

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: P709142

Luminaire Tested: **4APN-24L935-X-UNV**

Issue Date: 09/12/2023



Test Information

Test Method: LM-79-08
Report Number: P709142
Test Lab: INNOVATION CENTER(G2)
Issue Date: 09/12/2023
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: FAIL-SAFE
Catalog Number: 4APN-24L935-X-UNV
Description: ArcMed Patient Recessed 4 FT x6 IN Fixture Ambient Light
Light Source: 3500K CCT, 90 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

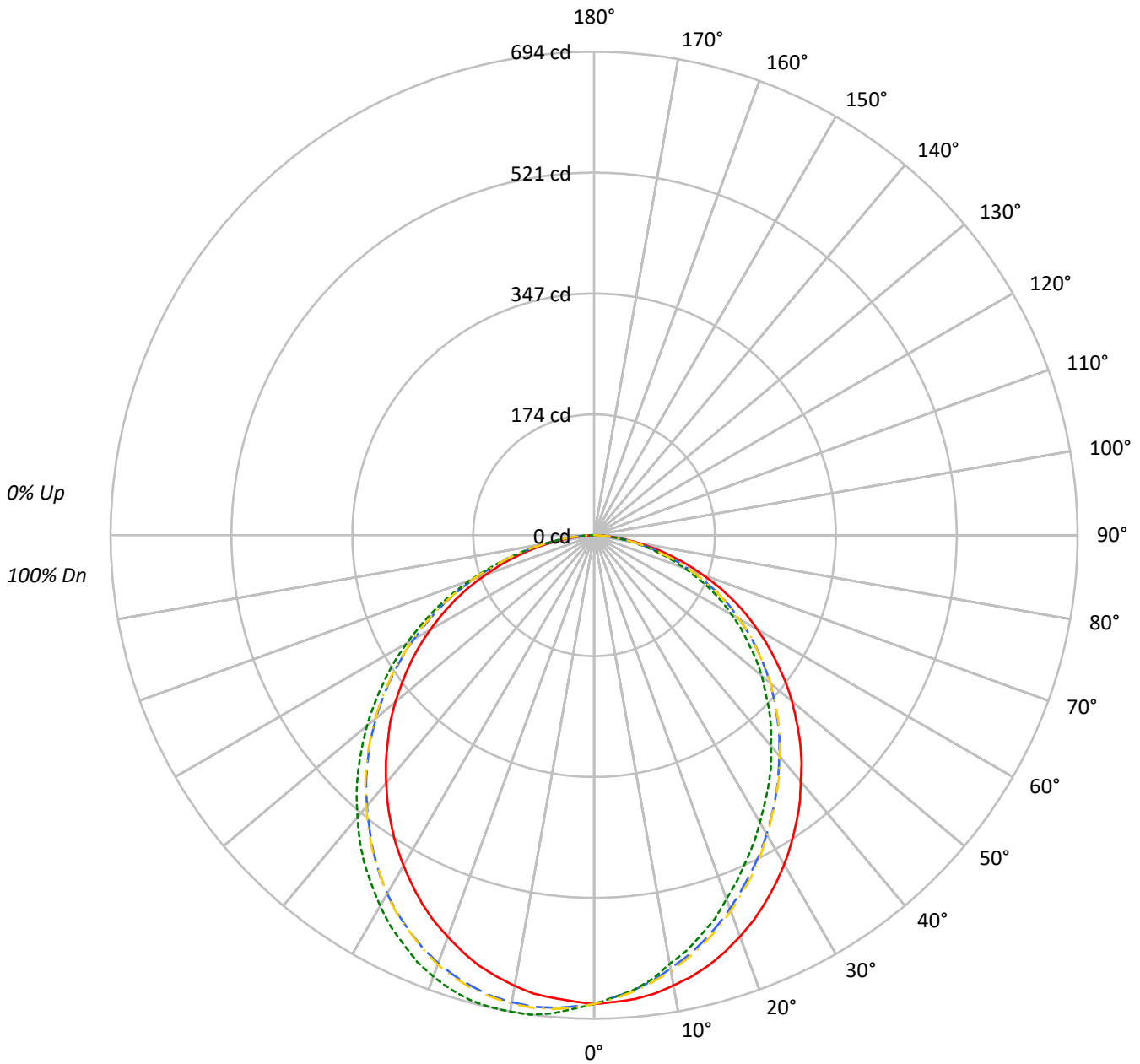
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1804.6 lumens
Efficiency: N/A
Efficacy: 64.7 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

TEST NUMBER: P709142
CATALOG NUMBER: 4APN-24L935-X-UNV

Luminous Intensity Polar Plot



— 0°-180° - - 45°-225° ···· 90°-270° - · - · 135°-315°



TEST NUMBER: P709142
 CATALOG NUMBER: 4APN-24L935-X-UNV

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°	6208	6208	6208	6208
5°	6189	6069	6176	6379
10°	6147	5854	6154	6504
15°	6100	5671	6107	6594
20°	6016	5455	6024	6621
25°	5920	5254	5943	6594
30°	5814	5068	5831	6543
35°	5692	4921	5718	6473
40°	5556	4757	5592	6362
45°	5453	4639	5462	6247
50°	5321	4513	5342	6107
55°	5154	4346	5191	5939
60°	5001	4213	5014	5729
65°	4803	4039	4803	5484
70°	4475	3736	4456	5112
75°	4071	3390	4014	4584
80°	3517	2912	3395	3921
85°	2742	2181	2583	3218



TEST NUMBER: P709142
 CATALOG NUMBER: 4APN-24L935-X-UNV

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	63.6	3.5
10°-20°	180.4	10.0
20°-30°	268.2	14.9
30°-40°	316.2	17.5
40°-50°	321.9	17.8
50°-60°	286.8	15.9
60°-70°	216.1	12.0
70°-80°	120.2	6.7
80°-90°	31.2	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°	512.3	28.4
0°-40°	828.4	45.9
0°-60°	1437.1	79.6
0°-90°	1804.6	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1804.6	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	673	673	673	673	673	
5°	668	655	667	689	668	63
15°	639	594	639	690	639	180
25°	582	516	584	648	582	268
35°	505	437	508	575	505	316
45°	418	356	419	479	418	322
55°	320	270	323	369	320	287
65°	220	185	220	251	220	217
75°	114	95	113	129	114	121
85°	26	21	24	30	26	31
90°	0	0	0	0	0	



TEST NUMBER: P709142

CATALOG NUMBER: 4APN-24L935-X-UNV

CANDELA DISTRIBUTION (FULL):

	0°	10°	20°	30°	40°	50°	60°	70°	80°	90°	100°
0°	672.9	672.9	672.9	672.9	672.9	672.9	672.9	672.9	672.9	672.9	672.9
2.5°	670.6	670.6	671.3	668.3	664.5	663.0	662.2	661.4	663.0	663.7	663.0
5°	668.3	666.8	665.2	661.4	656.9	653.8	652.3	651.5	653.1	655.3	653.1
7.5°	663.7	660.7	657.6	652.3	647.0	642.4	640.1	638.6	640.1	642.4	640.9
10°	656.1	652.3	647.7	641.6	634.0	628.7	626.4	624.1	624.9	624.9	624.9
12.5°	648.5	643.2	637.8	630.2	621.9	615.8	612.0	608.9	610.4	611.2	611.2
15°	638.6	631.8	624.1	615.8	607.4	600.5	596.0	592.9	593.7	593.7	594.5
17.5°	626.4	618.8	611.2	601.3	591.4	583.8	578.5	574.7	576.2	577.0	577.7
20°	612.7	604.4	596.0	585.3	574.7	566.3	561.0	556.4	555.6	555.6	556.4
22.5°	598.3	589.1	579.2	567.8	556.4	547.3	541.9	537.4	536.6	536.6	537.4
25°	581.5	571.6	561.7	550.3	538.1	529.0	522.1	517.6	516.8	516.1	517.6
27.5°	564.0	554.1	544.2	532.8	519.9	510.7	503.9	499.3	497.8	497.0	498.6
30°	545.7	534.3	523.7	511.5	500.1	490.9	484.1	478.8	477.2	475.7	477.2
32.5°	526.0	514.5	503.1	490.9	479.5	470.4	463.5	458.2	456.7	455.9	457.5
35°	505.4	494.0	483.3	471.2	459.7	450.6	443.7	439.2	437.7	436.9	437.7
37.5°	484.9	473.4	462.8	450.6	439.2	430.0	423.2	418.6	417.9	417.1	417.9
40°	461.3	451.4	440.7	429.3	417.9	408.7	403.4	398.1	396.6	395.0	397.3
42.5°	440.7	430.8	420.2	409.5	398.1	388.9	382.9	378.3	376.8	376.0	376.8
45°	417.9	407.2	396.6	386.7	376.0	367.6	361.5	357.0	356.2	355.5	356.2
47.5°	393.5	384.4	375.2	365.4	354.7	346.3	341.0	336.4	334.9	333.4	334.9
50°	370.7	361.5	352.4	343.3	333.4	325.8	320.4	315.9	315.1	314.4	315.1
52.5°	346.3	337.2	328.8	319.7	311.3	303.7	298.4	294.6	293.8	293.0	293.8
55°	320.4	312.8	305.2	297.6	289.2	282.4	277.8	273.3	271.7	270.2	271.7
57.5°	296.1	289.2	281.6	274.0	266.4	260.3	255.7	251.9	251.2	250.4	251.2
60°	271.0	264.9	258.0	251.2	243.6	237.5	233.7	230.6	229.1	228.3	229.1
62.5°	245.9	239.8	234.4	227.6	220.7	216.2	212.4	209.3	207.8	207.0	207.8
65°	220.0	214.6	209.3	203.2	197.9	193.3	189.5	186.5	185.7	185.0	185.0
67.5°	193.3	188.8	184.2	178.9	172.8	168.2	164.4	162.1	161.4	160.6	161.4
70°	165.9	162.1	157.6	153.0	148.4	144.6	142.3	140.1	139.3	138.5	138.5
72.5°	140.1	137.0	133.2	129.4	125.6	121.8	119.5	118.0	117.2	116.5	116.5
75°	114.2	111.1	108.8	105.8	102.0	99.7	97.4	95.9	95.1	95.1	95.1
77.5°	89.8	87.5	85.2	82.2	79.9	77.6	76.1	75.4	74.6	74.6	74.6
80°	66.2	64.7	63.2	61.7	59.4	57.1	56.3	55.6	54.8	54.8	54.8
82.5°	44.9	44.1	42.6	41.1	39.6	38.8	38.1	37.3	37.3	37.3	37.3
85°	25.9	25.1	24.4	23.6	22.8	22.8	22.1	21.3	20.6	20.6	20.6
87.5°	10.7	10.7	10.7	9.9	9.1	9.1	9.1	9.1	9.1	9.1	9.1
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: P709142

CATALOG NUMBER: 4APN-24L935-X-UNV

CANDELA DISTRIBUTION (continued):

	110°	120°	130°	140°	150°	160°	170°	180°	190°	200°	210°
0°	672.9	672.9	672.9	672.9	672.9	672.9	672.9	672.9	672.9	672.9	672.9
2.5°	661.4	663.0	664.5	666.8	669.0	671.3	670.6	669.8	672.9	676.7	677.4
5°	651.5	653.1	655.3	659.2	663.0	666.0	666.8	666.8	672.9	678.2	679.7
7.5°	639.4	641.6	644.7	648.5	653.8	658.4	660.7	663.7	669.8	676.7	679.7
10°	624.1	627.9	632.5	637.8	643.2	648.5	653.1	656.9	664.5	672.1	676.7
12.5°	610.4	614.2	618.8	624.9	631.8	638.6	643.2	648.5	657.6	666.8	672.1
15°	595.2	599.0	604.4	610.4	618.1	625.7	632.5	639.4	648.5	658.4	664.5
17.5°	578.5	582.3	587.6	595.2	603.6	612.0	619.6	627.2	637.8	648.5	655.3
20°	557.9	563.2	570.1	577.7	587.6	597.5	605.1	613.5	624.9	636.3	643.9
22.5°	538.1	543.5	551.1	560.2	570.9	581.5	590.7	599.8	612.0	623.4	631.8
25°	519.1	525.2	532.8	541.9	551.8	562.5	573.1	583.8	596.0	608.2	616.5
27.5°	500.1	505.4	513.0	522.1	533.6	544.2	554.9	565.5	578.5	591.4	600.5
30°	478.8	484.9	491.7	500.8	513.0	525.2	535.8	547.3	560.2	573.1	582.3
32.5°	459.0	464.3	471.2	480.3	492.5	504.6	516.1	528.2	540.4	553.4	562.5
35°	439.2	444.5	451.4	460.5	472.7	484.9	496.3	507.7	519.9	532.0	541.2
37.5°	419.4	424.7	431.6	440.7	452.1	464.3	475.0	486.4	498.6	510.7	519.1
40°	398.8	404.2	409.5	418.6	430.0	442.2	452.9	464.3	476.5	488.7	497.0
42.5°	378.3	383.6	390.5	399.6	410.3	420.9	431.6	442.2	453.6	465.1	473.4
45°	357.7	362.3	369.2	377.5	388.2	398.1	408.7	418.6	430.0	440.7	449.1
47.5°	336.4	341.0	346.3	354.7	365.4	376.0	386.7	396.6	406.5	417.1	424.7
50°	315.9	320.4	326.5	334.1	344.0	353.9	363.1	372.2	382.1	392.0	398.8
52.5°	294.6	299.1	304.5	312.1	320.4	329.6	337.9	347.1	356.2	365.4	372.2
55°	273.3	276.3	280.9	287.7	296.8	306.0	314.4	322.7	331.1	338.7	345.6
57.5°	251.9	255.7	261.1	267.2	274.8	282.4	290.0	297.6	305.2	312.8	318.9
60°	230.6	233.7	237.5	242.8	250.4	257.3	264.9	271.7	278.6	285.4	290.8
62.5°	208.6	211.6	215.4	220.7	226.8	232.9	239.8	245.9	251.9	258.0	263.4
65°	185.7	188.8	192.6	197.1	202.5	207.8	213.9	220.0	224.5	229.1	234.4
67.5°	162.1	165.2	169.0	172.8	177.3	182.7	188.0	193.3	197.9	202.5	206.3
70°	139.3	141.6	145.4	148.4	152.2	156.0	160.6	165.2	168.2	172.0	176.6
72.5°	117.2	119.5	122.5	125.6	127.9	130.9	135.5	139.3	143.1	147.7	149.9
75°	95.9	97.4	99.7	102.0	104.3	106.6	109.6	112.6	115.7	118.0	121.0
77.5°	74.6	76.1	78.4	79.9	81.4	83.0	85.2	87.5	89.8	91.3	94.4
80°	54.8	56.3	57.8	59.4	60.9	62.4	63.2	63.9	67.0	69.3	70.8
82.5°	37.3	38.1	38.8	40.3	41.1	41.9	42.6	42.6	44.1	45.7	48.0
85°	21.3	22.1	22.8	22.8	22.8	22.8	23.6	24.4	25.1	26.6	28.2
87.5°	8.4	8.4	9.1	9.1	9.1	9.1	9.1	9.1	9.9	11.4	12.2
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: P709142

CATALOG NUMBER: 4APN-24L935-X-UNV

CANDELA DISTRIBUTION (continued):

	220°	230°	240°	250°	260°	270°	280°	290°	300°	310°	320°
0°	672.9	672.9	672.9	672.9	672.9	672.9	672.9	672.9	672.9	672.9	672.9
2.5°	676.7	677.4	678.9	679.7	680.5	680.5	681.2	682.0	680.5	678.9	678.2
5°	680.5	681.2	683.5	685.8	687.3	688.8	688.1	687.3	685.8	683.5	682.0
7.5°	681.2	683.5	685.8	688.8	691.1	694.2	692.6	691.1	688.1	685.0	682.8
10°	678.9	682.0	685.8	689.6	691.9	694.2	692.6	691.1	688.1	684.3	681.2
12.5°	675.9	679.7	684.3	688.1	690.4	693.4	691.1	688.8	685.0	681.2	677.4
15°	669.0	673.6	678.9	683.5	687.3	690.4	688.1	686.6	682.0	676.7	671.3
17.5°	660.7	666.8	672.1	677.4	680.5	683.5	682.0	680.5	675.1	669.0	663.0
20°	650.8	656.9	662.2	667.5	671.3	674.4	672.1	669.8	664.5	659.2	653.1
22.5°	638.6	644.7	650.8	656.1	659.9	663.0	659.9	656.1	650.8	645.5	639.4
25°	623.4	630.2	637.1	642.4	644.7	647.7	644.7	641.6	636.3	631.0	624.1
27.5°	608.2	615.0	621.9	627.2	629.5	632.5	629.5	626.4	621.1	615.8	608.9
30°	590.7	597.5	604.4	609.7	612.0	614.2	611.2	608.2	603.6	598.3	591.4
32.5°	570.9	577.7	583.0	588.4	591.4	594.5	591.4	589.1	583.8	577.0	570.1
35°	549.5	556.4	563.2	568.6	571.6	574.7	570.9	567.1	562.5	557.2	551.1
37.5°	526.0	533.6	541.2	547.3	549.5	552.6	549.5	545.7	541.2	535.8	529.0
40°	503.9	510.7	517.6	523.7	526.0	528.2	525.2	522.1	516.8	511.5	504.6
42.5°	481.0	487.9	494.0	499.3	501.6	504.6	501.6	497.8	494.0	489.4	483.3
45°	456.7	463.5	468.9	474.2	476.5	478.8	475.7	471.9	468.1	464.3	458.2
47.5°	431.6	437.7	443.0	448.3	449.8	452.1	449.1	446.8	443.0	439.2	433.9
50°	405.7	411.8	417.1	421.7	423.2	425.5	422.4	419.4	416.3	413.3	408.7
52.5°	379.1	384.4	389.7	394.3	395.8	397.3	394.3	391.2	388.2	385.1	380.6
55°	351.7	357.0	362.3	366.1	367.6	369.2	366.1	363.8	360.8	358.5	353.9
57.5°	324.2	329.6	334.1	337.9	339.5	341.0	337.9	334.9	332.6	330.3	326.5
60°	296.1	301.4	305.2	308.3	309.8	310.5	307.5	305.2	303.7	302.2	298.4
62.5°	268.7	272.5	276.3	278.6	280.1	280.9	278.6	277.1	275.5	274.0	271.0
65°	239.8	244.3	247.4	249.7	250.4	251.2	248.9	247.4	245.9	244.3	242.0
67.5°	210.8	214.6	216.9	219.2	220.0	220.0	220.0	219.2	217.7	215.4	213.1
70°	181.9	185.0	187.2	188.8	189.5	189.5	188.0	186.5	186.5	185.7	184.2
72.5°	152.2	154.5	156.0	157.6	157.6	157.6	157.6	158.3	157.6	156.0	153.8
75°	124.1	126.4	127.9	128.6	128.6	128.6	128.6	129.4	128.6	127.9	126.4
77.5°	97.4	98.9	99.7	100.5	100.5	100.5	101.2	102.0	101.2	100.5	99.7
80°	72.3	73.1	73.8	74.6	73.8	73.8	74.6	76.1	75.4	74.6	73.8
82.5°	49.5	50.2	51.0	51.0	51.8	52.5	52.5	52.5	52.5	51.8	51.0
85°	29.7	30.4	30.4	30.4	30.4	30.4	31.2	32.0	32.0	31.2	31.2
87.5°	13.7	14.5	13.7	12.9	12.2	12.2	13.7	15.2	15.2	14.5	14.5
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: P709142
 CATALOG NUMBER: 4APN-24L935-X-UNV

CANDELA DISTRIBUTION (continued):

	330°	340°	350°	360°
0°	672.9	672.9	672.9	672.9
2.5°	678.9	678.2	674.4	670.6
5°	681.2	678.9	673.6	668.3
7.5°	681.2	678.2	670.6	663.7
10°	677.4	672.9	664.5	656.1
12.5°	672.9	667.5	657.6	648.5
15°	666.0	659.9	649.3	638.6
17.5°	656.1	648.5	637.8	626.4
20°	646.2	637.8	624.9	612.7
22.5°	632.5	624.9	611.2	598.3
25°	617.3	608.9	595.2	581.5
27.5°	601.3	591.4	577.7	564.0
30°	583.0	573.1	559.4	545.7
32.5°	563.2	554.1	540.4	526.0
35°	543.5	533.6	519.9	505.4
37.5°	521.4	512.3	498.6	484.9
40°	497.8	488.7	475.0	461.3
42.5°	475.7	467.3	453.6	440.7
45°	451.4	443.0	430.0	417.9
47.5°	426.2	417.9	405.7	393.5
50°	401.9	393.5	382.1	370.7
52.5°	374.5	367.6	357.0	346.3
55°	347.8	341.0	330.3	320.4
57.5°	321.2	315.1	305.2	296.1
60°	293.0	287.0	279.3	271.0
62.5°	266.4	261.1	253.5	245.9
65°	238.2	233.7	226.8	220.0
67.5°	209.3	205.5	199.4	193.3
70°	180.4	175.8	171.3	165.9
72.5°	151.5	149.2	144.6	140.1
75°	124.1	121.8	118.0	114.2
77.5°	98.2	95.9	92.9	89.8
80°	72.3	70.8	68.5	66.2
82.5°	50.2	48.7	47.2	44.9
85°	30.4	28.9	27.4	25.9
87.5°	13.7	12.9	11.4	10.7
90°	0.0	0.0	0.0	0.0

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