

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: P332876-940

Luminaire Tested: **SA4XXRDIP-C350D590U940-4F0-1E-UDD-F4**

Issue Date: 10/7/2019

Test Information

Test Method: LM-79-08
Report Number: P332876-940
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-18,
Test Lab: INNOVATION CENTER
Issue Date: 10/7/2019
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: SA4XXRDIP-C350D590U940-4F0-1E-UDD-F4
Description: DEFINE 4 DIRECT-INDIRECT PENDANT LED LUMINAIRE
DOWNLIGHT 350 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER, REGRESSED
HOUSING
UPLIGHT 590 LUMENS PER FOOT, BATWING OPTIC
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

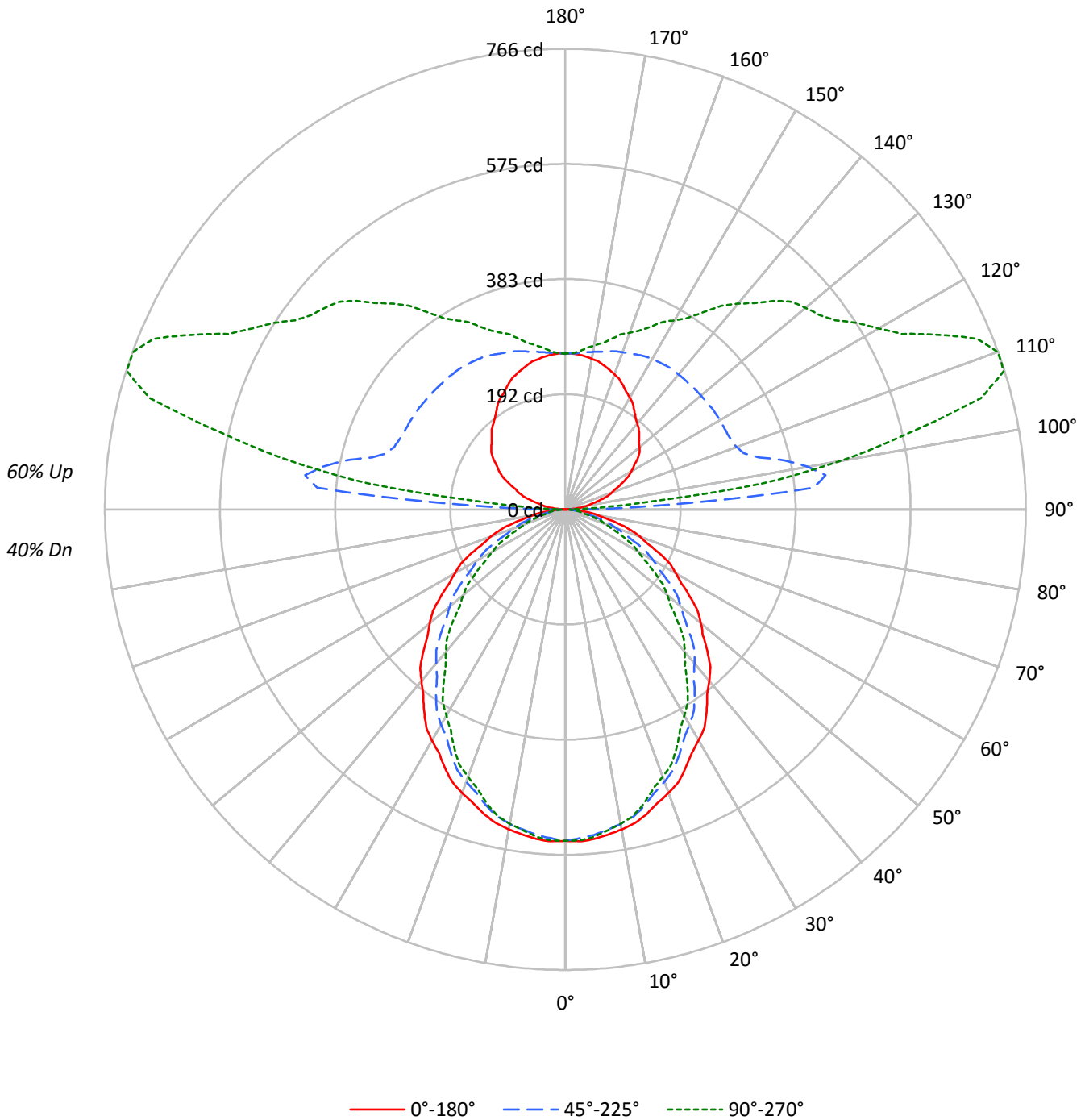
Lumens per Lamp: N/A
Luminaire Lumens: 3158.1 lumens
Efficiency: N/A
Efficacy: 123.4 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.09 / 1.24
Luminous Opening: Rectangular (W 0.33' x L: 4' x H: 0')
CIE Type: General Diffuse

Input Watts (W): 25.6
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	50	30	10	0	
RCR																						
0	105	105	105	105	95	95	95	95	78	78	78	62	62	62	47	47	47	40				
1	96	92	88	85	87	84	80	78	69	66	64	55	53	52	42	41	40	34				
2	87	80	74	69	79	73	68	64	60	57	54	48	46	44	37	36	34	29				
3	80	71	64	58	72	65	59	54	53	49	45	43	40	37	33	31	29	25				
4	73	63	55	49	66	57	51	46	48	43	39	38	35	32	30	27	25	22				
5	67	56	48	42	61	51	44	39	43	37	33	34	31	28	27	24	22	19				
6	62	50	42	37	56	46	39	34	38	33	29	31	27	24	24	22	20	17				
7	57	45	37	32	52	42	35	30	35	30	26	28	24	22	22	20	18	15				
8	53	41	33	28	48	38	31	26	32	27	23	26	22	19	21	18	16	13				
9	49	37	30	25	45	35	28	24	29	24	20	24	20	17	19	16	14	12				
10	46	34	27	23	42	32	25	21	27	22	18	22	18	16	18	15	13	11				

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	4451	4451	4451
5°	4460	4406	4433
10°	4432	4353	4353
15°	4381	4262	4229
20°	4312	4141	4064
25°	4222	4000	3899
30°	4135	3852	3691
35°	4039	3698	3482
40°	3923	3523	3256
45°	3817	3350	3027
50°	3695	3149	2783
55°	3564	2940	2519
60°	3421	2713	2249
65°	3289	2428	1983
70°	3099	2110	1683
75°	2857	1753	1369
80°	2492	1334	1255
85°	2112	1213	1130



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	51.8	1.6
10°-20°	144.4	4.6
20°-30°	208.5	6.6
30°-40°	236.4	7.5
40°-50°	228.2	7.2
50°-60°	189.8	6.0
60°-70°	131.1	4.1
70°-80°	66.4	2.1
80°-90°	18.5	0.6
90°-100°	187.0	5.9
100°-110°	389.2	12.3
110°-120°	348.6	11.0
120°-130°	293.2	9.3
130°-140°	244.5	7.7
140°-150°	186.8	5.9
150°-160°	131.3	4.2
160°-170°	77.2	2.4
170°-180°	25.1	0.8
0°-30°	404.7	12.8
0°-40°	641.0	20.3
0°-60°	1059.1	33.5
0°-90°	1275.0	40.4
90°-120°	924.8	29.3
90°-150°	1649.4	52.2
90°-180°	1883.0	59.6
0°-180°	3158.1	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	551	551	551	551	551	
5°	550	548	544	548	547	52
15°	524	520	510	509	506	148
25°	474	466	449	442	438	218
35°	410	396	375	361	353	256
45°	334	318	293	273	265	258
55°	253	236	209	188	179	226
65°	172	154	127	110	104	170
75°	92	76	56	47	44	97
85°	23	15	13	12	12	26
90°	0	4	9	10	11	2
95°	17	53	415	205	124	19
105°	60	86	334	719	716	63
115°	105	132	298	572	687	104
125°	146	173	296	486	548	130
135°	173	206	294	432	490	134
145°	200	229	292	364	400	125
155°	227	245	284	321	335	105
165°	248	255	272	288	292	70
175°	258	259	261	264	264	25
180°	259	259	259	259	259	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	551.3	551.3	551.3	551.3	551.3	551.3	551.3	551.3	551.3	551.3	551.3
2.5°	552.6	552.2	552.0	551.7	551.3	550.8	550.0	549.2	548.3	547.5	548.3
5°	550.4	550.0	549.7	549.3	548.8	548.1	547.0	545.9	544.7	543.7	544.6
7.5°	545.4	545.0	544.7	544.2	543.9	542.9	541.4	539.9	538.5	537.1	537.6
10°	540.6	540.2	539.8	539.3	538.8	537.7	536.0	534.3	532.6	531.0	531.4
12.5°	534.6	534.0	533.5	533.0	532.4	531.2	529.1	527.2	525.2	523.2	523.4
15°	524.2	523.3	522.5	521.7	520.8	519.2	516.9	514.5	512.2	509.9	509.7
17.5°	511.7	510.4	509.2	508.0	506.8	504.7	501.9	499.1	496.3	493.5	492.9
20°	501.9	500.6	499.4	498.2	497.0	494.8	491.6	488.4	485.2	482.0	481.3
22.5°	491.1	489.6	488.3	487.0	485.5	483.1	479.7	476.4	473.0	469.5	468.4
25°	474.0	472.3	470.6	469.0	467.3	464.5	460.7	456.8	452.9	449.1	447.5
27.5°	456.1	454.0	451.8	449.8	447.6	444.5	440.4	436.3	432.2	428.1	426.1
30°	443.6	441.2	438.9	436.6	434.3	430.9	426.4	422.0	417.6	413.2	410.9
32.5°	430.4	427.8	425.2	422.5	419.8	416.3	411.7	407.2	402.6	398.1	395.3
35°	409.8	406.8	403.9	400.8	397.8	394.0	389.3	384.6	380.0	375.2	372.0
37.5°	387.8	384.7	381.7	378.5	375.4	371.3	366.0	360.9	355.7	350.5	347.0
40°	372.3	369.2	366.0	363.0	359.9	355.7	350.4	345.0	339.7	334.3	330.4
42.5°	357.4	354.2	350.9	347.7	344.5	340.0	334.5	328.9	323.3	317.7	313.7
45°	334.3	330.8	327.3	323.9	320.4	315.8	310.2	304.6	299.0	293.4	288.7
47.5°	310.4	306.8	303.3	299.6	296.0	291.3	285.5	279.6	273.8	268.0	263.1
50°	294.2	290.5	286.9	283.2	279.6	274.7	268.8	262.7	256.7	250.7	246.0
52.5°	277.7	274.0	270.5	266.9	263.3	258.4	252.3	246.1	240.0	233.8	229.1
55°	253.2	249.5	245.8	242.0	238.3	233.3	227.2	221.1	215.0	208.9	204.0
57.5°	229.1	225.2	221.3	217.4	213.5	208.6	202.5	196.5	190.6	184.5	179.6
60°	211.9	208.1	204.4	200.6	196.9	192.0	186.0	179.9	174.0	168.0	163.1
62.5°	196.4	192.4	188.5	184.7	180.7	175.8	169.6	163.5	157.3	151.1	146.6
65°	172.2	168.2	164.2	160.2	156.0	151.1	145.1	139.0	133.0	127.1	123.1
67.5°	147.1	143.3	139.4	135.5	131.7	127.0	121.4	115.8	110.2	104.7	101.2
70°	131.3	127.3	123.4	119.5	115.5	110.8	105.5	100.1	94.8	89.4	86.4
72.5°	114.4	110.8	107.3	103.7	100.1	95.9	90.8	85.7	80.7	75.6	73.0
75°	91.6	88.1	84.6	81.1	77.7	73.7	69.4	64.9	60.5	56.2	53.9
77.5°	68.5	65.5	62.6	59.7	56.7	53.4	49.8	46.3	42.7	39.1	37.9
80°	53.6	50.9	48.2	45.5	42.7	39.9	37.2	34.3	31.5	28.7	28.4
82.5°	40.8	38.3	35.8	33.3	30.8	28.7	27.1	25.5	23.9	22.3	22.1
85°	22.8	21.0	19.1	17.1	15.2	14.2	13.9	13.6	13.4	13.1	12.9
87.5°	7.8	7.5	7.1	6.7	6.2	5.9	6.4	6.3	6.4	6.6	6.4
90°	0.5	1.5	3.0	3.6	4.1	4.1	7.1	7.1	8.1	9.2	8.6
92.5°	5.8	8.5	13.2	19.4	26.8	37.5	63.3	102.7	141.2	161.3	134.4
95°	16.8	18.3	23.4	30.1	42.2	63.6	107.8	191.3	312.8	414.6	426.2
97.5°	30.1	30.1	34.5	40.6	51.1	69.0	103.1	171.9	292.8	436.7	535.6
100°	38.7	38.7	42.2	48.3	58.0	74.3	104.2	161.8	265.6	408.9	539.2
102.5°	46.8	47.6	50.7	56.4	65.7	81.1	108.3	158.9	247.2	374.4	508.6
105°	59.5	61.1	63.6	69.7	78.8	93.6	118.0	160.2	231.5	333.7	453.3
107.5°	73.6	74.5	77.1	83.6	92.4	106.9	129.3	167.7	228.6	310.9	408.5
110°	82.9	83.9	86.5	92.6	101.7	115.5	137.9	173.4	229.4	303.2	386.1



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	91.8	92.9	95.9	101.6	110.7	124.4	146.0	179.6	231.8	299.5	373.4
115°	104.8	106.3	109.9	114.9	124.7	138.4	158.7	189.2	236.6	297.6	361.7
117.5°	118.2	119.7	122.8	128.4	137.4	151.7	171.0	199.1	241.5	297.0	356.4
120°	127.2	128.2	131.7	137.3	146.0	160.2	179.6	206.0	245.2	297.0	353.6
122.5°	135.3	136.3	139.9	145.1	154.5	168.4	187.7	212.5	248.9	296.7	350.3
125°	146.0	148.0	151.1	156.7	166.3	180.6	198.9	222.3	254.3	296.0	344.9
127.5°	155.4	157.1	160.8	167.1	177.2	191.5	209.3	230.8	258.7	294.9	337.7
130°	160.8	162.7	166.8	174.5	184.1	198.9	216.2	236.0	262.0	294.5	333.1
132.5°	166.0	167.6	173.0	180.2	190.6	204.6	221.9	241.3	264.8	294.1	329.1
135°	173.4	175.5	180.6	189.2	199.9	213.1	229.9	248.3	269.1	293.5	323.0
137.5°	180.9	182.8	188.4	196.6	207.8	220.3	236.0	253.2	271.6	293.4	317.7
140°	186.2	187.7	193.3	202.0	212.6	224.8	240.1	256.4	273.7	293.0	314.9
142.5°	191.9	193.4	198.6	206.8	217.1	228.9	243.8	258.8	275.3	293.0	312.5
145°	199.9	201.4	206.5	213.7	223.3	234.5	247.7	261.4	276.3	291.9	308.3
147.5°	208.9	209.5	213.9	221.2	229.3	239.4	251.8	263.8	276.7	290.2	304.5
150°	214.6	215.2	219.3	225.3	233.0	242.6	253.9	265.0	276.7	288.9	301.7
152.5°	220.0	220.1	224.1	229.8	236.7	245.5	255.5	265.8	275.9	286.9	298.4
155°	227.4	227.9	231.0	236.0	241.7	249.2	257.9	266.5	274.6	283.8	293.5
157.5°	234.6	234.6	237.5	241.4	246.3	252.3	259.7	266.5	273.4	280.7	288.6
160°	239.1	239.1	241.1	244.7	248.7	254.3	260.5	266.5	272.2	278.2	284.9
162.5°	243.2	242.7	244.3	247.5	251.2	255.6	261.3	266.5	270.9	275.8	281.6
165°	247.7	247.7	248.7	251.3	253.9	256.9	261.4	265.6	268.6	272.2	276.3
167.5°	252.3	251.8	252.3	254.2	255.7	258.0	261.4	264.3	266.2	268.5	271.3
170°	254.3	253.9	254.3	255.8	256.9	258.4	260.9	263.5	264.5	266.0	268.0
172.5°	256.4	255.8	255.9	257.1	257.7	258.8	260.6	262.7	262.9	263.6	265.2
175°	258.4	257.9	257.9	258.4	259.0	259.0	259.9	261.4	260.9	260.9	262.0
177.5°	259.3	259.0	258.5	259.0	259.0	259.0	259.3	260.1	259.3	259.3	259.8
180°	259.0	259.0	259.0	259.0	259.0	259.0	259.0	259.0	259.0	259.0	259.0



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	551.3	551.3	551.3	551.3	551.3	551.3	551.3	551.3
2.5°	549.2	550.0	550.8	551.2	551.1	551.1	551.0	550.9
5°	545.5	546.4	547.4	547.8	547.6	547.4	547.2	547.0
7.5°	538.2	538.9	539.5	539.6	539.3	539.0	538.7	538.4
10°	531.7	532.1	532.4	532.4	532.1	531.7	531.4	531.0
12.5°	523.6	523.9	524.1	524.0	523.4	522.9	522.4	521.8
15°	509.5	509.3	509.1	508.7	508.0	507.4	506.8	506.0
17.5°	492.4	492.0	491.4	490.6	489.6	488.7	487.7	486.7
20°	480.5	479.7	479.0	478.0	476.8	475.5	474.4	473.1
22.5°	467.3	466.1	465.0	464.0	463.0	462.0	461.0	459.9
25°	445.9	444.3	442.7	441.5	440.5	439.5	438.6	437.7
27.5°	424.1	422.1	420.2	418.6	417.1	415.8	414.5	413.1
30°	408.5	406.2	403.9	401.9	400.4	399.0	397.4	395.9
32.5°	392.6	389.9	387.2	385.0	383.6	382.2	380.8	379.3
35°	368.8	365.7	362.5	360.1	358.4	356.7	355.0	353.3
37.5°	343.4	339.8	336.3	333.6	331.9	330.2	328.5	326.8
40°	326.4	322.4	318.5	315.8	314.1	312.4	310.7	309.0
42.5°	309.7	305.7	301.7	298.8	297.0	295.2	293.5	291.8
45°	284.2	279.6	274.9	271.8	270.1	268.4	266.7	265.1
47.5°	258.4	253.6	248.9	245.6	243.7	241.8	240.0	238.2
50°	241.3	236.7	231.9	228.7	226.9	225.2	223.4	221.6
52.5°	224.3	219.5	214.8	211.4	209.6	207.8	205.9	204.0
55°	199.2	194.3	189.4	186.1	184.3	182.5	180.7	179.0
57.5°	174.6	169.7	164.7	161.6	160.2	158.9	157.5	156.1
60°	158.2	153.4	148.5	145.3	143.7	142.3	140.8	139.3
62.5°	142.1	137.6	133.1	130.3	129.0	127.9	126.6	125.5
65°	119.0	114.9	110.9	108.3	107.2	106.1	105.0	103.8
67.5°	97.7	94.3	90.8	88.5	87.2	86.0	84.7	83.5
70°	83.3	80.2	77.1	75.1	74.1	73.2	72.2	71.3
72.5°	70.4	67.7	65.1	63.3	62.4	61.6	60.7	59.8
75°	51.8	49.7	47.5	46.2	45.6	45.0	44.5	43.9
77.5°	36.6	35.4	34.2	33.4	33.3	33.1	32.9	32.7
80°	28.2	27.8	27.6	27.4	27.3	27.2	27.1	27.0
82.5°	21.8	21.7	21.5	21.3	21.2	21.1	21.0	21.0
85°	12.8	12.5	12.3	12.2	12.2	12.2	12.2	12.2
87.5°	6.4	6.4	6.4	6.4	6.6	6.8	6.8	6.9
90°	9.2	9.6	10.2	10.2	10.7	11.1	10.7	10.7
92.5°	99.9	75.2	59.8	49.7	43.6	40.9	39.1	39.1
95°	376.9	298.1	229.9	180.6	155.7	139.9	130.7	124.1
97.5°	556.9	527.6	477.9	424.7	388.3	357.6	342.3	331.7
100°	613.5	623.7	598.7	561.1	516.8	485.8	470.6	466.5
102.5°	610.6	661.1	668.3	652.6	625.4	603.0	586.9	583.6
105°	569.7	657.7	708.1	729.0	730.0	725.9	718.7	715.7
107.5°	511.7	605.3	676.3	721.6	746.7	758.3	763.4	764.7
110°	476.6	564.6	638.4	694.4	730.5	751.8	761.0	765.5



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	451.0	528.8	598.5	654.4	695.4	721.3	734.1	741.5
115°	425.3	487.9	547.3	596.2	636.3	666.9	683.1	687.2
117.5°	412.6	464.4	511.2	552.6	586.9	612.5	629.0	632.2
120°	407.0	454.2	494.9	531.0	560.1	582.5	595.7	601.3
122.5°	402.1	447.7	484.7	516.4	540.9	560.1	571.2	576.8
125°	393.7	437.5	472.5	500.5	520.8	535.7	545.3	548.3
127.5°	383.5	425.3	460.4	486.9	507.4	520.5	528.6	531.6
130°	375.4	415.6	450.1	477.2	498.0	510.7	518.9	521.9
132.5°	366.8	404.6	438.4	465.3	485.8	500.2	507.8	511.0
135°	355.1	388.2	419.1	444.6	464.9	479.2	487.3	490.4
137.5°	344.4	372.4	398.5	421.5	440.5	454.6	461.3	464.9
140°	338.2	362.2	385.0	406.4	424.3	435.4	442.6	446.7
142.5°	332.6	353.7	373.3	391.8	407.5	417.9	424.3	427.0
145°	324.5	341.8	357.1	371.3	384.1	392.7	397.8	400.3
147.5°	317.9	331.6	343.8	355.1	364.4	371.8	375.7	376.7
150°	313.9	325.6	335.7	344.9	353.0	359.6	362.7	363.2
152.5°	309.3	319.4	328.8	336.4	343.2	348.7	350.4	351.0
155°	302.6	310.8	318.4	324.5	329.7	333.7	335.2	335.2
157.5°	295.4	302.3	308.6	313.5	317.4	320.5	321.4	321.4
160°	291.0	296.6	302.1	306.2	309.2	312.4	312.8	312.8
162.5°	286.5	291.2	295.6	299.3	301.6	304.6	305.1	304.7
165°	280.3	283.3	286.9	289.4	291.5	293.5	293.0	292.5
167.5°	274.3	276.6	279.5	281.0	282.0	283.3	283.2	282.9
170°	270.6	272.2	274.2	275.7	276.7	277.2	276.7	276.7
172.5°	267.3	268.5	269.7	270.8	271.4	272.0	271.4	270.6
175°	263.0	263.5	264.5	264.5	264.5	265.6	264.5	263.5
177.5°	260.1	260.6	260.6	260.9	260.6	260.9	260.1	259.3
180°	259.0	259.0	259.0	259.0	259.0	259.0	259.0	259.0

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