

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: P332507

Luminaire Tested: **S124DIP-S350D590U835-4F0-1E-UDD-F4**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332507
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-18,
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S124DIP-S350D590U835-4F0-1E-UDD-F4
Description: DEFINE 4 DIRECT-INDIRECT PENDANT LED LUMINAIRE
DOWNLIGHT 350 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
UPLIGHT 590 LUMENS PER FOOT, BATWING OPTIC
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3629.2 lumens
Efficiency: N/A
Efficacy: 141.8 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.17 / 1.3
Luminous Opening: Rectangular (W 0.33' x L: 4' x H: 0')
CIE Type: General Diffuse

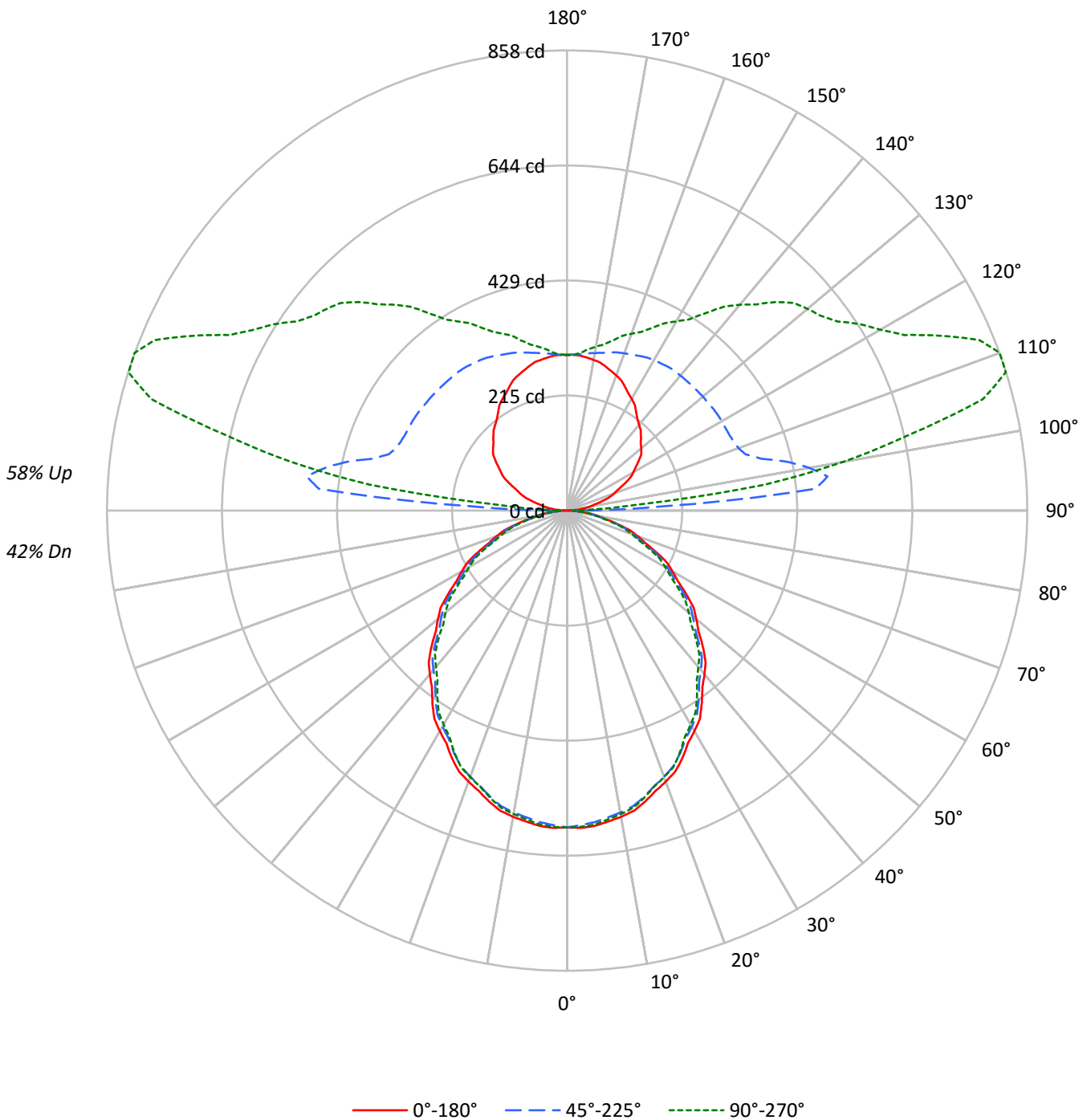
Input Watts (W): 25.6
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	0
RCR																		
0	105	105	105	105	96	96	96	96	79	79	79	63	63	63	49	49	49	42
1	96	92	88	84	87	84	80	77	69	67	65	55	54	52	43	42	41	35
2	87	80	74	69	79	73	68	64	60	57	53	49	46	44	38	36	34	29
3	80	70	63	57	72	64	58	53	53	49	45	43	40	37	33	31	29	25
4	73	62	54	48	66	57	50	45	47	42	38	38	35	32	30	27	25	21
5	67	55	47	41	61	51	44	39	42	37	33	34	30	27	27	24	22	19
6	61	50	42	36	56	46	39	33	38	33	29	31	27	24	24	22	19	16
7	57	45	37	31	52	41	34	29	34	29	25	28	24	21	22	19	17	14
8	53	41	33	28	48	37	31	26	31	26	22	26	22	19	20	18	15	13
9	49	37	30	25	45	34	28	23	29	24	20	24	20	17	19	16	14	12
10	46	34	27	22	42	31	25	21	26	21	18	22	18	15	17	15	13	11

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	4769	4769	4769
5°	4783	4725	4760
10°	4753	4687	4710
15°	4695	4621	4633
20°	4619	4538	4542
25°	4532	4444	4431
30°	4426	4333	4294
35°	4315	4217	4161
40°	4200	4086	4011
45°	4080	3956	3881
50°	3947	3841	3721
55°	3804	3690	3571
60°	3660	3523	3416
65°	3500	3364	3228
70°	3319	3151	3028
75°	3041	2895	2820
80°	2706	2599	2529
85°	2371	2279	2232



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	55.6	1.5
10°-20°	156.7	4.3
20°-30°	230.7	6.4
30°-40°	268.2	7.4
40°-50°	268.2	7.4
50°-60°	234.6	6.5
60°-70°	174.2	4.8
70°-80°	99.0	2.7
80°-90°	30.2	0.8
90°-100°	209.7	5.8
100°-110°	436.5	12.0
110°-120°	391.0	10.8
120°-130°	328.9	9.1
130°-140°	274.2	7.6
140°-150°	209.5	5.8
150°-160°	147.2	4.1
160°-170°	86.6	2.4
170°-180°	28.2	0.8
0°-30°	443.1	12.2
0°-40°	711.3	19.6
0°-60°	1214.1	33.5
0°-90°	1517.5	41.8
90°-120°	1037.2	28.6
90°-150°	1849.7	51.0
90°-180°	2112.0	58.2
0°-180°	3629.2	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	591	591	591	591	591	
5°	590	588	583	588	587	56
15°	562	560	553	555	554	158
25°	509	505	499	499	498	234
35°	438	434	428	425	422	274
45°	357	354	346	342	340	275
55°	270	269	262	257	254	242
65°	183	181	176	172	169	181
75°	98	95	93	91	90	104
85°	26	26	25	25	24	28
90°	1	5	10	11	12	2
95°	19	59	465	230	139	21
105°	67	97	374	806	803	71
115°	118	148	334	641	771	117
125°	164	194	332	546	615	146
135°	194	232	329	484	550	150
145°	224	257	327	408	449	141
155°	255	275	318	360	376	118
165°	278	286	305	323	328	78
175°	290	290	293	297	296	27
180°	290	290	290	290	290	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	590.7	590.7	590.7	590.7	590.7	590.7	590.7	590.7	590.7	590.7	590.7
2.5°	592.2	592.0	591.7	591.5	591.2	590.6	589.7	588.8	587.9	586.9	587.8
5°	590.2	589.8	589.4	589.0	588.6	587.8	586.6	585.5	584.3	583.1	584.3
7.5°	584.8	584.3	583.9	583.5	583.1	582.2	580.9	579.7	578.4	577.1	578.0
10°	579.8	579.4	579.0	578.6	578.2	577.3	575.9	574.5	573.2	571.8	572.6
12.5°	573.4	573.0	572.6	572.1	571.7	570.8	569.3	567.9	566.4	565.0	565.9
15°	561.8	561.4	561.0	560.6	560.2	559.2	557.6	556.0	554.4	552.9	553.5
17.5°	547.9	547.4	546.9	546.4	545.8	544.8	543.3	541.8	540.3	538.8	539.2
20°	537.7	537.2	536.7	536.1	535.6	534.6	533.0	531.4	529.8	528.2	528.6
22.5°	526.7	526.0	525.3	524.6	523.9	522.8	521.2	519.7	518.1	516.5	517.1
25°	508.8	508.1	507.4	506.6	505.9	504.8	503.3	501.8	500.4	498.9	499.0
27.5°	488.4	487.6	486.9	486.1	485.4	484.3	482.9	481.6	480.2	478.8	478.6
30°	474.8	473.9	473.1	472.2	471.4	470.3	468.9	467.5	466.2	464.8	464.4
32.5°	460.4	459.6	458.8	458.1	457.3	456.2	454.8	453.3	451.9	450.4	449.9
35°	437.8	437.1	436.4	435.6	434.9	433.8	432.3	430.8	429.4	427.9	427.2
37.5°	414.1	413.4	412.7	412.1	411.4	410.3	408.7	407.1	405.5	403.9	403.1
40°	398.5	397.7	396.9	396.0	395.2	394.0	392.4	390.8	389.2	387.7	386.6
42.5°	381.9	381.4	380.9	380.4	379.9	378.7	377.0	375.2	373.5	371.8	370.5
45°	357.4	356.6	355.9	355.2	354.4	353.2	351.5	349.8	348.2	346.5	345.3
47.5°	331.7	331.2	330.7	330.2	329.7	328.7	327.1	325.5	324.0	322.4	321.1
50°	314.3	313.9	313.5	313.0	312.6	311.7	310.2	308.7	307.2	305.8	304.3
52.5°	297.3	296.7	296.2	295.7	295.2	294.2	292.6	291.1	289.5	288.0	286.7
55°	270.3	270.0	269.6	269.3	269.0	268.1	266.6	265.2	263.7	262.2	261.0
57.5°	244.5	244.2	243.8	243.5	243.1	242.2	240.7	239.3	237.8	236.4	235.2
60°	226.7	226.2	225.7	225.1	224.6	223.7	222.3	220.9	219.6	218.2	217.3
62.5°	209.3	208.9	208.4	208.0	207.5	206.6	205.1	203.7	202.2	200.8	199.9
65°	183.2	182.7	182.1	181.6	181.1	180.3	179.2	178.2	177.1	176.1	175.0
67.5°	156.9	156.4	155.9	155.4	154.9	154.2	153.2	152.2	151.2	150.1	149.1
70°	140.6	139.8	139.1	138.4	137.6	136.8	136.0	135.2	134.3	133.5	132.6
72.5°	123.2	122.4	121.7	121.0	120.2	119.5	118.8	118.2	117.5	116.8	116.1
75°	97.5	97.0	96.5	95.9	95.4	94.9	94.4	93.8	93.3	92.8	92.4
77.5°	73.0	72.8	72.5	72.3	72.1	71.7	71.3	70.8	70.3	69.9	69.7
80°	58.2	57.9	57.6	57.3	57.0	56.7	56.5	56.3	56.1	55.9	55.6
82.5°	43.8	43.7	43.5	43.4	43.2	43.1	43.1	43.1	43.0	43.0	42.9
85°	25.6	25.6	25.6	25.6	25.6	25.5	25.2	25.0	24.8	24.6	24.6
87.5°	10.0	10.1	10.4	10.4	10.4	10.3	10.9	10.9	11.0	11.1	11.0
90°	0.6	1.7	3.4	4.0	4.6	4.6	8.0	8.0	9.1	10.3	9.7
92.5°	6.5	9.5	14.8	21.8	30.1	42.0	71.0	115.2	158.4	180.9	150.7
95°	18.8	20.5	26.2	33.7	47.3	71.3	120.9	214.5	350.8	464.9	478.0
97.5°	33.8	33.8	38.7	45.5	57.3	77.4	115.6	192.8	328.4	489.7	600.6
100°	43.4	43.4	47.3	54.2	65.0	83.3	116.9	181.4	297.8	458.6	604.7
102.5°	52.5	53.4	56.9	63.3	73.7	91.0	121.5	178.2	277.2	419.9	570.4
105°	66.7	68.5	71.3	78.2	88.4	105.0	132.3	179.7	259.6	374.2	508.3
107.5°	82.5	83.6	86.5	93.8	103.6	119.9	145.0	188.1	256.4	348.7	458.1
110°	93.0	94.1	97.0	103.8	114.1	129.5	154.6	194.5	257.3	340.0	433.0



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	103.0	104.2	107.5	113.9	124.1	139.5	163.7	201.4	260.0	335.9	418.8
115°	117.5	119.2	123.2	128.9	139.8	155.2	178.0	212.2	265.3	333.7	405.6
117.5°	132.6	134.2	137.7	144.0	154.1	170.1	191.8	223.3	270.8	333.1	399.7
120°	142.6	143.8	147.7	154.0	163.7	179.7	201.4	231.0	275.0	333.1	396.5
122.5°	151.7	152.9	156.9	162.7	173.3	188.8	210.5	238.3	279.1	332.7	392.8
125°	163.7	166.0	169.4	175.7	186.5	202.5	223.0	249.3	285.2	332.0	386.8
127.5°	174.3	176.2	180.3	187.4	198.7	214.8	234.7	258.8	290.1	330.7	378.7
130°	180.3	182.5	187.1	195.7	206.5	223.0	242.4	264.7	293.8	330.3	373.6
132.5°	186.2	188.0	194.0	202.1	213.8	229.4	248.8	270.6	297.0	329.8	369.1
135°	194.5	196.8	202.5	212.2	224.2	239.0	257.8	278.4	301.8	329.1	362.2
137.5°	202.9	205.0	211.3	220.5	233.0	247.1	264.7	283.9	304.6	329.0	356.3
140°	208.8	210.5	216.8	226.5	238.4	252.1	269.3	287.5	306.9	328.6	353.1
142.5°	215.2	216.9	222.7	231.9	243.5	256.7	273.4	290.2	308.7	328.6	350.4
145°	224.2	225.9	231.6	239.6	250.4	263.0	277.8	293.2	309.8	327.4	345.7
147.5°	234.3	234.9	239.9	248.1	257.2	268.5	282.4	295.8	310.3	325.4	341.5
150°	240.7	241.3	245.9	252.7	261.3	272.1	284.7	297.2	310.3	324.0	338.3
152.5°	246.7	246.8	251.3	257.7	265.4	275.3	286.5	298.1	309.4	321.7	334.6
155°	255.0	255.6	259.0	264.7	271.0	279.5	289.2	298.9	308.0	318.3	329.1
157.5°	263.1	263.1	266.3	270.7	276.2	282.9	291.2	298.9	306.6	314.8	323.6
160°	268.1	268.1	270.4	274.4	278.9	285.2	292.1	298.9	305.2	312.0	319.5
162.5°	272.7	272.2	274.0	277.6	281.7	286.6	293.0	298.9	303.8	309.3	315.8
165°	277.8	277.8	278.9	281.8	284.7	288.1	293.2	297.8	301.2	305.2	309.8
167.5°	282.9	282.4	282.9	285.1	286.7	289.3	293.1	296.4	298.5	301.1	304.3
170°	285.2	284.7	285.2	286.9	288.1	289.8	292.6	295.5	296.6	298.3	300.6
172.5°	287.5	286.9	287.0	288.3	289.0	290.2	292.2	294.6	294.8	295.6	297.4
175°	289.8	289.2	289.2	289.8	290.4	290.4	291.5	293.2	292.6	292.6	293.8
177.5°	290.8	290.4	289.9	290.4	290.4	290.4	290.8	291.7	290.8	290.8	291.3
180°	290.4	290.4	290.4	290.4	290.4	290.4	290.4	290.4	290.4	290.4	290.4



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	590.7	590.7	590.7	590.7	590.7	590.7	590.7	590.7
2.5°	588.6	589.5	590.3	590.7	590.6	590.5	590.4	590.3
5°	585.5	586.6	587.8	588.2	588.0	587.8	587.6	587.4
7.5°	578.9	579.9	580.8	581.2	581.1	580.9	580.8	580.7
10°	573.5	574.3	575.2	575.5	575.3	575.0	574.8	574.6
12.5°	566.8	567.7	568.7	569.0	568.7	568.4	568.1	567.8
15°	554.1	554.7	555.4	555.5	555.2	554.9	554.6	554.3
17.5°	539.6	540.0	540.4	540.5	540.3	540.1	539.9	539.7
20°	528.9	529.2	529.5	529.6	529.3	529.1	528.9	528.7
22.5°	517.6	518.2	518.8	518.9	518.5	518.1	517.7	517.4
25°	499.1	499.2	499.3	499.2	498.7	498.3	497.9	497.5
27.5°	478.3	478.1	477.8	477.4	476.9	476.4	475.8	475.3
30°	464.0	463.6	463.1	462.7	462.1	461.6	461.1	460.6
32.5°	449.4	448.9	448.4	447.9	447.4	446.8	446.3	445.8
35°	426.4	425.7	424.9	424.3	423.8	423.3	422.7	422.2
37.5°	402.3	401.5	400.7	400.0	399.3	398.6	397.9	397.2
40°	385.6	384.5	383.5	382.7	382.1	381.6	381.1	380.6
42.5°	369.3	368.1	366.9	366.1	365.7	365.4	365.0	364.7
45°	344.2	343.0	341.9	341.1	340.8	340.5	340.2	339.9
47.5°	319.8	318.5	317.2	316.2	315.4	314.6	313.8	313.0
50°	302.8	301.4	299.9	298.8	298.2	297.6	296.9	296.3
52.5°	285.4	284.1	282.8	281.7	280.9	280.1	279.3	278.5
55°	259.7	258.4	257.2	256.2	255.6	255.0	254.3	253.7
57.5°	234.0	232.8	231.6	230.7	230.1	229.5	228.9	228.2
60°	216.3	215.4	214.4	213.7	213.2	212.6	212.1	211.6
62.5°	199.1	198.2	197.3	196.6	196.1	195.6	195.1	194.5
65°	174.0	172.9	171.9	171.1	170.6	170.0	169.5	169.0
67.5°	148.1	147.1	146.1	145.5	145.4	145.2	145.1	144.9
70°	131.8	131.0	130.1	129.5	129.2	128.9	128.6	128.3
72.5°	115.5	114.8	114.1	113.6	113.3	113.0	112.7	112.4
75°	91.9	91.5	91.1	90.8	90.7	90.6	90.5	90.4
77.5°	69.6	69.5	69.4	69.2	68.9	68.6	68.3	68.1
80°	55.4	55.2	55.0	54.9	54.7	54.6	54.5	54.4
82.5°	42.7	42.6	42.5	42.4	42.3	42.1	42.0	41.9
85°	24.6	24.6	24.6	24.6	24.5	24.4	24.2	24.1
87.5°	11.1	11.3	11.4	11.4	11.5	11.6	11.5	11.5
90°	10.3	10.8	11.4	11.4	12.0	12.5	12.0	12.0
92.5°	112.0	84.3	67.1	55.7	48.9	45.9	43.9	43.9
95°	422.7	334.3	257.8	202.5	174.6	156.9	146.6	139.2
97.5°	624.5	591.7	535.9	476.3	435.4	401.0	383.9	372.0
100°	688.0	699.4	671.4	629.2	579.6	544.8	527.7	523.1
102.5°	684.8	741.4	749.5	731.9	701.4	676.2	658.2	654.5
105°	638.9	737.6	794.1	817.5	818.6	814.0	806.0	802.6
107.5°	573.8	678.8	758.4	809.2	837.4	850.4	856.1	857.6
110°	534.5	633.2	715.9	778.7	819.2	843.1	853.4	858.5



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	505.8	593.0	671.2	733.9	779.9	808.9	823.3	831.6
115°	476.9	547.1	613.8	668.6	713.6	747.9	766.1	770.7
117.5°	462.7	520.8	573.3	619.7	658.2	686.9	705.4	709.0
120°	456.4	509.4	555.0	595.5	628.1	653.2	668.0	674.3
122.5°	450.9	502.1	543.6	579.1	606.6	628.1	640.6	646.9
125°	441.5	490.6	529.9	561.3	584.1	600.7	611.5	614.9
127.5°	430.1	477.0	516.3	546.0	569.0	583.7	592.8	596.2
130°	421.0	466.1	504.8	535.1	558.5	572.7	581.9	585.3
132.5°	411.4	453.7	491.6	521.8	544.8	560.9	569.5	573.0
135°	398.2	435.3	470.0	498.6	521.4	537.4	546.5	549.9
137.5°	386.2	417.6	446.9	472.7	494.0	509.8	517.3	521.4
140°	379.3	406.2	431.8	455.8	475.8	488.3	496.3	500.9
142.5°	373.0	396.6	418.6	439.4	457.0	468.7	475.8	478.9
145°	363.9	383.3	400.5	416.4	430.7	440.4	446.1	448.9
147.5°	356.5	371.9	385.6	398.2	408.7	417.0	421.3	422.4
150°	352.0	365.1	376.5	386.8	395.9	403.3	406.7	407.3
152.5°	346.9	358.2	368.7	377.2	384.9	391.0	393.0	393.6
155°	339.4	348.5	357.1	363.9	369.7	374.2	375.9	375.9
157.5°	331.3	339.0	346.1	351.6	356.0	359.4	360.4	360.4
160°	326.3	332.6	338.8	343.4	346.8	350.3	350.8	350.8
162.5°	321.3	326.6	331.5	335.7	338.2	341.6	342.2	341.7
165°	314.3	317.7	321.7	324.6	326.9	329.1	328.6	328.0
167.5°	307.6	310.2	313.4	315.1	316.3	317.7	317.6	317.2
170°	303.5	305.2	307.5	309.2	310.3	310.9	310.3	310.3
172.5°	299.8	301.1	302.5	303.7	304.4	305.0	304.4	303.5
175°	294.9	295.5	296.6	296.6	296.6	297.8	296.6	295.5
177.5°	291.7	292.2	292.2	292.6	292.2	292.6	291.7	290.8
180°	290.4	290.4	290.4	290.4	290.4	290.4	290.4	290.4

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