

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: P331915-927

Luminaire Tested: **S123DIP-S560D365U927-4F0-1E-UDD-D4**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P331915-927  
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-17,  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: S123DIP-S560D365U927-4F0-1E-UDD-D4  
Description: DEFINE 3 DIRECT-INDIRECT PENDANT LED LUMINAIRE  
DOWNLIGHT 560 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER  
UPLIGHT 365 LUMENS PER FOOT, BATWING OPTIC  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 2913.5 lumens  
Efficiency: N/A  
Efficacy: 105.9 lumens/watt  
Spacing Criteria (0/90/45): 1.2 / 1.26 / 1.37  
Luminous Opening: Rectangular w/ Sides (W: 0.25' x L: 4' x H: 0.08')  
CIE Type: General Diffuse

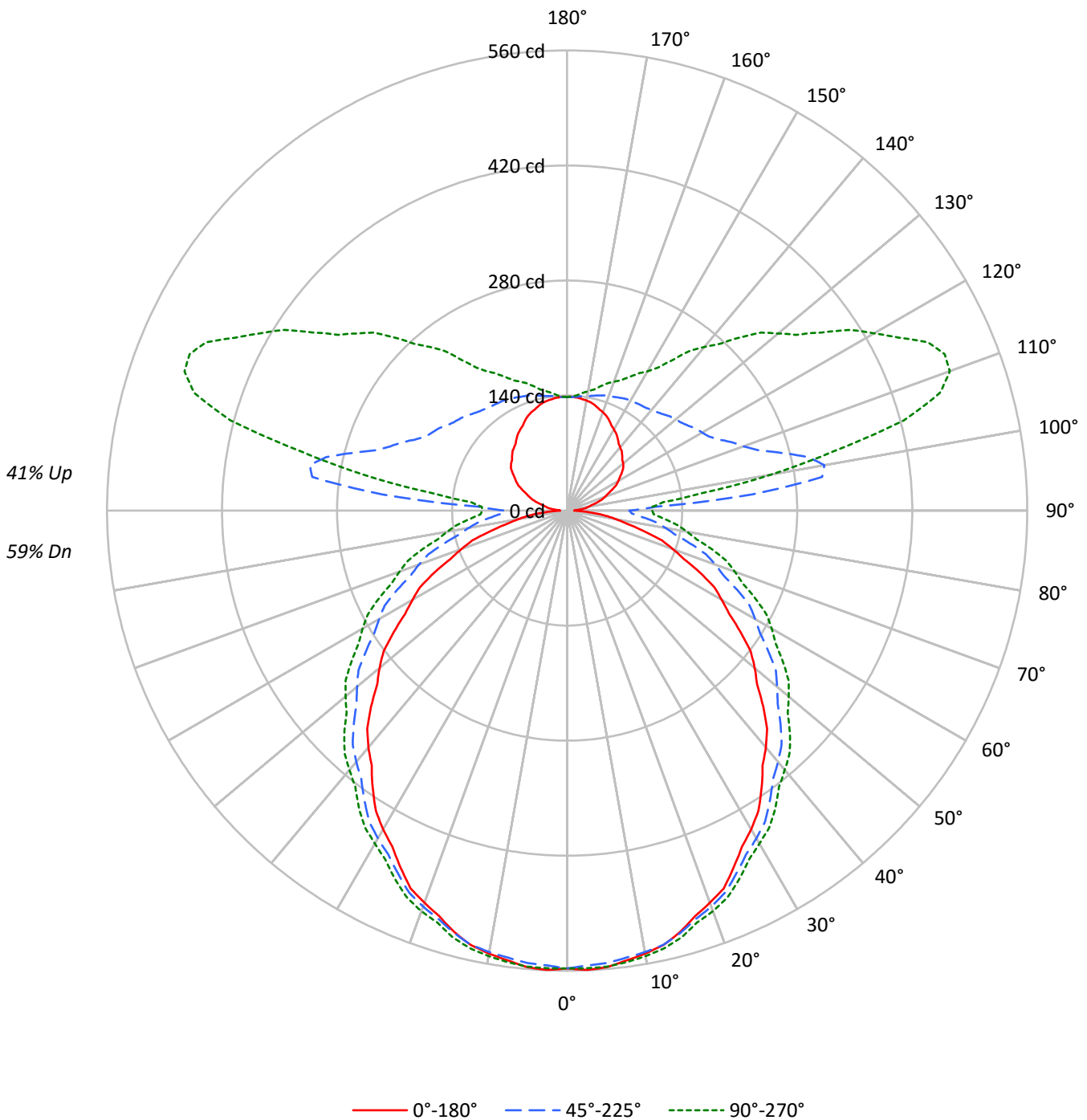
Input Watts (W): 27.5  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	50	30	10	0		
RCR																										
0	109	109	109	109	102	102	102	102	88	88	88	76	76	76	64	64	64	59								
1	99	94	89	85	92	87	83	80	76	73	70	65	63	61	55	53	52	47								
2	89	81	74	69	83	76	70	65	66	61	57	56	53	50	48	45	43	38								
3	81	71	63	57	75	66	59	53	57	52	47	49	45	42	42	39	36	32								
4	74	63	54	48	69	58	51	45	51	45	40	44	39	35	37	34	31	27								
5	68	56	47	41	63	52	44	39	45	39	34	39	34	30	33	30	26	23								
6	63	50	41	35	58	47	39	33	41	35	30	35	30	26	30	26	23	20								
7	58	45	37	31	54	42	35	29	37	31	26	32	27	23	27	24	20	18								
8	54	41	33	27	50	38	31	26	34	28	23	29	24	21	25	21	18	16								
9	50	37	29	24	46	35	28	23	31	25	21	27	22	19	23	19	16	14								
10	47	34	27	22	43	32	25	21	28	23	19	25	20	17	22	18	15	13								

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

	0°	45°	90°
0°	5997	5997	5997
5°	6015	5845	5849
10°	5961	5711	5682
15°	5884	5558	5501
20°	5774	5383	5300
25°	5639	5182	5090
30°	5500	5002	4877
35°	5344	4810	4707
40°	5195	4636	4524
45°	5031	4469	4378
50°	4868	4304	4219
55°	4689	4134	4074
60°	4513	3964	3925
65°	4335	3780	3750
70°	4066	3576	3568
75°	3724	3338	3386
80°	3326	3109	3176
85°	2963	2948	3053



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	52.8	1.8
10°-20°	150.5	5.2
20°-30°	225.2	7.7
30°-40°	268.9	9.2
40°-50°	281.3	9.7
50°-60°	264.0	9.1
60°-70°	220.5	7.6
70°-80°	157.8	5.4
80°-90°	95.1	3.3
90°-100°	136.0	4.7
100°-110°	261.3	9.0
110°-120°	243.3	8.4
120°-130°	187.5	6.4
130°-140°	142.2	4.9
140°-150°	102.2	3.5
150°-160°	70.1	2.4
160°-170°	41.2	1.4
170°-180°	13.4	0.5
0°-30°	428.5	14.7
0°-40°	697.4	23.9
0°-60°	1242.7	42.7
0°-90°	1716.1	58.9
90°-120°	640.6	22.0
90°-150°	1072.6	36.8
90°-180°	1197.0	41.1
0°-180°	2913.5	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	557	557	557	557	557	
5°	558	556	553	557	557	53
15°	531	533	532	538	538	149
25°	479	485	487	495	495	221
35°	413	422	430	439	442	258
45°	337	352	367	378	384	260
55°	257	277	299	315	320	230
65°	178	202	228	246	252	176
75°	96	125	155	175	183	103
85°	30	60	92	112	119	31
90°	8	41	76	96	103	6
95°	16	62	226	127	117	15
105°	37	68	271	455	424	39
115°	60	83	204	424	485	60
125°	82	97	180	323	378	73
135°	95	113	166	258	298	73
145°	107	122	156	201	224	67
155°	121	131	152	172	179	56
165°	132	136	145	154	156	37
175°	138	138	139	141	141	13
180°	138	138	138	138	138	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	557.1	557.1	557.1	557.1	557.1	557.1	557.1	557.1	557.1	557.1	557.1
2.5°	559.5	559.2	558.9	558.5	558.2	557.6	556.7	555.9	555.0	554.1	555.0
5°	557.7	557.4	557.1	556.9	556.6	556.0	555.2	554.4	553.7	552.8	553.9
7.5°	552.2	552.2	552.3	552.4	552.5	552.1	551.3	550.5	549.7	548.9	550.2
10°	547.4	547.6	547.9	548.2	548.4	548.3	547.6	546.9	546.2	545.6	546.9
12.5°	541.5	541.9	542.3	542.6	543.0	543.0	542.6	542.1	541.6	541.1	542.4
15°	531.0	531.4	531.8	532.2	532.6	532.7	532.6	532.4	532.3	532.2	533.5
17.5°	517.6	518.4	519.3	520.1	520.9	521.3	521.2	521.1	521.1	521.0	522.2
20°	507.9	508.7	509.5	510.3	511.1	511.7	512.0	512.2	512.5	512.8	514.0
22.5°	497.7	498.5	499.3	500.2	501.0	501.5	501.9	502.3	502.7	503.0	504.6
25°	479.4	480.8	482.1	483.5	484.8	485.7	486.1	486.5	486.9	487.3	489.0
27.5°	461.0	462.5	464.1	465.6	467.1	468.3	469.1	470.0	470.9	471.7	473.2
30°	447.8	449.6	451.3	453.1	454.9	456.3	457.3	458.4	459.5	460.6	462.2
32.5°	433.2	435.2	437.2	439.2	441.2	442.8	444.3	445.6	447.0	448.5	450.2
35°	412.6	414.8	416.9	419.1	421.3	423.3	425.0	426.7	428.5	430.2	432.3
37.5°	390.8	393.2	395.6	398.1	400.5	402.8	405.0	407.1	409.2	411.5	413.8
40°	376.2	378.7	381.1	383.5	386.0	388.5	391.2	393.9	396.6	399.3	401.6
42.5°	360.2	363.2	366.1	369.1	372.1	374.9	377.8	380.6	383.4	386.2	388.7
45°	337.4	340.6	343.9	347.1	350.3	353.6	357.0	360.4	363.8	367.1	369.7
47.5°	313.5	317.2	320.8	324.5	328.1	331.9	335.8	339.6	343.5	347.4	350.2
50°	297.9	301.7	305.5	309.3	313.1	317.0	321.2	325.4	329.5	333.7	336.8
52.5°	281.5	285.4	289.5	293.4	297.4	301.7	306.3	310.9	315.5	320.2	323.4
55°	257.3	261.7	266.2	270.6	275.1	279.7	284.6	289.5	294.3	299.1	302.8
57.5°	233.8	238.4	243.0	247.6	252.3	257.3	262.6	267.9	273.2	278.5	282.2
60°	217.2	222.1	227.0	231.8	236.6	241.9	247.4	252.9	258.4	264.0	267.8
62.5°	201.7	206.7	211.7	216.6	221.6	227.0	232.8	238.7	244.5	250.4	254.1
65°	177.8	183.1	188.3	193.6	198.8	204.5	210.4	216.3	222.2	228.1	232.2
67.5°	153.5	159.1	164.7	170.2	175.9	181.6	187.7	193.8	199.8	205.8	210.2
70°	136.6	142.4	148.1	153.9	159.7	165.9	172.3	178.8	185.3	191.8	196.1
72.5°	121.0	126.8	132.6	138.4	144.2	150.4	157.1	163.8	170.5	177.2	181.6
75°	96.5	102.8	109.2	115.5	121.8	128.4	135.1	141.9	148.6	155.3	159.8
77.5°	75.1	81.5	87.9	94.3	100.7	107.3	114.1	120.9	127.7	134.5	139.2
80°	60.0	66.7	73.3	79.9	86.5	93.3	100.3	107.3	114.4	121.4	126.0
82.5°	47.0	53.7	60.4	67.1	73.8	80.7	87.9	95.0	102.1	109.2	113.8
85°	29.7	36.4	43.3	50.0	56.7	63.6	70.8	78.0	85.1	92.2	96.8
87.5°	16.2	23.1	29.9	36.8	43.6	50.5	57.6	64.6	71.7	78.7	83.3
90°	8.5	15.6	22.8	30.3	37.4	44.7	52.4	60.1	67.9	75.6	79.9
92.5°	10.9	18.5	26.9	34.9	43.3	53.8	67.9	86.7	105.3	107.7	101.6
95°	16.2	22.3	30.7	40.6	53.2	70.0	100.4	148.8	201.3	226.1	198.9
97.5°	22.2	27.2	34.4	43.3	55.1	72.5	101.6	154.9	237.7	313.0	334.9
100°	26.1	30.7	37.1	45.3	56.3	72.5	98.3	145.9	225.8	317.9	376.9
102.5°	30.4	34.8	40.4	48.0	57.9	73.0	96.6	137.8	209.5	300.4	376.2
105°	37.3	41.4	46.3	52.9	61.5	74.7	95.6	130.2	188.9	270.6	354.7
107.5°	44.1	47.7	52.0	58.1	65.8	78.0	96.8	126.3	174.4	243.8	320.4
110°	49.0	52.3	56.1	61.6	68.8	80.6	98.5	125.2	168.1	228.6	299.0



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	53.9	56.7	60.1	65.2	72.0	83.2	100.1	124.9	163.2	217.2	279.7
115°	60.4	63.1	66.5	70.9	77.2	88.0	103.5	125.5	158.9	204.3	256.0
117.5°	67.4	69.7	72.1	75.7	82.0	91.7	106.9	126.7	155.4	194.7	239.8
120°	71.9	73.4	75.4	78.9	84.9	94.5	109.0	128.0	154.0	189.8	231.0
122.5°	76.1	77.3	79.1	82.4	87.9	97.6	111.7	129.4	153.4	185.8	223.3
125°	81.6	82.1	83.8	86.9	92.2	101.7	115.5	131.7	152.4	180.1	212.9
127.5°	86.3	87.0	88.9	91.9	97.7	106.7	119.5	133.8	152.1	175.5	203.3
130°	89.2	89.8	92.3	95.5	101.2	110.0	122.0	135.3	152.0	172.4	197.6
132.5°	90.9	92.0	94.7	98.7	104.5	112.9	124.1	136.7	151.5	169.7	192.2
135°	94.7	95.7	98.6	102.7	108.4	116.7	126.8	137.8	150.5	165.7	184.7
137.5°	98.3	99.3	102.3	106.6	112.3	119.7	128.9	138.8	149.6	162.2	178.2
140°	100.3	101.6	104.5	108.9	114.5	121.8	130.2	139.1	149.0	160.0	174.1
142.5°	103.0	104.0	106.9	110.8	116.4	122.9	130.9	139.1	148.1	157.6	170.2
145°	107.3	108.0	110.4	114.4	119.1	125.4	132.7	140.2	148.1	156.5	166.5
147.5°	111.1	111.5	114.0	117.6	122.2	127.7	134.4	141.2	148.1	155.4	163.4
150°	113.9	114.2	116.5	120.1	124.0	129.0	135.5	141.4	148.1	154.6	161.5
152.5°	116.8	116.9	119.1	122.3	125.8	130.6	136.2	141.8	147.4	153.4	159.7
155°	121.2	121.2	122.9	125.7	128.8	132.7	137.4	142.0	146.7	151.5	157.0
157.5°	124.7	124.9	126.3	128.7	131.3	134.4	138.2	142.2	145.8	149.7	154.0
160°	127.4	127.4	128.5	130.7	132.7	135.5	138.9	142.2	145.3	148.4	152.0
162.5°	129.4	129.4	130.3	132.1	133.8	136.2	139.1	142.0	144.4	147.0	150.0
165°	132.4	132.1	132.7	134.1	135.2	137.2	139.4	141.4	143.1	145.0	147.3
167.5°	134.7	134.4	134.7	135.7	136.5	137.8	139.3	140.9	141.7	143.0	144.7
170°	136.0	135.5	135.8	136.6	137.2	137.8	139.1	140.2	140.9	141.6	143.1
172.5°	137.0	136.6	136.7	137.3	137.6	137.9	139.1	140.1	140.1	140.5	141.5
175°	138.0	137.8	137.4	138.0	138.0	138.3	138.9	139.4	139.1	139.1	139.7
177.5°	138.6	138.3	138.1	138.3	138.3	138.3	138.6	138.9	138.6	138.3	138.6
180°	138.3	138.3	138.3	138.3	138.3	138.3	138.3	138.3	138.3	138.3	138.3



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	557.1	557.1	557.1	557.1	557.1	557.1	557.1	557.1
2.5°	555.9	556.7	557.6	558.0	557.9	557.8	557.7	557.5
5°	555.0	556.0	557.1	557.6	557.5	557.3	557.2	557.1
7.5°	551.6	552.9	554.4	554.9	554.8	554.6	554.4	554.3
10°	548.3	549.6	551.0	551.4	551.2	551.0	550.6	550.4
12.5°	543.7	544.9	546.1	546.6	546.4	546.1	545.8	545.6
15°	534.9	536.2	537.6	538.2	538.1	537.9	537.8	537.7
17.5°	523.5	524.7	525.9	526.4	526.2	526.0	525.9	525.6
20°	515.2	516.4	517.6	518.3	518.4	518.6	518.7	518.8
22.5°	506.1	507.7	509.2	509.9	509.8	509.8	509.7	509.6
25°	490.8	492.6	494.3	495.2	495.2	495.2	495.2	495.2
27.5°	474.8	476.3	477.8	478.6	478.7	478.8	479.0	479.0
30°	463.8	465.4	467.1	467.9	467.9	467.9	467.9	467.9
32.5°	451.9	453.6	455.3	456.4	456.7	457.0	457.3	457.6
35°	434.3	436.3	438.3	439.6	440.1	440.7	441.2	441.8
37.5°	416.0	418.3	420.6	422.0	422.4	422.8	423.3	423.7
40°	403.9	406.2	408.4	409.9	410.4	411.0	411.5	412.0
42.5°	391.2	393.7	396.2	397.8	398.6	399.3	400.1	400.8
45°	372.2	374.8	377.4	379.2	380.2	381.4	382.5	383.5
47.5°	353.2	356.0	358.9	360.8	361.6	362.4	363.3	364.1
50°	339.9	343.1	346.2	348.2	349.1	350.1	351.0	352.0
52.5°	326.6	329.8	333.0	335.2	336.4	337.5	338.7	339.8
55°	306.4	310.1	313.7	316.1	317.2	318.2	319.3	320.4
57.5°	285.9	289.5	293.2	295.6	296.9	298.2	299.4	300.7
60°	271.6	275.3	279.1	281.7	283.2	284.6	286.1	287.6
62.5°	257.9	261.7	265.5	268.1	269.4	270.8	272.2	273.5
65°	236.2	240.3	244.4	247.1	248.4	249.8	251.1	252.5
67.5°	214.7	219.1	223.6	226.3	227.4	228.5	229.7	230.8
70°	200.4	204.7	209.1	211.8	213.2	214.5	215.9	217.2
72.5°	186.0	190.4	194.9	197.8	199.2	200.5	201.8	203.2
75°	164.2	168.7	173.2	176.2	177.8	179.4	181.0	182.7
77.5°	143.9	148.5	153.2	156.2	157.5	158.7	159.9	161.2
80°	130.6	135.1	139.7	142.7	144.0	145.4	146.7	148.1
82.5°	118.4	122.9	127.5	130.6	131.9	133.2	134.6	135.9
85°	101.4	106.0	110.6	113.5	114.9	116.2	117.6	118.9
87.5°	87.9	92.5	97.2	100.2	101.6	102.9	104.3	105.6
90°	84.8	89.6	94.5	98.0	99.1	100.7	102.3	103.4
92.5°	97.2	96.8	99.1	100.5	101.2	101.6	103.1	103.9
95°	169.2	140.9	130.2	122.9	119.0	117.8	117.2	117.4
97.5°	315.0	268.9	236.9	206.1	186.8	175.5	169.3	168.3
100°	390.7	371.9	343.1	305.9	279.0	259.9	250.3	252.0
102.5°	413.8	416.8	401.6	378.9	358.2	343.4	335.6	330.6
105°	417.0	448.8	457.9	453.0	441.4	432.0	424.2	424.1
107.5°	390.4	439.4	467.5	479.9	481.3	479.0	477.1	475.7
110°	366.7	421.7	460.5	482.4	491.2	494.6	495.1	495.6





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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	342.7	398.7	441.6	469.1	484.7	492.8	496.1	497.4
115°	311.0	363.0	407.3	440.1	462.1	475.5	482.2	484.7
117.5°	286.7	332.0	372.2	405.2	428.2	443.3	452.5	455.4
120°	273.5	314.4	351.2	381.4	404.5	421.1	428.8	431.4
122.5°	262.6	299.8	334.0	362.2	382.8	397.8	406.2	409.2
125°	247.6	281.0	310.7	334.9	353.9	367.1	375.0	378.0
127.5°	234.0	264.0	290.8	313.0	329.9	341.4	348.6	351.3
130°	225.4	253.1	278.4	299.0	314.7	325.6	332.3	335.3
132.5°	217.1	242.7	266.3	286.1	301.0	312.0	318.1	320.6
135°	205.9	228.1	248.7	266.3	280.7	289.8	295.5	298.1
137.5°	195.4	213.9	231.7	246.9	259.1	268.3	273.2	275.2
140°	189.3	205.6	221.0	234.4	245.7	254.2	259.4	259.8
142.5°	183.1	197.2	210.6	222.3	232.1	239.7	244.4	244.8
145°	176.6	186.9	196.9	205.8	213.4	219.8	222.6	223.7
147.5°	171.3	179.0	186.5	192.7	198.4	203.0	205.6	206.3
150°	167.9	174.4	180.3	185.8	190.2	193.5	195.5	195.7
152.5°	165.5	171.0	176.3	180.7	184.0	187.0	188.1	188.1
155°	161.8	166.3	170.5	173.8	176.3	178.6	179.2	179.4
157.5°	157.9	161.6	164.9	167.5	169.7	171.3	171.8	171.7
160°	155.7	158.8	161.5	163.5	165.4	167.2	167.2	166.8
162.5°	153.0	155.6	158.2	159.9	161.2	162.6	162.6	162.4
165°	149.5	151.1	153.1	154.6	155.7	156.8	156.5	156.5
167.5°	146.5	147.7	148.9	149.9	150.4	151.1	150.9	150.9
170°	144.4	145.3	146.4	146.9	147.3	147.8	147.5	147.5
172.5°	142.7	143.3	144.2	144.5	144.6	145.1	144.7	144.4
175°	140.2	140.5	141.1	141.1	141.1	141.4	141.1	140.9
177.5°	138.7	138.9	139.2	139.2	138.9	139.2	138.7	138.7
180°	138.3	138.3	138.3	138.3	138.3	138.3	138.3	138.3

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