

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-24L830-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-24L830-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

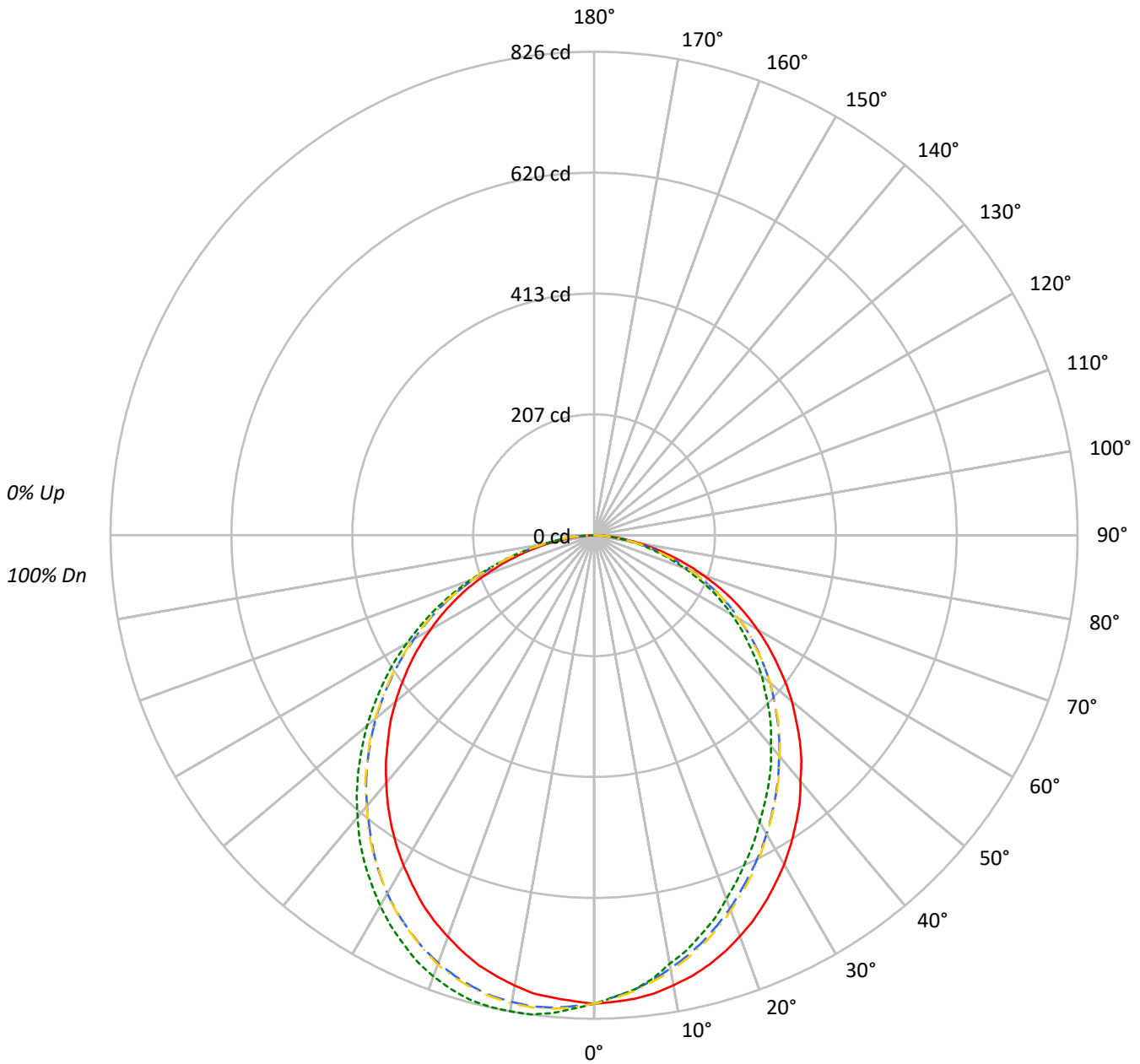
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2146.8 lumens
Efficiency: N/A
Efficacy: 76.9 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): 27.9
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



— 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°	7386	7386	7386	7386
5°	7363	7220	7346	7590
10°	7313	6965	7321	7737
15°	7256	6746	7265	7845
20°	7157	6490	7166	7876
25°	7043	6251	7070	7845
30°	6917	6029	6935	7785
35°	6771	5853	6803	7701
40°	6609	5659	6653	7568
45°	6486	5517	6499	7431
50°	6330	5368	6354	7266
55°	6132	5170	6175	7063
60°	5947	5012	5966	6816
65°	5713	4803	5713	6523
70°	5325	4446	5301	6080
75°	4841	4035	4777	5458
80°	4181	3464	4043	4670
85°	3260	2583	3070	3832



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	75.6	3.5
10°-20°	214.6	10.0
20°-30°	319.1	14.9
30°-40°	376.1	17.5
40°-50°	383.0	17.8
50°-60°	341.2	15.9
60°-70°	257.0	12.0
70°-80°	142.9	6.7
80°-90°	37.1	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°	609.4	28.4
0°-40°	985.5	45.9
0°-60°	1709.7	79.6
0°-90°	2146.8	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2146.8	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	800	800	800	800	800	
5°	795	780	793	820	795	75
15°	760	706	761	821	760	214
25°	692	614	694	771	692	319
35°	601	520	604	684	601	376
45°	497	423	498	570	497	383
55°	381	321	384	439	381	341
65°	262	220	262	299	262	258
75°	136	113	134	153	136	144
85°	31	24	29	36	31	37
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°	800.5	800.5	800.5	800.5	800.5	800.5	800.5	800.5	800.5	800.5	800.5
2.5°	797.7	797.7	798.6	795.0	790.5	788.7	787.8	786.8	788.7	789.6	788.7
5°	795.0	793.2	791.4	786.8	781.4	777.8	776.0	775.1	776.9	779.6	776.9
7.5°	789.6	786.0	782.3	776.0	769.7	764.2	761.5	759.7	761.5	764.2	762.4
10°	780.6	776.0	770.6	763.3	754.3	747.9	745.3	742.5	743.4	743.4	743.4
12.5°	771.4	765.2	758.8	749.8	739.8	732.5	728.0	724.4	726.2	727.1	727.1
15°	759.7	751.5	742.5	732.5	722.6	714.5	709.0	705.4	706.3	706.3	707.2
17.5°	745.3	736.1	727.1	715.4	703.6	694.5	688.2	683.7	685.4	686.3	687.3
20°	728.9	719.0	709.0	696.3	683.7	673.7	667.3	661.9	661.0	661.0	661.9
22.5°	711.7	700.8	689.1	675.5	661.9	651.0	644.8	639.3	638.4	638.4	639.3
25°	691.8	680.1	668.3	654.7	640.1	629.4	621.2	615.7	614.8	614.0	615.7
27.5°	670.9	659.2	647.4	633.9	618.5	607.6	599.4	594.0	592.2	591.3	593.1
30°	649.3	635.6	623.0	608.5	594.9	584.1	575.9	569.5	567.8	565.9	567.8
32.5°	625.7	612.1	598.6	584.1	570.4	559.6	551.4	545.1	543.3	542.4	544.2
35°	601.2	587.7	575.0	560.5	546.9	536.1	527.9	522.5	520.7	519.7	520.7
37.5°	576.8	563.2	550.5	536.1	522.5	511.6	503.4	498.1	497.1	496.2	497.1
40°	548.7	537.0	524.2	510.7	497.1	486.3	479.9	473.5	471.8	469.9	472.7
42.5°	524.2	512.5	499.8	487.2	473.5	462.8	455.5	450.0	448.2	447.4	448.2
45°	497.1	484.4	471.8	460.0	447.4	437.4	430.1	424.7	423.8	422.8	423.8
47.5°	468.1	457.3	446.4	434.6	422.0	412.0	405.7	400.2	398.4	396.6	398.4
50°	441.0	430.1	419.2	408.4	396.6	387.5	381.2	375.8	374.9	374.0	374.9
52.5°	412.0	401.2	391.2	380.3	370.4	361.3	355.0	350.5	349.5	348.6	349.5
55°	381.2	372.1	363.1	354.0	344.1	336.0	330.5	325.1	323.3	321.4	323.3
57.5°	352.2	344.1	335.1	326.0	316.9	309.7	304.3	299.7	298.8	297.9	298.8
60°	322.3	315.1	306.9	298.8	289.8	282.5	278.0	274.4	272.5	271.6	272.5
62.5°	292.5	285.3	278.9	270.7	262.6	257.1	252.6	249.0	247.2	246.3	247.2
65°	261.7	255.4	249.0	241.7	235.4	230.0	225.4	221.8	220.9	220.0	220.0
67.5°	230.0	224.6	219.2	212.8	205.5	200.1	195.6	192.9	192.0	191.0	192.0
70°	197.4	192.9	187.4	182.0	176.6	172.0	169.4	166.6	165.7	164.8	164.8
72.5°	166.6	163.0	158.5	154.0	149.4	144.8	142.2	140.3	139.4	138.6	138.6
75°	135.8	132.2	129.4	125.9	121.3	118.7	115.9	114.1	113.2	113.2	113.2
77.5°	106.9	104.1	101.4	97.8	95.1	92.4	90.5	89.6	88.7	88.7	88.7
80°	78.7	77.0	75.1	73.3	70.6	68.0	67.0	66.1	65.2	65.2	65.2
82.5°	53.4	52.6	50.7	48.9	47.1	46.2	45.3	44.3	44.3	44.3	44.3
85°	30.8	29.9	29.0	28.0	27.2	27.2	26.3	25.4	24.4	24.4	24.4
87.5°	12.6	12.6	12.6	11.8	10.9	10.9	10.9	10.9	10.9	10.9	10.9
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):

	110°	120°	130°	140°	150°	160°	170°	180°	190°	200°	210°
0°	800.5	800.5	800.5	800.5	800.5	800.5	800.5	800.5	800.5	800.5	800.5
2.5°	786.8	788.7	790.5	793.2	796.0	798.6	797.7	796.8	800.5	805.0	805.9
5°	775.1	776.9	779.6	784.2	788.7	792.3	793.2	793.2	800.5	806.7	808.6
7.5°	760.6	763.3	766.9	771.4	777.8	783.2	786.0	789.6	796.8	805.0	808.6
10°	742.5	747.0	752.4	758.8	765.2	771.4	776.9	781.4	790.5	799.6	805.0
12.5°	726.2	730.7	736.1	743.4	751.5	759.7	765.2	771.4	782.3	793.2	799.6
15°	708.1	712.6	719.0	726.2	735.3	744.3	752.4	760.6	771.4	783.2	790.5
17.5°	688.2	692.7	699.1	708.1	718.1	728.0	737.0	746.1	758.8	771.4	779.6
20°	663.7	670.0	678.2	687.3	699.1	710.8	719.9	729.9	743.4	757.0	766.1
22.5°	640.1	646.5	655.5	666.4	679.1	691.8	702.7	713.5	728.0	741.6	751.5
25°	617.6	624.7	633.9	644.8	656.5	669.2	681.8	694.5	709.0	723.5	733.5
27.5°	594.9	601.2	610.3	621.2	634.7	647.4	660.1	672.8	688.2	703.6	714.5
30°	569.5	576.8	584.9	595.8	610.3	624.7	637.5	651.0	666.4	681.8	692.7
32.5°	546.0	552.4	560.5	571.4	585.8	600.3	614.0	628.4	642.9	658.3	669.2
35°	522.5	528.8	537.0	547.9	562.3	576.8	590.4	604.0	618.5	633.0	643.8
37.5°	498.9	505.3	513.4	524.2	537.9	552.4	565.0	578.6	593.1	607.6	617.6
40°	474.5	480.8	487.2	498.1	511.6	526.1	538.7	552.4	566.8	581.3	591.3
42.5°	450.0	456.4	464.5	475.4	488.0	500.7	513.4	526.1	539.6	553.3	563.2
45°	425.6	431.0	439.1	449.1	461.8	473.5	486.3	498.1	511.6	524.2	534.2
47.5°	400.2	405.7	412.0	422.0	434.6	447.4	460.0	471.8	483.5	496.2	505.3
50°	375.8	381.2	388.4	397.5	409.3	421.1	432.0	442.7	454.5	466.3	474.5
52.5°	350.5	355.9	362.2	371.3	381.2	392.0	402.0	412.9	423.8	434.6	442.7
55°	325.1	328.7	334.1	342.2	353.1	364.0	374.0	383.9	393.9	402.9	411.1
57.5°	299.7	304.3	310.6	317.8	326.8	336.0	345.0	354.0	363.1	372.1	379.4
60°	274.4	278.0	282.5	288.9	297.9	306.0	315.1	323.3	331.4	339.6	345.9
62.5°	248.1	251.7	256.2	262.6	269.9	277.1	285.3	292.5	299.7	306.9	313.3
65°	220.9	224.6	229.1	234.6	240.8	247.2	254.5	261.7	267.1	272.5	278.9
67.5°	192.9	196.5	201.0	205.5	211.0	217.3	223.7	230.0	235.4	240.8	245.3
70°	165.7	168.4	173.0	176.6	181.1	185.6	191.0	196.5	200.1	204.7	210.0
72.5°	139.4	142.2	145.8	149.4	152.1	155.7	161.2	165.7	170.2	175.6	178.4
75°	114.1	115.9	118.7	121.3	124.0	126.8	130.4	134.0	137.7	140.3	144.0
77.5°	88.7	90.5	93.3	95.1	96.9	98.7	101.4	104.1	106.9	108.7	112.3
80°	65.2	67.0	68.8	70.6	72.5	74.2	75.1	76.1	79.7	82.4	84.2
82.5°	44.3	45.3	46.2	48.0	48.9	49.8	50.7	50.7	52.6	54.3	57.1
85°	25.4	26.3	27.2	27.2	27.2	27.2	28.0	29.0	29.9	31.7	33.5
87.5°	10.0	10.0	10.9	10.9	10.9	10.9	10.9	10.9	11.8	13.6	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



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CANDELA DISTRIBUTION (continued):

	220°	230°	240°	250°	260°	270°	280°	290°	300°	310°	320°
0°	800.5	800.5	800.5	800.5	800.5	800.5	800.5	800.5	800.5	800.5	800.5
2.5°	805.0	805.9	807.7	808.6	809.5	809.5	810.4	811.4	809.5	807.7	806.7
5°	809.5	810.4	813.1	815.9	817.6	819.5	818.6	817.6	815.9	813.1	811.4
7.5°	810.4	813.1	815.9	819.5	822.1	825.8	824.0	822.1	818.6	815.0	812.2
10°	807.7	811.4	815.9	820.4	823.1	825.8	824.0	822.1	818.6	814.0	810.4
12.5°	804.1	808.6	814.0	818.6	821.3	824.9	822.1	819.5	815.0	810.4	805.9
15°	796.0	801.4	807.7	813.1	817.6	821.3	818.6	816.7	811.4	805.0	798.6
17.5°	786.0	793.2	799.6	805.9	809.5	813.1	811.4	809.5	803.2	796.0	788.7
20°	774.2	781.4	787.8	794.1	798.6	802.2	799.6	796.8	790.5	784.2	776.9
22.5°	759.7	766.9	774.2	780.6	785.1	788.7	785.1	780.6	774.2	767.8	760.6
25°	741.6	749.8	757.9	764.2	766.9	770.6	766.9	763.3	757.0	750.7	742.5
27.5°	723.5	731.6	739.8	746.1	748.8	752.4	748.8	745.3	738.9	732.5	724.4
30°	702.7	710.8	719.0	725.3	728.0	730.7	727.1	723.5	718.1	711.7	703.6
32.5°	679.1	687.3	693.6	700.0	703.6	707.2	703.6	700.8	694.5	686.3	678.2
35°	653.8	661.9	670.0	676.4	680.1	683.7	679.1	674.6	669.2	662.8	655.5
37.5°	625.7	634.7	643.8	651.0	653.8	657.4	653.8	649.3	643.8	637.5	629.4
40°	599.4	607.6	615.7	623.0	625.7	628.4	624.7	621.2	614.8	608.5	600.3
42.5°	572.3	580.4	587.7	594.0	596.7	600.3	596.7	592.2	587.7	582.2	575.0
45°	543.3	551.4	557.8	564.1	566.8	569.5	565.9	561.4	556.9	552.4	545.1
47.5°	513.4	520.7	527.0	533.4	535.1	537.9	534.2	531.5	527.0	522.5	516.1
50°	482.7	489.9	496.2	501.7	503.4	506.2	502.6	498.9	495.3	491.7	486.3
52.5°	451.0	457.3	463.6	469.0	470.9	472.7	469.0	465.4	461.8	458.1	452.7
55°	418.3	424.7	431.0	435.6	437.4	439.1	435.6	432.8	429.2	426.5	421.1
57.5°	385.8	392.0	397.5	402.0	403.8	405.7	402.0	398.4	395.7	393.0	388.4
60°	352.2	358.6	363.1	366.7	368.5	369.4	365.8	363.1	361.3	359.5	355.0
62.5°	319.7	324.2	328.7	331.4	333.2	334.1	331.4	329.6	327.8	326.0	322.3
65°	285.3	290.7	294.3	297.0	297.9	298.8	296.1	294.3	292.5	290.7	287.9
67.5°	250.8	255.4	258.1	260.7	261.7	261.7	261.7	260.7	259.0	256.2	253.5
70°	216.4	220.0	222.8	224.6	225.4	225.4	223.7	221.8	221.8	220.9	219.2
72.5°	181.1	183.8	185.6	187.4	187.4	187.4	187.4	188.4	187.4	185.6	182.9
75°	147.6	150.3	152.1	153.1	153.1	153.1	153.1	154.0	153.1	152.1	150.3
77.5°	115.9	117.7	118.7	119.5	119.5	119.5	120.4	121.3	120.4	119.5	118.7
80°	86.0	86.9	87.9	88.7	87.9	87.9	88.7	90.5	89.6	88.7	87.9
82.5°	58.8	59.7	60.7	60.7	61.6	62.5	62.5	62.5	62.5	61.6	60.7
85°	35.3	36.2	36.2	36.2	36.2	36.2	37.2	38.0	38.0	37.2	37.2
87.5°	16.3	17.2	16.3	15.4	14.5	14.5	16.3	18.1	18.1	17.2	17.2
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):

	330°	340°	350°	360°
0°	800.5	800.5	800.5	800.5
2.5°	807.7	806.7	802.2	797.7
5°	810.4	807.7	801.4	795.0
7.5°	810.4	806.7	797.7	789.6
10°	805.9	800.5	790.5	780.6
12.5°	800.5	794.1	782.3	771.4
15°	792.3	785.1	772.4	759.7
17.5°	780.6	771.4	758.8	745.3
20°	768.8	758.8	743.4	728.9
22.5°	752.4	743.4	727.1	711.7
25°	734.4	724.4	708.1	691.8
27.5°	715.4	703.6	687.3	670.9
30°	693.6	681.8	665.5	649.3
32.5°	670.0	659.2	642.9	625.7
35°	646.5	634.7	618.5	601.2
37.5°	620.2	609.3	593.1	576.8
40°	592.2	581.3	565.0	548.7
42.5°	565.9	556.0	539.6	524.2
45°	537.0	527.0	511.6	497.1
47.5°	507.1	497.1	482.7	468.1
50°	478.1	468.1	454.5	441.0
52.5°	445.5	437.4	424.7	412.0
55°	413.8	405.7	393.0	381.2
57.5°	382.1	374.9	363.1	352.2
60°	348.6	341.3	332.3	322.3
62.5°	316.9	310.6	301.5	292.5
65°	283.4	278.0	269.9	261.7
67.5°	249.0	244.5	237.2	230.0
70°	214.6	209.2	203.8	197.4
72.5°	180.2	177.5	172.0	166.6
75°	147.6	144.8	140.3	135.8
77.5°	116.8	114.1	110.5	106.9
80°	86.0	84.2	81.5	78.7
82.5°	59.7	58.0	56.1	53.4
85°	36.2	34.4	32.6	30.8
87.5°	16.3	15.4	13.6	12.6
90°	0.0	0.0	0.0	0.0

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