

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: P331915-840

Luminaire Tested: **S123DIP-S560D365U840-4F0-1E-UDD-D4**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P331915-840  
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-S560D365U840-4F0-1E-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**

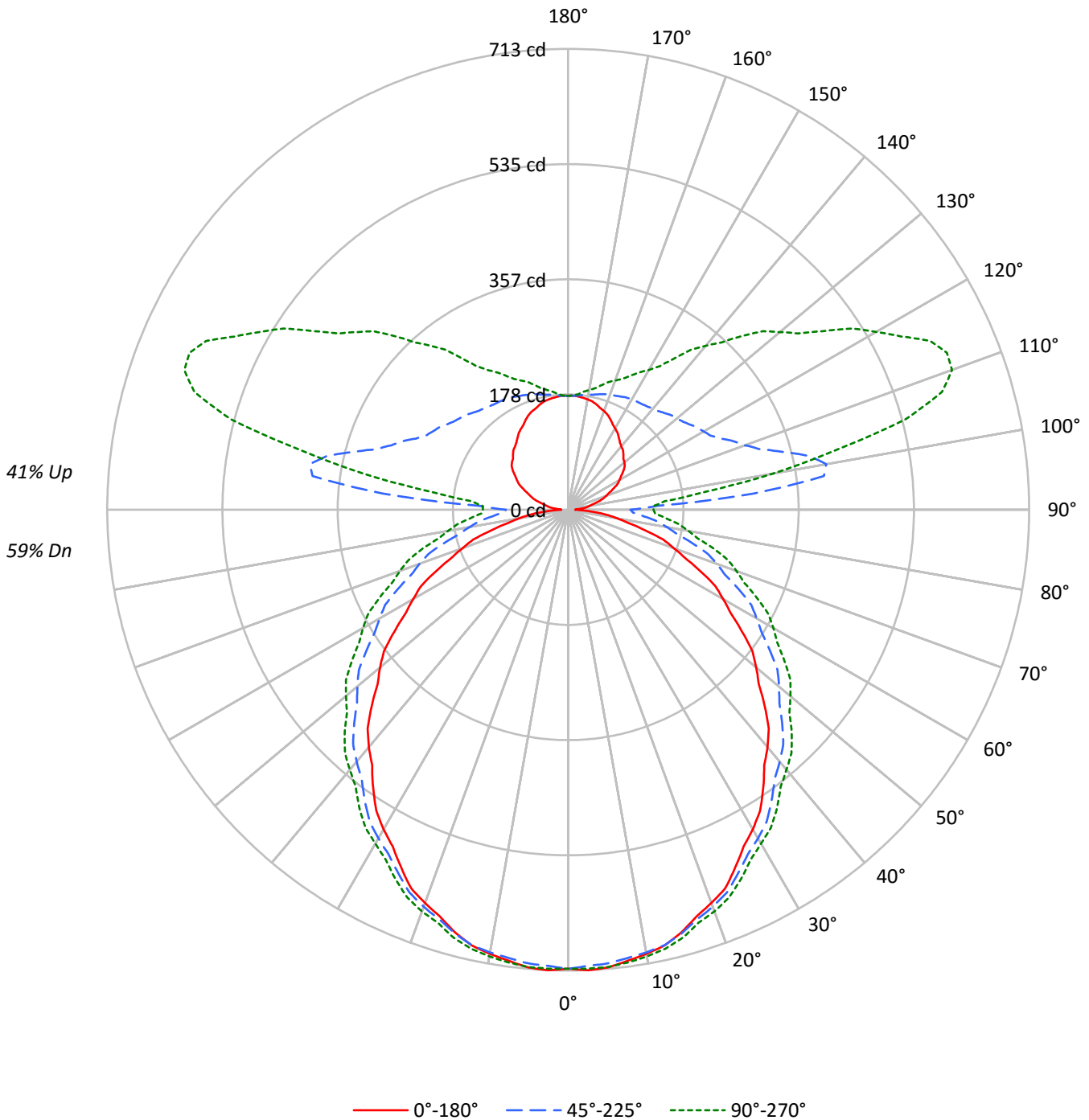
Lumens per Lamp: N/A  
Luminaire Lumens: 3714.1 lumens  
Efficiency: N/A  
Efficacy: 135.1 lumens/watt  
Spacing Criteria (0/90/45): 1.2 / 1.26 / 1.37  
Luminous Opening: Rectangular w/ Sides (W: 0.25' x L: 4' x H: 0.08')  
CIE Type: General Diffuse

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°	7643	7643	7643
5°	7667	7451	7455
10°	7599	7280	7244
15°	7501	7084	7012
20°	7361	6862	6756
25°	7189	6606	6489
30°	7011	6375	6216
35°	6812	6132	6000
40°	6623	5910	5767
45°	6414	5697	5582
50°	6206	5488	5378
55°	5978	5271	5194
60°	5753	5053	5005
65°	5525	4819	4780
70°	5183	4558	4549
75°	4746	4256	4316
80°	4241	3962	4047
85°	3780	3757	3892



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	67.3	1.8
10°-20°	191.9	5.2
20°-30°	287.0	7.7
30°-40°	342.8	9.2
40°-50°	358.6	9.7
50°-60°	336.5	9.1
60°-70°	281.1	7.6
70°-80°	201.1	5.4
80°-90°	121.3	3.3
90°-100°	173.4	4.7
100°-110°	333.1	9.0
110°-120°	310.2	8.4
120°-130°	239.1	6.4
130°-140°	181.3	4.9
140°-150°	130.3	3.5
150°-160°	89.4	2.4
160°-170°	52.5	1.4
170°-180°	17.1	0.5
0°-30°	546.3	14.7
0°-40°	889.0	23.9
0°-60°	1584.2	42.7
0°-90°	2187.7	58.9
90°-120°	816.7	22.0
90°-150°	1367.4	36.8
90°-180°	1526.0	41.1
0°-180°	3714.1	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	710	710	710	710	710	
5°	711	709	705	710	710	67
15°	677	679	678	686	685	191
25°	611	619	621	631	631	282
35°	526	538	548	560	563	329
45°	430	449	468	482	489	332
55°	328	354	381	401	408	294
65°	227	257	291	313	322	224
75°	123	160	198	223	233	131
85°	38	77	118	143	152	40
90°	11	52	96	123	132	8
95°	21	79	288	161	150	20
105°	48	87	345	581	541	50
115°	77	105	260	540	618	76
125°	104	124	230	412	482	93
135°	121	144	211	328	380	93
145°	137	156	199	257	285	86
155°	154	167	193	219	229	71
165°	169	174	185	196	199	48
175°	176	176	177	180	180	17
180°	176	176	176	176	176	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	710.1	710.1	710.1	710.1	710.1	710.1	710.1	710.1	710.1	710.1	710.1
2.5°	713.3	712.9	712.5	712.0	711.6	710.8	709.7	708.6	707.5	706.4	707.5
5°	710.9	710.5	710.2	709.9	709.5	708.8	707.8	706.8	705.8	704.7	706.1
7.5°	704.0	704.0	704.1	704.2	704.3	703.8	702.8	701.8	700.7	699.7	701.5
10°	697.8	698.1	698.4	698.8	699.1	698.9	698.0	697.2	696.3	695.5	697.2
12.5°	690.3	690.8	691.4	691.8	692.3	692.3	691.7	691.1	690.4	689.8	691.5
15°	676.9	677.4	677.9	678.4	678.9	679.1	678.9	678.7	678.6	678.4	680.1
17.5°	659.8	660.9	662.0	663.0	664.0	664.5	664.4	664.3	664.3	664.2	665.7
20°	647.5	648.5	649.5	650.6	651.6	652.3	652.7	653.0	653.3	653.7	655.2
22.5°	634.5	635.5	636.5	637.6	638.6	639.3	639.9	640.4	640.9	641.3	643.3
25°	611.2	612.9	614.6	616.3	618.0	619.1	619.7	620.2	620.7	621.2	623.4
27.5°	587.6	589.6	591.6	593.5	595.4	596.9	598.0	599.2	600.3	601.4	603.3
30°	570.9	573.1	575.3	577.6	579.9	581.7	583.0	584.4	585.7	587.1	589.3
32.5°	552.3	554.8	557.3	559.9	562.4	564.5	566.3	568.0	569.9	571.7	573.9
35°	526.0	528.8	531.5	534.3	537.0	539.6	541.8	544.0	546.2	548.5	551.1
37.5°	498.2	501.3	504.3	507.5	510.6	513.5	516.2	519.0	521.7	524.5	527.5
40°	479.6	482.7	485.8	488.9	492.0	495.2	498.7	502.1	505.5	509.0	511.9
42.5°	459.2	463.0	466.8	470.5	474.3	478.0	481.6	485.1	488.8	492.3	495.5
45°	430.1	434.2	438.4	442.5	446.6	450.8	455.1	459.4	463.7	468.0	471.3
47.5°	399.6	404.3	409.0	413.6	418.3	423.1	428.1	432.9	437.9	442.8	446.5
50°	379.8	384.7	389.4	394.3	399.1	404.1	409.5	414.9	420.1	425.5	429.4
52.5°	358.8	363.9	369.0	374.1	379.1	384.7	390.5	396.4	402.2	408.2	412.2
55°	328.0	333.7	339.3	345.0	350.7	356.6	362.8	369.0	375.2	381.3	386.0
57.5°	298.0	303.9	309.8	315.7	321.6	328.0	334.8	341.5	348.3	355.1	359.7
60°	276.9	283.2	289.3	295.5	301.6	308.3	315.4	322.4	329.4	336.5	341.3
62.5°	257.1	263.5	269.8	276.1	282.5	289.3	296.8	304.3	311.7	319.2	324.0
65°	226.6	233.4	240.0	246.8	253.5	260.6	268.2	275.7	283.3	290.8	296.0
67.5°	195.7	202.9	210.0	217.0	224.2	231.6	239.3	247.0	254.7	262.4	268.0
70°	174.1	181.5	188.8	196.2	203.6	211.5	219.6	227.9	236.2	244.5	249.9
72.5°	154.2	161.7	169.1	176.4	183.8	191.8	200.3	208.8	217.3	225.9	231.6
75°	123.0	131.1	139.2	147.2	155.3	163.7	172.3	180.9	189.5	198.0	203.7
77.5°	95.7	103.9	112.1	120.2	128.4	136.7	145.4	154.1	162.8	171.5	177.4
80°	76.5	85.0	93.4	101.9	110.3	119.0	127.8	136.8	145.8	154.7	160.6
82.5°	59.9	68.5	77.0	85.5	94.1	102.9	112.0	121.1	130.2	139.3	145.1
85°	37.9	46.5	55.1	63.7	72.3	81.1	90.3	99.4	108.5	117.5	123.4
87.5°	20.7	29.4	38.2	46.9	55.6	64.4	73.4	82.4	91.4	100.4	106.1
90°	10.8	19.9	29.1	38.6	47.7	57.0	66.9	76.6	86.5	96.3	101.8
92.5°	13.8	23.6	34.2	44.5	55.1	68.6	86.5	110.5	134.2	137.3	129.6
95°	20.6	28.4	39.1	51.8	67.8	89.3	128.1	189.7	256.6	288.2	253.6
97.5°	28.3	34.6	43.8	55.1	70.3	92.4	129.5	197.4	303.1	399.0	427.0
100°	33.3	39.2	47.3	57.8	71.8	92.4	125.3	186.0	287.8	405.3	480.5
102.5°	38.8	44.3	51.5	61.2	73.8	93.0	123.1	175.7	267.1	382.9	479.6
105°	47.6	52.8	59.1	67.5	78.4	95.2	121.9	166.0	240.9	345.0	452.2
107.5°	56.2	60.8	66.3	74.1	83.9	99.5	123.4	161.0	222.4	310.8	408.4
110°	62.4	66.7	71.5	78.6	87.7	102.7	125.6	159.6	214.3	291.4	381.2



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	68.8	72.3	76.6	83.1	91.8	106.0	127.5	159.3	208.0	276.9	356.6
115°	77.1	80.5	84.7	90.4	98.5	112.2	132.0	160.0	202.6	260.4	326.3
117.5°	85.9	88.9	91.9	96.4	104.5	116.9	136.2	161.5	198.1	248.2	305.7
120°	91.6	93.5	96.1	100.6	108.3	120.5	139.0	163.2	196.3	242.0	294.5
122.5°	97.0	98.6	100.8	105.0	112.0	124.4	142.4	164.9	195.5	236.9	284.7
125°	104.0	104.7	106.8	110.8	117.5	129.7	147.2	167.8	194.3	229.6	271.4
127.5°	110.0	110.9	113.3	117.1	124.5	136.0	152.3	170.6	193.9	223.7	259.1
130°	113.7	114.5	117.6	121.7	129.1	140.3	155.5	172.5	193.8	219.7	251.9
132.5°	115.9	117.2	120.7	125.8	133.2	143.9	158.2	174.2	193.1	216.3	245.0
135°	120.8	122.0	125.7	131.0	138.3	148.8	161.7	175.7	191.9	211.3	235.4
137.5°	125.3	126.6	130.4	135.9	143.2	152.6	164.3	176.9	190.8	206.8	227.1
140°	127.8	129.6	133.2	138.9	146.0	155.2	166.0	177.3	190.0	204.0	222.0
142.5°	131.3	132.6	136.3	141.3	148.3	156.6	166.8	177.3	188.7	201.0	216.9
145°	136.7	137.6	140.7	145.8	151.8	159.9	169.2	178.7	188.7	199.4	212.3
147.5°	141.6	142.2	145.3	150.0	155.8	162.8	171.3	180.0	188.7	198.1	208.3
150°	145.2	145.6	148.5	153.1	158.0	164.5	172.7	180.3	188.7	197.0	205.9
152.5°	149.0	149.1	151.9	155.9	160.4	166.5	173.6	180.8	187.9	195.6	203.6
155°	154.5	154.5	156.6	160.3	164.2	169.2	175.2	181.0	187.0	193.1	200.2
157.5°	159.0	159.3	161.0	164.1	167.4	171.3	176.1	181.3	185.8	190.9	196.3
160°	162.4	162.4	163.8	166.6	169.2	172.7	177.0	181.3	185.2	189.1	193.8
162.5°	164.9	164.9	166.1	168.3	170.6	173.6	177.3	181.0	184.1	187.4	191.2
165°	168.7	168.4	169.2	171.0	172.4	174.9	177.7	180.3	182.4	184.9	187.7
167.5°	171.7	171.3	171.7	173.0	174.0	175.6	177.6	179.7	180.7	182.3	184.4
170°	173.4	172.7	173.1	174.1	174.9	175.6	177.3	178.7	179.6	180.6	182.4
172.5°	174.6	174.1	174.2	175.0	175.4	175.8	177.3	178.5	178.6	179.2	180.4
175°	175.9	175.6	175.2	175.9	175.9	176.3	177.0	177.7	177.3	177.3	178.0
177.5°	176.6	176.3	176.0	176.3	176.3	176.3	176.6	177.1	176.6	176.3	176.6
180°	176.3	176.3	176.3	176.3	176.3	176.3	176.3	176.3	176.3	176.3	176.3



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	710.1	710.1	710.1	710.1	710.1	710.1	710.1	710.1
2.5°	708.6	709.7	710.8	711.3	711.1	711.0	710.9	710.7
5°	707.5	708.8	710.2	710.8	710.6	710.4	710.3	710.1
7.5°	703.2	704.9	706.7	707.4	707.2	707.0	706.8	706.6
10°	698.9	700.6	702.4	703.0	702.7	702.4	702.0	701.7
12.5°	693.1	694.6	696.2	696.8	696.5	696.1	695.8	695.5
15°	681.9	683.6	685.3	686.1	685.9	685.7	685.6	685.4
17.5°	667.3	668.8	670.3	671.1	670.8	670.6	670.3	670.0
20°	656.8	658.3	659.8	660.8	660.9	661.1	661.3	661.4
22.5°	645.2	647.2	649.1	650.1	649.9	649.8	649.7	649.6
25°	625.6	627.9	630.2	631.3	631.3	631.3	631.3	631.3
27.5°	605.2	607.1	609.0	610.2	610.3	610.4	610.6	610.7
30°	591.3	593.3	595.4	596.4	596.4	596.4	596.4	596.4
32.5°	576.0	578.2	580.5	581.8	582.2	582.6	583.0	583.4
35°	553.6	556.2	558.8	560.4	561.1	561.8	562.5	563.2
37.5°	530.3	533.2	536.1	538.0	538.5	539.0	539.6	540.1
40°	514.8	517.8	520.7	522.5	523.2	523.9	524.5	525.2
42.5°	498.7	501.9	505.1	507.2	508.2	509.1	510.1	511.0
45°	474.5	477.8	481.1	483.4	484.7	486.1	487.6	488.9
47.5°	450.2	453.8	457.5	459.9	460.9	462.0	463.1	464.1
50°	433.3	437.4	441.3	443.8	445.0	446.3	447.5	448.7
52.5°	416.4	420.4	424.5	427.3	428.8	430.2	431.7	433.2
55°	390.6	395.3	399.9	402.9	404.3	405.7	407.1	408.5
57.5°	364.5	369.1	373.8	376.9	378.5	380.1	381.7	383.3
60°	346.2	350.9	355.8	359.1	361.0	362.8	364.8	366.7
62.5°	328.8	333.7	338.4	341.7	343.5	345.2	347.0	348.7
65°	301.1	306.3	311.5	315.0	316.7	318.4	320.1	321.8
67.5°	273.7	279.3	285.0	288.5	289.9	291.3	292.9	294.3
70°	255.5	260.9	266.5	270.0	271.8	273.5	275.2	276.9
72.5°	237.1	242.8	248.4	252.2	253.9	255.6	257.3	259.0
75°	209.3	215.1	220.8	224.6	226.6	228.7	230.8	232.9
77.5°	183.4	189.3	195.3	199.1	200.8	202.3	203.9	205.5
80°	166.4	172.3	178.1	181.9	183.6	185.3	187.0	188.7
82.5°	151.0	156.7	162.6	166.4	168.1	169.9	171.6	173.3
85°	129.3	135.1	141.0	144.7	146.4	148.1	149.9	151.6
87.5°	112.0	118.0	123.9	127.7	129.5	131.2	133.0	134.6
90°	108.1	114.2	120.5	124.9	126.3	128.4	130.5	131.8
92.5°	123.9	123.4	126.3	128.2	129.1	129.6	131.5	132.5
95°	215.7	179.7	166.0	156.7	151.7	150.2	149.4	149.7
97.5°	401.5	342.8	301.9	262.8	238.1	223.8	215.8	214.5
100°	498.1	474.1	437.4	390.0	355.7	331.3	319.1	321.2
102.5°	527.5	531.4	511.9	483.0	456.7	437.8	427.9	421.4
105°	531.6	572.1	583.7	577.5	562.7	550.7	540.8	540.6
107.5°	497.7	560.2	596.0	611.8	613.6	610.6	608.2	606.4
110°	467.5	537.6	587.0	614.9	626.2	630.5	631.2	631.8





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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	436.9	508.3	563.0	598.0	617.8	628.2	632.5	634.1
115°	396.5	462.7	519.3	561.0	589.1	606.1	614.7	617.8
117.5°	365.5	423.2	474.4	516.5	545.8	565.1	576.8	580.6
120°	348.7	400.8	447.7	486.3	515.6	536.8	546.6	550.0
122.5°	334.8	382.2	425.8	461.7	488.0	507.2	517.8	521.7
125°	315.7	358.2	396.1	427.0	451.1	468.0	478.1	481.8
127.5°	298.3	336.5	370.7	399.0	420.5	435.2	444.3	447.8
130°	287.3	322.7	354.9	381.2	401.2	415.1	423.6	427.5
132.5°	276.8	309.4	339.5	364.8	383.6	397.7	405.6	408.7
135°	262.5	290.8	317.1	339.4	357.8	369.4	376.7	380.0
137.5°	249.1	272.7	295.4	314.8	330.3	342.0	348.3	350.8
140°	241.3	262.1	281.8	298.8	313.3	324.1	330.6	331.1
142.5°	233.4	251.4	268.5	283.4	295.9	305.6	311.5	312.0
145°	225.1	238.2	251.1	262.4	272.1	280.2	283.8	285.2
147.5°	218.3	228.1	237.7	245.6	253.0	258.7	262.1	263.0
150°	214.1	222.4	229.8	236.8	242.5	246.7	249.2	249.5
152.5°	211.0	218.0	224.7	230.4	234.6	238.3	239.7	239.7
155°	206.3	212.0	217.3	221.6	224.8	227.7	228.4	228.7
157.5°	201.3	206.0	210.2	213.6	216.3	218.4	219.0	218.9
160°	198.4	202.4	205.9	208.4	210.9	213.1	213.1	212.7
162.5°	195.0	198.3	201.7	203.9	205.5	207.3	207.3	207.0
165°	190.6	192.7	195.2	197.0	198.4	199.9	199.4	199.4
167.5°	186.7	188.3	189.8	191.1	191.7	192.7	192.4	192.4
170°	184.1	185.2	186.6	187.3	187.7	188.4	188.0	188.0
172.5°	181.9	182.7	183.8	184.2	184.3	185.0	184.4	184.1
175°	178.7	179.2	179.9	179.9	179.9	180.3	179.9	179.6
177.5°	176.8	177.1	177.4	177.4	177.1	177.4	176.8	176.8
180°	176.3	176.3	176.3	176.3	176.3	176.3	176.3	176.3

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