

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: P242457

Luminaire Tested: **S123DR-S560D927-X4F0-XX-UDD-A-W**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P242457
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-20)
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S123DR-S560D927-X4F0-XX-UDD-A-W
Description: DEFINE 3 DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER
STANDARD LIGHT ENGINE
Light Source: (92) 2700K CCT, 90 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1771.7 lumens
Efficiency: N/A
Efficacy: 94.2 lumens/watt
Spacing Criteria (0/90/45): 1.37 / 1.23 / 1.5
Luminous Opening: Rectangular (W 3.88' x L: 0.23' x H: 0')
CIE Type: Direct

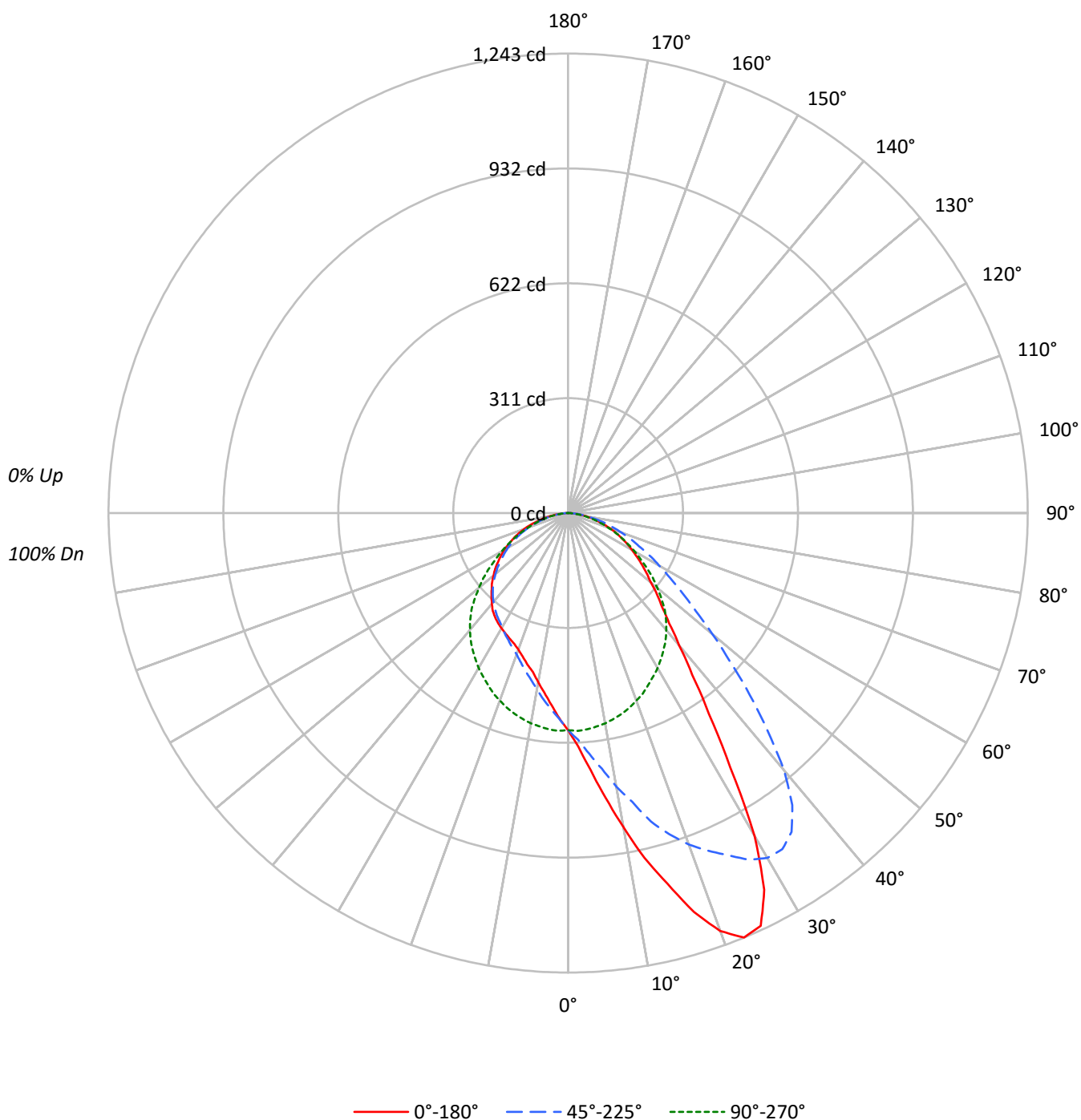
Input Watts (W): 18.8
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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					0
RW	70	50	30	10	70	50	30	10		50	30	10			50	30	10			0
RCR																				
0	119	119	119	119	116	116	116	116		111	111	111			106	106	106			100
1	110	105	101	98	107	103	99	96		99	96	93			95	92	90			85
2	100	93	86	81	98	91	85	80		87	82	78			84	80	76			72
3	92	82	74	68	89	80	73	67		77	71	66			75	69	65			62
4	84	73	65	58	82	72	64	58		69	62	57			67	61	56			53
5	78	66	57	51	76	64	56	50		62	55	50			60	54	49			47
6	72	59	51	44	70	58	50	44		56	49	44			55	48	43			41
7	67	54	45	39	65	53	45	39		52	44	39			50	44	39			36
8	62	49	41	35	61	49	41	35		47	40	35			46	39	35			33
9	58	45	37	32	57	45	37	32		43	36	32			42	36	31			29
10	55	42	34	29	53	41	34	29		40	33	29			39	33	29			27

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	7115	7115	7115
5°	8484	7146	6332
10°	10620	7109	5720
15°	13026	7052	5324
20°	15518	6963	5069
25°	16477	6854	5013
30°	14122	6774	5039
35°	9822	6662	5092
40°	7397	6530	5076
45°	6142	6332	5012
50°	5503	5931	4965
55°	5144	5499	4905
60°	4827	5047	4853
65°	4535	4600	4698
70°	4253	4093	4476
75°	3808	3583	4103
80°	3337	2939	3532
85°	2615	2142	2378

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	57.7	3.3
10°-20°	185.4	10.5
20°-30°	312.0	17.6
30°-40°	352.6	19.9
40°-50°	315.8	17.8
50°-60°	254.9	14.4
60°-70°	177.6	10.0
70°-80°	93.2	5.3
80°-90°	22.3	1.3
90°-100°	0.0	0.0
100°-110°	0.0	0.0
110°-120°	0.0	0.0
120°-130°	0.0	0.0
130°-140°	0.0	0.0
140°-150°	0.0	0.0
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	555.1	31.3
0°-40°	907.7	51.2
0°-60°	1478.5	83.5
0°-90°	1771.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1771.7	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	587	587	587	587	587	
5°	697	654	587	532	520	72
15°	1038	864	562	443	424	300
25°	1232	1021	512	381	375	545
35°	664	1053	450	336	344	428
45°	358	694	369	288	292	283
55°	243	377	260	222	232	218
65°	158	211	160	151	164	158
75°	81	100	76	76	88	87
85°	19	22	15	15	17	23
90°	0	0	0	0	0	

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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	587.0	587.0	587.0	587.0	587.0	587.0	587.0	587.0	587.0	587.0	587.0
2.5°	631.9	631.4	629.9	631.1	628.8	625.7	625.4	622.5	614.3	613.7	611.4
5°	697.3	695.1	694.8	694.5	690.5	685.1	674.9	674.0	660.4	653.5	645.3
7.5°	776.4	775.5	773.3	770.7	757.3	750.8	741.1	728.6	712.7	697.3	687.7
10°	862.8	872.2	860.6	852.6	845.2	831.3	815.1	794.9	774.7	751.1	733.2
12.5°	955.6	959.0	959.0	951.6	939.1	916.0	884.2	861.4	843.2	800.0	784.6
15°	1038.0	1055.4	1044.3	1018.7	1019.3	999.1	961.5	920.3	898.4	864.0	817.1
17.5°	1131.3	1134.4	1131.0	1107.1	1095.5	1066.2	1032.3	994.0	952.7	910.9	862.3
20°	1203.0	1201.3	1191.3	1180.2	1155.8	1134.2	1096.3	1052.3	995.4	954.4	900.1
22.5°	1242.8	1239.7	1236.3	1227.4	1208.1	1184.5	1151.5	1102.3	1048.8	988.5	923.7
25°	1232.0	1235.7	1236.3	1233.7	1226.6	1212.6	1185.9	1147.5	1093.5	1021.0	955.6
27.5°	1148.4	1157.8	1169.7	1177.7	1190.5	1199.0	1190.5	1166.3	1121.9	1057.1	976.6
30°	1009.0	997.6	1025.8	1061.4	1085.5	1128.2	1152.1	1153.5	1131.0	1077.3	999.4
32.5°	815.6	834.1	842.7	888.4	948.4	997.6	1051.1	1098.6	1109.7	1078.4	1012.7
35°	663.8	679.4	702.2	724.9	781.8	830.7	914.3	987.1	1045.1	1052.8	1011.0
37.5°	551.7	560.8	574.8	598.9	637.9	698.5	764.7	859.4	939.3	995.7	990.0
40°	467.5	469.8	486.0	503.4	533.5	581.3	639.6	720.9	821.6	908.9	945.3
42.5°	404.4	410.1	414.6	431.1	453.6	486.6	539.8	603.5	693.6	797.4	877.3
45°	358.3	364.0	368.3	379.4	396.4	420.6	458.4	519.9	590.1	693.9	789.8
47.5°	326.5	325.9	329.6	338.4	350.7	370.0	397.9	438.8	506.2	593.0	693.3
50°	291.8	296.3	297.5	304.0	313.1	326.5	348.7	382.2	435.1	509.1	599.5
52.5°	267.3	267.9	271.6	275.9	283.5	293.2	311.7	336.2	374.8	435.1	516.5
55°	243.4	243.4	246.6	250.3	254.8	264.2	277.0	296.3	327.9	376.8	445.6
57.5°	221.3	222.4	225.2	226.1	230.1	236.6	247.7	263.1	287.2	326.8	383.6
60°	199.1	201.6	201.3	203.6	207.0	211.9	221.0	232.9	254.0	284.1	330.2
62.5°	179.7	178.9	178.9	181.7	185.1	189.7	194.8	204.8	221.8	247.7	285.2
65°	158.1	157.6	159.5	161.3	162.4	165.8	170.4	179.5	191.4	211.3	241.7
67.5°	139.4	137.6	139.1	139.6	141.6	144.5	149.0	154.7	164.4	181.2	205.6
70°	120.0	118.6	118.3	118.9	120.6	122.6	125.7	131.1	139.9	152.7	169.5
72.5°	100.1	99.3	99.3	100.7	101.2	102.4	104.4	109.2	115.7	124.6	139.9
75°	81.3	81.3	81.3	81.6	82.5	83.6	85.3	87.9	93.3	100.1	110.6
77.5°	64.3	64.6	64.0	63.7	65.1	65.7	66.0	68.8	72.0	77.1	85.3
80°	47.8	46.4	46.9	47.8	48.3	48.6	49.5	50.1	52.6	55.2	60.6
82.5°	32.4	31.3	31.3	32.7	32.7	33.0	33.8	34.7	35.3	37.5	39.8
85°	18.8	18.8	19.1	19.1	19.3	19.1	19.9	20.2	20.2	21.6	23.3
87.5°	8.5	8.0	8.2	8.5	8.2	8.5	8.8	9.1	9.4	9.7	10.0
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	587.0	587.0	587.0	587.0	587.0	587.0	587.0	587.0	587.0	587.0	587.0
2.5°	609.7	607.5	605.2	601.2	597.8	593.0	591.5	589.8	584.7	580.2	576.7
5°	642.2	635.3	625.4	616.3	608.9	598.9	593.2	587.3	578.7	571.1	564.8
7.5°	673.2	661.2	647.3	632.2	617.7	603.8	592.7	582.7	571.6	560.8	552.6
10°	711.5	692.2	670.6	647.3	627.4	608.0	591.8	577.6	562.2	548.9	537.8
12.5°	755.3	724.3	692.5	662.9	638.5	609.7	589.3	570.2	552.3	535.5	522.7
15°	788.1	751.6	716.4	677.4	641.6	608.0	584.7	562.0	541.8	525.3	509.3
17.5°	820.5	780.7	735.7	688.8	646.7	608.0	576.2	551.7	527.0	507.1	491.7
20°	847.2	800.3	747.7	698.5	650.7	606.3	570.5	539.8	512.5	491.1	473.2
22.5°	870.2	813.4	758.5	705.0	650.4	601.8	560.0	528.1	498.0	477.2	457.9
25°	884.7	819.0	764.4	702.7	643.3	593.8	548.3	512.5	482.9	458.4	438.8
27.5°	898.4	818.2	756.5	689.9	634.8	585.6	536.6	498.3	467.3	440.8	420.6
30°	912.0	819.6	742.5	676.9	621.1	569.9	522.7	484.0	451.0	424.0	405.3
32.5°	920.6	818.8	729.8	658.7	599.5	555.7	507.6	467.3	433.1	406.7	388.8
35°	922.9	813.9	714.7	632.2	575.9	531.8	491.7	450.2	414.6	389.9	369.4
37.5°	918.0	805.1	698.2	608.3	547.5	503.7	468.7	433.1	399.0	371.4	353.5
40°	902.4	796.6	678.3	582.7	517.9	476.1	447.3	412.7	379.1	353.2	336.7
42.5°	872.5	779.2	656.4	554.3	487.2	445.4	419.5	391.9	360.6	336.7	320.2
45°	820.2	752.5	634.5	525.8	457.0	413.8	390.5	369.4	340.7	317.1	302.9
47.5°	753.4	716.4	602.9	496.0	425.5	383.6	359.2	341.8	319.4	300.3	286.4
50°	683.1	669.7	570.8	465.3	393.9	353.2	329.9	314.5	299.5	280.4	267.9
52.5°	602.1	615.7	533.2	433.4	361.7	321.9	300.3	288.9	275.6	260.8	250.3
55°	527.0	556.8	488.9	397.0	329.9	291.8	271.0	260.2	252.3	240.6	231.2
57.5°	454.2	492.3	442.8	360.3	298.6	265.3	244.9	232.6	227.5	221.0	213.3
60°	390.8	428.3	392.7	323.4	267.0	235.8	218.1	208.2	203.1	198.8	192.5
62.5°	334.2	372.3	343.8	285.8	236.0	207.6	192.8	183.1	179.5	177.7	172.6
65°	283.3	316.0	296.1	246.6	206.8	181.2	167.2	160.4	156.7	155.8	152.4
67.5°	239.2	264.5	249.1	211.9	179.5	156.1	143.9	137.9	134.8	134.5	131.7
70°	195.9	219.3	208.2	175.2	148.2	130.8	120.6	115.5	113.8	113.5	112.1
72.5°	162.4	176.9	168.6	142.5	123.1	107.8	101.0	95.6	93.6	94.1	93.3
75°	125.1	137.4	132.2	113.2	96.4	86.2	79.9	76.5	74.8	75.6	74.5
77.5°	95.6	104.1	99.0	84.5	73.7	66.0	61.1	58.9	57.2	57.2	56.6
80°	68.0	72.5	70.0	62.0	53.5	47.2	43.5	42.1	41.2	41.0	40.7
82.5°	43.5	47.2	44.1	39.2	34.1	31.0	29.3	27.3	26.7	27.0	26.7
85°	24.5	25.9	24.7	21.3	19.1	17.3	16.2	15.4	14.8	15.1	14.5
87.5°	10.5	10.8	10.0	8.8	8.2	7.4	7.4	6.8	6.3	6.3	6.0
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

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CANDELA DISTRIBUTION (continued):

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	587.0	587.0	587.0	587.0	587.0	587.0	587.0	587.0	587.0	587.0	587.0
2.5°	574.8	572.8	569.9	565.7	562.2	556.8	556.8	557.7	557.7	557.4	556.8
5°	559.7	555.4	550.3	544.3	538.1	531.8	530.7	528.4	526.7	525.6	524.1
7.5°	544.3	537.2	530.1	521.9	514.7	508.8	504.5	500.8	498.5	496.0	494.0
10°	528.7	519.3	510.5	501.7	492.0	484.3	479.5	476.1	473.5	471.2	470.1
12.5°	510.2	499.1	489.2	480.9	470.1	462.1	457.6	456.4	453.3	447.9	445.1
15°	492.3	482.3	470.7	457.9	452.8	443.1	437.7	435.1	433.4	429.7	428.6
17.5°	477.5	464.1	450.8	441.4	432.0	424.3	421.2	417.8	415.5	412.1	411.2
20°	459.0	447.3	435.4	425.2	415.2	406.7	404.1	401.8	399.6	398.1	397.0
22.5°	440.2	428.6	419.2	409.8	399.0	394.2	391.3	388.8	387.3	386.5	385.4
25°	422.9	412.7	401.6	393.0	384.5	380.8	379.1	377.7	376.5	375.1	374.8
27.5°	407.5	396.2	386.8	378.5	372.3	369.1	367.2	366.3	366.3	366.9	367.2
30°	389.9	379.7	372.3	365.4	359.8	356.9	356.6	356.6	357.8	358.0	358.6
32.5°	373.7	365.7	358.3	351.8	347.8	346.1	347.5	347.5	348.4	349.2	350.4
35°	358.0	350.7	345.0	339.3	335.6	336.4	337.0	337.6	339.0	340.7	341.8
37.5°	343.3	336.4	330.5	325.9	323.6	325.3	326.8	327.9	329.6	331.0	332.2
40°	327.1	322.2	316.5	312.5	313.1	314.0	315.1	316.5	318.0	318.8	319.9
42.5°	312.0	306.9	302.9	299.7	300.6	301.7	302.3	302.9	304.6	306.3	306.9
45°	296.6	292.6	288.7	286.7	287.2	287.8	288.4	289.2	290.6	291.8	292.1
47.5°	279.3	276.4	273.9	271.6	272.7	272.4	273.3	275.0	275.6	276.1	277.9
50°	262.8	260.2	257.1	256.5	256.5	256.5	256.8	259.1	259.1	260.2	261.4
52.5°	244.6	243.2	241.4	240.3	239.7	239.7	241.2	242.0	242.6	244.3	245.4
55°	226.7	225.0	223.2	222.4	221.8	222.4	224.7	225.2	226.7	227.5	228.4
57.5°	207.9	206.8	205.3	204.8	204.8	205.0	206.8	208.2	208.5	211.3	212.4
60°	189.4	187.4	186.3	186.3	185.7	188.3	187.7	190.5	191.1	192.8	194.8
62.5°	170.4	167.5	167.2	167.2	168.4	168.6	169.8	170.6	172.3	174.6	176.0
65°	149.6	148.2	150.2	149.9	149.3	151.0	151.0	152.4	154.1	156.1	159.3
67.5°	130.3	129.1	129.7	129.4	130.3	131.4	132.2	133.4	135.4	137.6	139.6
70°	110.6	111.5	110.1	111.2	112.1	112.3	112.9	114.6	116.9	118.3	120.6
72.5°	91.6	91.3	91.9	92.1	93.0	93.6	94.1	96.1	98.7	99.8	101.5
75°	73.4	73.1	73.9	73.9	75.4	75.9	76.5	77.4	79.6	81.3	82.8
77.5°	56.9	57.2	56.9	58.0	57.4	57.7	59.4	60.3	60.6	64.3	64.8
80°	40.4	41.0	41.2	41.5	41.8	41.2	43.2	44.1	44.1	46.1	47.5
82.5°	26.2	26.4	27.3	27.6	27.6	28.4	28.2	28.7	29.6	30.1	32.1
85°	14.5	15.4	15.6	15.4	15.6	15.1	15.9	16.2	16.5	16.5	16.5
87.5°	5.7	6.0	5.7	6.0	5.7	6.0	6.0	5.4	5.4	6.3	5.1
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

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CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	587.0	587.0	587.0	587.0
2.5°	554.8	554.6	556.6	555.1
5°	522.4	523.3	520.4	520.4
7.5°	493.1	492.0	492.3	490.3
10°	466.7	465.0	464.4	464.7
12.5°	444.8	444.8	440.2	440.2
15°	428.6	423.2	422.6	424.3
17.5°	410.7	407.5	407.8	407.2
20°	397.0	395.3	395.0	393.0
22.5°	384.5	384.2	384.5	382.2
25°	374.5	376.0	374.8	374.8
27.5°	367.7	367.7	366.9	366.9
30°	359.8	359.5	360.0	360.0
32.5°	351.8	352.4	352.4	352.6
35°	343.5	343.8	344.7	344.1
37.5°	332.7	334.2	333.9	334.4
40°	320.2	321.1	320.8	320.8
42.5°	307.4	308.0	307.1	306.6
45°	293.2	292.6	293.5	292.4
47.5°	277.6	277.9	278.1	279.3
50°	261.9	263.6	263.6	263.3
52.5°	246.6	247.1	248.6	248.6
55°	230.6	231.2	231.8	232.1
57.5°	214.4	214.1	215.3	215.6
60°	197.1	197.1	199.4	200.2
62.5°	178.6	179.7	182.0	180.3
65°	160.7	163.0	162.7	163.8
67.5°	141.9	143.3	145.6	145.6
70°	122.9	124.3	125.4	126.3
72.5°	104.4	104.9	108.1	106.4
75°	84.7	86.7	88.4	87.6
77.5°	66.0	68.5	69.1	68.3
80°	49.5	49.2	50.9	50.6
82.5°	33.0	32.7	33.3	33.6
85°	17.6	18.5	17.3	17.1
87.5°	5.1	5.1	4.8	4.6
90°	0.0	0.0	0.0	0.0

(END OF REPORT)