

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: P334821

Luminaire Tested: **S124IP-S590U940-4F0-1E-UDD-4**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P334821
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-S590U940-4F0-1E-UDD-4
Description: DEFINE 4 INDIRECT LED LUMINAIRE, BATWING OPTIC
PENDANT MOUNT, 590 LUMENS PER FOOT
Light Source: 4000K CCT, 90 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

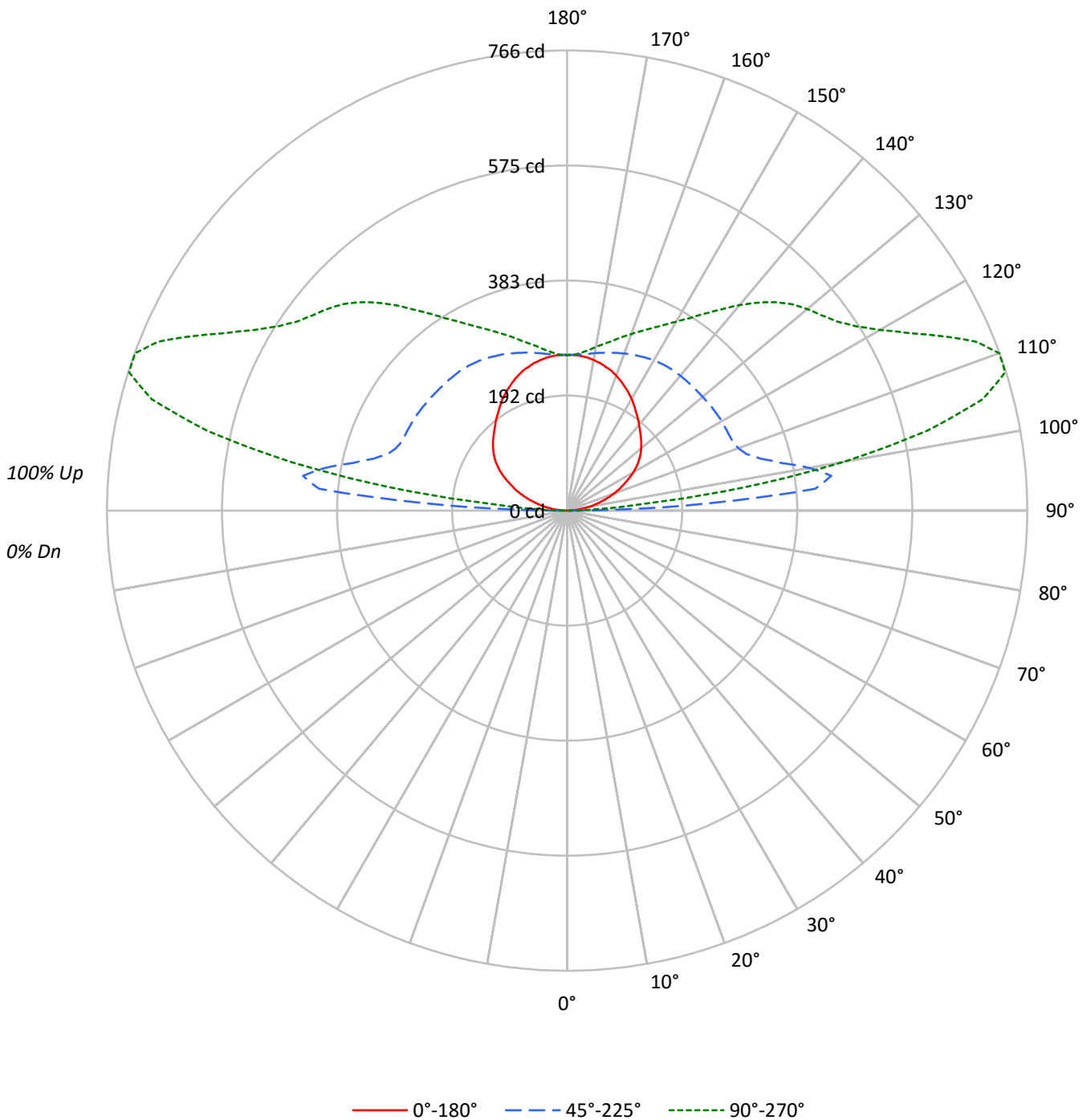
Lumens per Lamp: N/A
Luminaire Lumens: 1886.8 lumens
Efficiency: N/A
Efficacy: 100.4 lumens/watt
Spacing Criteria (0/90/45): - / - / -
Luminous Opening: Rectangular (W 0.33' x L: 4' x H: 0')
CIE Type: Indirect

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°	1.0	0.1
90°-100°	187.7	9.9
100°-110°	391.8	20.8
110°-120°	348.3	18.5
120°-130°	293.1	15.5
130°-140°	244.6	13.0
140°-150°	186.7	9.9
150°-160°	131.3	7.0
160°-170°	77.2	4.1
170°-180°	25.1	1.3
0°-30°	0.0	0.0
0°-40°	0.0	0.0
0°-60°	0.0	0.0
0°-90°	1.0	0.1
90°-120°	927.7	49.2
90°-150°	1652.2	87.6
90°-180°	1886.0	100.0
0°-180°	1886.8	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	9	10	11	1
95°	17	53	415	205	124	18
105°	60	86	334	718	716	63
115°	105	132	298	572	687	104
125°	146	173	296	487	548	130
135°	174	206	294	432	490	134
145°	200	229	292	364	400	125
155°	227	245	284	321	335	105
165°	248	255	272	288	292	70
175°	258	259	261	264	264	25
180°	259	259	259	259	259	



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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	1.5	3.1	3.6	4.1	4.1	7.1	7.1	8.1	9.2	8.6
92.5°	7.1	10.2	15.8	23.4	32.6	45.8	77.3	126.7	174.5	199.4	165.8
95°	16.8	18.3	23.4	30.0	42.2	63.6	107.8	191.3	312.8	414.6	426.3
97.5°	28.0	28.0	32.6	38.7	49.3	67.7	102.8	174.5	299.6	443.6	534.6
100°	38.7	38.7	42.2	48.3	58.0	74.3	104.3	161.8	265.5	409.0	539.2
102.5°	48.8	49.9	52.9	58.5	67.7	82.9	109.4	158.2	242.6	365.7	501.0
105°	59.5	61.0	63.6	69.7	78.8	93.6	118.0	160.2	231.4	333.7	453.2
107.5°	71.2	72.2	74.8	81.4	90.0	104.8	127.2	166.3	228.4	312.8	414.1
110°	82.9	83.9	86.5	92.6	101.7	115.5	137.9	173.5	229.4	303.2	386.1



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	94.1	95.1	98.2	103.8	112.9	126.7	148.0	181.1	232.5	298.6	370.3
115°	104.8	106.3	109.9	115.0	124.6	138.4	158.7	189.2	236.5	297.6	361.7
117.5°	116.0	117.5	120.6	126.2	135.3	149.6	168.9	197.4	240.6	297.1	357.1
120°	127.2	128.2	131.7	137.3	146.0	160.2	179.6	206.0	245.2	297.1	353.5
122.5°	137.3	138.4	141.9	147.0	156.7	170.4	189.7	214.2	249.8	296.6	349.5
125°	146.0	148.0	151.1	156.7	166.3	180.6	198.9	222.3	254.3	296.0	344.9
127.5°	154.1	155.7	159.2	165.3	175.5	189.7	207.5	229.4	257.9	295.0	338.8
130°	160.7	162.8	166.8	174.5	184.1	198.9	216.2	236.0	262.0	294.5	333.2
132.5°	167.4	168.9	174.5	181.6	192.3	206.0	223.3	242.6	265.5	294.0	328.1
135°	173.5	175.5	180.6	189.2	199.9	213.1	229.9	248.2	269.1	293.5	323.0
137.5°	179.6	181.6	187.2	195.3	206.5	219.2	235.0	252.3	271.1	293.5	318.4
140°	186.2	187.7	193.3	201.9	212.6	224.8	240.1	256.4	273.7	293.0	314.9
142.5°	193.3	194.8	199.9	208.0	218.2	229.9	244.7	259.4	275.7	293.0	311.8
145°	199.9	201.4	206.5	213.6	223.3	234.5	247.7	261.5	276.2	292.0	308.3
147.5°	207.5	208.0	212.6	220.3	228.4	238.6	251.3	263.5	276.7	290.5	305.2
150°	214.7	215.2	219.2	225.3	233.0	242.6	253.8	265.0	276.7	288.9	301.6
152.5°	221.3	221.3	225.3	230.9	237.6	246.2	255.9	266.0	275.7	286.4	297.6
155°	227.4	227.9	230.9	236.0	241.6	249.3	257.9	266.5	274.7	283.8	293.5
157.5°	233.5	233.5	236.5	240.6	245.7	251.8	259.4	266.5	273.7	281.3	289.4
160°	239.1	239.1	241.1	244.7	248.7	254.3	260.4	266.5	272.1	278.2	284.9
162.5°	244.2	243.7	245.2	248.2	251.8	255.9	261.5	266.5	270.6	275.2	280.8
165°	247.7	247.7	248.7	251.3	253.8	256.9	261.5	265.5	268.6	272.1	276.2
167.5°	251.8	251.3	251.8	253.8	255.4	257.9	261.5	264.5	266.5	269.1	272.1
170°	254.3	253.8	254.3	255.9	256.9	258.4	261.0	263.5	264.5	266.0	268.1
172.5°	256.9	256.4	256.4	257.4	257.9	258.9	260.4	262.5	262.5	263.0	264.5
175°	258.4	257.9	257.9	258.4	258.9	258.9	259.9	261.5	261.0	261.0	262.0
177.5°	259.4	258.9	258.4	258.9	258.9	258.9	259.4	260.4	259.4	259.4	259.9
180°	258.9	258.9	258.9	258.9	258.9	258.9	258.9	258.9	258.9	258.9	258.9



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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°	9.2	9.7	10.2	10.2	10.7	11.2	10.7	10.7
92.5°	122.6	91.6	72.2	59.5	51.9	48.3	46.3	46.3
95°	376.9	298.1	229.9	180.6	155.7	139.9	130.7	124.1
97.5°	542.8	503.6	447.6	390.7	356.1	325.6	310.3	298.1
100°	613.5	623.6	598.7	561.1	516.8	485.8	470.5	466.5
102.5°	609.9	670.4	685.7	675.5	652.6	632.3	616.0	613.0
105°	569.7	657.7	708.1	728.9	729.9	725.9	718.8	715.7
107.5°	520.4	615.5	685.7	728.4	750.8	760.0	764.0	764.5
110°	476.6	564.6	638.4	694.3	730.5	751.8	761.0	765.6



TEST NUMBER: P334821

CATALOG NUMBER: S124IP-S590U940-4F0-1E-UDD-4

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	444.6	519.9	588.5	644.5	686.7	713.7	727.4	735.5
115°	425.3	487.8	547.3	596.2	636.4	666.9	683.2	687.2
117.5°	414.1	467.0	515.3	558.0	593.6	620.1	637.4	639.9
120°	406.9	454.2	494.9	531.1	560.1	582.4	595.7	601.3
122.5°	400.8	446.1	482.2	512.7	536.1	554.5	565.1	570.7
125°	393.7	437.5	472.6	500.5	520.9	535.6	545.3	548.4
127.5°	385.6	427.8	462.9	489.3	509.7	522.9	531.1	534.1
130°	375.4	415.6	450.2	477.1	498.0	510.7	518.8	521.9
132.5°	364.7	401.9	435.4	462.4	482.7	497.5	505.1	508.2
135°	355.1	388.1	419.1	444.6	464.9	479.2	487.3	490.4
137.5°	345.9	374.9	401.9	425.3	444.6	459.3	465.9	469.5
140°	338.3	362.2	385.1	406.4	424.2	435.4	442.5	446.6
142.5°	331.1	351.5	370.3	388.1	403.4	413.6	419.7	422.2
145°	324.5	341.8	357.1	371.3	384.1	392.7	397.8	400.3
147.5°	318.9	333.2	345.9	357.6	367.3	374.9	379.0	380.0
150°	313.9	325.6	335.7	344.9	353.0	359.6	362.7	363.2
152.5°	308.3	317.9	327.1	334.2	340.8	345.9	347.4	347.9
155°	302.7	310.8	318.4	324.5	329.6	333.7	335.2	335.2
157.5°	296.6	303.7	310.3	315.4	319.4	322.5	323.5	323.5
160°	291.0	296.6	302.2	306.2	309.3	312.3	312.8	312.8
162.5°	285.4	289.9	294.0	297.6	299.6	302.7	303.2	302.7
165°	280.3	283.3	286.9	289.4	291.5	293.5	293.0	292.5
167.5°	275.2	277.7	280.8	282.3	283.3	284.9	284.9	284.3
170°	270.6	272.1	274.2	275.7	276.7	277.2	276.7	276.7
172.5°	266.5	267.6	268.6	269.6	270.1	270.6	270.1	269.1
175°	263.0	263.5	264.5	264.5	264.5	265.5	264.5	263.5
177.5°	260.4	261.0	261.0	261.5	261.0	261.5	260.4	259.4
180°	258.9	258.9	258.9	258.9	258.9	258.9	258.9	258.9

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