920.4	920.2	920.0	922.3
20°	902.5	903.2	904.0	904.7	905.5	905.9	906.2	906.4	906.7	906.9	909.3
22.5°	885.8	886.8	887.7	888.7	889.5	890.3	890.7	891.1	891.5	892.0	894.5
25°	858.7	860.2	861.6	863.1	864.5	865.6	866.3	867.1	867.8	868.5	871.2
27.5°	828.5	830.6	832.7	834.9	837.0	838.7	839.8	840.9	842.0	843.1	845.7
30°	808.3	810.2	812.2	814.1	816.1	817.9	819.6	821.3	823.0	824.7	827.4
32.5°	786.4	788.8	791.1	793.4	795.7	797.9	799.8	801.7	803.6	805.5	808.5
35°	751.4	754.3	757.2	760.1	763.0	765.7	768.2	770.6	773.0	775.5	778.9
37.5°	716.1	719.5	722.8	726.2	729.5	732.7	735.7	738.7	741.8	744.8	748.2
40°	693.3	696.5	699.7	702.8	706.0	709.2	712.6	716.1	719.5	722.9	726.5
42.5°	667.0	670.6	674.1	677.7	681.2	685.0	689.0	693.0	697.0	701.0	705.0
45°	626.5	631.1	635.7	640.4	645.0	649.6	654.3	658.9	663.5	668.1	672.2
47.5°	587.7	592.5	597.2	602.1	606.8	611.9	617.2	622.6	628.0	633.3	637.5
50°	559.7	565.1	570.4	575.8	581.1	586.5	591.8	597.1	602.5	607.8	612.8
52.5°	531.6	537.0	542.3	547.7	553.1	558.8	564.9	571.1	577.2	583.4	588.2
55°	490.7	495.8	500.9	506.0	511.1	517.3	524.7	532.0	539.2	546.5	551.4
57.5°	444.9	451.2	457.6	463.9	470.2	477.0	484.3	491.5	498.8	506.0	511.8
60°	415.1	421.4	427.8	434.1	440.5	447.6	455.7	463.7	471.7	479.7	485.3
62.5°	386.2	393.1	400.1	406.9	413.8	421.3	429.4	437.4	445.4	453.4	459.1
65°	339.5	347.3	355.1	362.9	370.7	378.7	387.0	395.3	403.5	411.9	417.9
67.5°	294.6	302.9	311.2	319.5	327.7	336.3	345.2	354.0	362.9	371.8	378.0
70°	264.0	272.3	280.5	288.8	297.1	305.9	315.1	324.3	333.6	342.9	349.4
72.5°	234.2	242.6	251.1	259.6	268.1	277.2	287.0	296.8	306.7	316.6	322.9
75°	188.4	197.4	206.4	215.4	224.4	234.0	244.2	254.4	264.7	274.9	281.7
77.5°	145.7	155.2	164.8	174.3	183.9	193.9	204.7	215.4	226.1	236.8	243.7
80°	119.4	129.1	138.9	148.6	158.4	168.6	179.3	190.0	200.7	211.4	218.7
82.5°	93.1	103.2	113.4	123.5	133.6	144.0	154.7	165.4	176.2	186.9	194.3
85°	58.1	68.3	78.5	88.7	98.9	109.6	120.5	131.4	142.4	153.4	160.7
87.5°	32.6	42.8	52.8	63.0	73.0	83.5	94.3	105.1	115.9	126.7	133.8
90°	18.6	29.2	39.8	50.5	61.1	71.9	83.0	94.1	105.2	116.3	123.9
92.5°	21.2	29.9	38.8	47.6	56.4	66.4	77.5	88.6	99.7	110.7	118.1
95°	34.0	39.3	44.6	49.9	55.3	63.0	73.0	83.1	93.2	103.2	110.3
97.5°	54.8	63.5	72.1	80.6	89.3	94.0	95.1	96.0	97.0	98.0	104.4
100°	70.9	78.7	86.4	94.2	102.0	105.1	103.6	102.0	100.5	99.0	104.3
102.5°	89.9	96.5	103.1	109.7	116.3	123.5	131.4	139.3	147.1	155.0	146.7
105°	118.0	123.3	128.7	134.0	139.3	146.7	156.1	165.5	174.9	184.3	191.1
107.5°	145.8	150.0	154.2	158.4	162.7	169.4	178.4	187.5	196.5	205.6	211.9
110°	163.8	167.5	171.2	174.8	178.5	184.7	193.8	202.8	211.8	220.8	226.5



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	181.3	184.8	188.2	191.7	195.2	201.1	209.4	217.8	226.1	234.5	239.9
115°	208.3	210.8	213.2	215.6	218.1	223.2	230.8	238.5	246.3	254.0	259.4
117.5°	233.6	235.3	236.9	238.5	240.1	244.7	252.1	259.5	267.0	274.4	279.4
120°	249.9	251.0	252.1	253.1	254.1	258.2	265.1	272.1	279.1	286.1	291.1
122.5°	266.0	266.4	266.7	267.0	267.4	270.9	277.7	284.6	291.3	298.1	303.0
125°	288.0	288.1	288.2	288.2	288.3	291.3	297.2	303.2	309.1	315.0	319.9
127.5°	309.6	309.4	309.3	309.1	309.0	311.4	316.5	321.5	326.5	331.5	335.9
130°	322.8	322.7	322.5	322.3	322.2	324.2	328.3	332.4	336.5	340.6	345.2
132.5°	335.7	335.6	335.6	335.4	335.3	337.0	340.4	343.8	347.2	350.7	355.0
135°	354.0	353.9	353.9	353.8	353.7	354.7	356.7	358.7	360.8	362.7	366.9
137.5°	371.2	371.0	370.7	370.6	370.3	370.8	372.0	373.2	374.4	375.6	379.3
140°	382.4	382.3	382.2	382.1	382.1	382.2	382.6	383.0	383.4	383.8	387.2
142.5°	391.6	391.8	392.1	392.3	392.5	392.6	392.5	392.5	392.4	392.4	395.4
145°	406.8	406.8	406.8	406.8	406.8	406.8	406.8	406.8	406.8	406.8	408.3
147.5°	419.1	419.3	419.5	419.7	419.9	419.9	419.9	419.8	419.7	419.6	419.9
150°	427.9	428.0	428.1	428.2	428.3	428.3	428.2	428.1	428.0	427.9	427.9
152.5°	434.6	434.7	435.0	435.1	435.4	435.4	435.3	435.1	435.0	434.8	435.0
155°	444.8	444.9	445.0	445.0	445.1	445.0	444.8	444.6	444.3	444.1	444.4
157.5°	453.7	453.6	453.5	453.5	453.4	453.3	453.0	452.7	452.5	452.3	452.7
160°	458.8	458.6	458.4	458.1	457.9	457.7	457.6	457.6	457.5	457.4	457.9
162.5°	463.4	463.1	462.8	462.5	462.2	462.0	461.9	461.8	461.8	461.7	462.2
165°	469.2	468.8	468.4	468.0	467.6	467.5	467.5	467.5	467.5	467.5	468.1
167.5°	473.8	473.4	473.0	472.6	472.1	471.9	471.9	471.8	471.8	471.7	472.5
170°	476.4	475.9	475.5	475.0	474.5	474.3	474.4	474.4	474.5	474.6	475.2
172.5°	478.2	477.7	477.2	476.7	476.3	476.0	476.1	476.2	476.3	476.3	477.0
175°	480.0	479.5	479.0	478.6	478.1	477.9	478.0	478.1	478.2	478.2	479.0
177.5°	480.9	480.5	480.0	479.5	479.1	479.0	479.0	479.2	479.3	479.4	479.9
180°	480.0	480.0	480.0	480.0	480.0	480.0	480.0	480.0	480.0	480.0	480.0



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	978.1	978.1	978.1	978.1	978.1	978.1	978.1	978.1
2.5°	974.7	976.0	977.4	977.9	977.8	977.6	977.4	977.2
5°	972.1	974.1	976.0	976.8	976.6	976.4	976.1	975.9
7.5°	966.9	969.1	971.3	972.2	972.0	971.8	971.5	971.3
10°	961.6	963.8	966.1	967.0	966.8	966.5	966.3	966.1
12.5°	954.3	956.2	958.2	959.3	959.2	959.1	959.1	959.0
15°	940.9	943.0	945.2	946.2	945.9	945.7	945.5	945.2
17.5°	924.5	926.8	929.0	930.0	929.8	929.6	929.4	929.2
20°	911.7	914.2	916.6	917.8	917.8	917.8	917.8	917.8
22.5°	896.8	899.3	901.7	903.2	903.6	903.9	904.3	904.7
25°	873.9	876.5	879.2	880.7	881.0	881.2	881.5	881.7
27.5°	848.1	850.6	853.1	854.4	854.8	855.1	855.3	855.6
30°	830.1	832.7	835.4	837.0	837.5	838.0	838.5	839.0
32.5°	811.6	814.7	817.8	819.5	820.0	820.5	820.9	821.5
35°	782.3	785.7	789.1	791.2	791.9	792.6	793.4	794.1
37.5°	751.7	755.2	758.6	760.7	761.5	762.3	763.0	763.8
40°	730.2	733.8	737.5	739.8	740.8	741.7	742.8	743.7
42.5°	709.1	713.1	717.2	719.5	720.3	721.1	721.9	722.6
45°	676.4	680.6	684.7	687.4	688.6	689.8	691.0	692.2
47.5°	641.8	646.1	650.5	653.3	654.7	656.2	657.7	659.2
50°	617.6	622.5	627.3	630.5	632.0	633.4	634.9	636.4
52.5°	593.1	597.9	602.9	605.9	607.4	608.9	610.4	611.8
55°	556.3	561.2	566.0	569.2	570.6	572.1	573.5	575.0
57.5°	517.6	523.4	529.2	532.7	534.1	535.5	536.9	538.2
60°	490.9	496.5	502.1	505.9	507.9	509.8	511.7	513.7
62.5°	464.6	470.2	475.9	479.6	481.6	483.5	485.4	487.4
65°	424.0	430.1	436.2	440.2	442.1	444.1	446.0	448.0
67.5°	384.1	390.3	396.5	400.5	402.4	404.3	406.2	408.1
70°	355.9	362.5	369.1	373.3	374.9	376.7	378.3	380.1
72.5°	329.3	335.6	342.1	346.2	348.1	350.0	351.9	353.8
75°	288.5	295.3	302.1	306.7	308.9	311.1	313.2	315.4
77.5°	250.6	257.5	264.4	269.1	271.4	273.8	276.1	278.5
80°	226.0	233.3	240.6	245.2	247.2	249.1	251.0	253.0
82.5°	201.8	209.4	216.8	221.7	223.8	225.9	228.1	230.2
85°	167.9	175.2	182.5	187.4	189.9	192.3	194.7	197.2
87.5°	140.9	148.1	155.3	159.9	162.1	164.3	166.4	168.7
90°	131.4	138.9	146.5	151.3	153.4	155.5	157.6	159.7
92.5°	125.5	132.8	140.1	144.8	146.8	148.8	150.8	152.7
95°	117.3	124.4	131.4	136.0	138.3	140.6	142.8	145.1
97.5°	110.8	117.2	123.7	127.9	130.2	132.3	134.5	136.7
100°	109.5	114.7	119.9	123.4	125.2	127.0	128.7	130.6
102.5°	138.5	130.2	121.9	118.7	120.7	122.6	124.5	126.4
105°	197.9	204.7	211.5	214.4	213.5	212.6	211.7	210.7
107.5°	218.2	224.6	230.9	235.1	237.2	239.2	241.3	243.4
110°	232.3	238.1	243.8	247.8	249.9	252.2	254.3	256.5



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	245.2	250.6	256.0	259.8	262.1	264.3	266.5	268.8
115°	265.0	270.5	276.0	279.6	281.3	283.0	284.7	286.5
117.5°	284.5	289.5	294.5	298.0	299.9	301.8	303.7	305.6
120°	296.1	301.2	306.2	309.6	311.4	313.1	315.0	316.8
122.5°	308.0	313.0	317.9	321.2	322.8	324.4	326.0	327.6
125°	324.7	329.6	334.5	337.6	339.2	340.7	342.3	343.8
127.5°	340.2	344.5	348.9	351.9	353.5	355.1	356.6	358.2
130°	349.6	354.0	358.5	361.5	363.0	364.4	365.8	367.3
132.5°	359.2	363.5	367.7	370.6	371.9	373.4	374.8	376.1
135°	370.9	374.9	379.0	381.8	383.4	385.1	386.7	388.3
137.5°	383.0	386.7	390.5	392.9	394.1	395.2	396.4	397.6
140°	390.6	394.0	397.4	399.8	401.1	402.3	403.7	405.0
142.5°	398.3	401.2	404.3	406.2	407.3	408.3	409.3	410.4
145°	409.9	411.4	413.0	414.2	415.4	416.5	417.6	418.8
147.5°	420.2	420.4	420.6	421.2	422.1	422.9	423.8	424.6
150°	427.9	427.9	427.9	428.0	428.1	428.2	428.3	428.3
152.5°	435.1	435.2	435.4	435.4	435.4	435.3	435.2	435.2
155°	444.7	445.0	445.4	445.4	445.2	445.0	444.7	444.5
157.5°	453.0	453.4	453.8	453.8	453.4	453.0	452.7	452.3
160°	458.4	458.8	459.3	459.3	458.8	458.4	457.9	457.4
162.5°	462.6	463.1	463.6	463.6	463.0	462.5	461.9	461.4
165°	468.7	469.4	470.0	469.9	469.2	468.5	467.8	467.1
167.5°	473.2	473.9	474.6	474.5	473.7	472.9	472.1	471.3
170°	475.9	476.5	477.2	477.1	476.3	475.5	474.7	473.9
172.5°	477.6	478.2	478.9	478.8	477.9	477.1	476.2	475.3
175°	479.7	480.4	481.1	480.9	480.0	479.0	478.1	477.1
177.5°	480.5	480.9	481.5	481.3	480.6	479.8	479.0	478.3
180°	480.0	480.0	480.0	480.0	480.0	480.0	480.0	480.0

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