

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: P332281-940

Luminaire Tested: **S123RDIP-S560D585U940-4F0-1E-UDD-F4**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P332281-940  
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: S123RDIP-S560D585U940-4F0-1E-UDD-F4  
Description: DEFINE 3 DIRECT-INDIRECT PENDANT LED LUMINAIRE  
DOWNLIGHT 560 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER, REGRESSED  
HOUSING  
UPLIGHT 585 LUMENS PER FOOT, BATWING OPTIC  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 3794.9 lumens  
Efficiency: N/A  
Efficacy: 115.7 lumens/watt  
Spacing Criteria (0/90/45): 1.21 / 1.06 / 1.22  
Luminous Opening: Rectangular (W 0.25' x L: 4' x H: 0')  
CIE Type: General Diffuse

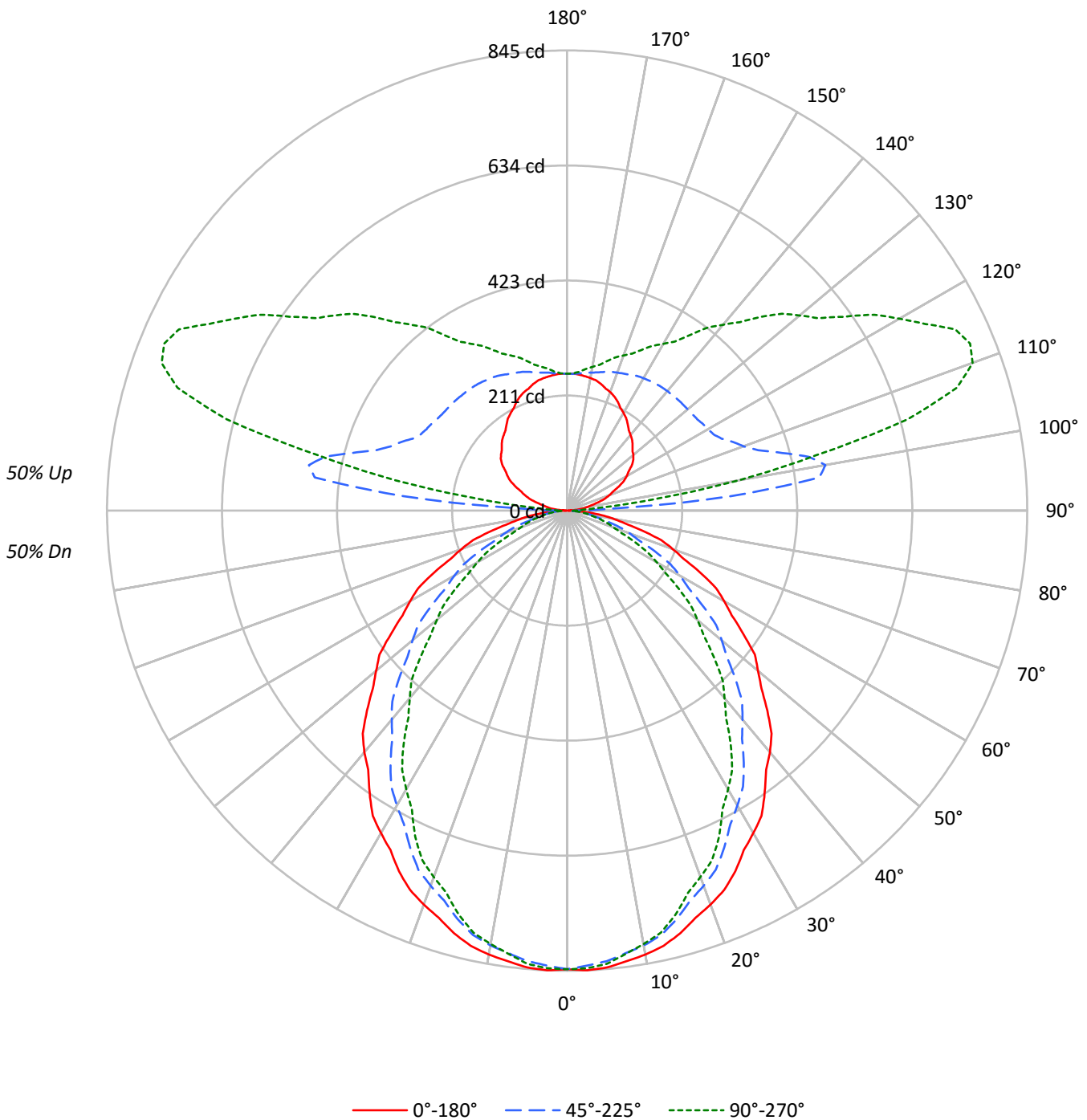
Input Watts (W): 32.8  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	107	107	107	107	99	99	99	99	83	83	83	69	69	69	56	56	56	50
1	98	94	90	87	90	87	84	81	74	71	69	61	60	58	50	49	48	43
2	90	82	76	71	83	76	71	67	65	61	58	54	52	49	45	43	41	36
3	82	73	66	60	75	67	61	56	58	53	49	48	45	42	40	37	35	31
4	75	65	57	51	69	60	53	48	51	46	42	43	39	36	36	33	31	27
5	69	58	50	44	64	54	47	41	46	41	36	39	35	32	32	29	27	24
6	64	52	44	38	59	48	41	36	42	36	32	35	31	28	29	26	24	21
7	59	47	39	34	54	44	37	32	38	32	28	32	28	25	27	24	21	19
8	55	43	35	30	51	40	33	28	34	29	25	30	25	22	25	22	19	17
9	51	39	32	27	47	36	30	25	32	26	23	27	23	20	23	20	17	15
10	48	36	29	24	44	34	27	23	29	24	20	25	21	18	21	18	16	14

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

	0°	45°	90°
0°	9065	9065	9065
5°	9100	8975	9027
10°	9049	8862	8833
15°	8952	8655	8564
20°	8818	8395	8200
25°	8679	8105	7845
30°	8499	7768	7343
35°	8311	7432	6884
40°	8140	7035	6315
45°	7913	6645	5801
50°	7663	6199	5228
55°	7409	5692	4692
60°	7175	5147	4103
65°	6872	4559	3512
70°	6493	3827	2839
75°	5939	3011	2670
80°	5294	2672	2455
85°	4471	2359	2186



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	79.1	2.1
10°-20°	220.1	5.8
20°-30°	316.9	8.3
30°-40°	356.9	9.4
40°-50°	341.4	9.0
50°-60°	279.6	7.4
60°-70°	188.7	5.0
70°-80°	94.9	2.5
80°-90°	27.0	0.7
90°-100°	139.8	3.7
100°-110°	395.9	10.4
110°-120°	389.5	10.3
120°-130°	310.7	8.2
130°-140°	244.9	6.5
140°-150°	182.8	4.8
150°-160°	127.4	3.4
160°-170°	74.9	2.0
170°-180°	24.4	0.6
0°-30°	616.0	16.2
0°-40°	972.9	25.6
0°-60°	1594.0	42.0
0°-90°	1904.6	50.2
90°-120°	925.2	24.4
90°-150°	1663.7	43.8
90°-180°	1890.0	49.8
0°-180°	3794.9	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	842	842	842	842	842	
5°	842	839	831	836	835	80
15°	803	795	777	773	768	226
25°	731	713	682	668	660	336
35°	632	607	566	537	524	396
45°	520	488	436	399	381	401
55°	395	360	303	265	250	354
65°	270	231	179	147	138	267
75°	143	110	72	66	64	152
85°	36	22	19	18	18	41
90°	1	6	13	14	15	3
95°	17	56	302	88	59	19
105°	59	87	409	715	647	63
115°	104	130	313	686	787	103
125°	145	171	292	529	620	129
135°	170	203	288	436	503	131
145°	194	222	284	357	393	121
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°	842.2	842.2	842.2	842.2	842.2	842.2	842.2	842.2	842.2	842.2	842.2
2.5°	845.0	844.5	844.0	843.5	843.0	842.0	840.6	839.1	837.7	836.2	837.6
5°	842.2	841.5	840.7	840.0	839.2	837.9	836.1	834.3	832.4	830.6	832.0
7.5°	834.5	833.7	832.8	832.0	831.2	829.6	827.2	824.8	822.4	820.1	820.8
10°	827.9	826.8	825.7	824.7	823.7	821.7	819.0	816.3	813.5	810.8	810.9
12.5°	818.6	817.4	816.2	815.0	813.9	811.6	808.2	804.9	801.6	798.3	798.2
15°	803.3	801.6	800.0	798.3	796.7	793.6	789.4	785.2	780.9	776.7	775.9
17.5°	784.0	782.1	780.2	778.2	776.2	772.6	767.1	761.8	756.3	751.0	749.4
20°	769.8	767.4	765.0	762.5	760.1	756.0	750.2	744.5	738.7	732.9	730.9
22.5°	753.9	751.2	748.4	745.6	742.8	738.3	732.2	726.0	720.0	713.8	711.3
25°	730.8	727.1	723.3	719.5	715.7	710.3	703.3	696.3	689.4	682.4	679.2
27.5°	702.8	698.7	694.5	690.3	686.1	680.1	672.3	664.6	656.8	649.1	644.6
30°	683.8	679.2	674.7	670.1	665.6	659.0	650.5	642.0	633.5	625.0	619.8
32.5°	664.6	659.5	654.3	649.2	644.0	636.9	627.9	618.9	609.9	600.9	595.3
35°	632.5	627.1	621.6	616.2	610.6	603.2	593.8	584.4	575.0	565.6	559.0
37.5°	600.0	594.0	587.9	581.8	575.7	567.7	557.6	547.6	537.5	527.4	520.0
40°	579.3	572.6	565.9	559.2	552.5	543.8	533.1	522.3	511.5	500.7	492.8
42.5°	555.7	549.0	542.4	535.7	529.1	520.1	509.0	497.8	486.7	475.5	466.9
45°	519.8	513.0	506.1	499.4	492.5	483.2	471.5	459.9	448.2	436.5	427.8
47.5°	483.8	476.4	468.9	461.4	453.9	444.3	432.6	420.9	409.2	397.5	388.2
50°	457.6	450.5	443.4	436.2	429.1	419.4	407.1	394.8	382.5	370.2	360.8
52.5°	434.2	426.4	418.7	410.9	403.2	393.2	381.0	368.9	356.7	344.6	334.7
55°	394.8	387.4	380.0	372.5	365.1	354.9	342.0	329.1	316.2	303.3	294.4
57.5°	358.5	350.4	342.2	334.1	326.0	315.5	302.6	289.6	276.6	263.7	255.4
60°	333.3	325.0	316.6	308.3	300.0	289.4	276.9	264.3	251.6	239.1	230.9
62.5°	308.2	299.9	291.5	283.1	274.8	264.3	251.7	239.2	226.5	213.9	206.3
65°	269.8	261.4	253.2	244.8	236.4	226.3	214.5	202.7	190.8	179.0	171.6
67.5°	231.4	223.0	214.5	206.1	197.7	187.8	176.4	165.1	153.7	142.3	136.8
70°	206.3	198.0	189.9	181.7	173.5	164.1	153.5	142.9	132.2	121.6	116.3
72.5°	181.1	173.1	165.0	156.9	148.8	140.0	130.4	120.6	111.0	101.4	97.0
75°	142.8	135.5	128.2	120.9	113.6	105.8	97.5	89.1	80.8	72.4	70.9
77.5°	107.8	101.2	94.6	88.0	81.4	75.4	70.1	64.7	59.3	53.9	53.1
80°	85.4	79.2	72.9	66.7	60.5	55.8	52.6	49.4	46.2	43.1	42.5
82.5°	64.1	58.7	53.3	48.0	42.5	39.1	37.6	36.2	34.7	33.2	32.7
85°	36.2	32.9	29.5	26.2	22.8	21.0	20.5	20.1	19.6	19.1	18.8
87.5°	13.3	12.2	11.1	10.0	8.9	8.4	8.7	9.0	9.4	9.6	9.5
90°	1.0	2.1	3.0	4.5	5.6	6.6	8.1	9.6	11.1	12.8	12.2
92.5°	6.3	9.4	13.6	17.6	21.8	29.4	42.7	64.6	86.1	78.2	59.0
95°	17.3	18.8	24.4	33.1	46.3	66.1	109.3	185.1	268.6	301.6	244.6
97.5°	29.5	30.1	34.4	41.9	54.9	76.4	117.7	203.1	342.1	467.4	500.1
100°	37.6	38.2	41.7	48.9	61.0	80.9	116.5	191.7	325.5	481.6	581.8
102.5°	46.2	47.1	50.3	57.0	67.9	86.1	118.1	182.0	301.1	455.2	585.9
105°	59.0	60.5	63.6	69.6	79.4	95.1	122.6	175.0	271.1	408.9	554.9
107.5°	72.6	74.2	77.1	83.1	92.2	106.8	130.9	174.4	252.0	368.0	500.6
110°	82.4	83.9	86.5	92.0	100.7	114.9	137.9	176.5	244.6	344.8	466.4



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	91.3	92.9	95.4	101.0	109.7	123.5	144.7	180.6	240.6	329.4	436.7
115°	104.2	106.3	109.3	114.4	123.1	136.8	156.1	187.2	239.1	312.8	400.8
117.5°	117.2	119.5	122.1	126.7	136.4	149.1	168.3	195.9	240.0	303.0	379.2
120°	126.2	127.7	130.2	135.3	145.0	157.7	175.9	202.4	241.6	298.5	367.7
122.5°	133.8	135.4	137.9	143.4	152.7	166.2	184.1	208.6	244.4	295.7	358.4
125°	145.0	146.0	149.0	154.6	164.3	178.0	195.8	218.2	248.7	291.9	346.3
127.5°	153.4	154.9	158.7	164.3	175.0	188.8	206.0	226.1	253.6	290.1	335.8
130°	158.7	160.2	164.8	170.9	181.6	195.3	212.0	231.4	256.8	288.9	330.1
132.5°	162.7	164.7	169.7	177.0	187.7	201.0	217.4	236.3	259.3	288.5	324.8
135°	169.9	171.9	177.5	185.1	195.8	209.6	225.3	242.6	263.0	287.8	317.9
137.5°	176.6	178.7	184.2	192.3	203.0	215.6	230.8	247.3	265.4	286.8	311.9
140°	181.1	183.6	188.7	196.8	207.0	219.7	234.4	249.8	267.0	286.3	308.2
142.5°	185.9	188.1	193.6	200.9	211.1	223.0	237.3	252.2	268.2	285.5	305.0
145°	193.8	195.3	199.9	207.5	216.2	227.8	241.1	254.9	269.0	284.3	300.6
147.5°	201.7	202.6	207.1	213.7	222.0	232.0	244.2	256.5	269.0	282.4	296.3
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°	842.2	842.2	842.2	842.2	842.2	842.2	842.2	842.2
2.5°	838.9	840.3	841.6	842.1	841.9	841.6	841.4	841.2
5°	833.3	834.7	836.1	836.6	836.3	836.0	835.7	835.4
7.5°	821.6	822.3	823.1	823.2	822.7	822.2	821.7	821.2
10°	811.1	811.3	811.4	811.1	810.4	809.6	808.9	808.1
12.5°	798.1	798.0	797.9	797.4	796.5	795.6	794.8	793.9
15°	775.2	774.4	773.6	772.7	771.6	770.6	769.5	768.5
17.5°	747.8	746.2	744.5	743.0	741.4	739.8	738.2	736.6
20°	729.0	727.0	725.1	723.2	721.3	719.5	717.6	715.9
22.5°	708.9	706.4	704.0	701.9	700.2	698.5	696.8	695.1
25°	676.0	672.8	669.7	667.2	665.6	663.9	662.2	660.5
27.5°	640.2	635.8	631.3	627.9	625.3	622.8	620.2	617.6
30°	614.7	609.5	604.4	600.6	598.2	595.8	593.3	590.8
32.5°	589.7	584.0	578.4	574.3	571.8	569.2	566.6	564.1
35°	552.5	546.0	539.5	534.8	532.1	529.4	526.6	523.9
37.5°	512.6	505.2	497.8	492.5	489.1	485.7	482.3	478.9
40°	484.9	477.0	469.1	463.4	459.9	456.5	453.0	449.4
42.5°	458.3	449.7	441.0	435.2	432.0	428.9	425.8	422.7
45°	419.2	410.5	401.9	395.7	392.1	388.4	384.8	381.1
47.5°	378.7	369.3	359.9	353.6	350.4	347.1	343.8	340.5
50°	351.4	342.0	332.6	326.1	322.6	319.1	315.7	312.2
52.5°	325.0	315.2	305.4	299.0	295.9	292.7	289.6	286.5
55°	285.7	276.9	268.0	262.2	259.1	256.1	253.1	250.0
57.5°	247.0	238.7	230.4	225.0	222.4	219.8	217.2	214.6
60°	222.7	214.5	206.3	200.9	198.3	195.7	193.1	190.6
62.5°	198.5	190.8	183.1	177.9	175.2	172.5	169.8	167.1
65°	164.1	156.7	149.2	144.6	143.0	141.3	139.6	137.9
67.5°	131.3	125.6	120.1	116.5	114.7	112.9	111.1	109.3
70°	110.9	105.7	100.3	96.8	95.1	93.5	91.8	90.2
72.5°	92.6	88.4	84.0	81.5	80.8	80.1	79.4	78.6
75°	69.4	67.9	66.3	65.5	65.1	64.8	64.5	64.2
77.5°	52.3	51.5	50.6	50.1	49.8	49.5	49.2	48.9
80°	42.1	41.6	41.2	40.8	40.6	40.2	39.9	39.6
82.5°	32.3	31.8	31.4	31.1	31.0	31.0	30.9	30.9
85°	18.5	18.2	17.9	17.7	17.7	17.7	17.7	17.7
87.5°	9.4	9.4	9.4	9.5	9.2	9.2	9.2	8.9
90°	12.8	13.2	13.7	14.7	14.3	14.7	15.2	14.7
92.5°	42.8	34.0	30.1	27.4	26.5	24.9	25.4	24.5
95°	183.1	124.1	97.1	78.8	69.2	64.6	61.0	59.0
97.5°	456.5	365.6	300.0	239.2	201.6	178.7	165.0	160.6
100°	599.7	558.5	498.9	426.7	375.3	338.2	318.4	318.9
102.5°	647.3	646.0	611.3	565.4	525.5	496.1	479.5	467.8
105°	661.2	712.0	721.8	708.5	685.1	665.8	649.5	646.9
107.5°	621.1	703.7	748.2	766.3	766.8	760.3	754.7	750.1
110°	582.8	676.5	740.6	776.1	790.4	794.4	793.4	792.4





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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	545.0	640.6	712.5	758.2	784.3	796.9	800.8	800.9
115°	494.9	583.4	658.2	713.5	751.7	774.1	784.3	786.8
117.5°	458.5	534.9	602.1	658.4	698.1	723.7	738.4	741.8
120°	439.4	508.1	569.1	620.5	660.7	689.2	701.3	704.5
122.5°	424.4	486.5	543.1	590.8	626.5	652.1	665.6	669.4
125°	404.3	459.8	508.6	549.3	581.8	604.2	617.0	620.5
127.5°	386.8	436.3	480.4	517.4	546.4	565.4	576.9	580.2
130°	375.9	421.6	462.8	497.4	524.4	542.7	553.4	557.4
132.5°	365.7	407.8	446.1	479.1	504.4	522.7	532.2	535.0
135°	352.0	388.1	421.2	450.1	475.0	490.3	499.4	503.0
137.5°	339.5	369.1	397.5	422.7	443.6	459.1	466.8	469.1
140°	332.2	358.0	382.5	404.3	423.7	437.9	446.0	445.5
142.5°	325.2	347.5	368.6	387.6	404.1	416.8	424.1	423.6
145°	316.8	333.7	349.9	364.7	377.4	388.1	392.2	393.2
147.5°	310.0	323.3	336.5	347.0	356.6	363.8	367.7	368.1
150°	305.1	316.8	327.5	337.2	344.8	350.4	353.5	353.5
152.5°	300.7	310.8	320.2	328.2	334.2	339.5	341.3	341.3
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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