

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-28L850-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-28L850-X-UNV-NP
Description: ArcMed Patient Recessed 4 FT x6 IN Fixture Ambient Light w/ Nature Pattern Lens
Light Source: 5000K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

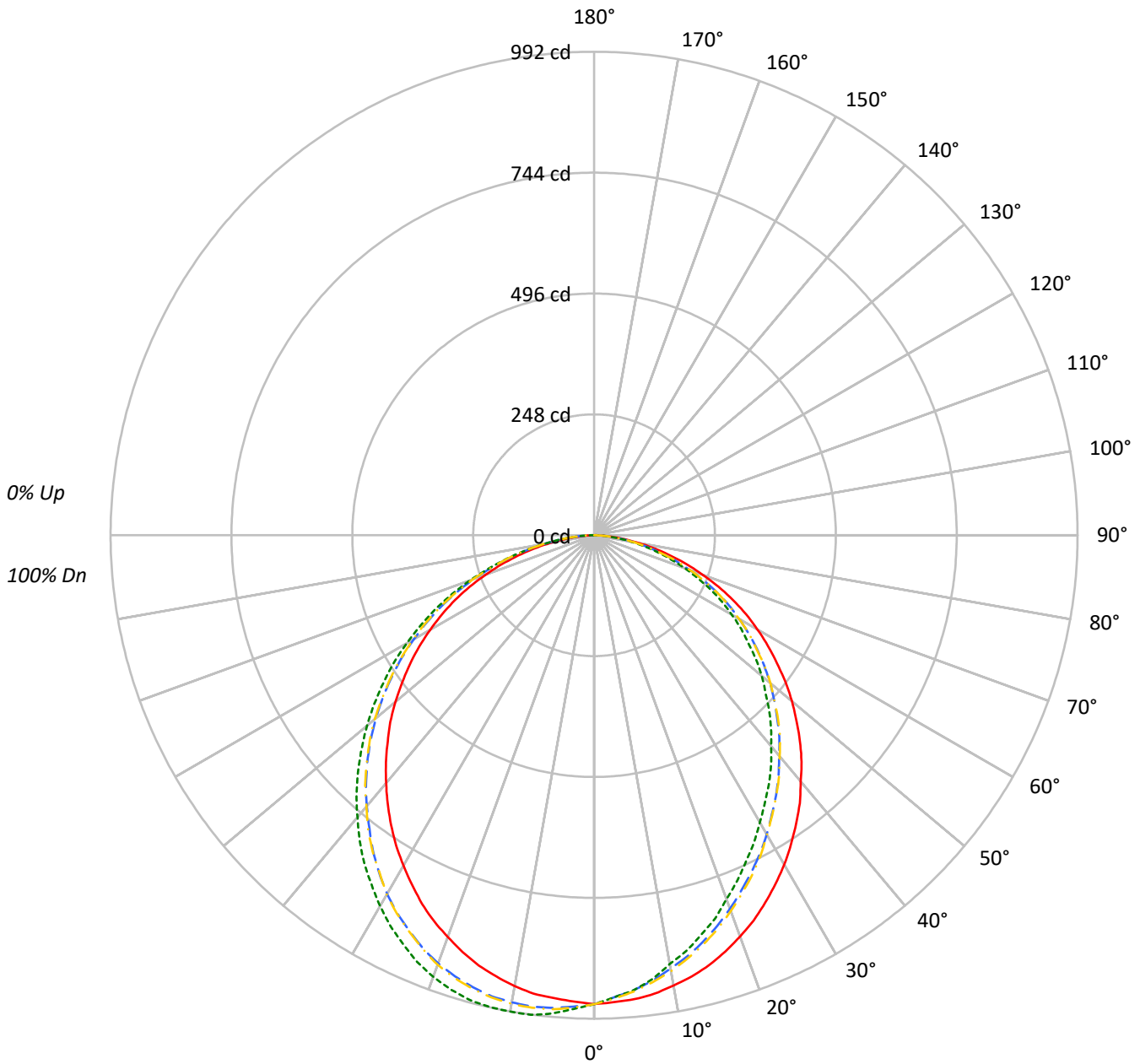
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2580.2 lumens
Efficiency: N/A
Efficacy: 80.1 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 (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
RCR																				
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	102	100	
1	109	104	100	96	106	102	98	95	98	94	92	94	91	89	90	88	86	86	84	
2	99	91	84	78	96	89	83	77	85	80	76	82	78	74	79	76	72	72	70	
3	90	80	72	65	88	78	71	65	75	69	64	73	67	62	70	65	61	61	59	
4	83	71	62	55	81	70	61	55	67	60	54	65	59	54	63	57	53	53	51	
5	76	63	54	48	74	62	54	48	60	53	47	58	52	47	56	51	46	46	44	
6	70	57	48	42	68	56	48	42	54	47	41	53	46	41	51	45	41	41	38	
7	65	52	43	37	64	51	43	37	49	42	37	48	41	36	47	41	36	36	34	
8	61	47	39	33	59	47	39	33	45	38	33	44	37	33	43	37	32	32	30	
9	57	43	35	30	55	43	35	30	42	35	30	41	34	29	40	34	29	29	27	
10	53	40	32	27	52	40	32	27	39	32	27	38	31	27	37	31	27	27	25	

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	8877	8877	8877	8877
5°	8850	8678	8829	9123
10°	8789	8371	8799	9298
15°	8722	8108	8732	9428
20°	8602	7801	8613	9467
25°	8465	7512	8498	9428
30°	8313	7247	8336	9357
35°	8140	7036	8176	9255
40°	7943	6802	7995	9097
45°	7796	6631	7810	8933
50°	7609	6452	7639	8731
55°	7369	6214	7423	8490
60°	7148	6025	7169	8193
65°	6866	5772	6866	7840
70°	6399	5341	6369	7310
75°	5821	4848	5743	6556
80°	5032	4166	4862	5611
85°	3917	3112	3694	4605



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	90.9	3.5
10°-20°	258.0	10.0
20°-30°	383.6	14.9
30°-40°	452.1	17.5
40°-50°	460.3	17.8
50°-60°	410.1	15.9
60°-70°	308.9	12.0
70°-80°	171.8	6.7
80°-90°	44.6	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°	732.4	28.4
0°-40°	1184.5	45.9
0°-60°	2054.9	79.6
0°-90°	2580.2	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2580.2	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	962	962	962	962	962	
5°	956	937	953	985	956	91
15°	913	849	914	987	913	257
25°	832	738	835	926	832	383
35°	723	625	726	822	723	452
45°	598	508	599	685	598	460
55°	458	386	462	528	458	410
65°	314	264	314	359	314	310
75°	163	136	161	184	163	173
85°	37	29	35	44	37	45
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°	962.1	962.1	962.1	962.1	962.1	962.1	962.1	962.1	962.1	962.1	962.1
2.5°	958.8	958.8	959.9	955.6	950.1	947.9	946.8	945.8	947.9	949.0	947.9
5°	955.6	953.3	951.2	945.8	939.2	934.9	932.7	931.6	933.8	937.0	933.8
7.5°	949.0	944.7	940.3	932.7	925.0	918.5	915.3	913.1	915.3	918.5	916.4
10°	938.1	932.7	926.1	917.5	906.6	898.9	895.7	892.4	893.5	893.5	893.5
12.5°	927.3	919.6	912.0	901.2	889.2	880.4	875.0	870.6	872.9	874.0	874.0
15°	913.1	903.3	892.4	880.4	868.5	858.7	852.1	847.8	848.9	848.9	850.0
17.5°	895.7	884.8	874.0	859.8	845.7	834.8	827.1	821.7	823.9	824.9	826.0
20°	876.1	864.1	852.1	836.9	821.7	809.7	802.0	795.6	794.5	794.5	795.6
22.5°	855.4	842.3	828.2	811.9	795.6	782.5	774.8	768.4	767.3	767.3	768.4
25°	831.5	817.4	803.2	786.8	769.4	756.4	746.5	740.1	739.0	737.9	740.1
27.5°	806.5	792.3	778.2	761.8	743.3	730.2	720.5	713.9	711.8	710.7	712.9
30°	780.3	764.0	748.8	731.3	715.0	702.0	692.1	684.6	682.4	680.2	682.4
32.5°	752.0	735.7	719.3	702.0	685.6	672.6	662.8	655.2	653.0	651.9	654.1
35°	722.7	706.3	691.0	673.7	657.4	644.3	634.5	628.0	625.8	624.7	625.8
37.5°	693.3	676.9	661.7	644.3	628.0	614.9	605.1	598.6	597.5	596.4	597.5
40°	659.5	645.4	630.1	613.8	597.5	584.5	576.8	569.2	567.0	564.8	568.1
42.5°	630.1	616.0	600.8	585.5	569.2	556.2	547.4	540.9	538.7	537.6	538.7
45°	597.5	582.2	567.0	552.8	537.6	525.6	517.0	510.4	509.3	508.2	509.3
47.5°	562.7	549.6	536.5	522.4	507.2	495.2	487.6	481.0	478.9	476.7	478.9
50°	530.1	517.0	503.9	490.9	476.7	465.8	458.1	451.7	450.6	449.5	450.6
52.5°	495.2	482.1	470.1	457.1	445.1	434.3	426.6	421.2	420.1	419.0	420.1
55°	458.1	447.3	436.4	425.5	413.5	403.7	397.2	390.7	388.5	386.3	388.5
57.5°	423.4	413.5	402.6	391.8	380.9	372.2	365.7	360.2	359.1	358.0	359.1
60°	387.4	378.8	369.0	359.1	348.2	339.6	334.1	329.8	327.6	326.5	327.6
62.5°	351.6	342.8	335.2	325.4	315.6	309.1	303.6	299.3	297.1	296.1	297.1
65°	314.5	306.9	299.3	290.6	283.0	276.4	271.0	266.6	265.5	264.4	264.4
67.5°	276.4	269.9	263.4	255.8	247.0	240.5	235.1	231.8	230.7	229.7	230.7
70°	237.2	231.8	225.2	218.8	212.2	206.8	203.5	200.3	199.2	198.0	198.0
72.5°	200.3	195.9	190.5	185.0	179.6	174.2	170.8	168.7	167.6	166.5	166.5
75°	163.3	158.9	155.6	151.3	145.9	142.5	139.3	137.1	136.0	136.0	136.0
77.5°	128.4	125.1	121.9	117.6	114.2	111.0	108.8	107.8	106.7	106.7	106.7
80°	94.7	92.5	90.4	88.1	84.9	81.6	80.5	79.5	78.4	78.4	78.4
82.5°	64.2	63.2	60.9	58.7	56.6	55.5	54.4	53.3	53.3	53.3	53.3
85°	37.0	36.0	34.9	33.7	32.6	32.6	31.5	30.5	29.4	29.4	29.4
87.5°	15.2	15.2	15.2	14.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1
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°	962.1	962.1	962.1	962.1	962.1	962.1	962.1	962.1	962.1	962.1	962.1
2.5°	945.8	947.9	950.1	953.3	956.7	959.9	958.8	957.7	962.1	967.5	968.6
5°	931.6	933.8	937.0	942.5	947.9	952.2	953.3	953.3	962.1	969.7	971.9
7.5°	914.2	917.5	921.8	927.3	934.9	941.4	944.7	949.0	957.7	967.5	971.9
10°	892.4	897.8	904.4	912.0	919.6	927.3	933.8	939.2	950.1	961.0	967.5
12.5°	872.9	878.3	884.8	893.5	903.3	913.1	919.6	927.3	940.3	953.3	961.0
15°	851.1	856.5	864.1	872.9	883.7	894.6	904.4	914.2	927.3	941.4	950.1
17.5°	827.1	832.6	840.2	851.1	863.0	875.0	885.9	896.7	912.0	927.3	937.0
20°	797.7	805.4	815.1	826.0	840.2	854.3	865.2	877.2	893.5	909.8	920.7
22.5°	769.4	777.1	787.9	801.0	816.2	831.5	844.6	857.6	875.0	891.3	903.3
25°	742.2	751.0	761.8	774.8	789.0	804.3	819.5	834.8	852.1	869.5	881.5
27.5°	715.0	722.7	733.5	746.5	763.0	778.2	793.4	808.6	827.1	845.7	858.7
30°	684.6	693.3	703.0	716.1	733.5	751.0	766.2	782.5	801.0	819.5	832.6
32.5°	656.3	663.8	673.7	686.7	704.1	721.6	737.9	755.3	772.7	791.2	804.3
35°	628.0	635.5	645.4	658.4	675.8	693.3	709.6	725.9	743.3	760.7	773.8
37.5°	599.7	607.3	617.1	630.1	646.5	663.8	679.1	695.5	712.9	730.2	742.2
40°	570.3	577.9	585.5	598.6	614.9	632.3	647.5	663.8	681.3	698.7	710.7
42.5°	540.9	548.5	558.3	571.4	586.6	601.9	617.1	632.3	648.6	664.9	676.9
45°	511.5	518.1	527.8	539.8	555.0	569.2	584.5	598.6	614.9	630.1	642.1
47.5°	481.0	487.6	495.2	507.2	522.4	537.6	552.8	567.0	581.1	596.4	607.3
50°	451.7	458.1	466.9	477.8	491.9	506.1	519.1	532.2	546.4	560.5	570.3
52.5°	421.2	427.7	435.4	446.2	458.1	471.2	483.2	496.3	509.3	522.4	532.2
55°	390.7	395.1	401.6	411.4	424.5	437.5	449.5	461.5	473.4	484.3	494.1
57.5°	360.2	365.7	373.3	382.0	392.9	403.7	414.6	425.5	436.4	447.3	456.0
60°	329.8	334.1	339.6	347.1	358.0	367.9	378.8	388.5	398.3	408.1	415.7
62.5°	298.2	302.5	308.0	315.6	324.4	333.0	342.8	351.6	360.2	369.0	376.5
65°	265.5	269.9	275.3	281.9	289.5	297.1	305.8	314.5	321.0	327.6	335.2
67.5°	231.8	236.1	241.6	247.0	253.5	261.2	268.9	276.4	283.0	289.5	294.9
70°	199.2	202.5	207.9	212.2	217.7	223.1	229.7	236.1	240.5	246.0	252.5
72.5°	167.6	170.8	175.2	179.6	182.8	187.2	193.7	199.2	204.6	211.1	214.4
75°	137.1	139.3	142.5	145.9	149.1	152.4	156.7	161.1	165.4	168.7	173.1
77.5°	106.7	108.8	112.1	114.2	116.4	118.7	121.9	125.1	128.4	130.6	135.0
80°	78.4	80.5	82.7	84.9	87.0	89.2	90.4	91.5	95.8	99.0	101.2
82.5°	53.3	54.4	55.5	57.7	58.7	59.8	60.9	60.9	63.2	65.3	68.6
85°	30.5	31.5	32.6	32.6	32.6	32.6	33.7	34.9	36.0	38.1	40.3
87.5°	12.0	12.0	13.1	13.1	13.1	13.1	13.1	13.1	14.1	16.3	17.4
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°	962.1	962.1	962.1	962.1	962.1	962.1	962.1	962.1	962.1	962.1	962.1
2.5°	967.5	968.6	970.8	971.9	973.0	973.0	974.0	975.1	973.0	970.8	969.7
5°	973.0	974.0	977.3	980.5	982.8	985.0	983.9	982.8	980.5	977.3	975.1
7.5°	974.0	977.3	980.5	985.0	988.2	992.5	990.4	988.2	983.9	979.5	976.2
10°	970.8	975.1	980.5	986.0	989.3	992.5	990.4	988.2	983.9	978.4	974.0
12.5°	966.4	971.9	978.4	983.9	987.1	991.4	988.2	985.0	979.5	974.0	968.6
15°	956.7	963.1	970.8	977.3	982.8	987.1	983.9	981.7	975.1	967.5	959.9
17.5°	944.7	953.3	961.0	968.6	973.0	977.3	975.1	973.0	965.3	956.7	947.9
20°	930.5	939.2	946.8	954.5	959.9	964.2	961.0	957.7	950.1	942.5	933.8
22.5°	913.1	921.8	930.5	938.1	943.6	947.9	943.6	938.1	930.5	922.9	914.2
25°	891.3	901.2	910.9	918.5	921.8	926.1	921.8	917.5	909.8	902.2	892.4
27.5°	869.5	879.4	889.2	896.7	900.1	904.4	900.1	895.7	888.1	880.4	870.6
30°	844.6	854.3	864.1	871.8	875.0	878.3	874.0	869.5	863.0	855.4	845.7
32.5°	816.2	826.0	833.7	841.2	845.7	850.0	845.7	842.3	834.8	824.9	815.1
35°	785.7	795.6	805.4	813.0	817.4	821.7	816.2	810.8	804.3	796.6	787.9
37.5°	752.0	763.0	773.8	782.5	785.7	790.2	785.7	780.3	773.8	766.2	756.4
40°	720.5	730.2	740.1	748.8	752.0	755.3	751.0	746.5	739.0	731.3	721.6
42.5°	687.8	697.6	706.3	713.9	717.2	721.6	717.2	711.8	706.3	699.8	691.0
45°	653.0	662.8	670.4	678.0	681.3	684.6	680.2	674.7	669.3	663.8	655.2
47.5°	617.1	625.8	633.4	641.0	643.2	646.5	642.1	638.9	633.4	628.0	620.3
50°	580.0	588.8	596.4	602.9	605.1	608.3	604.0	599.7	595.3	591.0	584.5
52.5°	542.0	549.6	557.3	563.7	565.9	568.1	563.7	559.4	555.0	550.7	544.2
55°	502.8	510.4	518.1	523.5	525.6	527.8	523.5	520.2	515.9	512.6	506.1
57.5°	463.6	471.2	477.8	483.2	485.4	487.6	483.2	478.9	475.6	472.3	466.9
60°	423.4	430.9	436.4	440.8	442.9	444.0	439.7	436.4	434.3	432.0	426.6
62.5°	384.2	389.6	395.1	398.3	400.5	401.6	398.3	396.2	394.0	391.8	387.4
65°	342.8	349.3	353.7	357.0	358.0	359.1	355.9	353.7	351.6	349.3	346.1
67.5°	301.5	306.9	310.2	313.5	314.5	314.5	314.5	313.5	311.3	308.0	304.7
70°	260.1	264.4	267.7	269.9	271.0	271.0	268.9	266.6	266.6	265.5	263.4
72.5°	217.7	220.9	223.1	225.2	225.2	225.2	225.2	226.4	225.2	223.1	219.8
75°	177.4	180.6	182.8	183.9	183.9	183.9	183.9	185.0	183.9	182.8	180.6
77.5°	139.3	141.5	142.5	143.6	143.6	143.6	144.8	145.9	144.8	143.6	142.5
80°	103.4	104.5	105.6	106.7	105.6	105.6	106.7	108.8	107.8	106.7	105.6
82.5°	70.7	71.8	72.9	72.9	74.0	75.1	75.1	75.1	75.1	74.0	72.9
85°	42.4	43.5	43.5	43.5	43.5	43.5	44.6	45.7	45.7	44.6	44.6
87.5°	19.5	20.7	19.5	18.5	17.4	17.4	19.5	21.8	21.8	20.7	20.7
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):

	330°	340°	350°	360°
0°	962.1	962.1	962.1	962.1
2.5°	970.8	969.7	964.2	958.8
5°	974.0	970.8	963.1	955.6
7.5°	974.0	969.7	958.8	949.0
10°	968.6	962.1	950.1	938.1
12.5°	962.1	954.5	940.3	927.3
15°	952.2	943.6	928.4	913.1
17.5°	938.1	927.3	912.0	895.7
20°	924.0	912.0	893.5	876.1
22.5°	904.4	893.5	874.0	855.4
25°	882.6	870.6	851.1	831.5
27.5°	859.8	845.7	826.0	806.5
30°	833.7	819.5	799.9	780.3
32.5°	805.4	792.3	772.7	752.0
35°	777.1	763.0	743.3	722.7
37.5°	745.5	732.4	712.9	693.3
40°	711.8	698.7	679.1	659.5
42.5°	680.2	668.3	648.6	630.1
45°	645.4	633.4	614.9	597.5
47.5°	609.4	597.5	580.0	562.7
50°	574.6	562.7	546.4	530.1
52.5°	535.5	525.6	510.4	495.2
55°	497.3	487.6	472.3	458.1
57.5°	459.2	450.6	436.4	423.4
60°	419.0	410.3	399.4	387.4
62.5°	380.9	373.3	362.4	351.6
65°	340.7	334.1	324.4	314.5
67.5°	299.3	293.8	285.2	276.4
70°	258.0	251.4	244.9	237.2
72.5°	216.6	213.4	206.8	200.3
75°	177.4	174.2	168.7	163.3
77.5°	140.4	137.1	132.8	128.4
80°	103.4	101.2	97.9	94.7
82.5°	71.8	69.6	67.5	64.2
85°	43.5	41.4	39.2	37.0
87.5°	19.5	18.5	16.3	15.2
90°	0.0	0.0	0.0	0.0

(END OF REPORT)