

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-28L840-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-28L840-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

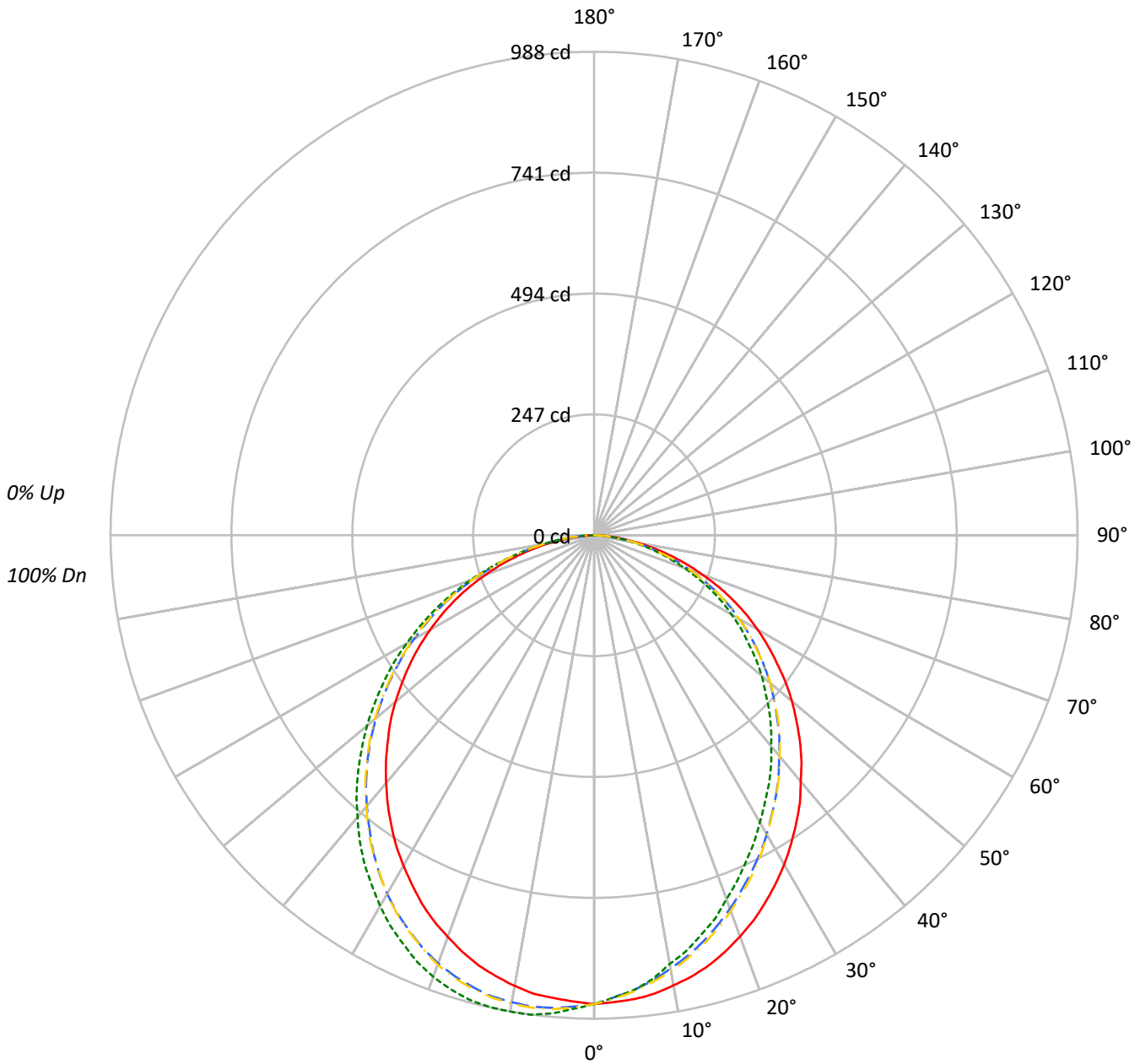
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 2569.4 lumens  
Efficiency: N/A  
Efficacy: 79.8 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): 32.2  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): 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	
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	0
RCR																		
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100
1	109	104	100	96	106	102	98	95	98	94	92	94	91	89	90	88	86	84
2	99	91	84	78	96	89	83	77	85	80	76	82	78	74	79	76	72	70
3	90	80	72	65	88	78	71	65	75	69	64	73	67	62	70	65	61	59
4	83	71	62	55	81	70	61	55	67	60	54	65	59	54	63	57	53	51
5	76	63	54	48	74	62	54	48	60	53	47	58	52	47	56	51	46	44
6	70	57	48	42	68	56	48	42	54	47	41	53	46	41	51	45	41	38
7	65	52	43	37	64	51	43	37	49	42	37	48	41	36	47	41	36	34
8	61	47	39	33	59	47	39	33	45	38	33	44	37	33	43	37	32	30
9	57	43	35	30	55	43	35	30	42	35	30	41	34	29	40	34	29	27
10	53	40	32	27	52	40	32	27	39	32	27	38	31	27	37	31	27	25

**AVERAGE LUMINANCE (cd/sqm):**

	0°	90°	180°	270°
0°	8840	8840	8840	8840
5°	8812	8643	8793	9084
10°	8752	8335	8762	9260
15°	8685	8075	8696	9388
20°	8566	7768	8576	9429
25°	8429	7480	8463	9389
30°	8279	7217	8302	9318
35°	8105	7007	8141	9217
40°	7909	6775	7962	9059
45°	7763	6604	7778	8895
50°	7576	6425	7607	8695
55°	7340	6190	7391	8454
60°	7121	5999	7139	8160
65°	6837	5748	6837	7807
70°	6372	5320	6345	7281
75°	5793	4827	5718	6531
80°	5010	4144	4835	5584
85°	3906	3091	3673	4584



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	90.5	3.5
10°-20°	256.9	10.0
20°-30°	381.9	14.9
30°-40°	450.2	17.5
40°-50°	458.4	17.8
50°-60°	408.3	15.9
60°-70°	307.6	12.0
70°-80°	171.1	6.7
80°-90°	44.4	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°	729.4	28.4
0°-40°	1179.6	45.9
0°-60°	2046.3	79.6
0°-90°	2569.4	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2569.4	100.0

**CANDELA DISTRIBUTION:**

	0°	90°	180°	270°	360°	Flux
0°	958	958	958	958	958	
5°	952	933	949	981	952	90
15°	909	845	910	983	909	256
25°	828	735	831	922	828	381
35°	720	622	723	818	720	450
45°	595	506	596	682	595	458
55°	456	385	460	526	456	409
65°	313	263	313	358	313	309
75°	162	135	160	183	162	173
85°	37	29	35	43	37	44
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°	958.1	958.1	958.1	958.1	958.1	958.1	958.1	958.1	958.1	958.1	958.1
2.5°	954.8	954.8	955.8	951.5	946.2	943.9	942.8	941.8	943.9	945.1	943.9
5°	951.5	949.4	947.2	941.8	935.3	930.9	928.8	927.7	929.8	933.2	929.8
7.5°	945.1	940.7	936.4	928.8	921.2	914.7	911.5	909.3	911.5	914.7	912.5
10°	934.2	928.8	922.3	913.6	902.8	895.2	891.9	888.7	889.7	889.7	889.7
12.5°	923.4	915.8	908.2	897.4	885.4	876.7	871.4	867.0	869.2	870.3	870.3
15°	909.3	899.5	888.7	876.7	864.8	855.1	848.6	844.3	845.4	845.4	846.4
17.5°	891.9	881.1	870.3	856.2	842.1	831.3	823.6	818.3	820.4	821.5	822.6
20°	872.4	860.5	848.6	833.4	818.3	806.3	798.7	792.3	791.2	791.2	792.3
22.5°	851.8	838.8	824.7	808.5	792.3	779.3	771.6	765.2	764.1	764.1	765.2
25°	828.0	813.9	799.8	783.6	766.2	753.2	743.5	737.0	735.8	734.8	737.0
27.5°	803.1	789.0	774.8	758.6	740.2	727.2	717.5	711.0	708.7	707.7	709.8
30°	777.1	760.8	745.6	728.3	712.1	699.1	689.3	681.7	679.5	677.4	679.5
32.5°	748.8	732.6	716.4	699.1	682.7	669.7	660.1	652.4	650.3	649.2	651.3
35°	719.6	703.4	688.2	670.8	654.6	641.6	631.8	625.3	623.2	622.1	623.2
37.5°	690.4	674.1	659.0	641.6	625.3	612.3	602.6	596.1	595.0	593.9	595.0
40°	656.7	642.6	627.5	611.3	595.0	582.0	574.4	566.8	564.6	562.5	565.7
42.5°	627.5	613.4	598.3	583.1	566.8	553.8	545.2	538.6	536.4	535.4	536.4
45°	595.0	579.8	564.6	550.5	535.4	523.4	514.8	508.3	507.2	506.1	507.2
47.5°	560.3	547.3	534.3	520.2	505.1	493.1	485.5	479.1	476.9	474.6	476.9
50°	527.8	514.8	501.8	488.8	474.6	463.9	456.3	449.8	448.6	447.6	448.6
52.5°	493.1	480.1	468.2	455.2	443.3	432.4	424.9	419.4	418.3	417.2	418.3
55°	456.3	445.4	434.6	423.8	411.9	402.1	395.5	389.1	386.9	384.8	386.9
57.5°	421.6	411.9	401.0	390.2	379.3	370.6	364.2	358.8	357.6	356.5	357.6
60°	385.9	377.2	367.4	357.6	346.8	338.1	332.7	328.4	326.2	325.1	326.2
62.5°	350.1	341.4	333.8	324.1	314.3	307.8	302.4	298.0	295.9	294.8	295.9
65°	313.2	305.6	298.0	289.3	281.8	275.3	269.9	265.5	264.4	263.3	263.3
67.5°	275.3	268.8	262.3	254.7	246.0	239.5	234.1	230.9	229.8	228.7	229.8
70°	236.2	230.9	224.3	217.9	211.3	205.9	202.7	199.4	198.3	197.2	197.2
72.5°	199.4	195.1	189.7	184.2	178.8	173.4	170.1	168.0	166.9	165.8	165.8
75°	162.5	158.2	155.0	150.7	145.2	142.0	138.8	136.5	135.4	135.4	135.4
77.5°	127.9	124.7	121.4	117.0	113.8	110.5	108.3	107.3	106.2	106.2	106.2
80°	94.3	92.1	90.0	87.8	84.5	81.3	80.2	79.1	78.0	78.0	78.0
82.5°	64.0	62.9	60.7	58.5	56.3	55.2	54.2	53.1	53.1	53.1	53.1
85°	36.9	35.8	34.7	33.6	32.5	32.5	31.4	30.3	29.2	29.2	29.2
87.5°	15.2	15.2	15.2	14.1	13.0	13.0	13.0	13.0	13.0	13.0	13.0
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°	958.1	958.1	958.1	958.1	958.1	958.1	958.1	958.1	958.1	958.1	958.1
2.5°	941.8	943.9	946.2	949.4	952.6	955.8	954.8	953.7	958.1	963.5	964.6
5°	927.7	929.8	933.2	938.5	943.9	948.3	949.4	949.4	958.1	965.6	967.8
7.5°	910.4	913.6	917.9	923.4	930.9	937.5	940.7	945.1	953.7	963.5	967.8
10°	888.7	894.1	900.6	908.2	915.8	923.4	929.8	935.3	946.2	956.9	963.5
12.5°	869.2	874.6	881.1	889.7	899.5	909.3	915.8	923.4	936.4	949.4	956.9
15°	847.5	852.9	860.5	869.2	880.0	890.8	900.6	910.4	923.4	937.5	946.2
17.5°	823.6	829.1	836.7	847.5	859.4	871.4	882.2	893.0	908.2	923.4	933.2
20°	794.4	802.0	811.7	822.6	836.7	850.7	861.6	873.5	889.7	906.0	916.8
22.5°	766.2	773.8	784.6	797.6	812.8	828.0	841.0	854.0	871.4	887.6	899.5
25°	739.2	747.8	758.6	771.6	785.7	800.9	816.1	831.3	848.6	865.9	877.8
27.5°	712.1	719.6	730.5	743.5	759.7	774.8	790.1	805.3	823.6	842.1	855.1
30°	681.7	690.4	700.1	713.1	730.5	747.8	763.0	779.3	797.6	816.1	829.1
32.5°	653.5	661.1	670.8	683.8	701.2	718.5	734.8	752.2	769.5	787.9	800.9
35°	625.3	633.0	642.6	655.6	673.1	690.4	706.6	722.8	740.2	757.5	770.5
37.5°	597.2	604.7	614.5	627.5	643.7	661.1	676.3	692.5	709.8	727.2	739.2
40°	567.9	575.5	583.1	596.1	612.3	629.6	644.8	661.1	678.4	695.7	707.7
42.5°	538.6	546.2	556.0	569.0	584.2	599.3	614.5	629.6	646.0	662.2	674.1
45°	509.4	515.9	525.6	537.5	552.7	566.8	582.0	596.1	612.3	627.5	639.4
47.5°	479.1	485.5	493.1	505.1	520.2	535.4	550.5	564.6	578.7	593.9	604.7
50°	449.8	456.3	465.0	475.8	489.9	504.0	517.0	530.0	544.1	558.2	567.9
52.5°	419.4	426.0	433.5	444.3	456.3	469.3	481.2	494.2	507.2	520.2	530.0
55°	389.1	393.4	399.9	409.6	422.6	435.6	447.6	459.5	471.4	482.3	492.1
57.5°	358.8	364.2	371.8	380.4	391.2	402.1	412.9	423.8	434.6	445.4	454.1
60°	328.4	332.7	338.1	345.8	356.5	366.3	377.2	386.9	396.6	406.4	414.0
62.5°	297.0	301.3	306.7	314.3	323.0	331.6	341.4	350.1	358.8	367.4	375.0
65°	264.4	268.8	274.2	280.7	288.3	295.9	304.5	313.2	319.7	326.2	333.8
67.5°	230.9	235.2	240.6	246.0	252.5	260.1	267.7	275.3	281.8	288.3	293.7
70°	198.3	201.5	207.0	211.3	216.8	222.2	228.7	235.2	239.5	245.0	251.4
72.5°	166.9	170.1	174.4	178.8	182.1	186.4	192.9	198.3	203.8	210.2	213.5
75°	136.5	138.8	142.0	145.2	148.4	151.8	156.1	160.4	164.8	168.0	172.3
77.5°	106.2	108.3	111.7	113.8	116.0	118.1	121.4	124.7	127.9	130.1	134.4
80°	78.0	80.2	82.3	84.5	86.7	88.9	90.0	91.0	95.3	98.7	100.8
82.5°	53.1	54.2	55.2	57.4	58.5	59.6	60.7	60.7	62.9	65.0	68.3
85°	30.3	31.4	32.5	32.5	32.5	32.5	33.6	34.7	35.8	37.9	40.1
87.5°	11.9	11.9	13.0	13.0	13.0	13.0	13.0	13.0	14.1	16.2	17.3
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):**

	220°	230°	240°	250°	260°	270°	280°	290°	300°	310°	320°
0°	958.1	958.1	958.1	958.1	958.1	958.1	958.1	958.1	958.1	958.1	958.1
2.5°	963.5	964.6	966.7	967.8	968.9	968.9	969.9	971.1	968.9	966.7	965.6
5°	968.9	969.9	973.3	976.5	978.6	980.8	979.7	978.6	976.5	973.3	971.1
7.5°	969.9	973.3	976.5	980.8	984.1	988.4	986.3	984.1	979.7	975.4	972.2
10°	966.7	971.1	976.5	981.9	985.2	988.4	986.3	984.1	979.7	974.3	969.9
12.5°	962.4	967.8	974.3	979.7	982.9	987.3	984.1	980.8	975.4	969.9	964.6
15°	952.6	959.2	966.7	973.3	978.6	982.9	979.7	977.6	971.1	963.5	955.8
17.5°	940.7	949.4	956.9	964.6	968.9	973.3	971.1	968.9	961.3	952.6	943.9
20°	926.6	935.3	942.8	950.5	955.8	960.3	956.9	953.7	946.2	938.5	929.8
22.5°	909.3	917.9	926.6	934.2	939.6	943.9	939.6	934.2	926.6	919.0	910.4
25°	887.6	897.4	907.2	914.7	917.9	922.3	917.9	913.6	906.0	898.5	888.7
27.5°	865.9	875.7	885.4	893.0	896.3	900.6	896.3	891.9	884.4	876.7	867.0
30°	841.0	850.7	860.5	868.1	871.4	874.6	870.3	865.9	859.4	851.8	842.1
32.5°	812.8	822.6	830.2	837.7	842.1	846.4	842.1	838.8	831.3	821.5	811.7
35°	782.5	792.3	802.0	809.6	813.9	818.3	812.8	807.4	800.9	793.3	784.6
37.5°	748.8	759.7	770.5	779.3	782.5	786.8	782.5	777.1	770.5	763.0	753.2
40°	717.5	727.2	737.0	745.6	748.8	752.2	747.8	743.5	735.8	728.3	718.5
42.5°	685.0	694.7	703.4	711.0	714.2	718.5	714.2	708.7	703.4	696.8	688.2
45°	650.3	660.1	667.6	675.2	678.4	681.7	677.4	672.0	666.5	661.1	652.4
47.5°	614.5	623.2	630.7	638.3	640.5	643.7	639.4	636.2	630.7	625.3	617.7
50°	577.6	586.3	593.9	600.4	602.6	605.8	601.5	597.2	592.8	588.5	582.0
52.5°	539.7	547.3	554.9	561.4	563.5	565.7	561.4	557.1	552.7	548.4	541.9
55°	500.7	508.3	515.9	521.3	523.4	525.6	521.3	518.1	513.7	510.4	504.0
57.5°	461.6	469.3	475.8	481.2	483.4	485.5	481.2	476.9	473.6	470.3	465.0
60°	421.6	429.2	434.6	439.0	441.1	442.2	437.9	434.6	432.4	430.3	424.9
62.5°	382.5	388.0	393.4	396.6	398.9	399.9	396.6	394.5	392.3	390.2	385.9
65°	341.4	347.9	352.2	355.4	356.5	357.6	354.4	352.2	350.1	347.9	344.6
67.5°	300.2	305.6	308.9	312.1	313.2	313.2	313.2	312.1	310.0	306.7	303.4
70°	259.0	263.3	266.6	268.8	269.9	269.9	267.7	265.5	265.5	264.4	262.3
72.5°	216.8	220.0	222.2	224.3	224.3	224.3	224.3	225.4	224.3	222.2	218.9
75°	176.7	179.9	182.1	183.2	183.2	183.2	183.2	184.2	183.2	182.1	179.9
77.5°	138.8	140.9	142.0	143.1	143.1	143.1	144.1	145.2	144.1	143.1	142.0
80°	103.0	104.0	105.1	106.2	105.1	105.1	106.2	108.3	107.3	106.2	105.1
82.5°	70.4	71.5	72.7	72.7	73.7	74.8	74.8	74.8	74.8	73.7	72.7
85°	42.2	43.3	43.3	43.3	43.3	43.3	44.4	45.5	45.5	44.4	44.4
87.5°	19.5	20.6	19.5	18.4	17.3	17.3	19.5	21.7	21.7	20.6	20.6
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):**

	330°	340°	350°	360°
0°	958.1	958.1	958.1	958.1
2.5°	966.7	965.6	960.3	954.8
5°	969.9	966.7	959.2	951.5
7.5°	969.9	965.6	954.8	945.1
10°	964.6	958.1	946.2	934.2
12.5°	958.1	950.5	936.4	923.4
15°	948.3	939.6	924.5	909.3
17.5°	934.2	923.4	908.2	891.9
20°	920.2	908.2	889.7	872.4
22.5°	900.6	889.7	870.3	851.8
25°	878.9	867.0	847.5	828.0
27.5°	856.2	842.1	822.6	803.1
30°	830.2	816.1	796.6	777.1
32.5°	802.0	789.0	769.5	748.8
35°	773.8	759.7	740.2	719.6
37.5°	742.4	729.4	709.8	690.4
40°	708.7	695.7	676.3	656.7
42.5°	677.4	665.4	646.0	627.5
45°	642.6	630.7	612.3	595.0
47.5°	607.0	595.0	577.6	560.3
50°	572.2	560.3	544.1	527.8
52.5°	533.2	523.4	508.3	493.1
55°	495.3	485.5	470.3	456.3
57.5°	457.3	448.6	434.6	421.6
60°	417.2	408.5	397.8	385.9
62.5°	379.3	371.8	360.9	350.1
65°	339.2	332.7	323.0	313.2
67.5°	298.0	292.6	284.0	275.3
70°	256.9	250.3	243.9	236.2
72.5°	215.7	212.4	205.9	199.4
75°	176.7	173.4	168.0	162.5
77.5°	139.8	136.5	132.2	127.9
80°	103.0	100.8	97.5	94.3
82.5°	71.5	69.3	67.2	64.0
85°	43.3	41.2	39.0	36.9
87.5°	19.5	18.4	16.2	15.2
90°	0.0	0.0	0.0	0.0

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