

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: P332153-840

Luminaire Tested: **S123DIW-S775D460U840-4F0-1E-UDD-D1**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P332153-840  
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-9,  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: S123DIW-S775D460U840-4F0-1E-UDD-D1  
Description: DEFINE 3 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE  
DOWNLIGHT 775 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER  
UPLIGHT 460 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

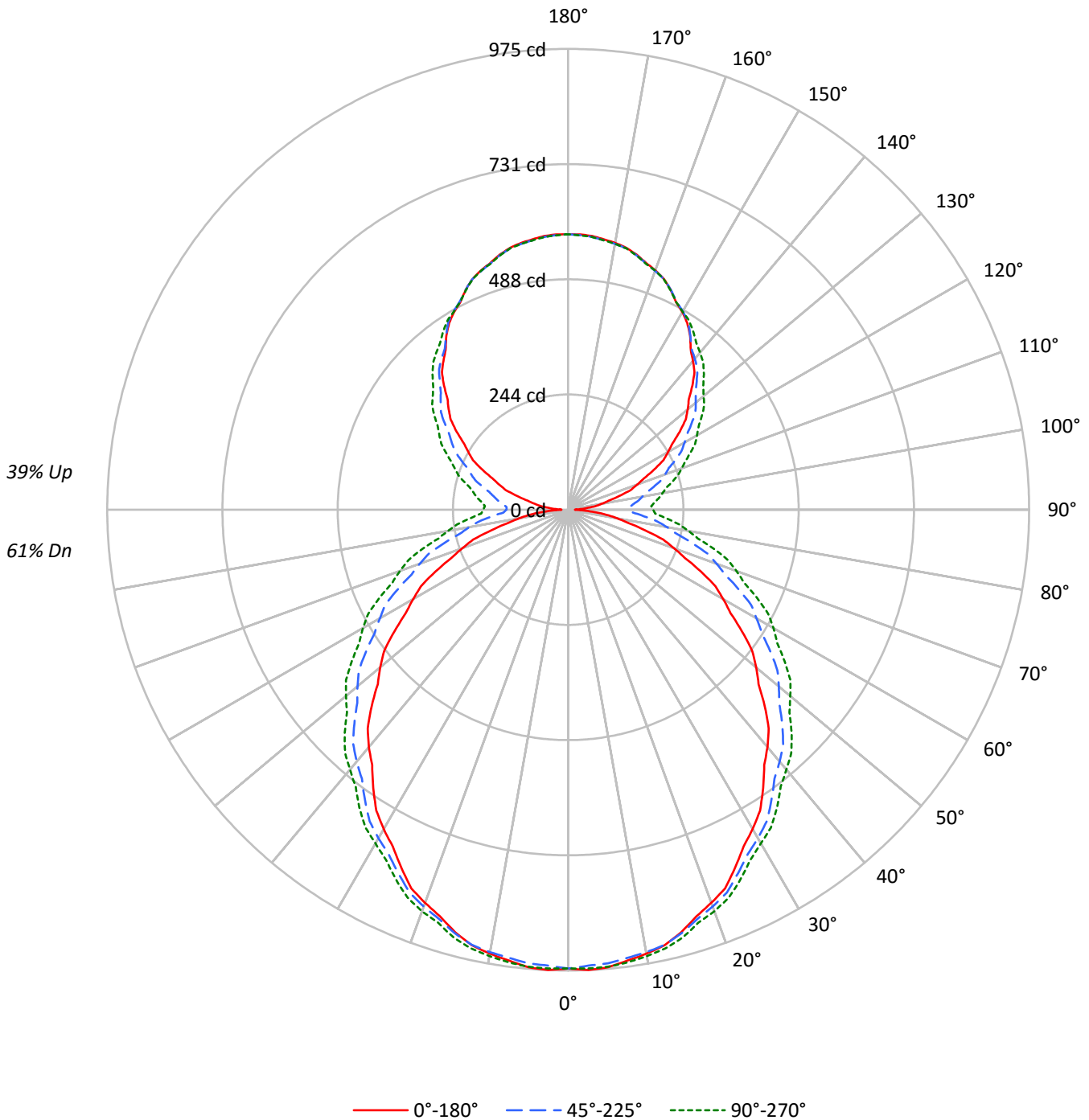
Lumens per Lamp: N/A  
Luminaire Lumens: 4877.8 lumens  
Efficiency: N/A  
Efficacy: 129.4 lumens/watt  
Spacing Criteria (0/90/45): 1.2 / 1.26 / 1.37  
Luminous Opening: Rectangular w/ Sides (W: 0.25' x L: 4' x H: 0.08')  
CIE Type: Semi-Direct  
  
Input Watts (W): 37.7  
Input Voltage (V): 120  
Input 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	110	110	110	110	103	103	103	103	90	90	90	78	78	78	67	67	67	61
1	99	94	90	86	92	88	84	81	77	74	71	66	64	62	57	55	54	49
2	90	81	75	69	83	76	70	65	66	62	58	58	54	51	49	47	44	40
3	82	71	63	57	76	67	60	54	58	53	48	50	46	42	43	40	37	33
4	74	63	54	48	69	59	51	45	52	45	41	45	40	36	38	35	32	28
5	68	56	47	41	63	52	45	39	46	40	35	40	35	31	34	31	27	24
6	63	50	41	35	58	47	39	34	41	35	30	36	31	27	31	27	24	21
7	58	45	37	31	54	43	35	29	38	31	27	33	28	24	28	24	21	19
8	54	41	33	27	50	39	31	26	34	28	24	30	25	21	26	22	19	17
9	50	37	30	24	47	35	28	23	31	25	21	28	23	19	24	20	17	15
10	47	34	27	22	44	32	26	21	29	23	19	26	21	17	22	18	15	14

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

	0°	45°	90°
0°	10449	10449	10449
5°	10481	10185	10191
10°	10387	9951	9901
15°	10253	9685	9584
20°	10061	9380	9236
25°	9826	9030	8869
30°	9583	8714	8498
35°	9312	8382	8201
40°	9054	8079	7884
45°	8767	7788	7630
50°	8484	7501	7350
55°	8172	7206	7099
60°	7867	6907	6840
65°	7553	6588	6534
70°	7082	6231	6219
75°	6487	5819	5899
80°	5804	5417	5533
85°	5167	5142	5320



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	92.0	1.9
10°-20°	262.3	5.4
20°-30°	392.3	8.0
30°-40°	468.5	9.6
40°-50°	490.2	10.0
50°-60°	460.0	9.4
60°-70°	384.2	7.9
70°-80°	274.9	5.6
80°-90°	165.7	3.4
90°-100°	140.8	2.9
100°-110°	189.2	3.9
110°-120°	243.7	5.0
120°-130°	283.0	5.8
130°-140°	298.6	6.1
140°-150°	283.5	5.8
150°-160°	236.4	4.8
160°-170°	157.3	3.2
170°-180°	55.1	1.1
0°-30°	746.7	15.3
0°-40°	1215.2	24.9
0°-60°	2165.4	44.4
0°-90°	2990.2	61.3
90°-120°	573.7	11.8
90°-150°	1438.8	29.5
90°-180°	1888.0	38.7
0°-180°	4877.8	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	971	971	971	971	971	
5°	972	969	963	971	971	92
15°	925	928	927	937	937	260
25°	835	846	849	862	863	385
35°	719	736	750	765	770	450
45°	588	613	640	659	668	453
55°	448	483	521	549	558	401
65°	310	351	398	428	440	306
75°	168	218	271	304	318	180
85°	52	105	161	195	207	54
90°	14	71	130	167	180	11
95°	39	84	139	172	184	39
105°	111	139	187	216	227	119
115°	200	215	251	276	285	198
125°	288	291	319	338	345	257
135°	371	374	384	401	406	286
145°	449	449	450	458	461	280
155°	513	513	514	515	512	236
165°	559	557	557	560	557	157
175°	581	580	579	582	579	55
180°	583	583	583	583	583	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	970.7	970.7	970.7	970.7	970.7	970.7	970.7	970.7	970.7	970.7	970.7
2.5°	974.9	974.3	973.8	973.2	972.7	971.6	970.2	968.7	967.1	965.6	967.1
5°	971.8	971.3	970.8	970.4	969.9	969.0	967.6	966.1	964.7	963.3	965.2
7.5°	962.2	962.3	962.4	962.5	962.6	962.0	960.6	959.3	957.9	956.5	958.9
10°	953.8	954.2	954.7	955.2	955.6	955.3	954.1	953.0	951.8	950.6	953.0
12.5°	943.6	944.3	944.9	945.6	946.2	946.2	945.4	944.6	943.8	943.0	945.1
15°	925.2	925.9	926.7	927.4	928.1	928.3	928.1	927.9	927.6	927.4	929.7
17.5°	902.0	903.4	904.8	906.2	907.6	908.3	908.2	908.1	908.0	907.9	910.0
20°	885.0	886.5	887.9	889.3	890.7	891.6	892.1	892.6	893.0	893.5	895.6
22.5°	867.3	868.7	870.1	871.5	872.9	873.9	874.6	875.3	876.0	876.6	879.3
25°	835.4	837.7	840.0	842.4	844.8	846.3	847.0	847.7	848.4	849.1	852.1
27.5°	803.2	805.9	808.6	811.2	814.0	816.0	817.5	819.0	820.5	822.0	824.7
30°	780.3	783.5	786.5	789.5	792.5	795.1	796.9	798.8	800.7	802.5	805.4
32.5°	755.0	758.4	761.8	765.3	768.7	771.6	774.1	776.6	779.0	781.4	784.5
35°	719.0	722.8	726.6	730.3	734.1	737.5	740.5	743.6	746.7	749.7	753.3
37.5°	681.0	685.2	689.4	693.7	697.9	701.9	705.7	709.4	713.2	716.9	720.9
40°	655.6	659.8	664.1	668.3	672.5	677.0	681.7	686.4	691.1	695.8	699.7
42.5°	627.6	632.9	638.0	643.2	648.3	653.4	658.2	663.2	668.0	673.0	677.3
45°	587.9	593.6	599.2	604.8	610.5	616.2	622.1	627.9	633.9	639.7	644.2
47.5°	546.2	552.7	559.1	565.4	571.8	578.3	585.1	591.8	598.5	605.2	610.3
50°	519.2	525.7	532.3	539.0	545.5	552.4	559.8	567.0	574.3	581.6	586.9
52.5°	490.4	497.4	504.3	511.3	518.3	525.7	533.8	541.8	549.9	557.8	563.5
55°	448.4	456.1	463.8	471.6	479.4	487.5	495.9	504.4	512.8	521.3	527.7
57.5°	407.3	415.4	423.4	431.5	439.7	448.3	457.6	466.9	476.1	485.3	491.7
60°	378.6	387.0	395.5	403.9	412.4	421.4	431.1	440.7	450.3	460.0	466.6
62.5°	351.4	360.1	368.8	377.4	386.1	395.5	405.7	415.9	426.1	436.3	442.8
65°	309.8	319.0	328.1	337.3	346.5	356.2	366.6	376.9	387.3	397.6	404.7
67.5°	267.5	277.2	287.0	296.7	306.4	316.6	327.1	337.6	348.1	358.7	366.4
70°	237.9	248.0	258.1	268.2	278.3	289.0	300.3	311.5	322.9	334.2	341.6
72.5°	210.9	221.0	231.1	241.2	251.3	262.2	273.8	285.5	297.1	308.7	316.5
75°	168.1	179.2	190.3	201.3	212.3	223.7	235.4	247.2	258.9	270.7	278.4
77.5°	130.9	142.1	153.2	164.3	175.4	186.9	198.8	210.7	222.5	234.3	242.5
80°	104.7	116.2	127.7	139.3	150.8	162.6	174.8	187.0	199.2	211.5	219.4
82.5°	81.8	93.5	105.2	116.9	128.7	140.7	153.1	165.5	177.9	190.4	198.3
85°	51.8	63.5	75.3	87.1	98.8	110.9	123.4	135.8	148.2	160.8	168.7
87.5°	28.2	40.1	52.0	63.9	75.8	88.0	100.2	112.4	124.6	136.9	145.0
90°	14.2	26.8	39.3	51.8	64.3	77.3	90.6	103.8	117.1	130.5	138.9
92.5°	23.9	35.0	46.2	57.2	68.3	80.1	92.6	105.2	117.8	130.3	138.5
95°	38.7	48.5	58.4	68.3	78.2	89.3	101.6	113.9	126.2	138.6	146.2
97.5°	58.4	67.2	75.9	84.7	93.5	103.7	115.3	126.9	138.5	150.1	157.5
100°	71.8	79.9	88.1	96.1	104.3	114.0	125.3	136.6	147.9	159.3	166.4
102.5°	87.4	94.5	101.7	108.8	115.9	125.1	136.4	147.7	159.1	170.3	177.2
105°	111.4	117.2	123.1	129.0	134.8	143.2	154.2	165.3	176.3	187.3	193.9
107.5°	138.4	143.3	148.1	153.1	158.0	165.4	175.4	185.3	195.3	205.3	211.9
110°	155.1	159.6	163.9	168.3	172.8	179.9	189.5	199.0	208.6	218.2	224.8



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	173.4	177.0	180.6	184.2	187.7	194.1	203.2	212.3	221.3	230.4	236.8
115°	199.8	202.9	206.0	209.1	212.3	217.9	226.2	234.5	242.8	251.0	256.7
117.5°	227.2	229.1	231.1	233.1	235.0	239.8	247.5	255.2	262.9	270.5	276.1
120°	243.6	245.4	247.1	248.9	250.7	255.2	262.5	269.7	277.0	284.2	289.5
122.5°	261.6	262.6	263.7	264.7	265.8	269.8	276.9	284.1	291.1	298.3	303.3
125°	287.8	288.1	288.4	288.7	289.0	292.5	299.1	305.7	312.4	318.9	323.5
127.5°	313.1	313.5	314.0	314.4	314.8	317.7	323.1	328.5	334.0	339.3	343.5
130°	329.9	330.5	331.1	331.6	332.2	334.8	339.1	343.6	347.9	352.3	356.4
132.5°	345.9	346.7	347.5	348.2	349.0	351.1	354.7	358.2	361.7	365.3	369.1
135°	371.4	371.8	372.1	372.5	372.9	374.4	376.9	379.3	381.8	384.3	388.1
137.5°	395.1	395.4	395.7	396.0	396.3	397.3	399.0	400.8	402.5	404.2	407.5
140°	410.6	411.1	411.6	412.1	412.7	413.3	414.1	415.0	415.8	416.6	420.0
142.5°	425.7	426.0	426.3	426.7	427.0	427.3	427.6	427.9	428.3	428.6	431.6
145°	449.1	449.1	449.0	449.0	449.0	449.1	449.4	449.7	450.0	450.3	452.1
147.5°	468.6	468.9	469.3	469.6	470.0	470.3	470.6	470.9	471.2	471.5	472.0
150°	482.8	483.0	483.2	483.4	483.6	483.8	484.0	484.2	484.4	484.6	484.6
152.5°	494.5	494.8	495.1	495.3	495.6	495.8	495.9	496.1	496.2	496.3	496.6
155°	513.0	513.0	513.0	513.0	513.0	513.1	513.2	513.3	513.4	513.5	513.9
157.5°	528.8	528.7	528.6	528.4	528.3	528.3	528.4	528.5	528.5	528.6	529.0
160°	538.7	538.5	538.3	538.1	537.9	537.8	537.8	537.8	537.8	537.8	538.3
162.5°	547.4	547.1	546.8	546.5	546.3	546.2	546.2	546.3	546.4	546.5	547.0
165°	558.8	558.5	558.2	557.8	557.5	557.4	557.4	557.4	557.4	557.4	558.1
167.5°	567.8	567.4	567.0	566.6	566.2	566.0	566.1	566.2	566.3	566.3	567.0
170°	573.0	572.6	572.2	571.8	571.4	571.2	571.2	571.2	571.2	571.2	571.9
172.5°	577.0	576.6	576.2	575.8	575.3	575.1	575.1	575.1	575.1	575.1	575.8
175°	581.2	580.8	580.4	580.0	579.6	579.4	579.4	579.4	579.4	579.4	580.0
177.5°	583.0	582.6	582.3	582.0	581.7	581.5	581.5	581.5	581.5	581.5	582.0
180°	582.6	582.6	582.6	582.6	582.6	582.6	582.6	582.6	582.6	582.6	582.6



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	970.7	970.7	970.7	970.7	970.7	970.7	970.7	970.7
2.5°	968.7	970.2	971.6	972.3	972.1	971.9	971.7	971.6
5°	967.0	969.0	970.8	971.6	971.4	971.2	971.0	970.7
7.5°	961.2	963.6	965.9	966.9	966.6	966.4	966.1	965.8
10°	955.3	957.7	960.0	961.0	960.5	960.0	959.6	959.1
12.5°	947.4	949.5	951.6	952.5	952.0	951.6	951.1	950.6
15°	932.0	934.4	936.8	937.8	937.6	937.4	937.1	936.9
17.5°	912.1	914.2	916.4	917.3	917.0	916.6	916.3	915.9
20°	897.8	899.9	902.0	903.1	903.4	903.6	903.8	904.1
22.5°	881.9	884.6	887.3	888.6	888.5	888.3	888.2	888.0
25°	855.3	858.3	861.3	862.8	862.8	862.8	862.8	862.8
27.5°	827.3	829.9	832.5	833.9	834.1	834.4	834.6	834.8
30°	808.2	811.0	813.9	815.3	815.3	815.3	815.3	815.3
32.5°	787.4	790.4	793.5	795.3	795.8	796.4	796.9	797.5
35°	756.8	760.3	763.8	766.1	767.0	767.9	768.8	769.8
37.5°	724.9	728.9	732.9	735.3	736.0	736.8	737.5	738.3
40°	703.8	707.7	711.8	714.2	715.2	716.1	717.0	718.0
42.5°	681.7	686.0	690.4	693.3	694.6	695.9	697.2	698.5
45°	648.6	653.1	657.6	660.8	662.7	664.5	666.4	668.3
47.5°	615.3	620.4	625.4	628.6	630.1	631.6	633.0	634.4
50°	592.4	597.7	603.2	606.7	608.3	610.0	611.7	613.3
52.5°	569.1	574.7	580.3	584.1	586.1	588.1	590.2	592.2
55°	534.0	540.4	546.6	550.8	552.7	554.5	556.4	558.4
57.5°	498.2	504.5	510.9	515.2	517.5	519.7	521.8	524.0
60°	473.1	479.7	486.3	490.9	493.4	496.0	498.7	501.2
62.5°	449.5	456.1	462.6	467.1	469.5	471.9	474.3	476.7
65°	411.7	418.7	425.8	430.5	432.8	435.2	437.6	439.9
67.5°	374.1	381.8	389.5	394.4	396.3	398.3	400.3	402.2
70°	349.2	356.7	364.3	369.1	371.5	373.9	376.2	378.6
72.5°	324.2	331.8	339.6	344.7	347.0	349.3	351.6	354.1
75°	286.2	294.0	301.7	307.0	309.8	312.7	315.5	318.3
77.5°	250.6	258.8	267.0	272.2	274.4	276.5	278.7	280.8
80°	227.4	235.4	243.5	248.6	251.0	253.3	255.7	258.0
82.5°	206.3	214.3	222.3	227.4	229.8	232.2	234.5	236.8
85°	176.7	184.7	192.7	197.8	200.2	202.6	204.9	207.2
87.5°	153.1	161.1	169.2	174.4	176.8	179.3	181.6	184.0
90°	147.2	155.6	164.1	169.6	172.1	174.6	177.2	179.8
92.5°	146.5	154.7	162.8	167.8	170.0	172.0	174.0	176.0
95°	153.9	161.6	169.4	174.3	176.7	179.0	181.4	183.7
97.5°	165.0	172.5	180.0	184.8	187.1	189.5	191.8	194.1
100°	173.5	180.7	187.7	192.6	195.1	197.7	200.3	202.8
102.5°	184.2	191.1	198.0	202.7	205.0	207.2	209.5	211.9
105°	200.5	207.0	213.6	218.0	220.4	222.7	225.0	227.3
107.5°	218.5	225.1	231.8	236.0	238.0	239.9	241.9	243.8
110°	231.3	237.8	244.3	248.4	250.0	251.8	253.5	255.1





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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	243.2	249.6	256.0	260.2	262.3	264.3	266.3	268.3
115°	262.5	268.2	274.0	277.7	279.5	281.2	283.1	284.9
117.5°	281.7	287.2	292.8	296.4	297.9	299.4	301.0	302.6
120°	294.8	300.1	305.4	308.8	310.2	311.6	313.2	314.6
122.5°	308.2	313.2	318.1	321.2	322.7	324.0	325.4	326.7
125°	328.0	332.5	337.1	339.9	341.1	342.4	343.7	344.9
127.5°	347.5	351.5	355.7	358.3	359.4	360.5	361.6	362.7
130°	360.4	364.5	368.5	370.9	371.6	372.3	373.0	373.8
132.5°	372.8	376.7	380.4	382.8	384.0	385.0	386.0	387.1
135°	391.9	395.8	399.6	402.0	402.9	403.9	404.9	405.9
137.5°	410.8	414.0	417.4	419.4	420.2	421.0	421.7	422.5
140°	423.4	426.9	430.3	432.2	432.6	433.1	433.6	434.0
142.5°	434.6	437.7	440.7	442.6	443.2	443.8	444.4	445.0
145°	453.8	455.7	457.5	458.6	459.1	459.7	460.2	460.7
147.5°	472.6	473.1	473.7	474.1	474.3	474.6	474.8	475.0
150°	484.6	484.6	484.6	484.5	484.4	484.3	484.1	484.0
152.5°	496.7	496.9	497.1	496.9	496.4	496.0	495.5	495.1
155°	514.3	514.7	515.1	514.9	514.2	513.5	512.8	512.1
157.5°	529.5	529.9	530.3	530.2	529.7	529.1	528.5	528.0
160°	538.8	539.3	539.8	539.8	539.4	539.0	538.6	538.2
162.5°	547.5	548.1	548.6	548.5	547.9	547.1	546.5	545.8
165°	558.7	559.3	559.9	559.8	559.1	558.4	557.6	556.9
167.5°	567.6	568.3	568.9	568.9	568.3	567.6	567.0	566.3
170°	572.6	573.3	574.0	574.0	573.3	572.6	571.9	571.2
172.5°	576.4	577.0	577.6	577.6	576.9	576.2	575.5	574.8
175°	580.6	581.2	581.8	581.8	581.1	580.4	579.7	579.0
177.5°	582.5	583.0	583.4	583.4	582.8	582.3	581.7	581.1
180°	582.6	582.6	582.6	582.6	582.6	582.6	582.6	582.6

(END OF REPORT)