

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: P332131

Luminaire Tested: **S123DIW-S560D755U835-4F0-1E-UDD-F1**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P332131  
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-S560D755U835-4F0-1E-UDD-F1  
Description: DEFINE 3 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE  
DOWNLIGHT 560 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER  
UPLIGHT 755 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

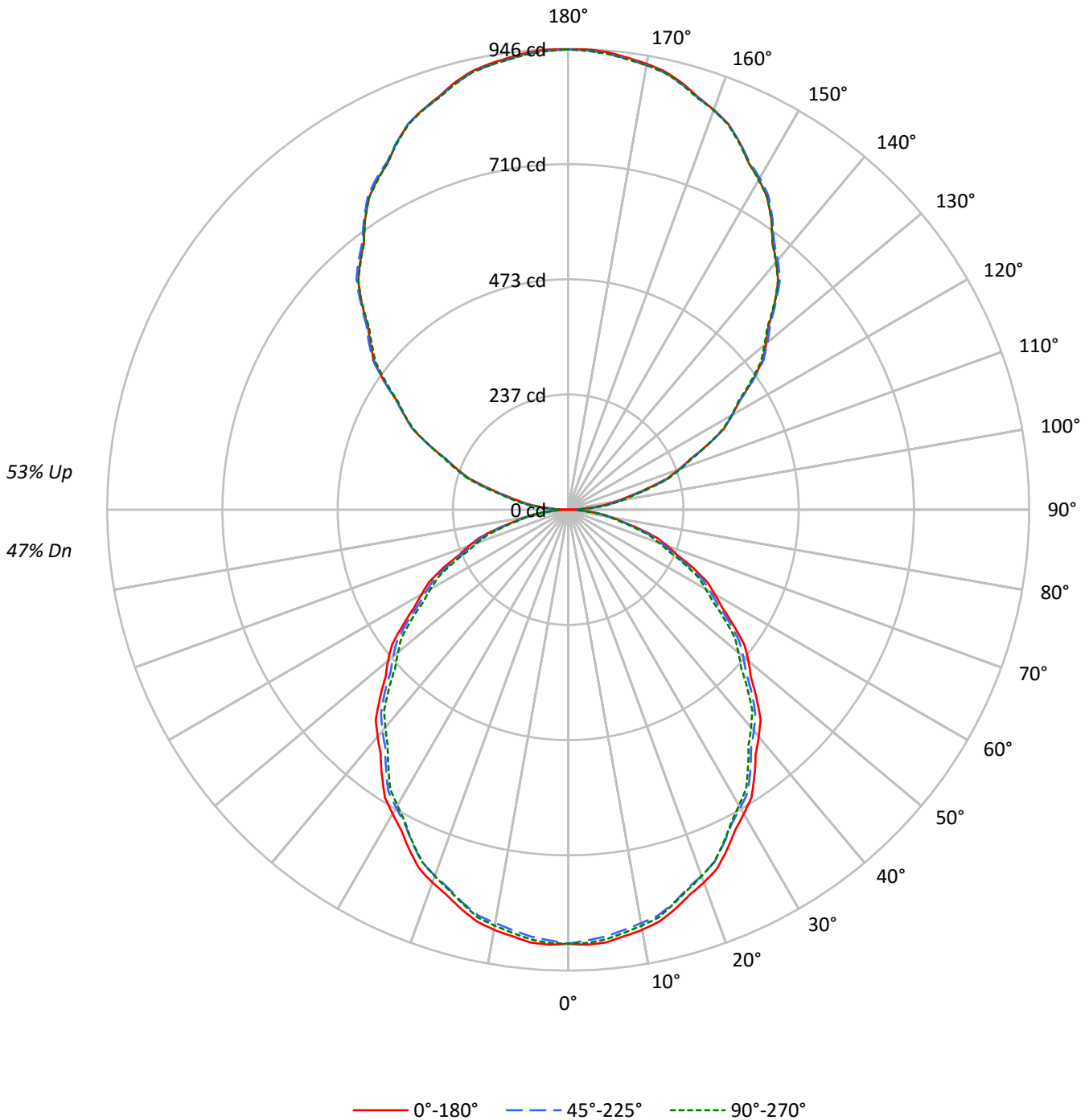
Lumens per Lamp: N/A  
Luminaire Lumens: 4938.9 lumens  
Efficiency: N/A  
Efficacy: 131.4 lumens/watt  
Spacing Criteria (0/90/45): 1.21 / 1.18 / 1.31  
Luminous Opening: Rectangular (W 0.25' x L: 4' x H: 0')  
CIE Type: General Diffuse

Input Watts (W): 37.6  
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	106	106	106	106	98	98	98	98	82	82	82	67	67	67	53	53	53	47
1	97	93	89	85	89	85	82	79	71	69	67	59	57	56	47	46	45	39
2	88	81	75	70	81	75	69	65	63	59	55	52	49	46	41	39	38	33
3	81	71	64	58	74	66	59	54	55	50	46	46	42	39	37	34	32	28
4	74	63	55	49	67	58	51	46	49	44	40	41	37	34	33	30	28	24
5	68	56	48	42	62	52	45	39	44	38	34	36	32	29	29	26	24	21
6	62	50	42	36	57	46	39	34	39	34	30	33	29	25	27	24	21	18
7	58	45	37	32	53	42	35	30	36	30	26	30	26	22	24	21	19	16
8	53	41	33	28	49	38	31	26	33	27	23	27	23	20	22	19	17	14
9	50	37	30	25	46	35	28	24	30	24	21	25	21	18	21	18	15	13
10	46	34	27	22	43	32	25	21	27	22	19	23	19	16	19	16	14	12

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

	0°	45°	90°
0°	9590	9590	9590
5°	9634	9502	9568
10°	9570	9419	9477
15°	9458	9313	9331
20°	9328	9160	9170
25°	9152	8980	8961
30°	8959	8779	8712
35°	8757	8566	8456
40°	8546	8331	8202
45°	8315	8115	7917
50°	8081	7850	7633
55°	7777	7576	7345
60°	7470	7255	7025
65°	7200	6907	6691
70°	6798	6508	6219
75°	6213	5989	5735
80°	5604	5368	5318
85°	4915	4730	4545



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	83.9	1.7
10°-20°	237.0	4.8
20°-30°	350.0	7.1
30°-40°	408.9	8.3
40°-50°	411.1	8.3
50°-60°	361.1	7.3
60°-70°	269.0	5.4
70°-80°	153.3	3.1
80°-90°	46.8	0.9
90°-100°	61.6	1.2
100°-110°	184.2	3.7
110°-120°	313.4	6.3
120°-130°	412.2	8.3
130°-140°	463.3	9.4
140°-150°	455.4	9.2
150°-160°	383.4	7.8
160°-170°	255.2	5.2
170°-180°	89.4	1.8
0°-30°	670.9	13.6
0°-40°	1079.8	21.9
0°-60°	1851.9	37.5
0°-90°	2320.9	47.0
90°-120°	559.2	11.3
90°-150°	1890.0	38.3
90°-180°	2618.0	53.0
0°-180°	4938.9	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	891	891	891	891	891	
5°	892	888	879	887	886	84
15°	849	845	836	841	837	239
25°	771	766	756	757	754	355
35°	666	662	652	647	644	417
45°	546	543	533	524	520	421
55°	414	413	404	396	391	371
65°	283	279	271	265	263	279
75°	149	146	144	140	138	160
85°	40	38	38	37	37	44
90°	1	8	18	21	22	5
95°	44	49	55	58	58	49
105°	167	169	175	175	177	179
115°	316	317	316	317	316	312
125°	462	464	462	459	456	412
135°	599	603	603	600	598	461
145°	727	728	730	730	727	454
155°	832	832	833	835	831	383
165°	906	904	904	908	903	255
175°	943	940	940	944	939	89
180°	945	945	945	945	945	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	890.9	890.9	890.9	890.9	890.9	890.9	890.9	890.9	890.9	890.9	890.9
2.5°	893.9	893.4	892.9	892.3	891.8	890.7	889.2	887.7	886.3	884.8	886.1
5°	891.6	890.8	889.9	889.1	888.2	886.9	885.0	883.1	881.3	879.4	881.1
7.5°	882.9	882.1	881.2	880.4	879.5	878.1	876.2	874.2	872.3	870.4	871.9
10°	875.6	874.7	873.9	873.0	872.2	870.6	868.4	866.2	864.0	861.8	863.3
12.5°	865.8	865.0	864.3	863.6	862.9	861.5	859.4	857.3	855.3	853.2	854.3
15°	848.7	848.1	847.4	846.7	846.0	844.6	842.4	840.2	837.9	835.7	837.1
17.5°	829.0	828.1	827.2	826.3	825.4	823.9	821.7	819.5	817.3	815.0	816.0
20°	814.3	813.3	812.2	811.2	810.2	808.6	806.4	804.2	801.9	799.7	800.4
22.5°	797.7	796.7	795.7	794.7	793.6	792.0	789.8	787.6	785.4	783.2	783.7
25°	770.6	769.6	768.6	767.6	766.5	764.9	762.7	760.5	758.3	756.1	756.2
27.5°	741.7	740.7	739.7	738.7	737.7	736.0	733.6	731.3	728.9	726.5	726.6
30°	720.8	720.0	719.1	718.3	717.4	715.8	713.4	711.0	708.7	706.3	706.3
32.5°	700.0	698.9	697.7	696.6	695.5	694.0	692.2	690.3	688.5	686.7	685.7
35°	666.4	665.4	664.4	663.4	662.4	660.7	658.5	656.3	654.1	651.9	650.9
37.5°	632.1	630.8	629.5	628.2	626.9	625.2	622.9	620.7	618.4	616.2	615.0
40°	608.2	607.2	606.2	605.2	604.1	602.4	600.0	597.7	595.3	592.9	591.5
42.5°	584.3	583.2	582.0	580.8	579.7	577.9	575.5	573.2	570.8	568.4	567.0
45°	546.2	545.5	544.8	544.1	543.4	542.0	539.8	537.6	535.4	533.1	531.1
47.5°	508.3	507.3	506.4	505.4	504.4	502.8	500.8	498.7	496.6	494.5	492.5
50°	482.6	481.7	480.9	480.0	479.2	477.7	475.4	473.2	471.0	468.8	466.9
52.5°	455.6	455.0	454.5	453.9	453.3	451.8	449.5	447.2	444.8	442.5	440.9
55°	414.4	414.2	414.1	413.9	413.7	412.5	410.3	408.1	405.9	403.7	401.8
57.5°	375.2	374.6	374.0	373.5	372.9	371.7	369.9	368.2	366.4	364.6	363.0
60°	347.0	346.8	346.7	346.5	346.3	345.2	343.2	341.1	339.1	337.0	335.5
62.5°	321.9	321.4	321.0	320.6	320.1	318.9	316.8	314.8	312.7	310.7	309.2
65°	282.7	281.8	281.0	280.1	279.3	278.0	276.3	274.6	272.9	271.2	269.8
67.5°	241.1	240.4	239.6	238.9	238.1	237.1	235.8	234.5	233.2	232.0	230.8
70°	216.0	215.0	214.0	213.0	211.9	210.9	209.9	208.9	207.8	206.8	205.6
72.5°	189.7	188.9	188.2	187.4	186.7	185.7	184.6	183.4	182.2	181.1	180.0
75°	149.4	148.7	148.0	147.3	146.7	146.1	145.5	145.0	144.5	144.0	143.2
77.5°	113.7	113.3	112.9	112.6	112.2	111.7	111.1	110.5	109.8	109.2	108.7
80°	90.4	89.9	89.4	88.9	88.3	87.9	87.6	87.2	86.9	86.6	86.4
82.5°	67.7	67.6	67.5	67.4	67.3	67.2	67.2	67.1	67.0	67.0	66.6
85°	39.8	39.5	39.2	38.8	38.5	38.3	38.3	38.3	38.3	38.3	38.0
87.5°	16.1	16.0	15.9	15.8	15.8	15.9	16.2	16.5	16.8	17.0	17.0
90°	0.7	2.4	4.0	5.7	7.3	9.2	11.4	13.5	15.7	17.8	18.5
92.5°	18.0	19.1	20.2	21.3	22.4	23.6	24.8	26.1	27.3	28.5	29.0
95°	43.8	44.9	46.1	47.3	48.4	49.6	51.0	52.3	53.6	54.9	55.6
97.5°	77.8	78.6	79.5	80.4	81.2	82.1	83.1	84.0	85.0	86.0	86.7
100°	100.9	101.9	102.9	103.9	104.9	105.8	106.6	107.5	108.3	109.1	109.6
102.5°	127.7	128.3	128.9	129.4	130.0	130.9	132.0	133.1	134.1	135.2	135.7
105°	167.0	167.3	167.7	168.0	168.3	169.2	170.7	172.2	173.7	175.2	175.2
107.5°	212.7	212.9	213.1	213.3	213.5	213.9	214.5	215.1	215.7	216.3	216.8
110°	241.2	241.6	241.9	242.2	242.5	242.9	243.2	243.5	243.9	244.2	244.9



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	270.9	271.1	271.3	271.5	271.7	271.8	271.9	272.0	272.0	272.1	272.9
115°	315.5	315.9	316.4	316.9	317.4	317.5	317.2	316.9	316.5	316.2	316.4
117.5°	360.3	360.6	360.9	361.3	361.6	361.6	361.1	360.7	360.3	359.8	359.8
120°	388.2	389.2	390.2	391.2	392.2	392.2	391.4	390.6	389.8	388.9	388.8
122.5°	417.3	418.0	418.7	419.5	420.2	420.3	419.9	419.5	419.1	418.6	418.2
125°	461.7	462.2	462.7	463.2	463.7	463.7	463.4	463.1	462.7	462.4	461.8
127.5°	502.6	503.7	504.8	505.8	506.9	507.2	506.9	506.5	506.1	505.8	504.8
130°	530.0	531.3	532.6	533.9	535.2	535.7	535.2	534.7	534.2	533.7	533.0
132.5°	557.3	558.6	559.9	561.2	562.6	563.0	562.7	562.3	561.9	561.6	560.8
135°	599.0	600.0	601.0	602.0	602.9	603.4	603.2	603.0	602.9	602.7	602.0
137.5°	637.6	638.4	639.2	640.1	640.9	641.5	641.9	642.4	642.8	643.2	642.5
140°	664.3	665.1	666.0	666.8	667.6	668.1	668.3	668.4	668.6	668.8	668.6
142.5°	688.7	689.5	690.3	691.1	691.9	692.5	692.8	693.1	693.4	693.7	693.5
145°	726.7	727.0	727.3	727.6	728.0	728.4	728.9	729.4	729.9	730.4	730.2
147.5°	759.9	760.5	761.1	761.7	762.3	762.8	763.3	763.7	764.2	764.7	764.7
150°	783.1	783.4	783.7	784.1	784.4	784.7	785.0	785.4	785.7	786.0	786.0
152.5°	802.1	802.5	803.0	803.5	803.9	804.2	804.4	804.6	804.8	805.0	805.3
155°	832.1	832.1	832.1	832.1	832.1	832.1	832.3	832.5	832.6	832.8	833.5
157.5°	857.6	857.4	857.2	857.0	856.8	856.8	856.9	857.0	857.2	857.3	858.0
160°	873.6	873.3	873.0	872.6	872.3	872.1	872.1	872.1	872.1	872.1	873.0
162.5°	887.9	887.4	886.9	886.5	886.0	885.9	886.0	886.1	886.3	886.4	887.2
165°	906.3	905.8	905.3	904.8	904.3	904.0	904.0	904.0	904.0	904.0	905.0
167.5°	921.0	920.3	919.7	919.0	918.3	918.1	918.2	918.3	918.5	918.6	919.6
170°	929.3	928.6	928.0	927.3	926.6	926.3	926.3	926.3	926.3	926.3	927.5
172.5°	935.8	935.2	934.5	933.8	933.2	932.8	932.8	932.8	932.8	932.8	933.9
175°	942.6	942.0	941.3	940.7	940.0	939.7	939.7	939.7	939.7	939.7	940.7
177.5°	945.5	944.9	944.4	943.9	943.4	943.1	943.1	943.1	943.1	943.1	943.9
180°	944.9	944.9	944.9	944.9	944.9	944.9	944.9	944.9	944.9	944.9	944.9



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	890.9	890.9	890.9	890.9	890.9	890.9	890.9	890.9
2.5°	887.5	888.8	890.2	890.8	890.7	890.5	890.4	890.3
5°	882.8	884.5	886.2	886.9	886.5	886.2	885.9	885.5
7.5°	873.4	874.9	876.5	877.1	876.9	876.7	876.5	876.3
10°	864.8	866.4	867.9	868.5	868.2	867.8	867.5	867.1
12.5°	855.4	856.6	857.7	858.1	857.9	857.7	857.5	857.3
15°	838.5	839.8	841.2	841.3	840.3	839.3	838.3	837.3
17.5°	817.0	817.9	818.9	819.1	818.8	818.4	818.0	817.6
20°	801.1	801.8	802.4	802.5	802.0	801.5	801.0	800.5
22.5°	784.3	784.8	785.4	785.3	784.7	784.0	783.4	782.7
25°	756.4	756.6	756.7	756.6	756.1	755.6	755.0	754.5
27.5°	726.8	726.9	727.0	726.8	726.1	725.5	724.8	724.2
30°	706.3	706.3	706.3	705.7	704.5	703.3	702.1	700.9
32.5°	684.8	683.8	682.8	682.0	681.4	680.8	680.1	679.5
35°	649.8	648.8	647.8	646.9	646.0	645.2	644.3	643.5
37.5°	613.7	612.5	611.3	610.4	609.9	609.3	608.8	608.2
40°	590.2	588.8	587.5	586.4	585.7	585.1	584.4	583.7
42.5°	565.7	564.3	562.9	561.9	561.2	560.6	559.9	559.2
45°	529.1	527.0	525.0	523.5	522.7	521.8	521.0	520.1
47.5°	490.5	488.5	486.5	485.1	484.4	483.6	482.9	482.1
50°	465.1	463.2	461.3	459.9	458.8	457.8	456.8	455.8
52.5°	439.3	437.7	436.1	434.7	433.7	432.7	431.7	430.7
55°	399.9	398.1	396.2	394.8	394.0	393.1	392.3	391.4
57.5°	361.3	359.6	358.0	356.6	355.6	354.7	353.7	352.7
60°	334.0	332.5	330.9	329.7	328.9	328.0	327.2	326.3
62.5°	307.6	306.1	304.6	303.5	302.9	302.4	301.8	301.2
65°	268.4	267.1	265.7	264.8	264.3	263.8	263.3	262.7
67.5°	229.6	228.4	227.2	226.2	225.5	224.8	224.1	223.4
70°	204.4	203.3	202.1	201.0	200.2	199.3	198.5	197.6
72.5°	179.0	177.9	176.9	176.1	175.7	175.2	174.8	174.3
75°	142.3	141.5	140.6	139.9	139.4	138.9	138.4	137.9
77.5°	108.1	107.5	106.9	106.6	106.6	106.6	106.6	106.6
80°	86.2	86.0	85.9	85.8	85.8	85.8	85.8	85.8
82.5°	66.3	66.0	65.7	65.5	65.4	65.2	65.1	65.0
85°	37.6	37.3	36.9	36.8	36.8	36.8	36.8	36.8
87.5°	17.0	17.0	17.0	17.1	17.1	17.2	17.3	17.3
90°	19.1	19.8	20.5	20.9	21.3	21.6	21.9	22.3
92.5°	29.6	30.1	30.6	30.8	30.6	30.4	30.2	30.0
95°	56.2	56.9	57.6	57.9	57.9	57.9	57.9	57.9
97.5°	87.5	88.2	89.0	89.3	89.3	89.2	89.1	89.1
100°	110.1	110.6	111.1	111.5	111.8	112.2	112.5	112.8
102.5°	136.2	136.7	137.2	137.4	137.4	137.3	137.2	137.2
105°	175.2	175.2	175.2	175.3	175.7	176.0	176.3	176.7
107.5°	217.3	217.9	218.4	218.6	218.4	218.2	218.0	217.8
110°	245.5	246.2	246.8	247.0	246.7	246.3	246.0	245.7





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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	273.7	274.5	275.3	275.6	275.6	275.5	275.4	275.4
115°	316.5	316.7	316.9	316.9	316.7	316.5	316.4	316.2
117.5°	359.8	359.7	359.7	359.5	359.0	358.5	358.1	357.6
120°	388.6	388.4	388.3	388.0	387.7	387.4	387.0	386.7
122.5°	417.8	417.3	416.9	416.5	416.0	415.5	415.1	414.6
125°	461.1	460.4	459.8	459.1	458.5	457.8	457.1	456.5
127.5°	503.9	503.0	502.1	501.2	500.5	499.7	499.0	498.2
130°	532.4	531.7	531.0	530.1	529.0	527.8	526.7	525.5
132.5°	560.0	559.2	558.4	557.6	556.7	555.8	554.9	554.0
135°	601.4	600.7	600.1	599.6	599.2	598.9	598.6	598.2
137.5°	641.8	641.1	640.5	639.8	639.2	638.5	637.9	637.3
140°	668.4	668.3	668.1	667.4	666.3	665.1	664.0	662.8
142.5°	693.4	693.2	693.0	692.5	691.6	690.7	689.8	688.9
145°	730.0	729.9	729.7	729.3	728.6	728.0	727.3	726.7
147.5°	764.7	764.7	764.7	764.2	763.2	762.2	761.2	760.2
150°	786.0	786.0	786.0	785.5	784.5	783.6	782.6	781.6
152.5°	805.6	805.8	806.1	805.8	804.9	804.1	803.2	802.4
155°	834.1	834.8	835.4	835.2	834.0	832.9	831.7	830.6
157.5°	858.7	859.4	860.1	859.9	859.0	858.1	857.2	856.2
160°	873.8	874.6	875.4	875.5	874.9	874.2	873.5	872.9
162.5°	888.0	888.9	889.7	889.6	888.5	887.5	886.4	885.3
165°	906.0	907.0	908.0	907.9	906.8	905.6	904.5	903.3
167.5°	920.6	921.7	922.7	922.7	921.7	920.6	919.6	918.6
170°	928.6	929.8	930.9	930.9	929.8	928.6	927.5	926.3
172.5°	934.9	935.9	936.9	936.9	935.7	934.6	933.4	932.3
175°	941.7	942.6	943.6	943.6	942.4	941.2	940.1	938.9
177.5°	944.7	945.5	946.3	946.2	945.3	944.3	943.4	942.5
180°	944.9	944.9	944.9	944.9	944.9	944.9	944.9	944.9

(END OF REPORT)