

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-20L840-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-20L840-X-UNV-NP
Description: ArcMed Patient Recessed 4 FT x6 IN Fixture Ambient Light w/ Nature Pattern Lens
Light Source: 4000K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

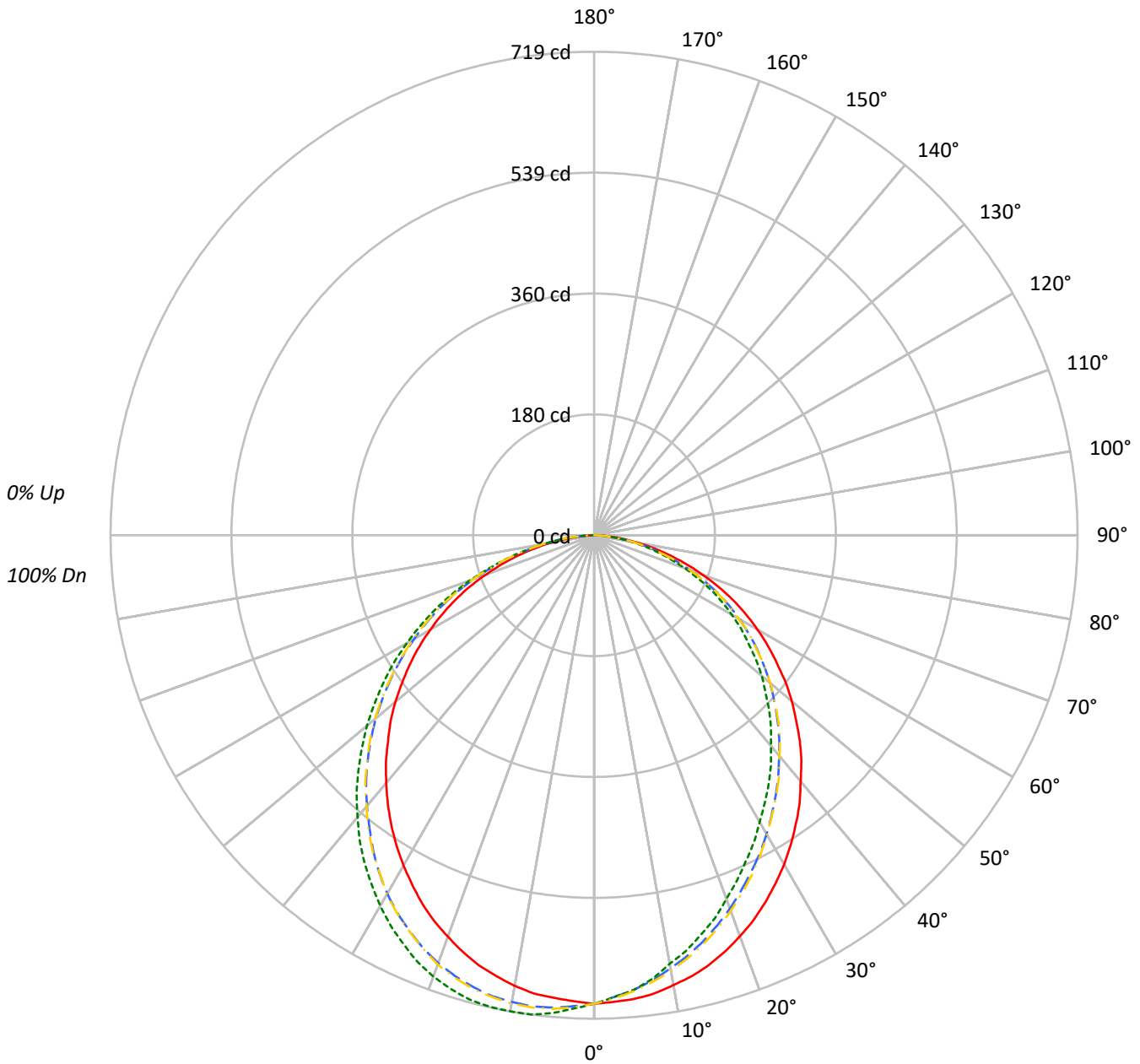
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1868.8 lumens
Efficiency: N/A
Efficacy: 78.5 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	102	102	102	100
1	109	104	100	96	106	102	98	95	98	94	92	94	91	89	90	88	86	86	86	86	84
2	99	91	84	78	96	89	83	77	85	80	76	82	78	74	79	76	72	72	72	72	70
3	90	80	72	65	88	78	71	65	75	69	64	73	67	62	70	65	61	61	61	61	59
4	83	71	62	55	81	70	61	55	67	60	54	65	59	54	63	57	53	53	53	53	51
5	76	63	54	48	74	62	54	48	60	53	47	58	52	47	56	51	46	46	46	46	44
6	70	57	48	42	68	56	48	42	54	47	41	53	46	41	51	45	41	41	41	41	38
7	65	52	43	37	64	51	43	37	49	42	37	48	41	36	47	41	36	36	36	36	34
8	61	47	39	33	59	47	39	33	45	38	33	44	37	33	43	37	32	32	32	32	30
9	57	43	35	30	55	43	35	30	42	35	30	41	34	29	40	34	29	29	29	29	27
10	53	40	32	27	52	40	32	27	39	32	27	38	31	27	37	31	27	27	27	27	25

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	6429	6429	6429	6429
5°	6410	6286	6395	6607
10°	6365	6063	6373	6735
15°	6317	5872	6324	6828
20°	6230	5649	6239	6857
25°	6131	5440	6155	6829
30°	6021	5248	6038	6777
35°	5895	5095	5921	6704
40°	5753	4927	5791	6588
45°	5646	4803	5656	6469
50°	5509	4673	5533	6324
55°	5337	4501	5376	6149
60°	5178	4364	5193	5934
65°	4973	4181	4973	5678
70°	4637	3871	4613	5295
75°	4214	3515	4156	4748
80°	3645	3018	3517	4059
85°	2837	2255	2678	3335



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	65.8	3.5
10°-20°	186.9	10.0
20°-30°	277.8	14.9
30°-40°	327.4	17.5
40°-50°	333.4	17.8
50°-60°	297.0	15.9
60°-70°	223.8	12.0
70°-80°	124.4	6.7
80°-90°	32.3	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°	530.5	28.4
0°-40°	857.9	45.9
0°-60°	1488.3	79.6
0°-90°	1868.8	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1868.8	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	697	697	697	697	697	
5°	692	679	690	713	692	66
15°	661	615	662	715	661	186
25°	602	534	605	671	602	277
35°	523	452	526	595	523	327
45°	433	368	434	496	433	333
55°	332	280	334	382	332	297
65°	228	192	228	260	228	225
75°	118	99	117	133	118	126
85°	27	21	25	32	27	32
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°	696.8	696.8	696.8	696.8	696.8	696.8	696.8	696.8	696.8	696.8	696.8
2.5°	694.5	694.5	695.2	692.1	688.1	686.5	685.8	685.0	686.5	687.4	686.5
5°	692.1	690.5	688.9	685.0	680.3	677.1	675.5	674.7	676.3	678.7	676.3
7.5°	687.4	684.2	681.0	675.5	670.0	665.2	662.9	661.4	662.9	665.2	663.7
10°	679.4	675.5	670.8	664.5	656.6	651.1	648.7	646.3	647.2	647.2	647.2
12.5°	671.6	666.1	660.5	652.7	644.0	637.7	633.8	630.6	632.1	633.0	633.0
15°	661.4	654.3	646.3	637.7	629.0	621.9	617.2	614.1	614.8	614.8	615.6
17.5°	648.7	640.8	633.0	622.7	612.5	604.6	599.0	595.2	596.7	597.5	598.3
20°	634.5	625.9	617.2	606.1	595.2	586.5	581.0	576.2	575.4	575.4	576.2
22.5°	619.6	610.1	599.9	588.1	576.2	566.8	561.2	556.5	555.7	555.7	556.5
25°	602.3	591.9	581.7	569.9	557.3	547.9	540.8	536.0	535.2	534.4	536.0
27.5°	584.1	573.9	563.6	551.7	538.4	528.9	521.9	517.1	515.5	514.8	516.3
30°	565.2	553.3	542.3	529.7	517.9	508.4	501.3	495.8	494.2	492.6	494.2
32.5°	544.6	532.8	521.0	508.4	496.6	487.1	480.0	474.6	472.9	472.2	473.7
35°	523.4	511.5	500.6	487.9	476.1	466.6	459.5	454.8	453.3	452.4	453.3
37.5°	502.1	490.3	479.3	466.6	454.8	445.3	438.2	433.5	432.7	432.0	432.7
40°	477.7	467.5	456.4	444.6	432.7	423.3	417.8	412.2	410.7	409.1	411.5
42.5°	456.4	446.2	435.1	424.0	412.2	402.8	396.5	391.8	390.2	389.4	390.2
45°	432.7	421.7	410.7	400.4	389.4	380.7	374.4	369.7	368.9	368.1	368.9
47.5°	407.5	398.0	388.6	378.4	367.3	358.7	353.1	348.4	346.9	345.3	346.9
50°	383.8	374.4	364.9	355.5	345.3	337.4	331.8	327.1	326.3	325.6	326.3
52.5°	358.7	349.2	340.5	331.1	322.4	314.5	309.0	305.1	304.3	303.4	304.3
55°	331.8	324.0	316.1	308.2	299.6	292.5	287.7	283.0	281.4	279.8	281.4
57.5°	306.7	299.6	291.6	283.8	275.9	269.6	264.9	260.9	260.1	259.4	260.1
60°	280.6	274.3	267.2	260.1	252.3	245.9	242.0	238.8	237.2	236.5	237.2
62.5°	254.6	248.3	242.8	235.7	228.6	223.9	219.9	216.8	215.2	214.4	215.2
65°	227.8	222.3	216.8	210.5	205.0	200.2	196.3	193.2	192.3	191.5	191.5
67.5°	200.2	195.5	190.8	185.2	179.0	174.2	170.3	167.9	167.1	166.3	167.1
70°	171.9	167.9	163.2	158.4	153.7	149.7	147.4	145.0	144.2	143.5	143.5
72.5°	145.0	141.9	137.9	134.0	130.1	126.1	123.7	122.2	121.4	120.6	120.6
75°	118.2	115.1	112.8	109.5	105.7	103.3	100.9	99.3	98.6	98.6	98.6
77.5°	93.0	90.6	88.3	85.1	82.8	80.4	78.8	78.0	77.3	77.3	77.3
80°	68.6	67.0	65.5	63.8	61.5	59.1	58.4	57.5	56.8	56.8	56.8
82.5°	46.5	45.7	44.2	42.6	41.0	40.2	39.4	38.6	38.6	38.6	38.6
85°	26.8	26.0	25.3	24.4	23.6	23.6	22.9	22.0	21.3	21.3	21.3
87.5°	11.1	11.1	11.1	10.2	9.5	9.5	9.5	9.5	9.5	9.5	9.5
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°	696.8	696.8	696.8	696.8	696.8	696.8	696.8	696.8	696.8	696.8	696.8
2.5°	685.0	686.5	688.1	690.5	692.9	695.2	694.5	693.6	696.8	700.7	701.5
5°	674.7	676.3	678.7	682.6	686.5	689.7	690.5	690.5	696.8	702.3	703.9
7.5°	662.1	664.5	667.6	671.6	677.1	681.8	684.2	687.4	693.6	700.7	703.9
10°	646.3	650.3	655.0	660.5	666.1	671.6	676.3	680.3	688.1	696.0	700.7
12.5°	632.1	636.1	640.8	647.2	654.3	661.4	666.1	671.6	681.0	690.5	696.0
15°	616.4	620.3	625.9	632.1	640.1	647.9	655.0	662.1	671.6	681.8	688.1
17.5°	599.0	603.0	608.5	616.4	625.0	633.8	641.6	649.5	660.5	671.6	678.7
20°	577.8	583.3	590.4	598.3	608.5	618.8	626.7	635.4	647.2	659.0	666.9
22.5°	557.3	562.8	570.7	580.1	591.2	602.3	611.7	621.2	633.8	645.6	654.3
25°	537.6	543.9	551.7	561.2	571.5	582.5	593.5	604.6	617.2	629.8	638.5
27.5°	517.9	523.4	531.3	540.8	552.6	563.6	574.6	585.7	599.0	612.5	621.9
30°	495.8	502.1	509.2	518.6	531.3	543.9	555.0	566.8	580.1	593.5	603.0
32.5°	475.3	480.8	487.9	497.4	510.0	522.6	534.4	547.0	559.7	573.0	582.5
35°	454.8	460.4	467.5	476.9	489.5	502.1	513.9	525.7	538.4	551.0	560.4
37.5°	434.4	439.8	446.9	456.4	468.2	480.8	491.9	503.7	516.3	528.9	537.6
40°	413.1	418.6	424.0	433.5	445.3	458.0	469.0	480.8	493.5	506.1	514.8
42.5°	391.8	397.3	404.4	413.8	424.9	435.9	446.9	458.0	469.8	481.7	490.3
45°	370.5	375.2	382.3	390.9	402.0	412.2	423.3	433.5	445.3	456.4	465.1
47.5°	348.4	353.1	358.7	367.3	378.4	389.4	400.4	410.7	420.9	432.0	439.8
50°	327.1	331.8	338.2	346.0	356.3	366.5	376.0	385.5	395.7	406.0	413.1
52.5°	305.1	309.8	315.3	323.2	331.8	341.3	350.0	359.4	368.9	378.4	385.5
55°	283.0	286.1	290.9	298.0	307.4	316.9	325.6	334.2	342.9	350.7	357.8
57.5°	260.9	264.9	270.3	276.7	284.5	292.5	300.3	308.2	316.1	324.0	330.3
60°	238.8	242.0	245.9	251.4	259.4	266.5	274.3	281.4	288.5	295.6	301.1
62.5°	215.9	219.2	223.0	228.6	234.9	241.2	248.3	254.6	260.9	267.2	272.7
65°	192.3	195.5	199.4	204.1	209.7	215.2	221.5	227.8	232.5	237.2	242.8
67.5°	167.9	171.0	175.0	179.0	183.7	189.2	194.7	200.2	205.0	209.7	213.6
70°	144.2	146.6	150.6	153.7	157.7	161.6	166.3	171.0	174.2	178.1	182.8
72.5°	121.4	123.7	126.9	130.1	132.4	135.5	140.3	144.2	148.2	153.0	155.3
75°	99.3	100.9	103.3	105.7	108.0	110.4	113.5	116.6	119.8	122.2	125.3
77.5°	77.3	78.8	81.2	82.8	84.4	85.9	88.3	90.6	93.0	94.6	97.7
80°	56.8	58.4	59.9	61.5	63.1	64.6	65.5	66.2	69.3	71.7	73.3
82.5°	38.6	39.4	40.2	41.8	42.6	43.3	44.2	44.2	45.7	47.3	49.7
85°	22.0	22.9	23.6	23.6	23.6	23.6	24.4	25.3	26.0	27.6	29.1
87.5°	8.7	8.7	9.5	9.5	9.5	9.5	9.5	9.5	10.2	11.8	12.6
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°	696.8	696.8	696.8	696.8	696.8	696.8	696.8	696.8	696.8	696.8	696.8
2.5°	700.7	701.5	703.1	703.9	704.7	704.7	705.4	706.3	704.7	703.1	702.3
5°	704.7	705.4	707.8	710.2	711.8	713.4	712.5	711.8	710.2	707.8	706.3
7.5°	705.4	707.8	710.2	713.4	715.7	718.9	717.3	715.7	712.5	709.4	707.1
10°	703.1	706.3	710.2	714.2	716.5	718.9	717.3	715.7	712.5	708.6	705.4
12.5°	700.0	703.9	708.6	712.5	714.9	718.1	715.7	713.4	709.4	705.4	701.5
15°	692.9	697.6	703.1	707.8	711.8	714.9	712.5	711.0	706.3	700.7	695.2
17.5°	684.2	690.5	696.0	701.5	704.7	707.8	706.3	704.7	699.2	692.9	686.5
20°	674.0	680.3	685.8	691.3	695.2	698.4	696.0	693.6	688.1	682.6	676.3
22.5°	661.4	667.6	674.0	679.4	683.4	686.5	683.4	679.4	674.0	668.5	662.1
25°	645.6	652.7	659.8	665.2	667.6	670.8	667.6	664.5	659.0	653.4	646.3
27.5°	629.8	636.9	644.0	649.5	651.9	655.0	651.9	648.7	643.2	637.7	630.6
30°	611.7	618.8	625.9	631.4	633.8	636.1	633.0	629.8	625.0	619.6	612.5
32.5°	591.2	598.3	603.8	609.3	612.5	615.6	612.5	610.1	604.6	597.5	590.4
35°	569.1	576.2	583.3	588.8	591.9	595.2	591.2	587.2	582.5	577.0	570.7
37.5°	544.6	552.6	560.4	566.8	569.1	572.3	569.1	565.2	560.4	555.0	547.9
40°	521.9	528.9	536.0	542.3	544.6	547.0	543.9	540.8	535.2	529.7	522.6
42.5°	498.2	505.3	511.5	517.1	519.5	522.6	519.5	515.5	511.5	506.8	500.6
45°	472.9	480.0	485.5	491.1	493.5	495.8	492.6	488.7	484.8	480.8	474.6
47.5°	446.9	453.3	458.8	464.2	465.9	468.2	465.1	462.7	458.8	454.8	449.3
50°	420.2	426.4	432.0	436.7	438.2	440.6	437.5	434.4	431.1	428.0	423.3
52.5°	392.5	398.0	403.6	408.3	409.9	411.5	408.3	405.1	402.0	398.9	394.2
55°	364.2	369.7	375.2	379.1	380.7	382.3	379.1	376.7	373.6	371.3	366.5
57.5°	335.8	341.3	346.0	350.0	351.6	353.1	350.0	346.9	344.5	342.1	338.2
60°	306.7	312.1	316.1	319.2	320.8	321.6	318.5	316.1	314.5	312.9	309.0
62.5°	278.3	282.2	286.1	288.5	290.1	290.9	288.5	286.9	285.4	283.8	280.6
65°	248.3	253.0	256.1	258.5	259.4	260.1	257.8	256.1	254.6	253.0	250.7
67.5°	218.3	222.3	224.7	227.0	227.8	227.8	227.8	227.0	225.4	223.0	220.7
70°	188.4	191.5	193.9	195.5	196.3	196.3	194.7	193.2	193.2	192.3	190.8
72.5°	157.7	160.0	161.6	163.2	163.2	163.2	163.2	163.9	163.2	161.6	159.2
75°	128.5	130.8	132.4	133.2	133.2	133.2	133.2	134.0	133.2	132.4	130.8
77.5°	100.9	102.4	103.3	104.0	104.0	104.0	104.8	105.7	104.8	104.0	103.3
80°	74.9	75.7	76.4	77.3	76.4	76.4	77.3	78.8	78.0	77.3	76.4
82.5°	51.3	52.0	52.8	52.8	53.6	54.4	54.4	54.4	54.4	53.6	52.8
85°	30.7	31.5	31.5	31.5	31.5	31.5	32.4	33.1	33.1	32.4	32.4
87.5°	14.2	14.9	14.2	13.4	12.6	12.6	14.2	15.8	15.8	14.9	14.9
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):

	330°	340°	350°	360°
0°	696.8	696.8	696.8	696.8
2.5°	703.1	702.3	698.4	694.5
5°	705.4	703.1	697.6	692.1
7.5°	705.4	702.3	694.5	687.4
10°	701.5	696.8	688.1	679.4
12.5°	696.8	691.3	681.0	671.6
15°	689.7	683.4	672.3	661.4
17.5°	679.4	671.6	660.5	648.7
20°	669.2	660.5	647.2	634.5
22.5°	655.0	647.2	633.0	619.6
25°	639.2	630.6	616.4	602.3
27.5°	622.7	612.5	598.3	584.1
30°	603.8	593.5	579.4	565.2
32.5°	583.3	573.9	559.7	544.6
35°	562.8	552.6	538.4	523.4
37.5°	539.9	530.5	516.3	502.1
40°	515.5	506.1	491.9	477.7
42.5°	492.6	484.0	469.8	456.4
45°	467.5	458.8	445.3	432.7
47.5°	441.5	432.7	420.2	407.5
50°	416.2	407.5	395.7	383.8
52.5°	387.8	380.7	369.7	358.7
55°	360.2	353.1	342.1	331.8
57.5°	332.7	326.3	316.1	306.7
60°	303.4	297.2	289.3	280.6
62.5°	275.9	270.3	262.5	254.6
65°	246.7	242.0	234.9	227.8
67.5°	216.8	212.8	206.5	200.2
70°	186.8	182.1	177.4	171.9
72.5°	156.8	154.5	149.7	145.0
75°	128.5	126.1	122.2	118.2
77.5°	101.7	99.3	96.2	93.0
80°	74.9	73.3	70.9	68.6
82.5°	52.0	50.4	48.9	46.5
85°	31.5	30.0	28.4	26.8
87.5°	14.2	13.4	11.8	11.1
90°	0.0	0.0	0.0	0.0

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