

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: P709130

Luminaire Tested: **4APN-24L850-X-UNV**

Issue Date: 09/12/2023



Test Information

Test Method: LM-79-08
Report Number: P709130
Test Lab: INNOVATION CENTER(G2)
Issue Date: 09/12/2023
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: FAIL-SAFE
Catalog Number: 4APN-24L850-X-UNV
Description: ArcMed Patient Recessed 4 FT x6 IN Fixture Ambient Light
Light Source: 5000K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

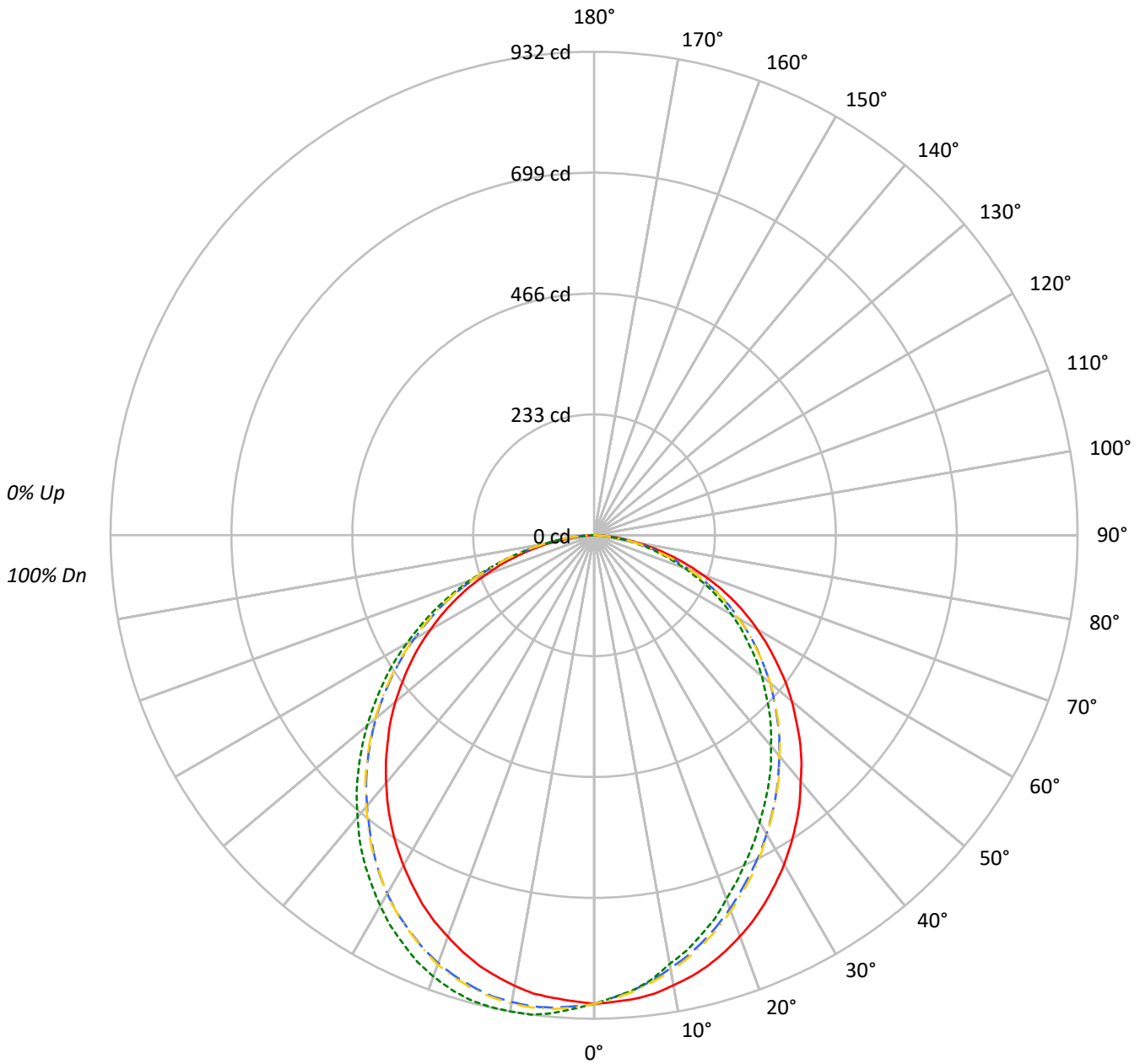
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2423.0 lumens
Efficiency: N/A
Efficacy: 86.8 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): 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°	8335	8335	8335	8335
5°	8310	8149	8292	8566
10°	8254	7861	8263	8732
15°	8190	7615	8200	8853
20°	8078	7325	8087	8890
25°	7949	7054	7980	8854
30°	7807	6804	7828	8786
35°	7643	6607	7678	8691
40°	7459	6388	7508	8543
45°	7321	6228	7334	8387
50°	7144	6059	7174	8200
55°	6922	5836	6970	7974
60°	6713	5658	6731	7695
65°	6449	5421	6449	7364
70°	6010	5017	5983	6865
75°	5465	4552	5393	6156
80°	4723	3910	4559	5265
85°	3673	2922	3462	4330



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	85.4	3.5
10°-20°	242.3	10.0
20°-30°	360.2	14.9
30°-40°	424.5	17.5
40°-50°	432.2	17.8
50°-60°	385.1	15.9
60°-70°	290.1	12.0
70°-80°	161.3	6.7
80°-90°	41.9	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°	687.8	28.4
0°-40°	1112.3	45.9
0°-60°	1929.6	79.6
0°-90°	2423.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2423.0	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	903	903	903	903	903	
5°	897	880	895	925	897	85
15°	857	797	858	927	857	242
25°	781	693	784	870	781	360
35°	679	587	682	772	679	425
45°	561	477	562	643	561	432
55°	430	363	433	496	430	385
65°	295	248	295	337	295	292
75°	153	128	151	173	153	163
85°	35	28	33	41	35	42
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°	903.4	903.4	903.4	903.4	903.4	903.4	903.4	903.4	903.4	903.4	903.4
2.5°	900.4	900.4	901.4	897.3	892.2	890.2	889.1	888.1	890.2	891.2	890.2
5°	897.3	895.3	893.2	888.1	882.0	877.9	875.8	874.8	876.9	879.9	876.9
7.5°	891.2	887.1	883.0	875.8	868.7	862.6	859.5	857.4	859.5	862.6	860.5
10°	881.0	875.8	869.7	861.5	851.3	844.2	841.1	838.0	839.1	839.1	839.1
12.5°	870.7	863.6	856.4	846.2	835.0	826.8	821.7	817.6	819.6	820.7	820.7
15°	857.4	848.3	838.0	826.8	815.5	806.3	800.2	796.1	797.2	797.2	798.2
17.5°	841.1	830.9	820.7	807.4	794.1	783.9	776.7	771.6	773.6	774.7	775.7
20°	822.7	811.5	800.2	785.9	771.6	760.4	753.2	747.1	746.1	746.1	747.1
22.5°	803.3	791.0	777.7	762.4	747.1	734.8	727.7	721.5	720.5	720.5	721.5
25°	780.8	767.5	754.2	738.9	722.5	710.3	701.1	695.0	693.9	692.9	695.0
27.5°	757.3	744.0	730.7	715.4	698.0	685.8	676.6	670.4	668.4	667.4	669.4
30°	732.8	717.4	703.1	686.8	671.4	659.2	650.0	642.8	640.8	638.7	640.8
32.5°	706.2	690.9	675.5	659.2	643.9	631.6	622.4	615.2	613.2	612.2	614.2
35°	678.6	663.3	649.0	632.6	617.3	605.0	595.8	589.7	587.6	586.6	587.6
37.5°	651.0	635.7	621.4	605.0	589.7	577.4	568.2	562.1	561.1	560.0	561.1
40°	619.3	606.0	591.7	576.4	561.1	548.8	541.7	534.5	532.5	530.4	533.5
42.5°	591.7	578.4	564.1	549.8	534.5	522.2	514.1	507.9	505.9	504.9	505.9
45°	561.1	546.8	532.5	519.2	504.9	493.6	485.4	479.3	478.3	477.3	478.3
47.5°	528.4	516.1	503.8	490.6	476.2	465.0	457.9	451.7	449.7	447.6	449.7
50°	497.7	485.4	473.2	460.9	447.6	437.4	430.3	424.1	423.1	422.1	423.1
52.5°	465.0	452.7	441.5	429.2	418.0	407.8	400.6	395.5	394.5	393.5	394.5
55°	430.3	420.0	409.8	399.6	388.4	379.2	373.0	366.9	364.8	362.8	364.8
57.5°	397.6	388.4	378.1	367.9	357.7	349.5	343.4	338.3	337.3	336.2	337.3
60°	363.8	355.7	346.5	337.3	327.0	318.9	313.8	309.7	307.6	306.6	307.6
62.5°	330.1	321.9	314.8	305.6	296.4	290.2	285.1	281.0	279.0	278.0	279.0
65°	295.4	288.2	281.0	272.9	265.7	259.6	254.5	250.4	249.4	248.3	248.3
67.5°	259.6	253.5	247.3	240.2	232.0	225.9	220.7	217.7	216.7	215.6	216.7
70°	222.8	217.7	211.6	205.4	199.3	194.2	191.1	188.0	187.0	186.0	186.0
72.5°	188.0	184.0	178.8	173.7	168.6	163.5	160.5	158.4	157.4	156.4	156.4
75°	153.3	149.2	146.1	142.1	136.9	133.9	130.8	128.8	127.7	127.7	127.7
77.5°	120.6	117.5	114.5	110.4	107.3	104.2	102.2	101.2	100.2	100.2	100.2
80°	88.9	86.9	84.8	82.8	79.7	76.6	75.6	74.6	73.6	73.6	73.6
82.5°	60.3	59.3	57.2	55.2	53.1	52.1	51.1	50.1	50.1	50.1	50.1
85°	34.7	33.7	32.7	31.7	30.7	30.7	29.6	28.6	27.6	27.6	27.6
87.5°	14.3	14.3	14.3	13.3	12.3	12.3	12.3	12.3	12.3	12.3	12.3
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°	903.4	903.4	903.4	903.4	903.4	903.4	903.4	903.4	903.4	903.4	903.4
2.5°	888.1	890.2	892.2	895.3	898.3	901.4	900.4	899.3	903.4	908.5	909.6
5°	874.8	876.9	879.9	885.0	890.2	894.2	895.3	895.3	903.4	910.6	912.6
7.5°	858.5	861.5	865.6	870.7	877.9	884.0	887.1	891.2	899.3	908.5	912.6
10°	838.0	843.1	849.3	856.4	863.6	870.7	876.9	882.0	892.2	902.4	908.5
12.5°	819.6	824.7	830.9	839.1	848.3	857.4	863.6	870.7	883.0	895.3	902.4
15°	799.2	804.3	811.5	819.6	829.9	840.1	849.3	858.5	870.7	884.0	892.2
17.5°	776.7	781.8	789.0	799.2	810.4	821.7	831.9	842.1	856.4	870.7	879.9
20°	749.1	756.3	765.5	775.7	789.0	802.3	812.5	823.7	839.1	854.4	864.6
22.5°	722.5	729.7	739.9	752.2	766.5	780.8	793.1	805.3	821.7	837.0	848.3
25°	697.0	705.2	715.4	727.7	740.9	755.2	769.6	783.9	800.2	816.6	827.8
27.5°	671.4	678.6	688.8	701.1	716.4	730.7	745.0	759.3	776.7	794.1	806.3
30°	642.8	651.0	660.2	672.5	688.8	705.2	719.5	734.8	752.2	769.6	781.8
32.5°	616.3	623.4	632.6	644.9	661.2	677.6	692.9	709.3	725.6	743.0	755.2
35°	589.7	596.8	606.0	618.3	634.7	651.0	666.3	681.7	698.0	714.4	726.6
37.5°	563.1	570.3	579.5	591.7	607.1	623.4	637.7	653.1	669.4	685.8	697.0
40°	535.5	542.7	549.8	562.1	577.4	593.8	608.1	623.4	639.8	656.1	667.4
42.5°	507.9	515.1	524.3	536.5	550.9	565.2	579.5	593.8	609.1	624.4	635.7
45°	480.3	486.5	495.7	506.9	521.2	534.5	548.8	562.1	577.4	591.7	603.0
47.5°	451.7	457.9	465.0	476.2	490.6	504.9	519.2	532.5	545.7	560.0	570.3
50°	424.1	430.3	438.4	448.7	461.9	475.2	487.5	499.8	513.0	526.3	535.5
52.5°	395.5	401.6	408.8	419.0	430.3	442.5	453.8	466.0	478.3	490.6	499.8
55°	366.9	371.0	377.1	386.3	398.6	410.8	422.1	433.3	444.6	454.8	464.0
57.5°	338.3	343.4	350.5	358.7	368.9	379.2	389.4	399.6	409.8	420.0	428.2
60°	309.7	313.8	318.9	326.0	336.2	345.4	355.7	364.8	374.0	383.2	390.4
62.5°	280.0	284.1	289.2	296.4	304.6	312.7	321.9	330.1	338.3	346.5	353.6
65°	249.4	253.5	258.6	264.7	271.8	279.0	287.2	295.4	301.5	307.6	314.8
67.5°	217.7	221.8	226.9	232.0	238.1	245.3	252.4	259.6	265.7	271.8	277.0
70°	187.0	190.1	195.2	199.3	204.4	209.5	215.6	221.8	225.9	231.0	237.1
72.5°	157.4	160.5	164.5	168.6	171.7	175.8	181.9	187.0	192.1	198.3	201.3
75°	128.8	130.8	133.9	136.9	140.0	143.1	147.2	151.3	155.3	158.4	162.5
77.5°	100.2	102.2	105.3	107.3	109.4	111.4	114.5	117.5	120.6	122.6	126.7
80°	73.6	75.6	77.7	79.7	81.8	83.8	84.8	85.8	89.9	93.0	95.0
82.5°	50.1	51.1	52.1	54.2	55.2	56.2	57.2	57.2	59.3	61.3	64.4
85°	28.6	29.6	30.7	30.7	30.7	30.7	31.7	32.7	33.7	35.8	37.8
87.5°	11.2	11.2	12.3	12.3	12.3	12.3	12.3	12.3	13.3	15.3	16.4
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°	903.4	903.4	903.4	903.4	903.4	903.4	903.4	903.4	903.4	903.4	903.4
2.5°	908.5	909.6	911.6	912.6	913.7	913.7	914.7	915.7	913.7	911.6	910.6
5°	913.7	914.7	917.7	920.8	922.9	924.9	923.9	922.9	920.8	917.7	915.7
7.5°	914.7	917.7	920.8	924.9	928.0	932.1	930.0	928.0	923.9	919.8	916.7
10°	911.6	915.7	920.8	925.9	929.0	932.1	930.0	928.0	923.9	918.8	914.7
12.5°	907.5	912.6	918.8	923.9	926.9	931.0	928.0	924.9	919.8	914.7	909.6
15°	898.3	904.5	911.6	917.7	922.9	926.9	923.9	921.8	915.7	908.5	901.4
17.5°	887.1	895.3	902.4	909.6	913.7	917.7	915.7	913.7	906.5	898.3	890.2
20°	873.8	882.0	889.1	896.3	901.4	905.5	902.4	899.3	892.2	885.0	876.9
22.5°	857.4	865.6	873.8	881.0	886.1	890.2	886.1	881.0	873.8	866.6	858.5
25°	837.0	846.2	855.4	862.6	865.6	869.7	865.6	861.5	854.4	847.2	838.0
27.5°	816.6	825.8	835.0	842.1	845.2	849.3	845.2	841.1	833.9	826.8	817.6
30°	793.1	802.3	811.5	818.6	821.7	824.7	820.7	816.6	810.4	803.3	794.1
32.5°	766.5	775.7	782.8	790.0	794.1	798.2	794.1	791.0	783.9	774.7	765.5
35°	737.9	747.1	756.3	763.4	767.5	771.6	766.5	761.4	755.2	748.1	739.9
37.5°	706.2	716.4	726.6	734.8	737.9	742.0	737.9	732.8	726.6	719.5	710.3
40°	676.6	685.8	695.0	703.1	706.2	709.3	705.2	701.1	693.9	686.8	677.6
42.5°	645.9	655.1	663.3	670.4	673.5	677.6	673.5	668.4	663.3	657.1	649.0
45°	613.2	622.4	629.5	636.7	639.8	642.8	638.7	633.6	628.5	623.4	615.2
47.5°	579.5	587.6	594.8	602.0	604.0	607.1	603.0	599.9	594.8	589.7	582.5
50°	544.7	552.9	560.0	566.2	568.2	571.3	567.2	563.1	559.0	554.9	548.8
52.5°	509.0	516.1	523.3	529.4	531.4	533.5	529.4	525.3	521.2	517.1	511.0
55°	472.2	479.3	486.5	491.6	493.6	495.7	491.6	488.5	484.4	481.4	475.2
57.5°	435.4	442.5	448.7	453.8	455.8	457.9	453.8	449.7	446.6	443.5	438.4
60°	397.6	404.7	409.8	413.9	415.9	417.0	412.9	409.8	407.8	405.7	400.6
62.5°	360.8	365.9	371.0	374.0	376.1	377.1	374.0	372.0	370.0	367.9	363.8
65°	321.9	328.1	332.1	335.2	336.2	337.3	334.2	332.1	330.1	328.1	325.0
67.5°	283.1	288.2	291.3	294.3	295.4	295.4	295.4	294.3	292.3	289.2	286.2
70°	244.3	248.3	251.4	253.5	254.5	254.5	252.4	250.4	250.4	249.4	247.3
72.5°	204.4	207.5	209.5	211.6	211.6	211.6	211.6	212.6	211.6	209.5	206.4
75°	166.6	169.7	171.7	172.7	172.7	172.7	172.7	173.7	172.7	171.7	169.7
77.5°	130.8	132.9	133.9	134.9	134.9	134.9	135.9	136.9	135.9	134.9	133.9
80°	97.1	98.1	99.1	100.2	99.1	99.1	100.2	102.2	101.2	100.2	99.1
82.5°	66.4	67.5	68.5	68.5	69.5	70.5	70.5	70.5	70.5	69.5	68.5
85°	39.9	40.9	40.9	40.9	40.9	40.9	41.9	42.9	42.9	41.9	41.9
87.5°	18.4	19.4	18.4	17.4	16.4	16.4	18.4	20.4	20.4	19.4	19.4
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):

	330°	340°	350°	360°
0°	903.4	903.4	903.4	903.4
2.5°	911.6	910.6	905.5	900.4
5°	914.7	911.6	904.5	897.3
7.5°	914.7	910.6	900.4	891.2
10°	909.6	903.4	892.2	881.0
12.5°	903.4	896.3	883.0	870.7
15°	894.2	886.1	871.8	857.4
17.5°	881.0	870.7	856.4	841.1
20°	867.7	856.4	839.1	822.7
22.5°	849.3	839.1	820.7	803.3
25°	828.8	817.6	799.2	780.8
27.5°	807.4	794.1	775.7	757.3
30°	782.8	769.6	751.2	732.8
32.5°	756.3	744.0	725.6	706.2
35°	729.7	716.4	698.0	678.6
37.5°	700.1	687.8	669.4	651.0
40°	668.4	656.1	637.7	619.3
42.5°	638.7	627.5	609.1	591.7
45°	606.0	594.8	577.4	561.1
47.5°	572.3	561.1	544.7	528.4
50°	539.6	528.4	513.0	497.7
52.5°	502.8	493.6	479.3	465.0
55°	467.0	457.9	443.5	430.3
57.5°	431.3	423.1	409.8	397.6
60°	393.5	385.3	375.1	363.8
62.5°	357.7	350.5	340.3	330.1
65°	319.9	313.8	304.6	295.4
67.5°	281.0	275.9	267.8	259.6
70°	242.2	236.1	229.9	222.8
72.5°	203.4	200.3	194.2	188.0
75°	166.6	163.5	158.4	153.3
77.5°	131.8	128.8	124.7	120.6
80°	97.1	95.0	92.0	88.9
82.5°	67.5	65.4	63.4	60.3
85°	40.9	38.8	36.8	34.7
87.5°	18.4	17.4	15.3	14.3
90°	0.0	0.0	0.0	0.0

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