

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-28L830-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-28L830-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

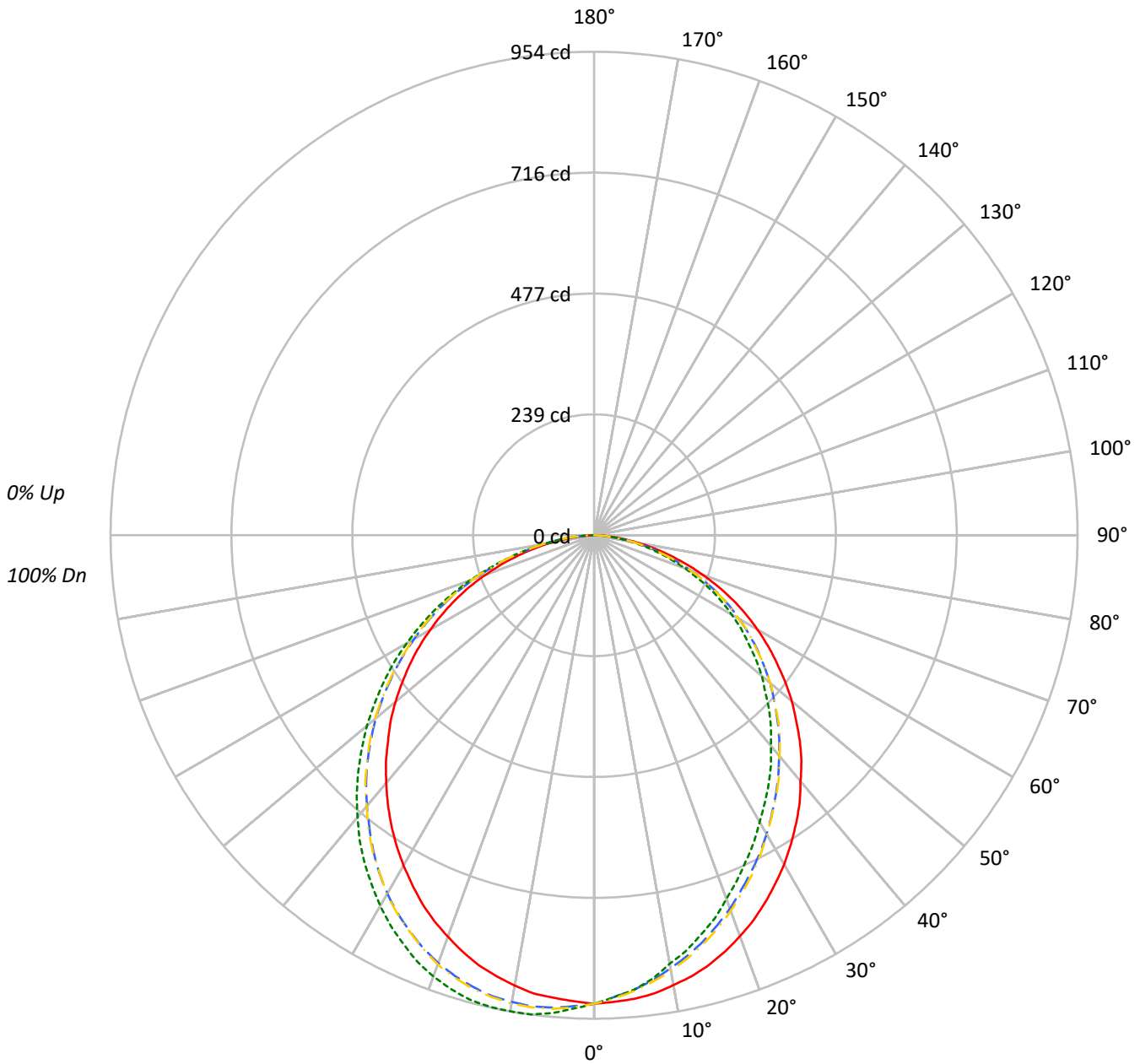
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2479.5 lumens
Efficiency: N/A
Efficacy: 77.0 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): 32.2
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



— 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°	8530	8530	8530	8530
5°	8504	8339	8485	8766
10°	8446	8045	8455	8936
15°	8382	7792	8391	9061
20°	8266	7495	8277	9098
25°	8134	7219	8165	9060
30°	7989	6963	8011	8992
35°	7822	6761	7857	8893
40°	7633	6537	7683	8742
45°	7491	6373	7505	8583
50°	7310	6201	7340	8391
55°	7082	5973	7132	8159
60°	6870	5790	6888	7874
65°	6597	5547	6597	7534
70°	6150	5133	6121	7024
75°	5589	4659	5518	6299
80°	4835	4001	4670	5388
85°	3769	2985	3546	4435



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	87.4	3.5
10°-20°	247.9	10.0
20°-30°	368.6	14.9
30°-40°	434.4	17.5
40°-50°	442.3	17.8
50°-60°	394.0	15.9
60°-70°	296.9	12.0
70°-80°	165.1	6.7
80°-90°	42.9	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°	703.9	28.4
0°-40°	1138.3	45.9
0°-60°	1974.6	79.6
0°-90°	2479.5	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2479.5	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	924	924	924	924	924	
5°	918	900	916	946	918	87
15°	878	816	878	949	878	247
25°	799	709	802	890	799	368
35°	694	600	698	790	694	434
45°	574	488	575	658	574	442
55°	440	371	443	507	440	394
65°	302	254	302	345	302	298
75°	157	131	155	177	157	167
85°	36	28	34	42	36	43
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°	924.5	924.5	924.5	924.5	924.5	924.5	924.5	924.5	924.5	924.5	924.5
2.5°	921.4	921.4	922.5	918.2	913.1	910.9	909.9	908.8	910.9	912.0	910.9
5°	918.2	916.2	914.1	908.8	902.5	898.4	896.3	895.3	897.3	900.4	897.3
7.5°	912.0	907.8	903.6	896.3	889.0	882.7	879.6	877.5	879.6	882.7	880.6
10°	901.5	896.3	890.0	881.6	871.2	863.8	860.7	857.6	858.7	858.7	858.7
12.5°	891.0	883.7	876.5	865.9	854.4	846.1	840.9	836.7	838.7	839.8	839.8
15°	877.5	868.1	857.6	846.1	834.6	825.2	818.9	814.7	815.8	815.8	816.8
17.5°	860.7	850.3	839.8	826.2	812.7	802.1	794.9	789.6	791.7	792.7	793.7
20°	841.9	830.4	818.9	804.3	789.6	778.1	770.8	764.5	763.4	763.4	764.5
22.5°	822.1	809.5	795.9	780.2	764.5	752.0	744.6	738.3	737.3	737.3	738.3
25°	799.0	785.5	771.8	756.1	739.4	726.8	717.4	711.1	710.1	709.1	711.1
27.5°	774.9	761.4	747.7	732.1	714.3	701.7	692.3	686.1	683.9	682.9	685.0
30°	749.9	734.2	719.5	702.8	687.1	674.5	665.1	657.8	655.7	653.6	655.7
32.5°	722.7	707.0	691.3	674.5	658.9	646.3	636.9	629.6	627.5	626.5	628.5
35°	694.5	678.8	664.1	647.3	631.7	619.1	609.7	603.4	601.3	600.3	601.3
37.5°	666.2	650.5	635.9	619.1	603.4	590.9	581.5	575.2	574.1	573.1	574.1
40°	633.8	620.1	605.6	589.9	574.1	561.6	554.3	546.9	544.9	542.8	545.9
42.5°	605.6	591.9	577.3	562.7	546.9	534.4	526.1	519.8	517.7	516.7	517.7
45°	574.1	559.6	544.9	531.3	516.7	505.2	496.8	490.5	489.5	488.4	489.5
47.5°	540.7	528.1	515.6	502.0	487.4	475.8	468.6	462.3	460.2	458.0	460.2
50°	509.3	496.8	484.2	471.7	458.0	447.6	440.3	434.0	433.0	432.0	433.0
52.5°	475.8	463.3	451.8	439.2	427.7	417.3	410.0	404.8	403.7	402.6	403.7
55°	440.3	429.8	419.4	408.9	397.4	388.0	381.7	375.4	373.3	371.3	373.3
57.5°	406.8	397.4	387.0	376.5	366.0	357.6	351.4	346.2	345.1	344.1	345.1
60°	372.3	363.9	354.5	345.1	334.7	326.3	321.0	316.9	314.8	313.8	314.8
62.5°	337.8	329.4	322.1	312.7	303.3	297.0	291.8	287.6	285.5	284.4	285.5
65°	302.2	294.9	287.6	279.3	271.9	265.6	260.4	256.2	255.2	254.1	254.1
67.5°	265.6	259.4	253.1	245.8	237.4	231.1	225.9	222.8	221.7	220.6	221.7
70°	228.0	222.8	216.5	210.2	203.9	198.7	195.6	192.4	191.4	190.3	190.3
72.5°	192.4	188.3	183.0	177.8	172.6	167.3	164.2	162.1	161.1	160.0	160.0
75°	156.8	152.7	149.5	145.4	140.1	137.0	133.9	131.8	130.7	130.7	130.7
77.5°	123.4	120.2	117.1	112.9	109.8	106.7	104.6	103.5	102.5	102.5	102.5
80°	91.0	88.9	86.8	84.7	81.6	78.5	77.4	76.3	75.3	75.3	75.3
82.5°	61.7	60.7	58.5	56.5	54.4	53.3	52.3	51.3	51.3	51.3	51.3
85°	35.6	34.5	33.5	32.5	31.3	31.3	30.3	29.3	28.2	28.2	28.2
87.5°	14.7	14.7	14.7	13.6	12.5	12.5	12.5	12.5	12.5	12.5	12.5
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°	924.5	924.5	924.5	924.5	924.5	924.5	924.5	924.5	924.5	924.5	924.5
2.5°	908.8	910.9	913.1	916.2	919.3	922.5	921.4	920.3	924.5	929.7	930.8
5°	895.3	897.3	900.4	905.7	910.9	915.1	916.2	916.2	924.5	931.9	933.9
7.5°	878.5	881.6	885.9	891.0	898.4	904.7	907.8	912.0	920.3	929.7	933.9
10°	857.6	862.8	869.1	876.5	883.7	891.0	897.3	902.5	913.1	923.5	929.7
12.5°	838.7	844.0	850.3	858.7	868.1	877.5	883.7	891.0	903.6	916.2	923.5
15°	817.8	823.1	830.4	838.7	849.3	859.7	869.1	878.5	891.0	904.7	913.1
17.5°	794.9	800.0	807.4	817.8	829.3	840.9	851.3	861.8	876.5	891.0	900.4
20°	766.6	773.9	783.3	793.7	807.4	820.9	831.5	843.0	858.7	874.3	884.8
22.5°	739.4	746.7	757.1	769.8	784.3	799.0	811.5	824.1	840.9	856.5	868.1
25°	713.3	721.6	732.1	744.6	758.3	772.9	787.5	802.1	818.9	835.6	847.1
27.5°	687.1	694.5	704.9	717.4	733.2	747.7	762.4	777.1	794.9	812.7	825.2
30°	657.8	666.2	675.6	688.2	704.9	721.6	736.3	752.0	769.8	787.5	800.0
32.5°	630.6	637.9	647.3	660.0	676.7	693.3	709.1	725.8	742.6	760.3	772.9
35°	603.4	610.7	620.1	632.8	649.5	666.2	681.9	697.6	714.3	731.1	743.6
37.5°	576.2	583.5	593.0	605.6	621.2	637.9	652.6	668.3	685.0	701.7	713.3
40°	548.0	555.3	562.7	575.2	590.9	607.6	622.3	637.9	654.7	671.4	682.9
42.5°	519.8	527.1	536.5	549.1	563.7	578.4	593.0	607.6	623.4	639.0	650.5
45°	491.5	497.8	507.2	518.7	533.4	546.9	561.6	575.2	590.9	605.6	617.0
47.5°	462.3	468.6	475.8	487.4	502.0	516.7	531.3	544.9	558.5	573.1	583.5
50°	434.0	440.3	448.6	459.2	472.7	486.4	498.9	511.4	525.0	538.6	548.0
52.5°	404.8	411.0	418.3	428.8	440.3	452.9	464.3	476.9	489.5	502.0	511.4
55°	375.4	379.7	385.9	395.4	407.9	420.4	432.0	443.4	454.9	465.4	474.8
57.5°	346.2	351.4	358.8	367.0	377.6	388.0	398.5	408.9	419.4	429.8	438.2
60°	316.9	321.0	326.3	333.6	344.1	353.5	363.9	373.3	382.8	392.2	399.5
62.5°	286.6	290.7	296.0	303.3	311.6	320.0	329.4	337.8	346.2	354.5	361.9
65°	255.2	259.4	264.6	270.9	278.2	285.5	293.8	302.2	308.5	314.8	322.1
67.5°	222.8	226.9	232.2	237.4	243.7	251.0	258.3	265.6	271.9	278.2	283.4
70°	191.4	194.5	199.8	203.9	209.2	214.4	220.6	226.9	231.1	236.4	242.7
72.5°	161.1	164.2	168.4	172.6	175.7	179.9	186.2	191.4	196.7	202.9	206.1
75°	131.8	133.9	137.0	140.1	143.3	146.4	150.6	154.8	159.0	162.1	166.3
77.5°	102.5	104.6	107.7	109.8	111.9	114.0	117.1	120.2	123.4	125.5	129.7
80°	75.3	77.4	79.5	81.6	83.6	85.7	86.8	87.9	92.0	95.2	97.3
82.5°	51.3	52.3	53.3	55.4	56.5	57.5	58.5	58.5	60.7	62.8	65.9
85°	29.3	30.3	31.3	31.3	31.3	31.3	32.5	33.5	34.5	36.6	38.7
87.5°	11.5	11.5	12.5	12.5	12.5	12.5	12.5	12.5	13.6	15.7	16.7
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°	924.5	924.5	924.5	924.5	924.5	924.5	924.5	924.5	924.5	924.5	924.5
2.5°	929.7	930.8	932.9	933.9	935.0	935.0	936.0	937.0	935.0	932.9	931.9
5°	935.0	936.0	939.1	942.3	944.4	946.5	945.4	944.4	942.3	939.1	937.0
7.5°	936.0	939.1	942.3	946.5	949.7	953.8	951.7	949.7	945.4	941.3	938.1
10°	932.9	937.0	942.3	947.5	950.7	953.8	951.7	949.7	945.4	940.2	936.0
12.5°	928.7	933.9	940.2	945.4	948.6	952.8	949.7	946.5	941.3	936.0	930.8
15°	919.3	925.6	932.9	939.1	944.4	948.6	945.4	943.3	937.0	929.7	922.5
17.5°	907.8	916.2	923.5	930.8	935.0	939.1	937.0	935.0	927.6	919.3	910.9
20°	894.2	902.5	909.9	917.2	922.5	926.6	923.5	920.3	913.1	905.7	897.3
22.5°	877.5	885.9	894.2	901.5	906.7	910.9	906.7	901.5	894.2	886.9	878.5
25°	856.5	865.9	875.3	882.7	885.9	890.0	885.9	881.6	874.3	867.0	857.6
27.5°	835.6	845.0	854.4	861.8	864.9	869.1	864.9	860.7	853.4	846.1	836.7
30°	811.5	820.9	830.4	837.7	840.9	844.0	839.8	835.6	829.3	822.1	812.7
32.5°	784.3	793.7	801.1	808.4	812.7	816.8	812.7	809.5	802.1	792.7	783.3
35°	755.1	764.5	773.9	781.2	785.5	789.6	784.3	779.2	772.9	765.5	757.1
37.5°	722.7	733.2	743.6	752.0	755.1	759.3	755.1	749.9	743.6	736.3	726.8
40°	692.3	701.7	711.1	719.5	722.7	725.8	721.6	717.4	710.1	702.8	693.3
42.5°	661.0	670.4	678.8	686.1	689.2	693.3	689.2	683.9	678.8	672.5	664.1
45°	627.5	636.9	644.2	651.6	654.7	657.8	653.6	648.4	643.2	637.9	629.6
47.5°	593.0	601.3	608.7	616.0	618.1	621.2	617.0	613.9	608.7	603.4	596.2
50°	557.4	565.8	573.1	579.4	581.5	584.6	580.4	576.2	572.1	567.9	561.6
52.5°	520.8	528.1	535.5	541.8	543.8	545.9	541.8	537.5	533.4	529.2	523.0
55°	483.2	490.5	497.8	503.0	505.2	507.2	503.0	499.9	495.8	492.6	486.4
57.5°	445.5	452.9	459.2	464.3	466.4	468.6	464.3	460.2	457.0	453.9	448.6
60°	406.8	414.2	419.4	423.6	425.7	426.7	422.6	419.4	417.3	415.2	410.0
62.5°	369.2	374.4	379.7	382.8	384.8	385.9	382.8	380.7	378.6	376.5	372.3
65°	329.4	335.7	339.9	343.1	344.1	345.1	342.0	339.9	337.8	335.7	332.6
67.5°	289.7	294.9	298.1	301.2	302.2	302.2	302.2	301.2	299.1	296.0	292.8
70°	250.0	254.1	257.2	259.4	260.4	260.4	258.3	256.2	256.2	255.2	253.1
72.5°	209.2	212.3	214.4	216.5	216.5	216.5	216.5	217.5	216.5	214.4	211.2
75°	170.5	173.6	175.7	176.7	176.7	176.7	176.7	177.8	176.7	175.7	173.6
77.5°	133.9	136.0	137.0	138.0	138.0	138.0	139.1	140.1	139.1	138.0	137.0
80°	99.4	100.4	101.4	102.5	101.4	101.4	102.5	104.6	103.5	102.5	101.4
82.5°	68.0	69.1	70.1	70.1	71.1	72.2	72.2	72.2	72.2	71.1	70.1
85°	40.8	41.9	41.9	41.9	41.9	41.9	42.9	43.9	43.9	42.9	42.9
87.5°	18.8	19.9	18.8	17.8	16.7	16.7	18.8	20.9	20.9	19.9	19.9
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°	924.5	924.5	924.5	924.5
2.5°	932.9	931.9	926.6	921.4
5°	936.0	932.9	925.6	918.2
7.5°	936.0	931.9	921.4	912.0
10°	930.8	924.5	913.1	901.5
12.5°	924.5	917.2	903.6	891.0
15°	915.1	906.7	892.1	877.5
17.5°	901.5	891.0	876.5	860.7
20°	887.9	876.5	858.7	841.9
22.5°	869.1	858.7	839.8	822.1
25°	848.1	836.7	817.8	799.0
27.5°	826.2	812.7	793.7	774.9
30°	801.1	787.5	768.7	749.9
32.5°	773.9	761.4	742.6	722.7
35°	746.7	733.2	714.3	694.5
37.5°	716.4	703.9	685.0	666.2
40°	683.9	671.4	652.6	633.8
42.5°	653.6	642.2	623.4	605.6
45°	620.1	608.7	590.9	574.1
47.5°	585.7	574.1	557.4	540.7
50°	552.2	540.7	525.0	509.3
52.5°	514.6	505.2	490.5	475.8
55°	478.0	468.6	453.9	440.3
57.5°	441.4	433.0	419.4	406.8
60°	402.6	394.2	383.8	372.3
62.5°	366.0	358.8	348.2	337.8
65°	327.3	321.0	311.6	302.2
67.5°	287.6	282.4	274.0	265.6
70°	247.8	241.6	235.3	228.0
72.5°	208.1	205.0	198.7	192.4
75°	170.5	167.3	162.1	156.8
77.5°	134.9	131.8	127.6	123.4
80°	99.4	97.3	94.1	91.0
82.5°	69.1	66.9	64.8	61.7
85°	41.9	39.7	37.6	35.6
87.5°	18.8	17.8	15.7	14.7
90°	0.0	0.0	0.0	0.0

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