

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: P331927-840

Luminaire Tested: **S123DIP-S560D585U840-4F0-1E-UDD-F4**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P331927-840  
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-S560D585U840-4F0-1E-UDD-F4  
Description: DEFINE 3 DIRECT-INDIRECT PENDANT LED LUMINAIRE  
DOWNLIGHT 560 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER  
UPLIGHT 585 LUMENS PER FOOT, BATWING OPTIC  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 4484.0 lumens  
Efficiency: N/A  
Efficacy: 136.7 lumens/watt  
Spacing Criteria (0/90/45): 1.21 / 1.18 / 1.31  
Luminous Opening: Rectangular (W 0.25' x L: 4' x H: 0')  
CIE Type: General Diffuse

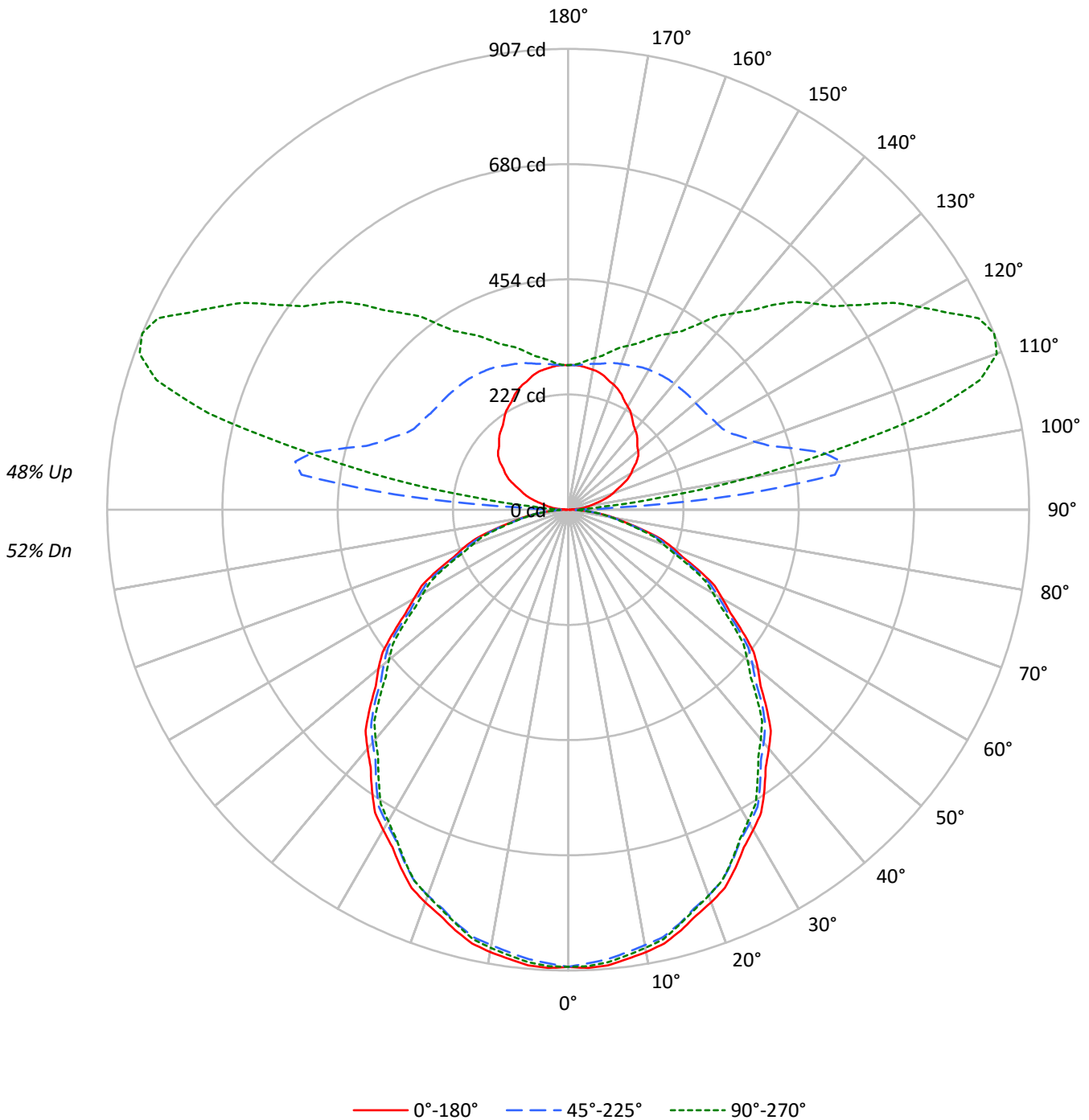
Input Watts (W): 32.8  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	108	108	108	108	100	100	100	100	85	85	85	71	71	71	58	58	58	52
1	98	94	90	86	91	87	84	81	74	72	69	62	60	59	51	50	49	44
2	89	82	76	70	82	76	71	66	65	61	57	55	52	49	45	43	41	37
3	82	72	65	59	75	67	60	55	57	52	48	48	45	42	40	37	35	31
4	75	64	56	50	69	59	52	47	51	45	41	43	39	36	36	33	30	27
5	68	57	49	43	63	53	46	40	45	40	35	39	34	31	32	29	26	23
6	63	51	43	37	58	47	40	35	41	35	31	35	30	27	29	26	23	20
7	58	46	38	32	54	43	36	31	37	31	27	32	27	24	27	23	21	18
8	54	42	34	29	50	39	32	27	34	28	24	29	25	21	24	21	18	16
9	50	38	31	25	47	36	29	24	31	26	22	27	22	19	23	19	17	14
10	47	35	28	23	44	33	26	22	29	23	20	25	20	17	21	18	15	13

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

	0°	45°	90°
0°	9684	9684	9684
5°	9729	9596	9662
10°	9664	9512	9571
15°	9551	9404	9423
20°	9419	9251	9260
25°	9242	9069	9049
30°	9047	8866	8797
35°	8843	8650	8539
40°	8630	8413	8283
45°	8397	8196	7995
50°	8162	7927	7708
55°	7854	7651	7418
60°	7543	7326	7093
65°	7272	6976	6757
70°	6864	6571	6279
75°	6276	6047	5793
80°	5659	5424	5368
85°	4965	4780	4594



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	84.7	1.9
10°-20°	239.3	5.3
20°-30°	353.5	7.9
30°-40°	412.9	9.2
40°-50°	415.1	9.3
50°-60°	364.6	8.1
60°-70°	271.7	6.1
70°-80°	154.8	3.5
80°-90°	46.7	1.0
90°-100°	158.3	3.5
100°-110°	448.4	10.0
110°-120°	441.1	9.8
120°-130°	351.8	7.8
130°-140°	277.4	6.2
140°-150°	207.0	4.6
150°-160°	144.3	3.2
160°-170°	84.8	1.9
170°-180°	27.6	0.6
0°-30°	677.5	15.1
0°-40°	1090.4	24.3
0°-60°	1870.2	41.7
0°-90°	2343.3	52.3
90°-120°	1047.8	23.4
90°-150°	1884.1	42.0
90°-180°	2141.0	47.7
0°-180°	4484.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	900	900	900	900	900	
5°	900	896	888	895	894	85
15°	857	854	844	850	846	242
25°	778	773	764	764	762	358
35°	673	668	658	654	650	421
45°	552	548	538	529	525	426
55°	418	417	408	399	395	375
65°	286	281	274	268	265	282
75°	151	148	145	142	139	161
85°	40	39	39	37	37	44
90°	1	7	14	16	17	4
95°	20	64	342	100	67	21
105°	67	99	463	810	733	71
115°	118	147	354	777	891	117
125°	164	194	331	599	703	146
135°	192	230	326	493	570	149
145°	219	251	322	405	445	138
155°	249	269	312	354	369	115
165°	272	280	298	316	322	77
175°	284	284	286	290	290	27
180°	285	285	285	285	285	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	899.7	899.7	899.7	899.7	899.7	899.7	899.7	899.7	899.7	899.7	899.7
2.5°	902.7	902.2	901.7	901.1	900.6	899.5	898.0	896.5	895.0	893.5	894.8
5°	900.4	899.6	898.7	897.9	897.0	895.6	893.7	891.8	890.0	888.1	889.8
7.5°	891.6	890.8	889.9	889.1	888.2	886.8	884.8	882.8	880.9	879.0	880.5
10°	884.2	883.3	882.5	881.6	880.8	879.2	877.0	874.7	872.5	870.3	871.8
12.5°	874.3	873.5	872.8	872.1	871.4	870.0	867.9	865.8	863.7	861.6	862.7
15°	857.1	856.5	855.8	855.1	854.3	852.9	850.7	848.5	846.2	843.9	845.4
17.5°	837.2	836.3	835.4	834.5	833.5	832.0	829.8	827.6	825.4	823.0	824.0
20°	822.3	821.3	820.2	819.2	818.2	816.6	814.4	812.1	809.8	807.6	808.3
22.5°	805.6	804.6	803.5	802.5	801.4	799.8	797.6	795.4	793.1	790.9	791.4
25°	778.2	777.2	776.2	775.2	774.1	772.4	770.2	768.0	765.8	763.6	763.7
27.5°	749.0	748.0	747.0	746.0	745.0	743.3	740.8	738.5	736.1	733.7	733.8
30°	727.9	727.1	726.2	725.4	724.5	722.9	720.4	718.0	715.7	713.3	713.3
32.5°	706.9	705.8	704.6	703.5	702.4	700.8	699.0	697.1	695.3	693.5	692.5
35°	673.0	672.0	671.0	669.9	668.9	667.2	665.0	662.8	660.6	658.3	657.3
37.5°	638.3	637.0	635.7	634.4	633.1	631.4	629.0	626.8	624.5	622.3	621.1
40°	614.2	613.2	612.2	611.2	610.1	608.3	605.9	603.6	601.2	598.7	597.3
42.5°	590.1	589.0	587.7	586.5	585.4	583.6	581.2	578.9	576.4	574.0	572.6
45°	551.6	550.9	550.2	549.5	548.8	547.3	545.1	542.9	540.7	538.4	536.3
47.5°	513.3	512.3	511.4	510.4	509.4	507.8	505.7	503.6	501.5	499.4	497.4
50°	487.4	486.5	485.6	484.7	483.9	482.4	480.1	477.9	475.6	473.4	471.5
52.5°	460.1	459.5	459.0	458.4	457.8	456.3	453.9	451.6	449.2	446.9	445.2
55°	418.5	418.3	418.2	418.0	417.8	416.6	414.3	412.1	409.9	407.7	405.8
57.5°	378.9	378.3	377.7	377.2	376.6	375.4	373.5	371.8	370.0	368.2	366.6
60°	350.4	350.2	350.1	349.9	349.7	348.6	346.6	344.5	342.4	340.3	338.8
62.5°	325.1	324.6	324.2	323.8	323.3	322.0	319.9	317.9	315.8	313.8	312.3
65°	285.5	284.6	283.8	282.9	282.1	280.7	279.0	277.3	275.6	273.9	272.5
67.5°	243.5	242.8	242.0	241.3	240.4	239.4	238.1	236.8	235.5	234.3	233.1
70°	218.1	217.1	216.1	215.1	214.0	213.0	212.0	211.0	209.8	208.8	207.6
72.5°	191.6	190.8	190.1	189.2	188.5	187.5	186.4	185.2	184.0	182.9	181.8
75°	150.9	150.2	149.5	148.8	148.1	147.5	146.9	146.4	145.9	145.4	144.6
77.5°	114.8	114.4	114.0	113.7	113.3	112.8	112.2	111.6	110.9	110.3	109.8
80°	91.3	90.8	90.3	89.8	89.2	88.8	88.5	88.1	87.8	87.5	87.3
82.5°	68.4	68.3	68.2	68.1	68.0	67.9	67.9	67.8	67.7	67.7	67.3
85°	40.2	39.9	39.6	39.2	38.9	38.7	38.7	38.7	38.7	38.7	38.4
87.5°	16.4	16.2	16.0	15.9	15.8	15.7	15.9	16.1	16.3	16.5	16.3
90°	1.1	2.3	3.4	5.2	6.4	7.5	9.2	10.9	12.6	14.4	13.8
92.5°	7.2	10.6	15.5	19.9	24.7	33.3	48.4	73.1	97.5	88.6	66.9
95°	19.6	21.3	27.7	37.5	52.4	74.8	123.8	209.6	304.2	341.5	277.0
97.5°	33.4	34.0	39.0	47.5	62.2	86.5	133.3	230.0	387.5	529.4	566.3
100°	42.6	43.2	47.3	55.3	69.1	91.6	131.9	217.1	368.6	545.4	658.9
102.5°	52.3	53.3	57.0	64.5	77.0	97.6	133.7	206.1	341.0	515.5	663.6
105°	66.9	68.6	72.0	78.9	89.9	107.8	138.9	198.1	307.0	463.1	628.4
107.5°	82.2	84.0	87.4	94.1	104.4	121.0	148.2	197.5	285.4	416.8	566.9
110°	93.3	95.0	98.0	104.2	114.0	130.2	156.1	199.9	277.0	390.5	528.2



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	103.4	105.2	108.1	114.4	124.2	139.9	163.9	204.5	272.5	373.0	494.5
115°	118.1	120.4	123.8	129.6	139.4	154.9	176.8	212.0	270.7	354.3	453.9
117.5°	132.7	135.3	138.3	143.5	154.5	168.8	190.6	221.9	271.8	343.2	429.4
120°	142.9	144.6	147.4	153.2	164.2	178.5	199.2	229.2	273.6	338.1	416.5
122.5°	151.6	153.3	156.2	162.4	172.9	188.2	208.5	236.2	276.8	334.9	405.9
125°	164.2	165.3	168.7	175.1	186.0	201.6	221.8	247.1	281.7	330.6	392.2
127.5°	173.7	175.4	179.8	186.1	198.2	213.8	233.3	256.1	287.2	328.5	380.3
130°	179.8	181.5	186.6	193.5	205.6	221.2	240.1	262.1	290.8	327.2	373.9
132.5°	184.3	186.5	192.2	200.5	212.6	227.6	246.2	267.6	293.7	326.7	367.8
135°	192.4	194.7	201.1	209.6	221.8	237.3	255.2	274.8	297.8	326.0	360.0
137.5°	200.0	202.4	208.6	217.8	229.8	244.2	261.4	280.0	300.5	324.8	353.3
140°	205.1	207.9	213.7	222.9	234.4	248.8	265.5	282.9	302.4	324.3	349.0
142.5°	210.6	213.0	219.2	227.5	239.0	252.6	268.7	285.6	303.8	323.4	345.4
145°	219.4	221.2	226.4	235.0	244.8	258.0	273.1	288.6	304.7	321.9	340.4
147.5°	228.4	229.4	234.6	242.1	251.5	262.8	276.5	290.4	304.7	319.8	335.6
150°	234.4	235.0	239.6	247.1	255.2	265.5	278.8	290.8	304.7	317.9	332.3
152.5°	240.4	240.5	245.2	251.8	258.8	268.7	280.1	291.9	303.4	315.7	328.7
155°	249.4	249.4	252.9	258.6	265.0	273.1	282.9	292.1	301.8	311.6	323.2
157.5°	256.5	257.0	259.7	264.9	270.2	276.5	284.3	292.7	299.8	308.0	316.9
160°	262.1	262.1	264.4	269.0	273.1	278.8	285.7	292.7	298.9	305.3	312.8
162.5°	266.2	266.2	268.1	271.8	275.3	280.1	286.2	292.2	297.1	302.6	308.6
165°	272.5	271.9	273.1	275.9	278.2	282.3	286.8	290.8	294.4	298.4	303.0
167.5°	277.2	276.5	277.0	279.2	280.8	283.4	286.7	289.9	291.5	294.2	297.6
170°	279.9	278.8	279.3	281.0	282.3	283.4	286.3	288.6	289.7	291.4	294.4
172.5°	281.8	281.0	281.2	282.5	283.2	283.9	286.3	288.1	288.3	289.1	291.1
175°	284.0	283.4	282.9	284.0	284.0	284.6	285.7	286.8	286.3	286.3	287.4
177.5°	285.0	284.6	284.1	284.6	284.6	284.6	285.0	285.9	285.0	284.6	285.0
180°	284.6	284.6	284.6	284.6	284.6	284.6	284.6	284.6	284.6	284.6	284.6



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	899.7	899.7	899.7	899.7	899.7	899.7	899.7	899.7
2.5°	896.3	897.6	899.0	899.6	899.5	899.3	899.2	899.1
5°	891.5	893.2	894.9	895.6	895.2	894.9	894.6	894.2
7.5°	882.0	883.5	885.1	885.8	885.6	885.3	885.1	884.9
10°	873.3	874.9	876.5	877.1	876.8	876.4	876.1	875.7
12.5°	863.8	865.1	866.2	866.6	866.4	866.2	866.0	865.8
15°	846.8	848.1	849.5	849.6	848.6	847.6	846.6	845.6
17.5°	825.1	826.0	827.0	827.2	826.9	826.5	826.1	825.7
20°	809.0	809.7	810.3	810.4	809.9	809.4	808.9	808.4
22.5°	792.0	792.5	793.1	793.0	792.4	791.7	791.1	790.4
25°	763.9	764.1	764.2	764.1	763.6	763.1	762.4	761.9
27.5°	734.0	734.1	734.2	734.0	733.3	732.7	732.0	731.3
30°	713.3	713.3	713.3	712.7	711.4	710.2	709.0	707.8
32.5°	691.6	690.5	689.5	688.7	688.1	687.5	686.8	686.2
35°	656.2	655.2	654.2	653.3	652.4	651.6	650.7	649.8
37.5°	619.8	618.5	617.3	616.4	615.9	615.3	614.8	614.2
40°	596.0	594.6	593.3	592.2	591.5	590.9	590.2	589.5
42.5°	571.3	569.9	568.5	567.4	566.7	566.1	565.4	564.7
45°	534.3	532.2	530.2	528.7	527.9	526.9	526.1	525.2
47.5°	495.3	493.3	491.3	489.9	489.2	488.4	487.7	486.9
50°	469.7	467.8	465.9	464.4	463.3	462.3	461.3	460.3
52.5°	443.6	442.0	440.4	439.0	438.0	437.0	436.0	434.9
55°	403.8	402.0	400.1	398.7	397.9	397.0	396.2	395.3
57.5°	364.9	363.1	361.5	360.1	359.1	358.2	357.2	356.2
60°	337.3	335.8	334.2	333.0	332.1	331.2	330.4	329.5
62.5°	310.6	309.1	307.6	306.5	305.9	305.4	304.8	304.2
65°	271.0	269.7	268.3	267.4	266.9	266.4	265.9	265.3
67.5°	231.9	230.7	229.4	228.4	227.7	227.0	226.3	225.6
70°	206.4	205.3	204.1	203.0	202.2	201.3	200.5	199.5
72.5°	180.8	179.7	178.6	177.8	177.4	176.9	176.5	176.0
75°	143.7	142.9	142.0	141.3	140.8	140.3	139.8	139.3
77.5°	109.2	108.6	108.0	107.7	107.7	107.7	107.7	107.7
80°	87.1	86.8	86.7	86.6	86.6	86.6	86.6	86.6
82.5°	67.0	66.7	66.3	66.1	66.0	65.8	65.7	65.6
85°	38.0	37.7	37.3	37.2	37.2	37.2	37.2	37.2
87.5°	16.3	16.2	16.2	16.4	16.3	16.4	16.5	16.4
90°	14.4	14.9	15.6	16.7	16.2	16.7	17.3	16.7
92.5°	48.5	38.5	34.0	31.0	30.0	28.2	28.8	27.8
95°	207.3	140.6	110.0	89.3	78.4	73.1	69.1	66.9
97.5°	516.9	414.0	339.7	270.8	228.3	202.4	186.8	181.9
100°	679.1	632.5	565.0	483.2	425.1	383.0	360.6	361.1
102.5°	733.1	731.5	692.3	640.4	595.1	561.8	543.0	529.8
105°	748.8	806.4	817.4	802.3	775.9	754.0	735.6	732.7
107.5°	703.4	797.0	847.4	867.9	868.4	861.0	854.7	849.5
110°	660.0	766.1	838.7	879.0	895.1	899.7	898.6	897.4





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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	617.2	725.5	806.9	858.7	888.2	902.5	906.9	907.1
115°	560.5	660.7	745.4	808.1	851.3	876.7	888.2	891.1
117.5°	519.3	605.8	681.9	745.6	790.6	819.6	836.3	840.1
120°	497.7	575.4	644.5	702.8	748.2	780.5	794.3	797.8
122.5°	480.6	551.0	615.0	669.0	709.5	738.5	753.8	758.1
125°	457.9	520.7	576.0	622.1	658.9	684.3	698.7	702.8
127.5°	438.1	494.1	544.0	585.9	618.7	640.4	653.4	657.1
130°	425.7	477.5	524.1	563.3	593.9	614.6	626.7	631.3
132.5°	414.1	461.8	505.2	542.6	571.3	592.0	602.7	605.9
135°	398.6	439.5	477.0	509.8	538.0	555.2	565.6	569.7
137.5°	384.5	418.0	450.2	478.7	502.4	519.9	528.7	531.3
140°	376.2	405.5	433.1	457.9	479.8	495.9	505.1	504.5
142.5°	368.3	393.5	417.5	439.0	457.7	472.0	480.3	479.7
145°	358.8	377.9	396.3	413.0	427.4	439.5	444.1	445.2
147.5°	351.1	366.2	381.1	392.9	403.8	412.0	416.5	416.9
150°	345.6	358.8	370.9	381.9	390.5	396.9	400.3	400.3
152.5°	340.5	351.9	362.6	371.7	378.5	384.5	386.5	386.5
155°	333.0	342.1	350.8	357.7	362.8	367.5	368.6	369.2
157.5°	324.9	332.5	339.3	344.7	349.2	352.6	353.6	353.5
160°	320.2	326.6	332.3	336.4	340.4	343.9	343.9	343.3
162.5°	314.8	320.1	325.5	329.0	331.6	334.7	334.7	334.1
165°	307.6	311.0	315.1	317.9	320.2	322.6	321.9	321.9
167.5°	301.3	304.0	306.3	308.4	309.4	311.0	310.4	310.4
170°	297.2	298.9	301.2	302.4	303.0	304.2	303.6	303.6
172.5°	293.6	294.8	296.6	297.3	297.4	298.6	297.6	297.1
175°	288.6	289.1	290.3	290.3	290.3	290.8	290.3	289.7
177.5°	285.5	285.9	286.4	286.4	285.9	286.4	285.5	285.5
180°	284.6	284.6	284.6	284.6	284.6	284.6	284.6	284.6

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