

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: P331248-927

Luminaire Tested: **S122DIP-S290D330U927-4F0-1E-UDD-F4**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P331248-927  
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-16,  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: S122DIP-S290D330U927-4F0-1E-UDD-F4  
Description: DEFINE 2 DIRECT-INDIRECT PENDANT LED LUMINAIRE  
DOWNLIGHT 290 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER  
UPLIGHT 330 LUMENS PER FOOT, BATWING OPTIC  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 1966.3 lumens  
Efficiency: N/A  
Efficacy: 96.9 lumens/watt  
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.3  
Luminous Opening: Rectangular (W 0.17' x L: 4' x H: 0')  
CIE Type: General Diffuse

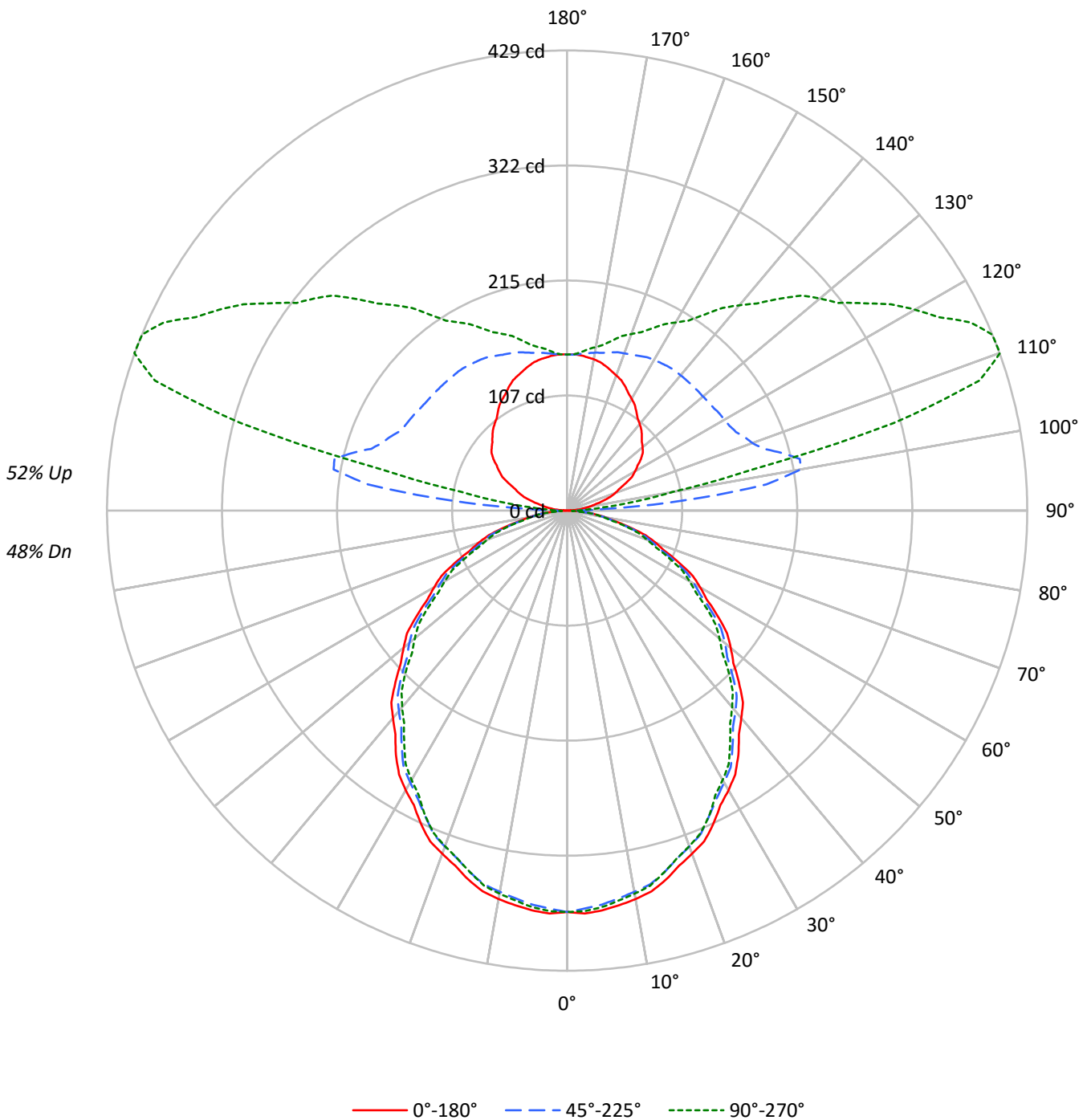
Input Watts (W): 20.3  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	0
RCR																		
0	107	107	107	107	98	98	98	98	82	82	82	68	68	68	55	55	55	48
1	97	93	89	86	90	86	83	80	72	70	68	60	58	57	48	47	46	41
2	89	81	75	70	81	75	70	65	63	59	56	53	50	47	43	41	39	34
3	81	71	64	58	74	66	60	55	56	51	47	46	43	40	38	35	33	29
4	74	63	55	49	68	59	52	46	50	44	40	41	37	34	34	31	29	25
5	68	56	48	42	62	52	45	40	44	39	35	37	33	30	30	27	25	22
6	63	51	42	37	57	47	40	34	40	34	30	34	29	26	28	24	22	19
7	58	46	38	32	53	42	35	30	36	31	27	31	26	23	25	22	19	17
8	54	41	34	28	49	39	32	27	33	28	24	28	24	21	23	20	17	15
9	50	38	30	25	46	35	28	24	30	25	21	26	21	18	21	18	16	14
10	47	35	27	23	43	32	26	21	28	23	19	24	20	17	20	17	14	12

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	6042	6042	6042
5°	6065	5977	6015
10°	6030	5917	5946
15°	5954	5840	5835
20°	5849	5727	5720
25°	5744	5585	5585
30°	5610	5455	5407
35°	5483	5298	5219
40°	5324	5143	5044
45°	5167	4987	4864
50°	4999	4828	4657
55°	4822	4642	4467
60°	4624	4414	4253
65°	4413	4195	4000
70°	4145	3923	3734
75°	3768	3612	3525
80°	3347	3245	3078
85°	2723	2594	2334



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	35.2	1.8
10°-20°	99.0	5.0
20°-30°	145.6	7.4
30°-40°	169.1	8.6
40°-50°	168.9	8.6
50°-60°	147.3	7.5
60°-70°	108.9	5.5
70°-80°	61.7	3.1
80°-90°	17.9	0.9
90°-100°	58.2	3.0
100°-110°	197.5	10.0
110°-120°	209.8	10.7
120°-130°	172.7	8.8
130°-140°	138.7	7.1
140°-150°	104.8	5.3
150°-160°	73.7	3.7
160°-170°	43.4	2.2
170°-180°	14.1	0.7
0°-30°	279.8	14.2
0°-40°	448.8	22.8
0°-60°	765.0	38.9
0°-90°	953.5	48.5
90°-120°	465.5	23.7
90°-150°	881.7	44.8
90°-180°	1013.0	51.5
0°-180°	1966.3	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	374	374	374	374	374	
5°	374	373	369	372	371	35
15°	356	354	349	351	349	100
25°	322	319	314	314	314	148
35°	278	274	269	267	265	174
45°	226	224	218	215	213	175
55°	171	169	165	161	159	153
65°	116	113	110	107	105	114
75°	60	60	58	56	56	65
85°	15	14	14	13	13	17
90°	0	4	10	9	9	1
95°	10	24	110	41	32	10
105°	34	52	207	371	315	36
115°	60	76	174	358	415	60
125°	84	99	167	290	337	75
135°	98	118	165	244	279	76
145°	112	129	164	204	223	71
155°	128	138	159	180	187	59
165°	139	144	153	162	164	39
175°	145	145	147	148	148	14
180°	146	146	146	146	146	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	374.2	374.2	374.2	374.2	374.2	374.2	374.2	374.2	374.2	374.2	374.2
2.5°	376.0	375.7	375.3	375.0	374.7	374.2	373.5	372.8	372.1	371.4	372.0
5°	374.2	373.9	373.6	373.3	373.0	372.4	371.5	370.7	369.7	368.8	369.5
7.5°	371.0	370.4	369.9	369.5	369.0	368.3	367.4	366.5	365.6	364.7	365.4
10°	367.8	367.3	366.7	366.1	365.5	364.8	363.8	362.9	361.9	360.9	361.6
12.5°	363.5	363.0	362.5	361.9	361.5	360.8	359.8	358.9	357.9	357.0	357.4
15°	356.2	355.8	355.3	354.8	354.3	353.6	352.5	351.5	350.5	349.4	349.7
17.5°	347.1	346.6	346.1	345.6	345.2	344.4	343.3	342.2	341.2	340.2	340.5
20°	340.4	339.9	339.5	339.0	338.5	337.7	336.6	335.5	334.4	333.3	333.5
22.5°	333.8	333.1	332.5	331.8	331.1	330.3	329.2	328.1	327.1	326.1	326.1
25°	322.4	321.8	321.2	320.5	319.9	318.9	317.5	316.2	314.8	313.5	313.6
27.5°	309.5	309.0	308.3	307.8	307.2	306.3	305.3	304.2	303.2	302.1	301.8
30°	300.9	300.2	299.6	299.0	298.3	297.4	296.2	295.0	293.7	292.6	292.3
32.5°	291.6	291.1	290.7	290.1	289.6	288.7	287.4	286.2	284.9	283.7	283.2
35°	278.2	277.3	276.6	275.8	275.0	273.9	272.7	271.4	270.1	268.8	268.3
37.5°	263.0	262.3	261.6	260.9	260.2	259.2	257.9	256.7	255.3	254.1	253.5
40°	252.6	252.0	251.4	250.7	250.1	249.1	247.8	246.5	245.3	244.0	243.3
42.5°	242.6	241.9	241.3	240.7	240.0	239.0	237.7	236.5	235.2	233.9	233.1
45°	226.3	225.8	225.2	224.7	224.1	223.2	222.0	220.9	219.7	218.4	217.5
47.5°	210.2	209.7	209.2	208.7	208.1	207.2	206.0	204.8	203.5	202.2	201.3
50°	199.0	198.6	198.2	197.8	197.4	196.6	195.5	194.4	193.3	192.2	191.1
52.5°	188.1	187.5	187.0	186.5	185.9	185.1	184.1	183.1	182.0	180.9	180.0
55°	171.3	170.8	170.3	169.8	169.4	168.7	167.7	166.8	165.8	164.9	163.8
57.5°	154.5	154.1	153.7	153.3	152.9	152.2	151.1	150.1	149.0	148.0	147.0
60°	143.2	142.9	142.6	142.3	142.0	141.2	140.1	139.0	137.8	136.7	135.9
62.5°	132.3	131.7	131.3	130.8	130.2	129.5	128.7	127.9	127.0	126.1	125.2
65°	115.5	115.0	114.5	114.1	113.6	113.0	112.2	111.4	110.6	109.8	109.0
67.5°	98.5	98.1	97.7	97.3	97.0	96.4	95.6	94.9	94.2	93.5	92.9
70°	87.8	87.5	87.1	86.8	86.5	86.0	85.3	84.6	83.8	83.1	82.5
72.5°	76.8	76.5	76.2	75.9	75.6	75.2	74.7	74.3	73.8	73.4	72.8
75°	60.4	60.3	60.1	60.0	59.8	59.6	59.2	58.7	58.3	57.9	57.4
77.5°	45.8	45.5	45.2	45.0	44.7	44.4	44.3	44.1	44.0	43.8	43.6
80°	36.0	35.9	35.8	35.7	35.6	35.6	35.4	35.3	35.1	34.9	34.7
82.5°	26.8	26.8	26.8	26.7	26.7	26.6	26.5	26.5	26.4	26.3	26.0
85°	14.7	14.7	14.6	14.5	14.4	14.3	14.3	14.2	14.1	14.0	13.8
87.5°	5.2	5.3	5.4	5.4	5.3	5.4	5.5	5.8	6.0	5.9	5.7
90°	0.3	1.1	2.2	2.8	3.3	4.2	5.6	7.5	9.3	9.5	9.3
92.5°	3.4	4.9	7.0	8.2	10.1	12.7	19.0	28.0	35.9	36.4	30.7
95°	9.8	10.9	13.7	16.2	20.7	27.4	40.3	64.6	97.1	109.7	96.0
97.5°	15.9	17.4	20.4	24.2	29.4	37.0	53.2	87.1	141.1	187.3	196.5
100°	21.5	22.4	24.9	29.4	35.0	42.9	57.7	91.8	152.3	221.1	261.4
102.5°	26.7	27.3	29.9	34.3	40.2	48.0	61.7	92.1	148.0	222.2	285.6
105°	34.1	35.3	37.2	41.4	47.6	55.5	68.6	93.5	139.7	207.4	281.9
107.5°	42.2	43.1	45.0	48.9	55.0	62.9	75.7	97.4	135.5	191.5	257.3
110°	47.6	48.7	50.4	54.0	59.9	68.0	80.3	100.4	134.7	183.9	241.9



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	52.5	53.6	55.5	58.9	64.6	73.0	84.8	103.9	134.8	179.0	231.1
115°	60.2	61.6	63.3	66.6	72.2	79.8	91.8	108.8	136.0	173.6	217.8
117.5°	68.1	69.2	70.9	73.9	79.3	87.1	98.2	114.2	138.1	170.9	209.4
120°	73.0	74.1	75.9	78.3	84.0	91.8	102.7	117.9	139.4	169.4	204.9
122.5°	77.8	78.7	80.3	83.1	88.6	96.7	106.9	121.0	140.9	168.4	201.1
125°	84.0	84.8	86.5	89.8	95.5	103.3	113.4	126.0	143.3	166.8	195.7
127.5°	88.9	90.0	92.4	96.1	101.4	109.5	119.3	130.6	145.7	165.9	190.6
130°	91.8	92.9	95.7	99.7	105.3	113.0	122.9	133.5	147.5	165.4	187.3
132.5°	94.5	95.9	98.9	103.0	108.8	116.7	126.0	136.4	149.3	165.2	184.6
135°	98.5	99.7	103.0	107.2	113.7	121.4	130.5	140.2	151.5	164.9	180.8
137.5°	102.3	103.7	107.0	111.5	117.9	125.2	134.0	143.1	153.4	164.8	178.2
140°	105.3	106.4	109.7	114.2	120.3	127.6	136.0	144.7	154.2	164.6	176.6
142.5°	108.1	109.1	112.2	116.7	122.6	129.4	137.6	146.1	154.9	164.6	175.1
145°	112.5	113.7	116.5	120.6	126.3	132.4	140.0	147.8	155.6	164.0	173.0
147.5°	117.2	118.0	120.7	124.6	129.3	134.8	141.9	148.8	155.8	163.0	170.9
150°	120.3	121.2	123.4	127.1	131.3	136.3	142.8	149.2	155.6	162.3	169.1
152.5°	123.5	123.9	126.1	129.3	133.3	137.8	143.6	149.4	155.2	161.2	167.5
155°	127.9	128.2	129.8	132.9	136.0	140.2	145.0	149.7	154.5	159.2	164.6
157.5°	131.6	131.9	133.2	135.9	138.4	141.9	145.9	149.7	153.2	157.2	161.8
160°	134.0	134.4	135.5	137.7	140.0	143.1	146.4	149.7	152.6	155.9	159.8
162.5°	136.6	136.3	137.5	139.3	141.3	143.7	146.6	149.5	151.9	154.8	158.0
165°	139.4	139.1	139.7	141.3	142.8	144.4	146.9	148.9	150.6	152.6	155.0
167.5°	141.7	141.4	141.9	143.0	144.0	145.0	146.9	148.5	149.3	150.6	152.2
170°	143.3	142.8	143.1	143.9	144.4	145.3	146.6	148.1	148.6	149.5	150.6
172.5°	144.2	143.9	143.7	144.6	144.9	145.5	146.5	147.4	147.7	148.1	149.0
175°	145.3	145.0	144.7	145.3	145.3	145.5	146.1	146.6	146.4	146.6	146.9
177.5°	145.8	145.3	145.1	145.5	145.5	145.5	145.8	146.2	145.8	145.5	145.8
180°	145.5	145.5	145.5	145.5	145.5	145.5	145.5	145.5	145.5	145.5	145.5



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	374.2	374.2	374.2	374.2	374.2	374.2	374.2	374.2
2.5°	372.6	373.3	373.9	374.2	374.1	373.9	373.8	373.7
5°	370.2	370.8	371.5	371.7	371.5	371.4	371.2	371.1
7.5°	366.0	366.6	367.3	367.5	367.3	367.1	366.9	366.8
10°	362.3	362.9	363.5	363.7	363.5	363.2	363.0	362.7
12.5°	357.8	358.2	358.7	358.9	358.7	358.5	358.3	358.1
15°	350.1	350.4	350.7	350.7	350.3	349.9	349.5	349.1
17.5°	340.9	341.3	341.6	341.6	341.2	340.9	340.5	340.1
20°	333.7	334.0	334.2	334.1	333.8	333.5	333.2	332.9
22.5°	326.1	326.2	326.2	326.1	326.0	325.7	325.6	325.4
25°	313.8	313.9	314.1	314.1	313.9	313.8	313.6	313.5
27.5°	301.6	301.3	301.1	300.8	300.4	300.0	299.7	299.3
30°	292.1	291.8	291.6	291.4	291.0	290.7	290.4	290.0
32.5°	282.8	282.3	281.9	281.5	281.2	280.9	280.6	280.3
35°	267.8	267.4	266.9	266.5	266.1	265.7	265.3	264.8
37.5°	252.9	252.3	251.7	251.2	250.8	250.4	250.1	249.7
40°	242.6	241.9	241.1	240.6	240.3	240.0	239.6	239.3
42.5°	232.3	231.6	230.8	230.1	229.7	229.3	228.9	228.4
45°	216.7	215.8	214.9	214.3	214.0	213.7	213.3	213.0
47.5°	200.4	199.5	198.5	197.8	197.4	196.9	196.5	196.0
50°	190.0	188.8	187.7	187.0	186.6	186.2	185.8	185.4
52.5°	179.1	178.2	177.2	176.5	175.9	175.5	174.9	174.4
55°	162.9	161.9	161.0	160.3	159.9	159.5	159.1	158.7
57.5°	146.1	145.1	144.2	143.5	143.3	143.0	142.7	142.4
60°	135.0	134.1	133.2	132.7	132.5	132.2	132.0	131.7
62.5°	124.5	123.7	122.9	122.3	122.0	121.7	121.4	121.0
65°	108.3	107.6	106.9	106.3	105.9	105.5	105.1	104.7
67.5°	92.4	91.8	91.3	90.8	90.5	90.2	89.8	89.5
70°	82.0	81.4	80.9	80.5	80.2	79.8	79.5	79.1
72.5°	72.2	71.7	71.1	70.7	70.4	70.2	69.9	69.6
75°	57.0	56.5	56.0	55.8	56.0	56.2	56.3	56.5
77.5°	43.3	43.1	42.9	42.6	42.4	42.2	42.0	41.7
80°	34.5	34.2	34.0	33.7	33.6	33.4	33.3	33.1
82.5°	25.7	25.3	25.0	24.9	24.9	24.8	24.8	24.8
85°	13.5	13.3	13.1	12.9	12.8	12.8	12.7	12.6
87.5°	5.5	5.1	5.1	5.0	4.9	4.8	4.8	4.8
90°	9.0	8.4	9.0	9.3	9.3	9.3	9.3	9.3
92.5°	24.4	20.9	18.6	16.9	16.6	15.8	15.9	15.5
95°	73.4	56.2	44.5	38.3	34.7	32.5	31.6	31.9
97.5°	171.1	140.0	109.7	89.5	76.1	69.2	65.2	62.8
100°	255.6	220.9	182.5	148.6	125.4	113.4	105.3	100.2
102.5°	310.9	303.0	275.0	239.1	213.8	193.3	183.2	176.3
105°	340.1	371.7	375.3	366.1	348.7	331.4	319.3	315.4
107.5°	319.0	366.7	395.8	409.3	411.5	410.6	408.1	403.0
110°	300.9	351.0	386.8	409.8	421.8	427.1	429.7	429.4





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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	284.3	332.4	370.7	397.0	413.8	422.6	427.4	428.9
115°	264.0	307.0	343.7	372.6	392.4	405.3	412.6	415.1
117.5°	248.6	286.5	319.7	346.7	367.0	380.6	388.2	390.4
120°	241.0	275.7	305.4	330.8	350.5	363.6	371.7	374.5
122.5°	235.0	266.7	294.9	317.8	335.4	348.4	355.6	357.9
125°	226.2	255.0	279.6	300.6	316.9	327.5	334.5	336.8
127.5°	217.5	243.6	266.8	286.1	300.3	310.3	316.3	318.1
130°	211.9	236.0	258.1	276.6	290.3	299.8	305.4	307.6
132.5°	206.5	228.8	249.1	266.5	280.0	289.5	294.6	296.7
135°	199.0	217.5	236.0	251.6	263.6	272.9	278.0	279.1
137.5°	193.1	208.5	223.2	236.8	247.8	255.7	260.2	261.8
140°	189.2	202.6	215.6	227.8	236.8	244.1	248.3	249.9
142.5°	186.1	197.5	208.6	218.9	227.4	234.0	237.7	238.1
145°	181.6	190.9	199.6	207.7	214.4	219.2	222.0	222.8
147.5°	178.2	185.5	192.3	198.2	203.7	207.6	209.5	210.0
150°	175.8	182.0	187.8	192.8	197.0	200.4	202.1	202.4
152.5°	173.3	179.0	184.0	188.4	191.7	194.6	195.8	195.9
155°	169.9	174.4	178.6	181.6	184.7	186.7	187.8	187.3
157.5°	166.0	169.7	173.2	175.6	177.8	179.4	179.9	179.9
160°	163.4	166.5	169.6	171.6	173.6	174.9	175.2	175.2
162.5°	161.0	163.7	166.3	167.8	169.8	170.7	171.0	170.7
165°	157.3	159.2	161.2	162.3	163.4	164.6	164.6	164.3
167.5°	153.8	155.3	156.6	157.6	158.1	158.8	158.7	158.4
170°	152.0	152.8	153.9	154.5	154.8	155.6	155.3	154.8
172.5°	150.0	150.6	151.5	151.8	152.1	152.5	152.2	151.9
175°	147.8	148.1	148.4	148.6	148.6	148.9	148.6	148.1
177.5°	146.2	146.2	146.5	146.5	146.5	146.5	146.2	145.8
180°	145.5	145.5	145.5	145.5	145.5	145.5	145.5	145.5

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