

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: NEO-RAY

Report Number: P334811

Luminaire Tested: **S124IP-S590U930-4F0-1E-UDD-4**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P334811
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-18)
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S124IP-S590U930-4F0-1E-UDD-4
Description: DEFINE 4 INDIRECT LED LUMINAIRE, BATWING OPTIC
PENDANT MOUNT, 590 LUMENS PER FOOT
Light Source: 3000K CCT, 90 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

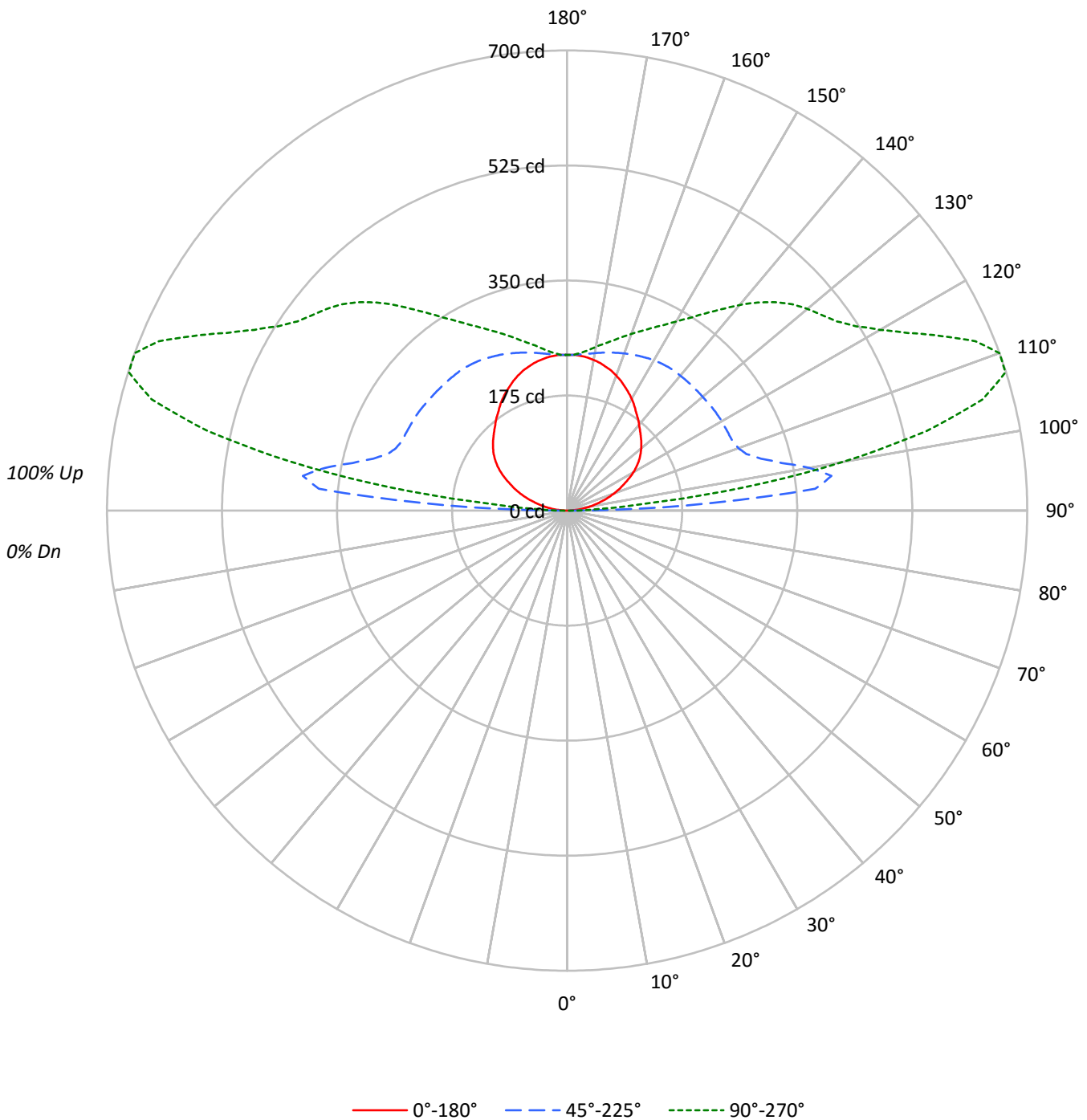
Lumens per Lamp: N/A
Luminaire Lumens: 1725.1 lumens
Efficiency: N/A
Efficacy: 91.8 lumens/watt
Spacing Criteria (0/90/45): - / - / -
Luminous Opening: Rectangular (W 0.33' x L: 4' x H: 0')
CIE Type: Indirect

Input Watts (W): 18.8
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





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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	95	95	95	95	81	81	81	81	56	56	56	32	32	32	10	10	10	0
1	87	83	79	76	74	71	68	65	48	47	45	28	27	26	9	9	8	0
2	79	72	66	62	67	62	57	53	42	40	37	24	23	22	8	7	7	0
3	72	63	56	51	61	54	49	44	37	34	31	21	20	18	7	6	6	0
4	65	56	48	43	56	48	42	37	33	29	26	19	17	16	6	6	5	0
5	60	49	42	36	51	42	36	32	29	25	22	17	15	13	5	5	4	0
6	55	44	36	31	47	38	32	27	26	22	19	15	13	11	5	4	4	0
7	50	39	32	27	43	34	28	23	23	19	17	14	11	10	4	4	3	0
8	47	35	28	23	40	30	24	20	21	17	14	12	10	9	4	3	3	0
9	43	32	25	20	37	27	22	18	19	15	13	11	9	8	4	3	3	0
10	40	29	22	18	34	25	19	16	17	14	11	10	8	7	3	3	2	0

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	0	0	0
5°	0	0	0
10°	0	0	0
15°	0	0	0
20°	0	0	0
25°	0	0	0
30°	0	0	0
35°	0	0	0
40°	0	0	0
45°	0	0	0
50°	0	0	0
55°	0	0	0
60°	0	0	0
65°	0	0	0
70°	0	0	0
75°	0	0	0
80°	0	0	0
85°	0	0	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	0.0	0.0
10°-20°	0.0	0.0
20°-30°	0.0	0.0
30°-40°	0.0	0.0
40°-50°	0.0	0.0
50°-60°	0.0	0.0
60°-70°	0.0	0.0
70°-80°	0.0	0.0
80°-90°	0.9	0.1
90°-100°	171.6	9.9
100°-110°	358.2	20.8
110°-120°	318.4	18.5
120°-130°	268.0	15.5
130°-140°	223.6	13.0
140°-150°	170.7	9.9
150°-160°	120.0	7.0
160°-170°	70.6	4.1
170°-180°	23.0	1.3
0°-30°	0.0	0.0
0°-40°	0.0	0.0
0°-60°	0.0	0.0
0°-90°	0.9	0.1
90°-120°	848.2	49.2
90°-150°	1510.6	87.6
90°-180°	1724.0	99.9
0°-180°	1725.1	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	0	0	0	0	0	
5°	0	0	0	0	0	0
15°	0	0	0	0	0	0
25°	0	0	0	0	0	0
35°	0	0	0	0	0	0
45°	0	0	0	0	0	0
55°	0	0	0	0	0	0
65°	0	0	0	0	0	0
75°	0	0	0	0	0	0
85°	0	0	0	0	0	0
90°	0	4	8	9	10	1
95°	15	48	379	188	114	17
105°	54	79	305	657	654	58
115°	96	120	272	523	628	95
125°	134	159	271	445	501	119
135°	159	189	268	395	448	123
145°	183	209	267	333	366	115
155°	208	224	260	294	306	96
165°	226	234	249	263	267	64
175°	236	237	239	242	241	22
180°	237	237	237	237	237	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
22.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
25°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
27.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
30°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
32.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
35°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
37.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
40°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
42.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
45°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
47.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
50°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
52.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
55°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
57.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
60°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
62.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
65°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
67.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
70°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
72.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
75°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
77.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
80°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
90°	0.5	1.4	2.8	3.3	3.7	3.7	6.5	6.5	7.4	8.4	7.9
92.5°	6.5	9.3	14.4	21.4	29.8	41.9	70.7	115.8	159.5	182.3	151.6
95°	15.3	16.7	21.4	27.4	38.6	58.1	98.6	174.9	286.0	379.0	389.7
97.5°	25.6	25.6	29.8	35.3	45.1	61.9	93.9	159.5	273.9	405.6	488.8
100°	35.3	35.3	38.6	44.2	53.0	67.9	95.3	147.9	242.8	373.9	493.0
102.5°	44.6	45.6	48.4	53.5	61.9	75.8	100.0	144.6	221.8	334.4	458.1
105°	54.4	55.8	58.1	63.7	72.1	85.6	107.9	146.5	211.6	305.1	414.4
107.5°	65.1	66.0	68.4	74.4	82.3	95.8	116.3	152.1	208.8	286.0	378.6
110°	75.8	76.7	79.1	84.6	93.0	105.6	126.0	158.6	209.8	277.2	353.0



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	86.0	87.0	89.8	94.9	103.2	115.8	135.3	165.6	212.5	273.0	338.6
115°	95.8	97.2	100.5	105.1	113.9	126.5	145.1	173.0	216.3	272.1	330.7
117.5°	106.0	107.4	110.2	115.3	123.7	136.7	154.4	180.5	220.0	271.6	326.5
120°	116.3	117.2	120.5	125.6	133.5	146.5	164.2	188.4	224.2	271.6	323.2
122.5°	125.6	126.5	129.8	134.4	143.2	155.8	173.5	195.8	228.4	271.1	319.5
125°	133.5	135.3	138.1	143.2	152.1	165.1	181.8	203.2	232.5	270.7	315.3
127.5°	140.9	142.3	145.6	151.2	160.5	173.5	189.8	209.8	235.8	269.8	309.7
130°	147.0	148.8	152.5	159.5	168.4	181.8	197.7	215.8	239.5	269.3	304.6
132.5°	153.0	154.4	159.5	166.0	175.8	188.4	204.2	221.8	242.8	268.8	300.0
135°	158.6	160.5	165.1	173.0	182.8	194.9	210.2	227.0	246.0	268.4	295.3
137.5°	164.2	166.0	171.2	178.6	188.8	200.5	214.9	230.7	247.9	268.4	291.1
140°	170.2	171.6	176.7	184.6	194.4	205.6	219.5	234.4	250.2	267.9	287.9
142.5°	176.7	178.1	182.8	190.2	199.5	210.2	223.7	237.2	252.1	267.9	285.1
145°	182.8	184.2	188.8	195.3	204.2	214.4	226.5	239.1	252.5	267.0	281.8
147.5°	189.8	190.2	194.4	201.4	208.8	218.1	229.8	240.9	253.0	265.6	279.1
150°	196.3	196.7	200.5	206.0	213.0	221.8	232.1	242.3	253.0	264.2	275.8
152.5°	202.3	202.3	206.0	211.1	217.2	225.1	233.9	243.2	252.1	261.8	272.1
155°	207.9	208.4	211.1	215.8	220.9	227.9	235.8	243.7	251.1	259.5	268.4
157.5°	213.5	213.5	216.3	220.0	224.6	230.2	237.2	243.7	250.2	257.2	264.6
160°	218.6	218.6	220.5	223.7	227.4	232.5	238.1	243.7	248.8	254.4	260.4
162.5°	223.2	222.8	224.2	227.0	230.2	233.9	239.1	243.7	247.4	251.6	256.7
165°	226.5	226.5	227.4	229.8	232.1	234.9	239.1	242.8	245.6	248.8	252.5
167.5°	230.2	229.8	230.2	232.1	233.5	235.8	239.1	241.8	243.7	246.0	248.8
170°	232.5	232.1	232.5	233.9	234.9	236.3	238.6	240.9	241.8	243.2	245.1
172.5°	234.9	234.4	234.4	235.3	235.8	236.7	238.1	240.0	240.0	240.4	241.8
175°	236.3	235.8	235.8	236.3	236.7	236.7	237.7	239.1	238.6	238.6	239.5
177.5°	237.2	236.7	236.3	236.7	236.7	236.7	237.2	238.1	237.2	237.2	237.7
180°	236.7	236.7	236.7	236.7	236.7	236.7	236.7	236.7	236.7	236.7	236.7



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
22.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
25°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
27.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
30°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
32.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
35°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
37.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
40°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
42.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
45°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
47.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
50°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
52.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
55°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
57.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
60°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
62.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
65°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
67.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
70°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
72.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
75°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
77.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
80°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
90°	8.4	8.8	9.3	9.3	9.8	10.2	9.8	9.8
92.5°	112.1	83.7	66.0	54.4	47.4	44.2	42.3	42.3
95°	344.6	272.5	210.2	165.1	142.3	127.9	119.5	113.5
97.5°	496.2	460.4	409.3	357.2	325.6	297.7	283.7	272.5
100°	560.9	570.2	547.4	513.0	472.5	444.2	430.2	426.5
102.5°	557.6	613.0	626.9	617.6	596.7	578.1	563.2	560.4
105°	520.9	601.4	647.4	666.5	667.4	663.7	657.2	654.4
107.5°	475.8	562.8	626.9	666.0	686.5	694.8	698.6	699.0
110°	435.8	516.2	583.7	634.8	667.9	687.4	695.8	700.0



TEST NUMBER: P334811

CATALOG NUMBER: S124IP-S590U930-4F0-1E-UDD-4

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	406.5	475.3	538.1	589.3	627.9	652.5	665.1	672.5
115°	388.8	446.0	500.4	545.1	581.8	609.7	624.6	628.3
117.5°	378.6	426.9	471.1	510.2	542.8	566.9	582.8	585.1
120°	372.1	415.3	452.5	485.6	512.1	532.5	544.6	549.7
122.5°	366.5	407.9	440.9	468.8	490.2	506.9	516.7	521.8
125°	360.0	400.0	432.1	457.6	476.2	489.7	498.6	501.4
127.5°	352.5	391.1	423.2	447.4	466.0	478.1	485.6	488.3
130°	343.2	380.0	411.6	436.3	455.3	466.9	474.4	477.2
132.5°	333.5	367.4	398.1	422.8	441.4	454.9	461.8	464.6
135°	324.6	354.9	383.2	406.5	425.1	438.1	445.6	448.3
137.5°	316.3	342.8	367.4	388.8	406.5	420.0	426.0	429.3
140°	309.3	331.1	352.1	371.6	387.9	398.1	404.6	408.3
142.5°	302.8	321.4	338.6	354.9	368.8	378.1	383.7	386.0
145°	296.7	312.5	326.5	339.5	351.1	359.0	363.7	366.0
147.5°	291.6	304.6	316.3	327.0	335.8	342.8	346.5	347.4
150°	287.0	297.7	307.0	315.3	322.8	328.8	331.6	332.1
152.5°	281.8	290.7	299.1	305.6	311.6	316.3	317.7	318.1
155°	276.7	284.2	291.1	296.7	301.4	305.1	306.5	306.5
157.5°	271.1	277.7	283.7	288.4	292.1	294.9	295.8	295.8
160°	266.0	271.1	276.3	280.0	282.8	285.6	286.0	286.0
162.5°	260.9	265.1	268.8	272.1	273.9	276.7	277.2	276.7
165°	256.3	259.1	262.3	264.6	266.5	268.4	267.9	267.4
167.5°	251.6	253.9	256.7	258.1	259.1	260.4	260.4	260.0
170°	247.4	248.8	250.7	252.1	253.0	253.5	253.0	253.0
172.5°	243.7	244.6	245.6	246.5	247.0	247.4	247.0	246.0
175°	240.4	240.9	241.8	241.8	241.8	242.8	241.8	240.9
177.5°	238.1	238.6	238.6	239.1	238.6	239.1	238.1	237.2
180°	236.7	236.7	236.7	236.7	236.7	236.7	236.7	236.7

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