

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: P332122

Luminaire Tested: **S123DIW-S560D460U835-4F0-1E-UDD-D**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P332122  
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-5,  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: S123DIW-S560D460U835-4F0-1E-UDD-D  
Description: DEFINE 3 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE  
DOWNLIGHT 560 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER  
UPLIGHT 460 LUMENS PER FOOT, NO LENS  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 4208.9 lumens  
Efficiency: N/A  
Efficacy: 139.4 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: General Diffuse

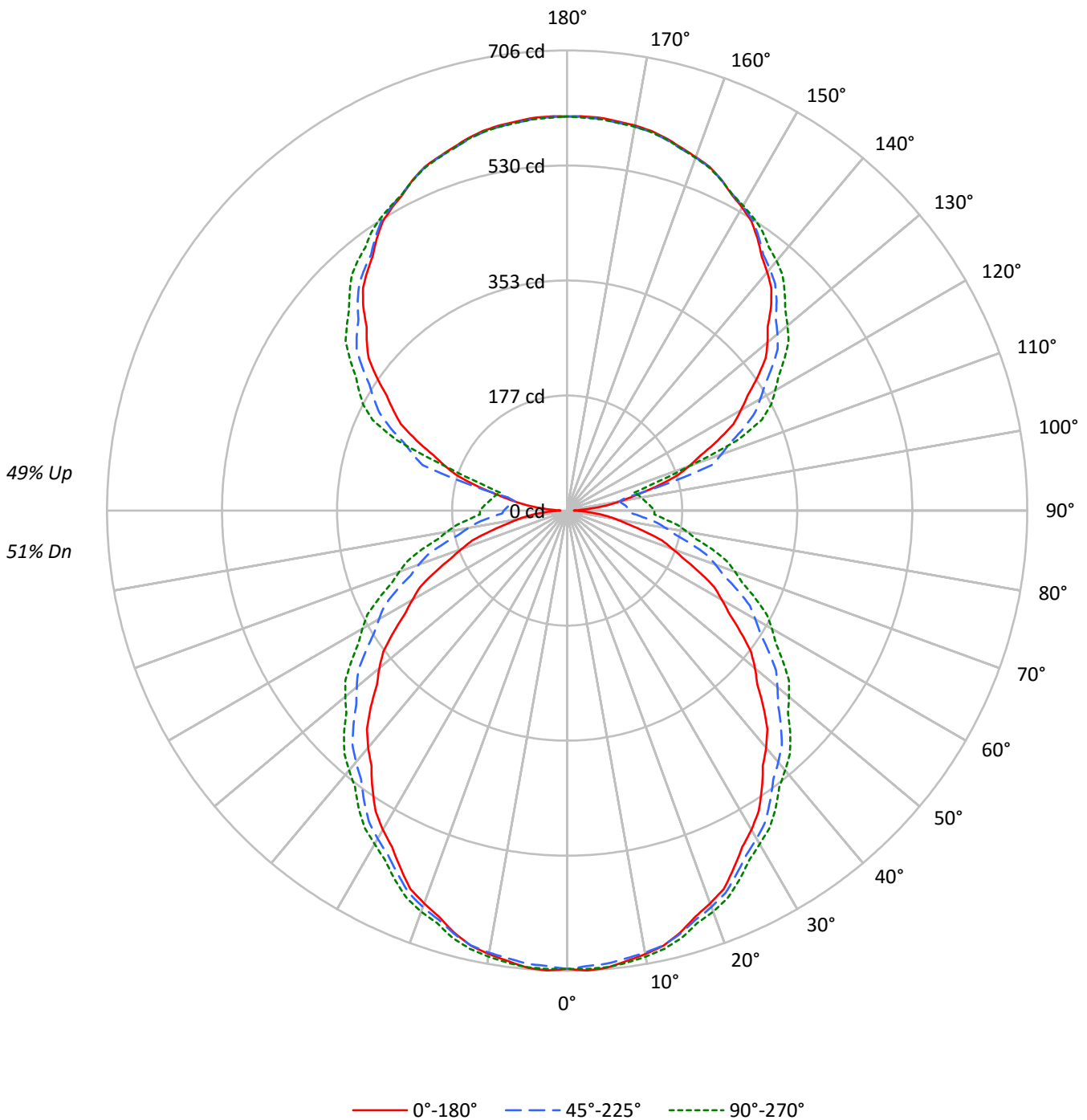
Input Watts (W): 30.2  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Luminous Intensity Polar Plot





TEST NUMBER: P332122

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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	84	84	84	70	70	70	57	57	57	51
1	97	92	88	84	89	85	81	78	72	69	67	60	58	56	49	48	46	41
2	88	80	73	68	81	74	68	63	63	58	54	52	49	46	43	40	38	34
3	80	70	62	56	73	65	58	52	55	50	45	46	42	39	37	35	32	28
4	73	62	53	47	67	57	50	44	49	43	38	41	36	33	33	30	27	24
5	67	55	46	40	61	51	43	38	43	37	33	36	32	28	30	26	24	20
6	62	49	41	35	57	46	38	33	39	33	29	33	28	25	27	23	21	18
7	57	44	36	30	52	41	34	28	35	29	25	30	25	22	25	21	18	16
8	53	40	32	27	49	37	30	25	32	26	22	27	23	19	23	19	16	14
9	49	37	29	24	45	34	27	22	29	24	20	25	20	17	21	17	15	13
10	46	33	26	21	42	31	25	20	27	22	18	23	19	16	19	16	13	11

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

	0°	45°	90°
0°	7569	7569	7569
5°	7593	7378	7383
10°	7525	7209	7173
15°	7428	7016	6943
20°	7289	6795	6690
25°	7119	6541	6425
30°	6943	6313	6156
35°	6746	6072	5942
40°	6558	5852	5711
45°	6351	5641	5527
50°	6145	5433	5325
55°	5919	5219	5143
60°	5697	5003	4956
65°	5471	4772	4733
70°	5132	4514	4504
75°	4700	4216	4274
80°	4202	3924	4008
85°	3741	3722	3854



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	66.7	1.6
10°-20°	190.0	4.5
20°-30°	284.2	6.8
30°-40°	339.4	8.1
40°-50°	355.1	8.4
50°-60°	333.2	7.9
60°-70°	278.3	6.6
70°-80°	199.1	4.7
80°-90°	120.4	2.9
90°-100°	96.5	2.3
100°-110°	159.5	3.8
110°-120°	288.3	6.8
120°-130°	341.4	8.1
130°-140°	351.8	8.4
140°-150°	322.2	7.7
150°-160°	258.3	6.1
160°-170°	166.7	4.0
170°-180°	57.5	1.4
0°-30°	540.9	12.9
0°-40°	880.3	20.9
0°-60°	1568.7	37.3
0°-90°	2166.6	51.5
90°-120°	544.3	12.9
90°-150°	1559.8	37.1
90°-180°	2042.0	48.5
0°-180°	4208.9	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	703	703	703	703	703	
5°	704	702	698	704	703	67
15°	670	672	672	679	679	189
25°	605	613	615	625	625	279
35°	521	533	543	554	558	326
45°	426	444	463	478	484	328
55°	325	350	378	398	404	291
65°	224	255	288	310	319	222
75°	122	158	196	220	231	130
85°	38	76	116	141	150	39
90°	10	53	97	124	134	8
95°	36	49	90	116	124	40
105°	140	162	156	101	106	148
115°	255	268	298	320	329	252
125°	356	361	384	400	407	318
135°	442	445	454	469	472	340
145°	509	512	513	519	523	319
155°	560	559	560	562	559	258
165°	591	590	589	592	590	167
175°	605	603	603	606	602	58
180°	605	605	605	605	605	



TEST NUMBER: P332122

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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	703.2	703.2	703.2	703.2	703.2	703.2	703.2	703.2	703.2	703.2	703.2
2.5°	706.3	705.9	705.5	705.0	704.6	703.9	702.8	701.7	700.6	699.5	700.6
5°	704.0	703.6	703.3	703.0	702.6	701.9	700.9	699.9	698.9	697.8	699.2
7.5°	697.1	697.1	697.2	697.3	697.4	696.9	695.9	694.9	693.9	692.9	694.6
10°	691.0	691.3	691.6	692.0	692.3	692.1	691.2	690.4	689.5	688.7	690.4
12.5°	683.6	684.1	684.6	685.0	685.5	685.5	684.9	684.3	683.7	683.1	684.7
15°	670.3	670.8	671.3	671.8	672.3	672.5	672.3	672.1	672.0	671.8	673.5
17.5°	653.4	654.4	655.5	656.5	657.5	658.0	657.9	657.8	657.8	657.7	659.2
20°	641.2	642.2	643.2	644.2	645.2	645.9	646.3	646.6	646.9	647.3	648.8
22.5°	628.3	629.3	630.3	631.4	632.4	633.1	633.6	634.1	634.6	635.0	637.0
25°	605.2	606.9	608.6	610.3	612.0	613.1	613.6	614.1	614.6	615.1	617.3
27.5°	581.9	583.8	585.8	587.7	589.6	591.1	592.2	593.3	594.4	595.5	597.4
30°	565.3	567.5	569.7	572.0	574.2	576.0	577.3	578.7	580.0	581.4	583.5
32.5°	546.9	549.4	551.9	554.4	556.9	559.0	560.8	562.5	564.3	566.1	568.3
35°	520.9	523.6	526.3	529.1	531.8	534.3	536.5	538.7	540.9	543.1	545.7
37.5°	493.3	496.4	499.4	502.5	505.6	508.5	511.2	513.9	516.6	519.4	522.3
40°	474.9	478.0	481.1	484.1	487.2	490.4	493.8	497.2	500.6	504.0	506.9
42.5°	454.7	458.5	462.2	465.9	469.7	473.3	476.9	480.4	484.0	487.5	490.7
45°	425.9	430.0	434.1	438.2	442.2	446.4	450.7	454.9	459.2	463.4	466.7
47.5°	395.7	400.4	405.0	409.6	414.2	419.0	423.9	428.7	433.6	438.5	442.1
50°	376.1	380.9	385.6	390.4	395.2	400.2	405.5	410.8	416.0	421.3	425.2
52.5°	355.3	360.3	365.4	370.4	375.4	380.9	386.7	392.5	398.3	404.2	408.2
55°	324.8	330.4	336.0	341.6	347.3	353.1	359.3	365.4	371.5	377.6	382.2
57.5°	295.1	300.9	306.8	312.6	318.5	324.8	331.5	338.2	344.9	351.6	356.2
60°	274.2	280.4	286.5	292.6	298.7	305.3	312.3	319.3	326.2	333.2	338.0
62.5°	254.6	260.9	267.2	273.4	279.7	286.5	293.9	301.3	308.7	316.1	320.8
65°	224.4	231.1	237.7	244.4	251.0	258.1	265.6	273.0	280.5	288.0	293.1
67.5°	193.8	200.9	207.9	214.9	222.0	229.3	237.0	244.6	252.2	259.8	265.4
70°	172.4	179.7	187.0	194.3	201.6	209.4	217.5	225.7	233.9	242.1	247.5
72.5°	152.7	160.1	167.4	174.7	182.0	189.9	198.3	206.8	215.2	223.7	229.3
75°	121.8	129.8	137.8	145.8	153.8	162.1	170.6	179.1	187.6	196.1	201.7
77.5°	94.8	102.9	111.0	119.0	127.1	135.4	144.0	152.6	161.2	169.8	175.7
80°	75.8	84.2	92.5	100.9	109.2	117.8	126.6	135.5	144.4	153.2	159.0
82.5°	59.3	67.8	76.2	84.7	93.2	101.9	110.9	119.9	128.9	137.9	143.7
85°	37.5	46.0	54.6	63.1	71.6	80.3	89.4	98.4	107.4	116.4	122.2
87.5°	20.5	29.1	37.8	46.5	55.2	64.0	72.9	81.9	90.8	99.7	105.6
90°	10.4	19.7	29.1	38.4	47.8	57.4	67.4	77.4	87.4	97.3	103.5
92.5°	17.7	24.9	32.2	39.4	46.7	55.1	64.6	74.1	83.6	93.2	99.4
95°	35.8	38.4	40.9	43.5	46.0	52.0	61.4	70.9	80.3	89.8	95.7
97.5°	62.6	66.7	70.9	75.1	79.2	81.7	82.5	83.2	84.0	84.8	90.7
100°	82.8	90.3	97.7	105.2	112.6	112.4	104.7	97.0	89.2	81.5	87.2
102.5°	105.9	112.3	118.6	125.0	131.3	129.8	120.5	111.2	101.8	92.5	94.9
105°	140.0	145.2	150.4	155.6	160.7	162.5	160.8	159.2	157.5	155.8	142.9
107.5°	175.2	179.6	183.9	188.3	192.6	199.0	207.3	215.7	224.1	232.4	224.0
110°	198.7	202.5	206.4	210.3	214.1	220.0	227.9	235.8	243.7	251.6	252.8



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	221.7	224.9	228.2	231.4	234.6	240.1	247.7	255.3	263.0	270.6	275.0
115°	255.0	257.6	260.3	262.9	265.5	270.4	277.4	284.4	291.5	298.5	303.6
117.5°	287.8	289.8	291.8	293.8	295.8	299.9	306.1	312.3	318.5	324.8	329.6
120°	307.7	309.4	311.2	312.9	314.7	318.5	324.4	330.3	336.3	342.2	346.9
122.5°	328.5	329.7	330.9	332.1	333.2	336.7	342.4	348.1	353.9	359.6	363.9
125°	356.3	357.1	357.9	358.7	359.5	362.6	367.9	373.3	378.6	383.9	387.7
127.5°	384.0	384.6	385.3	385.9	386.5	389.1	393.7	398.2	402.8	407.4	411.1
130°	401.3	401.9	402.5	403.1	403.8	406.0	409.8	413.6	417.4	421.2	424.8
132.5°	417.2	417.9	418.7	419.5	420.2	422.1	425.2	428.2	431.3	434.3	437.8
135°	442.3	442.7	443.1	443.6	444.0	445.3	447.6	449.9	452.2	454.4	457.8
137.5°	463.7	464.3	464.9	465.6	466.2	467.1	468.4	469.7	470.9	472.2	475.4
140°	477.4	478.0	478.6	479.2	479.8	480.6	481.4	482.2	483.0	483.8	486.7
142.5°	490.7	491.2	491.7	492.1	492.6	493.0	493.4	493.8	494.2	494.6	497.2
145°	509.3	509.9	510.4	510.9	511.5	511.8	512.0	512.2	512.4	512.6	514.2
147.5°	526.1	526.6	527.0	527.5	527.9	528.3	528.5	528.7	528.9	529.1	529.7
150°	536.9	537.2	537.5	537.8	538.1	538.3	538.5	538.7	538.9	539.1	539.3
152.5°	546.6	546.7	546.9	547.0	547.2	547.3	547.4	547.5	547.6	547.8	548.1
155°	560.2	560.0	559.8	559.7	559.5	559.4	559.5	559.6	559.7	559.8	560.3
157.5°	570.9	570.8	570.8	570.8	570.8	570.7	570.6	570.5	570.4	570.3	570.9
160°	577.3	577.2	577.1	577.0	576.9	576.8	576.7	576.6	576.5	576.4	577.0
162.5°	583.4	583.2	582.9	582.7	582.4	582.2	582.1	582.0	581.9	581.8	582.5
165°	590.8	590.5	590.2	589.9	589.6	589.4	589.3	589.2	589.1	589.0	589.8
167.5°	596.6	596.2	595.8	595.4	595.0	594.8	594.8	594.8	594.8	594.8	595.6
170°	599.8	599.4	599.0	598.6	598.2	598.0	598.0	598.0	598.0	598.0	598.8
172.5°	601.9	601.5	601.0	600.5	600.0	599.8	599.9	600.0	600.1	600.1	600.9
175°	604.7	604.2	603.7	603.2	602.7	602.5	602.6	602.7	602.8	602.9	603.6
177.5°	605.4	605.0	604.6	604.2	603.8	603.7	603.8	603.8	603.9	604.0	604.6
180°	604.7	604.7	604.7	604.7	604.7	604.7	604.7	604.7	604.7	604.7	604.7



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	703.2	703.2	703.2	703.2	703.2	703.2	703.2	703.2
2.5°	701.7	702.8	703.9	704.4	704.2	704.1	704.0	703.8
5°	700.6	701.9	703.3	703.9	703.7	703.5	703.4	703.2
7.5°	696.3	698.0	699.8	700.5	700.3	700.1	699.9	699.7
10°	692.1	693.8	695.5	696.1	695.8	695.5	695.1	694.8
12.5°	686.3	687.8	689.4	690.0	689.7	689.3	689.0	688.7
15°	675.2	676.9	678.6	679.4	679.2	679.0	678.9	678.7
17.5°	660.8	662.3	663.8	664.5	664.2	664.0	663.8	663.5
20°	650.4	651.9	653.4	654.3	654.4	654.6	654.8	654.9
22.5°	638.9	640.9	642.8	643.7	643.6	643.5	643.4	643.3
25°	619.5	621.8	624.0	625.1	625.1	625.1	625.1	625.1
27.5°	599.3	601.2	603.1	604.2	604.3	604.4	604.6	604.7
30°	585.5	587.5	589.6	590.6	590.6	590.6	590.6	590.6
32.5°	570.4	572.6	574.8	576.1	576.5	576.9	577.3	577.7
35°	548.2	550.8	553.3	554.9	555.6	556.3	557.0	557.7
37.5°	525.1	528.0	530.9	532.7	533.2	533.7	534.3	534.8
40°	509.8	512.7	515.6	517.4	518.1	518.8	519.4	520.1
42.5°	493.8	497.0	500.2	502.2	503.2	504.1	505.1	506.0
45°	469.9	473.1	476.4	478.7	480.0	481.4	482.8	484.1
47.5°	445.8	449.4	453.0	455.4	456.4	457.5	458.6	459.6
50°	429.1	433.1	437.0	439.5	440.7	441.9	443.1	444.3
52.5°	412.3	416.3	420.4	423.1	424.6	426.0	427.5	429.0
55°	386.8	391.4	396.0	399.0	400.4	401.7	403.1	404.5
57.5°	360.9	365.5	370.1	373.2	374.8	376.4	378.0	379.6
60°	342.8	347.5	352.3	355.6	357.5	359.3	361.2	363.1
62.5°	325.6	330.4	335.1	338.4	340.1	341.8	343.6	345.3
65°	298.2	303.3	308.5	311.9	313.6	315.3	317.0	318.7
67.5°	271.0	276.6	282.2	285.7	287.1	288.5	290.0	291.4
70°	253.0	258.4	263.9	267.4	269.1	270.8	272.5	274.2
72.5°	234.8	240.4	246.0	249.7	251.4	253.1	254.8	256.5
75°	207.3	213.0	218.6	222.4	224.4	226.5	228.5	230.6
77.5°	181.6	187.5	193.4	197.2	198.8	200.3	201.9	203.5
80°	164.8	170.6	176.4	180.1	181.8	183.5	185.2	186.9
82.5°	149.5	155.2	161.0	164.8	166.5	168.2	169.9	171.6
85°	128.0	133.8	139.6	143.3	145.0	146.7	148.4	150.1
87.5°	111.5	117.4	123.2	127.0	128.8	130.5	132.2	134.0
90°	109.7	115.9	122.1	126.1	128.0	129.9	131.8	133.7
92.5°	105.7	112.0	118.3	122.3	124.0	125.7	127.4	129.1
95°	101.7	107.7	113.7	117.5	119.2	120.9	122.6	124.3
97.5°	96.5	102.4	108.3	112.1	113.9	115.7	117.5	119.3
100°	92.9	98.7	104.4	108.2	110.0	111.8	113.6	115.4
102.5°	97.2	99.5	101.8	103.9	105.8	107.7	109.6	111.5
105°	130.0	117.1	104.2	98.6	100.4	102.1	103.8	105.6
107.5°	215.6	207.2	198.8	188.7	176.9	165.1	153.3	141.4
110°	253.9	255.0	256.2	250.3	237.4	224.5	211.5	198.6





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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	279.3	283.7	288.0	289.4	287.9	286.4	284.9	283.4
115°	308.7	313.7	318.8	322.2	324.0	325.8	327.5	329.3
117.5°	334.5	339.3	344.2	347.3	348.7	350.1	351.5	352.9
120°	351.6	356.3	361.0	364.0	365.2	366.4	367.6	368.7
122.5°	368.3	372.6	377.0	379.8	381.0	382.3	383.6	384.8
125°	391.5	395.3	399.0	401.6	403.0	404.4	405.8	407.2
127.5°	414.8	418.4	422.1	424.5	425.4	426.4	427.3	428.3
130°	428.5	432.1	435.7	438.0	438.8	439.6	440.4	441.3
132.5°	441.3	444.8	448.3	450.5	451.4	452.2	453.1	454.0
135°	461.2	464.5	467.9	469.8	470.4	470.9	471.5	472.0
137.5°	478.6	481.7	484.9	486.8	487.5	488.1	488.8	489.4
140°	489.7	492.6	495.6	497.4	498.1	498.7	499.4	500.0
142.5°	499.8	502.4	505.0	506.6	507.2	507.8	508.3	508.9
145°	515.7	517.3	518.9	520.0	520.7	521.4	522.0	522.7
147.5°	530.3	530.9	531.5	531.9	532.0	532.2	532.3	532.5
150°	539.5	539.7	539.9	540.1	540.1	540.1	540.2	540.2
152.5°	548.5	548.8	549.2	549.2	548.8	548.4	548.0	547.6
155°	560.8	561.3	561.8	561.7	561.1	560.5	559.9	559.4
157.5°	571.5	572.1	572.7	572.6	571.8	571.1	570.3	569.5
160°	577.6	578.2	578.8	578.8	578.1	577.4	576.7	576.0
162.5°	583.2	583.9	584.5	584.6	583.9	583.3	582.7	582.1
165°	590.6	591.4	592.2	592.2	591.5	590.9	590.2	589.5
167.5°	596.4	597.1	597.9	597.9	597.1	596.4	595.6	594.8
170°	599.6	600.4	601.2	601.2	600.4	599.6	598.8	598.0
172.5°	601.7	602.5	603.3	603.3	602.4	601.5	600.7	599.8
175°	604.3	605.0	605.7	605.7	604.9	604.1	603.3	602.5
177.5°	605.3	605.9	606.6	606.5	605.7	604.9	604.1	603.3
180°	604.7	604.7	604.7	604.7	604.7	604.7	604.7	604.7

(END OF REPORT)