

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: FAIL-SAFE

Report Number: P

Luminaire Tested: **4APN-20L830-X-UNV-NP**

Issue Date: 06/06/2024



Test Information

Test Method: LM-79-08
Report Number: P
Test Lab: INNOVATION CENTER(G2)
Issue Date: 06/06/2024
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: FAIL-SAFE
Catalog Number: 4APN-20L830-X-UNV-NP
Description: ArcMed Patient Recessed 4 FT x6 IN Fixture Ambient Light w/ Nature Pattern Lens
Light Source: 3000K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

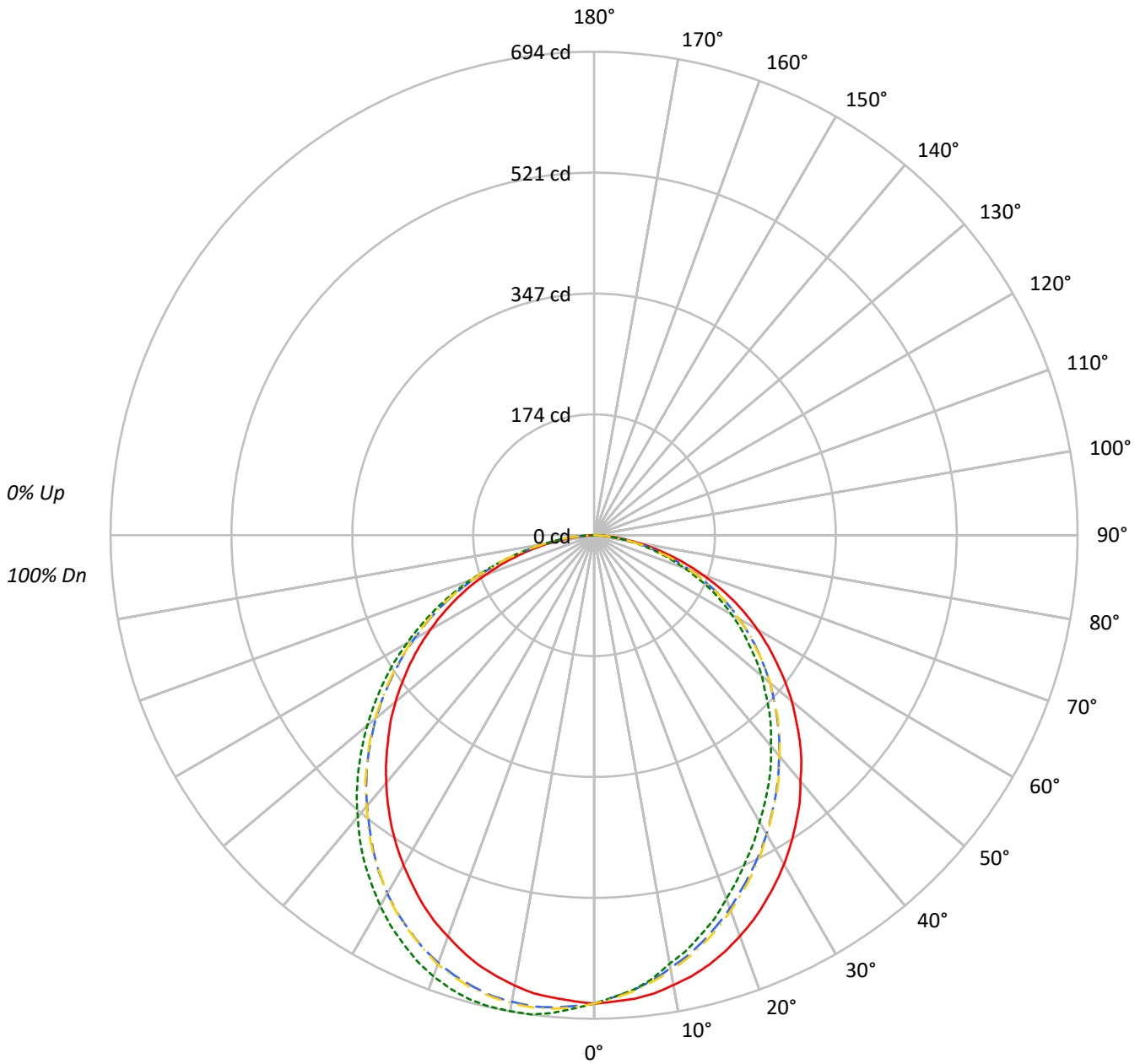
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1803.3 lumens
Efficiency: N/A
Efficacy: 75.8 lumens/watt
Spacing Criteria (0/90/45): 1.21 / 1.21 / 1.33
Luminous Opening: Rectangular (W 0.29' x L: 4' x H: 0')
CIE Type: Direct

Input Watts (W): 23.8
Input Voltage (V): 120
Input Current (A_{in}): 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



— 0°-180° - - 45°-225° - · - 90°-270° - - - 135°-315°



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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20				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	50	30	10	0
RCR																					
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100	100	100	100
1	109	104	100	96	106	102	98	95	98	94	92	94	91	89	90	88	86	84	84	84	84
2	99	91	84	78	96	89	83	77	85	80	76	82	78	74	79	76	72	70	70	70	70
3	90	80	72	65	88	78	71	65	75	69	64	73	67	62	70	65	61	59	59	59	59
4	83	71	62	55	81	70	61	55	67	60	54	65	59	54	63	57	53	51	51	51	51
5	76	63	54	48	74	62	54	48	60	53	47	58	52	47	56	51	46	44	44	44	44
6	70	57	48	42	68	56	48	42	54	47	41	53	46	41	51	45	41	38	38	38	38
7	65	52	43	37	64	51	43	37	49	42	37	48	41	36	47	41	36	34	34	34	34
8	61	47	39	33	59	47	39	33	45	38	33	44	37	33	43	37	32	30	30	30	30
9	57	43	35	30	55	43	35	30	42	35	30	41	34	29	40	34	29	27	27	27	27
10	53	40	32	27	52	40	32	27	39	32	27	38	31	27	37	31	27	25	25	25	25

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	6204	6204	6204	6204
5°	6185	6065	6171	6376
10°	6142	5851	6150	6499
15°	6096	5667	6103	6590
20°	6012	5451	6019	6617
25°	5916	5250	5939	6590
30°	5810	5065	5826	6540
35°	5689	4917	5715	6468
40°	5551	4755	5588	6357
45°	5449	4635	5458	6242
50°	5318	4508	5338	6103
55°	5151	4345	5188	5934
60°	4997	4211	5010	5726
65°	4798	4037	4798	5480
70°	4473	3733	4451	5109
75°	4067	3390	4014	4581
80°	3517	2912	3395	3921
85°	2731	2181	2572	3218



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	63.5	3.5
10°-20°	180.3	10.0
20°-30°	268.1	14.9
30°-40°	315.9	17.5
40°-50°	321.7	17.8
50°-60°	286.6	15.9
60°-70°	215.9	12.0
70°-80°	120.1	6.7
80°-90°	31.2	1.7
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°	511.9	28.4
0°-40°	827.9	45.9
0°-60°	1436.1	79.6
0°-90°	1803.3	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1803.3	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	672	672	672	672	672	
5°	668	655	666	688	668	63
15°	638	593	639	690	638	180
25°	581	516	583	647	581	268
35°	505	437	507	574	505	316
45°	418	355	418	478	418	322
55°	320	270	322	369	320	287
65°	220	185	220	251	220	217
75°	114	95	113	128	114	121
85°	26	21	24	30	26	31
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	10°	20°	30°	40°	50°	60°	70°	80°	90°	100°
0°	672.4	672.4	672.4	672.4	672.4	672.4	672.4	672.4	672.4	672.4	672.4
2.5°	670.1	670.1	670.8	667.8	664.0	662.5	661.7	661.0	662.5	663.3	662.5
5°	667.8	666.3	664.8	661.0	656.5	653.4	651.9	651.1	652.6	654.9	652.6
7.5°	663.3	660.2	657.2	651.9	646.5	642.0	639.7	638.2	639.7	642.0	640.4
10°	655.6	651.9	647.3	641.3	633.6	628.3	626.0	623.7	624.5	624.5	624.5
12.5°	648.1	642.7	637.4	629.8	621.4	615.3	611.6	608.5	610.0	610.8	610.8
15°	638.2	631.3	623.7	615.3	607.0	600.1	595.6	592.6	593.3	593.3	594.0
17.5°	626.0	618.4	610.8	600.9	591.0	583.4	578.1	574.3	575.8	576.5	577.4
20°	612.3	603.9	595.6	584.9	574.3	565.9	560.6	556.1	555.2	555.2	556.1
22.5°	597.8	588.7	578.8	567.4	556.1	546.9	541.6	537.0	536.2	536.2	537.0
25°	581.1	571.3	561.3	550.0	537.8	528.7	521.8	517.2	516.5	515.7	517.2
27.5°	563.6	553.8	543.9	532.5	519.5	510.4	503.5	499.0	497.4	496.7	498.2
30°	545.4	533.9	523.3	511.2	499.7	490.6	483.8	478.4	477.0	475.4	477.0
32.5°	525.6	514.2	502.8	490.6	479.2	470.0	463.2	457.9	456.4	455.7	457.1
35°	505.1	493.6	483.0	470.9	459.4	450.3	443.5	438.9	437.4	436.6	437.4
37.5°	484.5	473.1	462.5	450.3	438.9	429.7	422.9	418.3	417.6	416.8	417.6
40°	460.9	451.0	440.4	429.0	417.6	408.4	403.1	397.8	396.3	394.8	397.0
42.5°	440.4	430.5	419.9	409.2	397.8	388.7	382.6	378.0	376.5	375.7	376.5
45°	417.6	407.0	396.3	386.4	375.7	367.4	361.3	356.7	356.0	355.2	356.0
47.5°	393.2	384.1	375.0	365.1	354.4	346.1	340.8	336.2	334.7	333.1	334.7
50°	370.5	361.3	352.2	343.1	333.1	325.6	320.2	315.7	314.9	314.1	314.9
52.5°	346.1	337.0	328.6	319.5	311.1	303.5	298.2	294.4	293.6	292.8	293.6
55°	320.2	312.7	305.0	297.4	289.0	282.2	277.6	273.1	271.5	270.1	271.5
57.5°	295.9	289.0	281.4	273.8	266.2	260.1	255.6	251.8	251.0	250.2	251.0
60°	270.8	264.7	257.9	251.0	243.4	237.3	233.5	230.5	228.9	228.2	228.9
62.5°	245.7	239.6	234.3	227.5	220.5	216.0	212.2	209.2	207.6	206.9	207.6
65°	219.8	214.5	209.2	203.1	197.8	193.2	189.4	186.3	185.6	184.9	184.9
67.5°	193.2	188.6	184.0	178.8	172.7	168.1	164.3	162.0	161.3	160.5	161.3
70°	165.8	162.0	157.5	152.9	148.3	144.5	142.3	140.0	139.2	138.4	138.4
72.5°	140.0	136.9	133.1	129.3	125.5	121.7	119.4	117.9	117.1	116.4	116.4
75°	114.1	111.0	108.8	105.8	101.9	99.7	97.4	95.8	95.1	95.1	95.1
77.5°	89.7	87.5	85.2	82.2	79.8	77.5	76.1	75.3	74.5	74.5	74.5
80°	66.2	64.6	63.2	61.6	59.3	57.1	56.2	55.5	54.8	54.8	54.8
82.5°	44.9	44.1	42.6	41.0	39.6	38.8	38.0	37.2	37.2	37.2	37.2
85°	25.8	25.1	24.3	23.6	22.8	22.8	22.0	21.3	20.6	20.6	20.6
87.5°	10.6	10.6	10.6	9.9	9.1	9.1	9.1	9.1	9.1	9.1	9.1
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):

	110°	120°	130°	140°	150°	160°	170°	180°	190°	200°	210°
0°	672.4	672.4	672.4	672.4	672.4	672.4	672.4	672.4	672.4	672.4	672.4
2.5°	661.0	662.5	664.0	666.3	668.6	670.8	670.1	669.4	672.4	676.2	676.9
5°	651.1	652.6	654.9	658.7	662.5	665.6	666.3	666.3	672.4	677.8	679.2
7.5°	638.9	641.3	644.3	648.1	653.4	657.9	660.2	663.3	669.4	676.2	679.2
10°	623.7	627.5	632.1	637.4	642.7	648.1	652.6	656.5	664.0	671.7	676.2
12.5°	610.0	613.9	618.4	624.5	631.3	638.2	642.7	648.1	657.2	666.3	671.7
15°	594.8	598.7	603.9	610.0	617.6	625.2	632.1	638.9	648.1	657.9	664.0
17.5°	578.1	581.9	587.2	594.8	603.2	611.6	619.1	626.8	637.4	648.1	654.9
20°	557.5	562.9	569.7	577.4	587.2	597.1	604.7	613.0	624.5	635.9	643.5
22.5°	537.8	543.1	550.7	559.8	570.4	581.1	590.3	599.4	611.6	623.0	631.3
25°	518.7	524.8	532.5	541.6	551.4	562.1	572.7	583.4	595.6	607.8	616.1
27.5°	499.7	505.1	512.6	521.8	533.2	543.9	554.5	565.2	578.1	591.0	600.1
30°	478.4	484.5	491.3	500.5	512.6	524.8	535.5	546.9	559.8	572.7	581.9
32.5°	458.7	464.0	470.9	480.0	492.2	504.3	515.7	527.8	540.0	553.0	562.1
35°	438.9	444.2	451.0	460.2	472.3	484.5	495.9	507.4	519.5	531.7	540.8
37.5°	419.1	424.4	431.3	440.4	451.8	464.0	474.6	486.1	498.2	510.4	518.7
40°	398.6	403.9	409.2	418.3	429.7	441.9	452.6	464.0	476.1	488.3	496.7
42.5°	378.0	383.4	390.2	399.3	410.0	420.6	431.3	441.9	453.3	464.8	473.1
45°	357.5	362.1	368.9	377.3	387.9	397.8	408.4	418.3	429.7	440.4	448.7
47.5°	336.2	340.8	346.1	354.4	365.1	375.7	386.4	396.3	406.1	416.8	424.4
50°	315.7	320.2	326.3	333.9	343.8	353.7	362.8	371.9	381.8	391.8	398.6
52.5°	294.4	298.9	304.3	311.8	320.2	329.3	337.7	346.9	356.0	365.1	371.9
55°	273.1	276.1	280.7	287.5	296.6	305.7	314.1	322.5	330.9	338.5	345.3
57.5°	251.8	255.6	260.9	267.0	274.6	282.2	289.8	297.4	305.0	312.7	318.7
60°	230.5	233.5	237.3	242.7	250.2	257.1	264.7	271.5	278.4	285.3	290.5
62.5°	208.4	211.4	215.3	220.5	226.6	232.7	239.6	245.7	251.8	257.9	263.1
65°	185.6	188.6	192.4	197.0	202.3	207.6	213.7	219.8	224.4	228.9	234.3
67.5°	162.0	165.0	168.8	172.7	177.2	182.6	187.9	193.2	197.8	202.3	206.2
70°	139.2	141.4	145.3	148.3	152.1	155.9	160.5	165.0	168.1	171.9	176.5
72.5°	117.1	119.4	122.4	125.5	127.8	130.8	135.3	139.2	143.0	147.5	149.8
75°	95.8	97.4	99.7	101.9	104.2	106.5	109.5	112.6	115.6	117.9	121.0
77.5°	74.5	76.1	78.4	79.8	81.4	82.9	85.2	87.5	89.7	91.3	94.3
80°	54.8	56.2	57.8	59.3	60.9	62.3	63.2	63.9	66.9	69.2	70.7
82.5°	37.2	38.0	38.8	40.3	41.0	41.9	42.6	42.6	44.1	45.6	47.9
85°	21.3	22.0	22.8	22.8	22.8	22.8	23.6	24.3	25.1	26.6	28.1
87.5°	8.4	8.4	9.1	9.1	9.1	9.1	9.1	9.1	9.9	11.4	12.2
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):

	220°	230°	240°	250°	260°	270°	280°	290°	300°	310°	320°
0°	672.4	672.4	672.4	672.4	672.4	672.4	672.4	672.4	672.4	672.4	672.4
2.5°	676.2	676.9	678.5	679.2	680.0	680.0	680.8	681.5	680.0	678.5	677.8
5°	680.0	680.8	683.0	685.3	686.9	688.4	687.6	686.9	685.3	683.0	681.5
7.5°	680.8	683.0	685.3	688.4	690.7	693.7	692.1	690.7	687.6	684.6	682.3
10°	678.5	681.5	685.3	689.1	691.4	693.7	692.1	690.7	687.6	683.8	680.8
12.5°	675.5	679.2	683.8	687.6	689.9	693.0	690.7	688.4	684.6	680.8	676.9
15°	668.6	673.2	678.5	683.0	686.9	689.9	687.6	686.1	681.5	676.2	670.8
17.5°	660.2	666.3	671.7	676.9	680.0	683.0	681.5	680.0	674.7	668.6	662.5
20°	650.4	656.5	661.7	667.1	670.8	673.9	671.7	669.4	664.0	658.7	652.6
22.5°	638.2	644.3	650.4	655.6	659.5	662.5	659.5	655.6	650.4	645.0	638.9
25°	623.0	629.8	636.6	642.0	644.3	647.3	644.3	641.3	635.9	630.6	623.7
27.5°	607.8	614.6	621.4	626.8	629.1	632.1	629.1	626.0	620.7	615.3	608.5
30°	590.3	597.1	603.9	609.3	611.6	613.9	610.8	607.8	603.2	597.8	591.0
32.5°	570.4	577.4	582.6	588.0	591.0	594.0	591.0	588.7	583.4	576.5	569.7
35°	549.1	556.1	562.9	568.2	571.3	574.3	570.4	566.7	562.1	556.8	550.7
37.5°	525.6	533.2	540.8	546.9	549.1	552.2	549.1	545.4	540.8	535.5	528.7
40°	503.5	510.4	517.2	523.3	525.6	527.8	524.8	521.8	516.5	511.2	504.3
42.5°	480.7	487.6	493.6	499.0	501.3	504.3	501.3	497.4	493.6	489.1	483.0
45°	456.4	463.2	468.6	473.9	476.1	478.4	475.4	471.6	467.8	464.0	457.9
47.5°	431.3	437.4	442.7	448.0	449.6	451.8	448.7	446.5	442.7	438.9	433.5
50°	405.4	411.5	416.8	421.4	422.9	425.2	422.2	419.1	416.1	413.1	408.4
52.5°	378.8	384.1	389.5	394.0	395.5	397.0	394.0	390.9	387.9	384.8	380.3
55°	351.4	356.7	362.1	365.8	367.4	368.9	365.8	363.5	360.5	358.3	353.7
57.5°	324.0	329.3	333.9	337.7	339.2	340.8	337.7	334.7	332.4	330.1	326.3
60°	295.9	301.2	305.0	308.0	309.6	310.3	307.3	305.0	303.5	302.0	298.2
62.5°	268.5	272.3	276.1	278.4	279.9	280.7	278.4	276.9	275.3	273.8	270.8
65°	239.6	244.1	247.2	249.5	250.2	251.0	248.8	247.2	245.7	244.1	241.8
67.5°	210.7	214.5	216.8	219.1	219.8	219.8	219.8	219.1	217.5	215.3	213.0
70°	181.8	184.9	187.1	188.6	189.4	189.4	187.9	186.3	186.3	185.6	184.0
72.5°	152.1	154.4	155.9	157.5	157.5	157.5	157.5	158.2	157.5	155.9	153.6
75°	124.0	126.2	127.8	128.5	128.5	128.5	128.5	129.3	128.5	127.8	126.2
77.5°	97.4	98.8	99.7	100.4	100.4	100.4	101.1	101.9	101.1	100.4	99.7
80°	72.3	73.0	73.8	74.5	73.8	73.8	74.5	76.1	75.3	74.5	73.8
82.5°	49.4	50.2	51.0	51.0	51.7	52.5	52.5	52.5	52.5	51.7	51.0
85°	29.7	30.4	30.4	30.4	30.4	30.4	31.2	31.9	31.9	31.2	31.2
87.5°	13.6	14.5	13.6	12.9	12.2	12.2	13.6	15.2	15.2	14.5	14.5
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P
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CANDELA DISTRIBUTION (continued):

	330°	340°	350°	360°
0°	672.4	672.4	672.4	672.4
2.5°	678.5	677.8	673.9	670.1
5°	680.8	678.5	673.2	667.8
7.5°	680.8	677.8	670.1	663.3
10°	676.9	672.4	664.0	655.6
12.5°	672.4	667.1	657.2	648.1
15°	665.6	659.5	648.8	638.2
17.5°	655.6	648.1	637.4	626.0
20°	645.8	637.4	624.5	612.3
22.5°	632.1	624.5	610.8	597.8
25°	616.9	608.5	594.8	581.1
27.5°	600.9	591.0	577.4	563.6
30°	582.6	572.7	559.1	545.4
32.5°	562.9	553.8	540.0	525.6
35°	543.1	533.2	519.5	505.1
37.5°	521.0	511.9	498.2	484.5
40°	497.4	488.3	474.6	460.9
42.5°	475.4	467.0	453.3	440.4
45°	451.0	442.7	429.7	417.6
47.5°	426.0	417.6	405.4	393.2
50°	401.6	393.2	381.8	370.5
52.5°	374.2	367.4	356.7	346.1
55°	347.6	340.8	330.1	320.2
57.5°	320.9	314.9	305.0	295.9
60°	292.8	286.7	279.2	270.8
62.5°	266.2	260.9	253.3	245.7
65°	238.1	233.5	226.6	219.8
67.5°	209.2	205.3	199.2	193.2
70°	180.3	175.7	171.1	165.8
72.5°	151.4	149.1	144.5	140.0
75°	124.0	121.7	117.9	114.1
77.5°	98.1	95.8	92.8	89.7
80°	72.3	70.7	68.4	66.2
82.5°	50.2	48.7	47.1	44.9
85°	30.4	28.9	27.4	25.8
87.5°	13.6	12.9	11.4	10.6
90°	0.0	0.0	0.0	0.0

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