

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: P331284-840

Luminaire Tested: **S122DIP-S290D1080U840-4F0-1E-UDD-F4**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P331284-840  
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-S290D1080U840-4F0-1E-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**

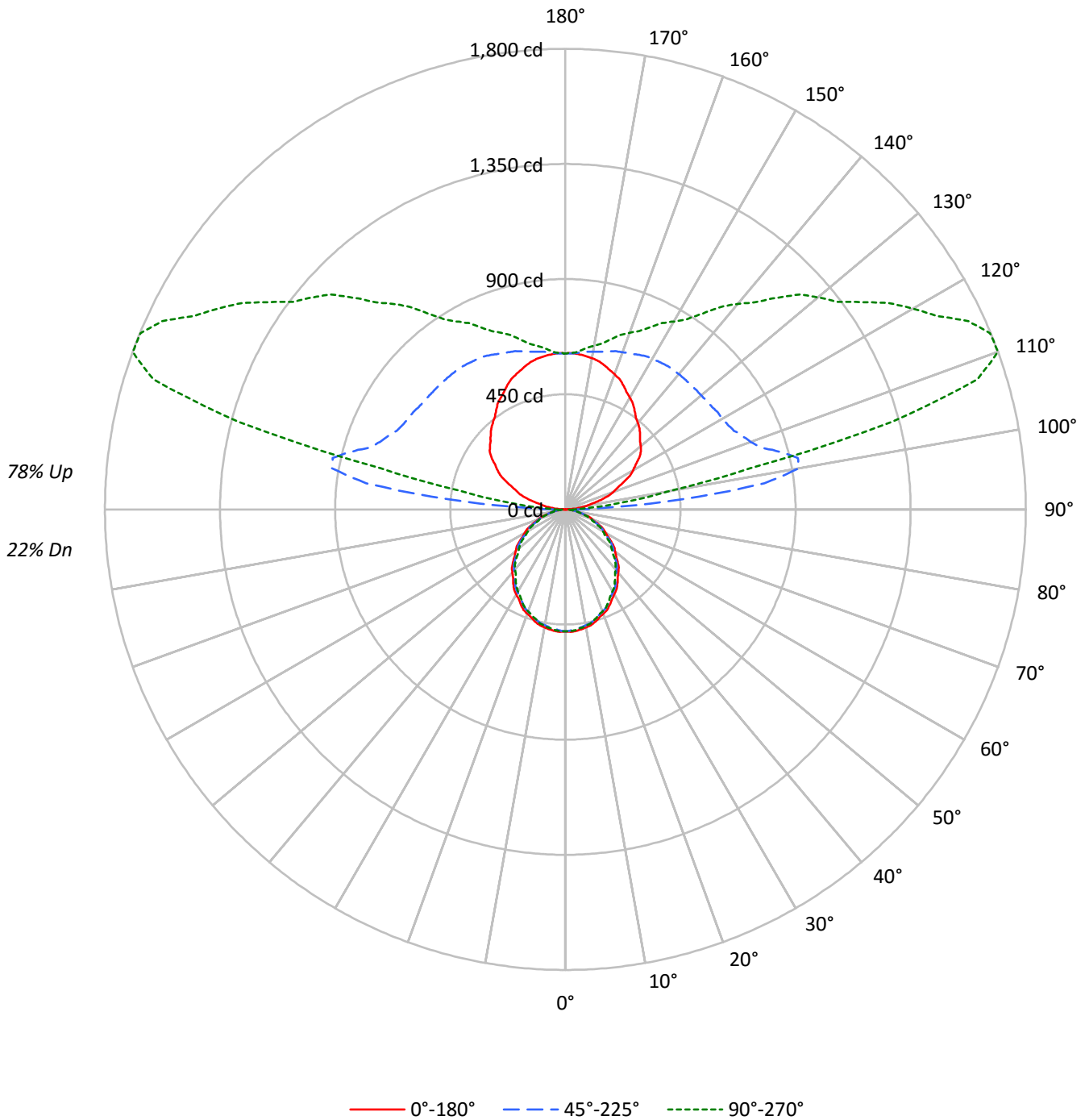
Lumens per Lamp: N/A  
Luminaire Lumens: 5464.3 lumens  
Efficiency: N/A  
Efficacy: 129.5 lumens/watt  
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.3  
Luminous Opening: Rectangular (W 0.17' x L: 4' x H: 0')  
CIE Type: Semi-Indirect

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	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°	7703	7703	7703
5°	7733	7621	7666
10°	7688	7543	7581
15°	7590	7447	7438
20°	7455	7301	7290
25°	7322	7119	7119
30°	7150	6952	6893
35°	6991	6753	6654
40°	6787	6555	6431
45°	6588	6357	6202
50°	6373	6154	5935
55°	6145	5917	5695
60°	5896	5628	5422
65°	5624	5349	5100
70°	5282	4999	4763
75°	4810	4604	4492
80°	4258	4138	3924
85°	3483	3316	2983



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	44.9	0.8
10°-20°	126.2	2.3
20°-30°	185.5	3.4
30°-40°	215.5	3.9
40°-50°	215.3	3.9
50°-60°	187.7	3.4
60°-70°	138.8	2.5
70°-80°	78.6	1.4
80°-90°	26.6	0.5
90°-100°	243.9	4.5
100°-110°	827.7	15.1
110°-120°	879.3	16.1
120°-130°	723.9	13.2
130°-140°	581.3	10.6
140°-150°	439.3	8.0
150°-160°	308.7	5.6
160°-170°	181.7	3.3
170°-180°	59.1	1.1
0°-30°	356.6	6.5
0°-40°	572.2	10.5
0°-60°	975.2	17.8
0°-90°	1219.3	22.3
90°-120°	1951.0	35.7
90°-150°	3695.4	67.6
90°-180°	4245.0	77.7
0°-180°	5464.3	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	477	477	477	477	477	
5°	477	475	470	474	473	45
15°	454	451	446	447	445	128
25°	411	407	400	400	400	189
35°	355	350	343	340	338	221
45°	288	285	278	274	272	223
55°	218	215	210	205	202	195
65°	147	144	140	136	134	146
75°	77	76	74	71	72	82
85°	19	18	18	17	16	22
90°	1	16	40	38	39	3
95°	41	101	460	174	134	44
105°	143	216	869	1554	1322	152
115°	252	319	727	1501	1740	250
125°	352	416	699	1216	1411	312
135°	413	493	691	1022	1170	319
145°	472	542	687	854	934	296
155°	536	579	668	755	785	247
165°	584	602	639	678	689	165
175°	609	609	615	622	621	58
180°	610	610	610	610	610	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	477.1	477.1	477.1	477.1	477.1	477.1	477.1	477.1	477.1	477.1	477.1
2.5°	479.3	478.9	478.5	478.1	477.7	477.1	476.2	475.2	474.3	473.4	474.2
5°	477.1	476.7	476.3	475.8	475.4	474.7	473.6	472.5	471.3	470.2	471.0
7.5°	472.9	472.2	471.6	471.0	470.4	469.5	468.4	467.2	466.1	464.9	465.7
10°	468.9	468.2	467.5	466.8	466.0	465.0	463.8	462.6	461.4	460.1	460.9
12.5°	463.3	462.7	462.1	461.4	460.8	459.9	458.7	457.5	456.3	455.0	455.6
15°	454.1	453.5	452.9	452.3	451.7	450.8	449.4	448.1	446.8	445.5	445.9
17.5°	442.4	441.8	441.2	440.6	440.0	439.0	437.7	436.3	434.9	433.6	434.0
20°	433.9	433.3	432.7	432.1	431.5	430.5	429.1	427.7	426.3	424.9	425.2
22.5°	425.6	424.6	423.8	422.9	422.1	421.0	419.7	418.3	417.0	415.7	415.7
25°	411.0	410.2	409.4	408.6	407.8	406.5	404.8	403.0	401.3	399.6	399.8
27.5°	394.6	393.8	393.0	392.3	391.6	390.5	389.2	387.8	386.5	385.1	384.8
30°	383.5	382.7	381.9	381.1	380.2	379.1	377.6	376.1	374.5	372.9	372.6
32.5°	371.7	371.1	370.5	369.8	369.2	368.0	366.4	364.9	363.2	361.6	361.0
35°	354.7	353.6	352.5	351.5	350.5	349.2	347.6	346.0	344.4	342.6	342.0
37.5°	335.3	334.4	333.5	332.5	331.6	330.4	328.8	327.2	325.5	323.9	323.2
40°	322.0	321.2	320.4	319.6	318.8	317.6	315.9	314.3	312.7	311.0	310.1
42.5°	309.2	308.4	307.6	306.8	306.0	304.7	303.1	301.4	299.8	298.2	297.2
45°	288.5	287.8	287.1	286.4	285.7	284.6	283.1	281.6	280.0	278.4	277.3
47.5°	268.0	267.3	266.7	266.0	265.3	264.2	262.6	261.1	259.4	257.8	256.6
50°	253.7	253.2	252.7	252.2	251.7	250.6	249.2	247.8	246.4	245.0	243.6
52.5°	239.7	239.0	238.4	237.7	237.0	236.0	234.7	233.4	232.0	230.7	229.4
55°	218.3	217.7	217.1	216.5	215.9	215.0	213.8	212.6	211.4	210.2	208.8
57.5°	196.9	196.4	195.9	195.4	194.9	194.0	192.7	191.4	190.0	188.6	187.4
60°	182.6	182.2	181.8	181.4	181.0	180.1	178.6	177.2	175.7	174.3	173.2
62.5°	168.6	167.9	167.3	166.7	166.0	165.1	164.0	163.0	161.9	160.8	159.7
65°	147.2	146.6	146.0	145.4	144.8	144.0	143.0	142.0	141.0	140.0	139.0
67.5°	125.5	125.0	124.5	124.0	123.6	122.9	121.9	121.0	120.1	119.2	118.5
70°	111.9	111.5	111.1	110.7	110.3	109.7	108.8	107.9	106.8	105.9	105.2
72.5°	98.0	97.6	97.1	96.7	96.3	95.8	95.2	94.7	94.1	93.5	92.8
75°	77.1	76.9	76.6	76.4	76.2	75.9	75.4	74.8	74.3	73.8	73.2
77.5°	58.4	58.0	57.7	57.4	57.0	56.7	56.5	56.2	56.0	55.8	55.5
80°	45.8	45.7	45.6	45.5	45.4	45.3	45.1	44.9	44.7	44.5	44.2
82.5°	34.1	34.1	34.1	34.0	34.0	33.9	33.8	33.7	33.6	33.5	33.1
85°	18.8	18.7	18.6	18.5	18.4	18.3	18.2	18.1	18.0	17.9	17.6
87.5°	6.9	7.4	8.2	8.5	8.8	9.3	10.3	11.8	13.0	13.1	12.6
90°	1.2	4.6	9.4	11.7	14.0	17.6	23.4	31.7	38.7	39.9	38.7
92.5°	14.3	20.6	29.1	34.2	42.2	53.2	79.8	117.0	150.4	152.5	128.9
95°	41.1	45.7	57.5	68.1	86.8	114.9	169.0	270.9	407.1	459.9	402.4
97.5°	66.9	73.2	85.6	101.6	123.2	155.1	222.9	365.1	591.3	785.1	823.5
100°	90.3	93.8	104.4	123.2	146.6	179.5	241.7	384.8	638.1	926.8	1095.7
102.5°	111.9	114.5	125.0	143.8	168.2	201.1	258.5	385.8	620.4	931.5	1197.1
105°	143.1	147.8	156.0	173.6	199.4	232.3	287.4	391.8	585.4	869.3	1181.3
107.5°	176.9	180.7	188.6	204.8	230.5	263.5	317.0	408.0	568.0	802.6	1078.3
110°	199.4	204.1	211.2	226.4	251.1	285.1	336.7	421.1	564.3	770.7	1013.6



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	220.0	224.8	232.8	247.0	270.7	305.7	355.5	435.3	565.2	750.1	968.6
115°	252.3	258.1	265.1	279.2	302.7	334.4	384.8	456.4	570.2	727.3	912.7
117.5°	285.6	290.2	297.3	309.7	332.2	365.1	411.7	478.9	578.6	716.3	877.5
120°	306.2	310.8	317.9	328.5	351.9	384.8	430.5	493.9	584.2	709.7	858.7
122.5°	325.9	329.6	336.7	348.2	371.6	405.5	448.4	507.1	590.8	706.0	842.7
125°	351.9	355.5	362.5	376.6	400.0	432.9	475.1	528.0	600.7	699.2	820.0
127.5°	372.5	377.3	387.2	402.6	425.2	458.9	500.0	547.3	610.8	695.2	798.9
130°	384.8	389.5	401.2	417.7	441.1	473.9	515.0	559.6	618.2	693.3	784.9
132.5°	396.1	401.7	414.3	431.7	456.2	489.0	528.2	571.8	625.7	692.4	773.6
135°	412.9	417.7	431.7	449.3	476.3	509.2	546.6	587.7	634.7	690.9	757.8
137.5°	428.9	434.5	448.6	467.4	494.1	524.6	561.7	600.0	642.7	690.7	746.8
140°	441.1	445.8	459.9	478.7	504.4	534.9	570.2	606.5	646.4	689.8	740.2
142.5°	453.3	457.1	470.2	489.0	513.8	542.5	576.7	612.2	649.2	689.8	733.7
145°	471.6	476.3	488.1	505.6	529.1	554.9	586.5	619.5	652.3	687.4	725.0
147.5°	491.3	494.8	506.0	522.3	541.8	564.7	594.5	623.4	653.2	683.3	716.1
150°	504.4	508.0	517.4	532.6	550.2	571.3	598.3	625.3	652.3	680.4	708.5
152.5°	517.6	519.3	528.6	542.0	558.7	577.8	602.1	626.2	650.4	675.7	702.0
155°	536.1	537.2	544.3	557.2	570.2	587.7	607.6	627.6	647.5	667.5	689.8
157.5°	551.6	552.8	558.5	569.7	580.0	594.8	611.7	627.6	642.2	659.0	678.3
160°	561.9	563.1	567.7	577.1	586.5	599.5	613.6	627.6	639.3	653.5	669.8
162.5°	572.3	571.6	576.2	583.7	592.2	602.3	614.5	626.7	636.5	648.7	662.4
165°	584.2	583.1	585.4	592.4	598.3	605.3	615.9	624.1	631.2	639.3	649.9
167.5°	594.1	592.7	594.8	599.3	603.5	607.9	615.6	622.5	625.7	631.2	637.7
170°	600.7	598.3	599.5	603.0	605.3	608.8	614.7	620.6	622.9	626.4	631.2
172.5°	604.4	603.0	602.3	605.8	607.2	609.8	613.8	617.7	619.1	620.9	624.6
175°	608.8	607.6	606.5	608.8	608.8	610.1	612.4	614.7	613.6	614.7	615.9
177.5°	611.0	609.0	608.1	610.1	610.1	610.1	611.0	612.9	611.0	610.1	611.0
180°	610.1	610.1	610.1	610.1	610.1	610.1	610.1	610.1	610.1	610.1	610.1



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	477.1	477.1	477.1	477.1	477.1	477.1	477.1	477.1
2.5°	475.0	475.8	476.7	477.1	476.9	476.7	476.6	476.4
5°	471.9	472.7	473.5	473.8	473.6	473.4	473.2	473.0
7.5°	466.6	467.4	468.2	468.5	468.3	468.0	467.8	467.6
10°	461.8	462.6	463.4	463.6	463.3	463.0	462.7	462.4
12.5°	456.2	456.7	457.3	457.5	457.3	457.0	456.8	456.6
15°	446.3	446.7	447.1	447.1	446.6	446.1	445.6	445.0
17.5°	434.5	435.0	435.5	435.5	434.9	434.5	434.0	433.5
20°	425.5	425.8	426.1	426.0	425.6	425.2	424.7	424.3
22.5°	415.8	415.9	415.9	415.8	415.6	415.3	415.1	414.9
25°	400.0	400.2	400.4	400.4	400.2	400.0	399.8	399.6
27.5°	384.5	384.2	383.8	383.4	382.9	382.4	382.0	381.5
30°	372.3	372.0	371.7	371.4	371.0	370.6	370.2	369.7
32.5°	360.5	359.9	359.4	358.9	358.5	358.1	357.7	357.3
35°	341.4	340.8	340.2	339.7	339.2	338.7	338.2	337.6
37.5°	322.3	321.6	320.8	320.2	319.7	319.2	318.8	318.3
40°	309.2	308.3	307.4	306.7	306.3	305.9	305.5	305.1
42.5°	296.2	295.2	294.2	293.4	292.9	292.3	291.8	291.1
45°	276.2	275.1	274.0	273.2	272.8	272.4	272.0	271.6
47.5°	255.5	254.3	253.1	252.2	251.7	251.1	250.4	249.8
50°	242.2	240.7	239.2	238.3	237.8	237.3	236.8	236.3
52.5°	228.3	227.1	225.9	225.0	224.3	223.7	223.0	222.3
55°	207.6	206.4	205.2	204.4	203.9	203.3	202.8	202.3
57.5°	186.2	185.0	183.8	183.0	182.7	182.3	181.9	181.5
60°	172.1	171.0	169.9	169.2	168.8	168.5	168.2	167.9
62.5°	158.6	157.6	156.6	155.9	155.5	155.1	154.7	154.3
65°	138.0	137.1	136.2	135.5	135.0	134.5	134.0	133.5
67.5°	117.8	117.0	116.3	115.7	115.3	114.9	114.5	114.1
70°	104.5	103.8	103.1	102.6	102.2	101.7	101.3	100.9
72.5°	92.1	91.4	90.7	90.1	89.8	89.5	89.2	88.8
75°	72.6	72.0	71.4	71.2	71.4	71.6	71.8	72.0
77.5°	55.2	54.9	54.6	54.3	54.0	53.8	53.5	53.2
80°	43.9	43.6	43.3	43.0	42.8	42.6	42.4	42.2
82.5°	32.7	32.3	31.9	31.7	31.7	31.6	31.6	31.6
85°	17.3	17.0	16.7	16.5	16.4	16.3	16.2	16.1
87.5°	12.1	11.4	11.7	11.7	11.6	11.6	11.5	11.4
90°	37.6	35.2	37.6	38.7	38.7	38.7	38.7	38.7
92.5°	102.3	87.8	77.9	70.6	69.7	65.9	66.9	65.0
95°	307.4	235.8	186.5	160.7	145.4	136.1	132.6	133.7
97.5°	717.2	586.8	459.9	375.2	319.1	290.2	273.1	263.3
100°	1071.1	925.6	764.9	622.9	525.5	475.1	441.1	420.0
102.5°	1302.9	1270.0	1152.5	1002.1	896.3	810.2	767.7	739.1
105°	1425.3	1557.9	1573.2	1534.5	1461.7	1389.0	1338.6	1322.1
107.5°	1337.2	1536.8	1658.8	1715.6	1724.7	1720.7	1710.6	1688.8
110°	1261.1	1471.1	1621.2	1717.5	1767.9	1790.2	1800.8	1799.6





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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	1191.6	1393.2	1553.7	1664.0	1734.1	1771.4	1791.4	1797.7
115°	1106.3	1287.0	1440.6	1561.5	1644.8	1698.7	1729.2	1739.8
117.5°	1042.0	1200.6	1340.0	1453.3	1538.2	1595.2	1627.4	1636.3
120°	1010.1	1155.5	1279.9	1386.6	1468.7	1523.9	1557.9	1569.6
122.5°	984.7	1118.0	1235.8	1332.2	1405.8	1460.1	1490.4	1500.2
125°	947.9	1068.7	1171.9	1259.9	1328.0	1372.6	1401.9	1411.3
127.5°	911.5	1020.9	1118.2	1199.4	1258.8	1300.5	1325.9	1333.4
130°	888.1	989.0	1081.7	1159.0	1216.6	1256.5	1279.9	1289.3
132.5°	865.6	959.0	1044.1	1116.8	1173.4	1213.3	1234.9	1243.2
135°	834.0	911.5	989.0	1054.6	1105.1	1143.8	1164.9	1169.6
137.5°	809.0	873.7	935.2	992.5	1038.4	1071.8	1090.4	1097.3
140°	793.0	849.4	903.3	954.9	992.5	1023.0	1040.6	1047.6
142.5°	779.9	827.8	874.2	917.4	953.0	980.8	996.4	997.8
145°	761.3	800.1	836.5	870.5	898.6	918.6	930.3	933.8
147.5°	747.1	777.6	806.0	830.8	854.0	870.0	878.0	880.1
150°	736.7	762.5	787.2	808.3	825.9	840.0	847.0	848.2
152.5°	726.4	750.3	771.2	789.5	803.3	815.6	820.7	820.9
155°	712.1	730.8	748.4	761.3	774.3	782.4	787.2	784.9
157.5°	695.4	711.1	725.9	736.0	745.2	751.9	754.1	754.1
160°	685.1	698.0	710.9	719.1	727.3	733.2	734.4	734.4
162.5°	674.8	685.8	696.8	703.2	711.3	715.4	716.5	715.6
165°	659.3	667.5	675.7	680.4	685.1	689.8	689.8	688.6
167.5°	644.5	650.9	656.5	660.8	662.8	665.4	665.2	663.8
170°	637.0	640.6	645.2	647.5	648.7	652.3	651.1	648.7
172.5°	628.5	631.2	634.9	636.3	637.5	639.1	637.9	636.5
175°	619.5	620.6	621.8	622.9	622.9	624.1	622.9	620.6
177.5°	612.9	612.9	613.8	613.8	613.8	613.8	612.9	611.0
180°	610.1	610.1	610.1	610.1	610.1	610.1	610.1	610.1

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