

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

Luminaire Tested: **S123DIP-S560D365U835-4F0-1E-UDD-D4**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P331915  
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-S560D365U835-4F0-1E-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: 3677.8 lumens  
Efficiency: N/A  
Efficacy: 133.7 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

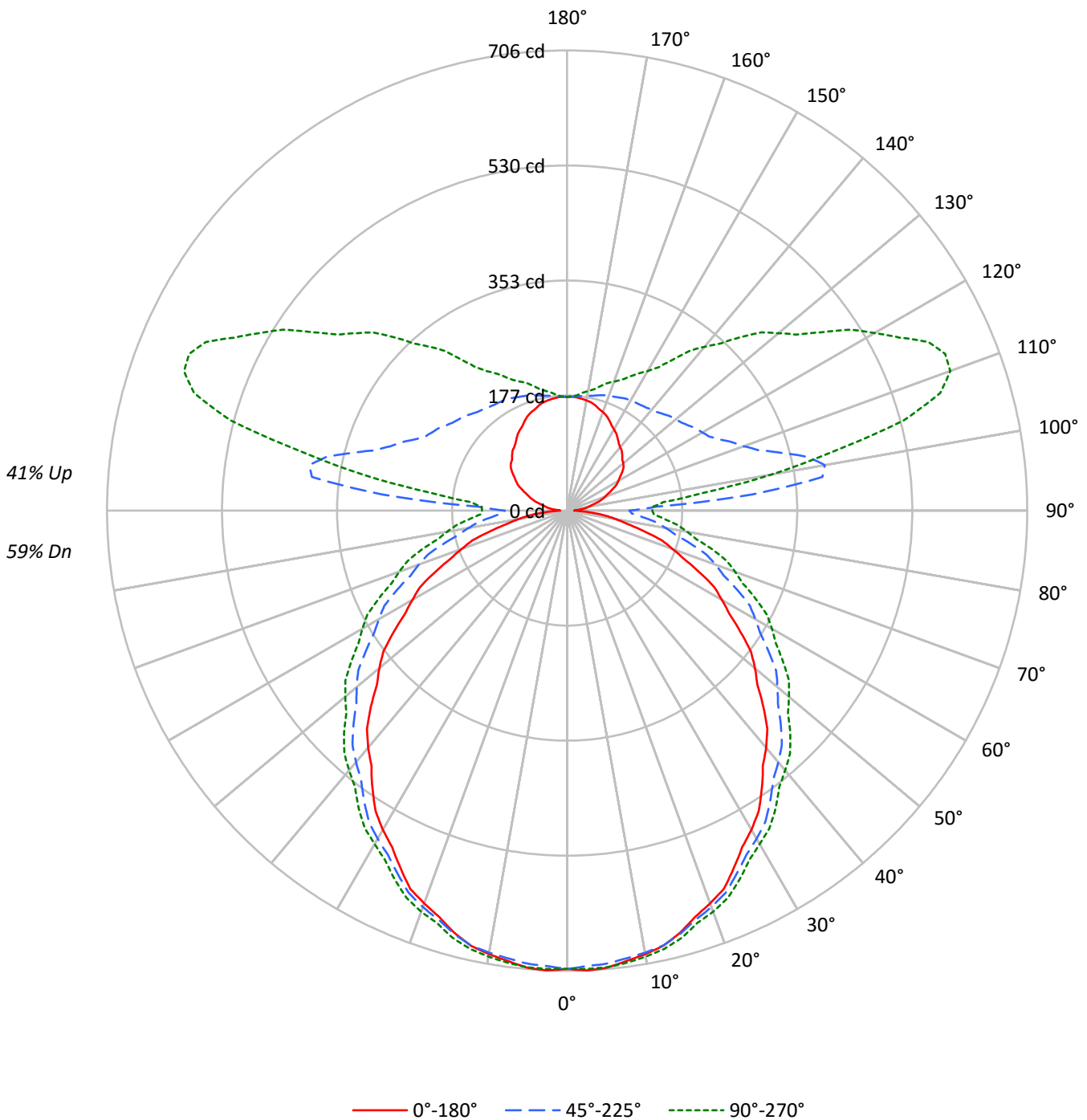
Input Watts (W): 27.5  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	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°	7569	7569	7569
5°	7593	7378	7383
10°	7525	7209	7173
15°	7428	7016	6943
20°	7289	6795	6690
25°	7119	6541	6425
30°	6943	6313	6156
35°	6746	6072	5942
40°	6558	5852	5711
45°	6351	5641	5527
50°	6145	5433	5325
55°	5919	5219	5143
60°	5697	5003	4956
65°	5471	4772	4733
70°	5132	4514	4504
75°	4700	4216	4274
80°	4202	3924	4008
85°	3741	3722	3854



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	66.7	1.8
10°-20°	190.0	5.2
20°-30°	284.2	7.7
30°-40°	339.4	9.2
40°-50°	355.1	9.7
50°-60°	333.2	9.1
60°-70°	278.3	7.6
70°-80°	199.1	5.4
80°-90°	120.1	3.3
90°-100°	171.7	4.7
100°-110°	329.9	9.0
110°-120°	307.2	8.4
120°-130°	236.7	6.4
130°-140°	179.6	4.9
140°-150°	129.0	3.5
150°-160°	88.6	2.4
160°-170°	52.0	1.4
170°-180°	16.9	0.5
0°-30°	540.9	14.7
0°-40°	880.3	23.9
0°-60°	1568.7	42.7
0°-90°	2166.3	58.9
90°-120°	808.7	22.0
90°-150°	1354.0	36.8
90°-180°	1512.0	41.1
0°-180°	3677.8	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	703	703	703	703	703	
5°	704	702	698	704	703	67
15°	670	672	672	679	679	189
25°	605	613	615	625	625	279
35°	521	533	543	554	558	326
45°	426	444	463	478	484	328
55°	325	350	378	398	404	291
65°	224	255	288	310	319	222
75°	122	158	196	220	231	130
85°	38	76	116	141	150	39
90°	11	52	95	122	130	8
95°	20	78	285	160	148	20
105°	47	86	342	575	535	50
115°	76	104	258	535	612	76
125°	103	122	227	408	477	92
135°	120	142	209	325	376	92
145°	135	154	198	254	282	85
155°	153	165	191	217	226	70
165°	167	172	183	194	198	47
175°	174	174	176	178	178	17
180°	175	175	175	175	175	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	703.2	703.2	703.2	703.2	703.2	703.2	703.2	703.2	703.2	703.2	703.2
2.5°	706.3	705.9	705.5	705.0	704.6	703.9	702.8	701.7	700.6	699.5	700.6
5°	704.0	703.6	703.3	703.0	702.6	701.9	700.9	699.9	698.9	697.8	699.2
7.5°	697.1	697.1	697.2	697.3	697.4	696.9	695.9	694.9	693.9	692.9	694.6
10°	691.0	691.3	691.6	692.0	692.3	692.1	691.2	690.4	689.5	688.7	690.4
12.5°	683.6	684.1	684.6	685.0	685.5	685.5	684.9	684.3	683.7	683.1	684.7
15°	670.3	670.8	671.3	671.8	672.3	672.5	672.3	672.1	672.0	671.8	673.5
17.5°	653.4	654.4	655.5	656.5	657.5	658.0	657.9	657.8	657.8	657.7	659.2
20°	641.2	642.2	643.2	644.2	645.2	645.9	646.3	646.6	646.9	647.3	648.8
22.5°	628.3	629.3	630.3	631.4	632.4	633.1	633.6	634.1	634.6	635.0	637.0
25°	605.2	606.9	608.6	610.3	612.0	613.1	613.6	614.1	614.6	615.1	617.3
27.5°	581.9	583.8	585.8	587.7	589.6	591.1	592.2	593.3	594.4	595.5	597.4
30°	565.3	567.5	569.7	572.0	574.2	576.0	577.3	578.7	580.0	581.4	583.5
32.5°	546.9	549.4	551.9	554.4	556.9	559.0	560.8	562.5	564.3	566.1	568.3
35°	520.9	523.6	526.3	529.1	531.8	534.3	536.5	538.7	540.9	543.1	545.7
37.5°	493.3	496.4	499.4	502.5	505.6	508.5	511.2	513.9	516.6	519.4	522.3
40°	474.9	478.0	481.1	484.1	487.2	490.4	493.8	497.2	500.6	504.0	506.9
42.5°	454.7	458.5	462.2	465.9	469.7	473.3	476.9	480.4	484.0	487.5	490.7
45°	425.9	430.0	434.1	438.2	442.2	446.4	450.7	454.9	459.2	463.4	466.7
47.5°	395.7	400.4	405.0	409.6	414.2	419.0	423.9	428.7	433.6	438.5	442.1
50°	376.1	380.9	385.6	390.4	395.2	400.2	405.5	410.8	416.0	421.3	425.2
52.5°	355.3	360.3	365.4	370.4	375.4	380.9	386.7	392.5	398.3	404.2	408.2
55°	324.8	330.4	336.0	341.6	347.3	353.1	359.3	365.4	371.5	377.6	382.2
57.5°	295.1	300.9	306.8	312.6	318.5	324.8	331.5	338.2	344.9	351.6	356.2
60°	274.2	280.4	286.5	292.6	298.7	305.3	312.3	319.3	326.2	333.2	338.0
62.5°	254.6	260.9	267.2	273.4	279.7	286.5	293.9	301.3	308.7	316.1	320.8
65°	224.4	231.1	237.7	244.4	251.0	258.1	265.6	273.0	280.5	288.0	293.1
67.5°	193.8	200.9	207.9	214.9	222.0	229.3	237.0	244.6	252.2	259.8	265.4
70°	172.4	179.7	187.0	194.3	201.6	209.4	217.5	225.7	233.9	242.1	247.5
72.5°	152.7	160.1	167.4	174.7	182.0	189.9	198.3	206.8	215.2	223.7	229.3
75°	121.8	129.8	137.8	145.8	153.8	162.1	170.6	179.1	187.6	196.1	201.7
77.5°	94.8	102.9	111.0	119.0	127.1	135.4	144.0	152.6	161.2	169.8	175.7
80°	75.8	84.2	92.5	100.9	109.2	117.8	126.6	135.5	144.4	153.2	159.0
82.5°	59.3	67.8	76.2	84.7	93.2	101.9	110.9	119.9	128.9	137.9	143.7
85°	37.5	46.0	54.6	63.1	71.6	80.3	89.4	98.4	107.4	116.4	122.2
87.5°	20.5	29.1	37.8	46.4	55.1	63.8	72.7	81.6	90.5	99.4	105.1
90°	10.7	19.7	28.8	38.2	47.2	56.4	66.2	75.9	85.7	95.4	100.8
92.5°	13.7	23.4	33.9	44.1	54.6	67.9	85.7	109.4	132.9	136.0	128.3
95°	20.4	28.1	38.7	51.3	67.1	88.4	126.8	187.8	254.1	285.4	251.1
97.5°	28.0	34.3	43.4	54.6	69.6	91.5	128.2	195.5	300.1	395.1	422.8
100°	33.0	38.8	46.8	57.2	71.1	91.5	124.1	184.2	285.0	401.3	475.8
102.5°	38.4	43.9	51.0	60.6	73.1	92.1	121.9	174.0	264.5	379.2	474.9
105°	47.1	52.3	58.5	66.8	77.6	94.3	120.7	164.4	238.5	341.6	447.8
107.5°	55.7	60.2	65.7	73.4	83.1	98.5	122.2	159.4	220.2	307.8	404.4
110°	61.8	66.0	70.8	77.8	86.8	101.7	124.4	158.0	212.2	288.6	377.5



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	68.1	71.6	75.9	82.3	90.9	105.0	126.3	157.7	206.0	274.2	353.1
115°	76.3	79.7	83.9	89.5	97.5	111.1	130.7	158.4	200.6	257.9	323.1
117.5°	85.1	88.0	91.0	95.5	103.5	115.8	134.9	159.9	196.2	245.8	302.7
120°	90.7	92.6	95.2	99.6	107.2	119.3	137.6	161.6	194.4	239.6	291.6
122.5°	96.1	97.6	99.8	104.0	110.9	123.2	141.0	163.3	193.6	234.6	281.9
125°	103.0	103.7	105.8	109.7	116.4	128.4	145.8	166.2	192.4	227.4	268.7
127.5°	108.9	109.8	112.2	116.0	123.3	134.7	150.8	168.9	192.0	221.5	256.6
130°	112.6	113.4	116.5	120.5	127.8	138.9	154.0	170.8	191.9	217.6	249.4
132.5°	114.8	116.1	119.5	124.6	131.9	142.5	156.7	172.5	191.2	214.2	242.6
135°	119.6	120.8	124.5	129.7	136.9	147.3	160.1	174.0	190.0	209.2	233.1
137.5°	124.1	125.4	129.1	134.6	141.8	151.1	162.7	175.2	188.9	204.8	224.9
140°	126.6	128.3	131.9	137.5	144.6	153.7	164.4	175.6	188.1	202.0	219.8
142.5°	130.0	131.3	135.0	139.9	146.9	155.1	165.2	175.6	186.9	199.0	214.8
145°	135.4	136.3	139.3	144.4	150.3	158.3	167.5	177.0	186.9	197.5	210.2
147.5°	140.2	140.8	143.9	148.5	154.3	161.2	169.6	178.2	186.9	196.2	206.3
150°	143.8	144.2	147.0	151.6	156.5	162.9	171.0	178.5	186.9	195.1	203.9
152.5°	147.5	147.6	150.4	154.4	158.8	164.9	171.9	179.0	186.1	193.7	201.6
155°	153.0	153.0	155.1	158.7	162.6	167.5	173.5	179.2	185.2	191.2	198.2
157.5°	157.4	157.7	159.4	162.5	165.8	169.6	174.4	179.5	184.0	189.0	194.4
160°	160.8	160.8	162.2	165.0	167.5	171.0	175.3	179.5	183.4	187.3	191.9
162.5°	163.3	163.3	164.5	166.7	168.9	171.9	175.6	179.2	182.3	185.6	189.3
165°	167.1	166.8	167.5	169.3	170.7	173.2	176.0	178.5	180.6	183.1	185.9
167.5°	170.0	169.6	170.0	171.3	172.3	173.9	175.9	177.9	178.9	180.5	182.6
170°	171.7	171.0	171.4	172.4	173.2	173.9	175.6	177.0	177.8	178.8	180.6
172.5°	172.9	172.4	172.5	173.3	173.7	174.1	175.6	176.8	176.9	177.4	178.6
175°	174.2	173.9	173.5	174.2	174.2	174.6	175.3	176.0	175.6	175.6	176.3
177.5°	174.9	174.6	174.3	174.6	174.6	174.6	174.9	175.4	174.9	174.6	174.9
180°	174.6	174.6	174.6	174.6	174.6	174.6	174.6	174.6	174.6	174.6	174.6



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	703.2	703.2	703.2	703.2	703.2	703.2	703.2	703.2
2.5°	701.7	702.8	703.9	704.4	704.2	704.1	704.0	703.8
5°	700.6	701.9	703.3	703.9	703.7	703.5	703.4	703.2
7.5°	696.3	698.0	699.8	700.5	700.3	700.1	699.9	699.7
10°	692.1	693.8	695.5	696.1	695.8	695.5	695.1	694.8
12.5°	686.3	687.8	689.4	690.0	689.7	689.3	689.0	688.7
15°	675.2	676.9	678.6	679.4	679.2	679.0	678.9	678.7
17.5°	660.8	662.3	663.8	664.5	664.2	664.0	663.8	663.5
20°	650.4	651.9	653.4	654.3	654.4	654.6	654.8	654.9
22.5°	638.9	640.9	642.8	643.7	643.6	643.5	643.4	643.3
25°	619.5	621.8	624.0	625.1	625.1	625.1	625.1	625.1
27.5°	599.3	601.2	603.1	604.2	604.3	604.4	604.6	604.7
30°	585.5	587.5	589.6	590.6	590.6	590.6	590.6	590.6
32.5°	570.4	572.6	574.8	576.1	576.5	576.9	577.3	577.7
35°	548.2	550.8	553.3	554.9	555.6	556.3	557.0	557.7
37.5°	525.1	528.0	530.9	532.7	533.2	533.7	534.3	534.8
40°	509.8	512.7	515.6	517.4	518.1	518.8	519.4	520.1
42.5°	493.8	497.0	500.2	502.2	503.2	504.1	505.1	506.0
45°	469.9	473.1	476.4	478.7	480.0	481.4	482.8	484.1
47.5°	445.8	449.4	453.0	455.4	456.4	457.5	458.6	459.6
50°	429.1	433.1	437.0	439.5	440.7	441.9	443.1	444.3
52.5°	412.3	416.3	420.4	423.1	424.6	426.0	427.5	429.0
55°	386.8	391.4	396.0	399.0	400.4	401.7	403.1	404.5
57.5°	360.9	365.5	370.1	373.2	374.8	376.4	378.0	379.6
60°	342.8	347.5	352.3	355.6	357.5	359.3	361.2	363.1
62.5°	325.6	330.4	335.1	338.4	340.1	341.8	343.6	345.3
65°	298.2	303.3	308.5	311.9	313.6	315.3	317.0	318.7
67.5°	271.0	276.6	282.2	285.7	287.1	288.5	290.0	291.4
70°	253.0	258.4	263.9	267.4	269.1	270.8	272.5	274.2
72.5°	234.8	240.4	246.0	249.7	251.4	253.1	254.8	256.5
75°	207.3	213.0	218.6	222.4	224.4	226.5	228.5	230.6
77.5°	181.6	187.5	193.4	197.2	198.8	200.3	201.9	203.5
80°	164.8	170.6	176.4	180.1	181.8	183.5	185.2	186.9
82.5°	149.5	155.2	161.0	164.8	166.5	168.2	169.9	171.6
85°	128.0	133.8	139.6	143.3	145.0	146.7	148.4	150.1
87.5°	110.9	116.8	122.7	126.5	128.2	129.9	131.7	133.3
90°	107.0	113.1	119.3	123.7	125.1	127.1	129.2	130.5
92.5°	122.7	122.2	125.1	126.9	127.8	128.3	130.2	131.2
95°	213.6	177.9	164.4	155.2	150.2	148.7	147.9	148.2
97.5°	397.6	339.5	299.0	260.2	235.8	221.6	213.7	212.4
100°	493.2	469.5	433.1	386.2	352.2	328.1	316.0	318.1
102.5°	522.3	526.2	506.9	478.3	452.2	433.5	423.7	417.3
105°	526.4	566.5	578.0	571.9	557.2	545.3	535.5	535.3
107.5°	492.8	554.7	590.2	605.8	607.6	604.6	602.3	600.5
110°	462.9	532.3	581.3	608.9	620.1	624.3	625.0	625.6





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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	432.6	503.3	557.5	592.2	611.8	622.1	626.3	627.9
115°	392.6	458.2	514.2	555.5	583.3	600.2	608.7	611.8
117.5°	361.9	419.1	469.8	511.5	540.5	559.6	571.2	574.9
120°	345.3	396.9	443.3	481.5	510.6	531.6	541.3	544.6
122.5°	331.5	378.5	421.6	457.2	483.2	502.2	512.7	516.6
125°	312.6	354.7	392.2	422.8	446.7	463.4	473.4	477.1
127.5°	295.4	333.2	367.1	395.1	416.4	430.9	440.0	443.4
130°	284.5	319.5	351.4	377.5	397.3	411.0	419.5	423.3
132.5°	274.1	306.4	336.2	361.2	379.9	393.8	401.6	404.7
135°	259.9	288.0	314.0	336.1	354.3	365.8	373.0	376.3
137.5°	246.7	270.0	292.5	311.7	327.1	338.7	344.9	347.4
140°	238.9	259.5	279.0	295.9	310.2	320.9	327.4	327.9
142.5°	231.1	248.9	265.9	280.6	293.0	302.6	308.5	309.0
145°	222.9	235.9	248.6	259.8	269.4	277.5	281.0	282.4
147.5°	216.2	225.9	235.4	243.2	250.5	256.2	259.5	260.4
150°	212.0	220.2	227.6	234.5	240.1	244.3	246.8	247.1
152.5°	208.9	215.9	222.5	228.1	232.3	236.0	237.4	237.4
155°	204.3	209.9	215.2	219.4	222.6	225.5	226.2	226.5
157.5°	199.3	204.0	208.1	211.5	214.2	216.3	216.9	216.8
160°	196.5	200.4	203.9	206.4	208.8	211.0	211.0	210.6
162.5°	193.1	196.4	199.7	201.9	203.5	205.3	205.3	205.0
165°	188.7	190.8	193.3	195.1	196.5	197.9	197.5	197.5
167.5°	184.9	186.5	187.9	189.2	189.8	190.8	190.5	190.5
170°	182.3	183.4	184.8	185.5	185.9	186.6	186.2	186.2
172.5°	180.1	180.9	182.0	182.4	182.5	183.2	182.6	182.3
175°	177.0	177.4	178.1	178.1	178.1	178.5	178.1	177.8
177.5°	175.1	175.4	175.7	175.7	175.4	175.7	175.1	175.1
180°	174.6	174.6	174.6	174.6	174.6	174.6	174.6	174.6

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