

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: P331776-930

Luminaire Tested: **S122RDIW-S290D970U930-4F0-1E-UDD-F1**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P331776-930
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-8,
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S122RDIW-S290D970U930-4F0-1E-UDD-F1
Description: DEFINE 2 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 290 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER, REGRESSED
HOUSING
UPLIGHT 970 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3581.8 lumens
Efficiency: N/A
Efficacy: 94.3 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular (W 0.17' x L: 4' x H: 0')
CIE Type: Semi-Indirect

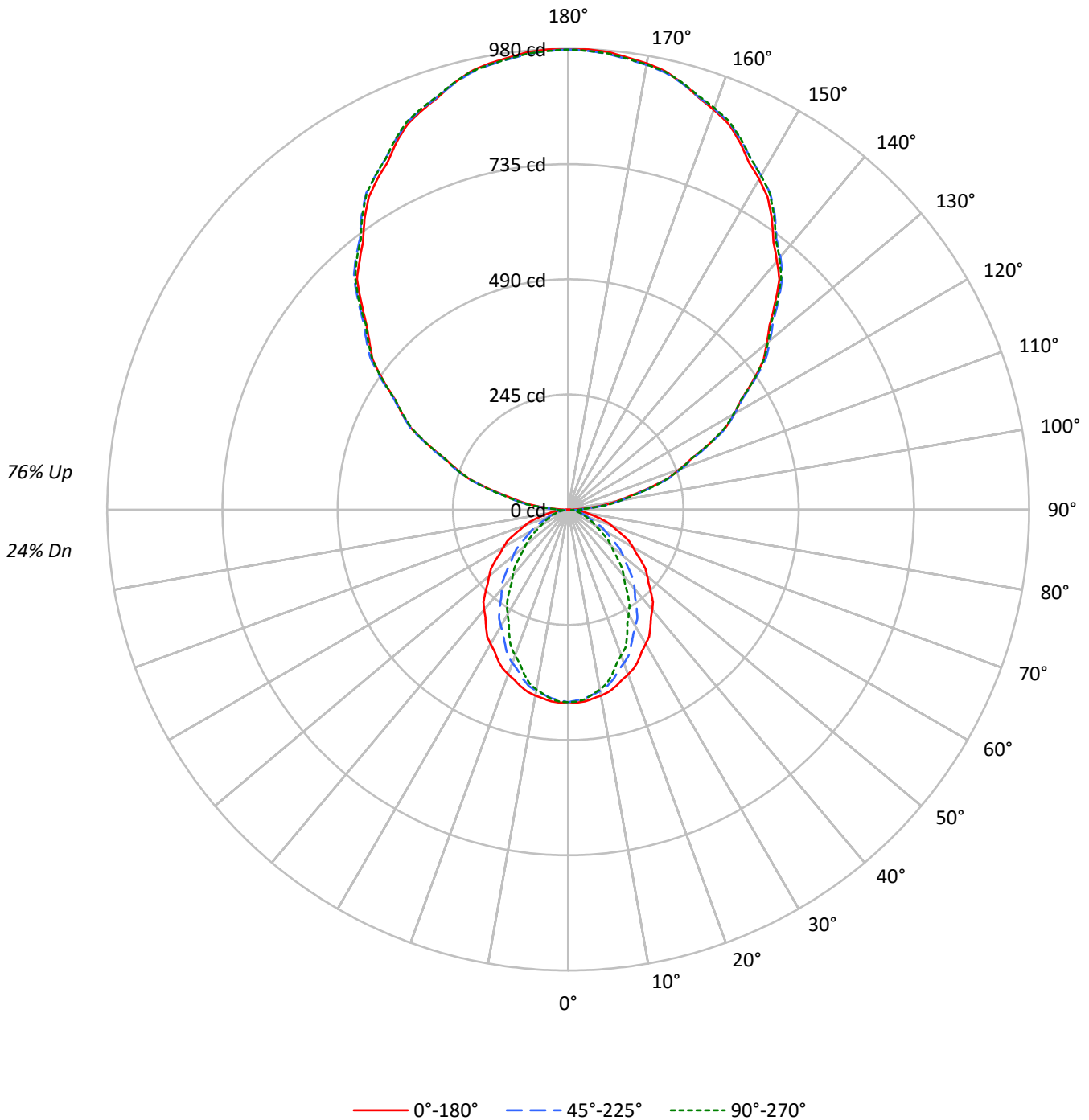
Input Watts (W): 38
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	101	101	101	101	90	90	90	90	69	69	69	49	49	49	32	32	32	24
1	92	88	84	81	82	78	75	73	60	58	57	44	43	41	28	28	27	20
2	84	77	71	66	74	69	64	60	53	50	47	39	37	35	25	24	23	17
3	77	68	61	56	68	61	55	50	47	43	40	34	32	30	23	21	20	15
4	70	60	53	47	62	54	47	43	42	37	34	31	28	26	20	19	17	13
5	64	53	46	40	57	48	41	36	37	33	29	28	25	22	18	17	15	11
6	59	48	40	35	52	43	36	32	34	29	25	25	22	19	17	15	14	10
7	55	43	36	30	48	39	32	28	30	26	22	23	19	17	15	13	12	9
8	51	39	32	27	45	35	29	24	28	23	20	21	18	15	14	12	11	8
9	47	35	28	24	42	32	26	22	25	21	18	19	16	14	13	11	10	7
10	44	32	26	21	39	29	23	19	23	19	16	17	14	12	12	10	9	7

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	6608	6608	6608
5°	6634	6525	6561
10°	6583	6419	6365
15°	6506	6228	6048
20°	6402	5957	5658
25°	6296	5649	5279
30°	6145	5330	4793
35°	6000	4987	4366
40°	5855	4628	3872
45°	5683	4229	3425
50°	5506	3823	2987
55°	5326	3386	2567
60°	5118	2929	2131
65°	4883	2460	1937
70°	4598	2030	1780
75°	4255	1847	1666
80°	3756	1655	1516
85°	2946	1297	1297



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	38.3	1.1
10°-20°	105.2	2.9
20°-30°	147.7	4.1
30°-40°	161.1	4.5
40°-50°	148.1	4.1
50°-60°	116.3	3.2
60°-70°	75.8	2.1
70°-80°	39.1	1.1
80°-90°	14.0	0.4
90°-100°	62.0	1.7
100°-110°	192.6	5.4
110°-120°	329.2	9.2
120°-130°	432.9	12.1
130°-140°	485.9	13.6
140°-150°	476.4	13.3
150°-160°	399.6	11.2
160°-170°	265.0	7.4
170°-180°	92.6	2.6
0°-30°	291.2	8.1
0°-40°	452.3	12.6
0°-60°	716.7	20.0
0°-90°	845.6	23.6
90°-120°	583.8	16.3
90°-150°	1979.0	55.2
90°-180°	2736.0	76.4
0°-180°	3581.8	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	409	409	409	409	409	
5°	409	407	403	406	405	39
15°	389	385	373	366	362	110
25°	353	341	317	302	296	162
35°	304	285	253	230	222	190
45°	249	223	185	160	150	192
55°	189	160	120	99	91	169
65°	128	98	64	52	51	127
75°	68	43	30	27	27	72
85°	16	8	7	7	7	19
90°	1	11	29	27	28	3
95°	43	51	53	53	51	49
105°	178	180	182	183	183	188
115°	330	335	334	333	330	327
125°	481	488	486	483	482	429
135°	622	630	632	632	629	480
145°	755	760	766	766	763	471
155°	863	865	868	872	870	397
165°	939	938	938	943	940	265
175°	977	974	973	978	974	93
180°	978	978	978	978	978	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	409.3	409.3	409.3	409.3	409.3	409.3	409.3	409.3	409.3	409.3	409.3
2.5°	410.7	410.4	410.1	409.8	409.4	408.9	408.1	407.5	406.8	406.0	406.7
5°	409.3	408.9	408.5	408.1	407.6	406.8	405.8	404.7	403.7	402.6	403.3
7.5°	405.0	404.6	404.0	403.5	403.0	402.1	400.9	399.6	398.4	397.1	397.3
10°	401.5	400.9	400.3	399.7	399.2	398.0	396.4	394.8	393.1	391.5	391.3
12.5°	397.1	396.3	395.6	394.9	394.2	392.8	390.7	388.6	386.5	384.3	383.9
15°	389.2	388.3	387.4	386.5	385.6	383.8	381.0	378.2	375.4	372.6	371.0
17.5°	379.7	378.3	376.9	375.5	374.1	371.7	368.1	364.5	360.9	357.3	355.5
20°	372.6	371.0	369.3	367.6	366.0	363.1	359.0	354.9	350.8	346.7	344.6
22.5°	364.9	363.1	361.2	359.4	357.5	354.2	349.6	345.0	340.4	335.7	333.0
25°	353.4	350.7	348.1	345.4	342.8	338.8	333.3	327.9	322.5	317.1	313.6
27.5°	339.4	336.6	333.7	330.8	327.9	323.4	317.3	311.2	305.1	299.0	295.1
30°	329.6	326.5	323.3	320.2	317.2	312.3	305.7	299.1	292.5	285.9	281.8
32.5°	320.2	316.5	312.8	309.2	305.5	300.4	293.7	286.9	280.2	273.5	268.7
35°	304.4	300.3	296.0	291.9	287.6	281.9	274.7	267.4	260.2	253.0	247.8
37.5°	288.8	284.1	279.5	274.9	270.3	264.2	256.4	248.7	241.0	233.3	227.6
40°	277.8	272.9	267.9	262.9	258.0	251.6	243.6	235.6	227.6	219.6	213.8
42.5°	266.5	261.3	256.1	250.9	245.7	239.0	230.7	222.5	214.3	206.0	200.0
45°	248.9	243.4	237.8	232.4	226.8	219.7	211.1	202.4	193.8	185.2	179.4
47.5°	231.7	225.8	220.0	214.2	208.3	201.0	192.0	183.1	174.1	165.3	159.5
50°	219.2	213.4	207.6	201.7	195.9	188.4	179.4	170.3	161.3	152.2	146.5
52.5°	207.1	201.0	194.9	188.8	182.7	175.2	166.3	157.5	148.6	139.7	134.3
55°	189.2	182.9	176.4	170.0	163.5	156.0	147.0	138.1	129.2	120.3	115.4
57.5°	171.0	164.4	157.8	151.2	144.6	137.1	128.5	120.0	111.5	102.9	98.3
60°	158.5	152.0	145.4	138.8	132.2	124.7	116.2	107.7	99.2	90.7	86.5
62.5°	146.3	139.8	133.2	126.6	120.0	112.7	104.6	96.5	88.5	80.4	76.4
65°	127.8	121.1	114.5	107.8	101.1	94.1	86.7	79.2	71.8	64.4	61.6
67.5°	109.8	103.2	96.6	90.0	83.4	76.7	70.0	63.4	56.7	50.1	48.8
70°	97.4	91.0	84.5	78.2	71.7	65.7	60.0	54.3	48.7	43.0	42.2
72.5°	85.5	79.4	73.2	67.1	60.9	55.6	51.0	46.5	41.9	37.3	36.6
75°	68.2	62.4	56.7	50.9	45.1	40.8	38.0	35.2	32.4	29.6	29.0
77.5°	51.0	46.0	40.9	35.9	30.8	27.6	26.3	24.9	23.6	22.3	21.9
80°	40.4	36.2	32.0	27.8	23.6	21.0	20.2	19.4	18.6	17.8	17.4
82.5°	30.6	27.3	24.1	20.8	17.5	15.6	15.0	14.4	13.9	13.4	13.1
85°	15.9	14.2	12.5	10.8	9.0	8.0	7.7	7.5	7.3	7.0	7.0
87.5°	4.9	4.8	4.7	4.6	4.6	4.9	5.7	6.5	7.3	8.2	8.0
90°	0.8	3.0	5.2	7.4	9.6	12.7	16.8	20.8	24.9	28.9	28.5
92.5°	14.7	16.3	17.9	19.6	21.2	22.4	23.4	24.4	25.3	26.3	26.3
95°	43.0	44.8	46.6	48.4	50.3	51.4	51.8	52.1	52.5	52.8	52.8
97.5°	78.4	80.1	81.7	83.3	84.9	86.1	86.7	87.5	88.1	88.9	88.9
100°	104.8	106.3	107.8	109.3	110.7	111.8	112.3	112.8	113.4	114.0	114.0
102.5°	132.6	133.8	134.9	136.2	137.3	138.3	138.9	139.7	140.3	141.0	141.2
105°	177.6	178.1	178.6	179.2	179.8	180.2	180.6	180.9	181.3	181.6	182.1
107.5°	222.8	223.6	224.4	225.2	226.0	226.4	226.4	226.4	226.4	226.4	226.6
110°	251.8	253.0	254.0	255.2	256.2	256.8	256.8	256.8	256.8	256.8	256.8



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	283.6	284.7	285.8	286.9	288.0	288.5	288.3	288.1	288.0	287.9	287.4
115°	330.3	331.4	332.5	333.6	334.7	335.1	334.7	334.4	333.9	333.6	333.5
117.5°	376.9	378.4	379.8	381.3	382.8	382.9	382.0	380.9	379.9	378.9	378.5
120°	408.0	409.4	410.9	412.4	413.8	413.8	412.4	410.9	409.4	408.0	408.0
122.5°	436.3	438.1	439.9	441.6	443.4	443.8	442.7	441.7	440.7	439.6	439.2
125°	480.6	482.2	483.9	485.6	487.2	487.8	487.2	486.7	486.1	485.6	485.0
127.5°	523.7	525.8	527.9	530.0	532.1	532.8	532.1	531.5	530.8	530.2	529.5
130°	550.8	553.2	555.5	558.0	560.4	561.3	561.0	560.6	560.3	559.9	559.5
132.5°	581.1	583.1	585.1	587.0	589.0	590.0	590.0	590.1	590.2	590.3	589.5
135°	621.8	623.9	625.8	627.9	629.9	631.0	631.4	631.8	632.2	632.5	632.3
137.5°	664.6	666.3	667.9	669.5	671.2	672.3	672.7	673.2	673.7	674.2	674.0
140°	690.3	692.0	693.7	695.3	696.9	698.2	699.2	700.1	701.0	701.9	701.9
142.5°	716.8	718.4	720.1	721.7	723.4	724.6	725.1	725.8	726.4	727.0	727.2
145°	754.7	756.0	757.3	758.6	759.9	761.1	762.2	763.3	764.4	765.5	765.6
147.5°	788.6	790.2	791.7	793.2	794.8	795.9	796.6	797.4	798.1	798.8	799.2
150°	811.7	812.9	813.9	815.1	816.1	817.1	817.8	818.6	819.3	820.0	820.5
152.5°	832.3	833.3	834.5	835.5	836.7	837.6	838.5	839.4	840.2	841.1	841.8
155°	862.9	863.5	864.1	864.6	865.1	865.7	866.3	866.8	867.3	867.9	868.8
157.5°	889.2	889.6	889.9	890.3	890.6	891.0	891.4	891.7	892.0	892.3	893.6
160°	905.1	905.4	905.8	906.1	906.5	906.8	907.0	907.2	907.3	907.5	908.7
162.5°	919.6	919.7	919.7	919.8	919.9	920.0	920.2	920.4	920.6	920.7	922.0
165°	938.9	938.7	938.6	938.3	938.2	938.1	938.1	938.1	938.1	938.1	939.4
167.5°	955.1	954.6	954.0	953.4	952.9	952.6	952.6	952.5	952.5	952.4	953.7
170°	963.7	963.1	962.6	962.1	961.5	961.2	960.9	960.7	960.6	960.4	961.6
172.5°	969.6	969.1	968.5	968.0	967.4	967.0	966.9	966.7	966.5	966.3	967.6
175°	976.9	976.3	975.8	975.3	974.7	974.2	973.9	973.5	973.1	972.7	974.0
177.5°	979.9	979.4	979.0	978.5	978.1	977.7	977.5	977.1	976.9	976.6	977.5
180°	978.5	978.5	978.5	978.5	978.5	978.5	978.5	978.5	978.5	978.5	978.5



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	409.3	409.3	409.3	409.3	409.3	409.3	409.3	409.3
2.5°	407.3	408.0	408.6	408.9	408.8	408.6	408.5	408.4
5°	404.1	404.8	405.5	405.8	405.5	405.3	405.0	404.8
7.5°	397.5	397.8	397.9	397.9	397.5	397.0	396.6	396.2
10°	391.0	390.8	390.5	390.1	389.6	389.1	388.7	388.2
12.5°	383.5	383.0	382.6	382.0	381.2	380.3	379.5	378.7
15°	369.5	367.9	366.3	365.2	364.4	363.5	362.6	361.8
17.5°	353.6	351.7	349.9	348.3	346.8	345.4	344.0	342.6
20°	342.6	340.5	338.4	336.5	334.7	332.9	331.1	329.3
22.5°	330.4	327.8	325.1	323.1	321.7	320.4	319.0	317.7
25°	310.3	306.9	303.5	301.3	300.0	298.7	297.5	296.3
27.5°	291.1	287.1	283.2	280.3	278.3	276.4	274.4	272.5
30°	277.5	273.4	269.1	266.0	263.7	261.5	259.3	257.1
32.5°	263.9	259.1	254.3	250.9	248.8	246.7	244.6	242.6
35°	242.6	237.4	232.2	228.7	226.9	225.1	223.3	221.5
37.5°	221.8	216.1	210.4	206.5	204.5	202.4	200.3	198.2
40°	208.0	202.1	196.2	192.2	190.1	188.0	185.8	183.7
42.5°	193.9	187.8	181.8	177.8	175.7	173.7	171.5	169.5
45°	173.5	167.6	161.8	157.9	156.0	153.9	152.0	150.0
47.5°	153.6	147.8	142.0	138.2	136.4	134.6	132.8	131.0
50°	140.9	135.2	129.5	125.8	124.1	122.4	120.6	118.9
52.5°	128.8	123.4	117.9	114.3	112.8	111.1	109.5	107.9
55°	110.5	105.6	100.6	97.3	95.8	94.2	92.7	91.2
57.5°	93.8	89.3	84.8	81.9	80.6	79.2	77.9	76.6
60°	82.3	78.2	73.9	71.2	69.9	68.6	67.3	66.0
62.5°	72.4	68.4	64.4	62.0	61.1	60.4	59.6	58.8
65°	58.9	56.0	53.2	51.7	51.4	51.2	51.0	50.7
67.5°	47.5	46.2	44.9	44.2	43.9	43.6	43.4	43.1
70°	41.3	40.5	39.7	39.1	38.7	38.4	38.1	37.7
72.5°	36.0	35.2	34.6	34.2	33.9	33.8	33.5	33.3
75°	28.5	27.9	27.3	27.0	26.9	26.8	26.7	26.7
77.5°	21.5	21.2	20.9	20.7	20.5	20.4	20.3	20.1
80°	17.1	16.8	16.5	16.3	16.3	16.3	16.3	16.3
82.5°	13.0	12.7	12.6	12.5	12.5	12.5	12.5	12.5
85°	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
87.5°	7.9	7.7	7.6	7.6	7.6	7.6	7.7	7.7
90°	28.1	27.8	27.4	27.3	27.6	27.7	27.9	28.0
92.5°	26.4	26.5	26.6	26.6	26.7	26.7	26.7	26.7
95°	52.8	52.8	52.8	52.7	52.3	51.9	51.5	51.2
97.5°	88.9	88.9	88.9	88.9	88.8	88.8	88.7	88.7
100°	114.0	114.0	114.0	113.9	113.7	113.5	113.3	113.2
102.5°	141.4	141.5	141.6	141.6	141.5	141.2	141.0	140.9
105°	182.4	182.8	183.1	183.4	183.4	183.4	183.4	183.4
107.5°	226.7	226.9	227.0	226.7	225.8	224.9	224.1	223.3
110°	256.8	256.8	256.8	256.6	256.0	255.4	254.9	254.4



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	287.0	286.6	286.1	285.7	285.3	284.9	284.5	284.1
115°	333.2	333.0	332.9	332.5	332.0	331.4	330.8	330.3
117.5°	378.0	377.6	377.1	376.6	376.1	375.5	375.0	374.4
120°	408.0	408.0	408.0	407.6	407.1	406.6	406.0	405.4
122.5°	438.8	438.3	437.9	437.5	437.1	436.7	436.3	435.9
125°	484.5	483.9	483.4	483.0	482.8	482.7	482.4	482.2
127.5°	528.8	528.2	527.5	526.8	526.3	525.7	525.1	524.6
130°	559.1	558.8	558.4	557.8	557.1	556.4	555.6	554.9
132.5°	588.6	587.8	587.0	586.4	585.8	585.1	584.6	584.0
135°	632.2	632.0	631.8	631.4	630.9	630.3	629.8	629.2
137.5°	673.8	673.8	673.6	673.1	672.4	671.6	670.9	670.2
140°	701.9	701.9	701.9	701.6	700.8	700.1	699.4	698.6
142.5°	727.3	727.5	727.6	727.3	726.6	725.9	725.1	724.4
145°	765.9	766.1	766.2	766.0	765.2	764.5	763.8	763.0
147.5°	799.6	800.1	800.5	800.3	799.6	798.9	798.3	797.5
150°	821.1	821.7	822.2	822.2	821.7	821.1	820.5	820.0
152.5°	842.5	843.3	843.9	843.9	843.3	842.5	841.8	841.1
155°	869.8	870.7	871.6	871.7	871.2	870.7	870.1	869.5
157.5°	894.9	896.1	897.3	897.5	896.7	895.8	894.9	894.0
160°	909.7	910.9	911.9	912.2	911.4	910.7	910.0	909.2
162.5°	923.2	924.5	925.8	925.9	925.0	924.1	923.2	922.4
165°	940.7	941.9	943.2	943.4	942.5	941.6	940.7	939.7
167.5°	955.0	956.3	957.6	957.7	956.8	955.9	954.9	954.0
170°	963.0	964.3	965.6	965.6	964.5	963.4	962.3	961.2
172.5°	968.9	970.2	971.4	971.6	970.5	969.4	968.2	967.2
175°	975.3	976.6	977.9	978.0	976.9	975.8	974.7	973.6
177.5°	978.4	979.2	980.1	980.1	979.2	978.4	977.5	976.6
180°	978.5	978.5	978.5	978.5	978.5	978.5	978.5	978.5

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