

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: P331924-940

Luminaire Tested: **S123DIP-S560D585U940-4F0-1E-UDD-D4**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P331924-940  
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-S560D585U940-4F0-1E-UDD-D4  
Description: DEFINE 3 DIRECT-INDIRECT PENDANT LED LUMINAIRE  
DOWNLIGHT 560 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER  
UPLIGHT 585 LUMENS PER FOOT, BATWING OPTIC  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 3999.4 lumens  
Efficiency: N/A  
Efficacy: 121.9 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

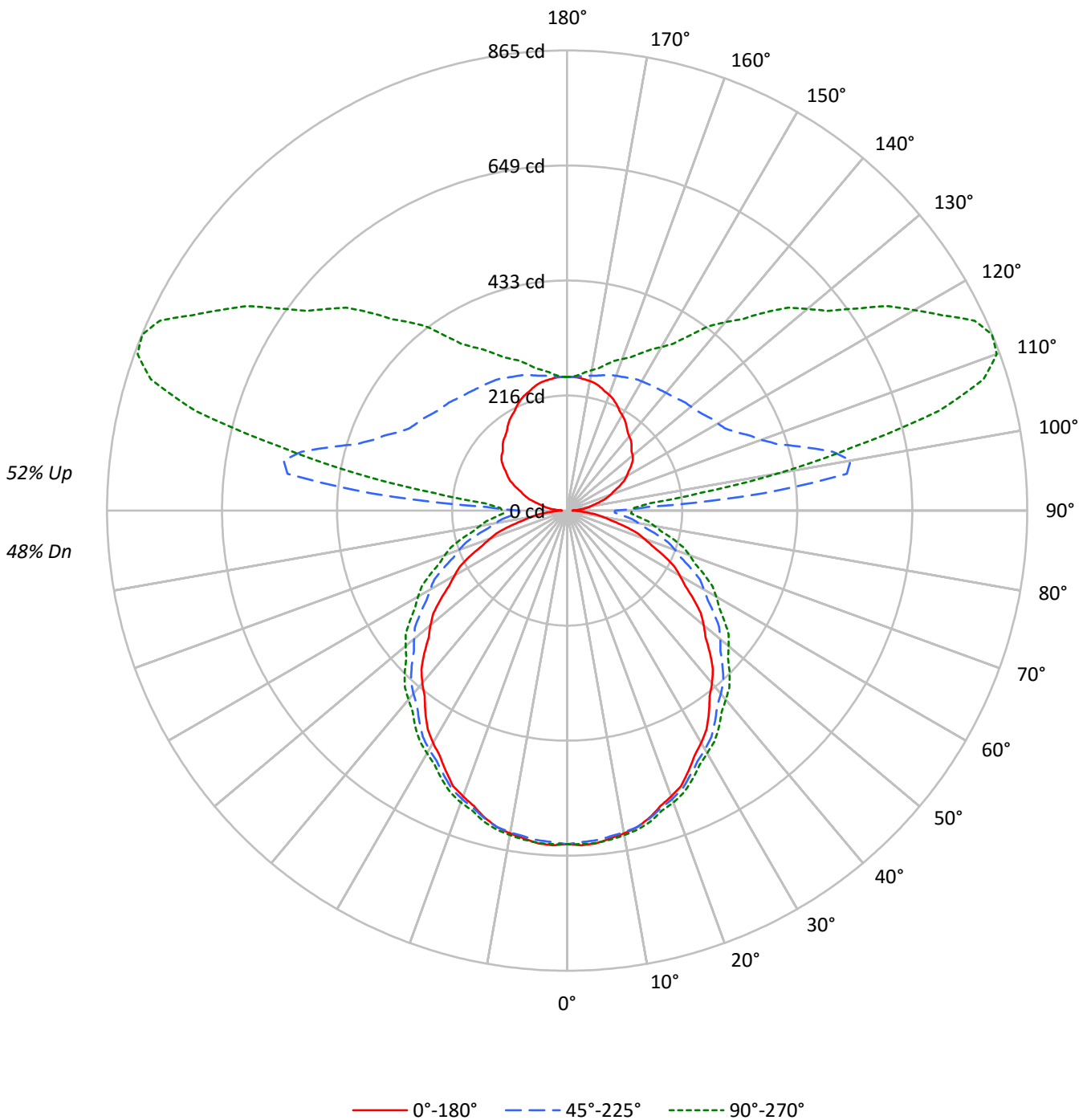
Input Watts (W): 32.8  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	107	107	107	107	98	98	98	98	82	82	82		68	68	68		55	55	55	48
1	96	92	87	83	88	84	81	77	71	68	65		58	56	54		47	45	44	39
2	87	79	73	67	80	73	67	63	61	57	53		50	47	45		40	38	36	32
3	79	69	62	56	73	64	57	52	54	49	44		44	41	37		35	33	30	26
4	73	61	53	47	66	57	49	44	48	42	38		39	35	32		32	28	26	22
5	66	54	46	40	61	50	43	37	42	37	32		35	31	27		28	25	22	19
6	61	49	40	34	56	45	38	32	38	32	28		32	27	24		26	22	20	17
7	56	44	36	30	52	41	33	28	35	29	25		29	24	21		23	20	17	15
8	52	40	32	26	48	37	30	25	31	26	22		26	22	19		21	18	16	13
9	49	36	29	23	45	34	27	22	29	23	19		24	20	17		20	16	14	12
10	45	33	26	21	42	31	24	20	26	21	17		22	18	15		18	15	13	11

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

	0°	45°	90°
0°	6750	6750	6750
5°	6771	6579	6584
10°	6710	6428	6396
15°	6624	6256	6191
20°	6501	6059	5966
25°	6348	5833	5729
30°	6191	5629	5489
35°	6016	5414	5298
40°	5848	5218	5093
45°	5664	5030	4929
50°	5480	4845	4748
55°	5278	4654	4586
60°	5080	4461	4419
65°	4879	4255	4221
70°	4575	4025	4016
75°	4191	3760	3810
80°	3748	3499	3575
85°	3332	3319	3435



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	59.4	1.5
10°-20°	169.5	4.2
20°-30°	253.4	6.3
30°-40°	302.7	7.6
40°-50°	316.7	7.9
50°-60°	297.2	7.4
60°-70°	248.2	6.2
70°-80°	177.6	4.4
80°-90°	107.8	2.7
90°-100°	206.3	5.2
100°-110°	444.8	11.1
110°-120°	422.1	10.6
120°-130°	329.3	8.2
130°-140°	253.3	6.3
140°-150°	184.6	4.6
150°-160°	127.4	3.2
160°-170°	74.9	1.9
170°-180°	24.4	0.6
0°-30°	482.3	12.1
0°-40°	785.0	19.6
0°-60°	1398.8	35.0
0°-90°	1932.4	48.3
90°-120°	1073.1	26.8
90°-150°	1840.3	46.0
90°-180°	2067.0	51.7
0°-180°	3999.4	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	627	627	627	627	627	
5°	628	626	622	627	627	59
15°	598	600	599	605	605	168
25°	540	546	548	557	557	249
35°	464	475	484	494	497	290
45°	380	396	413	426	432	293
55°	290	312	337	354	361	259
65°	200	227	257	277	284	198
75°	109	141	175	197	206	116
85°	33	68	104	126	134	35
90°	10	48	90	114	122	7
95°	25	91	369	176	155	25
105°	64	110	460	785	723	68
115°	108	142	349	738	845	107
125°	147	174	314	565	662	131
135°	171	204	296	456	527	132
145°	194	222	284	363	401	122
155°	220	238	275	313	326	101
165°	241	247	264	279	284	68
175°	251	251	253	256	256	24
180°	251	251	251	251	251	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	627.1	627.1	627.1	627.1	627.1	627.1	627.1	627.1	627.1	627.1	627.1
2.5°	629.8	629.5	629.1	628.7	628.3	627.7	626.7	625.7	624.7	623.8	624.7
5°	627.8	627.4	627.1	626.9	626.5	625.9	625.0	624.1	623.2	622.2	623.5
7.5°	621.6	621.6	621.7	621.8	621.9	621.4	620.5	619.6	618.8	617.9	619.4
10°	616.2	616.4	616.7	617.1	617.3	617.2	616.4	615.6	614.8	614.1	615.6
12.5°	609.6	610.0	610.5	610.8	611.3	611.3	610.7	610.2	609.7	609.1	610.6
15°	597.7	598.2	598.6	599.1	599.5	599.7	599.5	599.3	599.2	599.1	600.6
17.5°	582.6	583.5	584.5	585.4	586.3	586.7	586.7	586.6	586.6	586.5	587.8
20°	571.8	572.7	573.5	574.4	575.3	576.0	576.3	576.6	576.8	577.2	578.5
22.5°	560.3	561.2	562.0	563.0	563.9	564.5	565.0	565.4	565.9	566.2	568.0
25°	539.7	541.2	542.7	544.2	545.7	546.7	547.2	547.6	548.0	548.5	550.5
27.5°	518.9	520.6	522.4	524.1	525.8	527.1	528.1	529.1	530.0	531.0	532.7
30°	504.1	506.0	508.0	510.1	512.0	513.6	514.8	516.0	517.2	518.4	520.3
32.5°	487.7	489.9	492.1	494.4	496.6	498.5	500.1	501.6	503.2	504.8	506.8
35°	464.5	466.9	469.3	471.8	474.2	476.4	478.4	480.4	482.3	484.3	486.6
37.5°	439.9	442.6	445.3	448.1	450.8	453.4	455.8	458.3	460.7	463.2	465.7
40°	423.5	426.2	429.0	431.7	434.4	437.3	440.3	443.4	446.4	449.4	452.0
42.5°	405.5	408.8	412.1	415.4	418.8	422.0	425.3	428.4	431.6	434.7	437.6
45°	379.8	383.4	387.1	390.7	394.3	398.1	401.9	405.6	409.5	413.2	416.2
47.5°	352.8	357.0	361.1	365.2	369.3	373.6	378.0	382.3	386.6	391.0	394.2
50°	335.4	339.7	343.8	348.1	352.4	356.9	361.6	366.3	371.0	375.7	379.2
52.5°	316.8	321.3	325.8	330.3	334.7	339.7	344.8	350.0	355.2	360.4	364.0
55°	289.6	294.6	299.6	304.6	309.7	314.9	320.4	325.8	331.3	336.7	340.8
57.5°	263.1	268.3	273.6	278.7	284.0	289.6	295.6	301.6	307.6	313.5	317.6
60°	244.5	250.0	255.5	260.9	266.4	272.2	278.5	284.7	290.9	297.1	301.4
62.5°	227.0	232.6	238.3	243.8	249.4	255.5	262.1	268.7	275.3	281.9	286.1
65°	200.1	206.1	212.0	217.9	223.8	230.2	236.8	243.4	250.1	256.8	261.4
67.5°	172.8	179.1	185.4	191.6	198.0	204.5	211.3	218.1	224.9	231.7	236.7
70°	153.7	160.2	166.7	173.3	179.8	186.7	193.9	201.3	208.6	215.9	220.7
72.5°	136.2	142.8	149.3	155.8	162.3	169.3	176.8	184.4	191.9	199.5	204.5
75°	108.6	115.7	122.9	130.0	137.1	144.5	152.1	159.7	167.3	174.9	179.9
77.5°	84.5	91.8	99.0	106.1	113.3	120.7	128.4	136.1	143.7	151.4	156.7
80°	67.6	75.1	82.5	90.0	97.4	105.0	112.9	120.8	128.8	136.6	141.8
82.5°	52.9	60.5	67.9	75.5	83.1	90.9	98.9	106.9	114.9	123.0	128.1
85°	33.4	41.0	48.7	56.3	63.8	71.6	79.7	87.7	95.8	103.8	109.0
87.5°	18.4	26.1	33.9	41.7	49.5	57.3	65.5	73.5	81.5	89.5	94.6
90°	9.9	18.4	26.8	35.8	44.2	52.8	62.1	71.3	80.6	89.9	94.5
92.5°	14.6	24.4	35.4	46.1	57.1	71.7	92.6	122.2	151.2	151.1	136.9
95°	24.8	32.3	43.8	58.3	77.5	104.0	154.6	237.9	328.8	369.3	317.0
97.5°	36.2	42.1	51.7	64.6	83.0	110.7	159.1	251.6	397.8	530.1	567.3
100°	43.8	49.1	57.6	69.6	86.6	112.4	155.0	237.2	378.0	541.1	645.7
102.5°	51.8	57.1	64.6	75.7	91.0	114.9	153.6	224.4	350.4	511.4	646.3
105°	64.5	69.6	76.3	86.1	99.3	120.2	154.3	213.1	315.8	460.1	610.4
107.5°	77.3	81.9	87.9	97.0	109.2	128.5	158.8	208.5	292.2	414.5	551.1
110°	86.5	90.8	96.0	104.3	115.7	134.4	163.4	208.0	282.3	388.5	514.1



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	95.4	99.2	104.0	111.8	122.7	140.6	167.7	209.4	275.2	369.8	481.0
115°	107.7	111.6	116.4	123.3	133.8	151.1	175.9	212.4	269.7	349.0	440.6
117.5°	120.5	123.9	127.6	133.4	144.2	160.1	184.3	217.0	266.3	334.5	414.1
120°	128.9	131.2	134.5	140.3	150.7	166.3	189.7	221.1	265.3	327.3	399.9
122.5°	136.6	138.5	141.4	147.3	157.0	173.1	195.7	225.0	265.6	321.6	387.7
125°	147.0	148.0	151.1	156.7	166.3	182.3	204.5	231.2	266.2	313.8	371.4
127.5°	155.4	156.9	160.4	165.9	176.5	192.0	212.9	236.6	267.7	307.9	356.5
130°	160.8	162.1	166.6	172.5	183.0	198.2	218.0	240.4	268.9	303.9	348.0
132.5°	164.3	166.1	171.1	178.4	189.0	203.6	222.4	243.7	269.1	300.8	339.8
135°	171.2	173.1	178.6	186.0	196.5	211.1	228.5	247.4	269.5	296.0	328.8
137.5°	177.8	179.9	185.2	193.2	203.7	216.8	232.9	250.3	269.4	291.7	319.2
140°	181.7	184.3	189.4	197.5	207.7	220.6	235.9	251.6	269.3	289.1	313.3
142.5°	186.6	188.7	194.0	201.3	211.2	223.2	237.6	252.5	268.7	286.1	307.6
145°	194.5	195.8	200.3	207.8	216.2	227.8	241.1	254.9	269.0	284.3	301.8
147.5°	201.7	202.6	207.1	213.7	222.0	232.0	244.2	256.5	269.0	282.4	296.7
150°	207.0	207.5	211.6	218.2	225.3	234.4	246.2	256.8	269.0	280.7	293.5
152.5°	212.3	212.4	216.5	222.3	228.5	237.3	247.4	257.7	267.9	278.7	290.3
155°	220.3	220.3	223.3	228.4	234.0	241.1	249.8	257.9	266.5	275.2	285.3
157.5°	226.5	226.9	229.3	233.9	238.6	244.2	251.0	258.4	264.7	272.0	279.8
160°	231.4	231.4	233.4	237.6	241.1	246.2	252.3	258.4	263.9	269.6	276.2
162.5°	235.1	235.1	236.7	240.0	243.1	247.4	252.7	258.0	262.3	267.2	272.5
165°	240.6	240.0	241.1	243.6	245.7	249.2	253.2	256.8	259.9	263.5	267.5
167.5°	244.8	244.2	244.6	246.6	248.0	250.2	253.2	256.0	257.4	259.8	262.8
170°	247.2	246.2	246.6	248.2	249.2	250.2	252.8	254.9	255.8	257.3	259.9
172.5°	248.8	248.2	248.3	249.4	250.0	250.7	252.8	254.4	254.6	255.3	257.1
175°	250.7	250.2	249.8	250.7	250.7	251.3	252.3	253.2	252.8	252.8	253.8
177.5°	251.6	251.3	250.8	251.3	251.3	251.3	251.6	252.4	251.6	251.3	251.6
180°	251.3	251.3	251.3	251.3	251.3	251.3	251.3	251.3	251.3	251.3	251.3



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	627.1	627.1	627.1	627.1	627.1	627.1	627.1	627.1
2.5°	625.7	626.7	627.7	628.1	627.9	627.9	627.8	627.6
5°	624.7	625.9	627.1	627.7	627.5	627.3	627.2	627.1
7.5°	620.9	622.4	624.0	624.6	624.5	624.3	624.1	623.9
10°	617.2	618.7	620.2	620.7	620.5	620.2	619.8	619.6
12.5°	612.0	613.3	614.7	615.3	615.0	614.7	614.4	614.1
15°	602.1	603.6	605.1	605.8	605.6	605.5	605.4	605.2
17.5°	589.2	590.6	591.9	592.5	592.3	592.1	591.9	591.7
20°	580.0	581.3	582.6	583.4	583.5	583.7	583.9	584.0
22.5°	569.7	571.5	573.2	574.0	573.9	573.8	573.7	573.6
25°	552.4	554.5	556.4	557.4	557.4	557.4	557.4	557.4
27.5°	534.4	536.1	537.8	538.8	538.9	539.0	539.1	539.2
30°	522.1	523.9	525.8	526.6	526.6	526.6	526.6	526.6
32.5°	508.6	510.6	512.6	513.7	514.1	514.4	514.8	515.1
35°	488.8	491.2	493.4	494.8	495.4	496.1	496.7	497.3
37.5°	468.2	470.8	473.4	475.0	475.5	475.9	476.4	476.9
40°	454.6	457.2	459.8	461.4	462.0	462.6	463.2	463.8
42.5°	440.3	443.2	446.0	447.8	448.7	449.5	450.4	451.2
45°	419.0	421.9	424.8	426.9	428.0	429.3	430.5	431.7
47.5°	397.5	400.7	403.9	406.1	407.0	408.0	408.9	409.8
50°	382.6	386.2	389.7	391.9	393.0	394.0	395.1	396.2
52.5°	367.7	371.2	374.9	377.3	378.6	379.9	381.2	382.5
55°	344.9	349.0	353.1	355.8	357.0	358.2	359.4	360.7
57.5°	321.8	325.9	330.0	332.8	334.2	335.6	337.1	338.5
60°	305.7	309.9	314.1	317.1	318.8	320.4	322.1	323.8
62.5°	290.3	294.6	298.8	301.8	303.3	304.8	306.4	307.9
65°	265.9	270.5	275.1	278.1	279.6	281.2	282.7	284.2
67.5°	241.7	246.6	251.6	254.8	256.0	257.3	258.6	259.8
70°	225.6	230.4	235.3	238.4	240.0	241.5	243.0	244.5
72.5°	209.4	214.4	219.4	222.7	224.2	225.7	227.2	228.7
75°	184.9	189.9	194.9	198.3	200.1	202.0	203.8	205.6
77.5°	161.9	167.2	172.5	175.8	177.3	178.6	180.0	181.5
80°	147.0	152.1	157.3	160.6	162.1	163.6	165.1	166.7
82.5°	133.3	138.4	143.6	147.0	148.5	150.0	151.5	153.0
85°	114.1	119.3	124.5	127.8	129.3	130.8	132.3	133.8
87.5°	99.9	105.1	110.4	114.0	115.4	117.0	118.6	120.0
90°	100.2	105.9	111.6	115.9	116.9	119.0	121.0	122.0
92.5°	125.7	121.9	123.0	123.6	124.0	123.9	125.8	126.3
95°	260.1	205.8	183.6	168.4	160.2	157.2	155.2	154.6
97.5°	528.2	441.8	380.8	323.0	287.0	265.6	253.3	250.5
100°	667.9	631.1	576.0	506.8	456.8	421.2	403.0	404.9
102.5°	711.9	714.9	684.5	641.7	603.2	575.3	560.3	550.1
105°	720.9	776.1	790.0	779.5	757.5	739.5	724.6	723.4
107.5°	675.7	762.3	811.0	831.8	833.6	828.4	824.2	820.8
110°	634.5	732.0	800.0	838.2	853.6	859.0	859.2	859.3





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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	593.1	692.6	768.2	816.5	843.9	857.9	863.1	864.6
115°	538.3	630.5	708.9	766.8	806.1	829.7	841.2	844.9
117.5°	497.2	577.2	648.0	706.6	747.6	774.4	790.2	794.9
120°	475.1	547.2	611.8	665.4	706.7	736.2	749.5	753.6
122.5°	457.1	522.6	582.6	632.5	669.2	695.9	710.4	715.3
125°	432.6	491.2	543.2	586.0	619.6	643.1	656.8	661.5
127.5°	410.6	463.1	510.1	549.1	579.2	599.3	611.9	616.2
130°	396.6	445.3	489.4	525.8	553.8	572.9	584.5	589.5
132.5°	383.5	428.4	469.5	504.4	530.7	550.1	560.5	564.5
135°	365.6	404.5	440.2	471.0	496.7	512.6	522.6	526.9
137.5°	349.2	381.1	412.1	438.7	460.5	476.7	485.2	488.3
140°	339.4	367.7	394.3	417.7	437.8	452.8	461.7	461.9
142.5°	329.8	354.1	377.3	397.7	415.0	428.4	436.4	436.7
145°	319.3	337.3	354.8	370.4	383.8	395.0	399.8	401.4
147.5°	310.8	324.5	338.0	348.9	359.1	366.8	371.3	372.2
150°	305.1	316.8	327.5	337.3	345.3	351.2	354.5	354.8
152.5°	300.7	310.8	320.2	328.3	334.4	339.6	341.5	341.5
155°	294.0	302.1	309.8	315.8	320.4	324.5	325.5	326.0
157.5°	286.9	293.6	299.6	304.3	308.4	311.4	312.2	312.1
160°	282.8	288.4	293.5	297.0	300.6	303.6	303.6	303.1
162.5°	277.9	282.7	287.4	290.5	292.8	295.5	295.5	295.0
165°	271.6	274.6	278.2	280.7	282.8	284.8	284.3	284.3
167.5°	266.1	268.4	270.5	272.3	273.2	274.6	274.1	274.1
170°	262.4	263.9	266.0	267.0	267.5	268.6	268.0	268.0
172.5°	259.2	260.3	261.9	262.5	262.6	263.7	262.8	262.3
175°	254.9	255.3	256.4	256.4	256.4	256.8	256.4	255.8
177.5°	252.1	252.4	252.9	252.9	252.4	252.9	252.1	252.1
180°	251.3	251.3	251.3	251.3	251.3	251.3	251.3	251.3

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