

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: P331284-927

Luminaire Tested: **S122DIP-S290D1080U927-4F0-1E-UDD-F4**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P331284-927  
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-S290D1080U927-4F0-1E-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: 4286.4 lumens  
Efficiency: N/A  
Efficacy: 101.6 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

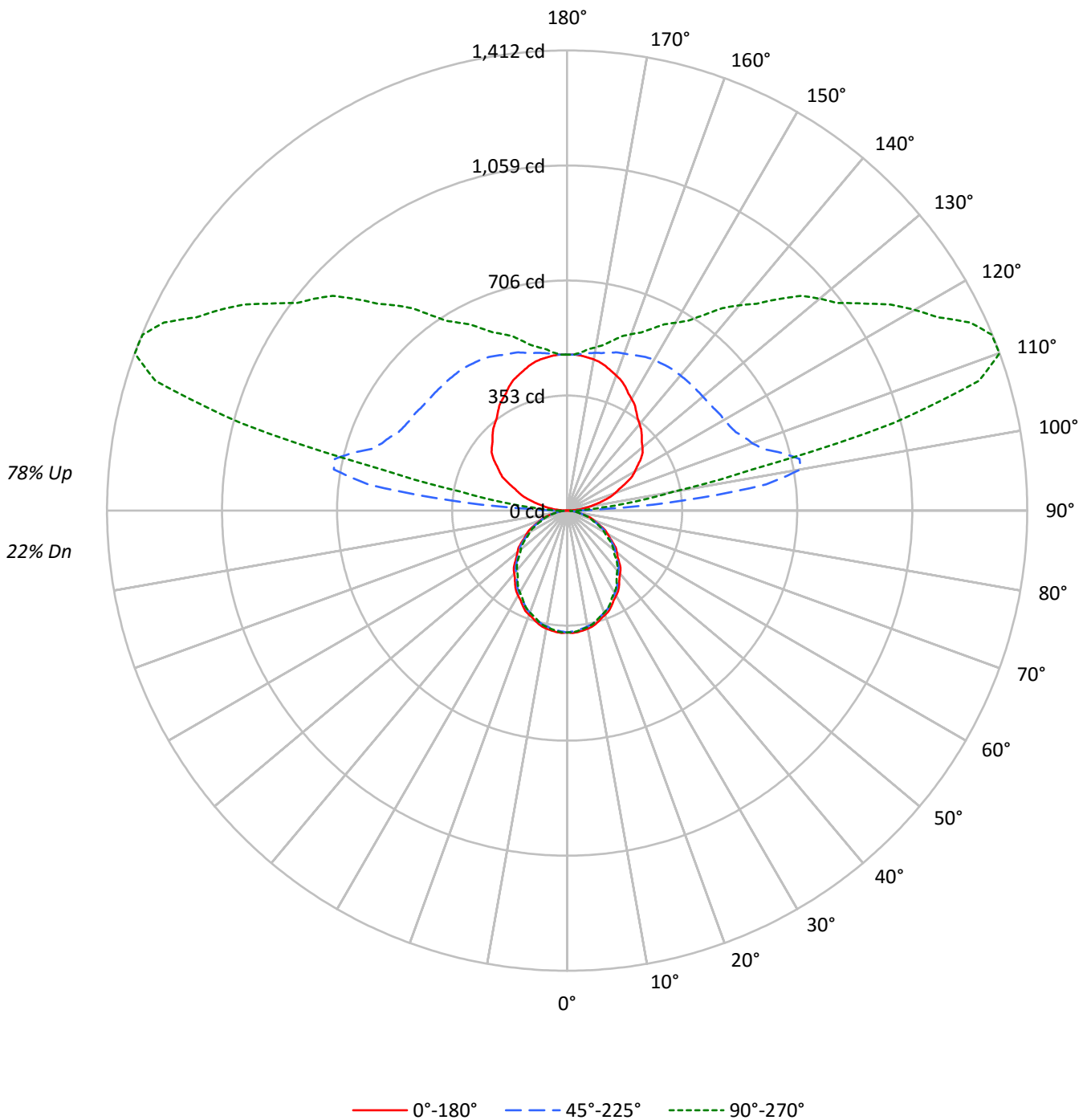
Input Watts (W): 42.2  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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°	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	0.8
10°-20°	99.0	2.3
20°-30°	145.6	3.4
30°-40°	169.1	3.9
40°-50°	168.9	3.9
50°-60°	147.3	3.4
60°-70°	108.9	2.5
70°-80°	61.7	1.4
80°-90°	20.9	0.5
90°-100°	191.3	4.5
100°-110°	649.3	15.1
110°-120°	689.8	16.1
120°-130°	567.8	13.2
130°-140°	456.0	10.6
140°-150°	344.6	8.0
150°-160°	242.2	5.6
160°-170°	142.6	3.3
170°-180°	46.4	1.1
0°-30°	279.8	6.5
0°-40°	448.8	10.5
0°-60°	765.0	17.8
0°-90°	956.5	22.3
90°-120°	1530.4	35.7
90°-150°	2898.8	67.6
90°-180°	3330.0	77.7
0°-180°	4286.4	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°	1	12	31	30	30	3
95°	32	79	361	136	105	34
105°	112	169	682	1219	1037	119
115°	198	250	570	1177	1365	196
125°	276	327	548	954	1107	245
135°	324	386	542	802	918	250
145°	370	425	539	670	732	232
155°	421	454	524	592	616	193
165°	458	472	502	532	540	129
175°	478	478	482	488	487	45
180°	479	479	479	479	479	



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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°	5.4	5.8	6.4	6.7	6.9	7.3	8.1	9.3	10.2	10.3	9.9
90°	1.0	3.6	7.4	9.2	11.0	13.8	18.4	24.9	30.3	31.3	30.3
92.5°	11.2	16.2	22.8	26.9	33.1	41.7	62.6	91.8	118.0	119.6	101.1
95°	32.2	35.9	45.1	53.4	68.1	90.2	132.5	212.5	319.3	360.8	315.7
97.5°	52.4	57.4	67.2	79.7	96.6	121.7	174.8	286.4	463.8	615.8	646.0
100°	70.8	73.6	81.9	96.6	115.0	140.8	189.6	301.8	500.6	727.0	859.5
102.5°	87.8	89.8	98.1	112.8	132.0	157.7	202.8	302.6	486.6	730.7	939.1
105°	112.3	116.0	122.4	136.2	156.5	182.2	225.5	307.4	459.2	681.9	926.7
107.5°	138.8	141.7	148.0	160.7	180.8	206.7	248.7	320.0	445.6	629.6	845.9
110°	156.5	160.1	165.6	177.6	196.9	223.6	264.1	330.3	442.7	604.6	795.1



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	172.6	176.3	182.6	193.8	212.4	239.8	278.8	341.4	443.4	588.4	759.8
115°	197.9	202.5	207.9	219.0	237.4	262.3	301.8	358.0	447.3	570.5	716.0
117.5°	224.0	227.7	233.2	243.0	260.6	286.4	323.0	375.7	453.8	561.9	688.3
120°	240.2	243.8	249.4	257.7	276.1	301.8	337.7	387.5	458.3	556.7	673.6
122.5°	255.6	258.6	264.1	273.1	291.5	318.1	351.7	397.8	463.4	553.8	661.1
125°	276.1	278.8	284.4	295.4	313.8	339.6	372.7	414.2	471.2	548.5	643.3
127.5°	292.2	296.0	303.7	315.8	333.5	360.0	392.2	429.4	479.1	545.3	626.7
130°	301.8	305.5	314.7	327.6	346.0	371.8	404.0	438.9	485.0	543.8	615.7
132.5°	310.7	315.1	325.0	338.7	357.8	383.6	414.3	448.5	490.8	543.1	606.8
135°	323.9	327.6	338.7	352.4	373.6	399.4	428.8	461.1	497.9	542.0	594.5
137.5°	336.4	340.9	351.9	366.6	387.6	411.5	440.6	470.6	504.1	541.9	585.8
140°	346.0	349.7	360.8	375.5	395.7	419.6	447.3	475.8	507.1	541.1	580.7
142.5°	355.6	358.5	368.8	383.6	403.1	425.6	452.4	480.2	509.3	541.1	575.5
145°	369.9	373.6	382.9	396.6	415.0	435.3	460.1	485.9	511.7	539.2	568.7
147.5°	385.4	388.2	397.0	409.7	425.0	443.0	466.4	489.0	512.4	536.0	561.7
150°	395.7	398.5	405.8	417.8	431.6	448.1	469.4	490.5	511.7	533.8	555.8
152.5°	406.0	407.3	414.6	425.2	438.2	453.3	472.3	491.2	510.2	530.0	550.6
155°	420.6	421.4	427.0	437.1	447.3	461.1	476.7	492.3	507.9	523.6	541.1
157.5°	432.7	433.6	438.1	446.9	455.0	466.6	479.8	492.3	503.7	517.0	532.1
160°	440.8	441.7	445.4	452.7	460.1	470.2	481.3	492.3	501.5	512.6	525.5
162.5°	448.9	448.4	452.0	457.9	464.5	472.5	482.0	491.6	499.3	508.9	519.6
165°	458.3	457.4	459.2	464.7	469.4	474.8	483.2	489.6	495.1	501.5	509.8
167.5°	466.0	464.9	466.6	470.1	473.4	476.9	482.9	488.3	490.8	495.1	500.3
170°	471.2	469.4	470.2	473.0	474.8	477.6	482.2	486.8	488.6	491.4	495.1
172.5°	474.1	473.0	472.5	475.2	476.3	478.3	481.5	484.6	485.7	487.0	490.0
175°	477.6	476.7	475.8	477.6	477.6	478.6	480.4	482.2	481.3	482.2	483.2
177.5°	479.3	477.8	477.1	478.6	478.6	478.6	479.3	480.8	479.3	478.6	479.3
180°	478.6	478.6	478.6	478.6	478.6	478.6	478.6	478.6	478.6	478.6	478.6



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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°	9.5	9.0	9.2	9.2	9.1	9.1	9.0	9.0
90°	29.5	27.6	29.5	30.3	30.3	30.3	30.3	30.3
92.5°	80.2	68.8	61.1	55.4	54.7	51.7	52.4	51.0
95°	241.1	185.0	146.3	126.0	114.1	106.8	104.0	104.9
97.5°	562.6	460.3	360.8	294.3	250.3	227.7	214.2	206.5
100°	840.2	726.1	600.0	488.6	412.3	372.7	346.0	329.5
102.5°	1022.1	996.2	904.0	786.1	703.1	635.6	602.2	579.8
105°	1118.1	1222.1	1234.1	1203.7	1146.6	1089.6	1050.0	1037.1
107.5°	1048.9	1205.5	1301.2	1345.8	1353.0	1349.8	1341.9	1324.8
110°	989.3	1154.0	1271.8	1347.3	1386.8	1404.3	1412.6	1411.7





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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	934.8	1092.9	1218.8	1305.3	1360.3	1389.6	1405.3	1410.2
115°	867.8	1009.6	1130.0	1224.9	1290.2	1332.5	1356.5	1364.8
117.5°	817.4	941.8	1051.1	1140.0	1206.7	1251.3	1276.6	1283.6
120°	792.3	906.4	1004.0	1087.7	1152.1	1195.4	1222.1	1231.3
122.5°	772.5	877.0	969.4	1045.0	1102.8	1145.3	1169.1	1176.8
125°	743.5	838.4	919.3	988.3	1041.7	1076.7	1099.7	1107.1
127.5°	715.0	800.8	877.2	940.9	987.5	1020.2	1040.1	1046.0
130°	696.6	775.8	848.5	909.2	954.3	985.6	1004.0	1011.4
132.5°	679.0	752.3	819.0	876.1	920.4	951.7	968.7	975.3
135°	654.3	715.0	775.8	827.3	866.9	897.2	913.8	917.5
137.5°	634.6	685.4	733.6	778.6	814.6	840.7	855.3	860.8
140°	622.1	666.3	708.6	749.1	778.6	802.5	816.3	821.8
142.5°	611.8	649.4	685.8	719.6	747.6	769.4	781.6	782.8
145°	597.2	627.6	656.2	682.9	704.9	720.6	729.8	732.5
147.5°	586.1	610.0	632.2	651.7	669.9	682.5	688.7	690.4
150°	577.9	598.2	617.5	634.1	647.8	658.9	664.4	665.4
152.5°	569.8	588.6	605.0	619.3	630.2	639.8	643.8	644.0
155°	558.6	573.3	587.1	597.2	607.4	613.8	617.5	615.7
157.5°	545.5	557.9	569.4	577.3	584.6	589.9	591.5	591.5
160°	537.4	547.6	557.7	564.1	570.5	575.1	576.1	576.1
162.5°	529.3	538.0	546.6	551.6	558.0	561.2	562.1	561.3
165°	517.2	523.6	530.0	533.8	537.4	541.1	541.1	540.2
167.5°	505.6	510.6	515.0	518.3	519.9	522.0	521.8	520.7
170°	499.7	502.5	506.1	507.9	508.9	511.7	510.7	508.9
172.5°	493.1	495.1	498.0	499.2	500.1	501.4	500.4	499.3
175°	485.9	486.8	487.7	488.6	488.6	489.6	488.6	486.8
177.5°	480.8	480.8	481.5	481.5	481.5	481.5	480.8	479.3
180°	478.6	478.6	478.6	478.6	478.6	478.6	478.6	478.6

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