

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: P332637-927

Luminaire Tested: **S124DIP-S1020D590U927-4F0-1E-UDD-D**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P332637-927  
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-6,  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: S124DIP-S1020D590U927-4F0-1E-UDD-D  
Description: DEFINE 4 DIRECT-INDIRECT PENDANT LED LUMINAIRE  
DOWNLIGHT 1020 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER  
UPLIGHT 590 LUMENS PER FOOT, NO LENS  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 5204.8 lumens  
Efficiency: N/A  
Efficacy: 106.7 lumens/watt  
Spacing Criteria (0/90/45): 1.23 / 1.28 / 1.39  
Luminous Opening: Rectangular w/ Sides (W: 0.33' x L: 4' x H: 0.08')  
CIE Type: General Diffuse

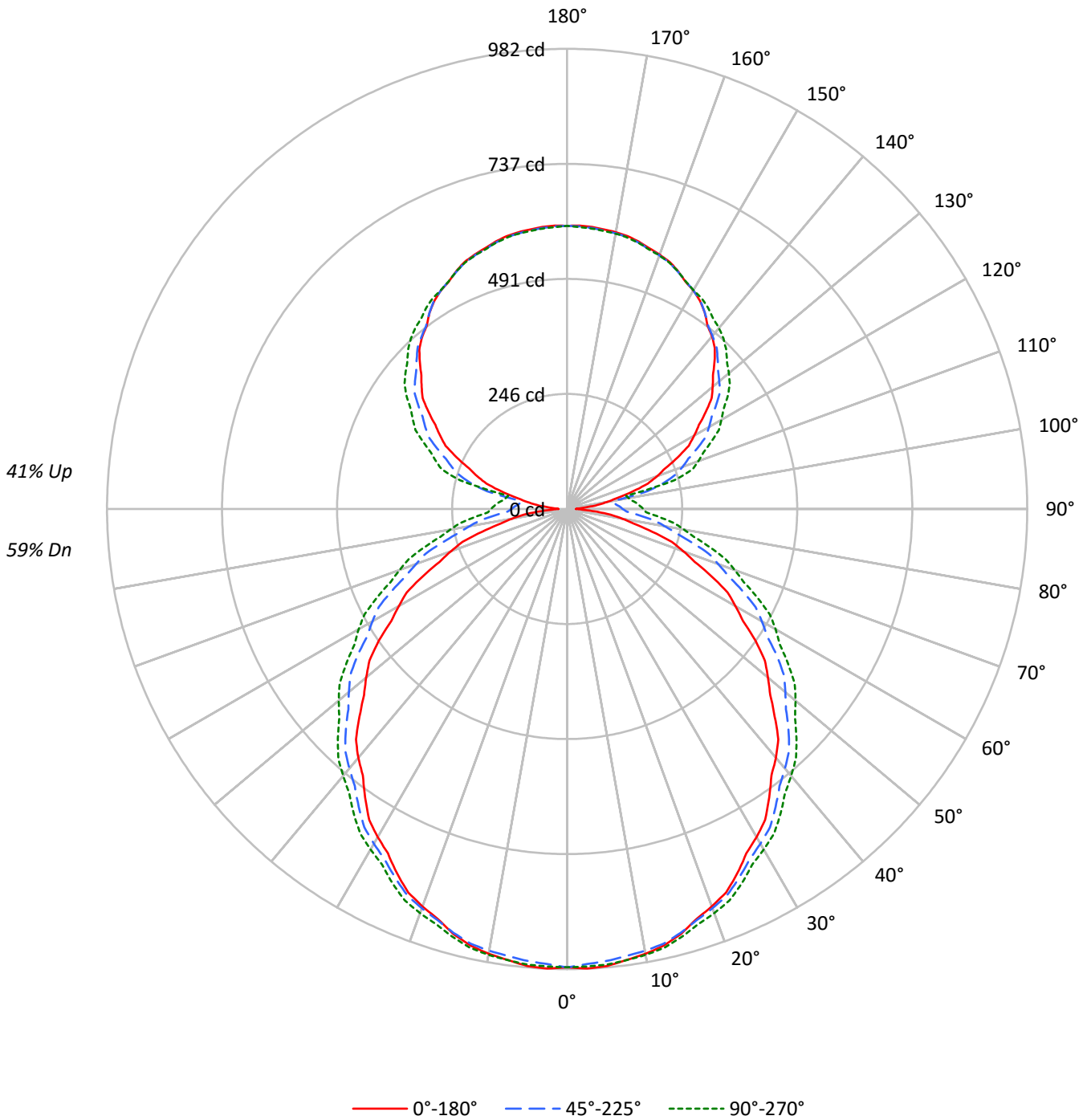
Input Watts (W): 48.8  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	109	109	109	109	102	102	102	102	88	88	88	76	76	76	65	65	65	59
1	99	94	89	85	92	88	84	80	76	73	70	65	63	61	55	54	52	47
2	89	81	74	69	83	76	70	65	66	61	57	56	53	50	48	45	43	39
3	81	71	63	57	75	66	59	54	58	52	48	50	45	42	42	39	36	32
4	74	63	54	48	69	59	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	27	23
6	63	50	41	35	58	47	39	33	41	35	30	35	30	27	30	26	23	20
7	58	45	37	31	54	42	35	29	37	31	26	32	27	23	28	24	21	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°	7896	7896	7896
5°	7920	7717	7739
10°	7872	7591	7585
15°	7802	7444	7404
20°	7695	7284	7227
25°	7575	7102	7034
30°	7445	6922	6835
35°	7299	6739	6660
40°	7181	6564	6478
45°	7007	6402	6322
50°	6859	6215	6158
55°	6707	6040	5964
60°	6469	5816	5788
65°	6208	5578	5571
70°	5894	5303	5319
75°	5453	5001	5089
80°	4964	4711	4865
85°	4347	4456	4735



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	92.6	1.8
10°-20°	265.4	5.1
20°-30°	401.3	7.7
30°-40°	485.5	9.3
40°-50°	513.3	9.9
50°-60°	483.1	9.3
60°-70°	400.8	7.7
70°-80°	281.5	5.4
80°-90°	160.9	3.1
90°-100°	115.2	2.2
100°-110°	201.7	3.9
110°-120°	299.0	5.7
120°-130°	346.4	6.7
130°-140°	353.8	6.8
140°-150°	322.4	6.2
150°-160°	258.2	5.0
160°-170°	166.5	3.2
170°-180°	57.4	1.1
0°-30°	759.3	14.6
0°-40°	1244.8	23.9
0°-60°	2241.1	43.1
0°-90°	3084.3	59.3
90°-120°	615.8	11.8
90°-150°	1638.5	31.5
90°-180°	2120.0	40.7
0°-180°	5204.8	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	978	978	978	978	978	
5°	979	976	968	976	976	93
15°	939	940	936	946	945	264
25°	859	865	868	880	882	395
35°	751	764	776	790	794	470
45°	626	647	668	686	692	484
55°	491	514	546	568	575	437
65°	340	375	412	438	448	336
75°	188	229	275	304	315	200
85°	58	104	153	185	197	62
90°	19	68	118	151	162	13
95°	39	61	105	136	148	43
105°	146	172	213	243	237	153
115°	260	273	306	330	339	257
125°	361	364	389	410	418	323
135°	445	445	454	472	480	343
145°	512	512	512	519	524	320
155°	560	560	559	561	559	258
165°	591	588	588	592	588	167
175°	604	602	602	605	601	58
180°	604	604	604	604	604	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	978.1	978.1	978.1	978.1	978.1	978.1	978.1	978.1	978.1	978.1	978.1
2.5°	981.6	981.0	980.4	979.9	979.2	978.2	976.6	975.1	973.5	971.9	973.3
5°	979.1	978.4	977.7	977.0	976.3	975.0	973.4	971.6	969.9	968.2	970.2
7.5°	970.8	970.4	969.9	969.6	969.1	968.2	966.8	965.4	963.9	962.5	964.7
10°	963.8	963.6	963.4	963.1	962.9	962.1	960.9	959.7	958.5	957.3	959.5
12.5°	954.2	954.2	954.1	954.0	954.0	953.5	952.8	951.9	951.1	950.2	952.3
15°	938.7	938.9	939.1	939.4	939.6	939.4	938.7	937.9	937.2	936.4	938.7
17.5°	917.4	918.1	918.9	919.6	920.4	920.6	920.4	920.4	920.2	920.0	922.3
20°	902.5	903.2	904.0	904.7	905.5	905.9	906.2	906.4	906.7	906.9	909.3
22.5°	885.8	886.8	887.7	888.7	889.5	890.3	890.7	891.1	891.5	892.0	894.5
25°	858.7	860.2	861.6	863.1	864.5	865.6	866.3	867.1	867.8	868.5	871.2
27.5°	828.5	830.6	832.7	834.9	837.0	838.7	839.8	840.9	842.0	843.1	845.7
30°	808.3	810.2	812.2	814.1	816.1	817.9	819.6	821.3	823.0	824.7	827.4
32.5°	786.4	788.8	791.1	793.4	795.7	797.9	799.8	801.7	803.6	805.5	808.5
35°	751.4	754.3	757.2	760.1	763.0	765.7	768.2	770.6	773.0	775.5	778.9
37.5°	716.1	719.5	722.8	726.2	729.5	732.7	735.7	738.7	741.8	744.8	748.2
40°	693.3	696.5	699.7	702.8	706.0	709.2	712.6	716.1	719.5	722.9	726.5
42.5°	667.0	670.6	674.1	677.7	681.2	685.0	689.0	693.0	697.0	701.0	705.0
45°	626.5	631.1	635.7	640.4	645.0	649.6	654.3	658.9	663.5	668.1	672.2
47.5°	587.7	592.5	597.2	602.1	606.8	611.9	617.2	622.6	628.0	633.3	637.5
50°	559.7	565.1	570.4	575.8	581.1	586.5	591.8	597.1	602.5	607.8	612.8
52.5°	531.6	537.0	542.3	547.7	553.1	558.8	564.9	571.1	577.2	583.4	588.2
55°	490.7	495.8	500.9	506.0	511.1	517.3	524.7	532.0	539.2	546.5	551.4
57.5°	444.9	451.2	457.6	463.9	470.2	477.0	484.3	491.5	498.8	506.0	511.8
60°	415.1	421.4	427.8	434.1	440.5	447.6	455.7	463.7	471.7	479.7	485.3
62.5°	386.2	393.1	400.1	406.9	413.8	421.3	429.4	437.4	445.4	453.4	459.1
65°	339.5	347.3	355.1	362.9	370.7	378.7	387.0	395.3	403.5	411.9	417.9
67.5°	294.6	302.9	311.2	319.5	327.7	336.3	345.2	354.0	362.9	371.8	378.0
70°	264.0	272.3	280.5	288.8	297.1	305.9	315.1	324.3	333.6	342.9	349.4
72.5°	234.2	242.6	251.1	259.6	268.1	277.2	287.0	296.8	306.7	316.6	322.9
75°	188.4	197.4	206.4	215.4	224.4	234.0	244.2	254.4	264.7	274.9	281.7
77.5°	145.7	155.2	164.8	174.3	183.9	193.9	204.7	215.4	226.1	236.8	243.7
80°	119.4	129.1	138.9	148.6	158.4	168.6	179.3	190.0	200.7	211.4	218.7
82.5°	93.1	103.2	113.4	123.5	133.6	144.0	154.7	165.4	176.2	186.9	194.3
85°	58.1	68.3	78.5	88.7	98.9	109.6	120.5	131.4	142.4	153.4	160.7
87.5°	32.7	42.9	53.0	63.1	73.3	83.8	94.6	105.4	116.2	127.1	134.3
90°	18.9	29.7	40.6	51.4	62.3	73.3	84.6	95.9	107.1	118.4	126.0
92.5°	22.3	31.1	40.0	48.8	57.7	67.7	79.0	90.2	101.5	112.7	120.3
95°	39.1	43.7	48.3	52.9	57.6	64.9	75.0	85.1	95.1	105.2	112.4
97.5°	65.7	74.8	83.8	92.8	101.9	105.8	104.4	103.1	101.7	100.4	106.9
100°	86.2	94.3	102.4	110.6	118.7	120.6	116.2	111.9	107.5	103.1	108.0
102.5°	110.0	116.9	123.7	130.6	137.5	144.7	152.2	159.7	167.2	174.7	162.6
105°	145.8	151.3	156.9	162.3	167.8	175.2	184.7	194.2	203.7	213.3	220.2
107.5°	181.0	185.3	189.6	193.8	198.1	204.9	214.1	223.3	232.5	241.7	248.1
110°	204.0	207.7	211.4	215.1	218.8	225.2	234.3	243.4	252.6	261.7	267.5



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	226.2	229.8	233.4	236.9	240.5	246.4	254.8	263.3	271.7	280.1	285.5
115°	260.5	263.0	265.5	268.0	270.5	275.6	283.3	291.0	298.7	306.3	311.9
117.5°	292.4	294.1	295.8	297.5	299.3	303.9	311.3	318.8	326.3	333.7	338.7
120°	313.2	314.3	315.4	316.6	317.7	321.8	328.8	335.7	342.6	349.6	354.7
122.5°	333.4	333.8	334.2	334.6	335.0	338.6	345.4	352.2	359.0	365.8	370.8
125°	361.4	361.6	361.7	361.9	362.0	365.0	370.9	376.8	382.7	388.6	393.5
127.5°	388.6	388.5	388.3	388.2	388.1	390.5	395.7	400.8	405.9	411.1	415.4
130°	405.4	405.3	405.2	405.0	404.9	406.9	411.1	415.3	419.5	423.7	428.2
132.5°	421.8	421.7	421.6	421.5	421.4	423.2	426.7	430.2	433.7	437.2	441.5
135°	445.0	445.0	444.8	444.7	444.7	445.6	447.7	449.9	451.9	454.1	458.1
137.5°	466.6	466.4	466.2	466.0	465.8	466.4	467.6	468.9	470.2	471.4	475.2
140°	480.7	480.7	480.6	480.6	480.5	480.8	481.2	481.6	482.1	482.5	486.0
142.5°	492.5	492.8	493.1	493.5	493.8	493.9	493.8	493.8	493.8	493.8	496.8
145°	511.7	511.7	511.8	511.9	512.0	512.0	512.0	512.0	512.0	512.0	513.6
147.5°	527.2	527.5	527.8	528.1	528.5	528.5	528.5	528.4	528.2	528.1	528.5
150°	538.4	538.5	538.7	538.8	539.0	539.1	538.9	538.8	538.8	538.6	538.6
152.5°	546.9	547.2	547.5	547.7	548.0	548.0	547.9	547.7	547.5	547.3	547.5
155°	559.9	560.0	560.1	560.2	560.3	560.2	559.9	559.6	559.3	559.0	559.4
157.5°	571.0	570.9	570.8	570.8	570.8	570.5	570.2	569.9	569.5	569.2	569.7
160°	577.5	577.2	576.9	576.6	576.3	576.1	576.0	575.9	575.8	575.7	576.3
162.5°	583.3	582.9	582.5	582.2	581.8	581.5	581.4	581.3	581.2	581.1	581.7
165°	590.6	590.1	589.6	589.1	588.6	588.4	588.4	588.4	588.4	588.4	589.1
167.5°	596.4	595.9	595.3	594.8	594.3	594.0	594.0	593.9	593.8	593.7	594.7
170°	599.7	599.0	598.4	597.9	597.2	597.0	597.1	597.1	597.3	597.4	598.2
172.5°	601.8	601.2	600.6	600.0	599.4	599.1	599.3	599.4	599.4	599.5	600.4
175°	604.2	603.6	602.9	602.4	601.7	601.5	601.6	601.7	601.8	601.9	602.8
177.5°	605.2	604.7	604.1	603.6	603.0	602.8	602.9	603.1	603.2	603.4	604.1
180°	604.2	604.2	604.2	604.2	604.2	604.2	604.2	604.2	604.2	604.2	604.2



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	978.1	978.1	978.1	978.1	978.1	978.1	978.1	978.1
2.5°	974.7	976.0	977.4	977.9	977.8	977.6	977.4	977.2
5°	972.1	974.1	976.0	976.8	976.6	976.4	976.1	975.9
7.5°	966.9	969.1	971.3	972.2	972.0	971.8	971.5	971.3
10°	961.6	963.8	966.1	967.0	966.8	966.5	966.3	966.1
12.5°	954.3	956.2	958.2	959.3	959.2	959.1	959.1	959.0
15°	940.9	943.0	945.2	946.2	945.9	945.7	945.5	945.2
17.5°	924.5	926.8	929.0	930.0	929.8	929.6	929.4	929.2
20°	911.7	914.2	916.6	917.8	917.8	917.8	917.8	917.8
22.5°	896.8	899.3	901.7	903.2	903.6	903.9	904.3	904.7
25°	873.9	876.5	879.2	880.7	881.0	881.2	881.5	881.7
27.5°	848.1	850.6	853.1	854.4	854.8	855.1	855.3	855.6
30°	830.1	832.7	835.4	837.0	837.5	838.0	838.5	839.0
32.5°	811.6	814.7	817.8	819.5	820.0	820.5	820.9	821.5
35°	782.3	785.7	789.1	791.2	791.9	792.6	793.4	794.1
37.5°	751.7	755.2	758.6	760.7	761.5	762.3	763.0	763.8
40°	730.2	733.8	737.5	739.8	740.8	741.7	742.8	743.7
42.5°	709.1	713.1	717.2	719.5	720.3	721.1	721.9	722.6
45°	676.4	680.6	684.7	687.4	688.6	689.8	691.0	692.2
47.5°	641.8	646.1	650.5	653.3	654.7	656.2	657.7	659.2
50°	617.6	622.5	627.3	630.5	632.0	633.4	634.9	636.4
52.5°	593.1	597.9	602.9	605.9	607.4	608.9	610.4	611.8
55°	556.3	561.2	566.0	569.2	570.6	572.1	573.5	575.0
57.5°	517.6	523.4	529.2	532.7	534.1	535.5	536.9	538.2
60°	490.9	496.5	502.1	505.9	507.9	509.8	511.7	513.7
62.5°	464.6	470.2	475.9	479.6	481.6	483.5	485.4	487.4
65°	424.0	430.1	436.2	440.2	442.1	444.1	446.0	448.0
67.5°	384.1	390.3	396.5	400.5	402.4	404.3	406.2	408.1
70°	355.9	362.5	369.1	373.3	374.9	376.7	378.3	380.1
72.5°	329.3	335.6	342.1	346.2	348.1	350.0	351.9	353.8
75°	288.5	295.3	302.1	306.7	308.9	311.1	313.2	315.4
77.5°	250.6	257.5	264.4	269.1	271.4	273.8	276.1	278.5
80°	226.0	233.3	240.6	245.2	247.2	249.1	251.0	253.0
82.5°	201.8	209.4	216.8	221.7	223.8	225.9	228.1	230.2
85°	167.9	175.2	182.5	187.4	189.9	192.3	194.7	197.2
87.5°	141.4	148.6	155.8	160.5	162.6	164.9	167.0	169.2
90°	133.7	141.3	149.0	153.9	156.1	158.2	160.3	162.5
92.5°	127.7	135.1	142.6	147.3	149.3	151.3	153.3	155.3
95°	119.5	126.7	134.0	138.6	140.9	143.2	145.5	147.8
97.5°	113.3	119.8	126.2	130.5	132.7	134.9	137.0	139.3
100°	112.9	117.7	122.6	125.9	127.7	129.5	131.3	133.2
102.5°	150.6	138.6	126.5	121.4	123.3	125.2	127.2	129.1
105°	227.3	234.2	241.2	243.9	242.2	240.6	238.9	237.2
107.5°	254.6	261.0	267.4	271.7	273.9	276.0	278.1	280.3
110°	273.3	279.1	284.9	288.9	291.2	293.4	295.6	297.9





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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	290.8	296.2	301.6	305.4	307.8	310.1	312.4	314.7
115°	317.4	323.0	328.6	332.2	333.9	335.6	337.3	339.0
117.5°	343.8	348.8	353.9	357.3	359.2	361.2	363.1	365.0
120°	359.7	364.8	369.9	373.3	375.0	376.8	378.5	380.2
122.5°	375.8	380.8	385.8	389.0	390.6	392.1	393.7	395.3
125°	398.4	403.3	408.3	411.5	413.0	414.6	416.2	417.7
127.5°	419.7	424.1	428.3	431.3	432.9	434.4	436.0	437.6
130°	432.7	437.1	441.6	444.6	446.1	447.5	449.0	450.4
132.5°	445.8	450.0	454.3	457.2	458.5	459.9	461.3	462.7
135°	462.2	466.4	470.4	473.3	475.0	476.7	478.3	480.0
137.5°	479.0	482.8	486.6	489.0	490.1	491.3	492.5	493.6
140°	489.5	493.0	496.4	498.8	500.1	501.5	502.7	504.1
142.5°	499.8	502.8	505.8	507.8	508.8	509.9	511.0	512.0
145°	515.1	516.7	518.2	519.6	520.8	522.0	523.1	524.3
147.5°	528.7	529.0	529.3	529.8	530.7	531.6	532.5	533.4
150°	538.6	538.6	538.6	538.7	538.8	538.9	539.0	539.1
152.5°	547.6	547.8	548.0	548.0	548.0	547.9	547.8	547.8
155°	559.8	560.2	560.5	560.6	560.3	560.0	559.8	559.4
157.5°	570.2	570.8	571.2	571.2	570.8	570.2	569.7	569.2
160°	576.9	577.5	578.1	578.1	577.5	576.9	576.3	575.7
162.5°	582.3	582.9	583.5	583.5	582.8	582.1	581.5	580.7
165°	589.9	590.7	591.6	591.5	590.6	589.7	588.8	587.9
167.5°	595.6	596.4	597.3	597.2	596.3	595.2	594.2	593.3
170°	599.0	599.8	600.6	600.5	599.5	598.5	597.5	596.5
172.5°	601.2	602.0	602.8	602.6	601.6	600.5	599.4	598.3
175°	603.7	604.6	605.5	605.4	604.2	602.9	601.7	600.6
177.5°	604.8	605.4	606.0	605.9	604.9	604.0	602.9	602.0
180°	604.2	604.2	604.2	604.2	604.2	604.2	604.2	604.2

(END OF REPORT)