

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: P709134

Luminaire Tested: **4APN-32L930-X-UNV**

Issue Date: 09/12/2023



Test Information

Test Method: LM-79-08
Report Number: P709134
Test Lab: INNOVATION CENTER(G2)
Issue Date: 09/12/2023
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: FAIL-SAFE
Catalog Number: 4APN-32L930-X-UNV
Description: ArcMed Patient Recessed 4 FT x6 IN Fixture Ambient Light
Light Source: 3000K CCT, 90 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

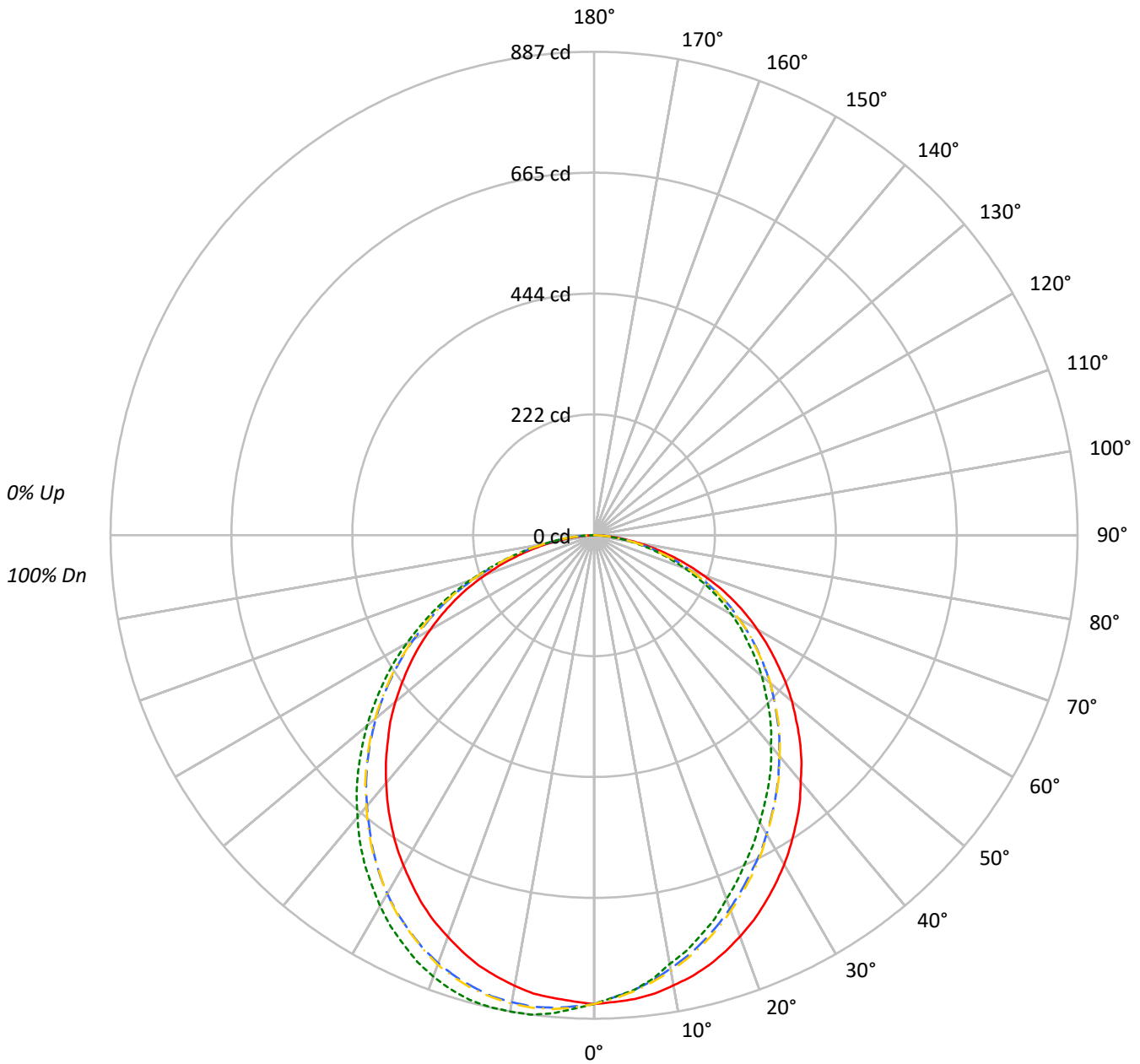
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2306.5 lumens
Efficiency: N/A
Efficacy: 63.4 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): 36.4
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°	7935	7935	7935	7935
5°	7911	7757	7893	8154
10°	7856	7483	7866	8312
15°	7796	7248	7806	8428
20°	7689	6973	7699	8462
25°	7567	6715	7596	8428
30°	7431	6477	7452	8364
35°	7276	6289	7309	8273
40°	7100	6081	7147	8132
45°	6969	5928	6982	7984
50°	6801	5767	6828	7805
55°	6589	5556	6635	7589
60°	6390	5386	6409	7324
65°	6139	5161	6139	7008
70°	5722	4777	5695	6533
75°	5201	4335	5133	5860
80°	4495	3719	4341	5016
85°	3504	2784	3292	4118



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	81.3	3.5
10°-20°	230.6	10.0
20°-30°	342.9	14.9
30°-40°	404.1	17.5
40°-50°	411.5	17.8
50°-60°	366.5	15.9
60°-70°	276.2	12.0
70°-80°	153.6	6.7
80°-90°	39.9	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°	654.7	28.4
0°-40°	1058.8	45.9
0°-60°	1836.8	79.6
0°-90°	2306.5	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2306.5	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	860	860	860	860	860	
5°	854	838	852	880	854	81
15°	816	759	817	882	816	230
25°	743	660	746	828	743	342
35°	646	558	649	734	646	404
45°	534	454	535	612	534	412
55°	410	345	412	472	410	367
65°	281	236	281	321	281	278
75°	146	122	144	164	146	155
85°	33	26	31	39	33	40
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°	860.0	860.0	860.0	860.0	860.0	860.0	860.0	860.0	860.0	860.0	860.0
2.5°	857.1	857.1	858.1	854.2	849.3	847.3	846.4	845.4	847.3	848.3	847.3
5°	854.2	852.2	850.3	845.4	839.6	835.7	833.7	832.8	834.7	837.6	834.7
7.5°	848.3	844.4	840.5	833.7	826.9	821.1	818.2	816.2	818.2	821.1	819.1
10°	838.6	833.7	827.9	820.1	810.4	803.6	800.7	797.7	798.7	798.7	798.7
12.5°	828.9	822.1	815.2	805.5	794.8	787.0	782.2	778.3	780.2	781.2	781.2
15°	816.2	807.5	797.7	787.0	776.3	767.6	761.7	757.8	758.8	758.8	759.8
17.5°	800.7	790.9	781.2	768.5	755.9	746.2	739.4	734.5	736.4	737.4	738.4
20°	783.1	772.4	761.7	748.1	734.5	723.8	717.0	711.2	710.2	710.2	711.2
22.5°	764.7	753.0	740.3	725.7	711.2	699.5	692.7	686.8	685.9	685.9	686.8
25°	743.3	730.6	718.0	703.4	687.8	676.1	667.4	661.5	660.6	659.6	661.5
27.5°	720.9	708.2	695.6	681.0	664.5	652.8	644.0	638.2	636.2	635.3	637.2
30°	697.5	682.9	669.3	653.8	639.2	627.5	618.7	611.9	610.0	608.0	610.0
32.5°	672.2	657.6	643.1	627.5	612.9	601.2	592.5	585.7	583.7	582.7	584.7
35°	646.0	631.4	617.8	602.2	587.6	575.9	567.2	561.3	559.4	558.4	559.4
37.5°	619.7	605.1	591.5	575.9	561.3	549.7	540.9	535.1	534.1	533.1	534.1
40°	589.5	576.9	563.3	548.7	534.1	522.4	515.6	508.8	506.9	504.9	507.8
42.5°	563.3	550.6	537.0	523.4	508.8	497.1	489.3	483.5	481.6	480.6	481.6
45°	534.1	520.5	506.9	494.2	480.6	469.9	462.1	456.3	455.3	454.3	455.3
47.5°	503.0	491.3	479.6	467.0	453.3	442.6	435.8	430.0	428.1	426.1	428.1
50°	473.8	462.1	450.4	438.8	426.1	416.4	409.6	403.7	402.8	401.8	402.8
52.5°	442.6	431.0	420.3	408.6	397.9	388.2	381.4	376.5	375.5	374.5	375.5
55°	409.6	399.8	390.1	380.4	369.7	360.9	355.1	349.3	347.3	345.4	347.3
57.5°	378.4	369.7	360.0	350.2	340.5	332.7	326.9	322.0	321.0	320.1	321.0
60°	346.3	338.6	329.8	321.0	311.3	303.5	298.7	294.8	292.8	291.9	292.8
62.5°	314.2	306.4	299.6	290.9	282.1	276.3	271.4	267.5	265.6	264.6	265.6
65°	281.2	274.3	267.5	259.8	252.9	247.1	242.2	238.3	237.4	236.4	236.4
67.5°	247.1	241.3	235.4	228.6	220.8	215.0	210.1	207.2	206.2	205.3	206.2
70°	212.1	207.2	201.4	195.5	189.7	184.8	181.9	179.0	178.0	177.1	177.1
72.5°	179.0	175.1	170.2	165.4	160.5	155.7	152.7	150.8	149.8	148.8	148.8
75°	145.9	142.0	139.1	135.2	130.4	127.4	124.5	122.6	121.6	121.6	121.6
77.5°	114.8	111.9	109.0	105.1	102.1	99.2	97.3	96.3	95.3	95.3	95.3
80°	84.6	82.7	80.7	78.8	75.9	73.0	72.0	71.0	70.0	70.0	70.0
82.5°	57.4	56.4	54.5	52.5	50.6	49.6	48.6	47.7	47.7	47.7	47.7
85°	33.1	32.1	31.1	30.2	29.2	29.2	28.2	27.2	26.3	26.3	26.3
87.5°	13.6	13.6	13.6	12.6	11.7	11.7	11.7	11.7	11.7	11.7	11.7
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):

	110°	120°	130°	140°	150°	160°	170°	180°	190°	200°	210°
0°	860.0	860.0	860.0	860.0	860.0	860.0	860.0	860.0	860.0	860.0	860.0
2.5°	845.4	847.3	849.3	852.2	855.1	858.1	857.1	856.1	860.0	864.9	865.8
5°	832.8	834.7	837.6	842.5	847.3	851.2	852.2	852.2	860.0	866.8	868.8
7.5°	817.2	820.1	824.0	828.9	835.7	841.5	844.4	848.3	856.1	864.9	868.8
10°	797.7	802.6	808.4	815.2	822.1	828.9	834.7	839.6	849.3	859.0	864.9
12.5°	780.2	785.1	790.9	798.7	807.5	816.2	822.1	828.9	840.5	852.2	859.0
15°	760.8	765.6	772.4	780.2	790.0	799.7	808.4	817.2	828.9	841.5	849.3
17.5°	739.4	744.2	751.0	760.8	771.5	782.2	791.9	801.6	815.2	828.9	837.6
20°	713.1	719.9	728.7	738.4	751.0	763.7	773.4	784.1	798.7	813.3	823.0
22.5°	687.8	694.6	704.3	716.0	729.6	743.3	754.9	766.6	782.2	796.8	807.5
25°	663.5	671.3	681.0	692.7	705.3	718.9	732.6	746.2	761.7	777.3	788.0
27.5°	639.2	646.0	655.7	667.4	682.0	695.6	709.2	722.8	739.4	755.9	767.6
30°	611.9	619.7	628.5	640.1	655.7	671.3	684.9	699.5	716.0	732.6	744.2
32.5°	586.6	593.4	602.2	613.9	629.4	645.0	659.6	675.2	690.7	707.3	718.9
35°	561.3	568.1	576.9	588.6	604.1	619.7	634.3	648.9	664.5	680.0	691.7
37.5°	536.0	542.8	551.6	563.3	577.9	593.4	607.1	621.6	637.2	652.8	663.5
40°	509.8	516.6	523.4	535.1	549.7	565.2	578.8	593.4	609.0	624.6	635.3
42.5°	483.5	490.3	499.1	510.7	524.4	538.0	551.6	565.2	579.8	594.4	605.1
45°	457.2	463.1	471.8	482.5	496.2	508.8	522.4	535.1	549.7	563.3	574.0
47.5°	430.0	435.8	442.6	453.3	467.0	480.6	494.2	506.9	519.5	533.1	542.8
50°	403.7	409.6	417.4	427.1	439.7	452.4	464.0	475.7	488.4	501.0	509.8
52.5°	376.5	382.3	389.1	398.9	409.6	421.2	431.9	443.6	455.3	467.0	475.7
55°	349.3	353.1	359.0	367.7	379.4	391.1	401.8	412.5	423.2	432.9	441.7
57.5°	322.0	326.9	333.7	341.5	351.2	360.9	370.7	380.4	390.1	399.8	407.6
60°	294.8	298.7	303.5	310.3	320.1	328.8	338.6	347.3	356.1	364.8	371.6
62.5°	266.6	270.5	275.3	282.1	289.9	297.7	306.4	314.2	322.0	329.8	336.6
65°	237.4	241.3	246.1	252.0	258.8	265.6	273.4	281.2	287.0	292.8	299.6
67.5°	207.2	211.1	216.0	220.8	226.7	233.5	240.3	247.1	252.9	258.8	263.6
70°	178.0	180.9	185.8	189.7	194.6	199.4	205.3	211.1	215.0	219.9	225.7
72.5°	149.8	152.7	156.6	160.5	163.4	167.3	173.2	178.0	182.9	188.7	191.7
75°	122.6	124.5	127.4	130.4	133.3	136.2	140.1	144.0	147.9	150.8	154.7
77.5°	95.3	97.3	100.2	102.1	104.1	106.0	109.0	111.9	114.8	116.7	120.6
80°	70.0	72.0	73.9	75.9	77.8	79.8	80.7	81.7	85.6	88.5	90.5
82.5°	47.7	48.6	49.6	51.6	52.5	53.5	54.5	54.5	56.4	58.4	61.3
85°	27.2	28.2	29.2	29.2	29.2	29.2	30.2	31.1	32.1	34.0	36.0
87.5°	10.7	10.7	11.7	11.7	11.7	11.7	11.7	11.7	12.6	14.6	15.6
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):

	220°	230°	240°	250°	260°	270°	280°	290°	300°	310°	320°
0°	860.0	860.0	860.0	860.0	860.0	860.0	860.0	860.0	860.0	860.0	860.0
2.5°	864.9	865.8	867.8	868.8	869.7	869.7	870.7	871.7	869.7	867.8	866.8
5°	869.7	870.7	873.6	876.5	878.5	880.4	879.5	878.5	876.5	873.6	871.7
7.5°	870.7	873.6	876.5	880.4	883.3	887.2	885.3	883.3	879.5	875.6	872.6
10°	867.8	871.7	876.5	881.4	884.3	887.2	885.3	883.3	879.5	874.6	870.7
12.5°	863.9	868.8	874.6	879.5	882.4	886.3	883.3	880.4	875.6	870.7	865.8
15°	855.1	861.0	867.8	873.6	878.5	882.4	879.5	877.5	871.7	864.9	858.1
17.5°	844.4	852.2	859.0	865.8	869.7	873.6	871.7	869.7	862.9	855.1	847.3
20°	831.8	839.6	846.4	853.2	858.1	861.9	859.0	856.1	849.3	842.5	834.7
22.5°	816.2	824.0	831.8	838.6	843.5	847.3	843.5	838.6	831.8	825.0	817.2
25°	796.8	805.5	814.3	821.1	824.0	827.9	824.0	820.1	813.3	806.5	797.7
27.5°	777.3	786.1	794.8	801.6	804.5	808.4	804.5	800.7	793.8	787.0	778.3
30°	754.9	763.7	772.4	779.3	782.2	785.1	781.2	777.3	771.5	764.7	755.9
32.5°	729.6	738.4	745.2	752.0	755.9	759.8	755.9	753.0	746.2	737.4	728.7
35°	702.4	711.2	719.9	726.7	730.6	734.5	729.6	724.8	718.9	712.1	704.3
37.5°	672.2	682.0	691.7	699.5	702.4	706.3	702.4	697.5	691.7	684.9	676.1
40°	644.0	652.8	661.5	669.3	672.2	675.2	671.3	667.4	660.6	653.8	645.0
42.5°	614.8	623.6	631.4	638.2	641.1	645.0	641.1	636.2	631.4	625.5	617.8
45°	583.7	592.5	599.3	606.1	609.0	611.9	608.0	603.2	598.3	593.4	585.7
47.5°	551.6	559.4	566.2	573.0	575.0	577.9	574.0	571.1	566.2	561.3	554.5
50°	518.5	526.3	533.1	539.0	540.9	543.8	539.9	536.0	532.1	528.3	522.4
52.5°	484.5	491.3	498.1	503.9	505.9	507.8	503.9	500.0	496.2	492.3	486.4
55°	449.5	456.3	463.1	467.9	469.9	471.8	467.9	465.0	461.1	458.2	452.4
57.5°	414.4	421.2	427.1	431.9	433.9	435.8	431.9	428.1	425.1	422.2	417.4
60°	378.4	385.2	390.1	394.0	395.9	396.9	393.0	390.1	388.2	386.2	381.4
62.5°	343.4	348.3	353.1	356.1	358.0	359.0	356.1	354.1	352.2	350.2	346.3
65°	306.4	312.3	316.2	319.1	320.1	321.0	318.1	316.2	314.2	312.3	309.4
67.5°	269.5	274.3	277.3	280.2	281.2	281.2	281.2	280.2	278.2	275.3	272.4
70°	232.5	236.4	239.3	241.3	242.2	242.2	240.3	238.3	238.3	237.4	235.4
72.5°	194.6	197.5	199.4	201.4	201.4	201.4	201.4	202.4	201.4	199.4	196.5
75°	158.6	161.5	163.4	164.4	164.4	164.4	164.4	165.4	164.4	163.4	161.5
77.5°	124.5	126.5	127.4	128.4	128.4	128.4	129.4	130.4	129.4	128.4	127.4
80°	92.4	93.4	94.4	95.3	94.4	94.4	95.3	97.3	96.3	95.3	94.4
82.5°	63.2	64.2	65.2	65.2	66.2	67.1	67.1	67.1	67.1	66.2	65.2
85°	37.9	38.9	38.9	38.9	38.9	38.9	39.9	40.9	40.9	39.9	39.9
87.5°	17.5	18.5	17.5	16.5	15.6	15.6	17.5	19.5	19.5	18.5	18.5
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):

	330°	340°	350°	360°
0°	860.0	860.0	860.0	860.0
2.5°	867.8	866.8	861.9	857.1
5°	870.7	867.8	861.0	854.2
7.5°	870.7	866.8	857.1	848.3
10°	865.8	860.0	849.3	838.6
12.5°	860.0	853.2	840.5	828.9
15°	851.2	843.5	829.8	816.2
17.5°	838.6	828.9	815.2	800.7
20°	825.9	815.2	798.7	783.1
22.5°	808.4	798.7	781.2	764.7
25°	789.0	778.3	760.8	743.3
27.5°	768.5	755.9	738.4	720.9
30°	745.2	732.6	715.0	697.5
32.5°	719.9	708.2	690.7	672.2
35°	694.6	682.0	664.5	646.0
37.5°	666.4	654.7	637.2	619.7
40°	636.2	624.6	607.1	589.5
42.5°	608.0	597.3	579.8	563.3
45°	576.9	566.2	549.7	534.1
47.5°	544.8	534.1	518.5	503.0
50°	513.7	503.0	488.4	473.8
52.5°	478.6	469.9	456.3	442.6
55°	444.6	435.8	422.2	409.6
57.5°	410.5	402.8	390.1	378.4
60°	374.5	366.8	357.0	346.3
62.5°	340.5	333.7	324.0	314.2
65°	304.5	298.7	289.9	281.2
67.5°	267.5	262.7	254.9	247.1
70°	230.6	224.7	218.9	212.1
72.5°	193.6	190.7	184.8	179.0
75°	158.6	155.7	150.8	145.9
77.5°	125.5	122.6	118.7	114.8
80°	92.4	90.5	87.6	84.6
82.5°	64.2	62.3	60.3	57.4
85°	38.9	37.0	35.0	33.1
87.5°	17.5	16.5	14.6	13.6
90°	0.0	0.0	0.0	0.0

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