

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: P219497

Luminaire Tested: **LDSQ4B15D010 EU4B10209030 4LBSQLWWLI**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P219497
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: LDSQ4B15D010 EU4B10209030 4LBSQLWWLI
Description: PORTFOLIO 4 INCH SQUARE SINGLE WALLWASH RECESSED DOWNLIGHT, WITH SPECULAR CLEAR TRIM
Light Source: (1) HIGH LUMEN LED 90CRI / 3000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 996.8 lumens
Efficiency: N/A
Efficacy: 69.3 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

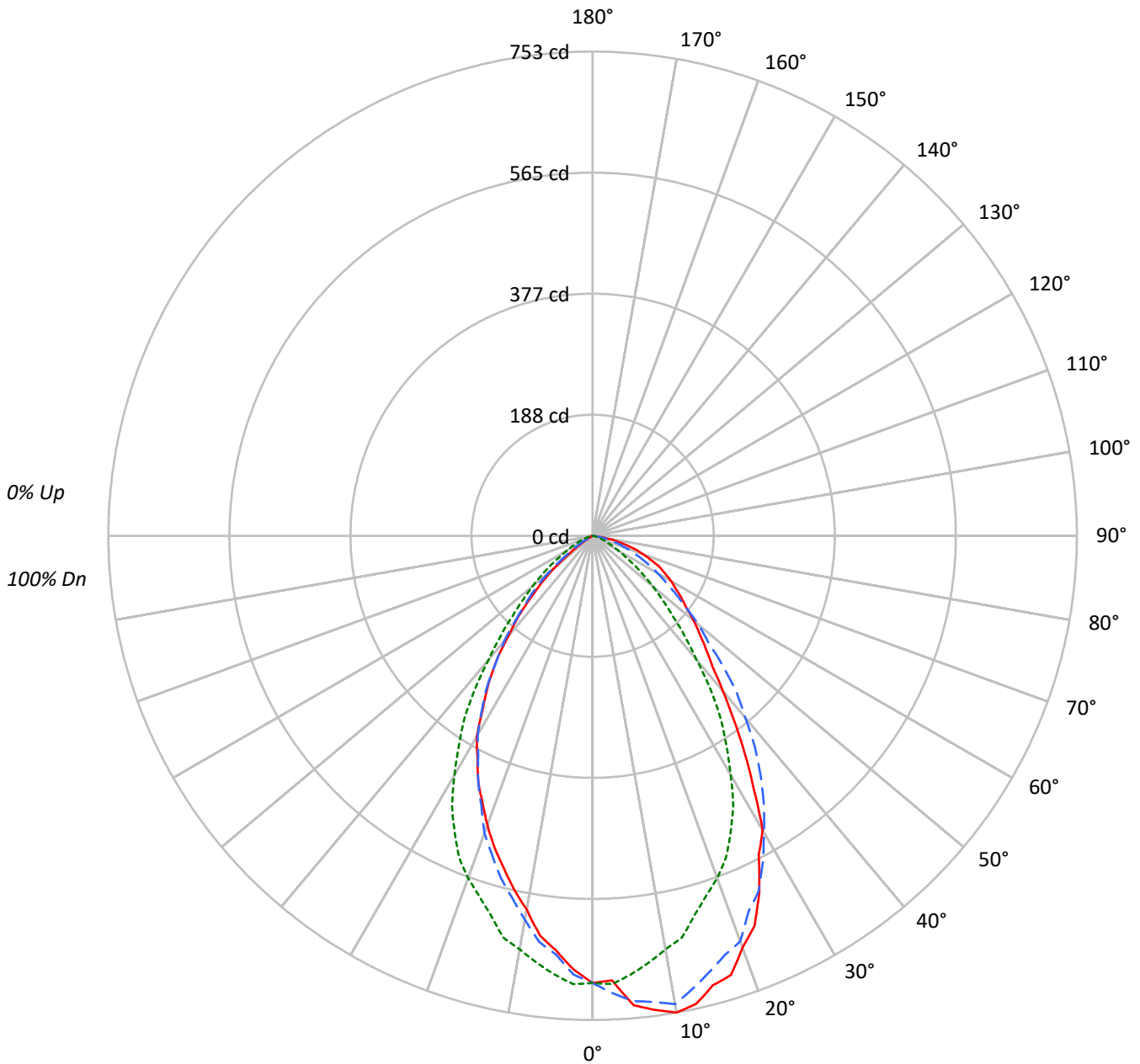
Input Watts (W): 14.39
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20									20									20									20									20								
RC	80									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°	67367	67367	67367
5°	71271	66574	63005
10°	74063	64226	58068
15°	72582	61299	53607
20°	70227	58371	49340
25°	65502	54279	45011
30°	59130	48034	40293
35°	48713	41120	33433
40°	39747	31742	25722
45°	34155	24099	18509
50°	30911	18342	11680
55°	28442	13242	4222
60°	27299	9048	639
65°	26384	6120	183
70°	23623	4249	227
75°	19351	2171	0
80°	12106	948	0
85°	0	0	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	65.2	6.5
10°-20°	175.5	17.6
20°-30°	234.4	23.5
30°-40°	222.5	22.3
40°-50°	153.8	15.4
50°-60°	85.0	8.5
60°-70°	42.2	4.2
70°-80°	16.6	1.7
80°-90°	1.6	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°	475.1	47.7
0°-40°	697.6	70.0
0°-60°	936.4	93.9
0°-90°	996.8	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	996.8	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	695	695	695	695	695	
5°	733	726	685	654	648	70
15°	724	702	611	551	534	205
25°	613	610	508	421	421	279
35°	412	455	348	286	283	258
45°	249	286	176	144	135	194
55°	168	158	78	40	25	152
65°	115	83	27	1	1	112
75°	52	32	6	0	0	55
85°	0	1	0	0	0	5
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°	695.4	695.4	695.4	695.4	695.4	695.4	695.4	695.4	695.4	695.4	695.4
2.5°	692.1	711.2	712.9	711.2	713.7	712.9	717.1	712.9	717.9	710.4	712.1
5°	732.9	725.4	741.3	732.9	732.9	732.1	729.6	728.7	732.1	721.2	726.2
7.5°	743.8	754.6	768.8	751.3	752.1	752.1	747.1	745.4	745.4	725.4	731.2
10°	752.9	746.3	753.8	747.1	752.9	752.1	755.4	744.6	752.1	740.4	739.6
12.5°	745.4	742.9	752.9	742.1	738.7	739.6	735.4	732.9	735.4	722.1	721.2
15°	723.7	726.2	741.3	729.6	727.9	726.2	721.2	712.9	719.6	701.2	702.1
17.5°	716.2	712.1	714.6	704.6	707.1	705.4	704.6	697.1	695.4	683.7	683.7
20°	681.2	690.4	690.4	683.7	683.7	682.9	672.0	678.7	671.2	667.9	671.2
22.5°	657.0	657.9	657.9	652.0	652.9	649.5	643.7	639.5	643.7	639.5	632.9
25°	612.8	614.5	624.5	613.7	612.0	615.3	610.3	607.8	607.0	597.0	610.3
27.5°	559.5	576.2	575.3	571.2	576.2	569.5	567.0	567.8	570.3	569.5	572.8
30°	528.6	531.1	533.6	530.3	531.1	528.6	528.6	529.5	536.1	533.6	532.8
32.5°	466.1	474.4	481.1	481.1	481.9	484.4	483.6	501.1	505.3	496.9	495.3
35°	411.9	417.7	423.6	424.4	435.2	436.1	436.9	441.9	453.6	456.1	455.3
37.5°	360.2	366.0	367.7	375.2	381.0	386.9	393.6	400.2	410.2	418.6	414.4
40°	314.3	316.8	321.0	324.3	336.0	336.0	339.4	352.7	363.5	370.2	369.4
42.5°	276.0	276.8	280.2	286.0	296.8	294.3	296.8	306.0	321.8	322.7	331.9
45°	249.3	248.5	251.0	251.8	258.5	261.8	263.5	270.2	283.5	285.2	286.0
47.5°	225.1	224.3	228.5	230.1	232.6	236.0	236.0	236.8	241.8	246.0	242.6
50°	205.1	205.1	205.1	206.8	211.0	210.1	211.0	214.3	216.8	215.1	214.3
52.5°	183.4	186.8	189.3	190.1	190.9	190.9	191.8	190.1	189.3	186.8	181.8
55°	168.4	171.8	171.8	171.8	171.8	175.1	170.9	171.8	171.8	165.1	158.4
57.5°	153.4	156.8	159.3	155.9	159.3	155.9	154.3	153.4	151.8	145.1	135.1
60°	140.9	142.6	141.7	140.9	142.6	140.1	138.4	135.1	133.4	124.2	117.6
62.5°	126.7	127.6	128.4	126.7	125.1	124.2	120.9	115.9	112.6	105.1	99.2
65°	115.1	112.6	111.7	110.9	109.2	106.7	104.2	98.4	95.9	89.2	83.4
67.5°	97.6	96.7	98.4	95.9	91.7	91.7	89.2	84.2	78.4	74.2	68.4
70°	83.4	82.5	80.9	78.4	77.5	74.2	74.2	68.4	66.7	59.2	54.2
72.5°	68.4	68.4	65.9	63.4	60.9	59.2	58.4	54.2	51.7	47.5	43.4
75°	51.7	51.7	50.9	48.4	46.7	45.0	44.2	40.9	38.4	34.2	31.7
77.5°	36.7	36.7	33.4	31.7	32.5	30.9	29.2	28.3	27.5	25.0	21.7
80°	21.7	20.8	18.3	19.2	18.3	18.3	17.5	16.7	15.0	13.3	11.7
82.5°	5.8	6.7	6.7	6.7	7.5	5.8	5.8	5.8	6.7	6.7	4.2
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.8	0.8
87.5°	0.8	1.7	3.3	3.3	3.3	3.3	3.3	2.5	2.5	2.5	1.7
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):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	695.4	695.4	695.4	695.4	695.4	695.4	695.4	695.4	695.4	695.4	695.4
2.5°	703.7	702.9	703.7	697.9	711.2	701.2	699.6	697.9	703.7	697.9	689.6
5°	718.7	710.4	707.9	705.4	712.9	701.2	698.7	699.6	695.4	684.6	685.4
7.5°	723.7	716.2	708.7	692.9	699.6	697.1	690.4	685.4	678.7	669.5	667.9
10°	725.4	717.1	706.2	701.2	691.2	687.9	685.4	677.0	668.7	652.9	648.7
12.5°	720.4	710.4	697.1	692.9	685.4	674.5	668.7	660.4	652.9	640.4	631.2
15°	698.7	690.4	686.2	672.0	668.7	662.0	650.4	638.7	627.9	611.2	606.2
17.5°	673.7	670.4	666.2	655.4	654.5	647.9	637.0	627.0	612.8	587.0	578.7
20°	647.9	647.9	634.5	630.4	638.7	625.4	617.0	607.8	578.7	566.2	551.1
22.5°	628.7	619.5	612.0	605.3	606.2	597.8	586.2	567.8	557.0	542.0	524.5
25°	591.2	594.5	577.8	575.3	577.8	558.6	552.8	537.8	522.0	507.8	494.4
27.5°	567.8	558.6	547.8	538.6	538.6	531.1	514.5	511.1	486.9	473.6	456.9
30°	532.8	526.1	517.0	503.6	501.9	496.1	482.8	474.4	449.4	429.4	420.2
32.5°	488.6	486.1	478.6	463.6	458.6	451.9	435.2	421.1	409.4	386.9	376.0
35°	456.9	447.8	431.9	419.4	415.2	403.6	390.2	380.2	367.7	347.7	333.5
37.5°	409.4	400.2	385.2	370.2	370.2	358.5	340.2	330.2	312.7	301.0	289.3
40°	367.7	356.0	341.0	323.5	321.0	304.3	296.8	280.2	269.3	251.0	249.3
42.5°	321.0	310.2	296.8	283.5	273.5	265.1	246.0	233.5	221.8	212.6	210.1
45°	278.5	264.3	252.6	236.0	226.0	216.0	203.4	195.1	185.9	175.9	170.1
47.5°	241.8	230.1	213.5	198.4	188.4	183.4	169.3	160.1	152.6	145.9	141.7
50°	204.3	190.1	180.9	164.3	162.6	150.9	139.2	131.7	127.6	121.7	115.9
52.5°	175.9	162.6	150.1	137.6	130.9	126.7	115.9	108.4	102.6	98.4	95.1
55°	148.4	136.7	126.7	114.2	110.1	104.2	91.7	90.1	84.2	78.4	74.2
57.5°	127.6	116.7	105.1	96.7	89.2	85.0	75.0	68.4	65.0	60.0	55.9
60°	108.4	96.7	87.5	77.5	74.2	68.4	60.9	55.0	50.9	46.7	42.5
62.5°	90.9	80.9	70.9	62.5	57.5	54.2	48.4	43.4	39.2	35.9	32.5
65°	75.0	65.9	57.5	49.2	46.7	42.5	38.4	34.2	30.9	26.7	23.3
67.5°	61.7	53.4	45.0	39.2	36.7	35.0	30.0	25.8	23.3	20.8	17.5
70°	48.4	42.5	35.9	30.9	28.3	25.8	22.5	20.0	16.7	15.0	12.5
72.5°	37.5	32.5	26.7	22.5	20.8	19.2	15.8	13.3	11.7	10.0	8.3
75°	26.7	22.5	19.2	15.0	14.2	13.3	10.8	9.2	7.5	5.8	5.0
77.5°	18.3	15.0	11.7	10.0	9.2	7.5	6.7	5.0	4.2	3.3	2.5
80°	10.0	7.5	5.8	5.0	4.2	3.3	3.3	2.5	1.7	1.7	0.8
82.5°	3.3	2.5	1.7	0.8	0.8	0.8	0.8	0.8	0.8	0.0	0.8
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°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	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°	695.4	695.4	695.4	695.4	695.4	695.4	695.4	695.4	695.4	695.4	695.4
2.5°	694.6	685.4	687.9	687.9	686.2	686.2	684.6	682.1	682.9	677.9	667.0
5°	687.1	675.4	673.7	675.4	668.7	667.0	663.7	668.7	653.7	659.5	652.9
7.5°	665.4	654.5	652.0	657.9	649.5	644.5	643.7	650.4	637.0	630.4	622.9
10°	641.2	637.0	629.5	625.4	622.9	623.7	617.0	608.7	606.2	604.5	597.8
12.5°	619.5	610.3	603.7	598.7	597.0	597.0	586.2	584.5	577.0	575.3	565.3
15°	593.7	582.8	578.7	572.0	566.2	569.5	557.0	553.6	551.1	540.3	542.0
17.5°	571.2	559.5	549.5	545.3	540.3	535.3	523.6	526.1	520.3	520.3	505.3
20°	542.0	529.5	522.0	513.6	513.6	507.0	498.6	499.4	491.9	484.4	471.1
22.5°	511.1	497.8	488.6	485.3	476.9	475.3	465.3	462.8	452.8	453.6	441.9
25°	478.6	465.3	452.8	453.6	446.1	442.7	436.9	425.2	421.1	416.1	412.7
27.5°	440.2	431.1	420.2	419.4	405.2	406.1	398.6	395.2	385.2	387.7	380.2
30°	405.2	391.9	381.9	379.4	373.5	371.9	360.2	355.2	356.9	350.2	346.0
32.5°	369.4	349.4	345.2	340.2	336.9	332.7	324.3	327.7	320.2	321.8	315.2
35°	321.8	313.5	302.7	302.7	299.3	296.0	290.2	293.5	286.0	282.7	276.0
37.5°	281.8	274.3	263.5	266.8	261.0	256.0	251.0	251.8	245.1	244.3	237.6
40°	238.5	234.3	226.8	226.8	222.6	222.6	220.1	217.6	213.5	208.5	200.9
42.5°	197.6	194.3	190.9	191.8	185.9	190.9	184.3	188.4	175.1	174.3	169.3
45°	167.6	160.1	160.9	157.6	154.3	155.9	150.1	151.8	144.2	142.6	137.6
47.5°	135.9	133.4	128.4	126.7	126.7	124.2	121.7	120.9	117.6	113.4	106.7
50°	111.7	102.6	100.9	98.4	96.7	96.7	93.4	88.4	89.2	85.0	78.4
52.5°	87.5	80.0	76.7	75.9	72.5	70.9	66.7	63.4	60.9	59.2	55.0
55°	67.5	60.9	56.7	56.7	51.7	51.7	45.9	43.4	40.0	36.7	34.2
57.5°	50.9	47.5	43.4	40.0	38.4	34.2	30.9	26.7	24.2	19.2	15.8
60°	38.4	35.0	30.9	28.3	26.7	22.5	18.3	15.0	9.2	7.5	6.7
62.5°	28.3	25.0	20.8	19.2	17.5	14.2	10.0	5.0	2.5	2.5	2.5
65°	20.8	16.7	13.3	11.7	10.0	7.5	3.3	1.7	0.8	0.8	0.8
67.5°	14.2	10.8	7.5	6.7	5.0	2.5	0.8	0.8	0.8	0.8	0.8
70°	9.2	6.7	3.3	2.5	1.7	0.8	0.8	0.8	0.8	0.8	0.8
72.5°	5.8	3.3	1.7	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0
75°	3.3	1.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
77.5°	1.7	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
80°	0.8	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	0.8	0.8	0.8
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°	695.4	695.4	695.4	695.4	695.4	695.4	695.4	695.4
2.5°	678.7	672.9	676.2	668.7	672.0	677.9	673.7	675.4
5°	655.4	652.0	647.9	637.0	645.4	652.0	648.7	647.9
7.5°	630.4	618.7	624.5	621.2	619.5	626.2	618.7	627.0
10°	604.5	596.2	595.3	589.5	589.5	594.5	595.3	590.3
12.5°	566.2	562.0	562.0	561.1	560.3	565.3	566.2	563.7
15°	538.6	537.0	532.8	532.0	527.0	534.5	535.3	534.5
17.5°	505.3	506.1	501.9	501.9	505.3	507.8	501.1	507.8
20°	482.8	478.6	476.9	469.4	473.6	477.8	477.8	478.6
22.5°	450.3	443.6	446.1	441.9	439.4	445.3	445.3	447.8
25°	413.6	413.6	415.2	412.7	414.4	417.7	415.2	421.1
27.5°	378.5	381.9	381.9	378.5	380.2	390.2	394.4	387.7
30°	346.0	346.9	349.4	347.7	352.7	356.0	355.2	360.2
32.5°	309.3	313.5	315.2	312.7	314.3	321.8	317.7	316.8
35°	281.0	273.5	272.7	273.5	276.8	278.5	276.8	282.7
37.5°	240.1	237.6	234.3	235.1	237.6	241.0	242.6	246.8
40°	200.9	197.6	197.6	196.8	194.3	203.4	203.4	203.4
42.5°	166.8	165.9	161.8	161.8	165.1	167.6	165.9	171.8
45°	136.7	133.4	130.9	130.9	133.4	133.4	135.9	135.1
47.5°	107.6	104.2	105.1	102.6	105.1	108.4	104.2	105.1
50°	80.9	80.9	79.2	80.9	80.0	80.9	79.2	77.5
52.5°	55.0	62.5	63.4	60.0	52.5	45.9	41.7	45.0
55°	31.7	28.3	28.3	27.5	25.8	25.0	22.5	25.0
57.5°	15.8	14.2	14.2	14.2	13.3	12.5	10.8	10.8
60°	6.7	5.8	5.8	5.0	4.2	3.3	2.5	3.3
62.5°	2.5	1.7	1.7	1.7	1.7	1.7	1.7	1.7
65°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
67.5°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
70°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
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)