

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: P331632-830

Luminaire Tested: **SA2XXRDIP-C290D725U830-4F0-1E-UDD-F4**

Issue Date: 10/7/2019

**Test Information**

Test Method: LM-79-08  
Report Number: P331632-830  
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: SA2XXRDIP-C290D725U830-4F0-1E-UDD-F4  
Description: DEFINE 2 DIRECT-INDIRECT PENDANT LED LUMINAIRE  
DOWNLIGHT 290 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER, REGRESSED  
HOUSING  
UPLIGHT 725 LUMENS PER FOOT, BATWING OPTIC  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

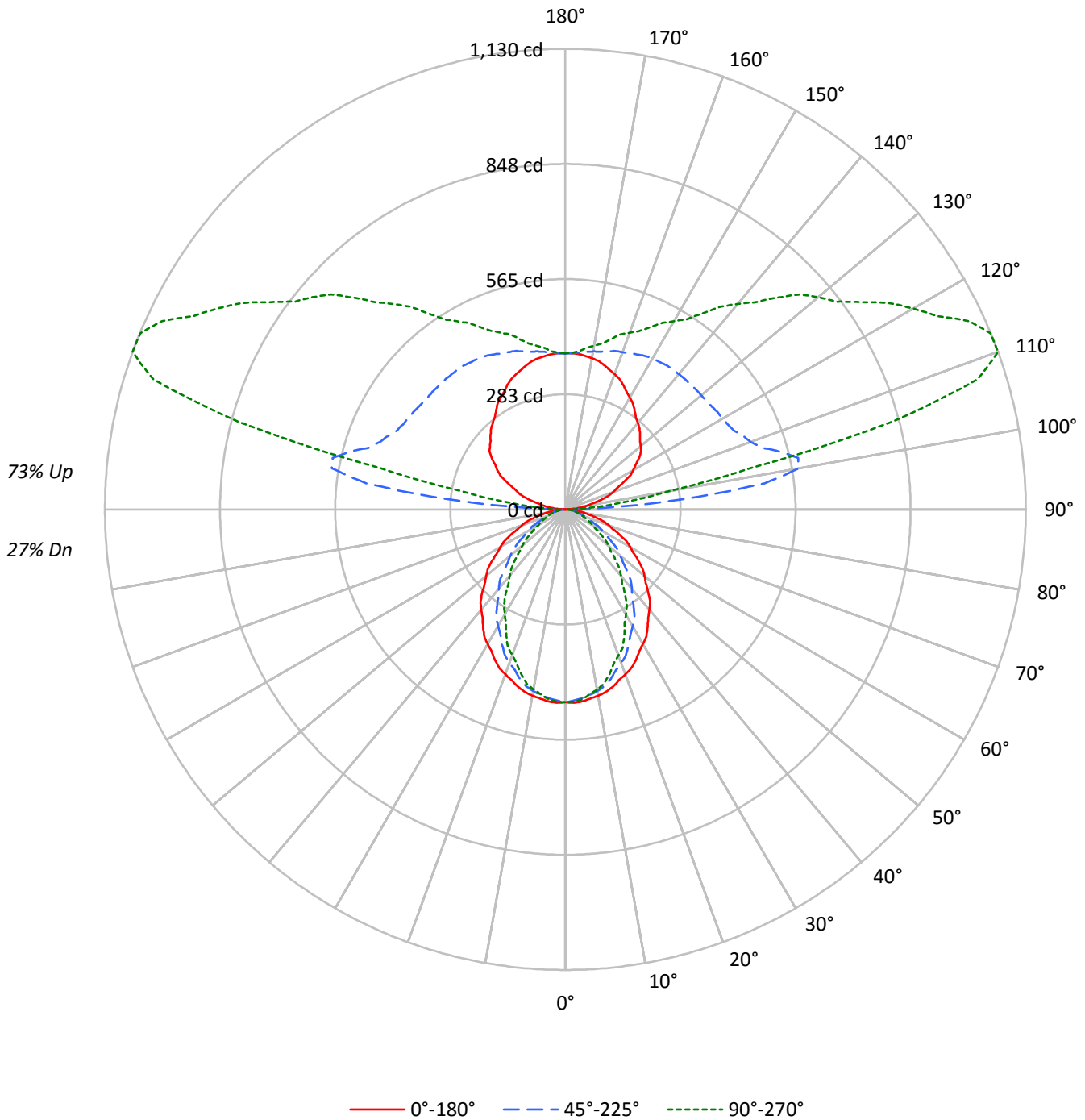
Lumens per Lamp: N/A  
Luminaire Lumens: 3642.6 lumens  
Efficiency: N/A  
Efficacy: 116.8 lumens/watt  
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16  
Luminous Opening: Rectangular (W 0.17' x L: 4' x H: 0')  
CIE Type: Semi-Indirect

Input Watts (W): 31.2  
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	102	102	102	102	91	91	91	91	70	70	70	52	52	52	35	35	35	27
1	93	89	85	82	83	79	76	74	62	60	58	46	45	43	31	30	30	23
2	85	78	72	67	75	70	65	61	55	51	48	41	38	37	28	26	25	20
3	77	68	62	56	69	61	56	51	48	44	41	36	33	31	25	23	22	17
4	71	61	53	48	63	55	48	43	43	39	35	32	29	27	22	21	19	15
5	65	54	46	41	58	49	42	37	38	34	30	29	26	23	20	18	17	13
6	60	48	41	35	53	44	37	32	35	30	26	26	23	21	18	16	15	12
7	55	44	36	31	49	39	33	28	31	27	23	24	21	18	17	15	13	10
8	51	40	32	27	46	36	29	25	29	24	21	22	19	16	15	13	12	9
9	48	36	29	24	43	33	26	22	26	22	18	20	17	15	14	12	11	8
10	44	33	26	21	40	30	24	20	24	20	16	18	15	13	13	11	10	8

**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	1.2
10°-20°	121.6	3.3
20°-30°	170.8	4.7
30°-40°	186.2	5.1
40°-50°	171.2	4.7
50°-60°	134.5	3.7
60°-70°	87.7	2.4
70°-80°	45.2	1.2
80°-90°	15.2	0.4
90°-100°	153.2	4.2
100°-110°	519.8	14.3
110°-120°	552.3	15.2
120°-130°	454.6	12.5
130°-140°	365.1	10.0
140°-150°	275.9	7.6
150°-160°	193.9	5.3
160°-170°	114.1	3.1
170°-180°	37.1	1.0
0°-30°	336.6	9.2
0°-40°	522.8	14.4
0°-60°	828.5	22.7
0°-90°	976.6	26.8
90°-120°	1225.3	33.6
90°-150°	2320.9	63.7
90°-180°	2666.0	73.2
0°-180°	3642.6	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°	1	10	25	24	24	2
95°	26	63	289	109	84	27
105°	90	136	546	976	830	96
115°	158	200	457	943	1093	157
125°	221	262	439	764	886	196
135°	259	310	434	642	735	200
145°	296	340	432	536	586	186
155°	337	364	419	474	493	155
165°	367	378	402	426	432	103
175°	382	383	386	391	390	36
180°	383	383	383	383	383	



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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°	5.7	5.5	5.5	5.1	4.8	5.0	5.7	6.7	7.6	7.7	7.5
90°	0.8	2.9	5.9	7.4	8.9	11.0	14.7	19.9	24.3	25.1	24.3
92.5°	9.0	13.0	18.3	21.5	26.5	33.5	50.1	73.5	94.4	95.8	80.9
95°	25.8	28.7	36.1	42.7	54.5	72.2	106.1	170.2	255.7	288.8	252.7
97.5°	42.0	46.0	53.8	63.8	77.4	97.4	140.0	229.3	371.4	493.0	517.3
100°	56.7	58.9	65.6	77.4	92.1	112.7	151.7	241.7	400.8	582.0	688.2
102.5°	70.3	71.9	78.5	90.3	105.7	126.3	162.4	242.2	389.6	585.0	751.8
105°	89.9	92.8	98.0	109.1	125.3	145.9	180.5	246.1	367.7	545.9	742.0
107.5°	111.1	113.5	118.5	128.7	144.7	165.5	199.1	256.3	356.8	504.1	677.2
110°	125.3	128.2	132.6	142.2	157.7	179.1	211.4	264.5	354.4	484.1	636.6



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	138.2	141.2	146.2	155.1	170.0	192.0	223.3	273.3	355.0	471.1	608.3
115°	158.4	162.1	166.5	175.3	190.1	210.0	241.7	286.6	358.1	456.9	573.3
117.5°	179.4	182.3	186.7	194.5	208.7	229.3	258.6	300.8	363.4	449.9	551.1
120°	192.3	195.3	199.6	206.3	221.0	241.7	270.4	310.2	366.9	445.7	539.3
122.5°	204.7	207.1	211.4	218.7	233.4	254.7	281.6	318.5	371.1	443.4	529.3
125°	221.0	223.3	227.6	236.5	251.3	271.8	298.4	331.6	377.2	439.1	515.0
127.5°	234.0	237.0	243.2	252.9	267.0	288.2	314.1	343.7	383.6	436.6	501.7
130°	241.7	244.6	251.9	262.3	277.0	297.7	323.5	351.5	388.3	435.5	492.9
132.5°	248.7	252.3	260.2	271.2	286.4	307.1	331.7	359.1	393.0	434.9	485.9
135°	259.4	262.3	271.2	282.2	299.2	319.8	343.4	369.1	398.6	433.9	476.0
137.5°	269.4	272.9	281.7	293.5	310.4	329.5	352.8	376.8	403.6	433.9	469.0
140°	277.0	279.9	288.8	300.6	316.8	336.0	358.1	380.9	406.0	433.2	465.0
142.5°	284.6	287.1	295.3	307.1	322.7	340.7	362.2	384.5	407.7	433.2	460.8
145°	296.1	299.2	306.5	317.5	332.2	348.5	368.4	389.0	409.6	431.8	455.3
147.5°	308.6	310.8	317.8	328.0	340.3	354.7	373.4	391.5	410.3	429.1	449.8
150°	316.8	319.1	324.9	334.5	345.5	358.8	375.8	392.7	409.6	427.3	445.0
152.5°	325.1	326.1	332.0	340.4	350.8	363.0	378.1	393.3	408.5	424.4	440.9
155°	336.7	337.4	341.9	350.0	358.1	369.1	381.6	394.2	406.7	419.2	433.2
157.5°	346.5	347.1	350.7	357.8	364.3	373.5	384.2	394.2	403.3	414.0	426.0
160°	352.9	353.6	356.6	362.5	368.4	376.5	385.3	394.2	401.5	410.4	420.8
162.5°	359.4	358.9	361.9	366.6	371.9	378.2	386.0	393.6	399.8	407.5	415.9
165°	366.9	366.2	367.7	372.1	375.8	380.2	386.8	392.0	396.4	401.5	408.2
167.5°	373.2	372.2	373.5	376.4	379.0	381.8	386.6	391.0	393.0	396.4	400.5
170°	377.2	375.8	376.5	378.7	380.2	382.4	386.1	389.7	391.2	393.4	396.4
172.5°	379.6	378.7	378.2	380.5	381.4	383.0	385.5	388.0	388.9	389.9	392.3
175°	382.4	381.6	380.9	382.4	382.4	383.1	384.6	386.1	385.3	386.1	386.8
177.5°	383.7	382.6	381.9	383.1	383.1	383.1	383.7	384.9	383.7	383.1	383.7
180°	383.1	383.1	383.1	383.1	383.1	383.1	383.1	383.1	383.1	383.1	383.1



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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°	7.3	7.0	7.2	7.3	7.3	7.3	7.3	7.3
90°	23.6	22.1	23.6	24.3	24.3	24.3	24.3	24.3
92.5°	64.3	55.1	48.9	44.4	43.7	41.4	42.0	40.8
95°	193.0	148.1	117.2	100.9	91.3	85.5	83.2	84.0
97.5°	450.4	368.5	288.8	235.6	200.4	182.3	171.5	165.3
100°	672.7	581.4	480.4	391.2	330.1	298.4	277.0	263.7
102.5°	818.3	797.7	723.8	629.3	562.9	508.8	482.1	464.2
105°	895.2	978.5	988.1	963.7	918.0	872.3	840.7	830.4
107.5°	839.8	965.2	1041.8	1077.5	1083.3	1080.7	1074.4	1060.6
110°	792.0	924.0	1018.2	1078.6	1110.3	1124.4	1131.0	1130.2





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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	748.5	875.0	975.8	1045.1	1089.1	1112.6	1125.1	1129.1
115°	694.7	808.2	904.7	980.6	1032.9	1066.9	1086.0	1092.7
117.5°	654.4	754.0	841.6	912.8	966.1	1001.9	1022.1	1027.7
120°	634.3	725.8	803.8	870.9	922.5	957.1	978.5	985.8
122.5°	618.5	702.2	776.1	836.7	883.0	917.0	936.0	942.2
125°	595.3	671.2	736.0	791.3	834.1	862.0	880.4	886.4
127.5°	572.5	641.1	702.3	753.3	790.6	816.8	832.7	837.4
130°	557.7	621.1	679.3	727.9	764.0	789.1	803.8	809.7
132.5°	543.6	602.3	655.7	701.4	737.0	762.0	775.5	780.8
135°	523.9	572.5	621.1	662.3	694.1	718.4	731.6	734.6
137.5°	508.1	548.7	587.4	623.3	652.2	673.2	684.8	689.2
140°	498.0	533.5	567.3	599.7	623.3	642.4	653.6	658.0
142.5°	489.8	519.9	549.0	576.2	598.6	616.0	625.8	626.7
145°	478.2	502.5	525.4	546.7	564.4	576.9	584.3	586.4
147.5°	469.2	488.3	506.1	521.8	536.4	546.4	551.4	552.7
150°	462.7	478.9	494.4	507.7	518.7	527.5	532.0	532.7
152.5°	456.2	471.3	484.4	495.9	504.5	512.2	515.5	515.6
155°	447.2	459.0	470.0	478.2	486.3	491.4	494.4	492.9
157.5°	436.8	446.7	455.9	462.2	468.0	472.3	473.6	473.6
160°	430.3	438.4	446.5	451.7	456.9	460.5	461.2	461.2
162.5°	423.8	430.7	437.6	441.7	446.8	449.3	450.1	449.4
165°	414.1	419.2	424.4	427.3	430.3	433.2	433.2	432.5
167.5°	404.8	408.8	412.3	415.0	416.3	417.9	417.7	416.9
170°	400.1	402.3	405.2	406.7	407.5	409.6	408.9	407.5
172.5°	394.7	396.4	398.8	399.6	400.4	401.4	400.7	399.8
175°	389.0	389.7	390.5	391.2	391.2	392.0	391.2	389.7
177.5°	384.9	384.9	385.5	385.5	385.5	385.5	384.9	383.7
180°	383.1	383.1	383.1	383.1	383.1	383.1	383.1	383.1

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