

Scaled data based on original data using

LM-41-14 Approved Method for Photometric Testing Of Indoor Fluorescent Luminaires

Test Report Prepared for

Cooper Lighting Solutions

(formerly Eaton)

Brand: io LED

Report Number: P219483

Luminaire Tested: **LDSQ4B10D010 EU4B10209027 4LBSQLWWLI**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P219483
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P35471)
Test Lab: INNOVATION CENTER-P3
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: io LED
Catalog Number: LDSQ4B10D010 EU4B10209027 4LBSQLWWLI
Description: PORTFOLIO 4 INCH SQUARE SINGLE WALLWASH RECESSED DOWNLIGHT, WITH SPECULAR CLEAR TRIM
Light Source: (1) HIGH LUMEN LED 90CRI / 2700K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 688.0 lumens
Efficiency: N/A
Efficacy: 68.5 lumens/watt
Spacing Criteria (0/90/45): 1.01 / 1 / 1.06
Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')
CIE Type: Direct

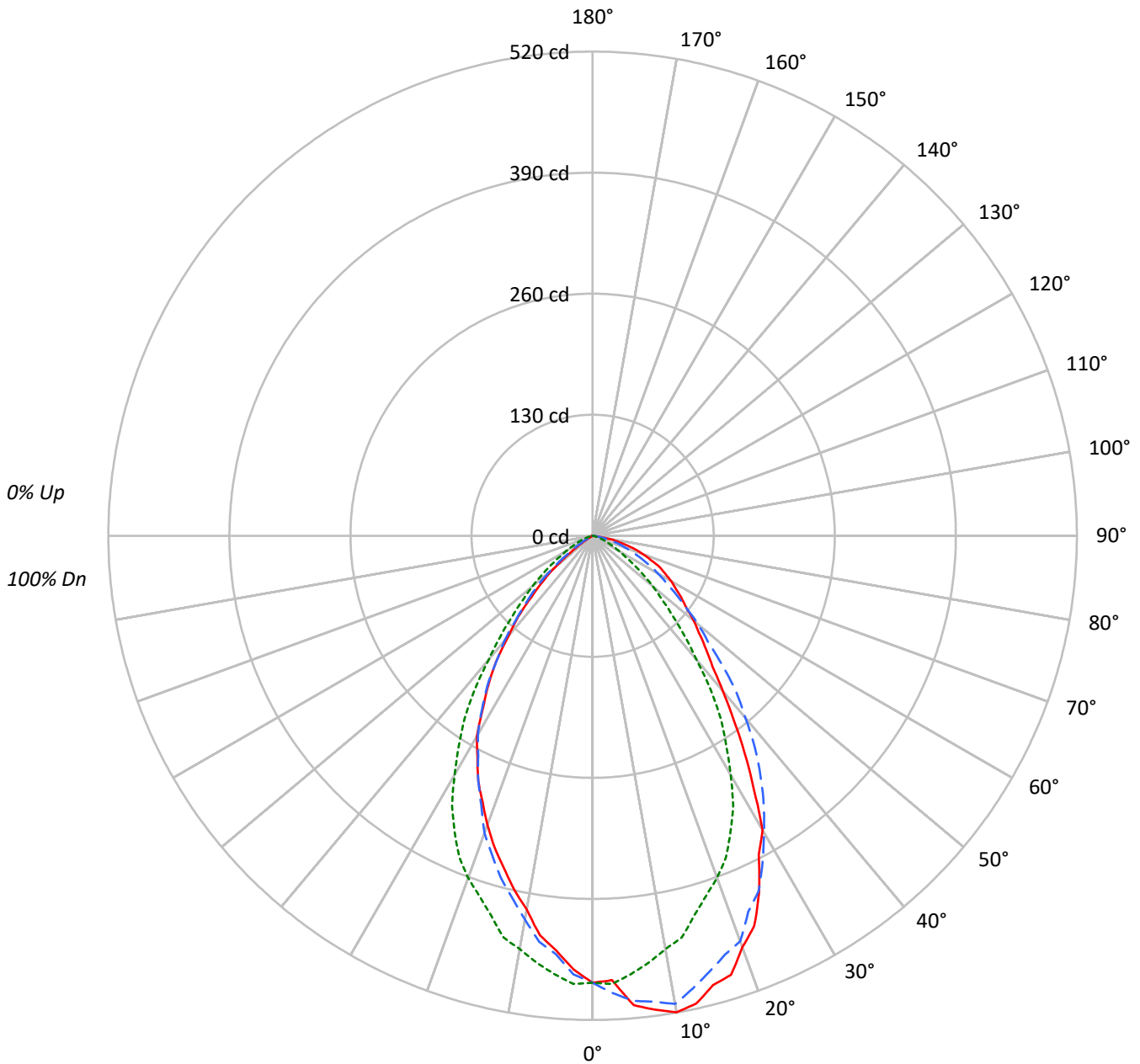
Input Watts (W): 10.05
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20									20									20									20									20									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	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	112	108	105	102	109	106	103	101	102	100	98	98	96	95	95	93	92	90																												
2	104	98	93	89	102	96	92	88	93	89	86	90	87	84	87	84	82	80																												
3	97	89	83	78	95	88	82	77	85	80	76	82	78	75	80	77	74	72																												
4	91	81	74	69	89	80	74	69	78	72	68	76	71	67	74	70	66	64																												
5	85	75	67	62	83	74	67	62	72	66	61	70	65	60	68	64	60	58																												
6	80	69	61	56	78	68	61	56	66	60	55	65	59	55	63	58	54	53																												
7	75	63	56	51	73	63	56	51	61	55	50	60	54	50	59	54	50	48																												
8	70	59	52	47	69	58	51	46	57	51	46	56	50	46	55	50	46	44																												
9	66	55	48	43	65	54	47	43	53	47	43	52	46	42	51	46	42	41																												
10	62	51	44	40	61	51	44	40	50	44	39	49	43	39	48	43	39	38																												

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	46500	46500	46500
5°	49196	45948	43488
10°	51123	44325	40086
15°	50106	42314	36998
20°	48474	40289	34062
25°	45215	37465	31062
30°	40818	33156	27809
35°	33622	28383	23073
40°	27442	21903	17755
45°	23578	16632	12769
50°	21341	12660	8063
55°	19643	9137	2922
60°	18852	6239	446
65°	18201	4218	138
70°	16315	2946	170
75°	13362	1497	0
80°	8368	669	0
85°	0	0	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	45.0	6.5
10°-20°	121.2	17.6
20°-30°	161.8	23.5
30°-40°	153.6	22.3
40°-50°	106.2	15.4
50°-60°	58.7	8.5
60°-70°	29.1	4.2
70°-80°	11.5	1.7
80°-90°	1.1	0.2
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°	327.9	47.7
0°-40°	481.5	70.0
0°-60°	646.3	93.9
0°-90°	688.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	688.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	480	480	480	480	480	
5°	506	501	472	451	447	48
15°	500	485	422	380	369	141
25°	423	421	350	291	291	193
35°	284	314	240	197	195	178
45°	172	197	121	100	93	134
55°	116	109	54	28	17	105
65°	79	58	18	1	1	77
75°	36	22	4	0	0	38
85°	0	1	0	0	0	3
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	480.0	480.0	480.0	480.0	480.0	480.0	480.0	480.0	480.0	480.0	480.0
2.5°	477.7	490.9	492.1	490.9	492.7	492.1	495.0	492.1	495.5	490.4	491.5
5°	505.9	500.7	511.7	505.9	505.9	505.3	503.6	503.0	505.3	497.8	501.3
7.5°	513.4	520.9	530.6	518.6	519.1	519.1	515.7	514.5	514.5	500.7	504.7
10°	519.7	515.1	520.3	515.7	519.7	519.1	521.4	514.0	519.1	511.1	510.5
12.5°	514.5	512.8	519.7	512.2	509.9	510.5	507.6	505.9	507.6	498.4	497.8
15°	499.6	501.3	511.7	503.6	502.4	501.3	497.8	492.1	496.7	484.0	484.6
17.5°	494.4	491.5	493.2	486.3	488.1	486.9	486.3	481.2	480.0	471.9	471.9
20°	470.2	476.5	476.5	471.9	471.9	471.4	463.9	468.5	463.3	461.0	463.3
22.5°	453.5	454.1	454.1	450.1	450.6	448.3	444.3	441.4	444.3	441.4	436.8
25°	423.0	424.2	431.1	423.6	422.4	424.7	421.3	419.6	419.0	412.1	421.3
27.5°	386.2	397.7	397.1	394.2	397.7	393.1	391.4	391.9	393.7	393.1	395.4
30°	364.9	366.6	368.3	366.0	366.6	364.9	364.9	365.5	370.1	368.3	367.8
32.5°	321.7	327.5	332.1	332.1	332.7	334.4	333.8	345.9	348.8	343.0	341.9
35°	284.3	288.3	292.4	292.9	300.4	301.0	301.6	305.0	313.1	314.8	314.2
37.5°	248.6	252.7	253.8	259.0	263.0	267.1	271.7	276.3	283.2	288.9	286.0
40°	217.0	218.7	221.6	223.9	231.9	231.9	234.2	243.5	250.9	255.5	255.0
42.5°	190.5	191.1	193.4	197.4	204.9	203.2	204.9	211.2	222.2	222.7	229.1
45°	172.1	171.5	173.2	173.8	178.4	180.7	181.9	186.5	195.7	196.8	197.4
47.5°	155.4	154.8	157.7	158.8	160.6	162.9	162.9	163.5	166.9	169.8	167.5
50°	141.6	141.6	141.6	142.7	145.6	145.0	145.6	147.9	149.6	148.5	147.9
52.5°	126.6	128.9	130.6	131.2	131.8	131.8	132.4	131.2	130.6	128.9	125.5
55°	116.3	118.6	118.6	118.6	118.6	120.9	118.0	118.6	118.6	114.0	109.4
57.5°	105.9	108.2	109.9	107.6	109.9	107.6	106.5	105.9	104.7	100.1	93.2
60°	97.3	98.4	97.8	97.3	98.4	96.7	95.5	93.2	92.1	85.8	81.2
62.5°	87.5	88.1	88.6	87.5	86.3	85.8	83.5	80.0	77.7	72.5	68.5
65°	79.4	77.7	77.1	76.5	75.4	73.7	71.9	67.9	66.2	61.6	57.6
67.5°	67.3	66.8	67.9	66.2	63.3	63.3	61.6	58.1	54.1	51.2	47.2
70°	57.6	57.0	55.8	54.1	53.5	51.2	51.2	47.2	46.0	40.9	37.4
72.5°	47.2	47.2	45.5	43.7	42.0	40.9	40.3	37.4	35.7	32.8	29.9
75°	35.7	35.7	35.1	33.4	32.2	31.1	30.5	28.2	26.5	23.6	21.9
77.5°	25.3	25.3	23.0	21.9	22.4	21.3	20.1	19.6	19.0	17.3	15.0
80°	15.0	14.4	12.7	13.2	12.7	12.7	12.1	11.5	10.4	9.2	8.1
82.5°	4.0	4.6	4.6	4.6	5.2	4.0	4.0	4.0	4.6	4.6	2.9
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.6	0.6
87.5°	0.6	1.2	2.3	2.3	2.3	2.3	2.3	1.7	1.7	1.7	1.2
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):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	480.0	480.0	480.0	480.0	480.0	480.0	480.0	480.0	480.0	480.0	480.0
2.5°	485.8	485.2	485.8	481.7	490.9	484.0	482.9	481.7	485.8	481.7	476.0
5°	496.1	490.4	488.6	486.9	492.1	484.0	482.3	482.9	480.0	472.5	473.1
7.5°	499.6	494.4	489.2	478.3	482.9	481.2	476.5	473.1	468.5	462.2	461.0
10°	500.7	495.0	487.5	484.0	477.1	474.8	473.1	467.3	461.6	450.6	447.8
12.5°	497.3	490.4	481.2	478.3	473.1	465.6	461.6	455.8	450.6	442.0	435.7
15°	482.3	476.5	473.7	463.9	461.6	457.0	448.9	440.9	433.4	421.9	418.4
17.5°	465.0	462.7	459.9	452.4	451.8	447.2	439.7	432.8	423.0	405.2	399.4
20°	447.2	447.2	438.0	435.1	440.9	431.7	425.9	419.6	399.4	390.8	380.4
22.5°	434.0	427.6	422.4	417.8	418.4	412.7	404.6	391.9	384.5	374.1	362.0
25°	408.1	410.4	398.8	397.1	398.8	385.6	381.6	371.2	360.3	350.5	341.3
27.5°	391.9	385.6	378.1	371.8	371.8	366.6	355.1	352.8	336.1	326.9	315.4
30°	367.8	363.2	356.8	347.6	346.5	342.4	333.2	327.5	310.2	296.4	290.1
32.5°	337.3	335.5	330.4	320.0	316.5	311.9	300.4	290.6	282.6	267.1	259.6
35°	315.4	309.1	298.1	289.5	286.6	278.6	269.4	262.4	253.8	240.0	230.2
37.5°	282.6	276.3	265.9	255.5	255.5	247.5	234.8	227.9	215.8	207.8	199.7
40°	253.8	245.8	235.4	223.3	221.6	210.1	204.9	193.4	185.9	173.2	172.1
42.5°	221.6	214.1	204.9	195.7	188.8	183.0	169.8	161.2	153.1	146.8	145.0
45°	192.2	182.4	174.4	162.9	156.0	149.1	140.4	134.7	128.3	121.4	117.4
47.5°	166.9	158.8	147.3	137.0	130.1	126.6	116.8	110.5	105.3	100.7	97.8
50°	141.0	131.2	124.9	113.4	112.2	104.2	96.1	90.9	88.1	84.0	80.0
52.5°	121.4	112.2	103.6	95.0	90.4	87.5	80.0	74.8	70.8	67.9	65.6
55°	102.4	94.4	87.5	78.8	76.0	71.9	63.3	62.2	58.1	54.1	51.2
57.5°	88.1	80.6	72.5	66.8	61.6	58.7	51.8	47.2	44.9	41.4	38.6
60°	74.8	66.8	60.4	53.5	51.2	47.2	42.0	38.0	35.1	32.2	29.4
62.5°	62.7	55.8	48.9	43.2	39.7	37.4	33.4	29.9	27.1	24.7	22.4
65°	51.8	45.5	39.7	34.0	32.2	29.4	26.5	23.6	21.3	18.4	16.1
67.5°	42.6	36.8	31.1	27.1	25.3	24.2	20.7	17.8	16.1	14.4	12.1
70°	33.4	29.4	24.7	21.3	19.6	17.8	15.5	13.8	11.5	10.4	8.6
72.5°	25.9	22.4	18.4	15.5	14.4	13.2	10.9	9.2	8.1	6.9	5.8
75°	18.4	15.5	13.2	10.4	9.8	9.2	7.5	6.3	5.2	4.0	3.5
77.5°	12.7	10.4	8.1	6.9	6.3	5.2	4.6	3.5	2.9	2.3	1.7
80°	6.9	5.2	4.0	3.5	2.9	2.3	2.3	1.7	1.2	1.2	0.6
82.5°	2.3	1.7	1.2	0.6	0.6	0.6	0.6	0.6	0.6	0.0	0.6
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°	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.0	0.0	0.0
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):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	480.0	480.0	480.0	480.0	480.0	480.0	480.0	480.0	480.0	480.0	480.0
2.5°	479.4	473.1	474.8	474.8	473.7	473.7	472.5	470.8	471.4	467.9	460.4
5°	474.2	466.2	465.0	466.2	461.6	460.4	458.1	461.6	451.2	455.3	450.6
7.5°	459.3	451.8	450.1	454.1	448.3	444.9	444.3	448.9	439.7	435.1	429.9
10°	442.6	439.7	434.5	431.7	429.9	430.5	425.9	420.1	418.4	417.3	412.7
12.5°	427.6	421.3	416.7	413.2	412.1	412.1	404.6	403.5	398.3	397.1	390.2
15°	409.8	402.3	399.4	394.8	390.8	393.1	384.5	382.2	380.4	372.9	374.1
17.5°	394.2	386.2	379.3	376.4	372.9	369.5	361.4	363.2	359.1	359.1	348.8
20°	374.1	365.5	360.3	354.5	354.5	349.9	344.2	344.7	339.6	334.4	325.2
22.5°	352.8	343.6	337.3	335.0	329.2	328.1	321.2	319.4	312.5	313.1	305.0
25°	330.4	321.2	312.5	313.1	307.9	305.6	301.6	293.5	290.6	287.2	284.9
27.5°	303.9	297.6	290.1	289.5	279.7	280.3	275.1	272.8	265.9	267.6	262.4
30°	279.7	270.5	263.6	261.9	257.8	256.7	248.6	245.2	246.3	241.7	238.8
32.5°	255.0	241.2	238.3	234.8	232.5	229.6	223.9	226.2	221.0	222.2	217.6
35°	222.2	216.4	208.9	208.9	206.6	204.3	200.3	202.6	197.4	195.1	190.5
37.5°	194.5	189.4	181.9	184.2	180.1	176.7	173.2	173.8	169.2	168.6	164.0
40°	164.6	161.7	156.5	156.5	153.7	153.7	151.9	150.2	147.3	143.9	138.7
42.5°	136.4	134.1	131.8	132.4	128.3	131.8	127.2	130.1	120.9	120.3	116.8
45°	115.7	110.5	111.1	108.8	106.5	107.6	103.6	104.7	99.6	98.4	95.0
47.5°	93.8	92.1	88.6	87.5	87.5	85.8	84.0	83.5	81.2	78.3	73.7
50°	77.1	70.8	69.6	67.9	66.8	66.8	64.5	61.0	61.6	58.7	54.1
52.5°	60.4	55.3	52.9	52.4	50.1	48.9	46.0	43.7	42.0	40.9	38.0
55°	46.6	42.0	39.1	39.1	35.7	35.7	31.7	29.9	27.6	25.3	23.6
57.5°	35.1	32.8	29.9	27.6	26.5	23.6	21.3	18.4	16.7	13.2	10.9
60°	26.5	24.2	21.3	19.6	18.4	15.5	12.7	10.4	6.3	5.2	4.6
62.5°	19.6	17.3	14.4	13.2	12.1	9.8	6.9	3.5	1.7	1.7	1.7
65°	14.4	11.5	9.2	8.1	6.9	5.2	2.3	1.2	0.6	0.6	0.6
67.5°	9.8	7.5	5.2	4.6	3.5	1.7	0.6	0.6	0.6	0.6	0.6
70°	6.3	4.6	2.3	1.7	1.2	0.6	0.6	0.6	0.6	0.6	0.6
72.5°	4.0	2.3	1.2	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
75°	2.3	1.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
77.5°	1.2	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
80°	0.6	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	0.6	0.6	0.6
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):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	480.0	480.0	480.0	480.0	480.0	480.0	480.0	480.0
2.5°	468.5	464.5	466.8	461.6	463.9	467.9	465.0	466.2
5°	452.4	450.1	447.2	439.7	445.5	450.1	447.8	447.2
7.5°	435.1	427.1	431.1	428.8	427.6	432.2	427.1	432.8
10°	417.3	411.5	410.9	406.9	406.9	410.4	410.9	407.5
12.5°	390.8	387.9	387.9	387.3	386.8	390.2	390.8	389.1
15°	371.8	370.6	367.8	367.2	363.7	368.9	369.5	368.9
17.5°	348.8	349.4	346.5	346.5	348.8	350.5	345.9	350.5
20°	333.2	330.4	329.2	324.0	326.9	329.8	329.8	330.4
22.5°	310.8	306.2	307.9	305.0	303.3	307.3	307.3	309.1
25°	285.5	285.5	286.6	284.9	286.0	288.3	286.6	290.6
27.5°	261.3	263.6	263.6	261.3	262.4	269.4	272.2	267.6
30°	238.8	239.4	241.2	240.0	243.5	245.8	245.2	248.6
32.5°	213.5	216.4	217.6	215.8	217.0	222.2	219.3	218.7
35°	194.0	188.8	188.2	188.8	191.1	192.2	191.1	195.1
37.5°	165.8	164.0	161.7	162.3	164.0	166.3	167.5	170.4
40°	138.7	136.4	136.4	135.8	134.1	140.4	140.4	140.4
42.5°	115.1	114.5	111.7	111.7	114.0	115.7	114.5	118.6
45°	94.4	92.1	90.4	90.4	92.1	92.1	93.8	93.2
47.5°	74.2	71.9	72.5	70.8	72.5	74.8	71.9	72.5
50°	55.8	55.8	54.7	55.8	55.3	55.8	54.7	53.5
52.5°	38.0	43.2	43.7	41.4	36.3	31.7	28.8	31.1
55°	21.9	19.6	19.6	19.0	17.8	17.3	15.5	17.3
57.5°	10.9	9.8	9.8	9.8	9.2	8.6	7.5	7.5
60°	4.6	4.0	4.0	3.5	2.9	2.3	1.7	2.3
62.5°	1.7	1.2	1.2	1.2	1.2	1.2	1.2	1.2
65°	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
67.5°	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
70°	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
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°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



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— 0°-180° - - 45°-225° - - - - 90°-270°













(END OF REPORT)