

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: P331284-940

Luminaire Tested: **SA2XXDIP-C290D1080U940-4F0-1E-UDD-F4**

Issue Date: 10/7/2019

**Test Information**

Test Method: LM-79-08  
Report Number: P331284-940  
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-16,  
Test Lab: INNOVATION CENTER  
Issue Date: 10/7/2019  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: SA2XXDIP-C290D1080U940-4F0-1E-UDD-F4  
Description: DEFINE 2 DIRECT-INDIRECT PENDANT LED LUMINAIRE  
DOWNLIGHT 290 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER  
UPLIGHT 1080 LUMENS PER FOOT, BATWING OPTIC  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 4824.9 lumens  
Efficiency: N/A  
Efficacy: 114.3 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: Semi-Indirect

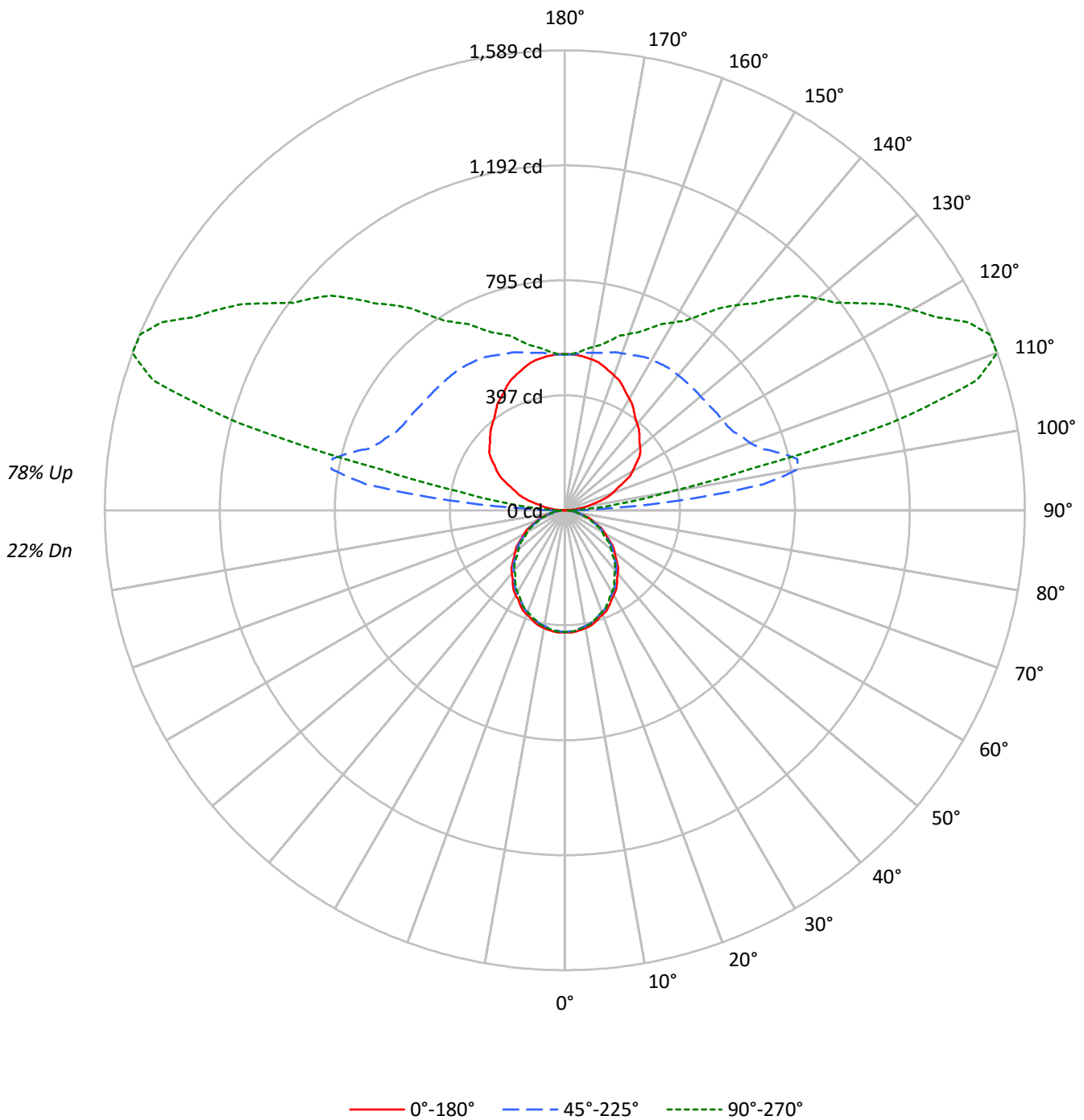
Input Watts (W): 42.2  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	101	101	101	101	89	89	89	89	68	68	68	49	49	49	31	31	31	22
1	92	87	84	80	81	78	75	72	59	57	55	43	41	40	27	26	26	19
2	83	76	70	65	74	68	63	59	52	49	46	37	35	33	24	23	22	16
3	76	67	60	54	67	60	54	49	46	42	38	33	30	28	21	20	18	13
4	69	59	52	46	61	53	46	41	41	36	33	29	26	24	19	17	16	11
5	64	52	45	39	56	47	40	35	36	32	28	26	23	21	17	15	14	10
6	58	47	39	34	52	42	35	30	32	28	24	24	20	18	15	13	12	9
7	54	42	35	29	48	38	31	27	29	25	21	21	18	16	14	12	11	8
8	50	38	31	26	44	34	28	23	27	22	19	19	16	14	13	11	10	7
9	46	35	27	23	41	31	25	21	24	20	17	18	15	13	12	10	9	6
10	43	32	25	20	38	28	22	18	22	18	15	16	13	11	11	9	8	6

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

	0°	45°	90°
0°	6801	6801	6801
5°	6827	6729	6770
10°	6787	6661	6694
15°	6703	6574	6569
20°	6584	6445	6438
25°	6465	6285	6285
30°	6315	6139	6087
35°	6173	5964	5876
40°	5994	5788	5678
45°	5818	5613	5476
50°	5627	5433	5242
55°	5427	5225	5027
60°	5205	4970	4789
65°	4967	4722	4504
70°	4664	4414	4206
75°	4242	4067	3968
80°	3766	3654	3468
85°	3075	2927	2631



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	39.6	0.8
10°-20°	111.5	2.3
20°-30°	163.8	3.4
30°-40°	190.3	3.9
40°-50°	190.1	3.9
50°-60°	165.8	3.4
60°-70°	122.6	2.5
70°-80°	69.4	1.4
80°-90°	23.5	0.5
90°-100°	215.4	4.5
100°-110°	730.9	15.1
110°-120°	776.4	16.1
120°-130°	639.2	13.2
130°-140°	513.3	10.6
140°-150°	387.9	8.0
150°-160°	272.6	5.6
160°-170°	160.5	3.3
170°-180°	52.2	1.1
0°-30°	314.9	6.5
0°-40°	505.2	10.5
0°-60°	861.1	17.8
0°-90°	1076.6	22.3
90°-120°	1722.7	35.7
90°-150°	3263.0	67.6
90°-180°	3748.0	77.7
0°-180°	4824.9	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	421	421	421	421	421	
5°	421	420	415	418	418	40
15°	401	398	393	395	393	113
25°	363	360	353	354	353	167
35°	313	309	303	300	298	195
45°	255	252	246	242	240	197
55°	193	190	186	181	179	172
65°	130	128	124	120	118	129
75°	68	67	65	63	64	73
85°	17	16	16	15	14	19
90°	1	14	35	34	34	3
95°	36	89	406	153	118	38
105°	126	191	768	1372	1167	134
115°	223	281	642	1325	1536	221
125°	311	368	617	1074	1246	276
135°	365	435	610	902	1033	282
145°	416	479	607	754	825	261
155°	473	511	589	667	693	218
165°	516	531	564	599	608	145
175°	538	538	543	550	548	51
180°	539	539	539	539	539	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	421.2	421.2	421.2	421.2	421.2	421.2	421.2	421.2	421.2	421.2	421.2
2.5°	423.2	422.8	422.5	422.1	421.8	421.2	420.4	419.6	418.8	418.0	418.7
5°	421.2	420.9	420.5	420.2	419.8	419.2	418.2	417.2	416.2	415.2	415.9
7.5°	417.6	417.0	416.4	415.9	415.4	414.6	413.6	412.5	411.5	410.5	411.3
10°	414.0	413.4	412.8	412.1	411.4	410.6	409.6	408.5	407.4	406.3	407.0
12.5°	409.1	408.6	408.0	407.4	406.9	406.1	405.0	403.9	402.9	401.8	402.3
15°	401.0	400.5	399.9	399.4	398.9	398.1	396.8	395.7	394.5	393.3	393.7
17.5°	390.7	390.1	389.6	389.1	388.5	387.6	386.5	385.2	384.1	382.9	383.3
20°	383.2	382.6	382.1	381.6	381.0	380.1	378.9	377.6	376.4	375.1	375.4
22.5°	375.8	375.0	374.3	373.4	372.7	371.8	370.6	369.3	368.2	367.0	367.0
25°	362.9	362.2	361.5	360.8	360.1	358.9	357.4	355.9	354.4	352.8	353.0
27.5°	348.4	347.8	347.1	346.4	345.8	344.8	343.7	342.4	341.3	340.0	339.7
30°	338.7	338.0	337.2	336.5	335.7	334.7	333.4	332.1	330.6	329.3	329.0
32.5°	328.2	327.7	327.2	326.5	326.0	324.9	323.5	322.2	320.7	319.3	318.8
35°	313.2	312.2	311.3	310.4	309.5	308.4	306.9	305.5	304.1	302.6	302.0
37.5°	296.0	295.2	294.4	293.6	292.8	291.8	290.3	288.9	287.4	286.0	285.3
40°	284.4	283.7	282.9	282.2	281.5	280.4	278.9	277.5	276.1	274.6	273.8
42.5°	273.0	272.3	271.6	270.9	270.2	269.0	267.6	266.2	264.7	263.3	262.4
45°	254.8	254.1	253.5	252.9	252.3	251.3	249.9	248.6	247.3	245.8	244.9
47.5°	236.7	236.0	235.5	234.9	234.3	233.3	231.8	230.5	229.1	227.7	226.6
50°	224.0	223.6	223.1	222.7	222.2	221.3	220.1	218.8	217.6	216.3	215.1
52.5°	211.7	211.1	210.5	209.9	209.3	208.4	207.2	206.1	204.8	203.7	202.6
55°	192.8	192.3	191.7	191.2	190.6	189.8	188.8	187.7	186.6	185.6	184.4
57.5°	173.9	173.4	173.0	172.5	172.1	171.3	170.1	169.0	167.7	166.6	165.5
60°	161.2	160.9	160.5	160.2	159.8	159.0	157.7	156.5	155.2	153.9	152.9
62.5°	148.9	148.3	147.8	147.2	146.6	145.8	144.8	143.9	142.9	142.0	141.0
65°	130.0	129.5	128.9	128.4	127.9	127.2	126.3	125.4	124.5	123.6	122.7
67.5°	110.8	110.4	109.9	109.5	109.1	108.5	107.6	106.8	106.0	105.2	104.6
70°	98.8	98.4	98.1	97.7	97.4	96.8	96.0	95.2	94.3	93.5	92.9
72.5°	86.5	86.1	85.8	85.4	85.1	84.6	84.1	83.6	83.1	82.6	81.9
75°	68.0	67.9	67.7	67.5	67.3	67.1	66.6	66.1	65.6	65.2	64.6
77.5°	51.5	51.2	50.9	50.6	50.3	50.0	49.8	49.7	49.5	49.3	49.0
80°	40.5	40.4	40.3	40.2	40.1	40.0	39.9	39.7	39.5	39.3	39.1
82.5°	30.1	30.1	30.1	30.1	30.1	30.0	29.9	29.8	29.7	29.6	29.2
85°	16.6	16.5	16.4	16.3	16.2	16.1	16.1	16.0	15.9	15.8	15.5
87.5°	6.1	6.5	7.2	7.5	7.8	8.2	9.1	10.4	11.5	11.6	11.1
90°	1.1	4.1	8.3	10.3	12.4	15.5	20.7	28.0	34.2	35.2	34.2
92.5°	12.7	18.2	25.7	30.2	37.3	47.0	70.4	103.3	132.8	134.6	113.8
95°	36.3	40.4	50.7	60.1	76.7	101.5	149.2	239.2	359.4	406.1	355.3
97.5°	59.0	64.6	75.6	89.7	108.8	137.0	196.8	322.4	522.1	693.2	727.2
100°	79.7	82.8	92.2	108.8	129.5	158.5	213.4	339.7	563.5	818.3	967.5
102.5°	98.8	101.1	110.4	127.0	148.6	177.5	228.3	340.6	547.8	822.5	1057.0
105°	126.4	130.5	137.8	153.3	176.1	205.1	253.8	346.0	516.9	767.6	1043.1
107.5°	156.2	159.5	166.6	180.8	203.5	232.6	279.9	360.3	501.6	708.7	952.2
110°	176.1	180.2	186.5	199.9	221.7	251.7	297.3	371.8	498.3	680.6	895.0



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	194.3	198.5	205.5	218.1	239.1	269.9	313.9	384.3	499.1	662.4	855.2
115°	222.7	227.9	234.1	246.6	267.2	295.2	339.7	403.0	503.5	642.2	805.9
117.5°	252.2	256.3	262.5	273.5	293.4	322.4	363.6	422.8	510.9	632.5	774.8
120°	270.4	274.5	280.7	290.1	310.8	339.7	380.1	436.1	515.9	626.7	758.2
122.5°	287.8	291.1	297.3	307.5	328.1	358.0	395.9	447.7	521.7	623.4	744.1
125°	310.8	313.9	320.1	332.5	353.2	382.3	419.5	466.2	530.4	617.4	724.1
127.5°	329.0	333.1	341.9	355.5	375.4	405.2	441.5	483.3	539.3	613.9	705.4
130°	339.7	343.9	354.3	368.8	389.5	418.5	454.8	494.1	545.9	612.2	693.0
132.5°	349.7	354.7	365.9	381.2	402.8	431.8	466.4	504.9	552.5	611.4	683.1
135°	364.6	368.8	381.2	396.7	420.5	449.6	482.7	519.0	560.4	610.1	669.1
137.5°	378.7	383.7	396.1	412.7	436.3	463.2	496.0	529.8	567.5	609.9	659.4
140°	389.5	393.6	406.1	422.7	445.4	472.3	503.5	535.6	570.8	609.1	653.6
142.5°	400.3	403.6	415.2	431.8	453.7	479.0	509.3	540.6	573.3	609.1	647.8
145°	416.4	420.5	431.0	446.5	467.2	490.0	517.9	547.0	576.0	607.0	640.2
147.5°	433.8	436.9	446.8	461.2	478.4	498.6	525.0	550.5	576.8	603.3	632.3
150°	445.4	448.5	456.8	470.3	485.8	504.4	528.3	552.1	576.0	600.8	625.6
152.5°	457.0	458.5	466.7	478.6	493.3	510.2	531.6	552.9	574.3	596.6	619.8
155°	473.4	474.4	480.6	492.0	503.5	519.0	536.5	554.2	571.8	589.4	609.1
157.5°	487.1	488.1	493.1	503.0	512.1	525.2	540.1	554.2	567.0	581.9	599.0
160°	496.1	497.2	501.3	509.6	517.9	529.3	541.8	554.2	564.5	577.0	591.5
162.5°	505.3	504.7	508.8	515.4	522.9	531.8	542.6	553.4	562.0	572.8	584.9
165°	515.9	514.9	516.9	523.1	528.3	534.5	543.9	551.1	557.3	564.5	573.9
167.5°	524.6	523.3	525.2	529.1	532.9	536.8	543.6	549.7	552.5	557.3	563.1
170°	530.4	528.3	529.3	532.4	534.5	537.6	542.8	548.0	550.0	553.1	557.3
172.5°	533.7	532.4	531.8	534.9	536.2	538.4	542.0	545.5	546.7	548.2	551.5
175°	537.6	536.5	535.6	537.6	537.6	538.7	540.7	542.8	541.8	542.8	543.9
177.5°	539.5	537.8	537.0	538.7	538.7	538.7	539.5	541.2	539.5	538.7	539.5
180°	538.7	538.7	538.7	538.7	538.7	538.7	538.7	538.7	538.7	538.7	538.7



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	421.2	421.2	421.2	421.2	421.2	421.2	421.2	421.2
2.5°	419.5	420.2	420.9	421.2	421.1	420.9	420.8	420.6
5°	416.7	417.4	418.1	418.4	418.2	418.0	417.9	417.7
7.5°	412.0	412.7	413.4	413.7	413.5	413.2	413.0	412.9
10°	407.8	408.5	409.2	409.4	409.1	408.8	408.6	408.3
12.5°	402.8	403.2	403.8	403.9	403.8	403.5	403.3	403.1
15°	394.0	394.4	394.8	394.8	394.3	393.9	393.4	393.0
17.5°	383.7	384.1	384.5	384.5	384.1	383.7	383.3	382.8
20°	375.7	375.9	376.2	376.1	375.8	375.4	375.1	374.7
22.5°	367.1	367.2	367.2	367.1	366.9	366.7	366.5	366.3
25°	353.2	353.4	353.6	353.6	353.4	353.2	353.0	352.8
27.5°	339.5	339.2	338.9	338.6	338.1	337.7	337.3	336.9
30°	328.8	328.5	328.2	328.0	327.6	327.3	326.9	326.5
32.5°	318.3	317.8	317.4	316.9	316.6	316.2	315.8	315.5
35°	301.5	301.0	300.4	300.0	299.5	299.1	298.6	298.1
37.5°	284.6	284.0	283.3	282.8	282.3	281.9	281.5	281.1
40°	273.0	272.2	271.4	270.8	270.5	270.1	269.7	269.4
42.5°	261.5	260.6	259.8	259.0	258.6	258.1	257.6	257.1
45°	243.9	242.9	241.9	241.2	240.9	240.5	240.1	239.8
47.5°	225.6	224.5	223.5	222.7	222.2	221.7	221.1	220.6
50°	213.8	212.5	211.2	210.4	210.0	209.6	209.1	208.7
52.5°	201.6	200.5	199.5	198.7	198.0	197.5	196.9	196.3
55°	183.3	182.3	181.2	180.5	180.0	179.5	179.1	178.6
57.5°	164.4	163.4	162.3	161.6	161.3	161.0	160.6	160.2
60°	151.9	151.0	150.0	149.4	149.1	148.8	148.6	148.3
62.5°	140.1	139.2	138.3	137.7	137.3	137.0	136.6	136.3
65°	121.9	121.1	120.3	119.7	119.2	118.8	118.3	117.9
67.5°	104.0	103.3	102.7	102.2	101.8	101.5	101.1	100.8
70°	92.3	91.7	91.0	90.6	90.2	89.8	89.4	89.1
72.5°	81.3	80.7	80.1	79.5	79.3	79.0	78.7	78.4
75°	64.1	63.6	63.0	62.9	63.0	63.2	63.4	63.6
77.5°	48.8	48.5	48.2	48.0	47.7	47.5	47.3	47.0
80°	38.8	38.5	38.3	38.0	37.8	37.6	37.5	37.3
82.5°	28.9	28.5	28.2	28.0	28.0	27.9	27.9	27.9
85°	15.2	15.0	14.7	14.5	14.4	14.4	14.3	14.2
87.5°	10.7	10.1	10.3	10.3	10.3	10.3	10.2	10.1
90°	33.2	31.1	33.2	34.2	34.2	34.2	34.2	34.2
92.5°	90.3	77.5	68.8	62.3	61.5	58.2	59.0	57.4
95°	271.4	208.2	164.7	141.9	128.4	120.2	117.1	118.1
97.5°	633.3	518.2	406.1	331.3	281.8	256.3	241.1	232.5
100°	945.7	817.3	675.4	550.0	464.0	419.5	389.5	370.9
102.5°	1150.5	1121.4	1017.6	884.8	791.4	715.4	677.9	652.6
105°	1258.6	1375.6	1389.1	1355.0	1290.7	1226.5	1182.0	1167.4
107.5°	1180.7	1357.0	1464.7	1514.8	1523.0	1519.4	1510.5	1491.2
110°	1113.6	1299.0	1431.6	1516.5	1561.0	1580.7	1590.1	1589.0





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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	1052.2	1230.2	1371.9	1469.3	1531.2	1564.1	1581.8	1587.3
115°	976.9	1136.4	1272.0	1378.8	1452.3	1499.9	1526.9	1536.2
117.5°	920.1	1060.2	1183.2	1283.3	1358.3	1408.5	1437.0	1444.8
120°	891.9	1020.3	1130.2	1224.4	1296.9	1345.6	1375.6	1386.0
122.5°	869.5	987.2	1091.2	1176.3	1241.4	1289.2	1316.0	1324.6
125°	837.0	943.7	1034.8	1112.5	1172.6	1212.0	1237.9	1246.2
127.5°	804.9	901.4	987.4	1059.1	1111.5	1148.3	1170.7	1177.4
130°	784.2	873.3	955.1	1023.4	1074.2	1109.5	1130.2	1138.4
132.5°	764.3	846.8	921.9	986.1	1036.1	1071.3	1090.4	1097.8
135°	736.5	804.9	873.3	931.2	975.8	1010.0	1028.6	1032.8
137.5°	714.3	771.5	825.8	876.4	916.9	946.4	962.8	968.9
140°	700.3	750.0	797.6	843.2	876.4	903.3	918.8	925.1
142.5°	688.7	730.9	772.0	810.0	841.5	866.0	879.9	881.1
145°	672.3	706.5	738.6	768.7	793.4	811.1	821.4	824.6
147.5°	659.7	686.6	711.7	733.6	754.1	768.2	775.3	777.1
150°	650.5	673.3	695.1	713.7	729.2	741.7	747.9	748.9
152.5°	641.4	662.5	681.0	697.1	709.4	720.1	724.7	724.9
155°	628.7	645.3	660.8	672.3	683.7	690.9	695.1	693.0
157.5°	614.0	627.9	641.0	649.9	658.0	664.0	665.8	665.8
160°	604.9	616.4	627.8	635.0	642.2	647.4	648.5	648.5
162.5°	595.8	605.6	615.3	620.9	628.1	631.7	632.7	631.9
165°	582.2	589.4	596.6	600.8	604.9	609.1	609.1	608.1
167.5°	569.1	574.7	579.7	583.4	585.2	587.5	587.4	586.1
170°	562.5	565.6	569.7	571.8	572.8	576.0	574.9	572.8
172.5°	555.0	557.3	560.6	561.9	562.9	564.4	563.3	562.0
175°	547.0	548.0	549.0	550.0	550.0	551.1	550.0	548.0
177.5°	541.2	541.2	542.0	542.0	542.0	542.0	541.2	539.5
180°	538.7	538.7	538.7	538.7	538.7	538.7	538.7	538.7

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