

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: P331618-830

Luminaire Tested: **SA2XXRDIP-C290D330U830-4F0-1E-UDD-F**

Issue Date: 10/7/2019

Test Information

Test Method: LM-79-08
Report Number: P331618-830
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-2,
Test Lab: INNOVATION CENTER
Issue Date: 10/7/2019
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: SA2XXRDIP-C290D330U830-4F0-1E-UDD-F
Description: DEFINE 2 DIRECT-INDIRECT PENDANT LED LUMINAIRE
DOWNLIGHT 290 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER, REGRESSED
HOUSING
UPLIGHT 330 LUMENS PER FOOT, NO LENS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

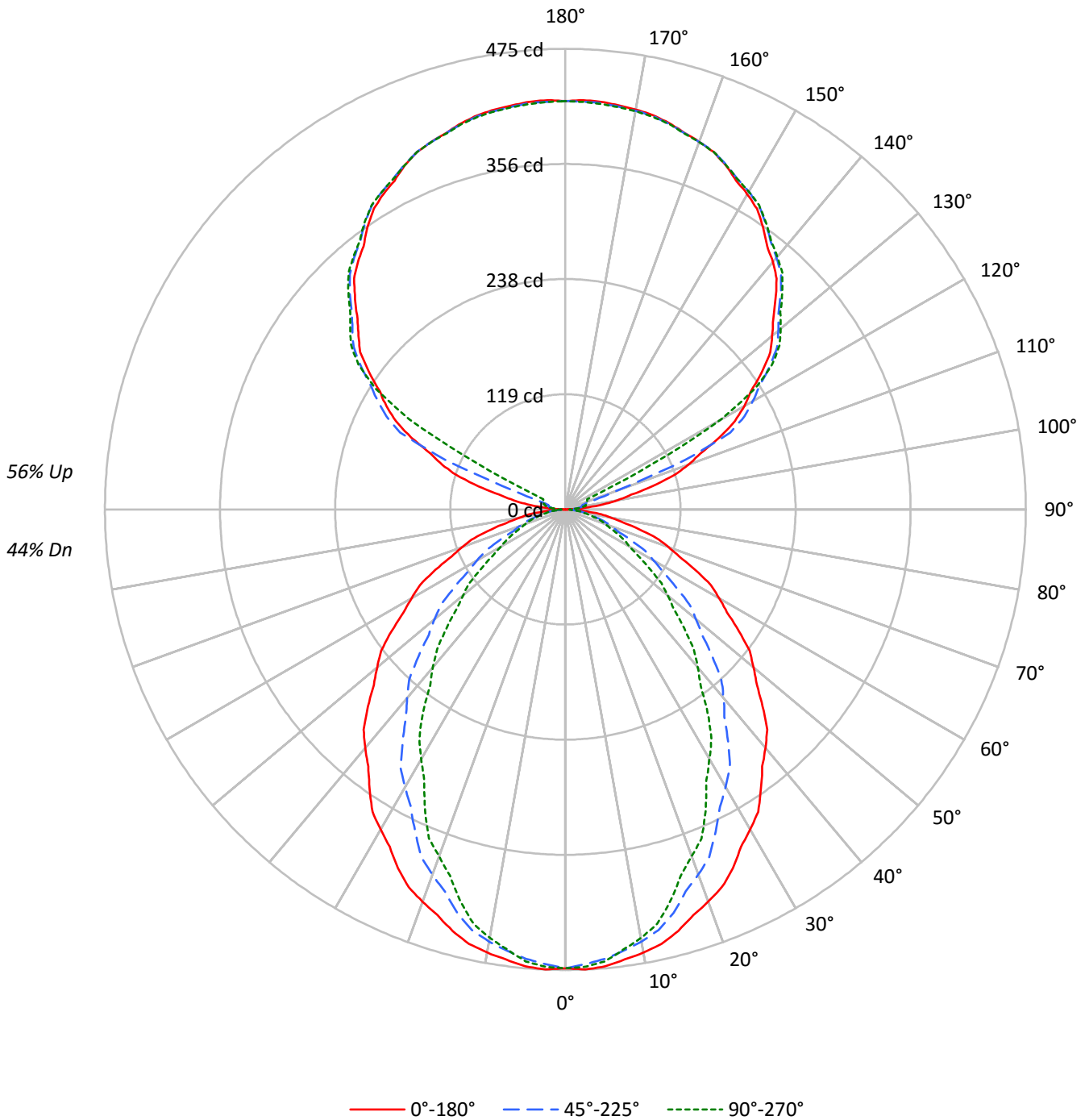
Lumens per Lamp: N/A
Luminaire Lumens: 2208.4 lumens
Efficiency: N/A
Efficacy: 108.8 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular (W 0.17' x L: 4' x H: 0')
CIE Type: General Diffuse

Input Watts (W): 20.3
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	106	106	106	106	97	97	97	97	80	80	80	65	65	65	51	51	51	44				44
1	97	93	89	86	89	85	82	79	71	69	67	58	56	55	45	44	44	38				38
2	89	81	76	71	81	75	70	66	62	59	56	51	49	46	41	39	37	32				32
3	81	72	65	59	74	66	60	55	55	51	47	46	42	40	36	34	32	28				28
4	74	64	56	51	68	59	52	47	50	45	41	41	37	34	33	30	28	24				24
5	68	57	49	44	62	53	46	41	45	39	35	37	33	30	30	27	25	21				21
6	63	51	44	38	58	48	41	36	40	35	31	33	29	26	27	24	22	19				19
7	58	46	39	33	53	43	36	31	37	31	27	31	27	24	25	22	20	17				17
8	54	42	35	30	50	39	33	28	33	28	24	28	24	21	23	20	18	15				15
9	51	39	31	26	46	36	29	25	31	26	22	26	22	19	21	18	16	14				14
10	47	35	28	24	43	33	27	22	28	23	20	24	20	17	20	17	15	13				13

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	7640	7640	7640
5°	7669	7543	7585
10°	7609	7420	7356
15°	7522	7199	6992
20°	7400	6887	6541
25°	7277	6531	6102
30°	7105	6162	5541
35°	6936	5765	5048
40°	6768	5351	4477
45°	6572	4889	3959
50°	6365	4421	3451
55°	6159	3916	2967
60°	5916	3387	2464
65°	5643	2846	2239
70°	5316	2346	2058
75°	4916	2133	1921
80°	4342	1906	1757
85°	3409	1501	1501



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	44.3	2.0
10°-20°	121.6	5.5
20°-30°	170.8	7.7
30°-40°	186.2	8.4
40°-50°	171.2	7.8
50°-60°	134.5	6.1
60°-70°	87.7	4.0
70°-80°	45.2	2.0
80°-90°	12.8	0.6
90°-100°	14.0	0.6
100°-110°	51.5	2.3
110°-120°	137.7	6.2
120°-130°	227.3	10.3
130°-140°	241.8	10.9
140°-150°	224.7	10.2
150°-160°	180.7	8.2
160°-170°	116.4	5.3
170°-180°	40.1	1.8
0°-30°	336.6	15.2
0°-40°	522.8	23.7
0°-60°	828.5	37.5
0°-90°	974.2	44.1
90°-120°	203.3	9.2
90°-150°	897.1	40.6
90°-180°	1234.0	55.9
0°-180°	2208.4	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	473	473	473	473	473	
5°	473	471	465	469	468	45
15°	450	445	431	423	418	127
25°	408	394	367	350	342	188
35°	352	329	292	266	256	220
45°	288	258	214	185	173	222
55°	219	185	139	114	105	195
65°	148	113	74	61	59	146
75°	79	50	34	31	31	83
85°	18	10	8	8	8	22
90°	0	4	6	8	8	2
95°	20	10	12	13	13	24
105°	93	97	19	22	23	99
115°	175	181	188	54	25	172
125°	248	252	258	260	260	221
135°	307	311	314	317	317	237
145°	356	356	360	362	361	222
155°	392	389	392	394	392	180
165°	413	411	412	414	412	117
175°	422	420	421	422	420	40
180°	421	421	421	421	421	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	473.2	473.2	473.2	473.2	473.2	473.2	473.2	473.2	473.2	473.2	473.2
2.5°	474.9	474.5	474.1	473.7	473.3	472.7	471.8	471.1	470.2	469.4	470.1
5°	473.2	472.7	472.2	471.7	471.3	470.3	469.1	467.9	466.7	465.4	466.3
7.5°	468.3	467.7	467.0	466.5	465.9	464.9	463.4	461.9	460.5	459.1	459.3
10°	464.1	463.4	462.8	462.1	461.5	460.1	458.3	456.4	454.5	452.6	452.3
12.5°	459.0	458.2	457.3	456.6	455.7	454.1	451.7	449.2	446.8	444.3	443.8
15°	450.0	448.9	447.9	446.9	445.8	443.7	440.5	437.2	433.9	430.7	429.0
17.5°	438.9	437.3	435.7	434.1	432.5	429.7	425.6	421.4	417.3	413.1	410.9
20°	430.7	428.9	427.0	425.0	423.1	419.8	415.0	410.3	405.6	400.8	398.4
22.5°	421.9	419.7	417.5	415.5	413.3	409.5	404.2	398.8	393.5	388.1	385.0
25°	408.5	405.4	402.4	399.4	396.3	391.6	385.3	379.1	372.8	366.6	362.6
27.5°	392.4	389.1	385.8	382.5	379.1	373.9	366.8	359.8	352.7	345.6	341.1
30°	381.1	377.5	373.8	370.2	366.6	361.0	353.4	345.8	338.2	330.5	325.7
32.5°	370.1	365.9	361.7	357.4	353.2	347.2	339.5	331.7	324.0	316.1	310.7
35°	351.9	347.1	342.2	337.4	332.5	325.9	317.5	309.2	300.9	292.5	286.4
37.5°	333.8	328.5	323.1	317.8	312.5	305.4	296.4	287.5	278.6	269.7	263.1
40°	321.1	315.5	309.7	304.0	298.3	290.9	281.6	272.4	263.2	253.9	247.1
42.5°	308.1	302.1	296.1	290.1	284.1	276.3	266.7	257.2	247.7	238.2	231.2
45°	287.8	281.3	274.9	268.6	262.2	254.0	244.0	234.0	224.0	214.1	207.4
47.5°	267.9	261.1	254.4	247.6	240.8	232.3	222.0	211.7	201.3	191.1	184.4
50°	253.4	246.8	240.0	233.2	226.5	217.8	207.4	196.9	186.4	176.0	169.4
52.5°	239.4	232.3	225.4	218.3	211.2	202.6	192.3	182.1	171.8	161.6	155.2
55°	218.8	211.4	204.0	196.5	189.1	180.3	169.9	159.7	149.4	139.1	133.5
57.5°	197.7	190.0	182.4	174.8	167.2	158.4	148.5	138.7	128.8	118.9	113.7
60°	183.2	175.7	168.1	160.4	152.8	144.1	134.3	124.5	114.7	104.9	100.0
62.5°	169.2	161.6	154.0	146.4	138.7	130.3	120.9	111.6	102.3	92.9	88.3
65°	147.7	140.0	132.3	124.6	116.9	108.8	100.2	91.6	83.0	74.5	71.3
67.5°	127.0	119.3	111.7	104.1	96.4	88.7	81.0	73.3	65.6	57.9	56.4
70°	112.6	105.2	97.7	90.4	82.9	76.0	69.4	62.8	56.3	49.7	48.7
72.5°	98.9	91.8	84.6	77.6	70.4	64.3	59.0	53.7	48.4	43.2	42.3
75°	78.8	72.1	65.5	58.8	52.1	47.2	43.9	40.7	37.5	34.2	33.6
77.5°	59.0	53.2	47.3	41.5	35.6	32.0	30.3	28.8	27.2	25.7	25.4
80°	46.7	41.8	36.9	32.1	27.2	24.3	23.4	22.4	21.5	20.5	20.2
82.5°	35.3	31.6	27.8	24.0	20.3	18.0	17.3	16.7	16.0	15.5	15.2
85°	18.4	16.4	14.4	12.4	10.5	9.2	9.0	8.7	8.4	8.1	8.1
87.5°	5.6	5.1	4.6	4.1	3.7	3.5	3.7	3.8	3.9	4.0	4.0
90°	0.3	1.0	1.8	2.5	3.3	4.0	4.4	5.0	5.6	6.1	6.4
92.5°	6.1	6.1	6.0	5.9	5.8	6.0	6.2	6.5	6.8	7.1	7.3
95°	19.8	17.5	15.4	13.1	10.8	10.0	10.5	10.9	11.4	11.9	12.3
97.5°	39.3	33.0	26.7	20.5	14.1	11.5	12.6	13.7	14.8	15.9	16.2
100°	53.9	44.7	35.3	26.1	16.9	12.7	13.9	15.1	16.2	17.3	17.9
102.5°	70.0	68.1	66.1	64.2	62.2	56.4	46.8	37.1	27.5	17.8	18.6
105°	92.7	94.6	96.7	98.8	100.8	92.6	74.1	55.6	37.0	18.6	19.3
107.5°	118.4	120.1	121.7	123.4	125.0	114.7	92.6	70.4	48.2	26.0	25.3
110°	135.0	136.4	137.9	139.3	140.7	131.6	112.1	92.5	72.9	53.3	46.6



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	150.6	151.8	153.2	154.4	155.6	153.8	149.0	144.2	139.3	134.5	109.8
115°	175.2	176.3	177.6	178.7	179.8	181.3	182.9	184.6	186.3	188.0	156.7
117.5°	197.3	198.5	199.8	201.1	202.4	203.6	204.8	205.9	207.1	208.3	200.7
120°	213.3	214.3	215.4	216.4	217.4	218.5	219.7	220.9	222.2	223.4	224.2
122.5°	227.0	228.1	229.1	230.2	231.3	232.4	233.8	235.1	236.5	237.8	238.3
125°	247.8	248.6	249.5	250.4	251.3	252.4	253.6	255.0	256.2	257.5	258.0
127.5°	266.6	267.6	268.5	269.6	270.5	271.5	272.4	273.4	274.4	275.3	276.0
130°	278.5	279.7	280.7	281.8	282.9	283.8	284.6	285.3	286.1	286.8	287.5
132.5°	290.8	291.6	292.6	293.5	294.5	295.2	296.0	296.7	297.5	298.2	298.9
135°	306.6	307.6	308.8	309.8	310.9	311.8	312.4	313.0	313.6	314.2	314.9
137.5°	322.6	323.4	324.1	324.9	325.6	326.4	327.1	327.7	328.5	329.1	329.8
140°	333.1	333.7	334.1	334.7	335.3	335.9	336.7	337.4	338.2	338.8	339.5
142.5°	341.9	342.3	342.8	343.4	343.8	344.5	345.3	346.2	347.0	347.9	348.5
145°	355.6	355.6	355.5	355.4	355.3	355.9	357.0	358.3	359.4	360.5	361.0
147.5°	367.7	367.4	367.1	366.8	366.6	367.0	368.2	369.4	370.5	371.6	371.9
150°	375.4	374.9	374.5	374.0	373.5	373.9	374.9	376.1	377.1	378.2	378.6
152.5°	382.0	381.5	381.0	380.4	379.9	380.1	381.2	382.2	383.2	384.3	384.7
155°	391.6	391.0	390.4	389.7	389.2	389.3	390.1	390.9	391.7	392.5	392.9
157.5°	399.1	398.6	398.0	397.6	397.0	397.1	397.7	398.2	398.8	399.4	399.8
160°	403.5	403.1	402.7	402.3	401.9	401.9	402.3	402.7	403.1	403.5	403.9
162.5°	407.4	407.0	406.6	406.1	405.8	405.8	406.0	406.4	406.8	407.2	407.6
165°	412.6	412.3	411.8	411.4	411.0	410.9	411.1	411.3	411.5	411.7	412.2
167.5°	416.5	416.1	415.8	415.3	414.9	414.8	415.0	415.2	415.4	415.6	416.0
170°	418.8	418.3	417.9	417.5	417.1	417.0	417.1	417.3	417.4	417.5	418.0
172.5°	420.2	419.8	419.3	419.0	418.6	418.4	418.6	418.7	418.9	419.0	419.4
175°	422.1	421.6	421.1	420.7	420.2	420.0	420.2	420.3	420.5	420.6	421.0
177.5°	422.4	422.0	421.6	421.2	420.8	420.8	420.8	420.8	420.8	420.9	421.3
180°	421.1	421.1	421.1	421.1	421.1	421.1	421.1	421.1	421.1	421.1	421.1



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	473.2	473.2	473.2	473.2	473.2	473.2	473.2	473.2
2.5°	470.9	471.6	472.4	472.7	472.6	472.4	472.2	472.1
5°	467.1	468.0	468.8	469.1	468.8	468.5	468.3	468.0
7.5°	459.6	459.9	460.1	460.0	459.5	458.9	458.5	458.0
10°	452.0	451.8	451.5	451.0	450.4	449.9	449.3	448.7
12.5°	443.4	442.8	442.3	441.6	440.6	439.7	438.8	437.8
15°	427.2	425.3	423.5	422.2	421.2	420.2	419.2	418.3
17.5°	408.8	406.6	404.5	402.7	401.0	399.4	397.7	396.1
20°	396.1	393.6	391.2	389.0	386.9	384.8	382.8	380.7
22.5°	382.0	378.9	375.9	373.5	371.9	370.4	368.8	367.3
25°	358.7	354.8	350.9	348.3	346.9	345.3	343.9	342.5
27.5°	336.5	332.0	327.4	324.0	321.8	319.5	317.3	315.0
30°	320.8	316.0	311.1	307.5	304.8	302.3	299.7	297.2
32.5°	305.1	299.5	294.0	290.0	287.7	285.2	282.8	280.4
35°	280.5	274.5	268.4	264.4	262.3	260.2	258.2	256.1
37.5°	256.5	249.9	243.3	238.7	236.4	233.9	231.6	229.1
40°	240.4	233.7	226.9	222.3	219.8	217.4	214.8	212.4
42.5°	224.1	217.2	210.2	205.6	203.1	200.8	198.3	196.0
45°	200.6	193.8	187.1	182.6	180.3	178.0	175.7	173.4
47.5°	177.6	170.9	164.2	159.8	157.7	155.6	153.5	151.5
50°	162.9	156.3	149.7	145.4	143.5	141.5	139.4	137.4
52.5°	148.9	142.6	136.3	132.1	130.4	128.5	126.6	124.8
55°	127.7	122.1	116.3	112.5	110.7	109.0	107.2	105.4
57.5°	108.5	103.2	98.0	94.6	93.1	91.6	90.1	88.5
60°	95.2	90.4	85.5	82.3	80.8	79.3	77.8	76.3
62.5°	83.7	79.1	74.5	71.6	70.7	69.8	68.9	68.0
65°	68.1	64.8	61.5	59.8	59.5	59.2	58.9	58.6
67.5°	55.0	53.4	51.9	51.1	50.7	50.4	50.1	49.9
70°	47.8	46.8	45.9	45.2	44.8	44.4	44.0	43.6
72.5°	41.6	40.7	40.0	39.5	39.2	39.0	38.7	38.5
75°	32.9	32.2	31.6	31.2	31.1	31.0	30.9	30.8
77.5°	24.9	24.5	24.1	23.9	23.8	23.6	23.5	23.3
80°	19.8	19.4	19.0	18.9	18.9	18.9	18.9	18.9
82.5°	15.0	14.7	14.5	14.4	14.4	14.4	14.4	14.4
85°	8.1	8.1	8.1	8.1	8.1	8.1	8.1	8.1
87.5°	4.0	4.0	4.0	4.0	4.0	4.0	4.1	4.1
90°	6.8	7.1	7.4	7.7	7.8	7.9	8.1	8.2
92.5°	7.4	7.6	7.7	7.9	8.0	8.1	8.1	8.2
95°	12.5	12.9	13.2	13.4	13.3	13.2	13.2	13.1
97.5°	16.5	16.7	17.0	17.2	17.2	17.3	17.4	17.5
100°	18.5	19.0	19.5	19.9	20.0	20.2	20.3	20.5
102.5°	19.2	20.0	20.6	21.1	21.3	21.5	21.7	21.9
105°	20.1	20.8	21.6	22.1	22.3	22.6	22.9	23.2
107.5°	24.5	23.8	23.0	22.7	23.0	23.3	23.6	23.8
110°	39.8	33.0	26.2	23.0	23.3	23.6	23.8	24.0



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	85.1	60.4	35.7	23.5	23.7	23.8	24.1	24.3
115°	125.4	94.0	62.6	44.5	39.6	34.8	29.9	25.0
117.5°	193.1	185.5	178.0	166.2	150.1	134.1	118.1	102.1
120°	225.0	225.8	226.6	222.4	213.3	204.2	195.0	185.9
122.5°	238.7	239.2	239.7	239.0	237.3	235.5	233.8	232.0
125°	258.4	258.9	259.4	259.8	260.0	260.1	260.3	260.5
127.5°	276.7	277.4	278.1	278.4	278.5	278.5	278.5	278.6
130°	288.2	289.0	289.7	290.1	290.0	289.9	289.9	289.8
132.5°	299.5	300.1	300.8	301.0	301.0	301.0	300.9	300.8
135°	315.6	316.2	316.9	317.2	317.1	316.9	316.8	316.6
137.5°	330.5	331.1	331.8	332.0	331.8	331.6	331.3	331.1
140°	340.1	340.7	341.3	341.5	341.1	340.8	340.4	340.1
142.5°	349.0	349.6	350.2	350.2	349.9	349.6	349.2	348.8
145°	361.5	361.9	362.4	362.5	362.1	361.8	361.5	361.1
147.5°	372.3	372.7	373.1	373.1	372.8	372.5	372.2	371.9
150°	379.0	379.4	379.8	379.8	379.6	379.2	378.8	378.5
152.5°	385.1	385.5	385.9	385.9	385.4	385.0	384.6	384.1
155°	393.3	393.7	394.2	394.1	393.5	393.0	392.5	391.9
157.5°	400.3	400.8	401.1	401.1	400.6	400.1	399.5	399.1
160°	404.4	404.7	405.1	405.1	404.6	404.2	403.7	403.2
162.5°	408.0	408.5	409.0	409.0	408.3	407.7	407.2	406.6
165°	412.6	413.1	413.6	413.6	413.1	412.6	412.2	411.7
167.5°	416.5	417.0	417.5	417.4	416.8	416.1	415.6	414.9
170°	418.5	419.0	419.4	419.3	418.8	418.1	417.5	416.9
172.5°	419.9	420.4	420.8	420.8	420.2	419.6	419.0	418.4
175°	421.5	422.0	422.4	422.4	421.7	421.0	420.3	419.6
177.5°	421.7	422.1	422.4	422.4	421.9	421.4	420.9	420.5
180°	421.1	421.1	421.1	421.1	421.1	421.1	421.1	421.1

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