

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: P331915-930

Luminaire Tested: **S123DIP-S560D365U930-4F0-1E-UDD-D4**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P331915-930  
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-S560D365U930-4F0-1E-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**

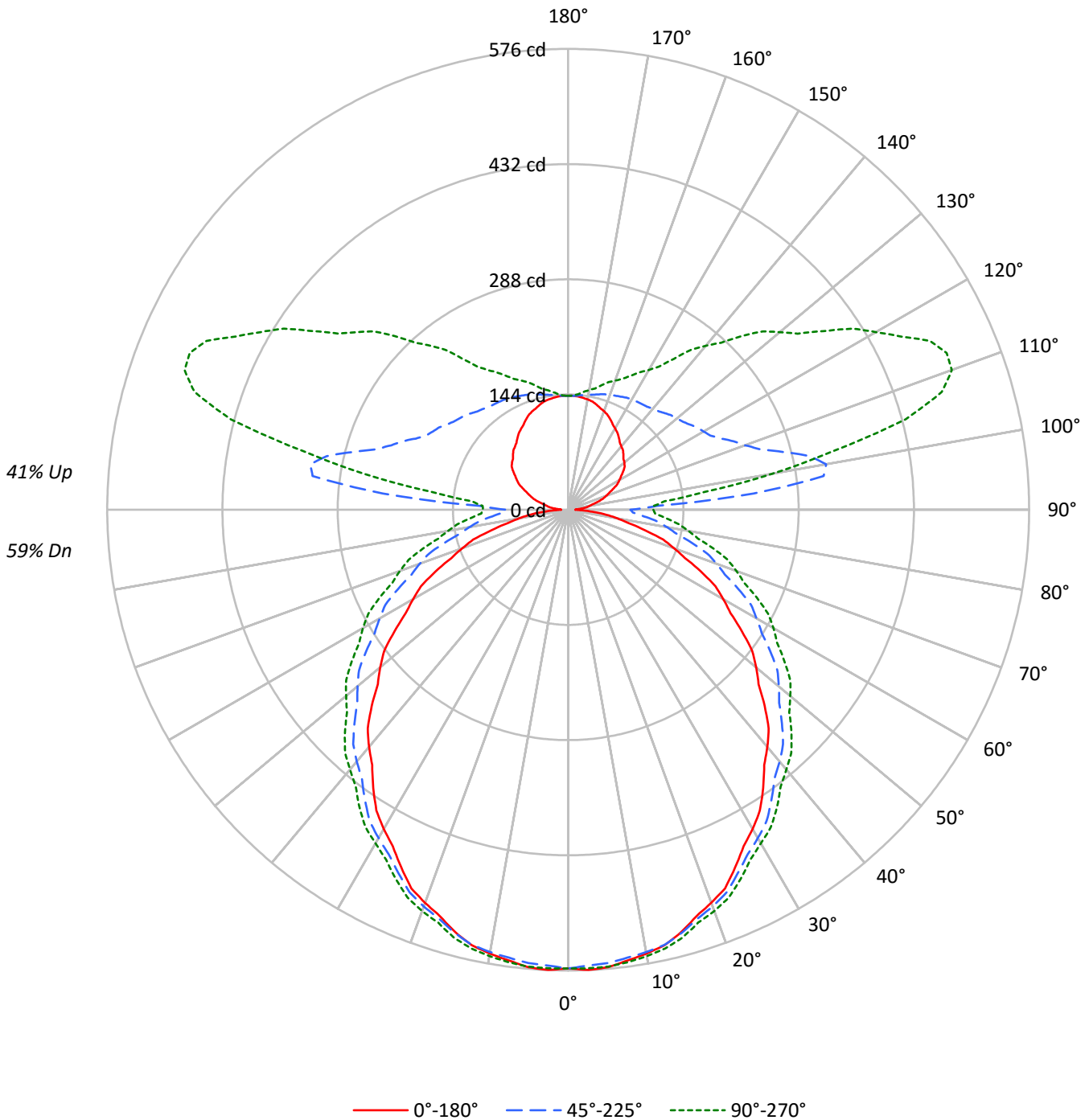
Lumens per Lamp: N/A  
Luminaire Lumens: 2998.5 lumens  
Efficiency: N/A  
Efficacy: 109.0 lumens/watt  
Spacing Criteria (0/90/45): 1.2 / 1.26 / 1.37  
Luminous Opening: Rectangular w/ Sides (W: 0.25' x L: 4' x H: 0.08')  
CIE Type: General Diffuse

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°	6171	6171	6171
5°	6191	6015	6019
10°	6135	5878	5848
15°	6056	5720	5660
20°	5943	5540	5454
25°	5804	5333	5238
30°	5660	5147	5019
35°	5500	4950	4844
40°	5347	4771	4656
45°	5177	4599	4506
50°	5010	4430	4341
55°	4826	4256	4193
60°	4646	4080	4040
65°	4462	3891	3859
70°	4185	3680	3673
75°	3832	3437	3484
80°	3426	3199	3268
85°	3052	3034	3143



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	54.4	1.8
10°-20°	154.9	5.2
20°-30°	231.7	7.7
30°-40°	276.7	9.2
40°-50°	289.5	9.7
50°-60°	271.7	9.1
60°-70°	226.9	7.6
70°-80°	162.4	5.4
80°-90°	97.9	3.3
90°-100°	140.0	4.7
100°-110°	268.9	9.0
110°-120°	250.4	8.4
120°-130°	193.0	6.4
130°-140°	146.4	4.9
140°-150°	105.2	3.5
150°-160°	72.2	2.4
160°-170°	42.4	1.4
170°-180°	13.8	0.5
0°-30°	441.0	14.7
0°-40°	717.7	23.9
0°-60°	1279.0	42.7
0°-90°	1766.2	58.9
90°-120°	659.3	22.0
90°-150°	1103.9	36.8
90°-180°	1232.0	41.1
0°-180°	2998.5	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	573	573	573	573	573	
5°	574	573	569	574	573	54
15°	546	548	548	554	553	154
25°	493	499	502	509	510	227
35°	425	435	443	452	455	266
45°	347	362	378	389	395	268
55°	265	286	308	324	330	237
65°	183	208	235	253	260	181
75°	99	129	160	180	188	106
85°	31	62	95	115	122	32
90°	9	42	78	99	106	6
95°	17	63	233	130	121	16
105°	38	70	278	469	436	41
115°	62	85	210	436	499	62
125°	84	100	185	332	389	75
135°	98	116	171	265	307	75
145°	110	126	161	207	230	69
155°	125	135	156	177	185	57
165°	136	140	149	158	161	38
175°	142	142	143	145	145	13
180°	142	142	142	142	142	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	573.3	573.3	573.3	573.3	573.3	573.3	573.3	573.3	573.3	573.3	573.3
2.5°	575.8	575.5	575.2	574.8	574.5	573.9	573.0	572.1	571.2	570.3	571.2
5°	574.0	573.6	573.4	573.2	572.8	572.3	571.4	570.6	569.8	568.9	570.1
7.5°	568.3	568.3	568.4	568.5	568.6	568.2	567.4	566.6	565.7	564.9	566.3
10°	563.4	563.6	563.9	564.2	564.4	564.3	563.5	562.9	562.1	561.5	562.9
12.5°	557.3	557.7	558.2	558.5	558.9	558.9	558.4	557.9	557.4	556.9	558.2
15°	546.5	546.9	547.3	547.7	548.1	548.3	548.1	548.0	547.9	547.7	549.1
17.5°	532.7	533.5	534.4	535.2	536.1	536.5	536.4	536.3	536.3	536.2	537.4
20°	522.8	523.6	524.4	525.2	526.0	526.6	526.9	527.2	527.4	527.7	529.0
22.5°	512.3	513.1	513.9	514.8	515.6	516.2	516.6	517.0	517.4	517.7	519.3
25°	493.4	494.8	496.2	497.6	499.0	499.9	500.3	500.7	501.1	501.5	503.3
27.5°	474.4	476.0	477.6	479.2	480.7	481.9	482.8	483.7	484.6	485.5	487.1
30°	460.9	462.7	464.5	466.4	468.1	469.6	470.7	471.8	472.9	474.0	475.7
32.5°	445.9	447.9	450.0	452.0	454.0	455.8	457.2	458.6	460.1	461.5	463.3
35°	424.7	426.9	429.1	431.4	433.6	435.6	437.4	439.2	441.0	442.8	444.9
37.5°	402.2	404.7	407.2	409.7	412.2	414.6	416.8	419.0	421.2	423.5	425.8
40°	387.2	389.7	392.2	394.7	397.2	399.8	402.6	405.4	408.1	410.9	413.3
42.5°	370.7	373.8	376.8	379.8	382.9	385.9	388.8	391.7	394.6	397.5	400.1
45°	347.2	350.6	353.9	357.3	360.5	363.9	367.5	370.9	374.4	377.8	380.5
47.5°	322.6	326.4	330.2	333.9	337.7	341.6	345.6	349.5	353.5	357.5	360.4
50°	306.6	310.5	314.4	318.3	322.2	326.3	330.6	334.9	339.2	343.5	346.7
52.5°	289.7	293.8	297.9	302.0	306.1	310.5	315.3	320.0	324.7	329.5	332.8
55°	264.8	269.4	273.9	278.5	283.2	287.9	292.9	297.9	302.9	307.9	311.6
57.5°	240.6	245.3	250.1	254.9	259.7	264.8	270.3	275.7	281.2	286.7	290.4
60°	223.6	228.6	233.6	238.6	243.5	248.9	254.6	260.3	266.0	271.7	275.6
62.5°	207.6	212.7	217.8	222.9	228.0	233.6	239.6	245.6	251.7	257.7	261.5
65°	183.0	188.4	193.8	199.3	204.6	210.4	216.5	222.6	228.7	234.8	239.0
67.5°	158.0	163.8	169.5	175.2	181.0	186.9	193.2	199.4	205.6	211.8	216.4
70°	140.6	146.5	152.5	158.4	164.4	170.7	177.3	184.0	190.7	197.4	201.8
72.5°	124.5	130.5	136.5	142.4	148.4	154.8	161.7	168.6	175.5	182.4	186.9
75°	99.3	105.8	112.3	118.9	125.4	132.2	139.1	146.0	153.0	159.9	164.4
77.5°	77.3	83.9	90.5	97.0	103.6	110.4	117.4	124.4	131.4	138.4	143.2
80°	61.8	68.6	75.4	82.3	89.0	96.0	103.2	110.5	117.7	124.9	129.6
82.5°	48.3	55.3	62.1	69.1	76.0	83.1	90.4	97.8	105.1	112.4	117.2
85°	30.6	37.5	44.5	51.4	58.4	65.5	72.9	80.2	87.6	94.9	99.6
87.5°	16.7	23.7	30.8	37.8	44.9	52.0	59.3	66.5	73.8	81.0	85.7
90°	8.7	16.1	23.5	31.1	38.5	46.0	54.0	61.9	69.9	77.8	82.2
92.5°	11.2	19.1	27.6	36.0	44.5	55.4	69.9	89.2	108.4	110.9	104.6
95°	16.6	22.9	31.6	41.8	54.7	72.1	103.4	153.1	207.2	232.7	204.7
97.5°	22.8	28.0	35.4	44.5	56.7	74.6	104.5	159.4	244.7	322.1	344.7
100°	26.9	31.6	38.2	46.6	58.0	74.6	101.2	150.2	232.4	327.2	387.9
102.5°	31.3	35.8	41.6	49.4	59.6	75.1	99.4	141.9	215.6	309.2	387.2
105°	38.4	42.6	47.7	54.5	63.3	76.9	98.4	134.0	194.4	278.5	365.1
107.5°	45.4	49.1	53.6	59.8	67.8	80.3	99.6	130.0	179.5	250.9	329.7
110°	50.4	53.8	57.7	63.4	70.8	82.9	101.4	128.8	173.0	235.3	307.8



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	55.5	58.4	61.9	67.1	74.1	85.6	103.0	128.6	168.0	223.6	287.9
115°	62.2	65.0	68.4	73.0	79.5	90.6	106.6	129.1	163.5	210.3	263.4
117.5°	69.4	71.7	74.2	77.9	84.4	94.4	110.0	130.4	160.0	200.4	246.8
120°	73.9	75.5	77.6	81.2	87.4	97.3	112.2	131.8	158.5	195.3	237.7
122.5°	78.4	79.6	81.4	84.8	90.4	100.4	115.0	133.1	157.8	191.3	229.8
125°	84.0	84.5	86.3	89.4	94.9	104.7	118.9	135.5	156.9	185.4	219.1
127.5°	88.8	89.5	91.5	94.6	100.5	109.8	122.9	137.7	156.5	180.6	209.2
130°	91.8	92.5	95.0	98.2	104.2	113.2	125.6	139.3	156.5	177.4	203.3
132.5°	93.6	94.7	97.4	101.6	107.5	116.2	127.8	140.6	155.9	174.6	197.8
135°	97.5	98.5	101.5	105.7	111.6	120.1	130.5	141.9	154.9	170.6	190.0
137.5°	101.2	102.2	105.3	109.7	115.6	123.2	132.6	142.8	154.0	167.0	183.4
140°	103.2	104.6	107.5	112.1	117.9	125.3	134.0	143.2	153.4	164.7	179.2
142.5°	106.0	107.0	110.1	114.1	119.8	126.5	134.7	143.2	152.4	162.2	175.1
145°	110.4	111.1	113.6	117.7	122.5	129.1	136.6	144.3	152.4	161.0	171.4
147.5°	114.3	114.8	117.3	121.1	125.8	131.4	138.3	145.3	152.4	160.0	168.2
150°	117.2	117.6	119.8	123.6	127.6	132.8	139.4	145.5	152.4	159.1	166.2
152.5°	120.3	120.3	122.6	125.9	129.5	134.4	140.1	145.9	151.7	157.9	164.4
155°	124.7	124.7	126.5	129.4	132.6	136.6	141.5	146.1	151.0	155.9	161.6
157.5°	128.3	128.6	130.0	132.5	135.2	138.3	142.2	146.3	150.0	154.1	158.5
160°	131.1	131.1	132.2	134.5	136.6	139.4	142.9	146.3	149.5	152.7	156.5
162.5°	133.1	133.1	134.1	135.9	137.7	140.1	143.2	146.1	148.6	151.3	154.3
165°	136.2	136.0	136.6	138.0	139.2	141.2	143.5	145.5	147.2	149.3	151.6
167.5°	138.6	138.3	138.6	139.7	140.5	141.8	143.4	145.0	145.9	147.2	148.9
170°	140.0	139.4	139.7	140.6	141.2	141.8	143.2	144.3	145.0	145.8	147.2
172.5°	141.0	140.6	140.6	141.3	141.6	141.9	143.2	144.1	144.2	144.6	145.6
175°	142.0	141.8	141.5	142.0	142.0	142.4	142.9	143.5	143.2	143.2	143.7
177.5°	142.6	142.4	142.1	142.4	142.4	142.4	142.6	143.0	142.6	142.4	142.6
180°	142.4	142.4	142.4	142.4	142.4	142.4	142.4	142.4	142.4	142.4	142.4



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	573.3	573.3	573.3	573.3	573.3	573.3	573.3	573.3
2.5°	572.1	573.0	573.9	574.3	574.1	574.1	574.0	573.8
5°	571.2	572.3	573.4	573.9	573.7	573.6	573.5	573.3
7.5°	567.7	569.1	570.5	571.1	571.0	570.8	570.6	570.5
10°	564.3	565.7	567.0	567.5	567.3	567.0	566.7	566.5
12.5°	559.5	560.8	562.1	562.6	562.3	562.0	561.7	561.5
15°	550.5	551.9	553.3	553.9	553.8	553.6	553.5	553.3
17.5°	538.7	540.0	541.2	541.8	541.5	541.4	541.2	541.0
20°	530.3	531.5	532.7	533.5	533.5	533.7	533.9	533.9
22.5°	520.9	522.5	524.1	524.8	524.7	524.6	524.6	524.5
25°	505.1	507.0	508.7	509.6	509.6	509.6	509.6	509.6
27.5°	488.6	490.2	491.7	492.6	492.7	492.8	492.9	493.0
30°	477.4	479.0	480.7	481.5	481.5	481.5	481.5	481.5
32.5°	465.0	466.8	468.6	469.7	470.0	470.3	470.7	471.0
35°	446.9	449.1	451.1	452.4	453.0	453.6	454.1	454.7
37.5°	428.1	430.5	432.8	434.3	434.7	435.1	435.6	436.0
40°	415.6	418.0	420.4	421.8	422.4	423.0	423.5	424.0
42.5°	402.6	405.2	407.8	409.4	410.3	411.0	411.8	412.5
45°	383.1	385.7	388.4	390.3	391.3	392.5	393.6	394.7
47.5°	363.5	366.4	369.3	371.3	372.1	373.0	373.9	374.7
50°	349.8	353.1	356.3	358.3	359.3	360.3	361.3	362.2
52.5°	336.1	339.4	342.8	345.0	346.2	347.3	348.5	349.8
55°	315.4	319.1	322.9	325.3	326.4	327.5	328.6	329.8
57.5°	294.2	298.0	301.7	304.3	305.6	306.9	308.2	309.5
60°	279.5	283.3	287.2	289.9	291.5	292.9	294.5	296.0
62.5°	265.5	269.4	273.2	275.9	277.3	278.7	280.1	281.5
65°	243.1	247.3	251.5	254.3	255.7	257.1	258.4	259.8
67.5°	220.9	225.5	230.1	232.9	234.1	235.2	236.4	237.6
70°	206.3	210.7	215.2	218.0	219.4	220.8	222.2	223.6
72.5°	191.4	196.0	200.6	203.6	205.0	206.4	207.7	209.1
75°	169.0	173.7	178.2	181.3	183.0	184.7	186.3	188.0
77.5°	148.1	152.9	157.7	160.8	162.1	163.3	164.6	165.9
80°	134.4	139.1	143.8	146.8	148.2	149.6	151.0	152.4
82.5°	121.9	126.5	131.3	134.4	135.7	137.1	138.5	139.9
85°	104.4	109.1	113.8	116.8	118.2	119.6	121.0	122.4
87.5°	90.4	95.2	100.0	103.1	104.5	105.9	107.4	108.7
90°	87.2	92.2	97.3	100.9	102.0	103.6	105.3	106.4
92.5°	100.0	99.6	102.0	103.5	104.2	104.6	106.2	107.0
95°	174.1	145.0	134.0	126.5	122.5	121.2	120.6	120.8
97.5°	324.2	276.8	243.8	212.1	192.2	180.7	174.2	173.2
100°	402.1	382.8	353.1	314.9	287.1	267.5	257.6	259.3
102.5°	425.8	429.0	413.3	390.0	368.7	353.4	345.4	340.2
105°	429.2	461.9	471.2	466.3	454.3	444.6	436.6	436.4
107.5°	401.8	452.2	481.2	493.9	495.4	492.9	491.1	489.6
110°	377.4	434.0	473.9	496.4	505.6	509.0	509.6	510.1





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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	352.7	410.3	454.5	482.8	498.8	507.2	510.6	511.9
115°	320.1	373.6	419.2	452.9	475.6	489.3	496.3	498.8
117.5°	295.1	341.7	383.0	417.0	440.7	456.2	465.7	468.7
120°	281.5	323.6	361.4	392.6	416.3	433.4	441.3	444.0
122.5°	270.3	308.6	343.7	372.8	394.0	409.4	418.0	421.2
125°	254.9	289.2	319.8	344.7	364.2	377.8	386.0	389.0
127.5°	240.8	271.7	299.3	322.1	339.5	351.3	358.7	361.5
130°	232.0	260.5	286.5	307.8	323.9	335.1	342.0	345.1
132.5°	223.5	249.8	274.1	294.5	309.7	321.1	327.4	330.0
135°	211.9	234.8	256.0	274.0	288.9	298.2	304.1	306.8
137.5°	201.1	220.1	238.5	254.1	266.7	276.1	281.2	283.2
140°	194.8	211.6	227.5	241.2	252.9	261.6	266.9	267.3
142.5°	188.4	202.9	216.8	228.8	238.9	246.7	251.5	251.9
145°	181.7	192.3	202.7	211.8	219.6	226.2	229.1	230.2
147.5°	176.3	184.2	191.9	198.3	204.2	208.9	211.6	212.3
150°	172.8	179.5	185.6	191.2	195.8	199.2	201.2	201.5
152.5°	170.3	176.0	181.4	186.0	189.4	192.4	193.6	193.6
155°	166.6	171.1	175.5	178.9	181.5	183.8	184.4	184.7
157.5°	162.5	166.3	169.7	172.4	174.6	176.3	176.8	176.8
160°	160.2	163.4	166.2	168.3	170.2	172.0	172.0	171.7
162.5°	157.4	160.1	162.8	164.6	165.9	167.4	167.4	167.1
165°	153.8	155.6	157.6	159.1	160.2	161.3	161.0	161.0
167.5°	150.7	152.1	153.2	154.3	154.7	155.6	155.3	155.3
170°	148.6	149.5	150.7	151.2	151.6	152.1	151.8	151.8
172.5°	146.8	147.5	148.4	148.7	148.8	149.4	148.9	148.6
175°	144.3	144.6	145.2	145.2	145.2	145.5	145.2	145.0
177.5°	142.8	143.0	143.2	143.2	143.0	143.2	142.8	142.8
180°	142.4	142.4	142.4	142.4	142.4	142.4	142.4	142.4

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